THE DEPARTMENT OF TRADE AND INDUSTRY

INDUSTRIAL POLICY ACTION PLAN 2015

Economic Sectors, Employment & Infrastructure Development Cluster
IPAP 2015/16 – 2017/18

the **dti**

Department:
Trade and Industry
REPUBLIC OF SOUTH AFRICA

THE DTI CAMPUS
77 Meintjies Street
Sunnyside
Pretoria
0002

THE DTI POSTAL ADDRESS
Private Bag X84
Pretoria
0001

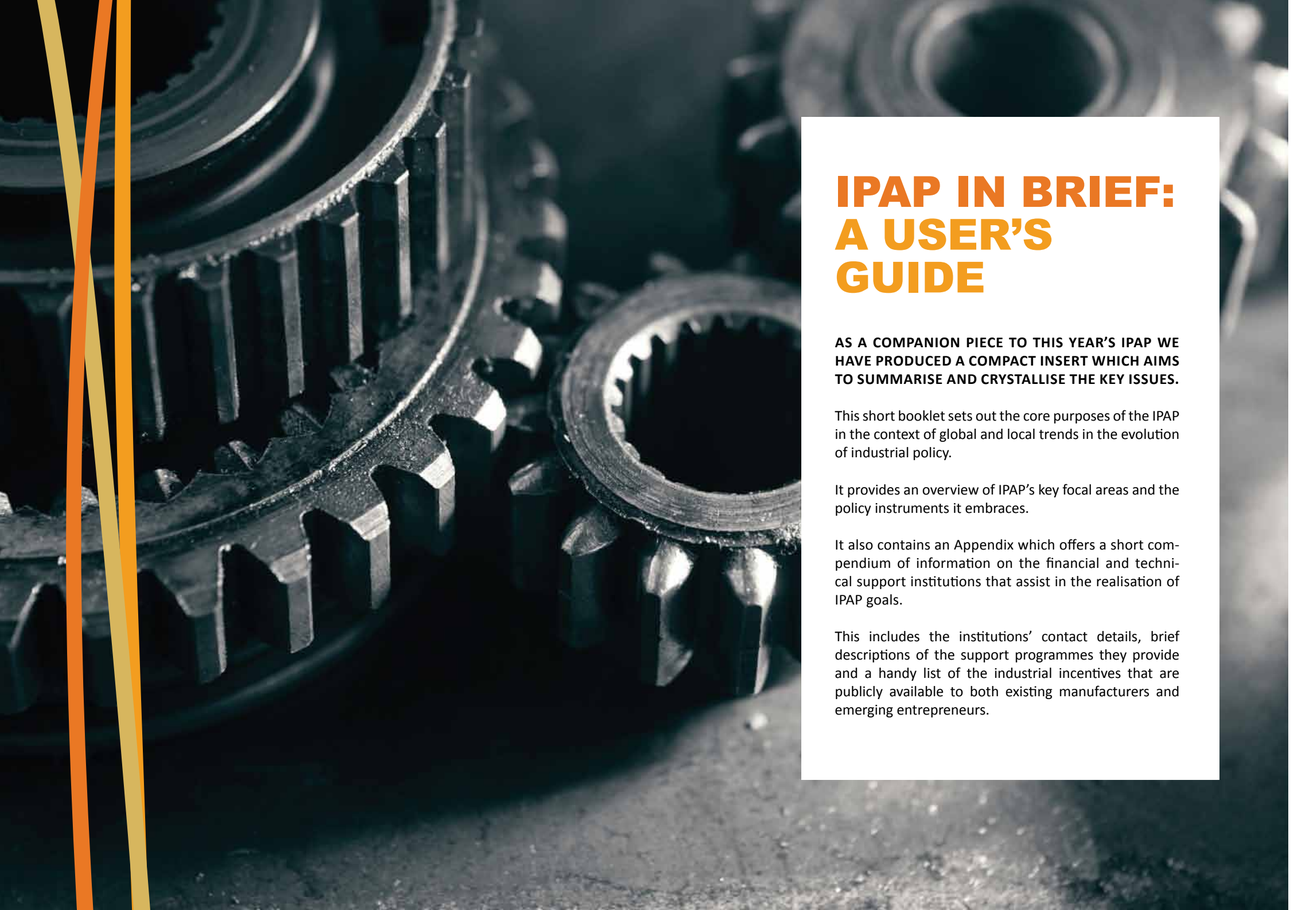
THE DTI CUSTOMER CONTACT CENTRE
0861 843 384

www.thedti.gov.za

ISBN: 978-0-621-42601-4
RP: 97/2014: 978-0-621-42601-4

the **dti**

Department:
Trade and Industry
REPUBLIC OF SOUTH AFRICA



IPAP IN BRIEF: A USER'S GUIDE

AS A COMPANION PIECE TO THIS YEAR'S IPAP WE HAVE PRODUCED A COMPACT INSERT WHICH AIMS TO SUMMARISE AND CRYSTALLISE THE KEY ISSUES.

This short booklet sets out the core purposes of the IPAP in the context of global and local trends in the evolution of industrial policy.

It provides an overview of IPAP's key focal areas and the policy instruments it embraces.

It also contains an Appendix which offers a short compendium of information on the financial and technical support institutions that assist in the realisation of IPAP goals.

This includes the institutions' contact details, brief descriptions of the support programmes they provide and a handy list of the industrial incentives that are publicly available to both existing manufacturers and emerging entrepreneurs.

CONTENT

FOREWORD BY THE MINISTER

This year, the publication of the annual iteration of the Industrial Policy Action Plan (IPAP 2015/16 - 17/18) coincides with a set of global economic conditions which are complex and volatile and which could impact on South Africa's economy — and its manufacturing sector in particular — in a range of sometimes contradictory ways. While the fall in the price of oil will certainly benefit South Africa, the fall in price of a range of other commodities will place our mining sector under further stress, with knock — on effects for the manufacturing sector.

Falling commodity prices reflect a drop in global demand linked to ongoing recessionary conditions in the Eurozone as well as a structural slow — down of economic growth in the Peoples Republic of China. On the other hand, structural change in China is linked to a steady increase in Chinese wages, which will enhance the competitiveness of South African industry. In addition, slow and uncertain growth in the developed world has created a surplus of savings over local investment opportunities, which could result in a greater openness to investment in the developing world. Whilst growth projections for the African economy remain optimistic, it is unclear how global turbulence will ultimately affect African economic and political stability.

This uncertain and volatile global context underlines the importance that successive iterations of IPAP have attached to efforts to decrease the dependence of the South African economy on resource exports. There are two inter — linked ways to achieve this: a) by developing economic capabilities in a range of value adding, labour — intensive and/or technologically sophisticated spillover sectors; and b) by ensuring that growing domestic demand underpins efforts to re-industrialise.

Industrialisation is the process of expanding a country's economic capabilities to design, manufacture and service products of increasing value. The development of the manufacturing sector is consequently core to the industrialisation process.

The key components of successful industrialisation are the provision of coherent and consistent support measures to manufacturing companies that enable them to develop new capabilities and grow South Africa's exports, whilst at the same time setting and securing compliance with a range of conditions designed to achieve increasing levels of competitiveness — especially the ability to compete effectively in export markets.

The National Industrial Policy Framework (NIPF) articulates South Africa's overarching approach to industrial development, providing a strong basis for the policy certainty that must underpin it. IPAP 2015 — the seventh iteration of the Industrial Policy Action Plan — further reinforces the policy certainty that has been painstakingly crafted over the past seven years. It also provides a working outline of the National Programme of Action that has been put in place to implement our industrial policy objectives.

IPAP is a product of the Economic Cluster of Government. It is published annually as a way of openly sharing with all stakeholders the thinking processes that underpin the ongoing adjustment and strengthening of government plans and the modification of its focus areas and instruments.

This is a necessarily flexible process, since it must take into account the dynamic nature of the global and local economy, whilst at the same time reflecting the implementation lessons learned over each successive IPAP period.

In other words, the IPAP does not reflect any change in the policy framework, but rather the need to adapt as we "learn by doing": refining existing approaches, adding further instruments and programmes and — in a small minority of instances — jettisoning those which have been found wanting.

"STRONG AND VIABLE POLICY PLATFORMS AND PROGRAMMES HAVE BEEN BUILT"

Apart from the volatile global economic context within which South African industry must operate, the domestic economy is also characterised by important constraints, challenges and opportunities. We have set these out in successive iterations of IPAP and do so again, in order to contribute to a growing national consensus that coherent and coordinated industrial development is critical to South Africa's economic fortunes — and that to achieve our overarching industrial objectives it is vital that government departments, state owned companies and the private sector work together in an integrated, solutions-based manner.

Since its inception, IPAP has had to row against the tide of the great global recession and its lingering aftermath. It has also had to battle with a significant array of domestic constraints, and has been operating on a scale that has been sub-optimal in relation to the demands of re-industrialisation in South Africa.

Despite all this, however, we are confident that very significant successes have been achieved. The overall diversity of the economy and many of its critical industrial capabilities have been retained; and a range of strong and viable policy platforms and programmes have been built and/or strengthened. Once again IPAP provides a summary of these achievements and sets out the opportunities which we believe can and must be pursued in close collaboration with the private sector.

IPAP 2015 therefore sets out the cross-cutting and sector specific refinements to the programmes and implementation plans of our industrial policy approach. It is underpinned by the building of capacity and capability to coherently manage the implementation process. IPAP also reflects the significant progress that has been achieved with respect to the building of partnerships with key private sector players to advance our industrial policy objectives.

Building on previous iterations, the key focus areas of IPAP 2015 are as follows:

- **PUBLIC AND PRIVATE PROCUREMENT**
  Given the depressed and volatile global environment, it is vital that we optimise the impact of government, State Owned Enterprises (SOEs) and private procurement on our manufacturing sector.

  In the forthcoming period the IPAP presents a three--pronged strategy to achieve this objective. Firstly, there will be a strong focus on increasing compliance with public sector procurement prescripts, including making compliance an audit requirement.

  Secondly, by training and capacity building for institutions that lead public procurement and strategic sourcing. Thirdly, by building the capability to monitor and support existing fleet procurements so that their impact is optimised.

  As part of this approach a further important focus of the IPAP is to leverage the infrastructure roll-out to accelerate the industrialisation process. Investment in infrastructure that can unlock the growth of high potential industrial sectors is critical.

  For example, the *Operation Phakisa* initiative, driven by the Presidency, is focusing on a collaborative effort between government, Transnet and the private sector to unlock investment in marine engineering-related infrastructure.

  By extension, it is important that government ensures that its investment programme is leveraged to develop more strongly integrated industrial capability in relevant supply chains.

  The IPAP seeks to ensure that the impact of fleet procurements (such as, for example in locomotives) is fully optimised; the point be-

"WORKING CLOSELY WITH GLOBAL AND SOUTH AFRICAN OEMs TO DEVELOP NEW PRODUCTS TAILORED FOR OUR PRIORITY EXPORT MARKETS"

ing that procurements of this magnitude provide a unique opportunity for broader industrial development — and do not come round every year or even decade. This being the case, it is critical to achieve a change in the way that infrastructure pricing is structured, particularly in the ports, so that exporters of manufactured goods are provided with a competitive offering. This process of restructuring has already begun and has resulted in a decrease in cargo dues at the ports for manufactured exports.

- **LEVERAGING SOUTH AFRICA'S RESOURCE ENDOWMENT**

The mining sector remains a core part of the South African economy, responsible for around 9% of GDP and 38% of exports. Under apartheid, the sector played a key role in supporting investment in industrial capacity. These investments had a bias towards capital and energy-intensive technologies, as a result of the peculiar incentives and constraints created by the apartheid system of racial domination.

While it is recognised that many key players in the sector have globalised their operations, it remains critical that we maximise the opportunities provided by the linkages and multipliers that exist between mining and manufacturing in order to extract full value from South Africa's enormous resource endowment.

This applies not only to upstream mining opportunities and downstream beneficiation projects but also to the significant work that has already taken place with respect to future gas-based industrialisation. IPAP 2015 therefore sets particular store on continuing efforts to build working relationships with large mining companies that can potentially contribute to the realisation of our industrial ambitions.

The revised empowerment codes, which unambiguously provide incentives for both small business and supplier development, create a foundation for working with mining companies towards building world-class engineering companies in the mining supply chain.

This includes collaboration between government and mining companies on the development of new technologies to beneficiate our mineral wealth inside South Africa.

- **SUPPORT FOR MANUFACTURED EXPORTS**

The IPAP puts a special emphasis on building world--class manufactured product exporters, by working with and supporting leading and dynamic companies with a proven track record as winners in their respective sectors.

The emphasis on ramping up export competitiveness will increasingly be achieved through the implementation of a range of carefully considered strategies; as follows:

- *Working with OEMS*

Global Original Equipment Manufacturers (OEMs) have a core competence in identifying and nurturing high potential companies to become part of their supply chains. OEMs are able to introduce experts from their global network to assist ambitious South African companies to enhance their capability and competitiveness.

The **dti** will be focused on partnering with committed OEMs (for example in the automotive sector) to expand the number of South African exporters.

- *Industrial financing and support*

Work is well advanced to build and strengthen a system of industrial financing, incentives and other assistance measures to 'support winners' in the manufacturing sector. In this regard support for domestic OEMs is also vital since these dynamic South African companies provide a base-load of demand for component manufacturers located in South Africa — and are consequently critical to South Africa's export effort.

The IPAP will thus be energetically helping existing and aspirant South African OEMs to develop products specifically tailored for our priority export markets.

"DRIVING REGIONAL TRADE AND INDUSTRIAL INTEGRATION"

- *Exports and African regional integration*

Growing South African exports to the Africa region have somewhat offset declining exports to traditional trading partners. Expectations of growth in many African countries remain high, powered by resource exploitation, infrastructure investment and a growing middle class. In keeping with previous iterations, IPAP 2015 sets out some of the work being undertaken to drive regional industrial integration both within the formal multilateral institutions as well as through government--led research and policy development.

Also highlighted in IPAP 2015 is a special section on support for black industrialists, which sets out the first practical steps towards realising government's commitment to transformation and empowerment in the manufacturing sector.

As we always emphasise, the IPAP is a product of the Economic Cluster of Departments. IPAP 2015 reflects the need to optimise the impact which will arise from an integrated approach to industrial development — especially in relation to the linkages that need to be developed with — and within — the mining and agricultural sectors.

The Industrial Policy Action Plan is supported by other Divisions and components of the broader **dti** group. These include the Export and Investment Promotion Division (TISA); the Incentive Development and Administration Division (IDAD); the International Trade and Economic Development Division (ITED) and the Consumer and Corporate Regulation Division (CCRD) of the **dti**.

Finally all this work is underpinned by the efforts of related industrial development institutions — namely, the Industrial Development Corporation (IDC), the National Empowerment Fund (NEF) and the Council for Scientific and Industrial Research (CSIR) — as well as the cooperation of those SOEs (in particular Transnet and Eskom) that occupy a central place in the industrialisation effort. To all these institutions and the dedicated staff on whom the work rests, I offer on behalf of government our sincerest appreciation. We re-affirm our common goal of taking this work forward.

Dr Rob Davies, MP
Minister, Trade and Industry

MESSAGE FROM THE DIRECTOR GENERAL

This is the seventh annual Industrial Policy Action Plan (IPAP). It sets out — as each successive iteration has done — the key economic data and analysis which will inform the work of the **dti** in the financial year ahead.

In keeping with all previous iterations, this year's IPAP sets out in some detail all the transversal and sector-specific time-bound Key Action Plans (KAPs), together with a clear indication of the lead and supporting departments jointly responsible for each.

This is important, firstly, because the IPAP is a collaborative product of the Economic Cluster of government. Its success hinges on the extent to which all government departments, state owned companies (SOCs) and developmental finance institutions (DFIs) cooperate with one another in support of an integrated industrial development effort.

Secondly, it is important because this format enables good management and oversight of the success, or otherwise, of the work set out in each section; and identifies the new or revised interventions that are required when problems or bottlenecks are encountered.

Thirdly, the IPAP provides a framework into which all the other divisions and functions of the **dti** can fit, encompassing the full range of its trade, investment and export promotion efforts.

Finally, the format allows for the public in general — and manufacturing companies in particular — to gain an informed insight into both the overall architecture and the nitty-gritty detail of the Industrial Policy Action Plan. This makes it much easier to develop the mutual understandings and build the partnerships with government that are so critical to the success of South Africa's industrialisation effort.

IPAP 2015 reflects the collaborative energies of many departments and institutions, including the very valuable efforts of the Department of Science and Technology (DST) — which is responsible for the Innovation and Technology Chapter — and the Industrial Development Corporation (IDC), whose support is reflected across many areas of the IPAP.

To all the individuals, both in the **dti** and in its sister departments, who have contributed to the compilation of this year's IPAP — and will be driving implementation of all the Key Action Plans over this and the coming years — I wish to express my sincere appreciation.

Let's commit to even greater effort in the difficult work that we must all undertake together in carrying out the complex tasks involved in securing sustainable long term industrial development.

Lionel October
Director General
The Department of Trade and Industry

ECONOMIC ANALYSIS

KEY LINKAGES: THE IPAP, THE NDP AND THE MTSF

THE NATIONAL DEVELOPMENT PLAN (NDP)

Highlights the need for SA to develop a more competitive and diversified economy with a higher global share of dynamic products and greater depth and breadth of domestic linkages. (NDP p. 103).

Recognises that resources are either a curse or a blessing (NDP p. 98) – which way this goes being critically dependent on the coherence of investment and regulatory policy.

Posits the need to move steadily away from an exchange rate linked primarily to commodity prices towards one based on the sophistication of SA's overall export basket. (NDP p. 98-99).

In order to achieve these objectives it advocates deepening the productive base in mining, agriculture, manufacturing and services, intensified stimulation of local and foreign markets and strengthening of conditions to support labour-absorbing activities. (NDP, p. 103).

THE MEDIUM TERM STRATEGIC FRAMEWORK 2014-2019 (MTSF)

Positions the IPAP as one of the key pillars of radical economic transformation in South Africa, predicated on rapid and inclusive growth in the productive sectors of the economy and the creation of a skilled and capable workforce to support an inclusive growth path. (MTSF, pp. 20, 22).

IPAP IN CONTEXT: ECONOMIC ANALYSIS

Introduction

The IPAP 2015/16 – 17/18 is the seventh iteration of government's annual Industrial Policy Action Plan. It sets out time-bound transversal and sector specific plans, lists lead and supporting departments and provides for continuous monitoring, evaluation and improvement of all the key interventions it makes to secure industrial development in South Africa.

It is aligned with and seeks to take forward South Africa's vision 2030 as set out in the National Development Plan (NDP); with a particular focus on catalysing dynamic and sustainable economic growth in the domestic economy – a core goal of the NDP. The IPAP is also closely aligned with another key objective of the NDP, namely, the need for South Africa to develop deeper and more robust export capabilities in both traditional and non-traditional dynamic sectors of the economy.

To meet the economic objectives of the Plan, the NDP further proposes the following, more detailed objectives:

- Increasing exports in key sectors such as mining, construction, labour-intensive manufacturing and agriculture.
- Infrastructure development to facilitate economic activity and job creation.
- Reducing the cost of regulatory compliance, especially for small- and medium-sized firms
- Developing a more comprehensive and effective innovation system.
- Stimulating a higher rate of industrial investment, with public sector investment crowding in private investment.
- A strong commitment to public and private procurement that supports domestic industry and job creation.

The current iteration of IPAP - rooted in its founding policy architecture, the National Industrial Policy Framework (NIPF) – is committed to realising broader national policy goals through a wide range of mutually supportive and interlocking transversal and sector-specific programmes and instruments targeting specifically the manufacturing sector of the economy.

The close alignment between NDP, the core objectives of the NIPF and the successive annual Action Plans which have followed, provides the consistency and continuity of government policy for the manufacturing sector summarised in the NIPF as:

- Facilitation and support for industrial diversification beyond our current reliance on traditional commodities and non-tradable services - which requires the promotion of increased value addition per capita and targets a significant shift into non-traditional tradable goods and services that are competitive in both export markets and the domestic economy.
- The long-term intensification of South Africa's industrialisation process and movement towards a knowledge economy.
- The promotion of a more labour-absorbing industrialisation path with a particular emphasis on tradable labour-intensive goods and services and economic linkages, including to the primary sectors of the economy, that are capable of catalysing robust and sustainable employment creation.
- The promotion of a broader-based industrialisation path characterised by deeper levels of participation in the mainstream industrial economy by historically disadvantaged economic citizens - particularly women – and the inclusion of historically marginalised regions.
- Contributing to industrial development in Africa, with a strong emphasis on regional industrial integration and building regional productive capabilities.

Government-wide policy perspectives and documents – including the IPAP - also clearly reflect the undeniable reality that the domestic economy is characterised by deep-seated structural fault lines that put a brake on development.

These include: high levels of inequality and unemployment; skills shortages and mismatches that are particularly acute in the manufacturing sector; inadequate and over-strained infrastructure; operational bottlenecks; over-concentration in key sectors of the economy; conflictual industrial relations; and inequitable spatial patterns.

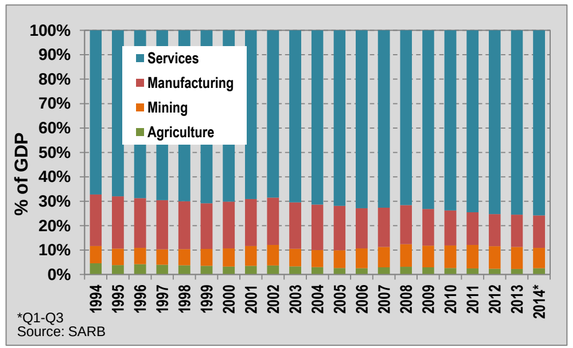
All these challenges have to be addressed in a difficult policy environment still scarred by the distortions and perversities of apartheid's racially-based economic growth patterns and by our continuing path dependence on a particular energy- and capital-intensive trajectory which is extremely difficult to break out of.

Practically, this means that the South African economy continues to occupy a subordinate place in the global division of labour, principally as a producer and exporter of primary commodities and an importer of value-added manufactured products. To the limited extent that domestic value-added exports exist, they are highly concentrated in a few sectors.

This structural reality is also reflected in the fact that the economy has not grown fast enough for long enough. Where GDP growth exceeded 5% (in 12 of the previous 44 quarters) it was driven both by the commodity super cycle - as China industrialised and embarked on a massive fixed investment drive, resulting in increased commodity demand and booming prices - and by credit-fuelled household consumption based on a very high level of import intensity.

As a result - and as set out elsewhere in this introduction - key features of SA's recent growth have further embedded existing fault-lines, as evidenced by the continuing steady decline in the mining, agriculture and manufacturing sectors' share of GDP (refer to Figure 1), and by unsustainable growth in the services sector of the economy - which has significantly out-paced the production or industrial sectors.

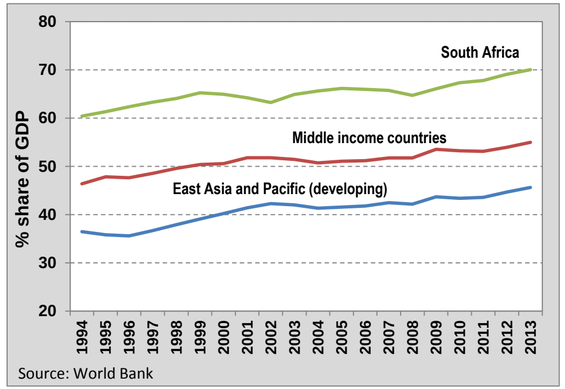
Figure 1: Sector contributions to GDP



The consumption-based services sectors of the economy have grown at double the rate of the production-based sectors of the economy. Clearly growth and employment gains in services sectors such as retail cannot be sustained if the production side of the economy does not grow.

In terms of our international competitive position, it should also be noted that the growth shown in South Africa's domestic services sectors also significantly outstrips services growth in peer middle income countries (MIC's) and fast-growing regions like East Asia, as illustrated in Figure 2.

Figure 2: Services' share of GDP – SA vs world regions

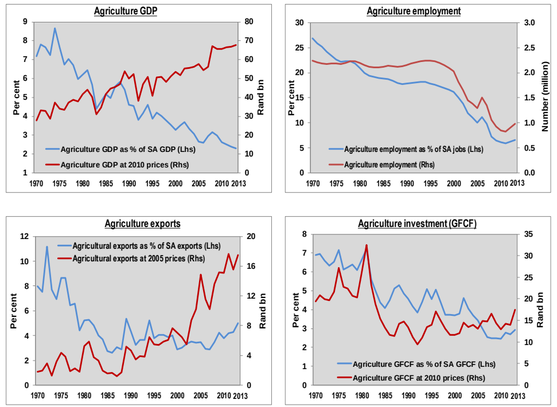


The main drivers of South Africa's high growth in services have been credit extension, retail consumption, the proliferation of business services and telecommunications and explosive growth in the security industry.

Putting it bluntly: growth has not been inclusive; unemployment has never fallen below 22%; and increasing levels of inequality have become a chronic feature of our society. This is very significant because growing inequality is not only a threat to social well-being, stability and cohesion, but also undermines domestic demand and therefore the possibilities for expanded economic growth.

The declining share of the productive sectors in South Africa's GDP is illustrated in the following graphs.

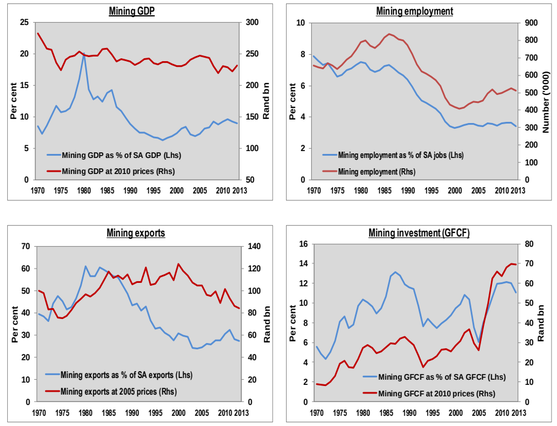
Figure 3: Agricultural sector's contributions to SA economy



Source: IDC, compiled using SARB, Stats SA and Quantec data

The moderate contribution of agriculture to GDP and employment has declined over time, reaching new lows in 2013 and 2012, respectively, as shown in Figure 3.

Figure 4: Mining sector's contributions to SA economy



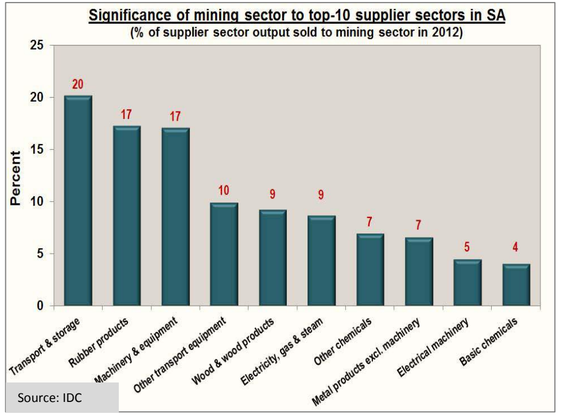
Source: IDC, compiled using SARB, Stats SA and Quantec data

Similarly – as illustrated in Figure 4 - the contribution of the mining sector to the SA economy declined across a number of key economic indicators over the years.

These primary sectors are enormously important to overall economic growth (including exports) and employment because of their substantial upstream and downstream linkages and the multiplier effects they generate, both to the services and the manufacturing sectors.

One example is the extent to which mining demand impacts upon the manufacturing sector, as shown in Figure 5. A number of sub-sectors rely heavily on the mining sector as a key source of demand for their respective products/services. In manufacturing, sub-sectors such as rubber products; machinery and equipment; other transport equipment; wood and wood products; metals products; electrical machinery; basic chemicals, as well as many other sub-sectors supply a substantial portion of their output to the domestic mining sector.

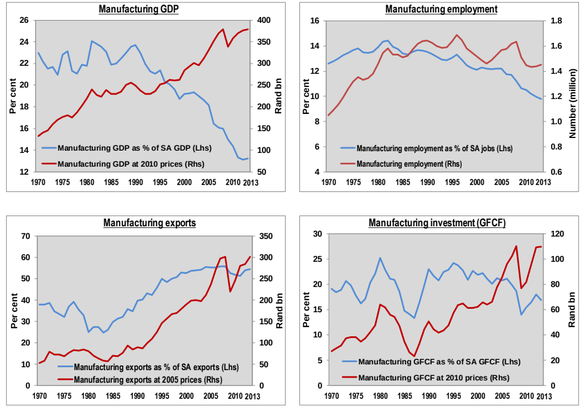
Figure 5: Mining-manufacturing interface: mining is a critical source of demand for manufacture



Source: IDC

The downward trend in production and employment across the manufacturing sectors is similarly evident in the contribution they make to GDP and employment. As can be seen below (Figure 6) manufacturing employment levels have steadily declined over time, with 2013 ratios substantially lower than in the 1980s.

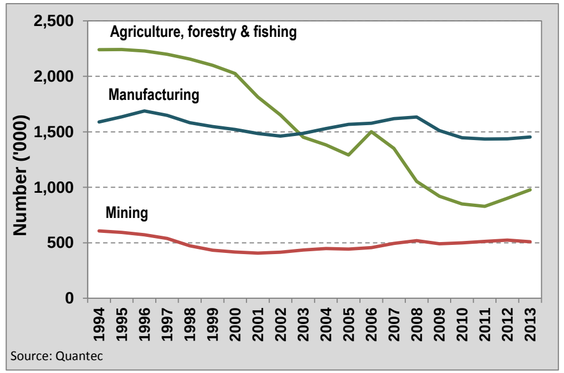
Figure 6: Manufacturing sector's contributions to the SA economy



Source: IDC, compiled using SARB, Stats SA and Quantec data

The data clearly illustrates one of the main reasons why South Africa has achieved such low growth rates and has not been able to come to terms with either the unemployment or the inequality crises.

Figure 7: Manufacturing employment trends



Source: Quantec

Recent trends have only served to strengthen and not lessen the structural problems of the economy, entrenching the dependence on commodity exports and capital inflows, with attendant knock-on effects with respect to exchange rate volatility and the deficit on the current account of the balance of payments – all of which leave South Africa highly vulnerable to shifts and swings in global sentiment and economic performance.

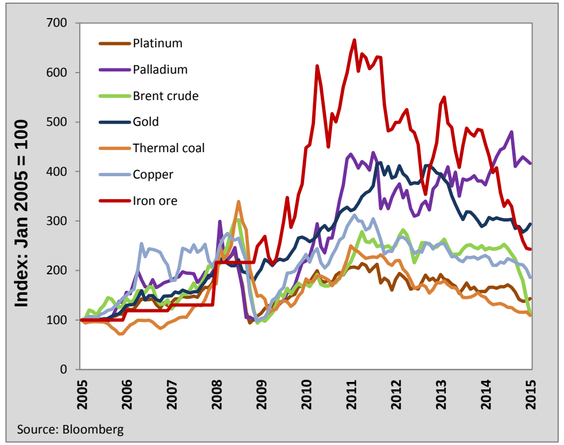
All these endogenous factors are exacerbated by the persistent effects of the Great Recession, characterised by muted demand from South Africa's traditional trading partners, particularly in the austerity-afflicted Eurozone.

Global growth picked up only marginally in 2014 to 2.6%, compared to 2.5% in 2013, and - according to the United Nations Conference on Trade and Development (UNCTAD) - will most likely remain well below pre-crisis levels for some time to come. Any projected slight improvements going forward will be driven in the main by growth in developing countries - particularly China - and the United States.

Similarly, on the trade front, overall growth by volume (including merchandise trade) grew at just under 2% in 2012/2013 and into 2014.

Compounding these problems (see Figure 8 below), and carrying worrying implications for many African countries, including South Africa, is the recent widespread fall in the price of traded commodities - with only a few exceptions - which once again underlines the need for diversification of value-added export production.

Figure 8: Global commodity prices



Source: Bloomberg

There is therefore very little likelihood that global growth will return to its previous trajectory in the short term; and no significant prospect of a renewed commodity super cycle.

In addition to this, China's 'rebalancing' of its economic structure to move up the value chain and adopt a steadily less resource-intensive growth path will (certainly in the short term) negatively impact on South Africa's commodity exports; this because, although China is South Africa's leading export destination at the country level, the export basket destined for the world's second largest economy is still heavily dominated by commodities. These accounted for 69% of South Africa's merchandise exports sold on the Chinese market in 2014 and consisted largely of iron ore, manganese, chrome, copper, coal and platinum.

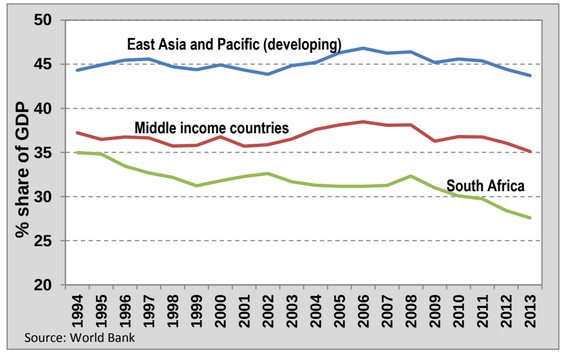
However, it is important at the same time to recognise that the global economy is complex and exhibits sometimes contradictory trends. These include the fact that Chinese exports will become more expensive as higher wages are conceded, in turn supporting domestic demand.

In contrast to the difficult commodity-export situation confronting South Africa, the fall in the oil price will bring clear advantages to the local economy, both with respect to the balance of trade and lower input costs for the manufacturing sector and other domestic producers.

The domestic manufacturing economy

The domestic economy is still stuttering in the aftermath of the Great Recession, with growth since then having remained well below pre-crisis levels. As previously indicated this is not just the case in South Africa but across the world, as many industrialised economies and developing countries are struggling to attain pre-crisis growth rates.

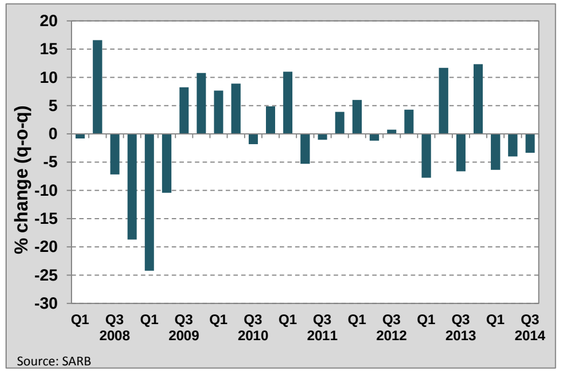
Figure 9: Industry share of GDP: international comparison



This adverse trend highlights the challenges facing the domestic manufacturing sector. An increasingly competitive environment globally and substantially weaker demand conditions in key external markets since the 2007/08 financial crisis in advanced economies have negatively affected the performance of local manufacturing. Critical home-grown factors have aggravated the situation, including substantial cost pressures, the unstable supply and high cost of electricity, exchange rate volatility, skills constraints, high administered prices (especially rail freight and port charges for value-added products) and industrial action – all compounded by productivity and competitiveness challenges.

The spillover effects of the five-month long labour strike in platinum mining last year, followed by labour disruptions in the metals and engineering industries in July, were particularly severe. Lower levels of output were recorded by more than half of all manufacturing sub-sectors in the first 11 months of 2014. The exceptions were mainly in consumer-oriented sectors and a few others, such as those producing fabricated metal products, sawn timber and basic chemicals.

Figure 10: Real GDP growth in manufacturing



On a year-on-year basis, real value added by the manufacturing sector contracted by 0.2% over the first three quarters of 2014. This was most likely the worst performance since the 2008/09 recession for a sector that accounts for approximately 13% of real value-added in the economy, 11.5% of overall employment and 54% of South Africa's export earnings. Furthermore, in light of its substantial linkages with domestic suppliers of goods and service providers across other sectors of economic activity, the poor manufacturing performance has had ramifications throughout the economy.

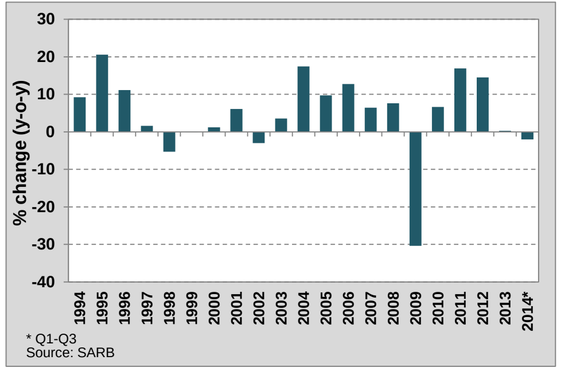
Weak performances were reported by clothing and textiles, plastic products, the metals sector, machinery and equipment, as well as the motor vehicles and components sector, due to a substantial contraction in the output of components. These sectors benefit from IPAP incentives and other forms of support at varying levels and it is clear that, were it not for government support measures, their performance would have been far more dire across the board.

More promisingly, however, the footwear, paper and paper-products, basic chemicals and furniture sectors all reported relatively strong output growth in 2014.

Overall, the marked slowdown in South Africa's economic growth in 2014 was reflected in a substantial decline in fixed investment spending, particularly by private business enterprises. Private sector fixed investment contracted sharply on a quarter-on-quarter and seasonally adjusted basis in the first half of the year, followed by a marginal up-tick in the third quarter.

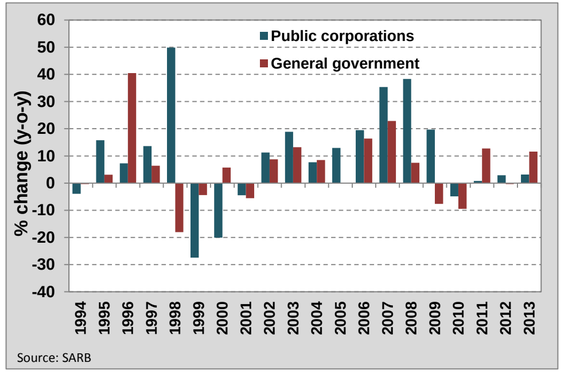
Capital outlays in the manufacturing sector contracted by 2% on a year-on-year basis over the first nine months of 2014, compared to a 2.6% contraction in overall private sector fixed investment and a mere 0.3% growth for the economy at large. Factors affecting investment decisions included weak demand conditions, surplus production capacity in numerous sub-sectors of manufacturing, concerns over electricity supply - especially for energy-intensive projects - and high levels of industrial action.

Figure 11: Real growth in fixed investment by the manufacturing sector



Facing a generally trying operational environment both on the demand and supply fronts, business confidence among manufacturers remained low throughout 2014, although a modest improvement emerged in the final quarter. This was confirmed by the relatively weak readings of the Purchasing Managers' Index (PMI) throughout 2014.

Figure 12: Fixed investment by the public sector



Source: SARB

The infrastructure development programme rolled out by the public sector - including both general government and public corporations (state-owned entities) – was designed, amongst other things, to provide a substantial counter-cyclical effect to the ravages of the economic downturn of 2008/2009 (as illustrated in Figure 12 above). Although the rate of growth in such investment has subsequently decelerated, the absolute levels remain high on an annual basis.

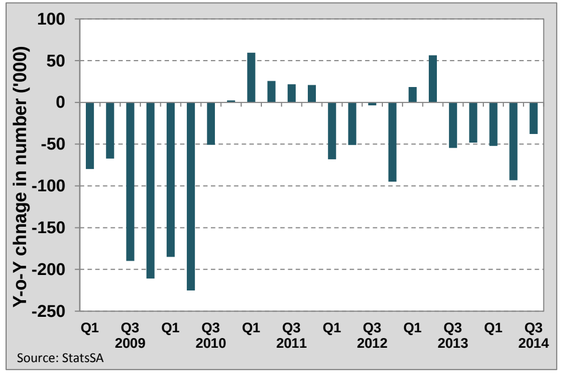
Figure 13: Business confidence in the SA economy and the manufacturing sector

Source: BER

The adverse trends in manufacturing production and investment activity resulted in continued job shedding on a net basis. Employment levels in the sector in the third quarter of 2014 were about 20% lower than those recorded prior to the 2008 economic downturn.

However, manufacturing employment has been on a long-term declining trend, a situation aggravated by the 2008/09 recession, as job numbers declined quite sharply over the past two decades. The contribution of the manufacturing sector to overall employment fell from 14.6% in the first quarter of 2008 to 11.5% by the third quarter of 2014 and amounted to a substantial loss of some 370,000 employment opportunities.

Figure 14: Manufacturing employment trends



Source: StatsSA

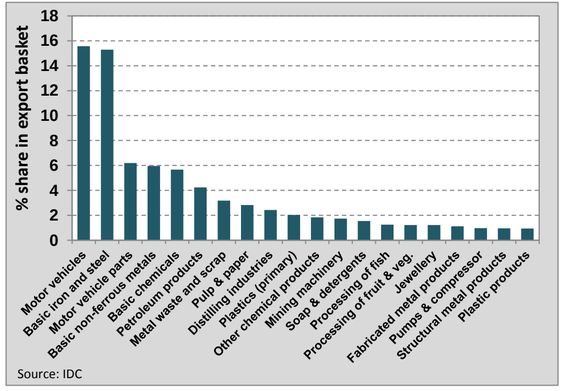
For the economy at large, only 880,000 additional jobs have been created since 2008, falling well short of the number necessary to absorb new entrants into the labour market and, most critically, to meaningfully reduce overall unemployment in South Africa. The unemployment rate measured an excessively high 24.3% in the fourth quarter of 2014, with just over 4.9 million people unable to find a work, whilst the number of discouraged work-seekers has also been rising.

External trade

South Africa's export sector came under increased pressure during the course of 2014. As noted earlier, falling commodity prices, production stoppages due to labour strikes in the platinum mining industry, reduced global demand and production challenges experienced by key export-oriented manufacturing sectors all contributed to this adverse trend in exports.

Moreover, the manufacturing export basket remains highly concentrated, with a few main sub-sectors accounting for the bulk of manufactured exports (refer to Figure 15). The top ten export categories accounted for 63% of all manufactured exports in 2014. This extent of concentration makes the export sector particularly vulnerable to unexpected developments in key global markets affecting both demand and supply conditions for our main export categories.

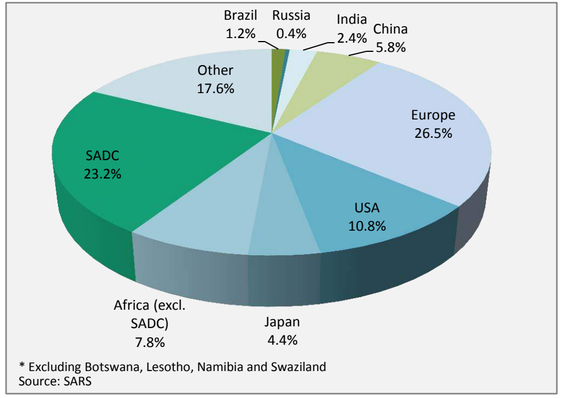
Figure 15 Key manufacturing export products in 2014



Source: IDC

In contrast to all these challenges, a most welcome trend has been the rising importance of the rest of the African continent as a major market for locally produced manufactured goods. Manufactured exports to other African markets totalled R143 billion or 31% of all manufactured exports in 2014, exceeding the R122 billion destined for Europe by a substantial margin. However, almost 75% of South Africa's manufactured export trade with the rest of the continent is conducted principally with other members of the Southern African Development Community.

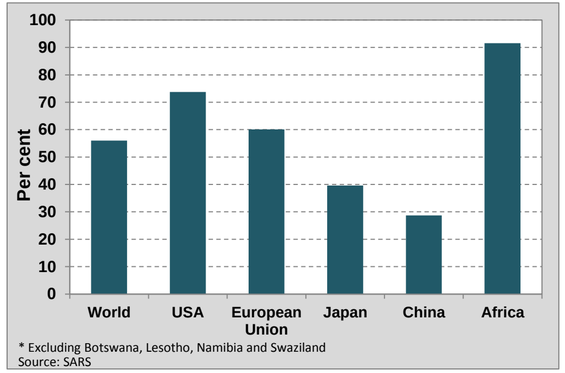
Figure 16: Regional destinations of manufactured exports in 2014



* Excluding Botswana, Lesotho, Namibia and Swaziland
Source: SARS

It is noteworthy that manufactured goods represented approximately 92% of South Africa's merchandise exports to other African countries in 2014, as compared to 74% and 60% in the case of the United States and the European Union respectively.

Figure 17: Manufacturing share in merchandise export basket in 2014

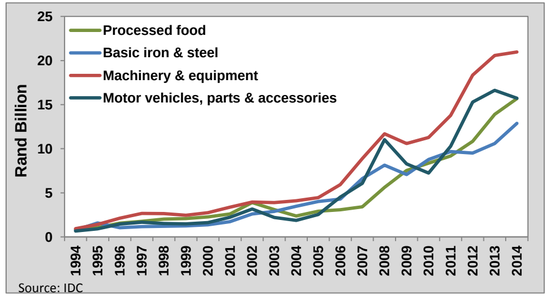


* Excluding Botswana, Lesotho, Namibia and Swaziland
Source: SARS

The product mix of the manufactured export basket destined for other African countries is also substantially more diversified relative to other traditional export markets. Exports of non-electrical machinery topped the list of export products to the rest of Africa in 2014, comprising largely mining and agricultural machinery and equipment. Motor vehicles, parts and accessories, processed food and a variety of chemicals are other leading product categories being exported to various countries elsewhere in Africa (refer to Figure18).

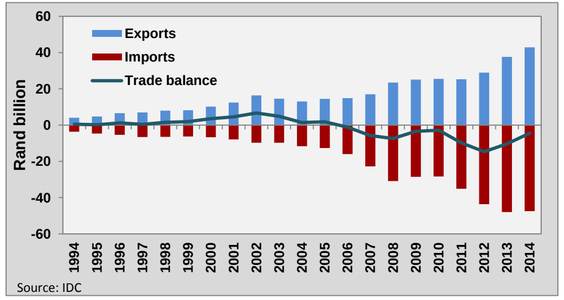
The strong growth prospects for the Sub-Saharan Africa region, underpinned by substantial investment in infrastructure, rapid urbanisation and a fast-growing and increasingly sophisticated consumer market provide ample trade and investment opportunities for South African businesses.

Figure 18: Top manufactured exports to Africa



Source: IDC

Figure 19: Agro-processing trade

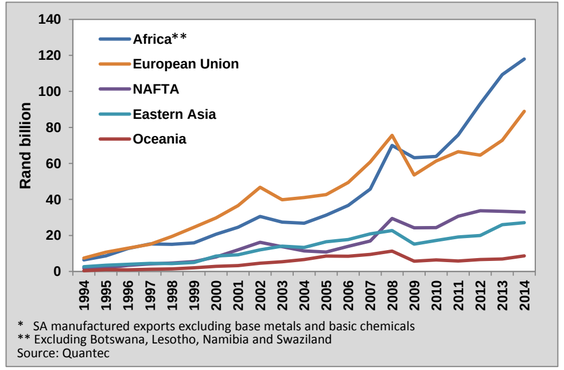


Source: IDC

Agro-processing trade (refer to Figure 19), for example, is both a cause for optimism and a signal as to where further focussed industrial support measures should be directed.

As illustrated in Figure 20, the African continent is rapidly growing into South Africa's most important export market for manufactured goods

Figure 20: SA non-commodity-based manufacturing exports*



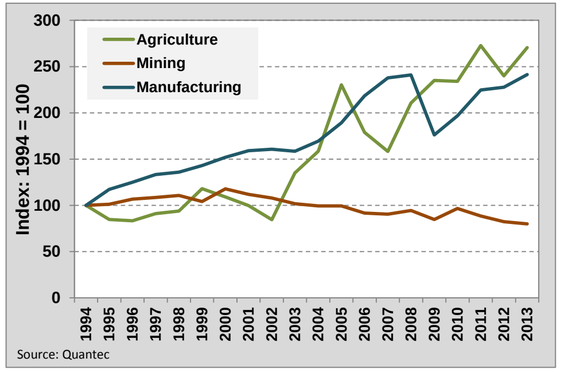
* SA manufactured exports excluding base metals and basic chemicals
** Excluding Botswana, Lesotho, Namibia and Swaziland
Source: Quantec

Mineral exports

At a broad sector level it is clear that South Africa's mineral exports to the world at large have underperformed over the past two decades. By 2013, export volumes (at constant prices) were stuck below 1994 levels, mainly the result of a sharp declining trend in gold exports. Although minerals like platinum group metals (PGMs), coal and iron ore in particular reported stronger growth, this was not enough to fully compensate for gold's steep decline. The global recession in 2008/09 took its toll on manufactured exports, whilst - despite a subsequent mild economy-wide recovery - export volumes have barely recovered the losses of the economic downturn.

South Africa's non-mineral exports have also underperformed and are lagging behind those of its peers. In nominal terms, growth in South Africa's non-mineral exports was substantially slower than in countries such as China, Russia, India, Brazil, Thailand and Turkey over the period 1994 to 2012.

Figure 21: Merchandise export trends at constant prices

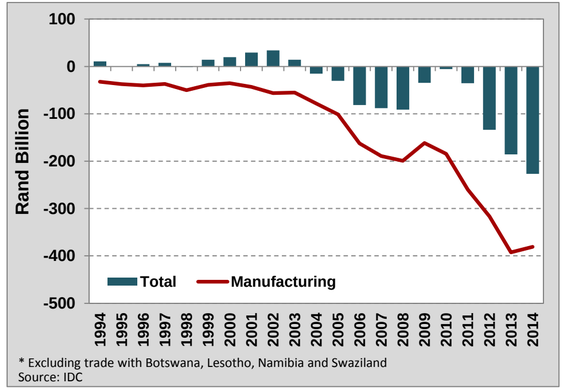


Source: Quantec

Despite a substantial moderation in overall economic growth in 2014, demand for imported goods remained surprisingly strong. The import intensity of the South African economy averaged around 25% over the first 3 quarters of 2014, reflecting strong demand for crude oil and refined petroleum products, as well as machinery and equipment. Manufactured goods accounted for the bulk of the import basket at a ratio of 80% in 2014. Demand for imported goods has risen at a much faster pace in nominal value terms in recent years, compared to that recorded by exports, resulting in a widening trade deficit for manufactured goods.

Consequently, the overall deficit on the current account of the balance of payments increased to 5.8% of GDP, being the largest deficit since 1981. In 2014, the current account deficit remained large at a ratio of 6.3% and 6% of GDP in the second and third quarters respectively.

Figure 22: Overall trade balance as against manufacturing trade balance*

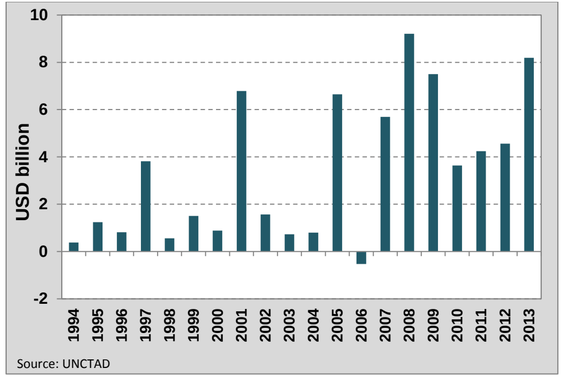


* Excluding trade with Botswana, Lesotho, Namibia and Swaziland
Source: IDC

Foreign Direct Investment (FDI)

Foreign direct investment (FDI) flows into South Africa (Figure 23 below) have been generally robust since 2007, with the country being the leading recipient of FDI on the African continent in 2013.

Fig 23: FDI into South Africa



Source: UNCTAD

Breaking these numbers down by country investment (refer to Figure 24) and by major recipient sector (refer to Figure 25), we can see that a) the biggest inward flows are still predominantly from South Africa's traditional advanced economy trading partners, with the UK and US well to the fore (though with both India and China starting to make a significant showing; and b) that there has been very significant capex inflow into the renewable energy sector – a tribute, no doubt, to the widely-recognised success of the Renewable Energy Independent Power Producer Programme (REIPPPP).

Fig 24: FDI into South Africa by selected countries

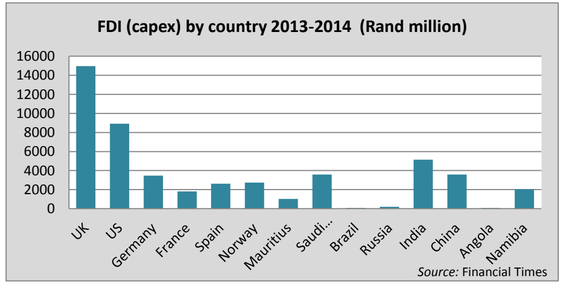
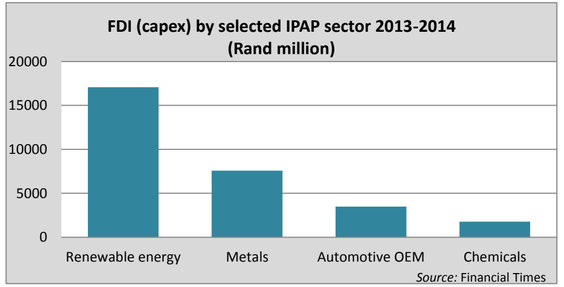


Fig 25: FDI into South Africa by selected IPAP sector



SUMMARISING:

- These trends and the data - the global and domestic realities - underline the necessity for South Africa to accelerate economic transformation to address the deep-seated structural problems which characterise the domestic economy: away from a consumption-led, debt-fuelled trajectory in which energy- and carbon-intensive production and the export of raw commodities and semi-processed products are the dominant factors.
- Government policy documents stress the necessity of a new economic growth trajectory based on industrial development, strongly linking the production sectors of the economy, with a special emphasis on higher value-added manufacturing and exports.
- The manufacturing sector is critical to sustainable growth, as set out in all previous iterations of IPAP. The undeniable, repeatedly demonstrated facts are that manufacturing has the highest growth and employment multipliers of all the economic sectors; that it has strong positive spillover effects on the primary and services sectors; that it is a key driver of technological innovation and skills development; and that it has a strong positive impact on the balance of trade.
- Thus IPAP 2015/16 - in keeping with and building upon previous iterations - emphasises the following critical programmes to achieve a higher-impact industrial policy:
  - ***Economy-wide pursuit of a stronger articulation of macro- and micro-economic policies****:*
    - Use of policy instruments to prevent over- and under-shooting on the valuation of the Rand - hence mitigating its destabilising volatility.
    - Stronger alignment of government-led industrialisation policies, both between departments and SOCs; including export promotion programmes and intensified support for Export Councils.
  - ***Infrastructure-driven industrialisation*****:** sustaining and building the public infrastructure programme, with stronger support for local manufacturing and economic infrastructure, including Special Economic Zones and regional industrial integration.
  - ***Resource-driven industrialisation*****:** which enables the leveraging of mineral resources for greater levels of downstream beneficiation and value addition and systematically builds up both the demand and competitive advantages South Africa enjoys in the upstream mining, transport and capital goods sectors. This includes ongoing work to develop a roadmap for gas-based industrialisation.
  - ***Advanced manufacturing-driven industrialisation***: with a continued focus on key spillover sectors with stronger conditionalities for public sector support allied to strong stakeholder engagement, particularly with global OEMs in these sectors. This includes ongoing work, not yet completed, to build an integrated system of industrial financing, incentives and export support with a special focus on lead and dynamic companies which can compete in export markets.
  - This work also encompasses a strong commitment to support ***emerging black industrial entrepreneurs –*** *as* set out in summary further ahead in IPAP 2015.
  - ***Procurement:*** Strengthening the localisation of public procurement, building on the lessons learnt through the implementation of various policy instruments over the last few years. This includes securing compliance with procurement prescripts in the public sector, training and capacitating public sector institutions for strategic sourcing and supplier development and leveraging other policy instruments such as incentives to support the development of domestic manufacturing capabilities.
  - Deepening the process of ongoing ***monitoring and evaluation;*** whilst at the same time modifying and strengthening ***sector strategies and support instruments*** in key sectors.
  - ***Maximising the opportunities presented to the domestic economy by a growing market on the African continent*****:** driven by high growth in the region, strong consumer demand, infrastructure development and resource exploitation. This opportunity must be optimally leveraged with a strong commitment to - and clear programmes of - regional economic trade and industrial integration.
  - ***Rolling-out the intra-governmental Operation Phakisa Plan for the marine economy:*** including the marine manufacturing sector, upstream oil and gas and boatbuilding. This will include the development of public sector investment in port infrastructure and an appropriate model for private sector investment.

OVERCOMING CONSTRAINTS, GRASPING OPPORTUNITIES

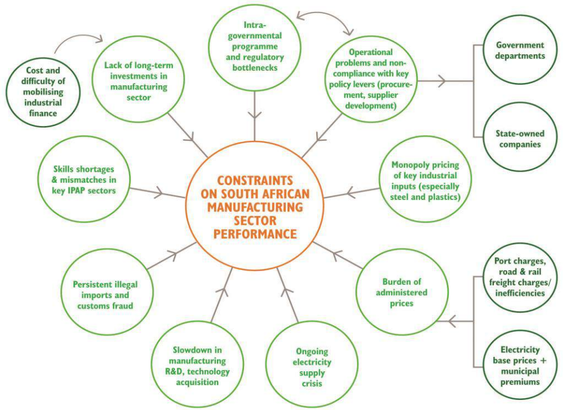
At the heart of government's economic growth strategy now lies a coherent and integrated national industrialisation effort, with a critical role for the manufacturing sector to play.

But this battle is not fought on a blank slate. Aside from the deep-seated structural problems of the domestic economy, already highlighted in the Economic Analysis section of this document, a range of exogenous factors continues to militate strongly against this effort.

Not the least of these factors are the slow, uneven and uncertain global economic recovery - particularly in South Africa's traditional trading partners - and an increasingly 'cut-throat' global economy, characterised on the one hand by increasingly widespread use of tariff and non-tariff barriers to trade and, on the other hand, by significant and increasing public sector support for the building of competitive industrial capabilities.

Tackling both the external and the domestic constraints to the deepening of South Africa's own industrialisation strategy will require a careful, purposeful, coordinated and sustained effort by government to implement practical solutions-based approaches to the critical issues, working in close collaboration with its social partners.

MAPPING THE CONSTRAINTS



The following key areas of concern have been identified for special attention and concerted remedial action:

Electricity

Supply constraints: Load-shedding carries with it highly negative consequences for manufacturing in general; and has a critical impact on energy-intensive and energy-reliant industrial sectors such as foundries and plastics. To counter the short-term impacts of the power crisis - and begin to stabilise the situation over the medium term - an initial four-point strategy has been adopted.

This consists of the following elements:

1) The establishment by government of a 'war-room' to mitigate short-term supply constraints;
2) A demand-side power-usage management programme;
3) Measures to secure a more expeditious roll-out of the Integrated Energy Plan, with a particular emphasis on stepping up the Renewable Energy Independent Power Producer Procurement Programme (REIPPPP) and providing robust support for power co-generation initiatives.
4) Urgently renewed attention needs to be given to electricity supply and pricing issues at the local government level – addressing a) the levying of high municipal premiums on top of Eskom base charges; and b) widespread maintenance and billing inefficiencies.[1]

Economic infrastructure and costs to manufacturing:

Despite some recent reduction in South African port charges – which, according to the World Bank, are amongst the highest in the world - there remains a strong need to re-orientate the South African ports infrastructure away from its current cost-bias in favour of bulk commodity exports and steer it towards a pricing model which more vigorously supports the export of value-added manufactured goods.

A recent announcement by the Transnet National Ports Authority to invest significantly in economic infrastructure for marine manufacturing and provide a much stronger framework for private sector concessioning and investment in ports demonstrates what can be achieved. Further work with Transnet to unwind the current financing and operational model should build on the positive outcomes achieved in marine manufacturing investment arising from work in the *Operation Phakisa* programme.

Intermediate inputs

The pricing of key intermediate inputs into manufacturing, especially steel and plastics products, continues to be a significant constraint on downstream, value-adding manufacturing in both value chains. In this context, the recent downward adjustment of import tariffs, particularly in sectors where single-firm market dominance exists, has provided a modest degree of price moderation.

In addition, government will continue to explore the possibility of increasing competition in the steel sector with new investment and production capacity, and will work with companies to explore the possibilities of securing more competitive input prices for manufacturing.

The 'regulatory burden' and investment constraints:

The issue of excessive red tape across regulatory agencies and all three spheres of government – manifested in a wide range of difficult forms and onerous licensing requirements - severely complicates the operating environment for business.

In order to start seriously reducing the regulatory burden, government is initiating a number of interventions to make doing business simpler. These include the 'One Stop Investment Centres' championed by **the dti**; the co-location of SMME support agencies by the Small Business Department; and speedy resolution of Strategic Environmental Assessments (SEAs) by the Department of Environmental Affairs.

Integration and partnering with the private sector

Efforts to secure integrated, intra-governmental support for industrialisation, in close co-operation with the private sector, have begun to gain traction. Driving this process is the Presidential Business Working Group, made up of five joint task teams focusing on education and skills, infrastructure, the regulatory environment, the labour relations environment and inclusive growth.

Higher impact industrial policy instruments

Up to now, neither the scale of industrial policy interventions - nor the impact of efforts to fully leverage localisation in public sector tenders - have been sufficient to achieve the growth and diversification outcomes the manufacturing economy requires.

Later on in this document (IPAP 2015/16) we set out a series of action plans to address the key issues. These include: securing stricter compliance; capacity building and training; and the roll-out of additional measures to secure higher impacts from the public sector procurement process.

[1] Similar inefficiencies apply in the sphere of water supply, where recurrent interruptions to service - especially in smaller municipalities - have been widespread.

However, it is also imperative that the private sector comes to the procurement localisation table. For example, local supplier development and strategic sourcing by large private sector companies in the mining; health services and telecommunications sector could make a very significant impact on the manufacturing sector.

Regional industrial integration

South African exports to Africa represent possibly the single biggest opportunity on offer to domestic manufacturers. But in order to fully realise the value of this 'new frontier', a strong collaborative platform must be put in place to secure higher levels of trade and deeper industrial integration across African national boundaries.

This will include developing joint programmes of action in electricity and transport infrastructure; industrial integration across key value chains - particularly in the mining; agro-processing, pharmaceuticals and chemicals sectors – and higher levels of value-addition in the downstream minerals processing and beneficiation sector.

IPAP 2015/16 reflects some of plans being developed and the progress currently being made in taking this critically important work forward.

From blame games to solutions

Looking ahead – and taking into account the emergent approaches to 'bottleneck-busting' that have been outlined in the previous paragraphs – it is evident that we must now move swiftly and decisively towards an overall outcomes-and-solutions-based approach to overcoming South Africa's most pressing economic constraints. 'Blame games' and 'sacred cows' will no longer do; they must be substituted by a constructive, committed, collaborative approach fully involving all the social partners.

ACHIEVEMENT HIGHLIGHTS

A. TRANSVERSAL HIGHLIGHTS

1. INFRASTRUCTURE AND INDUSTRIAL FINANCING

The Infrastructure Development Act, designed to fast-track South Africa's large economic and social infrastructure projects has been promulgated. Over the coming three years, government will spend a further R840 billion to develop the country's infrastructure in support of deepening industrialisation.

Over the past 20 years, the Industrial Development Corporation (IDC) has approved total project funding of more than R128 billion (R204 billion in 2013 prices). These financial commitments supported the creation of 360,000 direct jobs over the period and saved an additional 43,000 jobs, particularly through a R6 billion fund set up specifically to cushion firms that fell on hard times during the 2008/9 global financial crisis.

Between April 2014 and December 2014, the IDC approved projects to the value of R7.7 billion and this resulted in 6,899 new jobs whilst 4,668 jobs were saved as a result.

The following IPAP sectors benefitted from the approvals:

- R 3.3 billion in Mining and Minerals Beneficiation
- R 1.4 billion in Green Industries
- R 678 million in Shipbuilding
- R 478 million in Chemical & Allied Industries
- R 433 million in Textiles
- R 352 million in Forestry and Wood Products
- R 323 million in Metals, Transport & Machinery Products
- R 283 million in Agro-industries
- R 148 million in Healthcare
- R 46 million in Media & Motion Pictures

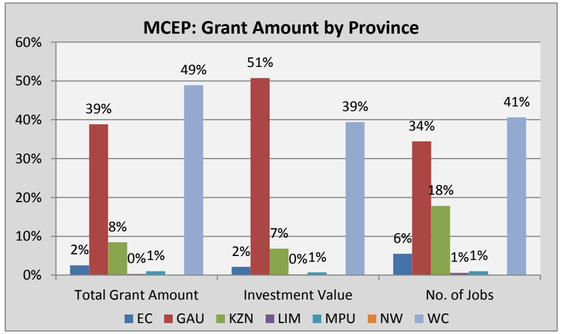
1.1. Manufacturing Competitiveness Enhancement Programme (MCEP)

From the beginning of the financial year to date 236 enterprises were approved for funding under MCEP with a total grant value of R1 billion. The investment leveraged as a result is R 3.7 billion in support of 28,093 jobs.

- 4% of total MCEP grant approved went to small entities with assets below R 5 million;
- 10% went to those with assets between R 5 million and R 30 million;
- 25% went to entities with assets between R 30 million and R 200 million; and
- 61% went to entities with assets above R 200 million.

The dti has approved the newly revised Manufacturing Competitiveness Enhancement Programme (MCEP) guidelines for implementation from April 1 in a bid to tighten up potential imbalances in the awarding of manufacturing support grants.

Figure 26: MCEP grants

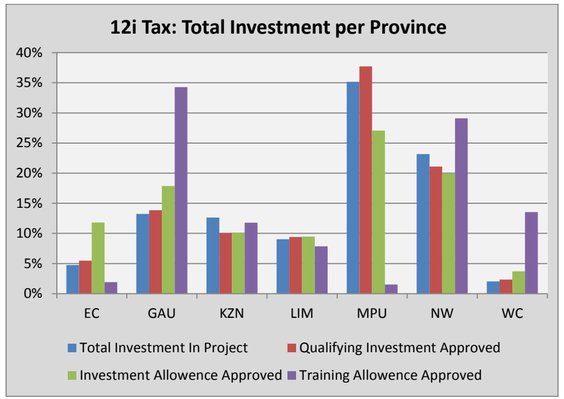


Source: **the dti**

1.2. 12i Tax incentive[2]

Between April 2014 and December 2014, 12 projects with an investment value of R 5.8 billion were approved. These are expected to create 556 direct and 4,047 indirect jobs.

Figure 27: 12i Tax Incentive Distribution



[2] The 12i Tax Incentive is designed to support greenfield investments (i.e. new industrial projects that utilise only new and unused manufacturing assets) as well as brownfield investments (i.e. expansions or upgrades of existing industrial projects). The incentive offers support for both capital investment and training.

1.3. Enterprise Investment Programme (EIP)

Between April 2014 and December 2014, the EIP approved 39 projects to the value of R 146 million. The investment leveraged as a result is R 1.3 billion. The projects have to date created 248 jobs and are expected to create a further 1,181 jobs.

1.4. Technology and Human Resources for Industry Programme (THRIP)

Since 2009 (up to December 2014) THRIP has approved 1,602 projects to the value of R 873 million and supported 9,750 students.

1.5. National Empowerment Fund (NEF)

Approvals: The NEF Approved 549 transactions worth more than R 5.4 billion for black-empowered businesses across the country.

Supporting jobs: To date the NEF has supported in excess of 47,000 jobs.

Industrialisation: 20 strategic industrial projects worth R 30 billion, with the potential to support over 80,000 jobs once the projects are fully commercialised.

1.6. Foreign Investment

- South Africa attracted almost a quarter of all the foreign investment projects in Africa between 2007 and 2014, with investments coming from the USA, the EU and, increasingly, from China, India and other Asian countries.
- Between January 2013 and December 2014, SA attracted approximately R 57.9 billion from 153 companies. These investments created 19,706 jobs.

2. SPECIAL ECONOMIC ZONES & INDUSTRIAL DEVELOPMENT

2.1. SEZs

- In 2014 President Zuma signed The Special Economic Zones (SEZ) Act. The Act will contribute to the revitalisation of previously under-served regions by drawing in greater volumes of foreign direct investment (FDI), strengthening the local manufacturing sector and creating significant numbers of new jobs.

2.2. IDZs

- Three of the five IDZs - Richards Bay, East London and Coega - are now fully operational and have generated R 3.4 billion in investments and creating more than 67,000 direct and indirect jobs. Further new investments worth several billion Rand are currently under negotiation.
- **Richards Bay:**

  The Richards Bay IDZ secured two significant new investments in 2014/15:

  – The first, by Sizabantu Piping Systems (Pty) Ltd. Is for 2 hectares of land, plus the option of an additional 1 hectare. With a total investment of R 300 million, the facility is set to create 87 direct jobs and 110 indirect jobs.

  – The second investment, by RB Energy Services Pty (Ltd) for 1 hectare plus the option of an additional 1 hectare. The total investment is R 20 million, and it is expected to create 25 jobs in construction and 20 direct jobs upon completion.

- **East London:**

  – The East London IDZ (ELIDZ) has to date attracted private sector investment to the value of R 4.4 billion, with more than 80% of this being Foreign Direct Investment. The total number of secured investors has grown to 34, with the bulk of these (25) already operating from the zone. Industrial/economic sectors represented by these investors are: automotive components manufacturing, agro-processing, aquaculture, steel fabrication, mineral beneficiation, logistics and general manufacturing.

  – Direct manufacturing and related services jobs in the ELIDZ have grown to more than 2,992.

- **Coega:**

  – Up to Q3 of the 2014-15 financial year, total investments to the value of R 1.54 billion had been secured, with an estimated 646 jobs expected to be created.

  – Seven companies are currently busy with construction projects in the Coega Development Corporation's IDZ.

  – First Automotive Works SA (FAW) - a subsidiary of the China FAW Group – has invested R 600 million in a truck assembly plant in the Coega IDZ, which will produce up to 5,000 trucks a year.

- **Saldanha:**

  – The Transnet National Ports Authority (TNPA) announced a R 2 billion maintenance programme over 5 years and a R 7.2 billion capital expenditure programme within a framework for private sector investment.

  The projects will create an estimated 6,300 new direct jobs and 25,200 new indirect jobs

- **Dube Trade port:**

  – The Dube Trade port IDZ was officially launched in October 2014.

  – In its first phase of development - over the past five years - the DTP IDZ has attracted over R 900 million in private investment, creating around 16,527 new job opportunities. It is expected to secure over R 10 billion in further investments by 2020.

  – The South Korean electronics giant Samsung recently agreed to establish its first African manufacturing facility at Dube with an investment value of R 200 million.

- In October 2014 Brenco Reelin - a joint venture between South African enterprise Reelin Bearings and US company Brenco, the largest rail component manufacturer in the world - signed a combined R 70 million deal which will see the construction of one of the most sophisticated bearing manufacturing and refurbishment facilities in the world.

3. PUBLIC PROCUREMENT

- **Rail fleet procurement**
  - The Passenger Rail Agency of South Africa (PRASA) and Gibela Rail Transportation announced that the entities had achieved commercial close on the contract to supply the state agency with 600 commuter trains (3,600 coaches) over the next ten years. The R 51 billion contract to supply the trains was signed in October 2013.

    The Gibela deal forms part of PRASA's bigger rolling stock programme, which aims to procure 7,224 new coaches at a projected cost of R 123 billion over 20 years.
  - Transnet Freight Rail awarded a R 50 billion contract for the supply of 1,064 locomotives split amongst four successful bidders: 599 electric locomotives to be built by China South Rail Zhuzhou and Bombardier Transportation South Africa; and 465 diesel locomotives to be built by China North Rail Rolling Stock SA and General Electric SA Technologies.
  - Both of these contracts mandate very significant local procurement obligations for the successful bidders.
  - Black-owned and-controlled Ansys has been awarded a R 188 million contract by Transnet to supply integrated dash-board display systems for the freight rail utility's locomotives.
- **Pharmaceuticals**
  - Four pharmaceutical companies were jointly awarded a R 10 billion tender to supply the Department of Health with antiretroviral (ARV) medication from 1 April 2015 to 31 March 2018. The tender had a conditional provision for designation of up to 70% of the tender volume for domestic manufacturers. Sonke Pharmaceuticals was awarded R3 billion, Mylan Pharmaceuticals R 2.8 billion, Aspen Pharma R 2.5 billion, and Cipla Medpro R2 billion.
  - The 2014-2016 OSD tender worth R 2.683 billion was awarded to 38 companies. Including local manufacturers such as Aspen (38%), Adcock (2%), Sanofi-Aventis and its subsidiary Winthrop (11%), Sandoz (3%) and Be-Tabs (3%).
- **Ship/Boat-building**
  - An Instruction Note for the designation of working vessels was issued, effective from August 2014.
  - A R 1.4bn tender for the procurement of tug boats was awarded to a South African company in support of local procurement

4. DEVELOPMENTAL TRADE POLICY

Import duties and tariffs

- ITAC continued to consolidate and realign itself to support strategic industrial development imperatives. This was reflected in the completion of 17 applications for increases, rebates and reductions of duties across a range of sectors.
- More than 300,000 non-compliant products valued at R8 million were destroyed at the third Destruction-of-Goods function conducted in Bon Accord, Pretoria. To date, approximately R 153 million worth of non-compliant and unsafe products have been seized and removed from the market.

5. COMPETITION POLICY

In an effort to stem anti-competitive behaviour, the Competition Commission fined a number of companies transgressing the Competition Act. These included:

- A penalty of R 534 million penalty on a subsidiary of Sasol for over-charging local customers for plastic products. A penalty of R 205.2 million was imposed in the case of purified propylene and R328.8 million in respect of polypropylene.
- R 4 million imposed on Saldanha Foods for being involved in the price fixing of pilchards and anchovies.
- Oceana Brands Limited and Premier Fishing SA previously paid penalties of R 34.7 million and R 2.1 million respectively.
- Columbus Stainless was fined R 32.57 million for entering into a price-fixing agreement or engaging in a concerted practice with its competitors to directly or indirectly fix the purchase price of scrap metal.
- Cargolux International has been fined $ 941,561 (R 10.97 million) for being part of a cartel with four other airlines, including South African Airways (SAA) that directly or indirectly fixed elements of the selling prices for cargo services.
- Hendrik Pistorius & Co fined an administrative penalty of 10 per cent of its turnover over the period of the alleged price-fixing fixing prices in the agricultural industry since 1995.
- Electric cable manufacturing company ATC has agreed to pay R 80.7 million after admitting to collusion.

B. SECTORAL HIGHLIGHTS

1. AUTOMOTIVE

- The Minister of Trade and Industry has approved the newly-revised guidelines for the Automotive Investment Scheme (AIS) and the People-carrier Automotive Investment Scheme (P-AIS).
- During the year under review to date the Automotive Investment Scheme (AIS) and the People-carrier Automotive Investment Scheme (P-AIS) have together approved 40 projects with total incentives of R 515 million and an estimated investment value of R 2 billion.
- The single largest investment project for AIS was Mercedes-Benz South Africa (MBSA) with an estimated total investment of R 5.4billion, expected to create more than 250 new jobs.
- **OEM expansions**
  - **Mercedes-Benz South Africa (MBSA)** started rolling off the assembly of the C-Class at Mercedes-Benz South Africa's (MBSA's) East London plant. The production followed an investment of R 5.4 billion in plant and equipment, together with skills training and development.
    - Investment in the plant has created 550 direct jobs, together with a further 400 indirect jobs with a logistics service provider.
    - MBSA's new C-Class project has received R 1.6-billion in government support, the biggest single investment by the Automotive Investment Scheme (AIS).
    - Linked component manufacturers in the East London IDZ have invested over R 890 million in plant and equipment and more than R400m in building infrastructure to support the new C-Class.
    - Ten new components firms set up in the wake of the C-Class investment programme with 800 new jobs created in the MBSA value chain
  - **Volvo Southern Africa** is planning to build 1,800 trucks and buses in in Durban this year. Volvo truck production has increased from an original 172 to 196 trucks per month, with employment rising from 60 to 99 people, 67 of whom are assemblers.
- Vehicle and component exports increased by 8.2%, from R 94.9-billion in 2012 to R 102.7-billion in 2013. This was the first time the industry exceeded the R100 billion mark. The local industry's top export markets in value terms were Germany, receiving R 19.1-billion in exports, followed by the US at R 18.7-billion.
- **Other significant automotive investment landmarks in 2013-14**

FAW - CHINA

- President Zuma opened the Eastern Cape-based China FAW Group Corporation's new Coega Assembly Plant. The plant is expected to produce 5,000 trucks a year and supply FAW's entire range – comprising 14 models – of small to extra-heavy trucks to South Africa and beyond into the rest of Africa. FAW aims to establish a 35,000-a-year-capacity passenger vehicle facility, with construction set to start in 2015.
- By 2016 FAW expects to be sustaining an employee complement of 750, up from the current 285, on the back of both the newly commissioned Coega plant and the expansion of its existing facility in Johannesburg.

HYUNDAI – SOUTH KOREA

- Hyundai Automotive South Africa (HASA) began assembling medium-duty trucks at its plant in Benoni in July 2014. The R 110 million investment will concentrate on the assembly five- and six-ton trucks for the local market and will create around 40 new jobs.

TOYOTA-HINO – JAPAN

- Hino South Africa (SA) opened its new truck plant in May 2014. Hino SA is a subsidiary of Toyota South Africa Motors (TSAM). The truck plant has been relocated in a R 54 million investment. The new plant target is to produce 4,000 trucks in 2014.

IVECO - ITALY

- A new vehicle assembly plant, building buses for the Putco commuter transport company, started production in July 2014. The initial investment by Iveco SA Works (ISAW) is R 800 million: R 200 million for the building and R600 million for tooling and equipment. The plant will have annual capacity to build 6,000 trucks and 1,000 buses and will create up to 1,000 jobs.

2. METAL FABRICATION, CAPITAL AND RAIL TRANSPORT EQUIPMENT

- The acquisition of South Africa's Premier Valves Group (PVG) for R 100 million by Denmark AVK is supported by **the dti's** designation policy. The transaction will fund the introduction of a new international standard for local production capability at the facility. AVK will also set up a resilient seal valve (RSV) manufacturing unit at the Alrode-based facility, producing up to 80, 000 RSVs a year.
- Agni Steels SA is soon to start production at its R 400 million facility in the Coega industrial development zone (IDZ). The high-tech smelting plant will initially produce 100,000 tons a year of mild steel billet fabricated from scrap metal, and will employ about 270 people.
- United States technology multinational General Electric (GE) announced a R 700 million commitment designed to support innovation, enterprise- and skills-development in South Africa. The investment is closely aligned with government's increasing demand for localisation in the awarding of infrastructure contracts.
  - The programme is divided into two components: a R 500 million investment in the creation of a customer innovation centre (CIC) and a R 200 million investment in a supplier-development vehicle to provide technical, funding and business support to small and medium-sized enterprises (SMEs).
- On the back of **the dti** support to the value of R 11 million, Grindrod unveiled its cost-effective shunting and short haul locomotive in October 2014. The locomotive boasts 80% local content.
- The Gold Loan Scheme was launched on the 30 September 2014, with R 100 million allocated to support large jewellery manufacturers to finance gold for jewellery manufacturing at a cost of 3%.

3. CLOTHING, TEXTILES, LEATHER AND FOOTWEAR

- Since inception of the CTCP programme approvals worth R 2.7 billion have been facilitated under the Production Incentive Programme (PIP), and disbursements to date are R 2.1 billion. Approvals under the Cluster programme are R 712 million, with disbursements to the value of R310 million.
- The Southern Africa Sustainable Textile and Apparel Cluster (SASTAC) was launched in October 2014 on the back of a R 200 million grant approved by **the dti.** It seeks to take a value-chain approach to industry development in the textile sector and to bring all the relevant stakeholders together to strategise about the future of the industry.
- As part of its efforts to support the clothing, textile and leather sector, **the dti** approved a grant of R 69.2 million for the establishment of National Footwear and Leather Cluster through the Competitiveness Improvement Programme (CIP).
  - The work of the cluster has already been directly responsible for the creation of approximately 2,000 sustainable jobs and a reduction in the trade deficit of R 1.4 bn through import substitution by local retailers.
- Measurable positive results were registered in 2013:
  - Footwear manufacturing grew by 16.2%, constraining footwear imports to a marginal 0.1% growth.
  - Domestic market share increased from 19% to 24% due to improved retail collaboration and the effective monitoring of Designation in the Leather & Footwear sectors under the PPPFA.
  - Footwear exports grew by 18.3% by volume and 25% by value.
  - Exports of finished and semi-finished crocodile skins grew by 97%.
  - The trade deficit was reduced by R 1.4 billion, with 2,012 new formal jobs created in the footwear sector.

- The National Bargaining Council of the Leather Industry of South Africa (NBCLI) has confirmed the establishment of 22 new manufacturers from January 2012 to May 2014, with gross domestic capital formation of R 371 million in the leather and footwear sector from 2010 to 2013. This level of growth does not only reflect the emergence of new companies; it is also attributable to expansions of manufacturing operations by many existing companies in these sectors.
- Company developments in 2014: Kayo Shoes reopened in Dimbaza, Eastern Cape in April, resuscitating 417 jobs; a new leather tannery was established in Atlantis in the Western Cape.

4. AGRO-PROCESSING

- **The dti** and Astral Foods supported a R 200 million chicken feed mill to boost South Africa's agriculture sector. **The dti** has contributed R28 million towards the 40,000 ton per month mill, with the remainder of the costs being undertaken by Astral Foods, South Africa's largest poultry producer.
- As part of the South African Fruit and Vegetable Canning Association PPP initiative, Minister Rob Davies officially opened a new 10-hectare peach orchard in Robertson. The orchard is 70% owned by a group of black women who have an off-take agreement with the Rhodes Food Group.
- **The dti,** in collaboration with FABCOS, assisted in developing an incubator farm for barley production in Kimberly through R20m support it provided to Cape Malting House.
- **The dti** has funded an R 86 million agro-processing facility announced by Coega Development Corporation (CDC).
- Since 2009 **the dti** has supported agro-processing industries to the tune of R 1.2 billion through various schemes such as the MCEP, the Manufacturing Investment Programme and the Enterprise Investment Programme.
- The right for South Africa to secure geographical indicator status for rooibos tea has been granted, opening the way for aggressive expansion of rooibos exports into new markets. This new development was part of the announcement on the Economic Partnership Agreement between Southern African nations and the EU by the Department of Trade and Industry.
- Since the beginning of the 2014/15 financial year to date, the Aquaculture Development and Enhancement Programme (ADEP) has supported 8 projects, with an incentive value of R 75 million. Investment leveraged as a result is R96 million and these projects are expected to create 121 new jobs.

5. PLASTICS

- The Industrial Development Corporation (IDC) and the Department of Trade and Industry (**dti**) were instrumental in Mpact Limited's decision to build a R 350 million state-of-the-art polyethylene terephthalate (PET) recycling plant. Mpact Limited is a JSE-listed manufacturer of paper and plastic packaging and a major paper recycler to plastics recycling.

6. BUSINESS PROCESS SERVICES (BPS)

- **The dti** launched the revised Business Process Services (BPS) incentive at South Africa House in London.
  - The revised incentive scheme will build upon the success of the previous scheme which led to the creation of 9,077 jobs on the back of financial disbursements of R 587 million.
  - The scheme will further support the South African Value Proposition, which has already seen South Africa named "Best Offshoring Destination 2012" by the UK's National Outsourcing Association (NOA).
- Webhelp, a French-owned Global Contact Centre company which has contact centres in Algeria, Belgium, France, Madagascar, Morocco, Netherlands, Romania and the UK, launched its new Johannesburg Contact Centre in August 2014. The investment is expected to rise to more than R220m over three years and has thus far created 200 jobs.
- The Minister of Trade and Industry, Dr Rob Davies, and King Goodwill Zwelithini launched CCI Call Centres in Umhlanga, KwaZulu-Natal with an investment value of R 200m. This will increase the number of jobs from 3,000 to over 5,500.
  - CCI Call Centres is a beneficiary of **the dti**'s BPS incentive and has participated in the Monyetla Work Readiness Programme which prepares those under 35 and previously unemployed for the workplace through training and development.

7. AEROSPACE

- Denel Aero-structures (DAe) has been awarded a R 200 million contract to make parts for the Airbus A400M military transport and air-to-air refuelling aircraft.

8. NUCLEAR ENERGY

- **The dti** officially launched a new Training Centre that will take South Africa's nuclear safety management status to a new, significantly higher level.
  - This will be given effect through a R 3 million contribution towards laboratory equipment to train Radiation Protection Officers (RPOs) at the South African Nuclear Energy Corporation's (Necsa's) Radiation Protection Training Centre in Pelindaba, North West province.

9. GREEN INDUSTRIES

- The roll-out of the REIPPPP (Renewable Energy Independent Power Producer Procurement Programme) - which started in 2011 - has to date awarded 4,944 MW to 64 projects over a period of 3 years. Most projects have been allocated to the solar photovoltaic and wind energy technologies.
- Over the three bid windows, the renewable energy sector has committed investments totalling R 120 Billion, of which R 39 billion was committed to local content.
- **The dti** has strengthened the local content requirement, with every successive bidding round scaling up thresholds and targets. The local content requirements for renewable energy have progressed from a threshold of 25% in bid window 1 to a threshold of 40% in bid window 4, and a target of 40% and 60% in Bid Windows 1 and 4 respectively.
- These local content requirements, coupled with **the dti**'s trade and investment promotion activities, have resulted in a number of new investments establishing local manufacturing and assembly facilities for renewable energy components. These include:
  - In December 2014, SMA Solar Technology South Africa, the market leader for solar inverters, officially launched its multi-million Rand manufacturing facility in Cape Town.
  - The Chinese company Jinko Solar opened its R 80 million, 120MW p/a solar PV plant, also in Cape Town. The facility is expected to create 200 jobs. **The dti** helped secure Jinko's commitment by energetic reduction of red tape, facilitation and guidance and support on local content requirements.
  - A R 1.5-billion, 100-hectare solar power photovoltaic (PV) plant facility – comprising 165,000 solar PV panels - was launched at Droogfontein near Kimberly. The plant was constructed by emerging power company Globeleq in collaboration with other industry players and the Department of Environmental Affairs (DEA). It is the first large solar farm in South Africa to be built as a direct response to the REIPPPP.
  - Three utility-scale wind farms have begun exporting electricity to the grid for the first time. Three of them – the Hopefield wind farm, the Van Staden's wind farm outside Port Elizabeth, and the Klipheuwel Dassiesfontein wind farm near Caledon – are now providing 120 MW of capacity.

10. BENEFICIATION

- In 2014/15, the **dti** SEZ fund provided catalytic funding to support the feasibility and demonstration of a 100KW fuel cell at the Chamber of Mines (COM). This is a world class demonstration currently being commissioned to provide the COM with electricity. In Jan 2015, **the dti** in collaboration with local companies have concluded a fuel cell industrialisation mission to the leading fuel cell OEM's in a bid to scope industrialisation opportunities and promote investment in SA into the Fuel Cell value chain through the SEZ platform.

11. UPSTREAM OIL & GAS

- Newly formed oil group Oiltanking MOGS Saldanha (OTMS) - a joint venture between Oiltanking Grindrod Calulo (OTGC) Holdings and Mining, Oil and Gas Services (MOGS) - has been granted environmental authorisation for the development and construction of a R2 billion commercial crude oil blending and storage terminal at Saldanha Bay.

12. WHITE GOODS

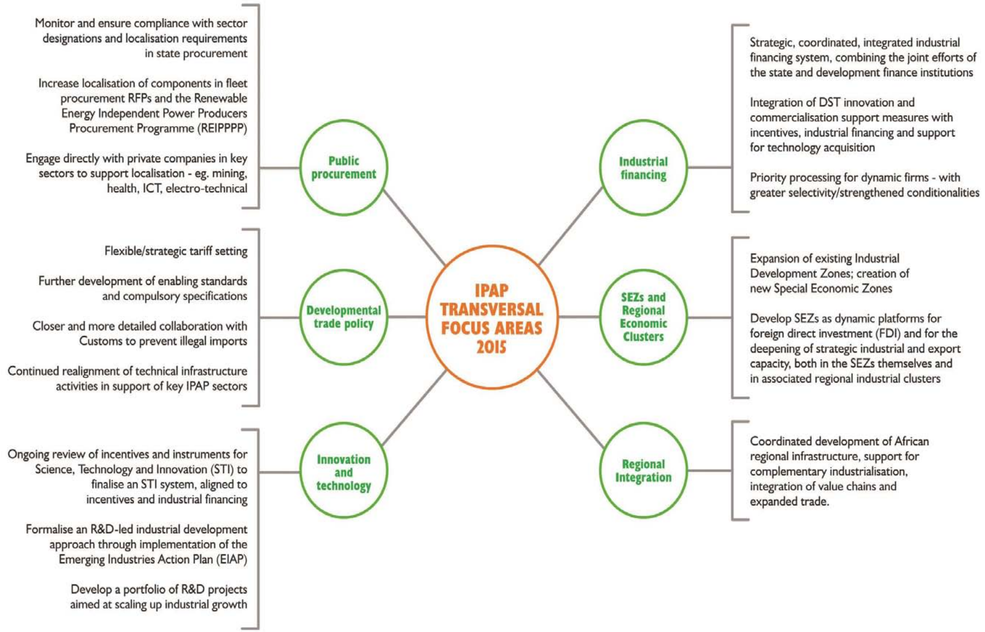
- **The dti** supported the expansion of the of Defy 'Side-by-Side' refrigerator production facility - worth more than R 120 million - in East London. The local manufacturing of the Side-by-Side refrigerators will reduce some of the imports of these type of refrigerators.
- It also provided a grant of R 30 million in support of an investment of ± R 200 million in upgrading Defy's Ezakheni factory in Ladysmith.

13. FILM

- IDC and the National Film and Video Foundation (NFVF) launched the Emerging Black Filmmakers Transformation Fund (EBFTF) aimed at assisting new black filmmakers. The fund will assist 18 films over the next three years with R5 million per film. In addition, IDC will continue to support funding for other film productions as well as development of other areas of the film value chain.
- The Minister of Trade and Industry launched the newly developed R1 million threshold South African Emerging Black Film-Makers Incentive Programme. The objective of the programme is to support emerging black filmmakers with the intention to nurture and grow them to take up big productions and thus contribute towards employment creation.
- The domestic film expenditure threshold required for producers to benefit from government incentives was also reduced from R10m to R500, 000, allowing small productions to benefit from the rebate scheme, which took effect in October 2014. Of the R8bn spent domestically on film production, government has paid out R2bn under the rebate scheme.
- 94 projects to the value of R654m were supported between April and December 2014.These projects include foreign blockbusters such as *Avengers 2: Age of Ultron, the Last face, Childhood's End, Grimsby, Back to School Mom* and *Eye in the Sky.* Local productions supported included *Andani and the Mechanic, Schuster 2015, Chemo Club, Mandela's Children, Enlisted for Glory* and *Free State.*
- Series supported include: *Homeland; Dominion* (Season 1 & 2); *Hunters; Bloed Broers; Wildlife Odyssey; Soul City* and *ZANews.*

TRANSVERSAL INTERVENTIONS

IPAP 2015/16 – 2017/18: TRANSVERSAL FOCUS AREAS



IPAP TRANSVERSAL INTERVENTIONS

1. Public Procurement

Public procurement accounts for a sizeable part of many economies in both developed and developing countries, typically contributing between 15% and 25% to GDP. It is regarded as a subset of public sector expenditure and government uses its significant purchasing power to stimulate economic development, transform public services and fast-track service delivery. Given its economic significance, public procurement has the potential to stimulate the local economy in terms of production, demand and consumption trends in favour of innovative, socially responsible, environmentally friendly products and services on a large scale.

In South Africa, public procurement is deployed as a policy instrument to leverage public spending in order to promote a wide range of economic, social and environmental policies. It is integrated with a number of the policy objectives set out in the National Development Plan (NDP), New Growth Path (NGP) and, of course, the Industrial Policy Action Plan (IPAP). It also contributes to the creation of markets for appropriate technologies and innovative solutions.

Through the powers conferred on it by the revised Preferential Procurement Policy Framework Act (PPPFA) regulations of 7 December 2011, **the dti** has designated a significant number of industries, sectors and sub-sectors for local production, at specified levels of local content. Products already designated for local production are: rail rolling stock, power pylons, bus bodies, canned/processed vegetables, certain pharmaceutical products, furniture products, electricity meters, valves and actuators, electrical and telecommunication cables, components of solar water heaters and the Clothing, Textile, Leather and Footwear (CTLF) sector.

Other procurement levers being used by government to leverage industrial development in general - and more specifically, to assist emerging suppliers in strategic rail and energy procurement projects - are the National Industrial Participation Programme (NIPP) - also known as the Importation Offset Programme - and the Competitive Supplier Development Programme (CSDP). Strategic procurement provides an opportunity to support long-term growth and implement policies that influence industrialisation, technology and trade, while also activating important economic multipliers.

Moving forward, it is important for government to make rapid progress in crafting clear-cut criteria and a strong governance framework for procurement decision-making around major strategic projects. The identification and promotion of key industrial capabilities provides a targeted approach to leveraging public procurement. This should balance South Africa's short-term practical needs with the long-term goal of high value-addition in manufacturing.

Leveraging government and private sector procurement, when done effectively, is an extremely powerful instrument for promoting economic growth, job creation and industrial capability development. It drives up local content levels, enhances the competitiveness of national industry, develops new industrial capabilities and ultimately increases exports. Procurement leverage instruments to achieve industrial development objectives can be integrated with, and at times supplemented by, mechanisms to achieve black economic empowerment objectives.

All of this requires continuously improved harmonisation of the existing raft of procurement support instruments. In addition to the NIPP, the CSDP and designations, other important instruments include the Defence Industry Participation Program (DIPP), the Renewable Energy Independent Power Producer Procurement Programme (REIPPPP) and the Local Procurement Accord.

Cabinet has endorsed a programme to (i) enable, and where required enforce, compliance; (ii) review and where necessary alter and align relevant policies; and (iii) provide support for the design and implement of strategic interventions to optimise the value that is extracted from large scale procurements.

National Industrial Participation Programme (NIPP)

In December 2012, Cabinet approved the strengthening of NIPP and its better alignment with other procurement programmes - in particular, designations, the CSDP and localisation/fleet procurement. The new NIP Guidelines provide opportunities for greater support of the work of the sector desk. In order to ensure that NIPP contributes more effectively to supporting the work of the sectors, a greater emphasis is now placed on implementing Direct NIP rather than Indirect NIP. This means that companies that have been awarded state contracts with NIP obligations should fulfil these obligations within the sectors from which the obligation arose. It is accepted that there will sometimes be procurements for which it would not be possible to apply Direct NIP due to lack of capabilities, especially in the short-term.

The introduction of Direct NIP also presents new challenges for companies wanting to fulfil their NIP obligations, as their range of projects becomes limited. Therefore, separate NIP industrial development sector strategies need to be developed for the different sectors in order to direct investment and activities to those areas that are in line with sector strategies or support further industrialisation in those sectors.

These NIP strategies will also guide potential tenders in the areas for which proposals will be accepted in fulfilment of NIP obligations. Currently companies discuss possible NIP proposals once they have been awarded contracts. The new NIP industrial development strategies will be developed in conjunction with the sector desks; and once developed could either become part of the general NIP Guidelines or could be included as annexures to tender documents.

Key opportunities

- Provide support for some sector development work where limited support is available.
- Targeted interventions to address specific government industrial development activities.
- Close alignment between the national industrial participation programmes and the work of sector desk.
- Provide more certainty/clarity to companies on the requirements and better long-term NIPP plans to build industrial capabilities.

Key constraints

- Limited opportunities for large contracts.
- Information about tenders sometimes available only after the tender has been awarded.

Key Action Programmes

1. Strengthening of the Compliance Programme

Nature and Purpose of the intervention

Coordinated programme across government departments and agencies to address poor compliance, limited capacity and challenges associated with procurement policies and programmes.

Targeted outcomes

Improved compliance through better coordination and enhanced procurement leverage capabilities.

Key milestones

2015/16 Q1-Q4: The production of detailed guidelines **the dti** (with the support of National Treasury) defining when relevant policies are applicable, and the processes that must be followed to comply with these policies.

2015/16 Q1-Q4: Joint departmental information and training sessions across the country on the guidelines, compliance requirements and adherence to the policies.

2015/16 Q1-Q4: The integration of procurement leverage policies into the government and SOC auditing and reporting frameworks.

2015/16 Q1-Q4: Review technical specifications on the calculation and measurement of local content.

2015/16 Q1-Q4: Implement a monitoring and evaluation tool for designated sectors.

Lead departments/agencies: dti, EDD and SABS

Supporting departments/agencies: NT; National and Provincial Departments, ITAC, SARS and AG

2. Designation of further sectors for local procurement

Further 'waves' of designation will follow and in keeping with the priorities of the IPAP:

- Review of the canned and processed food instruction note to include the entire food sector.
- Metal fabrication, capital equipment and transport equipment.
- Green industries and components of the renewable energy generation build programme.
- Big ticket items defined in government's strategic infrastructure projects at all levels of government.

Key milestones

2015/16 Q1-Q4: Review of research work done by Sector Desks for further designation of sectors/sub-sectors for local procurement.

2015/16 Q1-Q4: Issue procurement instruction notes for designated sectors.

2015/16-2016/17: Work with other government departments and public entities to identify opportunities for further designation.

2015/16-2016/17: Work with the Southern African Sustainable Textile and Apparel Cluster (SASTAC) on developing the government portal to assist in streamlining the tender process for Textiles, Clothing, Footwear and Leather (TCFL).

2015/16 Q1-Q4: Implement section 9.3 of the PPPFA Regulations, 2011. Consult with other government departments, state entities and business to identify opportunities for promoting local procurement in non-designated sectors.

2013/14 Q1 – Q4: Provide training on local content to supply chain practitioners in all spheres of government and state owned companies. This is aimed at empowering officials to accurately verify local content declarations before final awards, whilst providing a solid support function to bidders and potential suppliers.

Lead departments/agencies: **the dti**

Supporting departments/agencies: NT, DPE, EDD, SABS, PALAMA, SASTAC

3. Design a NIP Industrial Development Strategy for ICT

Nature and purpose of the intervention

A significant obstacle to meeting NIP obligations in the ICT sector is the reality that the great majority of the companies involved are selling products or services that are not produced locally and are mostly fully imported - e.g. networking equipment and software products. The transnational companies providing these products/services to government often struggle to find suitable projects to fulfil their NIP obligations - especially the requirements for Direct NIP.

It therefore becomes necessary to develop a strategy for more effective fulfilment of these obligations and to provide stronger support the work of the sector desk in developing more sophisticated local manufacturing capabilities in the ICT sector.

Targeted outcomes

The future development of the local industry is dependent on its adapting continuously to new technology applications and market opportunities, growing exports and securing large contracts in public, private and multilateral markets. Given that the value chain in the ICT sector includes input materials, component manufacturing, sub-assembly (or final assembly in some cases), software development and retail, it is imperative that NIP is deployed in specific areas of the business that seeks to deliver on the following:

- Software development / customisation;
- Research and Development into new solutions/applications;
- Technology Transfer (Quality accreditation and Certification);
- Component manufacturing;
- Sub-assembly;
- Business process improvements.

Key Milestones

2015/16: Q1 – Q2: In conjunction with the sector desk, identify priority areas in which industrial development capability improvements should be supported. Consult with transnational companies with NIP obligations on developing an effective approach to the identified areas.

2015/16: Q3 – Q4: Develop a NIP programme to specifically support the local ICT sector.

Lead Department: the dti.

Supporting Departments: Department of Science and Technology, Department of Posts and Telecommunications.

4. Design a NIP industrial development programme for the defence industry

Nature and purpose of the intervention

For defence procurement, both the National Industrial Participation Programme (NIPP) and the Defence Industrial Participation Programme (DIPP) are applicable. The primary policy objectives of both the NIP and DIP programmes are similar in that both seek to (i) increase local manufacturing capabilities; (ii) create international market access for local value-added goods related to particular tenders; and (iii) support both technology transfer and research and development.

Previously NIP was used to support industrialisation in sectors outside of the defence-related industry. The shift in emphasis towards Direct NIP means that NIP activities must now be primarily directed at the defence-related industries, seeking to target the same sectors as DIP.

There is thus a need to develop a programme/strategy that will align the two instruments whilst avoiding duplication of activities.

Targeted outcomes

Successful implementation of this key action plan will lead to alignment of the NIP and DIP programmes and maximise their combined value to the local defence industry, as well as contributing to domestic manufacturing capability and capacity, industry competitiveness and the creation of new jobs that can be directly linked to the NIP or DIP.

Key Milestones

2015/16: Q1 – Q2: Consult with Department of Defence, Armscor and other relevant stakeholders.

2015/16: Q3 – Q4: Develop a NIP programme to support industrial development in the defence industry.

Lead Department: the dti.

Supporting Departments/Institutions: Department of Defence and Armscor.

5. Develop NIP industrial development strategy for the pharmaceutical sector

Nature and purpose of the intervention

The pharmaceutical industry in South Africa is dominated by a number of multinational companies that are doing very little manufacturing in South Africa. Most pharmaceutical tenders attract huge imports. To date the potential of obligations in the pharmaceutical sector amount to almost R 5 billion combined. This offers a huge opportunity for industrial development. The key challenge is the need to balance the security of supplies of essential medicines at affordable prices and the need to reduce imports.

Targeted outcomes

Develop and implement programmes that support key priorities for the development of the pharmaceutical industry. These programmes should also help reduce imports and support measures to increase industry competitiveness.

Key Milestones

2015/16: Q1 – Q2: Consult with various stakeholders and identify key priorities and key opportunities for which NIP could be employed to support the sector.

2015/16: Q3 – Q4: NIP Programme to support key priority areas in the sector.

Lead Department: the dti.

Supporting Departments/Institutions: Department of Health.

6. Design a NIP industrial development programme for the automotive sector

Nature and purpose of the intervention

National Treasury, through its RT57 tender system, awards automotive companies contracts to supply various types of vehicles for the different organs of state. Most of these contracts attract NIP obligations. The types of proposals that are submitted to fulfil these NIP obligations are typically the same proposals submitted for the automotive incentives. They are thus mainly driven by incentives as opposed to NIP obligations and the case for the principle of causality is always weak.

It is therefore necessary to identify areas for automotive companies to fulfil their NIP obligations and seek to increase localisation beyond the range of automotive components currently being manufactured.

Targeted outcomes

Support further localisation in the automotive sector by identifying key/strategic components for companies with NIP obligations to focus on.

Key Milestones

2015/16: Q1 – Q2: Develop parameters for NIP projects in the automotive sector in conjunction with the sector desk and other stakeholders. Consult with the automotive industry.

2015/16: Q3 – Q4: Develop a NIP automotive sector programme.

Lead Department: the dti.

2. Industrial Financing

Successive iterations of IPAP have sought to strengthen **the dti**'s suite of incentives in two main ways:

i. aligning them more strongly with the industrial financing offerings of the Industrial Development Corporation (IDC); and

ii. requiring beneficiaries to meet progressively stronger conditions with respect to a range of criteria, including increased competitiveness.

This approach was designed to achieve a better mix of public and private sector funding to support diversification in the manufacturing sector - especially during the great global recession – whilst at the same time ensuring optimal beneficiary performance in return for public sector support.

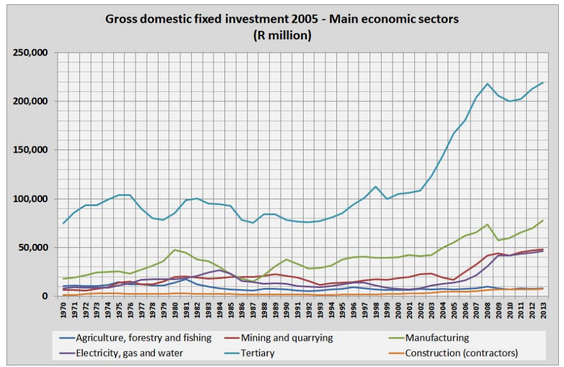
The viability and competitiveness of the manufacturing sector in a highly competitive global economy is dependant in many ways upon the availability, cost and terms and conditions of a national industrial financing and incentive package. The shaping of such a package will have a very significant effect on its ability to absorb technology, adopt and commercialise new technologies and deliver innovation in equipment and systems.

Successive IPAP iterations have consistently highlighted shortcomings in the industrial financing sphere which continue to retard the development of the manufacturing sector.

These include the following:

- The cost of capital is high and the average term of financing short, relative to SA's peer competitor middle income countries.
- The extent to which private credit extension has been channelled to the productive sectors, especially the manufacturing sector, has been limited. At around 20% of GDP, South Africa's investment levels are too low in absolute terms. But there has also been a serious sectoral imbalance, with investment in the productive sectors of the economy (agriculture, mining and manufacturing) lagging far behind investment in the tertiary or services sectors of the economy. Thus, where credit *has* been extended for investment, it has been highly concentrated in the consumption-driven sector and - to a lesser extent – in capital and energy-intensive industries.
- The scarcity of readily available working capital acts as a brake on the operational performance of many firms, particularly in the start-up, new technology commercialisation and systems-building phases.
- The private sector venture capital market in South Africa is weak.

Figure 29: Gross fixed domestic investment



A market failure exists in that the private financial sector is not adequately aggregating savings and making them available - under appropriate terms and conditions - for fixed investment in longer-term 'bricks and mortar' investment.

This is a result of the inherent asset-liability mismatch within the financial sector. The short term nature of the source of funding (mainly deposits and short-term capital inflows} manifests in impatient capital eager to fund either established relatively 'low-risk' industries (e.g. upstream capital-intensive and energy-intensive industries) or industries achieving high returns within a short period of time (e.g. consumption driven services).

Consequently, banks have consistently demonstrated a reluctance to channel funds towards relatively less well entrenched or established industries (particularly manufacturing industries) which require longer-term investment horizons and grace periods for new entrants.

At the same time, as indicated earlier on, the scarcity of working capital acts as a permanent and significant burden on manufacturing firms – both because of the length of time required to transform inputs to final product and because of the asymmetry of power in favour of upstream input markets, which are able to dictate the terms of their transactions with downstream firms as a result of their financial depth, comparatively large scale and concentration.

Previous iterations of IPAP have pointed to the need to develop specific programmes to support manufacturing companies, *particularly lead and dynamic companies in key sectors of the economy.*

This requires a carefully targeted system of industrial financing and incentives across government departments and agencies, which is also aligned at and supportive of private sector credit extension. Such a system should learn from and implement best practice from other developing countries, with a strong emphasis on the following elements:

- more favourable cost-of-financing terms;
- more favourable terms for repayment periods and lower collateral requirements;
- more sharply-focused conditionalities for beneficiaries of favourable financing packages.

The Manufacturing Competitiveness Enhancement Programme (MCEP), launched in 2012, provided an important stepping stone on the path towards such a system. The MCEP was designed to assist manufacturing firms to improve their competitiveness by providing support for the upgrading of production facilities, processes, products and systems. It also provided support for capital investment, working capital and pre-shipment finance; feasibility studies; value chain localisation and supplier development; cluster studies; new market access; and energy efficiency upgrading.

It is clear (as already argued in the economic data and analysis section of IPAP 2015/16) that government support for manufacturing, including the MCEP, played a critical role in retaining both strategic industrial capabilities and the diversity of manufacturing capacity in the domestic economy.

An effective industrial financing system has to be more than the sum of its parts. The co-ordinated 'packages' of financing, incentives and export support it offers should be directed to support the rapid growth of leading and dynamic firms; volume and value growth in exports; improved supply capabilities combined with stronger data collection, reporting and compliance requirements. In short, it should have cumulative strategic impact throughout the manufacturing economy.

The existing suite of government support measures has been steadily strengthened and recalibrated in recent years to take account of a highly challenging and competitive global economy and key constraints and structural problems in the domestic economy. Building on this – and driven by **the dti**, the Department of Science and Technology (DST) and the Industrial Development Corporation (IDC) - the new industrial financing architecture has begun to be put in place - with a particular focus on the following issues:

- Understanding the characteristics of those firms that have utilised government support effectively.
- Understanding the characteristics of those firms that continue to be successful and internationally competitive *without* government support.
- Tightening the alignment between **dti** sector strategies and the manner in which incentives are administered in order to ensure that financing is closely linked to our industrial development priorities and goals.
- Achieving both a better balance between the incentives offered, the conditions imposed and stricter compliance with those conditions. This requires linking support measures more strongly to performance *measurements* such as incremental increases in production and value addition, employment creation and localisation in supply chains.
- Developing an ever closer working relationship with the Industrial Development Corporation (IDC).

  Despite significant progress by the IDC in re-orienting and prioritising its activities in support of NGP and IPAP sectors (whilst maintaining a sustainable balance sheet), deeper alignment will be critical to the development of new incentive packages that are more comprehensive, focused and provide better value for money.
- Achieving greater alignment between the activities of other financial institutions - in particular the Export Credit Insurance Corporation (ECIC) and the Development Bank of South Africa (DBSA).

These processes also involve constant interactions between manufacturers, the IDC and other global, regional and domestic development finance institutions. **The dti** is working closely with the United Nations Development Organisation (UNIDO) to develop a monitoring, evaluation and impact assessment methodology for the MCEP, benchmarked against best practice in other comparable countries. It is expected that this methodology will also provide a useful basis for the continuous assessment of other **dti** incentives.

In addition, work is underway to develop a support mechanism for black industrialists. This is intended to promote their participation as manufacturers in the key productive sectors of the economy, and as suppliers of goods and services to the public infrastructure programme.

This initiative will be underpinned by systematic and purposeful support for the inclusion of black industrialists along the entire value chain of industrial sectors and infrastructure projects. This will be achieved through financial and non-financial support measures and incentives, using both existing and new mechanisms. As part of the transformation agenda, black industrialists have been identified as vital protagonists for black economic empowerment, job creation, enterprise and industrial development. These ambitions find expression in key policies such as the amended Black Economic Empowerment Act and the National Industrial Policy Framework (NIPF).

Key Action Programmes

1. Re-calibration of existing dti incentives

Nature and purpose of the Intervention

This exercise will involve, amongst other things: a dialogue with manufacturing companies; developing a better understanding of the characteristics of firms that leverage government support effectively; developing a better understanding of the characteristics of those firms that continue to be successful and internationally competitive without government support; and maximising the synergies of a closer working relationship between various developmental finance institutions.

Economic Rationale

South African companies are faced with a wide range of critical challenges arising from the intense international competition for capital, rising input costs (especially electricity) and low and falling levels of investment in the productive sectors of the economy.

It is critical that the manufacturing sector is provided with continuing support for the duration of the slow and uncertain journey towards global economic recovery, in order to maintain a reasonably robust tempo of growth and defend both its diversity and our existing domestic industrial capabilities.

Targeted outcomes

Greater levels of competitiveness arising from access to industrial financing for working capital; product development; new market access, energy efficiency; clustering and other potential outcomes not specifically covered in existing incentive schemes - including enhanced support for BEE in the manufacturing sector.

Key Milestones

2015/16 Q3: Scope the design, range, quantum, conditions, take-up and impact of the full suite of government industrial financing packages and incentives across and in consultation with other departments and institutions.

2015/16 Q4: Develop and design a set of proposals for incremental expansion and strengthening of the suite of existing incentive and industrial finance support mechanisms, beginning with further fine-tuning of the MCEP; design of a specialised incentive to support black industrialists in the manufacturing sector and culminating in the design and adoption of a comprehensive system of industrial financing and incentives.

Lead departments: **the dti** and EDD.

Supporting departments/agencies: IDC, ECIC, DST, NEF, DBSA.

2. Black Industrialists Development Programme

Nature of the intervention

The Black Industrialists Development Programme will be aimed at promoting industrialisation, sustainable economic growth and transformation through support of black-owned entities in the mainstream of South African manufacturing industry and related manufacturing service sectors.

The Programme envisages implementing key measures such as access to finance, access to markets, skills development, standards, quality and productivity improvements by black manufacturing companies.

Recommendations from the commissions reporting back at the Black Industrialists Indaba of 25-26 March 2015 included the following:

- A committee comprising government, the private sector and co-opted experts be established to explore more ways and instruments to accelerate the implementation of the Programme;
- Review of the Preferential Public Procurement Act;
- Setting the black majority threshold at 75% for companies qualifying for the Programme.

Three commissions have been established: (i) Access to Finance; (ii) Access to Markets and State Procurement; and (iii) Policy and Skills Development.

Skills development will be placed at the core of the Programme.

Targeted outcomes

Improved inclusion and participation of black industrialists in manufacturing activities.

Key milestones

2015/16 Q1-Q4: Design, develop and structure the Black Industrialists Development Programme, including an incentive and associated guidelines.

Lead department: the dti.

Supporting agencies: IDC, ECIC, NEF, DBSA.

3. Developmental trade policy

Technical Infrastructure

Technical infrastructure plays a pivotal role in economic growth by promoting competitiveness and fair trade in domestic and international markets, building business confidence and consumer confidence in products and services, protecting consumer health, safety and environment, ensuring product safety and providing assurance of reliability and quality.

The technical Infrastructure system is also known as quality infrastructure and refers to all aspects of metrology, standardisation and accreditation of conformity assessment mechanisms such as testing, inspection and certification.

The four institutions responsible for implementing technical infrastructure policies are the South African National Accreditation System (SANAS), the National Regulator for Compulsory Specifications (NRCS), the South African Bureau of Standards (SABS) and the National Metrology Institute of South Africa (NMISA). The technical infrastructure framework in South Africa ensures that products manufactured, exported and imported are safe and fit for purpose and meet regulatory and legislative requirements.

The technical infrastructure institutions - together with ITAC and SARS - play a vital role in the battle to keep the marketplace free of non-compliant and unsafe products, limiting customs fraud and illegal imports, smuggling and under-invoicing – all of which hamper productive capacity and industrial growth, thereby also impacting negatively on employment creation.

The border enforcement project of the NRCS, coupled with implementation of its risk-based approach, has borne fruit over the past two years. The NRCS is now scaling up on market surveillance with an emphasis on improvements related to the rigor with which the Letter of Authority process is applied. The initial approval is supplemented by sampling and testing of the regulated products at accredited testing facilities. In parallel, the SABS is also scaling up its test facilities to ensure that they will be able to fully test products to the compulsory specifications of the NRCS.

A firm technical infrastructure framework has a direct impact on the economy and can strengthen industrial development by building a capable domestic manufacturing base producing quality products that are not swamped by low quality and 'grey' imports.

At the same time it encourages industry to achieve the international quality standards that must be met in order to export successfully into foreign markets.

The technical infrastructure institutions programmes are aligned with the state's coordinated drive to scale up industrial policy, with a strong focus on priority sectors that have been identified for expansion: namely, green industries, agro-processing and metal fabrication, capital and rail transport equipment, advanced materials and clothing, textiles and footwear production.

Key opportunities for improved performance

The key areas in which the Technical Infrastructure Institutions will be aiming to up their game over the coming three years include:

- Achieving an increasingly integrated and coordinated approach to the handling of all industrial and trade-related matters.
- Ensuring that a long term strategic view is taken in charting the future direction of their interventions, including updating their respective legislative mandates and strengthening their human capacity and technical capabilities.
- Providing training programmes and courses on international standards and legislative requirements to better equip emerging industries to compete in domestic and international markets;
- Stronger enforcement of existing mandatory standards to protect consumers from inferior and sub-standard products and strengthen business confidence.
- New investment in measurement capabilities, the introduction of additional voluntary and mandatory standards and accreditation programmes that will foster the development of new industries, particularly in the green industry area.
- Strengthened accredited conformity assessment support for export products to unlock significant growth opportunities in identified markets and promote confidence in locally manufactured products.
- Improved, accurate, internationally accepted measurement to effectively monitor imports and support exports for safety and conformity.
- Raising consumer awareness on the safety of products regulated by the NRCS.
- Stronger integrated and co-ordinated programmes between SARS and industry to step up compliance monitoring and increase the rate of successful prosecutions.
- Support for SMME design efforts in the energy, communications and transport sectors.

Key Constraints

- Budgetary constraints that often limit the ability of the technical infrastructure institutions to deliver optimally on their mandates.
- Lack of understanding and awareness on the part of many SMMEs as to what they can gain from engaging with the current offerings of the technical infrastructure institutions.
- Regulatory delay: given that these institutions serve a variety of regulatory purposes, any delay in the implementation of regulations impacts negatively on the overall efficacy of their programmes. Collaborative forums have been established to better manage this issue.

Key Action Programmes

1. Re-alignment of technical infrastructure activities with IPAP sectors

Nature and Purpose of the intervention

Strengthening and aligning the activities of technical infrastructure institutions with IPAP imperatives through the development of accurate measurement and testing capabilities, standards, compulsory specifications and accreditation programmes that serve sector priorities.

Targeted outcome

Re-aligned and synchronised technical infrastructure institutions' activities, better able to support IPAP priorities.

In line with the approach adopted in the previous IPAP iteration, the technical infrastructure institutions as a collective developed a framework for the appraisal of existing national policies applicable to each IPAP sector, including IPAP-specific objectives.

This resulted in synchronised Action Plans in the following sectors: green industries; agro-processing; metal fabrication, capital and rail transport equipment; information and communications technology; advanced materials; clothing, textiles, leather and footwear; plastics, pharmaceuticals, chemicals and cosmetic; automotive products; and components for the nuclear industry. The key milestones in the identified sectors below reflect targeted responses to the gaps that were identified during this process.

Green industries

Key milestones

2015/16 - 2016/17 Q4:	Second-phase upgrade of the electrical power and energy measurement standards by NMISA to support measurements required by Eskom and municipalities for the maintenance of the national power grid and the monitoring of its distribution systems.
2015/16 Q2:	Project implementation for the revision of the standard on Energy Efficiency in Buildings.
2015/16 Q3:	Project implementation for new standards on non-ballasted Light Emitting Diode (LED) lamps.
2015/16 Q4:	Project implementation to setup the laboratory to test air conditioners in support of NRCS regulations on energy efficiency labelling.
2015/16 Q4:	An *Energy Efficiency Performance of Buildings Accreditation Programme* to be developed and rolled out.
2015/16 Q4:	Benchmark study to investigate how SANAS can support renewable energy.
2015/16 Q4:	New upgraded national measurement standards for energy efficient lighting.
2016/17 Q1:	Finalise the amendment of VC 9006, the Compulsory Specification for hot water storage tanks - upgrading of energy-efficiency requirements and labelling.
2016/17 Q1:	Conduct a feasibility study for the development of a new Compulsory Specification for thermal insulation products for buildings.
2016/17 Q4:	Develop capability to accurately determine the size of dust particles (in support of Air pollution monitoring).

Lead departments/ agencies: NMISA, NRCS, SABS, SANAS.

Agro-processing

Key milestones

2015/16 - 2015/16 Q4:	Roadmap for accurate microbiological measurements in South Africa.
2015/16 - 2016/17 Q4:	Provide reference measurement capability for pesticides and inorganic elements in environmental and food matrices (including fish).
2015/16 - 2016/17 Q4:	Provide reference measurement capability for dioxins, furans and dioxin-like toxic substances in environmental and food matrices.
2015/16 Q1:	Project implementation for a new standard on olive oil and pomace oil.
2015/16 Q3:	Investigation of a regulatory framework for olive oil.
2015/16 Q4:	Project implementation for the revision of the current standard on canned meat products.
2015/16 Q4:	Project Implementation for the revision of the current standard on canned fish, canned marine molluscs and canned crustaceans and other products derived from them.
2015/16 Q4:	Project implementation for a new standard on live and raw bivalve molluscs.
2015/16 Q4:	The Development of a Compulsory Specification for Live Rock Lobster.

2015/16 Q4 – 2017/18 Q4: Continue to develop new reference measurements for pesticides and inorganic elements in environmental and food matrices.

2015/16 Q4 - 2017/18 Q4: Provide reference materials for mycotoxins and inorganic elements in food matrices.

2015/16 Q4 - 2017/18 Q4: Provide reference measurement capability for brominated and chlorinated contaminants in environmental and food matrices.

2016/17 Q2: Amendment of VC 8014, the Compulsory Specification for canned fish products.

2016/17 Q2: Amendment of VC 8019, the Compulsory Specification for canned meat products.

2017/18 Q4: Develop reference measurement capability for amino-acids in food, in support of food labelling regulation.

Lead departments/ agencies: NMISA, NRCS, SABS.

Metal Fabrication, Capital and Transport Equipment

Key milestones

2015/16 Q4: Upgrade the laser tracker dimensional facility at NMISA for traceability for large dimensional measurements for locomotives and coaches.

2015/16 Q4 - 2017/18 Q4: Establish reference measurements for alloy compositions using XPS, in support of the metals industry.

2016/17 Q4: Conduct a benchmark study to investigate how accreditation can support the rail industry.

2017/18 Q4: Declaration of mineral exports: SABS to conduct verification tests on the qualities and quantities of coal and other minerals (SABS and Department of Mineral Resources project).

Lead departments/ agencies: NMISA, SANAS, SABS.

Automotive Products and Components

Key milestones

2015/16 Q1: Amendment of VC 8013, the Compulsory Specification for hydraulic brake and clutch fluid.

2015/16 Q4: Finalise the amendment of Compulsory Specifications, VC 8022, 8023, 8024 and 8025, to add further safety features to automotive vehicles and align SA requirements with the latest UN (ECE) requirements.

2015/16 Q4: Finalise the amendment of Compulsory Specifications VC 8056 and 8059 for pneumatic tyres for passenger and commercial vehicles.

2015/16 Q4: Develop a certification scheme for SANS 543-1: Vehicle security – Whole-of-vehicle marking Part 1: Microdot systems (for automotive microdot fitment/application).

2015/16 Q4: Project implementation for new standards on electric vehicle conductive and charging system (various parts).

2015/16 Q4: Recapitalisation of national dimensional and torque measurement laboratories, in support of the automotive sector.

2017/18 Q4: Upgrade of the national Force Measurement laboratories, in support of the transport, manufacturing and automotive sectors.

Lead departments/ agencies: NMISA, NRCS, SABS.

Biofuels

Key milestones

2015/16 Q4: Develop reference benchmarks in support of accurate measurement requirements for biofuels.

Lead departments/ agencies: NMISA.

Plastics, Pharmaceuticals, Chemicals, Cosmetics

Key milestones

2015/16 - 2016/17 Q4: Develop analytical capabilities for monitoring of hazardous substances in polymers, plastics and packaging materials.

2015/16 Q2: Project implementation for the development of standards for traditional medicines.

2015/16 Q2: Conduct a feasibility study for the development of a Compulsory Specification for damp courses in buildings.

2015/16 Q3: Project implementation for the revision of the standard on detonators, relays and initiating devices for commercial applications.

2015/16 Q4: Build capability to quantify and assign purity to peptides (proteins) in support of biopharma.

2015/16 Q4 - 2016/17 Q4: Provide analytical reference measurement traceability for pharmaceutical, personal care and cosmetic products; specifically to analyse for toxic elements.

2015/16 Q4 - 2016/17 Q4: Provide analytical reference measurement traceability for residual solvents in pharmaceutical products.

2016/17 - 2017/18 Q4: Build capability to perform traceable diagnostic measurements from blood samples in support of clinical diagnostics.

2016/17 Q3: Conduct a feasibility study for the development of a Compulsory Specification for Bin liners.

Lead departments/ agencies: NMISA, NRCS, SABS.

Clothing, textiles and footwear

Key milestones

2016/17 Q4: Refurbishment of textiles laboratory to continue supporting the consignment inspection services.

Lead departments/ agencies: SABS.

Advanced materials

Key milestones

2015/16 Q4: Upgrade specialised equipment for reliable measurement of locally produced advanced materials.

2015/16 Q4 – 2017/18 Q4: In support of air monitoring, provide reference measurements to determine the sizes of fine to coarse dust particles.

2016/17 Q4: Procure and install an advanced microscope that can provide 3D reference measurements for advanced material manufacturing.

2016/17 Q4: In support of the local metal industry, establish surface reference measurement capability.

Lead departments/ agencies: NMISA.

Electro-technical

Key milestones

2015/16 Q2: Project implementation for the revision of safety standards on household and similar electrical appliances.

2015/16 – 2017/18 Q4: Conduct a feasibility study to establish the market requirement for national measurement standards for high voltage direct current.

2015/16 Q2: Project implementation for new standards on fuel cell technologies (various parts).

2015/16 Q3: Amendment of VC 8036, the Compulsory Specification for circuit breakers.

2015/16 Q4: Project implement for new standards on communication networks and systems for power utility automation (various parts).

2016/17 Q1: The Development of a new Compulsory Specification for Power Tools.

Information Communications Technology (ICT)

2015/16 Q3: Project implementation for a new standard on Integrated Digital Television (IDTV) for free-to-air digital terrestrial television.

2015/16 Q2: Project implement for a new standard on Direct to home television (DTH).

2016/17 Q4: Information Security Management System and Information Technology Service Management System accreditation programmes to be developed and rolled out.

Lead departments/ agencies: NMISA, NRCS, SABS, SANAS.

Nuclear energy

Key milestones

2015/16 - 2017/18 Q4: Support the South African nuclear regulatory bodies (DOH and NNR) in fulfilling their mandate through traceable measurements and technical expertise.

2015/16 - 2017/18 Q4: Support the SABS through traceable measurements in monitoring radiation workers in the country.

2016/17 Q4: Develop and roll out an Accreditation Programme for nuclear pressure equipment and component inspection and facility management system certification.

2016/17 Q4: Identify technical experts and train SANAS technical assessors.

Lead departments/ agencies: the **dti**, NMISA, SANAS.

ICT

Key milestones

2016/17 Q4: Upgrade the national measurement standards required to perform diagnostic network tests on fibre-optic and wireless telecommunication systems.

Lead departments/ agencies: NMISA.

Strengthen South Africa's technical infrastructure to support industrial development

Key milestones

Implementation of Legal Metrology Act

2015/16 Q2: Requirements for Legal Metrology Administrative Regulations finalised**.**

2015/16 Q4: Preparation of an accreditation response to the Legal Metrology Act.

Lead departments/ agencies: **the dti**, NRCS, SANAS.

Updating of the National Building Regulations and Building Standards Act

2016/17 Q2: New NBR Part XB for water efficient building regulations.

2016/17 Q3: Conduct a feasibility study for the development of a Compulsory Specification for lintels in construction.

2016/17 Q4: The Development of a new Compulsory Specification for plumbing components.

2016/17 Q4: Conduct a feasibility study for the development of a Compulsory Specification for timber roof-trusses and punched metal fasteners.

2016/17 Q4: Conduct a Feasibility study to assess the need for an accreditation programme on Construction Management.

2016/17 Q4 - 2017/18 Q4: National Building Regulations and Building Standards Bill drafted; Parliamentary legislative process.

2017/18 Q2: Amendment of relevant National Building Regulations to include plumbing requirements as per the Water Act.

Lead departments/ agencies: the dti, NRCS, SANAS.

Strategic direction of the South African technical infrastructure

2015/16 Q2 - 2016/17 Q4: 10-year Strategic Plan for the South African Technical Infrastructure.

2017/18 Q4: Legislative review of the technical infrastructure – an investigation into the effectiveness of the four governing Acts and recommendations on necessary amendments.

Lead departments/ agencies: the dti.

Supporting departments/ agencies: NMISA, NRCS, SABS, SANAS.

Strengthening the enforcement system of NRCS

Key milestones

2015/16 Q4: Finalise gap analysis research report to inform the NRCS risk-based strategy aimed at improving NRCS coverage of the higher-risk industries; draft appropriate regulations.

Lead departments/ agencies: the dti, NRCS.

Consumer protection initiatives

Key milestones

2015/16 Q2: Amendment of Compulsory Specification VC 8032 for personal flotation devices.

2016/17 Q4: Project implementation for Standards on consumer warranties to support Consumer Protection Act.

2016/17 Q2: Project Implementation for Standards on Consumer Contact Centres to support Consumer Protection Act.

2015/16 Q4: New legal metrology technical regulation for multi-dimensional measuring instruments and gas meters.

2016/17 Q2: Revision of the Legal Metrology Technical Regulation for liquid fuel dispensers to include technical regulations for all dynamic measuring systems for liquids other than water.

2016/17 Q3: The Development of a new Compulsory Specification for the safety of toys.

2016/17 Q4: Revision of the Legal Metrology Technical Regulation for water meters for cold potable water to additionally include technical regulation for water meters for hot water.

2016/17 Q4: Develop a Legal Metrology Technical Regulation for road and rail tankers with level gauging.

Lead departments/ agencies: the dti, NRCS, SABS.

Accreditation programme rollout

Key milestones

2017/18 Q4: Conduct a feasibility study on an Accreditation programme for Asset Management.

Lead departments/ agencies: the dti, SANAS.

SMME support

2015/16 Q4: The SABS Design Institute is establishing a Rapid Accelerator Centre for social, technological and business innovation to support SMMEs in the energy, communications and transport sectors, amongst others. The following deliverables are planned:

- 10 SMMEs to be supported and developed through design methodologies into sustainable businesses; and
- 10 Start-ups and new ideas to be supported and developed into products that are ready to enter the commercialisation phase, geared towards the supply chain of key partners.
- 10 SMMEs/Cooperatives to go through certification.

Lead departments/ agencies: the dti, SABS.

2017/18 Q4: Identify relevant ARSO standards for harmonisation by SABS.

Lead departments/ agencies: the dti, NMISA SABS, SANAS.

2017/18 Q4: Develop comparison programme within AFRIMETS to compare National Measurement Standards of all countries participating in the CIPM Mutual Recognition Arrangement.

Lead departments/ agencies: the dti, NMISA SABS, SANAS.

Ongoing developmental tariff reform

Nature and purpose of the intervention

South Africa's tariff framework is administered by the International Trade Administration Commission (ITAC) in accordance with SA's obligations to the World Trade Organisation. It adopts a strategic approach to tariff-setting and policy is on a sector-by-sector basis and is informed by different sector strategies. Therefore, both developmental tariff reform and tariff setting are continuous on-going interventions.

Targeted outcomes

Reduced input costs for downstream value-adding manufacturers, leading to improved competitiveness through further downstream value-addition and increased manufacturing sector employment

Key milestones

2016/17 – 2017/18 ongoing: Scope for industries to apply to ITAC for selective tariff increases on products with significant potential for the creation and retention of sustainable jobs, import replacement and "water" between bound and applied rates.

2015/16 – 2017/18 ongoing: Scope for further selected decreases in tariffs, particularly in monopolistic sectors that supply intermediate inputs into manufacturing and other productive sectors, in order to support downstream value-addition.

2015/16 – 2017/18 ongoing: Scope for selective creation of rebates for manufacturing products that attract duties, particularly where these are intermediate products in manufacturing, in support of the value-adding manufacturing sectors.

Lead departments/agencies: the dti and ITAC.

Supporting departments/agencies: EDD.

Clampdown on customs fraud, illegal imports and sub-standard products.

Introduction

The South African economy continues to face increasing growth of illicit trade and illegal imports which have a negative impact as they erode the country's manufacturing capacity and revenue. The South African Revenue Services is actively involved in updating the existing legislative framework with the dual purpose of facilitating trade and combatting customs fraud and illegal imports.

To date gains have been secured through two important new pieces of legislation that were gazetted in 2014 (Customs Duty Act and Customs Control Act).

These allow for much harsher penalties for customs offenders, through measures such as higher fines; naming-and-shaming of offenders; holding individuals (natural persons and not simply juristic persons) responsible for fraud; and levying new forms of penalties on offenders. They also allow for:

- Rescinding the import licences of repeat offenders;
- Stemming the flow of illegally imported goods into the local market;
- Creating additional customs capacity so as to achieve higher rates of inspection.

These gains provide considerable leverage for strategic interventions in customs-related challenges.

Nature and purpose of the intervention

Ongoing interventions in customs fraud-related issues, illegal imports and sub-standard products, including strengthened enforcement of the legislative framework.

Targeted outcomes

Stronger integrated and co-ordinated programmes in the clampdown on customs fraud, illegal imports and sub-standard products; such programmes to combine border enforcement and post-border compliance with enforcement extended to the points of distribution and sale.

Key milestones

2015/16– 2017/18: Strengthening of a range of measures – including closer collaboration between **the dti**, industry, NCRS, SABS ,CIPC (on counterfeit goods) and SARS – through multi-sectoral forums such as the Ports of Entry Control Centre that targets SA border posts.

2015/16 – 2017/18: Extend application of the Indicative Reference Price System to other vulnerable sectors to provide an increasingly effective early warning system.

2015/16 – 2017/18: Ongoing development of programmes aimed at improving compliance within industry and contributing to the formulation of best practice in the facilitation of trade, in accordance with all the Acts administered by SARS.

2015/16 – 2017/18: Conduct continuous targeted investigations and raids, on non-compliant products; confiscation of substandard and illegal products of individuals and companies that are in breach of the law; search and seizure missions to include goods for export.

Lead departments/agencies: NT, EDD and SARS.

Supporting departments /agencies: the **dti**, NCRS, SABS, CIPC, ITAC.

4. Innovation and Technology

Leveraging science, technology and innovation for industrial growth and development

Background and context

Science, Technology and Innovation (STI) are recognised as key drivers of long-term economic growth, which today is increasingly led by knowledge production and dissemination of knowledge [i.e. knowledge utilisation], for the enrichment of all fields of human endeavour. STI becomes a major source of competitive advantage, wealth creation and improvements in the quality of life[3], if it is properly coordinated, disseminated and utilised by actors and stakeholders in a national innovation system (NSI) that has the capacity to absorb and quickly adapt to the new knowledge and capabilities.

Governments are therefore increasingly pushing innovation towards the top of the scale in their policy agendas, recognising its potential to promote economic growth and address social and environmental challenges[4].

In South Africa, the centrality of STI to national development has been firmly highlighted in the National Development Plan (NDP Vision 2030). The NDP notes that the developments in STI are fundamentally altering the way people live, connect, communicate and transact, with profound effects on economic growth and development (NDP, 2012). A coherent STI framework can become a deep-level driver of equitable economic growth, harnessing and directing innovation to deliver economic advances, improvements in health systems, education and infrastructure.

[3] E.g. Ten Year Innovation Plan (TYIP) 2008-2018, Department of Science and Technology, South Africa (source: http://www.dst.gov.za/index.php/resource-center/strategies-and-reports/143-the-ten-year-plan-for-science-and-technology Accessed on 4 February 2014).

OECD Policy Brief: Science, Technology and Innovation in the New Economy, September 2002 (source: http://www.oecd.org/science/sci-tech/1918259.pdf Accessed on 4 February 2014).

[4] http://innovationpolicyplatform.org/content/innovation-definitions-and-fundamentals?topic-filters=11377 Accessed on 4 February 2014

The NDP further recognises that STI quality is a key differentiator between countries that are able to tackle poverty effectively by growing and diversifying their economies, and those that do not have this capacity. In other words, the extent to which developing countries emerge as economic powerhouses depends on their ability to grasp and apply insights from STI and use them creatively (NDP, 2012).

In order to realise the national potential, STI investments are essential for the country's transformation to a knowledge economy, as indicated in the NDP, White Paper and other policy documents.

The importance attached to innovation is also reinforced in the national and international policy domain through, for example, the Innovation Strategy[5] of the Organisation for Economic Co-operation and Development (OECD), the European Commission's concept of the 'Innovation Union'[6], and South Africa's own 10-year plan, *'Innovation towards a knowledge-based economy'*[7].

The growing focus on STI can, in part, be attributed to the following factors:

- Substantial increases in global science, engineering and technology (SET) efforts, leading to enhanced capability and knowledge potential;
- Increasing participation of developing countries in global SET activities;
- Ever-increasing complexity and technological capability embedded in components/ products, leading to an associated reduction in the lifespan of these products;
- Significant growth in higher technology and advanced manufacturing goods, indicative of changing global exports and markets; and
- The fact that technology has a time-bound value, implying that continuous knowledge reinvestment is required, irrespective of the type of industrial sector.

[5] See: http://www.oecd.org/site/innovationstrategy/
[6] See: http://ec.europa.eu/research/innovation-union/index_en.cfm
[7] South African Journal of Science 2012, Vol. 108, Issue 7/8

1. Science and Technology Innovation (STI) and economic growth:

SA policy context and coordination

South Africa's STI policy package[8] provides a sound basis for the further improvement and up-scaling of the country's industrial development interventions as spelled out in the National Industrial Policy Framework (NIPF), and as driven by the Industrial Policy Action Plan (IPAP).

The DST's focus, in support of economic and industrial development, will be structured as follows over the next five years:

a) Knowledge generation/production for increased competitiveness, reflected as a substantial increase in the R&D effort above the current value of 0.76% of Gross Expenditure on R&D (GERD) as a percentage of Gross Domestic Product (GDP).

b) Knowledge utilisation for economic development, and in particular, knowledge utilisation for:
   - New industrial development and the diversification of the economy;
   - Enabling innovation;
   - Competitiveness, including a specific focus on small and medium enterprises (SMEs); and
   - Inclusive social development.

c) Deepening bilateral engagement on research, development and innovation (RD&I), between South Africa and the rest of the African continent.

South Africa's investment in RD&I is quantified on a frequent basis via surveys, such as the National Survey of Research and Experimental Development (the National R&D Survey) and the South African Innovation Survey, in line with established practices from the OECD. It is becoming increasingly important to improve the level of analysis and the understanding of the linkages of the above-mentioned surveys with trends in innovation, SME life cycles and interaction between industry, government, academia and society.

[8] As articulated in, amongst others, the White Paper on Science and Technology (1996), the National Research and Development Strategy (2002), as well as, the Ten Year Innovation Plan (2008 to 2018).

This knowledge will substantially contribute towards achieving the STI policy and developmental objectives as outlined in the NIPF[9], such as:-

- Facilitating diversification beyond the economy's current reliance on traditional commodities and non-tradable services - a strategy that require the promotion of value addition, characterised particularly by the movement into non-traditional tradable goods and services that compete in export markets and against imports;
- Ensuring long-term intensification of South Africa's industrialisation process and movement towards a knowledge economy.

Over and above enhanced understanding of the impact of RDI spend, and also to improve the DST's technological foresight, the Minister of Science and Technology has already requested that the National Advisory Council on Innovation (NACI) start work in this domain.

In line with the broader objectives of the NIPF and the perspectives of the current iteration of IPAP, the following interventions for developing STI will also be emphasised:

a) The study and identification of underlying linkages between knowledge production (R&D), knowledge utilisation (innovation, new technology maturation), industrial activity and economic growth in South Africa.

   This will be achieved through analytical studies of the available data on knowledge production (e.g. the National R&D Survey), knowledge utilisation (e.g. South African innovation surveys), industrial activity, economic data, and studies on linkages (e.g. clusters, Centres of Competence (CoCs) and innovation networks). Where appropriate, policy briefs will be produced and disseminated.

b) Continued identification and support of large R&D programmes in knowledge-intensive areas, with the potential to renew existing or to establish new industries, to enable new market penetration and sustainable competitiveness.

   This will be coordinated through the continued implementation of the Emerging Industries Action Plan (EIAP), which is a mechanism to help create an enabling environment for the maturation of technology intensive projects which have the potential to create new industries.

[9] Contained in the Industrial Policy Action Plan (IPAP) 2012/13-2014/15.

The enabling environment will establish partnerships across government and with local industrial partners, in order to increase market access (local and foreign), and to improve funding certainty through leveraging commitments from development finance institutions such as the Technology Innovation Agency (TIA) and the Industrial Development Corporation (IDC).

c) Continued harmonisation of innovation support initiatives. The environmental scan of RD&I support initiatives will be continued, with an expanded focus to include instruments that exist in the private sector, in order to maintain a comprehensive understanding of the offerings already in existence, as well as the possible mechanisms required to create the necessary linkages between them.

   Further enhancements will be developed and proposed to address areas where innovation support gaps and/or needs are identified. Particular emphasis will be placed on maximising the DST's technological support instruments aimed at helping SMEs to increase their participation in the local economy - especially local production - by reviewing the STI support instruments for innovators, entrepreneurs and SMEs. The web-based platform for innovation instruments will also be expanded, to serve as an interactive vehicle to foster continuous engagement between the various actors within the technology innovation and commercialisation landscape, and to act as a channel through which government can communicate with stakeholders.

d) Continuation of the development of a technology commercialisation strategy. In close collaboration with **the dti**, ongoing initiatives to develop a National Technology Commercialisation Strategy will be accelerated, with a view to producing a policy framework that facilitates and improves the translation of research outputs into commercially viable products and services.

The remainder of this section contextualises South Africa's STI and economic development objectives (see sub-section 2 below), and outlines the economic rationale and milestone activities towards the realisation of the proposed STI development interventions (sub-section 3).

2. SA STI Policy context

R&D, knowledge production - science policy

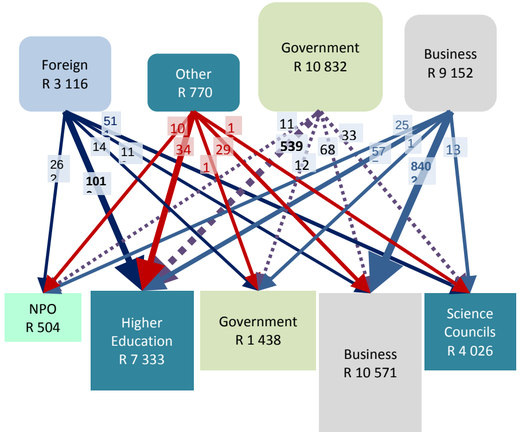
The DST is funding R&D through various approaches including, for example, parliamentary grants to the Science Councils (SCs) (such as the CSIR and HSRC), which are aimed at broad R&D, and specific R&D projects and R&D networks, such as the Advanced Metals Initiative (AMI), which has R&D networks in light, precious, ferrous and nuclear metals.

In an effort to build the science system, part of DST funding is also used to provide postgraduate bursaries to build the capacity to perform high quality research; to replace and upgrade scientific infrastructure at laboratory, national and international level; and to ensure that pilot plants are available to help mature technology development. The bench-scale pilot plant scaling up the CSIR's technology for the production of titanium metal powder is an example of project-specific or high end infrastructure equipment.

In the South African context, while it is recognised that innovation does not stem solely from formalised R&D, the national knowledge generation and utilisation effort is broadly assessed in terms of national and international investments in R&D. In this regard, information from the latest National R&D survey[10] indicates that government investment in R&D is 18% larger (at R10.832 billion) than business's investment of R9.152 billion. Business, does, however, perform R&D to the amount of R10.571 billion – though this remains lower (by 7.5%) than the combined spend of Higher Education Institutions (HEIs) and SCs, which stands at R11.359 billion.

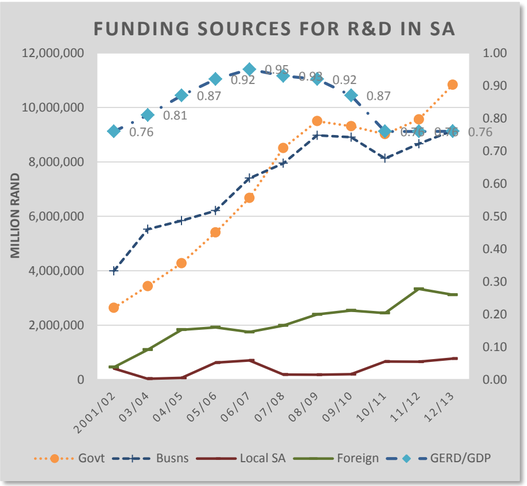
[10] South African National Survey of Research and Experimental Development, Statistical Report, 2012/13

Major R&D funding flows (million), 2012/13[3]



In order to increase R&D spend, the Medium Term Strategic Framework (2014-2019) includes a policy target that the Gross Expenditure on R&D (GERD) be increased to 1,5% of GDP in order to support growth and development. To achieve this, three successive phases and scenarios have been identified under which the contribution of RDI is expected to grow in importance over time. These phased scenarios and are being used to inform the review and align current strategies.

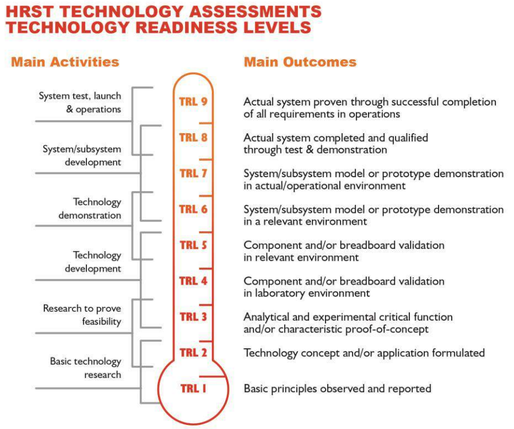
Variation of R&D Funding sources in South Africa (HSRC database)



Technology development – technology policy

Technology policy is indirectly pursued through specific DST portfolios that are aimed at the maturing of new technologies. The progress of technology development is measured by Technology Readiness Levels (TRLs), a system adopted by NASA to reflect the growth and maturity of technology. TRLs, (defined in the schematic below), have been accepted by DST as an instrument to help guide DST investment and quantify the desired outcomes of a project. The TRL approach is also used by TIA, which predominantly invests in technology maturation from TRL 4 to TRL 7.

Technology requires time to mature, and to develop technology from TRL 4 to 7 might



take 5 to 8 years, depending on the domain and complexity of the technology.

Innovation – innovation policy

As indicated in the national innovation surveys, South Africa has a relatively high rate of innovation. The innovation survey of 2005[11] found that [51.7%] of firms stated that they had innovations in the period [2002] to [2004]. When analysing the sources of innovation, it is found that 35% of firms rated clients and customers, and 24% rated customers, as their external sources of information for innovation, indicating that most of the South African innovations are incremental in nature.

[11] Main results of the South African Innovation Survey 2005, HSRC Press, 2009

Only [8%] of firms stated that R&D (resulting from universities, universities of technology and science councils) is their source of innovation. Although this value is relatively low, it is in line with international norms. Typically, innovation resulting from R&D is more radical (rather than incremental) in nature and often leads to disruptive changes.

South Africa's STI policy package, and RD&I support interventions, have to date been developed in a manner that seeks to address some of these challenges by not only incentivising R&D, but also through creating innovation support structures that aim to enable a greater translation of innovative ideas into prototypes for further commercial development.

In this regard the DST has established the Technology Innovation Agency (TIA), tasked with the primary responsibility of helping to mature technologies with industrial potential, between TRLs 4 to 7. In addition, the National Intellectual Property Management Office (NIPMO) is responsible for supporting the protection of intellectual property (IP) resulting from publicly funded R&D. The DST's Commercialisation Framework, the proposed national Technology Commercialisation Strategy and the Emerging Industries Action Plan (latter both detailed below) are further instruments to help mature and commercialise local technology and IP.

3. SA STI, Economic and Industrial development context: coordination through streamlining and harmonisation

The effective improvement and up-scaling of the country's industrial development objectives – i.e. towards diversifying the economy through movement towards a knowledge economy and into non-traditional tradable goods and services – requires the effective dovetailing of South Africa's STI, economic and industrial policy objectives. Efforts directed to address this requirement are demonstrated in the Key Action Programmes (KAPs) identified below - in particular through enhanced collaborative efforts between the DST and **the dti**.

The existing instruments and support mechanisms in South Africa's NSI seek to maximise opportunities for innovation, derived from market and business needs.

The development and leveraging of STI is ideally achieved through partnerships between government, academia (including science councils) and industry (large, medium, and SMEs).

Summarising:

- The DST is responsible for STI policy aimed at enhancing knowledge generation capacity; ramping up the country's innovation capacity; developing appropriate science, technology, innovation and human capital to meet the needs of society; building world-class STI infrastructure; and positioning South Africa as a strategic research, development and innovation partner and destination.
- **The dti** is responsible for industrial policy development (including ensuring that local firms have access to knowledge generation etc.) and for enterprise development. In addition, several other departments contribute to the national STI effort in funding human capital development, focussed R&D programmes, and local development programmes.

Harmonisation and coordination of DST, **dti** and other government departments' incentives, initiatives and instruments is critical to unlocking maximum value from the national investment in STI. This will be achieved through enhanced coordination of the design and implementation of various developmental interventions.

These are described in greater detail below.

Key action programmes

1. Improving linkages between knowledge production, utilisation and innovation and industrial growth

The DST is responsible for the execution of a set of science, technology and innovation (STI) related surveys / assessments which are performed frequently, from annually to once every three years. The purpose of these measurements is to quantify the status of these specific focus areas.

It is the stated intention of government to increase the level of R&D, (both public and privately funded), in South Africa. In addition, to realising the benefits of increased R&D, an improved linkage between R&D effort and industrial growth is also essential.

Economic rationale

Investment in STI has a positive relationship with increased competitiveness and economic growth. South Africa has a stated intent to increase the level of R&D, upgrade human capacity and skills, enhance knowledge production (patents, publications, etc.) and knowledge utilisation (e.g. technology demonstrators, new innovations, etc.).

A comprehensive study and analysis will be undertaken to map, analyse and explore the linkages between investments in R&D, technology, innovation and industrial growth.

Targeted outcome

Improved linkages that help to maximise overall R&D investment and ensure that it contributes as strongly as possible to economic growth.

Key milestones

2015/16 Q2: Finalisation of the Terms of Reference for the study and identification of the most relevant data sources.

2015/16 Q4: Completion of Phase 1 of the study, and policy recommendations for FY 2016/17 R&D led industry development programmes.

2016/17 Q2: Completion of Phase 2 of the study and recommendations for enhancements to science, technology and innovation policy in context of South Africa's industrial policy.

Lead departments / agencies: DST.

Supporting departments / agencies: **the dti**, NIPMO, TIA, IDC, Offices of Technology Transfer, SCs, universities, and private sector organisations as relevant.

2. Large R&D programmes in knowledge-intensive areas

South Africa has a demonstrated capacity to generate large innovations with disruptive potential - i.e. innovations that help create new technologies, markets and value networks in such a manner as to eventually displace existing technologies, markets and value networks over a period of time.[12]

The DST is currently investing in number of potential high impact[13] programmes that are cross-cutting (requiring close integration and support from other departments) and which have the potential to revitalise existing or establish new industries, contribute substantially to longer term, sustainable competitiveness and new market penetration.

Examples of 'R&D-led industry development' programmes are:

- Titanium metal powder manufacturing development;
- Fuel cell development;
- Additive manufacturing.

Such programmes are knowledge-intensive and based on proprietary know-how, with corresponding markets often not yet established. This implies that, in view of the technical and market risks, development funding is difficult to secure. Besides the financial aspects, the speed of technical and market development is deemed key to success.

In order to help mitigate the above-mentioned risks, and to ensure interdepartmental and, where appropriate, industry, support and buy-in, the Emerging Industries Action Plan (EIAP) was devised and incorporated into government's Medium Term Strategic Framework (MTSF).

Economic rationale

The establishment of an EIAP is aimed at providing a formal platform that will a) reflect and elevate government-led technological programmes supporting new industrial development, and b) assist in the formal inter-departmental coordination and positioning of the respective programmes.

Target outcomes

- Increased market access (both local and foreign) and improved investment certainty throughout the project life-cycle. (To be achieved by securing firm commitments from developmental finance institutions such as the TIA and the IDC).
- A clear set of value propositions to potential local and foreign funding and industry partners.

Key milestones

2015/16 Q1: Secure stakeholder support for the EIAP concept, Terms of Reference and proposed implementation modalities.

2015/16 Q2: Secured stakeholder support and commitment for the evaluation of the first EIAP flagship projects.

2015/16 Q4: First techno-economic evaluation completed and EIAP project(s) selected and finalised. A summary report will capture the process and lessons learned.

Lead departments / agencies: DST.

Supporting departments / agencies: **the dti**, NT, EDD, DoE, DoH, DMR, TIA, IDC, provincial government departments, science councils, universities and private sector organisations as relevant.

[12] The term is deemed to have been originally coined by Prof. Clayton Christensen, Professor of Business Administration at the Harvard Business School (HBS). See also: http://www.christenseninstitute.org/key-concepts/

[13] From the perspective of economic growth, competitiveness and local value addition.

3. Technology Commercialisation Strategy

Technology commercialisation is understood as the process, or processes, of introducing a new product or production method into the market. This can include new-to-the-world, as well as new-to-the-market (i.e. something new in a given context and not in absolute terms[14]), innovations that have demonstrably captured economic and/or social value.

The DST is currently finalising the implementation modalities for its Commercialisation Framework, which is intended to guide its commercialisation activities. It is envisaged that the lessons learnt from the implementation and testing of the DST's Commercialisation Framework will in turn support work towards the development of a National Technology Commercialisation Strategy, in cooperation with **the dti**.

The Technology Commercialisation Strategy will seek to accelerate the journey between development R&D and commercialisation, so as to assist start-ups and other players in the commercialisation space to overcome the 'valley of death' (i.e. the gap between R&D and the creation of successful products, processes and services).

The Strategy will provide guidance with respect to investment strategies and will deal with the inherent complexity of innovation exploitation. The Strategy is particularly crucial given the share of research carried out in public institutions and funded by government.

Increasing awareness of commercialisation is important. So, too, is the involvement in research decisions of partners with a commercial understanding of the challenges to be overcome in assessing and responding to market needs. The commercialisation of technology always presents significant, sometimes fatal, risk; the strategy, therefore, seeks to identify areas where support could be tailored to commercialise technology developed either by public research institutions or by the private sector, taking into consideration the individual needs of all the stakeholders at the different stages along the commercialisation pathway.

[14] World Bank. (2010) Innovation Policy: A Guide for Developing Countries. The World Bank, Washington DC.

Economic Rationale

To bridge the gaps between the pre-production, prototyping and commercialisation stages of the innovation process.

Targeted outcome

An optimised framework for successfully commercialising new technologies.

Key milestones

2015/16 Q1: Finalise terms of reference for the Technology Commercialisation Strategy.

2015/16 Q3: Hold workshops with relevant stakeholders and consolidate inputs.

2015/16 Q4: Seek approval for the Technology Commercialisation Strategy.

Co-leading departments/agencies: the DST and **the dti.**

Supporting departments/agencies: NT, EDD, IDC, TIA, NRF, NIPMO, Universities, Science Councils, SOEs, private sector organisations.

4. Harmonisation of innovation support programmes

South Africa has strong science and technology capabilities and well-developed STI institutional frameworks. Concern has, however, been expressed at the inadequate levels of coherence and coordination in prioritisation and agenda-setting for science and technology innovation by, and between, government, business, academia[15] and civil society[16]. Strengthening the system is required to address the need for improved coordination and coherence in the use of R&D in promoting innovation for the purposes of social and economic development. [17].

Numerous innovation-support initiatives are currently being implemented by government departments and their agencies. Potential overlap, duplication and dispersion of efforts exist. Access to, and utilisation of, support mechanisms is not optimal; information on the various innovation-support programmes is not readily available to/accessible by stakeholders. In addition, it is very likely that there are innovation-support gaps and/or needs that are not currently being addressed.

Preliminary assessments of some of the existing innovation financing and support programmes of government reveal that there is indeed collective, at times, overlapping support for commercialisation from basic and applied R&D stages towards demonstration. An emerging gap', therefore, is the lack of proper synchronisation of funding and other support mechanisms geared towards the technology deployment and full commercialisation stages of the innovation chain.

[15] Academia in this context is extended to include other research technology organisations, such as Science Councils.

[16] Department of Science and Technology Ministerial Review Committee on the Science,Technology and Innovation Landscape in South Africa http://www.dst.gov.za/index.php/resource-center/strategies-and-reports/454-ministerial-review-committee-report Accessed 4 February 2014.

[17] Communiqué from the Minister of Science and Technology, Derek Hanekom following the Science Technology and innovation Summit, held on 20-21 July 2013, the Legend Golf and Safari Resort, Limpopo; http://www.dst.gov.za/index.php/media-room/latest-news/676-communique-from-the-minister-of-science-and-technology-derek-hanekom-following-the-science-technology-and-innovation-summit-held-on-20-21-july-2013-the-legend-golf-and-safari-resort-limpopo. Accessed 4 February 2014.

Economic rationale

Ongoing efforts are under way to identify further gaps (and opportunities for enhanced complementarities) amongst the various institutions and between the available support instruments; and these will inform the efforts of both the DST and **the dti** to harmonise and coordinate the interventions necessary for successful outcomes.

Targeted outcome

Harmonised support mechanisms that facilitate the development of synergies between existing and future innovation-support programmes across departments and entities, with a view to delivering increased, better targeted impacts on the growth of the economy.

Key milestones

2015/16 Q1: Finalise TOR for review of private sector innovation support programmes and implement formal forum of public sector innovation support stakeholders.

2015/16 Q2: Finalise review of public sector innovation support programmes; establish and develop the requirements for the Innovation Bridge Portal (a "Portal of Portals") to serve as a platform to encourage greater interaction between industry, academia and government in support of the commercialisation of publicly funded R&D.

2015/16 Q3: Identify potential for coordination across innovation-support programmes and implement steps to facilitate harmonisation in the system.

2015/16 Q4: Develop a proposal for additional innovation instruments to meet system and stakeholder needs.

2015/16 Q4: Launch IB Portal.

Co-leading departments/agencies: DST and **the dti.**

Supporting departments/agencies: EDD, NT, IDC, TIA, NRF, NIPMO.

5. Special Economic Zones and Regional Industrial Clusters

Special Economic Zones (SEZs) are an important tool to support the country's long-term industrialisation objectives and the development of new industrial capabilities. The development of SEZs is primarily aimed at a) increasing the flow of domestic and foreign direct investment; b) developing, strengthening and deepening key domestic value chains and suppliers; and c) increasing the volume and diversity of exports.

SEZS are also expected to play an increasingly important role in the development of additional industrial hubs, thus bringing about a much needed regional diversification of the country's industrial base.

Over the past few years, work on this programme was largely focused on the development of a regulatory framework for effective design, planning, development and management of zones. This included the introduction of a package of incentives for qualifying investments located within designated zones and the undertaking of feasibility studies to determine the long-term economic viability of proposed new zones.

Going forward, more effort will now go into the development and promotion of viable SEZs. Marketing of designated zones and development of targeted industrial clusters within and around these zones will therefore be prioritised.

Associated with Special Economic Zones is the development of Regional Industrial Clusters. These are seen as a critical component in government's efforts to bring to the fore regions which have long been lagging behind in industrial development. Work is underway to realise this objective by ensuring that regions which have not been designated as SEZs could instead benefit from agglomeration of activities. The interventions envisaged could take the form either of spatial agglomerations and/or active cooperation between firms.

Benefits linked to Regional Industrial Clusters include improved market access (as a result of customer concentration); attraction and pooling of skilled labour; the emergence of specialised suppliers and services; increased dissemination of knowledge and information; and natural technological spillovers that occur as skilled and semi-skilled labour moves between employment opportunities within groups of firms operating in the area.

Key opportunities

Summarising the discussion above: the SEZs and Regional Industrial Clusters can be seen as an emerging base for the following opportunities:

- Development and strengthening of key value chains and their integration in national and international value chains.
- Enhanced competitiveness through harnessing of collective efficiencies.
- Creation of economic opportunities for small and medium enterprises through supplier development programmes.
- Regional diversification of the economy.
- Technology and skills transfer, to be achieved by linking transnational and large domestic firms with smaller ones.
- Creation of decent and sustainable jobs.
- Attraction of foreign direct investment.
- Maximisation of returns on natural endowments within specific geographical proximities.
- Enhanced intermediate levels of industrialisation with crucial benefits of spillover into surrounding regions - including the lagging regions.
- Facilitation of capacity and institutional development for the management of clusters to enhance business productivity,

Constraints

- Underdeveloped infrastructure, especially outside the main industrial hubs, including the following:
  - Insufficient energy supply, water shortages and poor road and rail linkages.
  - Absent or extremely weak education and training infrastructure.
  - Port inefficiencies, in particular cargo terminal capacity constraints.
- Unattractiveness of some regions to domestic and foreign professionals.
- Macro-economic instability.
- Access to finance.
- Scarcity of existing businesses, especially in low-populated areas

Key Action Programmes

1. Special Economic Zones Strategy

Nature and Purpose of the intervention

Setting out priorities and outlining key approaches to guide the design, planning, development and management of Special Economic Zones in order to accelerate the attraction of foreign and domestic direct investments into the targeted regions.

Targeted outcome

An SEZ Strategy that responds to conditions in the host regions and clarifies priorities, support measures, roles and responsibilities of the various key role players, performance measures and targets.

Key milestones

2015/16 Q1: Review of the Draft SEZ Strategy and finalisation of drafting.

2015/16 Q2: Stakeholder consultation and consolidation of inputs.

2015/16 Q3: Submission of Draft SEZ Strategy for approval by Minister.

2015/16 Q4: Implementation.

2. Special Economic Zones Guidelines

Nature and Purpose of the intervention

Provision of planning guidance to all critical stakeholders with respect to the identification, preparation of project proposals, development of clusters and building of industrial capabilities.

Targeted outcomes

Clear, simple and precise SEZ Planning Guidelines and enhanced certainty for investors; effective planning and management of zones.

Key milestones

2015/16 Q1: SEZ Planning Guidelines developed and finalised.

2015/16 Q2-Q4: Implementation of the guidelines.

Lead departments/agencies: **the dti.**

3. Marketing Plan for Special Economic Zones

Nature and Purpose of the intervention

Implementation of a programme to communicate with domestic and foreign investors regarding available investment opportunities and incentives in Special Economic Zones.

Targeted outcomes

Packaged investment opportunities communicated to investors, with provision of support to those willing to take advantage of these opportunities; increased investments in Special Economic Zones.

Key milestones

2015/16 Q1: Packaging of investment opportunities across all designated zones.

2015/16 Q2: Marketing Plan and promotion materials finalised.

2015/16 Q3-Q4: Implementation of the Marketing Plan.

2015/16 Q1-Q4: Secure 30 new Investors into designated SEZs.

Lead departments/agencies: **the dti.**

Supporting departments / agencies: NT, NPC, EDD, DoE, DPE, DHA, DEA, Eskom, Transnet, SARS, the IDC and other DFIs.

4. Implementation of the Cluster Development Framework

Nature and purpose of the intervention

The framework seeks to conceptually crystallise the economic developmental interventions and the overall approach to the promotion of industrialisation in underdeveloped regions in South Africa. It has been developed with the objectives of supporting joint action between the private and public sector and building collaborative models amongst private firms - particularly to the extent that these collaborative models support industrial upgrading and the expansion of economic activity.

Targeted outcome

A National Cluster Development Policy Tool for supporting industrialisation in underdeveloped regions and enhancing equitable distribution in emerging economic regions.

Key Milestones

2015/16 Q2: Finalisation and sign off of Cluster Development Framework.

2015/16 Q3 - Q4: Provincial Roll-out / Implementation.

Lead department: the dti.

Supporting departments/Agencies: Provincial Economic Departments and Agencies, DST, IDC.

5. Roll-out of the Cluster Development Programme Incentive Scheme

Nature and Purpose of the intervention

To enhance the competitiveness of local companies, in order to improve the manufacturing sector's share in domestic market aggregate demand. This will be done by further supporting established cluster management organisations and by providing shared infrastructure and implementing specific business development measures to support the consolidation of industrial clusters in lagging regions.

Targeted outcome

Enhanced firm-level production efficiencies, to be achieved by leveraging shared manufacturing infrastructure and joint marketing efforts, whilst reducing the cost of doing business for single enterprises.

Key Milestones

2015/16 Q1- Q2: Launch of CDP Incentive Scheme. (1).

2015/16 Q3 - Q4: Roll-out of the Incentive Scheme. (2).

(1) Lead department: **the dti.**

Supporting departments/Agencies: DST, IDC, NEF, SEFA.

(2) Lead department: the dti, University of Johannesburg**.**

Supporting departments/Agencies: CENLED, IDC, FETs.

6. Regional integration

Regional integration remains a critical mechanism for enhancing economic growth and fostering industrial development across the continent. Africa's economic rise is still predominantly driven by external markets; but regional markets are now also beginning to boost intra-continental trade. A large number of African countries continue to record high growth rates, some averaging 5% and upward, while the value of intra-African trade has increased over the last decade to reach US $ 130 billion. This is attributed mainly to expansion of agriculture production, robust growth in services and a rise in oil production and mineral exports.

Notwithstanding these developments, the continent remains largely confined to the lower end of global supply chains as a result of heavy reliance on raw material production and unbeneficiated exports, with too little value-addition and few forward and backward linkages to other economic sectors - further aggravated by underdeveloped infrastructure. Consequently, levels of productivity and competitiveness generally remain low, exports (especially value-added) a mere fraction of world exports and intra-regional trade sluggish. It is increasingly evident - as is the rule in other parts of the world – that development of competitive manufacturing activities will have to be the game-changer as far as sustained and inclusive growth is concerned.

It is therefore imperative that the continent makes rapid strides towards the development and implementation of complementary national industrial strategies linked up to systematic regional development initiatives. There is no other route to the transition from primary resource dependence to the creation of diversified and sustainable industrial economies.

In this context, it is self-evident that stronger regional markets are critical for the drive towards sustainable industrialisation. Opportunities and market demand already exist for industrial and consumer products, infrastructure and raw materials inputs, across multiple value chains. However, many of these opportunities currently remain untapped or filled through imports from other regions. The key must therefore be to meet and grow demand increasingly from shared national and regional resources. In practical terms, this means actively stimulating industrial development through cooperation around major joint projects and financing initiatives that give concrete form to regional integration.

It is against this backdrop that South Africa has committed to upping its role in fostering regional economic integration through market integration, infrastructure development and enhanced inter-regional connectivity. These are seen as the first critical steps on the road to shared and complementary industrial development.

The Tripartite Free Trade Agreement involving COMESA, EAC and SADC (Common Market for Eastern and Southern Africa, East African Community and Southern African Development Community) is proving to be an important building block for the African integration agenda. Over the past year, South Africa has worked with fellow member states in the SADC and Tripartite Free Trade Area negotiations to develop a practical road map towards building supply-side capacities and develop stronger regional value chains to underpin intra-regional growth and diversification of trade.

Work is currently under way to concretise areas of collaboration at both bilateral and multilateral levels. South Africa has already initiated discussions that have led to the identification of a significant number of areas for cooperation, particularly in infrastructure projects, the mining, agro-processing, pharmaceuticals and chemicals sectors and in downstream minerals processing and beneficiation.

Key Action Programmes

1. Work programme of the Regional Economic Communities

Nature and purpose of the intervention

Implementation of the work programme with Regional Economic Communities as agreed by SADC member states.

Economic Rationale

In pursuit of deeper regional integration South Africa must continue to upscale its work with fellow African states to implement agreed priorities, including the establishment of joint infrastructure development projects, development of regional value chains and the provision of technical assistance for policy and institutional development.

Targeted outcome

Increased economic integration and co-operation between the regional economic communities.

Key milestones

2015 - 2018: Work with fellow member states to implement the approved SADC Industrial Development Implementation Matrix to build on the Regional Industrial Development Strategy, prioritising agro-processing, mineral beneficiation and pharmaceuticals as initial sectors of focus.

2015 - 2018: Work with member states to concretise areas of collaboration on identified projects that support development of regional value chains in the region.

2015 - 2018: Work with fellow member states to concretise areas of collaboration to promote productive capacity in the tripartite region.

Lead and Supporting Departments: **thedti**, EDD, DIRCO.

2. Cross-border infrastructure and sector development

Nature and purpose of the intervention

This intervention seeks to promote a cross-border infrastructure and sector development project to complement the Free Trade Area (FTA) discussions to create a market of more than 600 million people in South, Central and East Africa.

Economic Rationale

A critical constraint to regional industrial development and integration is the continuing prevalence of weak cross-border infrastructure. Despite robust GDP growth, inadequate infrastructure remains a chronic constraint to growth, choking integration efforts. Adequate infrastructure is essential for regional integration as it facilitates formation of large competitive markets in the place of small, isolated and inefficient ones. It also lowers the cost of production across sectors. Governments in the region have the opportunity to stimulate regional industrial development through localisation of their procurement requirements, thus establishing sufficiently large economies and creating conditions for firms to become internationally competitive.

Targeted outcome

A better-integrated cross-border infrastructure that facilitates investment, trade and development of regional value chains.

Key milestones

2015 - 2018: Consolidate project preparation and development facilities, working with Development Finance Institutions.

2015 - 2018: Promote regional sourcing in all regional infrastructure development programmes.

2015 - 2018: Promote participation of South African manufacturers in mutually beneficial regional value chains particularly in agro-processing, mineral beneficiation and pharmaceuticals.

2015 – 2018: Identify viable regional value chains and relevant levers to promote their development.

3. Technical Assistance

Nature of the intervention

This intervention seeks to promote sharing of best practice and capacity-building.

Economic Rationale

South Africa has strong technical capacity at a number of levels and through a number of organisations. These can be shared with the rest of the region. A number of DFIs in South Africa have MoUs with other DFIs across the continent to offer training in project planning, project appraisal, research and information management.

Targeted outcome

Shared knowledge and capacity building between the regional economic communities.

Key milestone

2015 - 2018: Continue to cooperate with countries across the continent on capacity building programmes.

Lead and supporting departments/agencies: thedti, EDD, IDC, DBSA**.**

4. Co-operation on Standards, Quality Assurance, Metrology and Accreditation (Technical Infrastructure)

Nature and Purpose of the intervention

South Africa will work with countries in the region to strengthen cooperation and better co-ordination of technical infrastructure activities, including standards, metrology and accreditation and conformity assessment services, mindful of the fact that the development of such capacity has a long lead time.

The capacity to comply with international standards, norms and technical regulations underpins the potential for economic and industrial growth. The strengthening of technical infrastructure capacity in African countries is a precondition of industrialisation efforts and regional integration.

The dumping of cheap, sub-standard manufactured goods on African markets has sometimes led to the collapse of local industries and acted as a major barrier to industrial development. Tightened standards and conformity assessment are, therefore, of great importance in preventing the influx of sub-standard and injurious products into African markets.

Targeted outcome

Improved quality and enhanced potential access of African products to export markets, as a key support mechanism for regional integration.

Key milestones

2015/16 Q4: Two pre-peer evaluations to be conducted on ENAO (Ethiopia) and MAURITAS (joint AFRAC & SADCA); peer evaluations of KENAS and SADCAS to be conducted (joint AFRAC & SADCA); peer evaluators for prioritised AFRAC scoping training needs where there are skills lacking; AFRAC to apply to ILAC and IAF for peer evaluation; updated AFRAC Strategy Plan to be developed.

2015/16 Q4: SABS to participate in the review processes for harmonisation at the African Organisation for Standardisation (ARSO).

2016/17 Q4: Peer evaluations to be conducted in 2016/17 on ENAO (Ethiopia) and MAURITAS (joint AFRAC & SADCA).

2016/17 Q4: SABS to put forward proposals for harmonisation of South African Indigenous Knowledge System standards in ARSO and SADC.

2017/18 Q4: AFRAC ILAC and IAF peer evaluation.

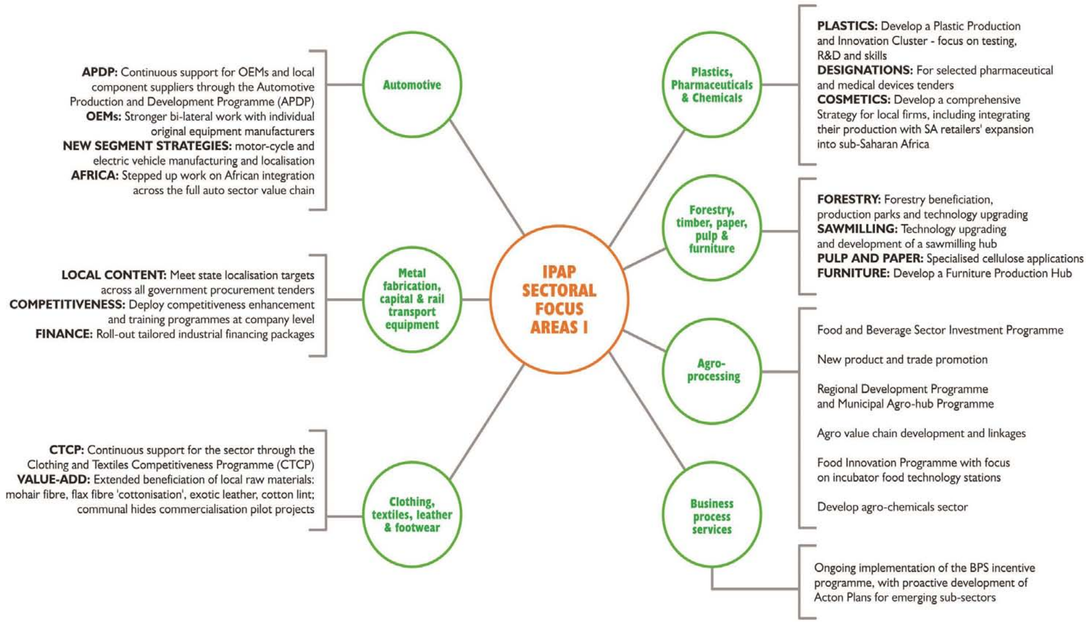
2017/18 Q4: Develop comparison programme within AFRIMETS to compare National Measurement Standards of all countries participating in the CIPM Mutual Recognition Arrangement.

2017/18 Q4: Identify relevant ARSO standards for harmonisation by SABS.

Lead departments/ agencies: **the dti**, NMISA SABS, SANAS.

SECTORAL INTERVENTIONS 1

IPAP 2015/16 – 2017/18 SECTORAL FOCUS AREAS CLUSTER 1



SECTORAL INTERVENTIONS 1

Clothing, Textiles, Leather & Footwear

Introduction

In the early 2000s, the Clothing, Textiles, Leather and Footwear (CTLF) sectors were under massive pressure. On the one hand, South Africa's opening of local markets to global competition - in line with World Trade Organisation (WTO) rules – opened the door to strong global competition from legitimate manufacturers. On the other hand, South African CTLF sectors experienced a flood of cheap and illegal imports - particularly from the Far East - which saw many manufacturing companies forced to close down their operations and/or shed large numbers of jobs. However, studies carried out during this period also highlighted the hard fact that our manufacturing entities were not globally competitive, even against legitimate competition.

At this point, government took the decision to intervene in order to save the CTLF sectors. After extensive engagements with all stakeholders, several very important interventions were implemented which, over the past few years, have begun to bear fruit.

The first intervention was the Clothing and Textiles Competitiveness Programme (CTCP) incentive, which came on stream in 2009 and which has had a significant positive impact despite ongoing challenges related to the weak state of the global economy. The programme is subdivided into the Production Incentive Programme (PIP) and the Competitiveness Improvement Programme (CIP).

Government has invested close to R 3.5 billion in the CTCP to date; of which nearly R 3 billion has already been fully transferred to the industry. The main impact of the programmes has been the stabilisation of the sectors, the saving of over 67,000 jobs and the creation of a significant number of new, decent, sustainable employment opportunities.

Through the PIP, companies have invested extensively in new technology and skills development, bringing renewed confidence back into the industry. The CIP, on the other hand, facilitated the establishment of both horizontal and vertical clusters - including both national and sub-national clusters – which now cover the entirety of the textiles and footwear value-chains, from fibre and hides to retailers' outlets.

The 37 retail collaborative clusters established include 20 ordinary clusters and 10 Individual clusters under the old programmes, plus 3 national clusters and 4 sub-national clusters under the new CIP guidelines.

The quick-response principles which have been promoted through these cluster programmes have enhanced the procurement of locally manufactured garments, footwear, leather goods and home textiles by local retailers.

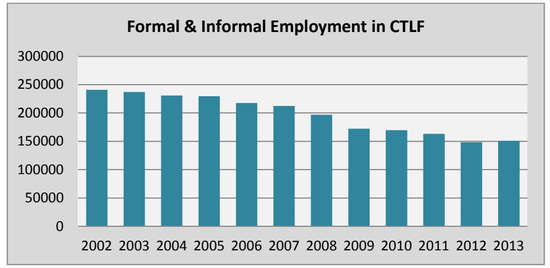
The second major intervention – which kicked in on 16th July 2012, was the designation of CTLF sectors for 100% local content in state procurement tenders under the revised Preferential Public Procurement Framework Act (PPPFA). This has started showing good impact on localisation through both transversal and non-transversal tenders. Transversal public procurements from CTLF sectors through National Treasury have increased by 82% from R 264 million in 2013/14 to R 479. 6 million for 2015/16.

Sector economic data

Variable	% of Manufacturing
• CTLF GDP	4.36%
• CTLF Employment	8.20 %
• CTLF Output	6.58 %
• CTLF Wages	5.35 %

Source: Quantec

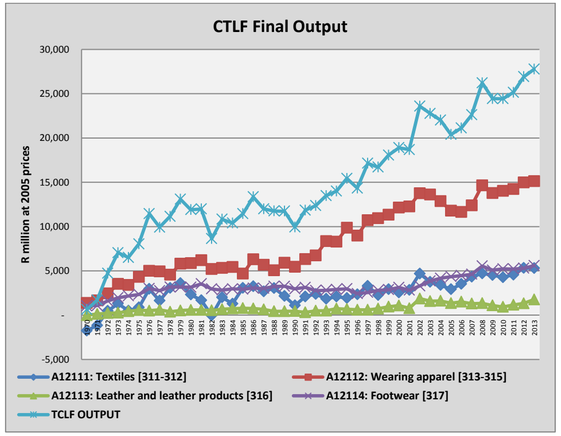
Figure 1 Employment: Formal & informal In CTLF from 2002 to 2013



Source: Quantec database

The graph above clearly shows the downward trend in employment numbers from 2002. However, it also illustrates the stabilisation achieved by 2012-13. In fact, in 2013 there was a slight increase in sectoral employment: from 148,228 people in 2012 to 150,959 in 2013 – i.e. 2,731 new jobs created.

Figure 2: Growth in CTLF annual real output from 1970 to 2013



Source: Quantec database

Real output grew by 13.93% from R 24.4 billion in 2010 to R 27.8 billion in 2013. The stability in employment and increase in the real output are clearly attributable to the positive impact of the CTCP, in conjunction with **the dti's** designation of CTLF with a local content of 100%.

Key Action Programmes

1. Clothing, Textiles, Footwear and Leather Competitiveness Improvement Programme (CTCP) Monitoring and Evaluation

Nature and Purpose of the intervention

The CTCP will be reviewed based on existing M&E mechanisms of the CIP and PIP. The review will evaluate data from the CTCP with a view to enhancing job creation, growth, stability and global competitiveness across the whole CTLF sector.

Targeted outcomes

Improved competitiveness, growth and job creation in the sector.

Key milestone

2015/16 Q1-Q4: Initial review of the impact of the CTCP, based (as noted above) on the existing M&E mechanisms of the CIP and PIP.

Lead departments/agencies: the dti.

Supporting department/agencies: IDC.

2. Support Programmes

Nature and Purpose of the intervention

- Enhance the work of the Compliance Centre at the Southern African Sustainable Textiles and Apparel Cluster (SASTAC) to combat illegal imports in collaboration with SARS.
- Collaboration with SARS to implement the Customs Risk Engine (CRE) and extend Valuation-Based Targeting through Reference Pricing to more product lines.

Targeted outcome

The CTLF forum will formulate strategies to combat illegal imports which will help level the playing field for local manufacturers. The aim is to achieve a drastic reduction of illegal imports through the programme-based approach of the Compliance Centre and joint efforts by the CTLF Forum.

Key milestone

2015/16 – 2016/17: Ongoing and targeted campaigns against under-invoicing and other illegal activities in the sector.

Lead departments/agencies: SARS, National Treasury, SASTAC and **the dti.**

Supporting departments/agencies: ITAC.

3. Beneficiation of Local Raw Materials

Nature and Purpose of the intervention

- Continuation of the 3-year pilot programme for the commercialisation of flax fibre cottonisation, funded through the Employment Creation Fund.
- Beneficiation of mohair fibre through the Mohair Cluster.
- Crocodile and ostrich leather beneficiation through the Sub-National Exotic Leather Cluster (ELC) established at the University of Pretoria.
- Enhanced beneficiation of cotton lint through the Southern African Sustainable Textiles and Apparel Cluster (SASTAC).
- Finalisation of the Hides Export Policy.

Targeted outcomes

Enhanced training, technology demonstrations, compliance and trade facilitation in the South African CTLF value chains.

Key milestone

2015/16 Q1- Q4: Ongoing enhancement of local raw material beneficiation through rolled-out beneficiation programmes.

Lead departments/agencies: the dti, National Treasury, TCCoE-CSIR, ELC-UP.

Supporting departments/agencies: IDC, FP&M SETA, TEIs.

4. Establishment of Centres of Leather and Footwear Entrepreneurship

Nature and Purpose of the intervention

To establish Centres of Leather and Footwear Entrepreneurship at Further Education and Training Colleges (FETCs) as Public-Private Partnership (PPPs) in collaboration with the Fibre Processing and Manufacturing Sector Education and Training Authority (PF&M SETA), the National Footwear and Leather Cluster, Vaal University of Technology and University of Pretoria.

Targeted outcomes

Increased number of skilled entrepreneurs within the Leather and Footwear sector, to enhance the sector's competitiveness.

Key milestones

2015/16 Q1: Finalise funding through the **dti** ISF, FP&M SETA, SANF&LC, VUT, ELC, UP.

2015/16 Q4: Implementation of established Centres of Leather and Footwear Entrepreneurship.

Lead departments/agencies: the dti, FETC's, FP&M SETA, SANF&LC, VUT, ELC, UP.

Supporting departments/agencies: DHET, NSF.

5. Communal Hides Commercialisation Pilot Project

Nature and Purpose of the intervention

Skins and hides are a rich source of raw material in South Africa's leather value chain. Most abattoirs have partnerships with skins and hide traders who export raw skins and hides as well as low value-added semi-finished leather products.

At the same time, hides from communal cattle farmers - responsible for nearly 30 % of the country's cattle livestock - are thought to be going to waste or attracting only very low price in informal markets. These hides are a communal resource whose value would be greatly enhanced if they could be processed into tanned leather and supplied for further value addition in the labour-intensive footwear, furniture and automotive leather value chains.

The skins & hides available in the informal sector could also create business opportunities for communal entrepreneurs to act as emerging hide merchants; and the sector could be substantially upgraded by training informal slaughter operators, emerging farmers and herders to prepare hides, collect and sell them to local tanneries.

Targeted outcomes

Establishment of a Communal Hides Commercialisation Pilot and the transformation of communal leather off-take, through a joint venture between the leather industry, communal skills development facilitators and communities. The Communal Hides Commercialisation Pilot will be established in the Free State in collaboration with Midland Tannery and Impala Trading.

Key milestones

2015/16 Q1: Finalise the funding.

2015/16 Q4: Implementation of the Communal Hides Commercialisation pilot.

Lead departments/agencies: the dti. Supporting departments/agencies: SANF&LC-VUT

Automotives

Light Motor Vehicles, Medium and Heavy Commercial Vehicles, & Components

Introduction

The automotive manufacturing value chain provides significant economic growth and development opportunities hence various countries in the African continent are now developing policies to support a degree of automotive production. It is in fact, a global trend that automotive manufacturing is increasingly being shifted into developing economies.

The demise of the automotive manufacturing industry in Australia is an example of how quickly production can be shifted to other locations where an enabling policy environment exists. The closure of automotive manufacturing plants in Australia by 2017 will result in the loss of approximately 30 000 direct jobs and a few thousand more indirect jobs. It should be noted that Australia is at about 4% unemployment as compared to at least 25% unemployment in South Africa, therefore every job opportunity counts.

It should also be noted that whilst the automotive sector has in the past twenty years grown from an inward looking to a globally integrated industry, some challenges remain. There still is a challenge of transforming the industry in line with the country's empowerment policies especially focussing on enterprise development and other equity equivalent initiatives.

The recent review of the APDP has confirmed the difficulties faced by the industry in reaching the set objectives of high production volumes and increased local value addition under current and future economic conditions.

It is therefore the intention to effect a few amendments to the APDP in an effort to steer the industry towards higher volume production and increased localisation, whilst at the same time implementing other (non-APDP) interventions such as competitiveness improvement initiatives, support for new segments and an improved monitoring framework.

Medium term Action Programmes

The focus of policy interventions in the medium term will be on providing direction for the period post-2020, with an intensification of efforts to encourage further localisation of truck and bus manufacturing as well as the transformation of the retail segment and, in particular, the motor body repair industry.

Targeted outcomes and impacts

Whilst the local automotive manufacturing industry is still recovering from the effects of the 2008/9 global economic crisis, almost 100 000 people are still employed in vehicle assembly and component production as at end 2014. The Australian example cited above is a clear indication that South Africa has to continue supporting the automotive industry especially that there is overcapacity in other regions from where global demand can be serviced.

The APDP and its predecessor the MIDP have successfully positioned South Africa as a global participant in automotive production. The wider automotive sector has regularly contributed between 6 and 7% to the country's GDP in recent years, underpinning employment. Exports recently valued at more than R100 billion a year from investments of more than R24 billion since 2009.

Key opportunities

- Preferential procurement by the State;
- Cooperation with emerging automotive production locations in the continent;
- Global collaboration in supplier development;
- Localisation of selected automotive segments.

Key Constraints

- Cost and reliability of inputs such as energy and raw materials;
- General competitiveness gap with competing locations;
- Relatively small domestic market.

Key Action Programmes

1. Competitiveness improvement initiatives

Initiatives aimed at improving supplier operational efficiencies will be implemented under the auspices of the Automotive Supply Chain Competitiveness Improvement Initiative (ASCCI), a previous IPAP development.

Nature and purpose of the intervention

This intervention involves the assessment of recent and current World Class Manufacturing (WCM) initiatives with a view to improving and expanding similar interventions across the automotive value chain.

Targeted outcomes and impacts

The adoption of state-of-the-art manufacturing technologies and practices by the automotive suppliers will lead to improving competitiveness levels and opportunities to win more orders – closely associated with increased localisation and employment creation.

Key milestones

2015/16 Q1: Complete scoping exercise.

2015/16 Q2: Produce recommendations with detailed action plan.

2015/16 Q3: Supplier assessment report.

2015/16 Q4: Implementation of approved interventions.

Lead departments/agencies: **the dti.**

Supporting departments / agencies: NT, EDD, Provincial and Local Government.

2. Localisation

Nature and purpose of the intervention

This ASCCI-driven intervention involves the identification of products or component groups for localisation as well as the creation of focused Action Plans to give practical impetus to the localisation drive.

Targeted outcomes and impacts

The industry-approved localisation priorities should lead to deepening automotive manufacturing through increasing investment in the value chain, improved local value addition and employment creation.

Key milestones

2015/16 Q1: Identification of localisation opportunities.

2015/16 Q2: Identification of existing and potential blockages to the realisation of the opportunities.

2015/16 Q3: Draft Business Case for priority localisation.

2015/16 Q4: Approved Business Case and Action Plans for localisation projects/opportunities.

Lead departments/agencies: **the dti.**

Supporting departments / agencies: NT, EDD, Provincial and Local Government.

Metal Fabrication, Capital & Rail Transport Equipment

Introduction

The metal fabrication, capital and rail transport equipment cluster of sectors includes:

- Ferrous Metals
  - Primary iron and steel (flat products, long products) and related downstream industries.
  - Metal products (tubes, structural steel, extrusions and wires).
- Non-ferrous Metals
  - Primary non-ferrous (aluminium, copper, rare earth, brass, lead, tin, zinc, precious metals fabrication and related downstream industries).
  - Jewellery (gold, silver and platinum group metals).
- Capital Equipment
  - Capital equipment and machinery.
  - Engineering and allied services.
- Rail transport equipment
  - Rail Rolling Stock (locomotives, electric multiple units, wagons, and coaches).
  - Rail Infrastructure (signalling, perway, and overhead electric transmission).

The metal fabrication, capital and rail transport equipment cluster of industries forms an important component of any industrialisation path; and is a key driver of the manufacturing sector's overall competitiveness. These industries are at the centre of economic development because they produce products, applications and services used across the entire economy. Since the implementation of IPAP, a number of key success stories have been registered in these industries; but structural issues still persist.

Sector economic data

Variable	Contribution in 2013
Manufacturing value-add (% of GDP) • Basic iron and steel and basic non-ferrous metals • Metal fabrication, capital and rail transport equipment	R24.5 billion (1.4%) R44.5 billion (2.5%)
Manufacturing employment (% of Manufacturing) • Basic iron and steel and basic non-ferrous metals • Metal fabrication, capital and rail transport equipment	65,272 (5.7%) 278,635 (24.3%)
Trade balance: • Basic iron and steel and basic non-ferrous metals • Metal fabrication, capital and rail transport equipment	R195 billion -R149.7 billion

Source: Quantec

Key Opportunities

- The public infrastructure-build programme, both in the local and the African economy, remains the single largest opportunity to stimulate the industry.
- Mining turnkey projects in South Africa, the rest of Africa and South America.
- Opportunities to extend value chains through further downstream manufacturing initiatives, turning the lack of maturity in existing South African beneficiation chains into a strength.
- Taking advantage of the APDP to create additional opportunities for metal-component manufacturing.

Key Constraints

- Supply and availability of energy; rising energy (electricity and gas) costs – impacting particularly on the smelting industries (e.g. steel mills and foundries).
- Availability and costs of key intermediate inputs (particularly steel; aluminium; and scrap metals).
- Availability and reliability of rail and associated high logistics costs.

- Weak understanding of - and/or unwillingness to comply with - localisation programmes.
- Higher tariffs and non-tariff barriers in potential export markets.
- Downward tariff pressures on a number of value-added products, which is resulting in a surge of imports, particularly in low-value and high-volume manufactured goods.
- Insufficient dedicated funding support to make the industry more competitive in both domestic and export mega-projects.
- Complex regulatory requirements and imperfect inter-governmental integration.

Key Action Programmes

1. Response to government target of 75% local content across government procurement: Designation and Localisation

Nature and purpose of the intervention

The current administration has committed to achieving 75% local content across public procurement. This strategic intent can only be achieved if the infrastructure-build programme – which consumes the majority of products from the metal fabrication, capital and rail transport equipment cluster of industries – can be fully leveraged and the procurement instruments used optimally.

This KAP will reinforce, complement and re-evaluate localisation programmes, including designations, which have already been implemented for the past 4 years. During 2014/15 the necessary technical work was completed on transformers, large-bore conveyance piping and rail signalling. Localisation targets have been prioritised for forward communication into the market.

Targeted outcomes

Optimised localisation opportunities presented by the state infrastructure programmes; reduced import leakage; increased investments in key manufacturing processes and activities for supply into the domestic market; capture of significant after-market opportunities; contribution to the revival of lost manufacturing capacity; increased employment and exports.

Key milestones

2015/16 Q1:	Finalise designation process, including instruction notes for transformers and associated equipment.
2015/16 Q2:	Finalise designation process, including instruction notes for rail signalling equipment.
2015/16 Q2:	Finalise designation process through revisions on the power pylon instruction notes to include monopoles, line hardware and steel structures.
2015/16 Q4:	Industry analysis for possible designation of fabricated structural steel finalised.
2016/17 q1:	Industry analysis for possible designation of small tubes and pipes finalised.
2016/17 q2:	Industry analysis for possible designation of pumps finalised.
2016/17 Q4:	Preliminary report on the localisation of the PRASA rail signalling contract for Gauteng North.
2017/18 Q1:	**The dti** to review the rail rolling stock components designated under the PPPFA and make adjustments to the levels of local content and components.

Lead departments/agencies: **the dti** and EDD.

Supporting departments / agencies: NT, DPE, DWA, Eskom, Transnet, PRASA.

2. Continued competitiveness enhancement programmes deployed at company-level, together with dedicated training

[Under the National Foundry Technology Network and National Tooling Initiative Programmes]

Nature and purpose of the intervention

The near-terminal decline of the tooling, casting and forging industries over the past 30 years has led to serious knock-on effects for the performance of the manufacturing sector as a whole. This dire situation compelled **the dti**, the tooling and foundry industries to embark on two major rehabilitation initiatives: the Intsimbi National Tooling Initiative (NTI) and the National Foundry Technology Network (NFTN). These interventions have culminated in the successful development and implementation of the dedicated skills development and enterprise development programmes.

The NTI and NFTN include multi-year programmes aim to put the tooling and the foundry industries on a trajectory that will enable them to successfully support the local manufacturing sector and produce tooling, casting and forgings competitively for global markets – at the same time addressing the age-gap and transformation deficits that still exist in these industries.

In this IPAP, we will build systematically on the foundations laid and the successes so far achieved by the NTI and NFTN. These included:

- The launch of the first computerised numerically-controlled laboratory as a tooling centre of excellence at NECSA in November 2014;
- The new Tooling Trade Test piloted by QCTO and NAMB during FY 2014/15; and the associated uptake of 205 students who have qualified to undertake the test;
- The more than 300 foundry workers who have been trained on various technical foundry courses; and
- The 10 foundries that have been participating in various enterprise development initiatives.

Targeted outcomes

Reduce import leakage; increased human skills capacity; promotion of investments in key manufacturing processes and activities; growth of employment opportunities.

Key milestones

2015/16 Q1:	10 young foundrymen/women enrolled into the second phase of the New Foundry Generation Forum programme aimed at developing future managers and addressing the 'ageing skills' challenge in the sector.
2015/16 Q2:	Launch of KZN Tooling Centre of Excellence.
2015/16 Q1–Q4:	250 workers trained on the formal foundry qualifications (NQF 2 – 4).
2015/16 Q1–Q4:	20 foundries assisted under the competitiveness improvement programme aligned to the localisation programme.
2015/16 Q1- Q4:	500 students enrolled on the different levels of the Tool, Die and Mould Apprenticeship Programme.
2016/17 Q1–Q4:	200 workers trained on the formal foundry qualifications (NQF 2 – 4).
2016/17 Q1–Q4:	20 foundries assisted under the competitiveness improvement programme aligned to the localisation programme.
2016/17 Q1- Q4:	300 students enrolled on the different levels of the Tool, Die and Mould Apprenticeship Programme.
2017/18 Q3:	**dti**-NTI Artisan Skills Development Partnership Programme project closeout report.

Lead departments/agencies: **the dti.**

Supporting departments / agencies: DHET, DST, CSIR, DEA.

3. Address costs and access to key intermediate inputs

Nature and purpose of the intervention

Key challenges to the metal fabrication industry remain access to and costs of key intermediate inputs, especially on steel flat products and scrap metals. The structural issues in these intermediate sectors continue to be a hindrance to the industry's competitiveness in both domestic and global markets.

To this end, a number of interventions have been deployed, including proposals by the Inter-Departmental Task Team on the iron-ore and steel value chain and the price preferential system on scrap metals by ITAC; but these have not yielded the desired outcomes, pointing towards the need for a deepening of policy instruments to address market failures.

Targeted outcomes

Reduced costs and increased access to raw materials by the foundries, steel mini-mills and non-ferrous metals secondary smelters; thereby increasing both value addition and sector competitiveness.

Key milestones

2015/16 Q2: Development of a comprehensive Steel Industry Position Paper to consolidate government's objectives and interventions in the iron and steel value chain.

2015/16 Q3: Policy positions to improve the current regulations on scrap metal; including re-submission of the Export Tax Proposal to National Treasury for implementation.

Lead departments/agencies: the dti.

Supporting departments / agencies: EDD, NT, IDC, DPE, ITAC.

Agro-processing

Introduction

South Africa's R 49 billion agro-processing sector plays a significant role in terms of job creation and sustainability in the economy. Despite the continued ripple effect of the 2008 economic meltdown, food processing continues to be resilient and it is one of the largest manufacturing sectors by employment. It presents key opportunities in the global value chains in the food and freight industries, with an estimate of 207,893 jobs in the 3rd quarter of 2013 – this against a backdrop of job losses in other parts of the sector. Agro-processing is also significant in value-addition terms, as it contributes a significant component of total manufacturing value-added. Both the New Growth Path (NGP) and National Development plan (NDP) identify agro-processing as a sector with high growth potential to help realise overarching macroeconomic objectives.

A key characteristic of the agro-processing sector is its strong upstream and downstream linkages. Upstream, the sector links to primary agriculture across a wide variety of farming models and products. Downstream, agro-processing outputs are both intermediate products (to which further value is added) and final goods that are marketed through wholesale and retail chains. It also supplies a diverse array of restaurants, pubs, shebeens and fast-food franchises. The 'organic' link with primary agriculture makes agro-processing critical for employment creation and poverty eradication.

The agro-processing sector is defined in statistical terms by the food-processing and beverage manufacturing sub-sectors only.

Sector economic data

Variables	Contribution in 2014
Agro-processing (% of GDP in manufacturing)	R14.7bn
Agro-processing employment (% of Manufacturing)	255,375
Trade balance	R8.8 bn

Sources: Quantec and StatsSA

Key opportunities

The agriculture and agro-processing value chain is defined by a sizeable labour/capital ratio L/C of (1:5.54) which makes it an important source of labour-intensive growth. South Africa is a very active participant in the global food chain, offering employment not only in the domestic economy but to a large number of international industries in the cold chain, freight and food industries. In addition, this value chain is central to Government's rural development and smallholder farmer development objectives.

The agro-processing sector's economic performance is closely related to the overall rate of economic growth in South Africa and key export markets. Export-focused sub-sectors such as horticulture and aquaculture are in the short term likely to experience stagnant or slow growth in traditional export markets such as the EU and the US. Meanwhile, substantially more attractive opportunities are likely to be found in Asia and sub-Saharan Africa, where the combination of positive growth rates and rapid urbanisation is creating significant opportunities for the export of middle-income consumer products.

The Middle East and BRICS continue to represent important new markets for upper-income consumer products such as confectionery, fruit juices, indigenous teas, fruits and wine. The wave of new trade agreements will allow us to capitalise on the increase in trade in middle-income products and to move the focus from individual product trade into broader developmental programme trade.

Key opportunities in the agro-chemicals and biotechnology sector will enrol South Africa into the world research fraternity, due to our unique indigenous active ingredients and products such as concentrated Rooibos, Hoodia, Pelargonium and Marula fruit. The drive for investment in the nanotechnology sector will enhance both the paper and pulp sector and allow South Africa to lead in the pharmaceutical and nutriceutical sub-sector.

South Africa's agro-processing sector has the potential to generate an industrial impetus that can create jobs and answer some of the macroeconomic questions such as balance of payments (BOP) generated by the current import/export gap. The processing of cassava into starch - which has a myriad of applications in confectionery, sweeteners, textiles, paper, animal feed and alcohol production - is one such opportunity. Currently, supplies of cassava are sourced and imported from South East Asia; but with appropriate investment, planning and support, this situation can potentially be reversed.

Recently the Department of Energy announced that as of October 2015 it will be mandatory to blend 2% of locally produced bioethanol into petrol. Sorghum and soybeans will be used as the biofuels and biodiesel feedstock respectively.

This will potentially create a R 15 billion per year bio-fuels industry with a second-order effect of 15,000 to 18,000 direct jobs in the various agricultural value chains alone. The inclusion of sugarcane as a feedstock will enable one of South Africa's traditional industries to generate investment in new value chains which will be linked to new opportunities for the exporting of final product into the European market - further allowing South Africa to diversify its agri-export portfolio.

Constraints

Given the diversity of the sub-sectors that make up the agro-processing sector, the constraints are relatively sector-specific. Export-focused producers in the wine and spirit, fresh and canned fruit, indigenous tea, fresh flowers, confectionery, processed food, fruit juice and aquaculture sub-sectors face constraints that are related to developed-country trade policy – including subsidies, tariffs and sanitary and phyto-sanitary standards (SPS). This necessitates more sophisticated export intelligence, better export marketing, more visible South African 'presence', and dynamic product innovation and customisation to fight for market share in the developed economies. At the same time, producers primarily focused on supplying the domestic market – such as soybean processing, fruit juice, processed vegetables, confectionery, meat and processed food sub-sectors – currently face heightened competition from imports.

Import competition is particularly severe in the meat, frozen vegetables, wheat, pasta and confectionery sub-sectors. Increased import penetration has coincided with rising domestic cost pressures resulting from a range of production inputs, including electricity and water, road transport, fertiliser and seed costs. The resulting margin squeeze has led to some employment losses, increased labour strikes, and under-investment in productivity-enhancing measures and plant-level maintenance.

The dti will address these constraints on a sub-sector basis, focusing on developing comprehensive interventions that will include (where applicable) a mix of trade measures, support for local procurement, financial assistance for productivity-enhancing investments, financial assistance for the development of competitive clusters and appropriate infrastructure development.

The Agricultural Policy Action Plan (led by the Department of Agriculture) will address the productivity enhancement programme and will focus on the linkages between agriculture and agro-processing. The forestry sub-sector – which offers significant opportunities in non-timber based products and afforestation that can create substantial employment - has to cope, however, with the challenge of limited water

resources. Overcoming this challenge will require innovation and a new agricultural production approach that uses precision engineering solutions as a method of growing the sector. Further moves towards more clearly defined trade frameworks and export promotion initiatives focussed on supporting small businesses will allow **the dti** to collaborate with all spheres of government to upscale the work during the 2015 -2018 IPAP period.

South African products hubs: targeted shared infrastructure programme

Food agri-hubs/clusters are the future of the food sub-sector, and have strong potential to contribute to socio-economic rebalancing in South Africa. More than half of the population is food insecure, mainly due to limited access to fresh and nutritious food. The need for sustainable food production is enhanced by the growing population and high levels of HIV-prevalence in many South African communities.

The hub aims at stimulating the local economy and creating employment opportunities. It will optimise the use of current natural resources in the region and develop skills through agribusiness and food processing – primarily by creating a central processing and marketing company. This will be supplied by out-growers and supported by localised distribution hubs that run through local pack-sheds in selected and approved sites within the hub. The focus will be on promoting entrepreneurship for increased economic activity and addressing issues such as lack of business management support, poor production systems, lack of markets access and access to support systems, investments and financial services.

Opportunities

Geographically, the hubs/clusters will be located in rural township areas with little or no meaningful economic activity, bringing in real opportunities for sustainable rural development.

Constraints

One of the major challenges for the manufacturing industry, particularly in this region, is the ongoing trend towards steep increases in agriculturally-based food prices. A recent World Trade Organisation (WTO) study confirmed that food manufacturing sectors such as canning, dairy, beverages and tobacco, distilleries and wineries, grain products and animal feeds are most likely to be negatively affected by price increases in the agricultural sector.

The results from this study also confirmed the linkage between price increases in primary agricultural products and a generally higher cost of living – particularly, of course, for poor African and coloured households in rural areas.

Capacity and access issues: More than 150 small agricultural businesses are currently facing challenges of SARS non-compliance and inadequacy of marketing materials. Likewise, emerging fishermen are faced with limited resources (inability to finance their own boats and upgrade their equipment) and are often unable to access the necessary fishing rights to allow them to pursue their fishing activities legally.

Key Action Programmes

1. Establishment of the targeted shared infrastructure programme through the SA products hub

Nature and purpose of the intervention

The hub will include shared facilities and services (e.g. transport, storage and packaging) built explicitly for the processing of agricultural products earmarked for export markets.

Targeted outcome

The establishment of the hub will create a shared space in which produce can be marketed internationally. It will also help farmers who are in the same sector to benefit from bulk procurement of inputs. The establishment of a canola processing plant within the hub – drawing on the canola that is already being produced in the area - will enable the farmers to process their canola into oil for export markets, thus stimulating both growth and employment creation.

Key milestones

2015/16 Q2:	Identify the location of the hub and identify targeted beneficiaries of the hub.
2015/16 Q3:	Appoint the service provider to develop the e-centre for the targeted export programme for the SA products hub.
2015/16 Q4:	Launch the e-centre for the targeted export programme for the SA products hub.

Lead departments/agencies: the dti, EDD and Cape Agulhas Municipality.

Supporting departments/agencies: DAFF.

2. Establishment of a pilot domestic agri-business hub

Nature and purpose of the intervention

The agribusiness cluster includes shared facilities and services (e.g. transport, storage and packaging) that allows for the provision of common infrastructure facilities where enterprises gain advantages through co-location. This will also entail building the processing factory which will allow the cluster to sell processed food into the local market.

Targeted outcomes

The agribusiness cluster will stimulate the local economy, create employment, optimise agricultural potential and agri-processing by creating a central processing and marketing hub, supplied by out growers and supported by localised distribution hubs run through local pack-sheds in selected and approved sites within the project area.

Key milestones

2015/16 Q1:	Undertake market analysis for the products to be processed (vegetables, moringa and poultry).
2015/16 Q2-Q3:	Facilitate the development of a design for the agri-village.
2015/16 Q4:	Undertake a syndication exercise with different funding institution for the purposes of establishing a pack-house for vegetables, moringa processing plant and chicken abattoir.

Lead departments/agencies: **the dti**, LIV foundation, DAFF, KZN Provincial and Local government and DRDLR.

Supporting departments/agencies: EDD, SEDA, Jobs Fund, DFIs and Old mutual Masisizane fund.

3. Commercialisation of cassava for industrial starch

Sector profile

Cassava is a perennial woody shrub with an edible root, which grows in tropical and subtropical areas of the world. The crop ranks very high among crops that convert the greatest amount of solar energy into soluble carbohydrates per unit of area. Among the starchy staples, cassava gives a carbohydrate production which is about 40% higher than rice and 25% more than maize. It is a drought-tolerant crop that can grow on marginal soils, making it attractive to resource-poor farmers as it requires less maintenance. In additional to its use as food, its primary starch derivatives are applicable in many types of products – e.g. confectionery, sweeteners, textiles, paper, animal feed and alcohol production.

Key opportunities

In South Africa, cassava is an exotic crop grown as a secondary food staple by small-scale farmers in the Mpumalanga, Limpopo and Kwazulu-Natal provinces for local sales - and to traders in Swaziland and Mozambique. There is a total of 2 million hectares of agricultural land available for cassava production in the sub-tropical regions of South Africa. There has been an increase in the usage of cassava starch locally, with the paper-making industry being the largest users to manage-down processing costs (due to lower annealing temperature requirements), and to improve paper dry-strength and surface quality.

Current supplies are currently overwhelmingly sourced and imported from South East Asia. Adding value to local cassava for industrial applications has the potential to establish a new biomass-based industry that could greatly enhance the competitiveness of local starch-dependant companies. The estimated value of the starch market in SA is about R 1.3 billion per annum. Sappi and Mondi are the main starch users and Enterprise Foods use cassava starch in sausage and polony binding, both accounting for 60% of cassava starch utilisation in South Africa.

Key Constraints

Key economic constraints that are holding back development of the cassava industry and its potential industrial applications are as follows:

- **Skills development and technology transfer:** The rural communities who are the primary target do not possess the skills and relevant technology to grow cassava on a commercial scale. These communities also require improved business skills to manage their operations effectively.
- **Investment finance**: The roll-out of the project hinges on the availability of investment finance. The long rotations in cassava forestry require long-term capital for planting, maintenance and harvesting operations. Consequently, income streams only appear after a relatively protracted period following the initial investment. As a result, there is some reluctance to invest in the cassava forestry business.
- **Agronomic practices**: As much as cassava is cultivated in South Africa, it has never been carried out on a serious commercial scale; and, as a result, there exist no reliable, scientifically proven data on the optimal performance characteristics of cassava in significantly different geographic regions. The current cultivars with are deemed to be fit for the South African geography have also not been properly tested on the ground.
- **Commercial potential vs subsistence realities**: Most of the land that would be required for cassava production at scale is currently used for self-sustenance practices. Despite the commercial opportunity that may be presented by cassava as an industrial starch crop, convincing the communities to change their practices may prove to be a delicate and challenging task, involving fully convincing them that making the switch would not involve intolerable risk to their already precarious livelihoods. (See also 'Agronomic practices' above, for the risk dimension).

Nature of the intervention

Supporting rural communities owning land with potential for cassava cultivation and the roll-out of field trials to scientifically determine if the crop can indeed be grown on a commercial scale as a feedstock for industrial starch production.

Support will be in the form of:

- Providing capacity to communities on how to grow and manage the crop.
- Funding the feasibility study.
- Assisting with business plan development to apply for investment capital.
- Providing skills and technology for cassava production and management.
- Leveraging financial support for the development of a cassava processing plant.

Economic rationale

To stimulate the supply of cassava as a raw material with the specific purposes of establishing processing capabilities within the domestic economy and stimulating import replacement. This has the potential to create about 10,000 jobs at both plantation and value-adding levels.

Targeted outcomes

Commercialisation of cassava as an industrial crop, leading to growth and resulting in sustainable market-driven industry employment opportunities.

Key milestones

2015/16 Q1: **The dti** and TIA to conduct a bankable feasibility study on cassava production in South Africa.

2015/16 Q2,-Q4: **The dti** and TIA facilitate to pilot cassava production in KZN.

Lead departments/agencies: **the dti** and TIA.

Supporting departments/agencies: DAFF, DST, DRLRD, NEF.

4. Development of small-scale dairy processors

Sector profile

The dairy sector in South Africa contributes substantially to the country's employment rate. In 2006 there were 4,184 raw milk producers who provided job opportunities for more than 60,000 farm workers, also providing 40,000 people with indirect jobs within the milk processing value chain.

Currently the actual number of dairy producers is 1,961. This indicates a serious declining trend in producer numbers, a concerning factor given its negative impact on food security and employment rate/job creation.

Key constraints

The number of commercial dairy farmers in South Africa has been declining rapidly. Although raw milk production has stayed more or less stable, periods of shortages and surpluses do occur.

The current shortage of milk in the country emphasises the fact that South Africa is not producing enough milk to provide the growing South African and International markets with our dairy products. Entry barriers for small-scale dairy processors to start up processing plants are high, as it is a capital-intensive industry, with many of the players lacking the necessary skills and experience to enter the secondary dairy industry.

Opportunities

- New entrepreneurial and employment creation opportunities.
- Increased trade with SADC, the Tripartite Free Trade Area and the rest of the world.
- Export trade with BRICS partners.
- Growing population coupled with increased urbanisation and per capita consumption of dairy products.
- Expansion in middle class as future consumers of beneficiated milk products – higher disposable income.
- Opening of the world market offers opportunities for utilisation of by-products of the dairy industry for manufacturing value-added products for import substitution.
- Investment opportunities in co-operatives as a driver of economic growth and social development in the dairy industry.
- Growing consumer demand for dairy products in developing countries – marketing opportunity.

Nature of the intervention

Development and facilitation of successful small-scale dairy processors in order to strengthen the domestic industry, create more entrepreneurs, increase South Africa's exports of processed milk products and help new entrants to become more competitive in the global dairy market.

Economic rationale

Demand is always higher than the current supply of dairy produce. This is mainly caused by the 'productivity gap' - lack of adequate planning, management and technical skills to grow the industry to meet effective demand.

Though higher value-added niche dairy products are currently mostly imported, an opportunity does present itself here for greater involvement of small-scale dairy product processors. There are, however, significant barriers to entry that could hamper such a development – most notably, the concentrated structure of retailing in South Africa and the substantial capital requirements for starting up new processing plants.

Targeted outcome

Increased participation, competitiveness and integration of small-scale dairy processors into the domestic dairy value chain.

Key milestones:

2015/16 Q1: Mapping of existing small-scale dairy producers towards the development of processing infrastructure.

2015/16 Q2 – Q3: Facilitation of funding requisition to develop at least 1 dairy processing investment project targeting small scale producers.

2015/16 Q4: Implement at least one small-scale dairy processing project.

Lead department: **the dti**.

Supporting Departments/agencies: DRDLR, DAFF, MPO, SAMPRO, MilkSA.

5. Development and growth of the aquaculture sector

Sector profile

Aquaculture is the fastest growing food-producing sector in the world. The most recent figures for worldwide aquaculture show that it contributes around 35% to total fish production, albeit that the contribution of aquaculture to total fisheries production varies sharply from country to country. In sub-Saharan Africa, for example, aquaculture supplies only around 3% of total fish production.

The aquaculture sector in SA is fairly new. It has profound economic potential, but its performance is currently subdued owing to a combination of various limitations such as conflicting regulations from different government departments and market access problems, both on the domestic and international fronts. Typical issues in the domestic market would relate to public awareness about aquaculture products in general. In the international space the main stumbling blocks would be NTBs, MTF clauses and tariffs. More general cross-cutting issues would be fit-for-purpose infrastructure, access to state property - i.e. dams and sea space - and access to funding.

The sector currently contributes R 1 billion to GDP and employs about 4,000 people. With the progressive lifting of existing barriers through the BFR approach (or "business unusual") the sector can in the next five years be expected to achieve significant growth, with an estimated GDP of R 3 billion and the possibility of creating 20,000 new direct jobs.

On the socio-economic front, the aspiration for aquaculture is that of a greatly transformed and inclusive sector by 2019.

Constraints

The main drawbacks that have affected the growth of the aquaculture sector include: limited access to land and water; limited skills capacity; reluctance of financial institutions to lend money to potential aquaculture entrepreneurs; inadequate market-related services; availability of production inputs (seed, feed etc.); operational costs (e.g. electricity and water); weak research and slow technology development.

Opportunities

Aquaculture offers important economic benefits to producing countries by increasing export income and reducing imports. At the micro-economic level aquaculture creates substantial opportunities for generating strong commercial returns.

In addition, aquaculture provides diversity to a country's economic base and creates demand for technology, training, extension services, infrastructure and local goods.

Nature and purpose of the intervention

The project will focus on developing and strengthening the competitiveness and employment-creating potential of the South African aquaculture industry.

Economic rationale

The aquaculture industry is particularly important from a socio-economic perspective, since it contributes to food security, improved nutrition and poverty alleviation - directly by producing food fish, and indirectly by generating employment and income for the purchase of food. The contribution of aquaculture to employment is even greater.

If multiplier effects are added, 90% of aquaculture production and processing takes place in rural and coastal communities, providing economic stability and growth where economic development options are often limited - particularly in areas where yields from wild fisheries have declined.

Targeted outcome

Consolidation and sustained/sustainable growth of the SA aquaculture sector in order to help it (through concerted state assistance programmes) to overcome its 'late starter' status and provide the resources and breathing space that will be required to make it internationally competitive.

Key milestones

2015/16 Q1-Q2: Package at least 1 investment proposal targeting new entrants into the aquaculture sector including one black industrialist in the sector.

2015/16 Q3: Project preparation towards implementation and the training of the 10 new entrants in the sector.

2015/16 Q4: Implementation and monitoring of at least 1 project commences.

Lead departments/agencies: the dti, DAFF, ELIDZ.

Supporting departments/agencies:, WCADI, ECDC, Trade and Investment KZN, KZN Growth Fund, East London and Coega IDZ, Provincial Agriculture, Economic Development and Environment Departments, Municipalities.

6. "Eat Well, Eat Safe, Eat Local" Awareness Campaign

The "Eat well, Eat Safe, Eat Local" awareness campaign is an on-going project that seeks to promote healthy eating habits and promote local products. It was implemented for the canning sector in 2013/14. In the current phase, the campaign will be expanded to include more companies.

Nature and purpose of the intervention

The project will focus on promoting and strengthening healthy eating habits, contributing to dietary habit-change aimed at reducing the level of obesity in South Africa.

Targeted outcome

Improve the uptake of healthy foods by the public and the new policy on sugar and salt reduction with food companies.

Key milestones

2015/16 Q1-Q4: Host one "Eat well, Eat Safe, Eat Local" awareness campaign in two provinces.

Lead departments/agencies: **the dti**, DoH, Department of Education, municipality and stakeholders.

Supporting departments/agencies: **the dti**, DoH, Department of Education, municipality and stakeholders.

7. Poultry Sector Development Plan

Poultry production dominates the agricultural sector and is a major source of protein-intake across the country. The poultry industry as a whole employs an estimated 107,857 people in its three main sub-sectors: broilers (35,000 people); eggs (6,000 people); chick producers (7,000 people); plus 59,739 indirect employees. The average gross value of production amounted to some R 32 bn (R 31,989,389,000) over the past ten years.

South Africa is, however, also the 7th largest *importer* of poultry meat in the world. In response to this, **the dti** will develop a strategy to develop the industry and improve its competitiveness.

Nature and purpose of the intervention

The project will focus on developing and strengthening South African poultry industry.

Targeted outcome

To improve the domestic and global competitiveness of the South African poultry meat industry whilst curbing the influx of imported meat products in which SA has a significant price disadvantage.

Key milestones:

2015/16 Q1: Consultation with the domestic and international industry, with a view to reinvigorating poultry production in South Africa.

2015/16 Q1-Q2: Develop a draft strategy within DAFF's APAP programme on the poultry production sector.

2015/16 Q3 – Q4: Consultation on the final strategy and its implementation.

Lead departments/agencies: **the dti**, DRDLR, DAFF, DPFO/SAPA, IDC, EDD.

Supporting departments/agencies: **the dti**, DRDLR, DAFF, DPFO/SAPA, IDC, EDD.

8. Halaal Parks

Islam is one of the largest and fastest-growing religions in the world. Close to 25% of the world's population is Muslim - nearly 1.6 billion people. The global halaal sector is becoming more sophisticated and consumer demand traceability is shaping the way in which food should be produced and processed. In response to this, **the dti** will facilitate development of a Halaal Products Supplier Park in South Africa.

Nature and purpose of the intervention

The project will focus on developing and strengthening the South African Halaal industry, creating more employment opportunities and enhancing the competitiveness of the sector.

Targeted outcome

Increased participation, competitiveness and integration of small-scale Halaal processors in South Africa.

Key milestones

2015/16 Q1-Q2: Signing of Malaysia Memorandum of Understanding.

Lead departments/agencies: the dti, DAFF, IDC, EDD and stakeholders.

Supporting departments/agencies: **the dti**, DAFF, IDC, EDD and stakeholders.

Forestry, Timber, Paper, Pulp and Furniture

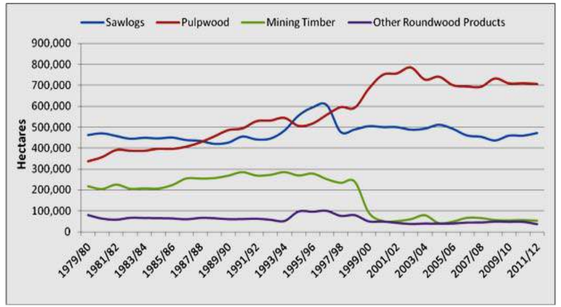
Introduction

The forestry and forest products industry contributes about R 42 billion to GDP. The timber industry contributes 7.7% to manufacturing GDP and 25.5% to agricultural GDP. The sector provides the raw material for beneficiation in sub-sectors such as pulp and paper, sawmilling, particle boards for furniture manufacturing, mining timber, construction and poles. South Africa has 1.34 million ha under forestry and the total value of timber produced in South Africa is R 6.7 billion, with associated value-adding sectors contributing a further R 20.4 billion and sales to processing plants adding a further R 17.4 billion.

Demand for timber and timber products has increased steadily, whilst supply has declined over the last few years. For the period 2005-2009, the total timber supply from 1,266,194 ha of plantation area is estimated at 20,550,761 tons p/a, with the demand estimated at 23,249,214 tons p/a - representing a deficit of 2,698,453 tons.

Approximately 56% of all the plantations are managed for pulpwood; 37% for sawlogs, 4% for mining timber and 3% for other purposes. Softwoods are managed mainly for sawlog production (70%), whilst 83% of the hardwood area is managed for pulpwood (DAFF, 2011/2012). There has been a marked decline in both softwood and hardwood plantation since the mid-1990s. There has also been a marked increase in hectares allocated to pulpwood purposes, as compared with the number of hectares allocated to sawlogs and mining.

Figure 1: Area under forests by usage



Source: DAFF 2012

The forestry sector maintained a positive trade balance, with a total value of R 19.3 billion in 2013 for exported forestry products. Charcoal, paper and paperboard, pulp, wood and wood-based articles are the leading export products, constituting around 94% of total forestry products. The sector - especially sawmilling and associated activities further down the value chain - is one of the most labour-intensive sectors of the economy. Growth in this sector could and should be instrumental in addressing one of South Africa's major challenges: chronic and persistent unemployment. Despite the huge potential, the sector faces major challenges around access to raw materials - especially for small scale sawmillers.

The region is endowed with high quality indigenous forests which - if used properly - could lead to significant growth in the region's forestry value chain. Currently, raw timber is often exported to Asian countries with very little beneficiation. What would be beneficial for the region would be the creation of regional value chains that would move products between countries in the region without negatively affecting the primary timber producing countries. From the South African perspective, this would be done through facilitation of investments in neighbouring countries of timber origin, in addition to importing timber into South Africa.

Forestry beneficiation has experienced many changes since the global crisis of 2008, with primary processing experiencing a steady downward trend, both in terms of production volumes and the number of companies operating in the sawmilling industry. The same recessive pattern has been experienced in the furniture manufacturing and paper industries. However, there has at the same time been increased demand for niche products like specialised cellulose, which is only produced for export markets.

Sawmilling sector

Introduction

The South African sawmilling industry is a strategically important segment of the greater forestry value chain. It is the oldest, most established and well-developed industry, with more than 200 enterprises producing lumber. Pine sawmilling is dominant and the structural pine market is the most important. This industry is the largest employer in rural areas. The employment trends in the industry are shown in Table 1 below. The industry's socio-economic role is recognised globally and stems from its traditional labour-intensive processes, which, by their nature, are important employment drivers.

Table 1: Employment

Sub-Sector	No. of employees		Total Employment
	Direct	Indirect	
Forestry	62,700	30,000	92,700
Pulp and Paper	13,200	10,800	24,000
Sawmilling	20,000	10,600	30,000
Timber Board	6,000	n/a	6,000
Mining Timber	2,200	n/a	2,200
Other	11,000	n/a	1, 000
Total	115,100	50,800	165,900

Source: Forestry South Africa

The sawmilling industry supplies feedstock to building and construction, furniture, joinery and packaging. Timber is a renewable raw material resource which is capable of generating its own energy requirements.

Key constraints

- **Shortage of raw material supply**: Dwindling supplies of raw timber, sizes and poor log quality pose serious threats to the sustainability of the sawmilling sector. These shortages translate into high timber prices for sawmillers, who then pass a proportion of this cost increase to downstream customers through higher sawn timber prices.
- **Keeping abreast of global technological advancements**: The pace of technological improvement and modernisation in South Africa's sawmilling industry generally lags behind most of its peer competitors. This is particularly the case insofar as the many informal small-scale sawmills are concerned, but less for the larger formal sawmills. Faced with ageing/obsolete equipment, many sawmills not only struggle to compete in the local and global marketplace, but also struggle to maintain their old technologies as it becomes increasingly difficult and expensive to access replacement parts. The modernisation of sawmills extends beyond the acquisition of new and more efficient technologies, to improving the skills base and the technical know-how of the workforce so as to extract maximum benefits from any technological improvements that are implemented.
- **Few opportunities for value-added products:** The bulk of the timber produced by small-scale sawmills is 'wet-off-saw' and mostly ungraded. These include products such as ungraded building materials: mainly purlins, rafters, roof truss materials and other construction materials. The other main output from small-scale sawmills is supplied in the form of industrial (ungraded) timber which is supplied to downstream manufacturers such as pallet producers, manufacturers of doors and door-frames and laminated products. The major reasons for not developing value-added opportunities include insufficient raw material supply at appropriate quality levels, poor productivity levels and old equipment and technology.
- **Skills shortages**: Skills shortages and limited capacity within communities pose a serious threat to the sustainability of the sawmilling industry.
- **Escalating electricity tariffs and transportation costs**: Sharp increases in electricity tariffs in recent years, coupled with higher petrol and diesel prices, have had a detrimental impact on margins across the country.
- **Unsustainable use of sawmill waste material:** Due to the use of old equipment, especially on the part of small-scale sawmillers, a huge amount of waste is generated. These entities typically do not have waste management strategies in place and as a result the waste generated is everywhere posing fire risks. With proper equipment, sawmillers can add value to the waste and sell it to downstream industries.
- **Lack of funding for forward integration into value-added products:** This limits the extent to which small-scale sawmills can develop and explore new markets.

Key opportunities

- Regional development offers a potentially sustainable supply of raw material into neighbouring countries - Moçambique and Zimbabwe being the key target countries.
- Cluster and hub development for forward integration into the production of value-added products such as furniture components, low-cost housing components, doors, windows, window frames and similar building products.
- The possibility to enter the export market with innovative products which focus on African-inspired functionality and design. This however will only be successful if small-scale sawmills are sufficiently organised to cooperate effectively to penetrate export markets.
- Small-scale sawmills have the opportunity of organising themselves into a formal Association that will act on their behalf, both with regard to securing log supplies and to capturing improved local marketing and export opportunities.
- The sector has the potential to create job opportunities in rural communities by beneficiating waste material produced and upgrading technology.

Key Action Programmes

1. Productivity improvement through technology upgrading

Nature and purpose of the intervention:

This programme is intended to assist small- and medium-scale sawmills to improve their productivity through technology upgrading.

Economic rationale

Small to medium sawmills use old technologies which make their businesses uncompetitive and unsustainable.

Targeted outcome

Improved recovery rate and competitiveness of the sawmilling industry.

Key milestones

2015/16 Q1:	**the dti** to identify and consult 4 small-scale sawmilling companies and develop an Enterprise Development Report and a company-based Action Plan.
2015/16 Q2:	**the dti** to work in collaboration with identified companies to develop action plans for the identified enterprises.
2015/16 Q3-Q4:	**the dti** to facilitate the application process for **dti** incentives relevant to the sector.

Lead departments/agencies: **the dti**.

Supporting departments/agencies: DAFF, SEDA, Fibre Processing and Manufacturing SETA.

2. Conduct a feasibility study on the establishment of a sawmill cluster (value-addition facility)

Nature and purpose of the intervention

This programme is intended to assist small- and medium-scale sawmills to improve their profitability through value-addition to their end products.

Economic rationale

Small- to medium-scale sawmills use old technology and do not add sufficient value to their products, resulting in their businesses becoming uncompetitive and unsustainable.

Targeted outcomes

Improved recovery rate; value-added products; overall competitiveness of the sawmilling industry.

Key Milestones

2015/16 Q1- Q2:	**The dti** to do a pre-feasibility study on the establishment of the sawmill cluster in the KZN, EC and in the SADC region.
2015/16 Q4:	**The dti** / RBI to present the outcome of the report to the cluster members sector, including the broader industry in the region.

Lead departments/agencies: **the dti.**

Supporting departments/agencies: DAFF, SADEC, COMESA, SACU, SEDA, Fibre Processing and Manufacturing SETA.

Furniture manufacturing

Introduction

The furniture industry is one of the established traditional sectors that accounts for a significant proportion of jobs in the industry. It currently employs approximately 29,000 people, whilst there are 2,200 registered establishments involved in manufacturing furniture, bedding and upholstery. The furniture industry is labour-intensive and contributes 0.95% to manufacturing GDP and 1.6% to manufacturing employment.

Opportunities

The furniture sector has significant potential to create employment, especially in rural areas where there is minimal alternative economic activity. There is also significant opportunity to improve productivity and competitiveness by improving skills and enhancing innovation in the sector. Cluster development offers various potential benefits: notably, economies of scale, shared infrastructure, shared and reduced input costs and information-sharing. Once recapitalised - and, crucially, with design skills upgraded - companies can also use begin to cluster development to access new markets.

Constraints

The sector is facing constraints that are holding back development and negatively affecting its competitiveness:

- Skills shortages - especially technical and high-level design skills.
- The strong influx of cheap imports and the challenge of getting retailers to buy locally-produced products. The survival of the industry will largely depend on interventions to deal with the escalation of imports and increase procurement of locally manufactured products.
- Lack of research and development to support industry growth.
- Difficulties in enforcing quality and standards measures to differentiate local furniture products from cheap low-quality imports. Although some quality standards exist, they are currently not enforceable. There is also a need to align formal standards with public procurement.
- Wood raw material supply, especially for small enterprises.

Key Action Programmes

1. Furniture Design Competition

Nature and purpose of the intervention

South Africa lacks sufficient tuition specifically geared towards furniture design, which leaves it lagging behind most major competitor manufacturers in design education. There is a serious skills mismatch between what the industry needs and what is being offered by training providers - who are typically restricted in what they can provide. The objective of this programme is therefore to ensure improved competitiveness of the industry through higher design content in domestically produced furniture.

As a way of encouraging participation in the furniture industry - and to complement the proposed course for design skills development under the Furniture Strategy Action Plan - the agro-processing unit of **the dti** ran the first Annual National Furniture Design Competition in FY 2014/15. The winners of the competition were announced in March 2015 at the Design Indaba, Cape Town. The project represents collaboration between Furntech, **the dti** Marketing Division and the SABS Design Institute. The SABS Design Institute will continue to help supply technical expertise and facilitate meetings with institutions offering design courses. Furntech will help the competition finalists to manufacture their end products.

Targeted outcomes

Skills development in the sector, especially high-level design skills, helping to address key areas of market failure, encourage specialisation and improve productivity and competitiveness.

2. Furniture Manufacturing Hub

Nature and purpose of the intervention

The project will focus on identifying all Furntech-trained individuals/manufacturers and establishing what development stage they are at (if in operation). Comprehensive needs analyses of the companies or proposed businesses will be carried out. The study will also look at the feasibility of organising the trained manufacturers into hubs and implementing recommended business models, whilst providing cost estimates of the resources needed to run the proposed models.

Economic rationale

The project will aim to develop a comprehensive package of support services for these manufacturers, including proper advisory services and financing. This will involve bringing together and coordinating existing support available from government departments and other organisations. The main aim is to package these services and ensure that they are communicated to the potential beneficiaries.

Targeted outcome

Improved competitiveness, productivity and sustainability of the trained manufacturers.

Key milestones

2015/16 Q1-Q3: **The dti** to do a feasibility study on the establishment of a Furniture Hub in South Africa.

2015/16 Q4: Implementation of pilot phase of the Furniture Hub.

Lead department/ departments: the dti / Industry/ Provincial Economic Development.

Plastics, pharmaceuticals, chemicals and cosmetics

Plastics

Introduction

The South African plastics market is well developed throughout the plastics value chain and caters for both local demand and export markets. Generally, the leading markets for plastics are in packaging, building, construction and the automotive industries. However, other industries which use some form of plastic include agriculture, textiles and electrical, electronic and mechanical engineering.

The plastics industry has been experiencing a profound downturn in demand, as it struggles to adjust to changes in the market for its products, high input costs and a rising tide of imports. Competition from advanced developing countries is having an impact on patterns of domestic demand, with cheap imports of relatively low cost value-added products causing many parts of the world's plastics industry to restructure or collapse. As a result, a number of companies have relocated their manufacturing facilities to low-cost production countries and have themselves become importers. The rising cost of the polymers used by the plastics conversion industry has made many of its customers resist the inevitable price increases that follow and led them to seek alternative sources of supply wherever possible.

The turnover for the plastics industry was estimated at R 50.4 bn in 2013, representing about 1.6% of GDP and approximately 14.3% of the manufacturing sector. The largest contribution of plastic production is to the plastic packaging market (approximately 54%). The export value of plastic products in 2013 was R 14.3 bn, as compared to an import value of R 24.3 bn - leading to a trade deficit of R 10 bn, an increase of R 2.9 bn when compared to the 2012 trade deficit.

The industry's contribution to the economy is nevertheless significant, and expressive of increasingly innovative connections with the green economy. With increased investment and technological know-how, the plastics industry in South Africa is in principle capable of undergoing a major diversification from basic to more sophisticated products.

Plastic consumption for 2013 in South Africa was 1,661 million tonnes, which indicates a per capita consumption of 29 kg. Included in the consumption figure is recycled plastic, which contributed 260,930 tonnes of recycled input material in 2013 - a 2.7% increase when compared to 2012.

The compound annual growth rate (CAGR) for the plastic industry over the next 5 years is expected to increase to about 4.8% from the 2013 growth rate of 2%. This increased CAGR can mainly be attributed to an expected increase in demand for packaged food and an expected rise in the use of plastics in the automotive industry.

There are approximately 2,000 companies in the plastic converting industry, employing 60,000 workers - each of whom, on average, converts approximately 25 tonnes of plastic polymers annually.

Sector economic data

Variable	Contribution in 2013
Manufacturing value-add	**R 5.6bn**
Manufacturing employment	**60,000**
Trade balance	**-R10.0bn**

Key highlights for the sector in the last financial year included:

- The completion of the Growth Strategy for the plastics downstream conversion industry;
- The completion of a business case for syringe manufacturing in South Africa;
- The completion of a report on the localisation of plastic pipes in South Africa.

Key Opportunities

Key areas of opportunity for growing the sector include:

- Automotive interior and exterior products;
- Food packaging;
- Medical products;
- Buildings: pipes, flooring and building sheets;
- Electrical and electronics cables, appliances and casing components.

Key Constraints

Among key barriers to growth in the plastics sector are:

- Import parity pricing of polymers and other key inputs;
- Electricity pricing and reliability of supply;
- The slow pace of technological upgrading;
- Strong competition from imports;
- (Non-) proximity to markets (and related high logistics costs);
- The relatively small size of local and regional markets;
- Skills shortages across the plastics value chain.

Key Action Programmes

1. Development of a plastics production and innovation cluster

Nature and purpose of the intervention

Cluster development in the plastics sector to deal with testing, R&D and skills. Plastics conversion plants are generally small to medium-sized, family owned businesses with no or limited R&D activities, limited testing facilities and serious skills deficits. The intervention will enable converters to develop economies of scale based on shared infrastructure, equipment and knowledge, thereby strengthening capacity to access existing and new markets.

Targeted outcomes

The key outcome of this intervention is a sustainable plastic cluster with access to markets. This will include: assisting unemployed learners to participate in accredited work programmes and acquire skills; and enhanced R&D to transform the training division into a value-added, high performance strategic partner to the industry. .

Key milestones

2015/16 Q1: Develop TOR for the cluster management.

2015/16 Q2: Development Business Plan and Marketing Plan for cluster product.

2015/16 Q3-Q4: Implementation of the business plan.

2015/16 Q4: Facilitate acquisition of resources for the functioning of the cluster.

Lead departments/agencies: the dti, EDD, Industry (Plastics SA), Provincial Departments of Economic Development and municipalities.

2. Promotion of the integration of plastics products in identified key sectors and cross-cutting areas

Nature and purpose of the intervention

Collaboration between the plastics sector and other major industrial sectors in which plastic products contribute more integrally to their production processes. Sectors identified for this financial year include automotives, medical devices, construction and rolling stock.

Targeted outcomes

The intermediate nature of plastics products as components in other manufacturing processes means that the sector needs to be positioned at the centre of industrial strategies that are cross-cutting in nature in order to benefit from the substantial knock-on effects - including growth - generated by other sectors. Hence: increased demand for plastic products through better integrated supply chains and increased localisation in many of the inter-connected sectors. The key outcome of this intervention can therefore be summarised as enhanced integration of key intermediate plastic products into other industrial sectors' production and value-adding processes.

Key milestones

2015/16 Q1: Stakeholder engagement of key sectors.

2015/16 Q2: Identify key opportunities for integration of plastics with other sectors.

2015/16 Q3-Q4: Implementation of identified opportunities.

Lead departments/agencies: the dti, EDD, DST, Industry (Plastics SA), Provincial Departments of Economic Development, ASCCI, DAC, PRASA, IDC, Metropolitans and Municipalities.

Pharmaceuticals and medical devices

Introduction

Estimated at US $ 4.2 bn (R 45 bn) at the ex-factory price level in 2013, the South African pharmaceutical market is the biggest on the African continent. Putting this into perspective, however, it accounts for just 0.4% of the global market.

Nevertheless, with regard to regulatory standards and the quality of manufacturing facilities, the South African pharmaceutical sector is among the world's most advanced. The South Africa healthcare sector is comprised of two distinct segments: public and private. The differences and disproportionalities between the public and the private healthcare sectors - serving 42 million and 8 million South Africans respectively - are also reflected in the pharmaceutical market, with the former accounting for 35%, and the latter 65% of the market by value. Over the medium to long term it is intended that the two healthcare segments will gradually be merged into one, under the National Health Insurance (NHI) Programme, which started on a pilot scale in 2012 and is expected to be completed by 2025.

The South African pharmaceutical sector is characterised by high import penetration, estimated at 65% - including the active pharmaceutical ingredients (APIs). Imports of pharmaceuticals, excluding APIs, were R 22.0 bn in 2013. The two largest groups of imports were pharmaceuticals in finished-dosage form (at R 17.5 bn) and vaccines, biologics and blood fractions (at R 2.9 bn).

South Africa's own exports of pharmaceuticals amounted to R 1.6 billion in 2013, of which more than half went to countries with the world's highest regulatory standards, including the USA, the EU and Australia. Exports to Africa are far below the industry's actual potential, due to an absence of harmonisation of regulatory affairs within SADC and Africa, various tariff and non-tariff barriers and competition from low-cost, often sub-standard pharmaceuticals of dubious origin flooding the markets of many African countries (with the notable exception of South Africa).

The South African pharmaceutical manufacturing base comprises 23 plants, the largest (Aspen-Pharmacare and Adcock-Ingram) owned by SA capital. Aspen is the largest pharmaceutical company in the Southern hemisphere and the world's 6th largest generic manufacturer. Its Oral Solid Dosage (OSD) facility in Port Elizabeth has formulation capacity of 12 billion units (tablets and capsules) per year.

Sector economic data

Variable	Contribution in 2013
Pharmaceuticals – SA market	R 45 bn (US$ 4.2 bn)
Pharmaceutical sector employment	9,500 in the industry (incl. admin staff) 25,000 downstream (specialised logistics, retail and hospital pharmacies)
Pharmaceutical exports	R 1.6 bn (incl. R 1.27 bn. under TH 30.04)
Pharmaceuticals - Trade balance	R 20.4 bn (Chapter 30 Pharmaceuticals – including R 16.2 bn (TH 30.04 – finished pharmaceutical products) Active pharmaceutical ingredients (APIs): Estimated R 5 bn
Medical devices – SA market	R 13.4 bn (US$ 1.22 bn)
Medical devices – trade balance	R 9.98 bn
Medical devices - employment	Total 20,000 including manufacturing, marketing and sales, servicing, providing specialised laboratory & diagnostics services.

Transnational corporations (TNCs) dominate the South African private sector market, but their contribution to domestic manufacturing is disproportionately lower.

TNCs with manufacturing operations in South Africa include Fresenius-Kabi, GlaxoSmithKline (GSK), Johnson & Johnson, Merck Sharp & Dohme (MSD), Sandoz and Sanofi-Aventis. The Indian companies manufacturing in South Africa are represented by Cipla, Ranbaxy and Portfolio Pharmaceuticals. India is the largest supplier of pharmaceuticals to South Africa, both in the finished-dosage form (imports to the value of R 3.97 bn in 2013) and APIs, especially ARV APIs. While pharmaceuticals (primarily generics) imported from India are yet to establish prominent positions in the private sector, they account for over 65% of the public (government tender) market where they compete with South African generic medicines.

Imports of pharmaceuticals from India grew by 64% year-on-year from R 2.42 bn in 2012 to R 3.97 bn in 2013 - a paradoxical situation considering that many South African generic manufacturers operate at less than 50% capacity.

The virtually total reliance on imported active pharmaceutical ingredients is the "Achilles heel" of the South African pharmaceutical industry. The only domestic API manufacturer, the Fine Chemicals Corp. in Cape Town (a subsidiary of Aspen-Pharmacare) supplies less than 5% of South Africa's API requirements. So far, attempts to start domestic manufacture of advanced APIs, including those for ARVs ("Project Ketlaphela") and anti-TB medicines have not been successful, chiefly due to (i) the absence of vertical integration into domestic manufacture of fine chemicals and intermediates for API synthesis; and (ii) competition from large, established, perfectly horizontally and vertically integrated API manufacturers in India and China.

Imports of APIs present an increasing financial risk and burden to the domestic pharmaceutical manufacturers due to the volatility of the South African currency and the inflexible mechanism for price adjustment (the Single Exit Price, SEP, in the private sector, adjusted once a year, and the Health Department's tender prices, adjusted six-monthly). These factors, combined with low capacity utilisation and the loss of government tenders to imports, has negatively impacted on the financial situation of most South African pharmaceutical manufacturers in 2013 and 2014 (Adcock-Ingram, for example posting a loss of nearly R1 bn over the first three quarters of 2014).

The South African human-grade vaccine project (Biovac) is seriously delayed, due to a multitude of reasons ranging from technology barriers to securing finance. The positive development in the sector is an extensive R 490 million upgrade and expansion of the veterinary-grade vaccine facility (the OBI in Onderstepoort, Pretoria).

In the nuclear medicine area, South Africa became the world's leading manufacturer and exporter of isotopes for medical diagnostics, such as Mo-99, made in the Safari reactor at the NTP in Pelindaba, with annual revenue of R 900 million, of which 95% was attributable to exports.

The South African medical devices sector (which includes medical diagnostics) was estimated at US $ 1.3 bn (R 14.3 bn) in 2013. It involves over 200 companies, most of them with only sales / marketing and servicing operations. The import penetration of the South African medical devices sector is over 90%.

Domestic manufacturing of medical devices ranges from simple products such as condoms and "medical textiles' – bandages, plasters and sterile wound dressings - through wheelchairs, stents and implants for head and limb surgery – to the world's technologically most advanced full-body X-ray scanner ("Lodox").

Currently, only a few categories of medical devices are regulated by the Medicines Control Council (MCC). This has led to an uncontrolled flood of cheap, often sub-standard imported products. At the same time, the export potential of South African medical device manufacturers has been affected by the absence of domestically-based, internationally-accredited inspection and certification bodies. The situation is expected to radically improve following the entry into force of new Medical Device Regulations (draft published for comments on 22 April 2014). The current version is still undergoing fine-tuning with the broad participation of industry, academia and medical practitioners, in order to avoid regulatory backlogs akin to these affecting the pharmaceutical sector).

Jointly, medical products - i.e. pharmaceuticals, medical devices and medical diagnostics - are the 5th largest contributor to South Africa's trade deficit. Unless this situation is urgently addressed, it may delay or seriously jeopardise the entry into effect of universal healthcare coverage (the NHI programme).

Key Opportunities

Key opportunities for growing the pharmaceutical and medical devices sectors include:

- Increasing participation in Health Department tenders - reaching an agreement with the DoH, the National Treasury and the domestic industry regarding the rules of designation of pharmaceutical tenders in the 2015-2016-2017 tender cycle;
- Expanding the range of generics manufactured in South Africa, taking advantage of the "Patent Cliff" (pharmaceuticals with global sales of US$ 200 bn losing patent protection in 2013-2014-2015);
- Starting the domestic manufacture of advanced generic biological medicines, including the newly off-patent oncology and anti-auto immune diseases products, under licence and/or with foreign investors;
- Expanding regional co-operation and exports of medical products to SADC and the rest of Africa.

Key Constraints

Key barriers to growth in the pharmaceutical and medical devices sectors are:

- Segmentation and small size of the domestic market; absence of protection of the domestic market (by tariffs, for pharmaceuticals; by tariffs and regulatory requirements, for medical devices), while facing such entry barriers to export markets.
- Absence of preference for domestic manufacturers in government tenders; importers exploiting the gaps and ambiguities in the new Preferential Procurement Regulations; "designations" unable to offset for the loss of statutory points for local content.
- Regulatory delays, delaying the entry of new, attractively-priced products, and limiting flexibility as to the sourcing of APIs and raw materials.
- The high degree (>95%) of reliance on imports of APIs and raw materials, components for medical device assembly etc. - exacerbated by the volatility of the Rand.
- The fact that current local investment incentives are far less attractive than those offered by countries competing for investment in pharmaceuticals and medical devices.

Key Action Programmes

1. Development of industrial strategy for the medical devices sector

Nature and purpose of the intervention

- A jointly-developed and accepted document (by government, industry, labour, academia, NGOs) to guide the South African medical devices sector to optimise its manufacturing and trade, meet Government's healthcare priorities (including the National Health Insurance) and gradually reduce the sector's trade deficit.
- Design a set of sector-specific economic and regulatory interventions to fully exploit the economic potential of the South African medical devices sector.

Targeted outcomes

- Optimised quantum and structure of imports, exports and domestic manufacturing base of medical devices.
- An environment (economic, legislative, regulatory etc.) conducive to sustainable growth of the sector.
- Rapid technology progress in the global medical device industry to the full benefit of the SA economy.

Key milestones

2015 Q1-Q2: Discuss the objectives and the Terms of Reference for the industrial strategy with all key players (Government – DoH, **dti**, DST, NT, EDD) regulatory bodies (MCC/SAHPRA, SABS, SANAS), financial institutions (IDC, DBSA), industry, labour, academia and NGOs. Adopt the objectives and the ToR for the Strategy.

2015 Q1–Q3: Establish and implement compulsory standards for the 1st group of medical devices procured by the State (Phase 1: 44 line-items; lead Department: the National Treasury).

2015 Q3 - Q4: Adopt the 1st draft of the Strategy (Q3). Finalise and adopt / endorse the Strategy (Q4)

2016 – 2017: Implement, monitor progress and (where necessary) fine-tune the Strategy.

Lead departments/agencies: **the dti,** DoH, MCC / SAHPRA, SABS. For the industry – SAMED.

Supporting departments / agencies: NT, DST, EDD, MRC, CSIR, SANAS, academia.

2. Optimising public sector procurement of medical consumables (Pharmaceuticals, medical devices)

Nature and purpose of the intervention

A jointly-developed and accepted document (government and industry) to optimise the Preferential Procurement Regulations, removing the gaps and ambiguities that create the potential for perversities; agreement on a set of rules to fully exploit the manufacturing potential of the South African pharmaceutical and medical devices industries; meeting the conditions imposed by budgetary constraints and ensuring security of supply of pharmaceuticals and medical devices.

Targeted outcomes

- Removing internal barriers to growth in the South African pharmaceutical and medical devices industries by increasing their participation in public sector procurement.
- Reducing the sectors' trade deficit.
- Attracting domestic and foreign investment.
- Preserving existing jobs and creating new employment opportunities.
- Creating an economic base enabling the implementation of the National Health Insurance Scheme.

Key milestones

2015 Q1-Q3: Analysis of the pharmaceutical and medical consumables ("medical textiles" and condoms) tender awards before and after the entry of the new Preferential Procurement Regulations (Dec. 2011). Identifying the shortcomings of the current tender designation system.

Identifying the unutilised potential of the industry and the losses to the economy vis-à-vis the achieved budget savings.

Analysing the delivery performance of South African manufacturers vs. importers; and fully understanding the factors affecting this performance.

2015 Q2-Q4: Undertaking a joint (**dti**, NT, DoH, EDD, industry) updated and sector-specific cost-benefit analysis to calculate the maximum price premium for domestic pharmaceutical manufacturers that brings revenue-neutral outcome to the SA economy. Presenting the results and recommendations for endorsement by the Ministerial Economic Cluster.

2015-2017 Collecting data and conducting economic analysis for all pharmaceutical tenders (domestic manufacturing capacities, cost of manufacture); submitting tender designation analysis to the relevant Departments and Ministers.

Lead departments / agencies: **the dti,** DoH, NT. For the industry: all SA pharmaceutical manufacturers and associations).

Supporting departments / agencies: DST, EDD, IDC, MRC.

Cosmetics Sector

Introduction

The Cosmetics sector is comprised of mass-market and premium-market segments. These markets are differentiated in terms of pricing dynamics, with the premium market dominated by lower volume and higher margin sales. Companies depend on the symbolic construct of "brand" in the minds of consumers – a set of images, expectations and projected 'lifestyle-identities' associated with the products or services they provide. Brand development and maintenance involves massive investments in advertising, with the systematic deployment of brand ambassadors and branded events over many years. With respect to branding and market segmentation, the emerging global trend is that branding for the premium market is less about information and more about aspiration, prestige and exclusivity; whereas branding in the mass market focuses more on functionality, effectiveness and affordable quality. As a result, branding as a barrier to entry is lower in the mass market than in the premium market.

Innovation is key in the sector and is viewed as the lifeblood of the success of any modern cosmetics and personal care company. Increased consumer education - together with environmental and personal well-being concerns - have impacted on the industry by massively increasing the demand for new, innovative products produced using natural and organic ingredients. Consumers now expect transparent disclosure of inputs and are seeking natural remedies, compounds and ingredients in their products. The natural/organics movement has created a rebirth and reinvention opportunity for the sector and has led to massive new positioning, branding and innovation initiatives at both the input and end-product level.

The cosmetics and personal care sector in South Africa is estimated to have contributed about 1.2% to manufacturing value-add of R 3.4 bn in 2013. The sector grew at an average of 4.1% per annum between 1995 and 2013. Its small contribution to GDP - though sizeable contribution to manufacturing output - is not, however, reflected in its employment levels. The entire sector accounts for 50,000 jobs.

In collaboration with the Consumer Goods Council of South Africa (CGCSA), **the dti** assisted a number of manufacturers and marketers of cosmetics products to become compliant with barcode requirements for both the local and international markets.

In the past two years the Cosmetics Exports Council of South Africa (CECOSA) has successfully increased its membership from an initial founding base of 11 members to 45 members - and is growing at approximately 3 members per month. The Council has exhibited successfully both locally and internationally and the export of cosmetic products is growing at a steady rate. The Council will be exhibiting at Cosmoprof Bologna in 2016.

Key Opportunities

- Increased foreign and domestic investment.
- Growth in production output leading to increased exports of value-added manufactured goods.
- Employment creation.
- Transfer of technology and skills development.
- Increased innovation in ethnic hair care.
- Beneficiation and commercialisation of Southern African plant (mega) biodiversity for the cosmetics sector.
- Creation of stronger economic linkages through supplier development.

Key Constraints

- Continuing relatively weak market intelligence and firm level networking.
- Competition from large branded TNCs.
- Price implications of using local agents to penetrate new markets - especially in developed countries.
- High cost and long duration required to develop a brand or country positioning.

Key Action Programmes

1. Support the creation of an "African Story" through leveraging of unique local natural resources

Nature and purpose of the intervention

A campaign to differentiate South African ethnic hair care, sun protection products and bio-diversity products based on credibly 'African' claims with regard to the uniqueness and 'exoticism' of ingredients.

Targeted outcomes

- Increased mass market sales into Africa and increased niche market sales into developed country markets.
- Innovative new-product developments which utilise local ingredients as a key differentiator.
- Potential for a significant increase in the output of higher value-added personal care final goods.
- International perception of SA products as being unique - as measured by price and quality differentials.

Key milestones

2015/18 Q1-Q4:	In partnership with incubation centres and industry, facilitate the development and commercialisation of new products.
2016/17 Q1-Q4	Increased connectivity between researchers, developers and manufacturers.
2015/18 Q1-Q4:	Increased demand for SA exports in the ethnic hair, sun care and aromatherapy product markets.

Lead departments/agencies: **the dti and Incubation centres, CECOSA**

Supporting departments / agencies: NT, DEA, Industry, Phytotrade, DST, CSIR.

2. Increase investment, upgrade capital equipment and processes

Design and implement a basket of interventions aimed at upgrading the competitiveness of contract packers and their ability to meet new standards and requirements demanded by the personal care sector.

Key issues include:

- Upgrading equipment and processes to meet medical/pharmaceutical standards;
- Increased contact with and exposure to product and process development undertaken at publicly funded research institutes;
- Market development to increase demand for contract packing services;
- Demand strategies to include a) a campaign to position South Africa as the global destination of choice for small batch production in the personal care sector; and b) mass market development in Africa.

Nature and purpose of the intervention

With large TNCs dominating the sector, small and medium firms are highly reliant on contract packers to provide them with competitively priced final goods. (i.e. These firms cannot manufacture in-house and achieve sufficient economies of scale; thus economies of scale are "bought in" via the use of contract packers).

Contract packers have recently come under increasing pressure due to changes in the business models of large TNCs; and competition for work is high. Shrinking demand threatens closures and cut-backs in production capacity which will directly constrain the growth of output of non-TNC participants in the sector. As such the ability of the personal care sector to grow will be largely influenced by the capacity and competitiveness of contract packers.

Targeted outcomes

- Initially: stabilisation of contract packing capacity in South Africa (with a view to growing this capacity in the future).
- Support for improved competitiveness of contract packing services, in addition to ensuring that contract packers offer services which are in line with the changing demands of the personal care sector.
- Reduction in the number of mergers and acquisitions and bankruptcies in South Africa's contract packing sub-sector.

Key milestones

2015/16- Q1-Q4:	Increased number of contract manufacturers/packers meeting medical/pharmaceutical standards.
2016/17- Q1-Q4:	Increased number and value of TNC and export contracts.

Lead departments/agencies: **the dti.**

Supporting departments / agencies: The industry.

3. Aerosol manufacturing cluster

Aerosols have been a popular and convenient option for personal, household, automotive, industrial, paint, and other industries throughout South Africa and the Western world for well over 50 years. They are extremely versatile and are able to dispense a wide variety of products safely, hygienically and efficiently. South Africans use in excess of 260 million aerosol products annually. Global industry trends show that aerosol product sales increase as GDP and household income increase, and that as lower income households become middle income households, aerosol usage increases even further. Aerosols are no longer viewed as environmentally unfriendly due to the use of new, non-CFC propellants; and all cans, dip tubes and buttons are fully recyclable.

South Africa is home to a complete aerosol value chain and the industry includes small, medium and large players, many of whom are internationally competitive (especially on small batch runs). Due to economies of scale, demand volumes and input prices are key drivers of competitiveness; and competition for contracts in the domestic market is high.

Key constraints

Demand constraints, high input prices and low margins have constrained new investments in the industry.

Key opportunities

Increased, targeted support of aerosol producers can result in increased production, increased employment, technology transfer, direct and indirect Investment opportunities and increased exports.

Nature and purpose of intervention

To identify systemic constraints which impede the growth of the industry and to resolve and/or ameliorate such impediments in collaboration with industry stakeholders; to actively work on locational economies of scale that will result in employment creation.

Targeted outcomes

- An enabling environment for increased production at low cost.
- Upgraded investment in technology that will ensure international competitiveness.
- Increased sales into Africa.
- Improved collaborative relations with relevant research institutions.
- Positioning South Africa as the global destination of choice for small batch aerosol production.

Key Milestones

2015/16: Engage with relevant stakeholders regarding the proposed cluster.
2016/17: Develop Terms of References for cluster management.
2017/18: Develop a business plan with industry for cluster establishment.
2017/16: Facilitate acquisition of resources for running the cluster.

Lead departments/agencies: **the dti.**

Supporting departments / agencies: Industry association (AMA), industry.

Business Process Services

Introduction

The dti's Business Process Services programmes continue to aim at growing investment that services the offshore market. The main objectives are: increasing employment (particularly youth employment); increasing the domestic market's capacity to service the offshore market; and increasing South Africa's market share as a global destination for offshored business process services.

The industry at large, including the domestic component, has grown to more than 300,000 agents and 30,000 support staff. The estimated growth rate is 26% per annum.

To date the South African Business Process Services incentive has grown to support the creation of approximately 16,500 jobs. This is attributable to the introduction of a BPO & O incentive between 2007 and 2010 - followed by the shift from BPO&O to BPS in 2011. After a comprehensive review of the incentive in 2014, new programme guidelines were launched in October 2014. Distinctive characteristics of the new programme can be summarised as follows:

A. A two-tier incentive structure with a declining scale maintained over a period of five years. Key highlights of this element are:
   - **L1 incentives:** For L1 jobs (voice-centric contact centre work such as customer service, telemarketing, inbound sales etc.) To qualify, the fully loaded operating cost per job should be less than or equal to R 300,000 per annum and the quantum of incentives per job is: R 32, 000 for 2014/15; R 24, 000 for 2015/16; 2016/17 and 2017/18; R 20, 000 for 2018/19.
   - **L2 incentives:** For L2 jobs (non-voice work such as, reconciliations, insurance claims, analytics, legal processing, social media services, and complex customer care etc.). To qualify, the fully loaded operating cost per job should be greater than R 300,000 per annum and wages should contribute at least 65% of cost base with the quantum of incentives per job being: R 40,000 for 2014/15, 2015/16 and 2016/17; and R 32,000 for 2017/18, 2018/19.

B. An added bonus incentive based on performance.

C. A requirement for 80% of the funded agents to be youth.

On the skills pool front: the partnership between the National Skills Fund, the Jobs Fund, **the dti** and the industry has produced a robust domestic industry which is increasingly becoming competent in capturing foreign contracts. By the end of the 2014/15 financial year the programme will have put 13,787 unemployed youth through BPS skills programmes - with approximately 10,800 of these graduates entering gainful employment in BPS firms post-training.

Sector economic data

Variable	Contribution 2007-2010	Contribution 2011-2014	Total contribution
Employment resulting from incentives	7,295	9,181 (BPS)	16,476
Unemployed youth trained under Monyetla	4,467	6,356	10,823
Unemployed youth employed from MWRP	3,483	4,268	8,837
Foreign direct investment	R 349m (actual)	R 5.9bn (projected)	

Key opportunities

- Investment in Africa through Shared Services Centres;
- New emerging sub-sectors with higher value (Shared Services Centres, Legal Process Outsourcing , Back-Office processing, Online shopping);
- Potential investment in tier-2 towns, townships and rural areas, due to lower investment costs;
- Broadening penetration of English-speaking markets other than the UK.

Constraints

- A shortage of skills at middle management level;
- Increasing competition by other offshore locations, especially new competitors in Africa;
- Slow transformation.

Key Action Programmes

1. Implementation of the Business Process Services (BPS) incentive programme

Nature and purpose of the intervention

The main result of the review conducted during 2014A has been to institute a new graded scheme which now extends over five years. The purpose of the new scheme is to sustain the strong growth momentum of the BPS industry, which – being predominantly voice-centric – is ideally suited to job creation for unemployed youth.

The incentives will also help in increasing the competitiveness of South Africa as a BPS location for higher-value jobs, thus helping it to move up in the value chain in emerging areas such as marketing BPS, Legal Process Outsourcing, Social Media, analytics, Banking Financial Services and Insurance BPS. A bonus incentive is offered for greater job creation if the applicant exceeded annual offshore job creation targets.

Targeted outcomes

The new guidelines will increase financial benefit for companies planning to set up or grow in South Africa. The incentives will help reduce operating costs for companies by 11-12%, thereby reducing the cost gap between SA and its competitors. The incentive is expected to result in the creation of approximately 18,000 new jobs by 2019.

Key milestones

2015/16 Q1-Q4: Ongoing Implementation of the BPS incentive.

Lead departments/agencies: the dti.

Supporting departments / agencies: NT.

2. Talent development for the BPS sector

Nature and purpose of the intervention

In the first phase of implementation of the BPS Sector Support Programme, the main area of focus was marketing South Africa as an investment destination, as the global industry was not even aware of the country's capabilities in this space. Having achieved this to a significant degree – mainly by launching some well-known captive transnationals - the focus has shifted to addressing the challenge of a skills gap, particularly at middle management level, in combination with the development of specialised skills for the industry.

The Monyetla Work Readiness Programme provides support by partnering with the industry in the provision of skills development programmes leading to gainful employment. The programme's focus is on unemployed youth from the target group as defined by the National Skills Development Strategy (NSDS).

Targeted outcomes

The continuation of the programme will increase the number of agents with specialised skills as well the pool of domestic managers. The next phase will provide a "Monyetla" (an opportunity) to an additional 3,220 unemployed youth from across the country to gain work experience, both in this industry and in other sectors of the economy.

Key milestones

2015/16 Q2-Q4: Training of 3,220 unemployed youth at NQF level 4 and above takes place.

2015/16 Q4: 483 unemployed youth recruited from 2 and tier 3 towns, townships and rural areas contracted into employment.

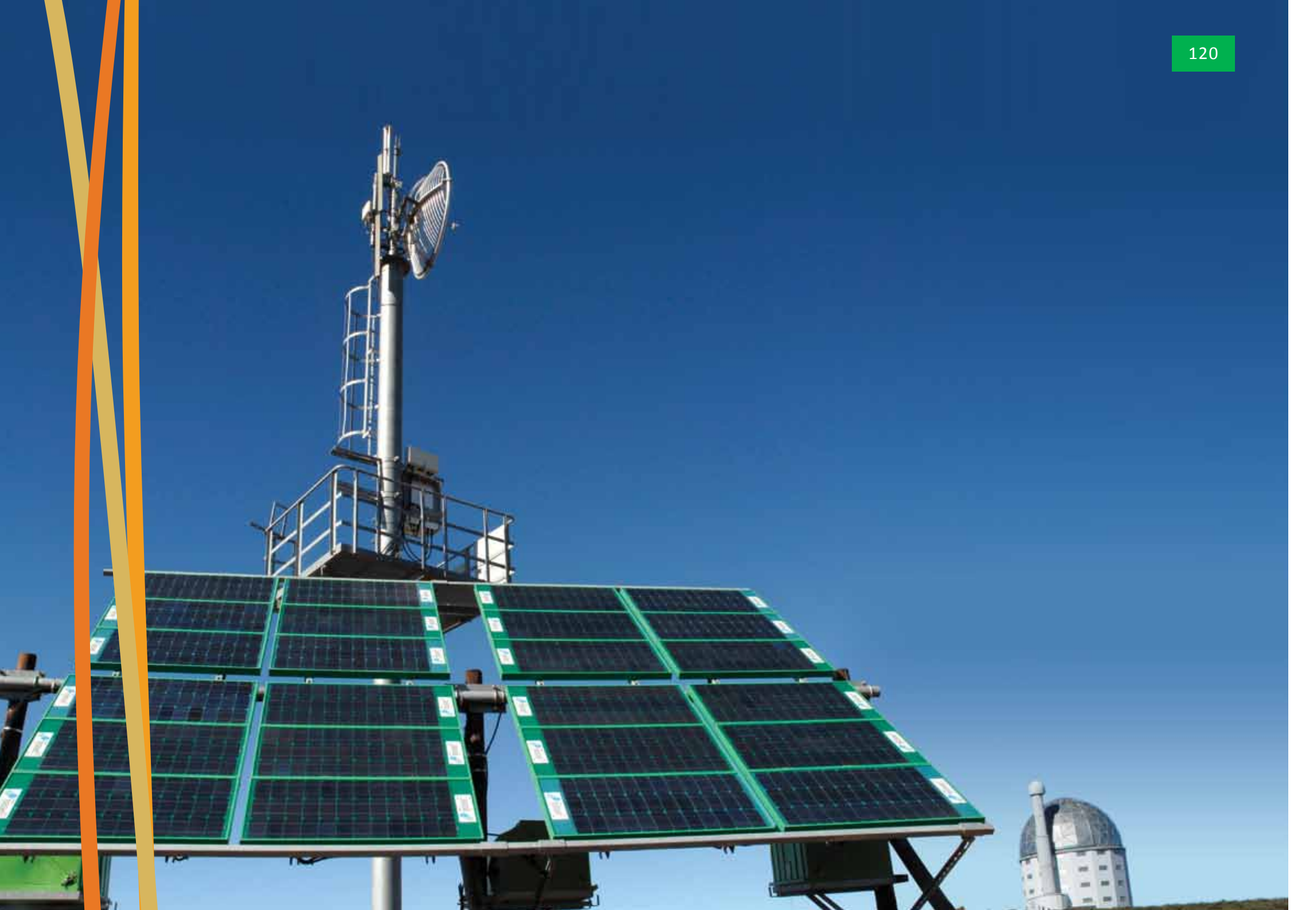
2015/16 Q4: 2,100 trained learners contracted into employment for a minimum of a 12-month contract.

2015/16 Q4: Benchmarking Report completed.

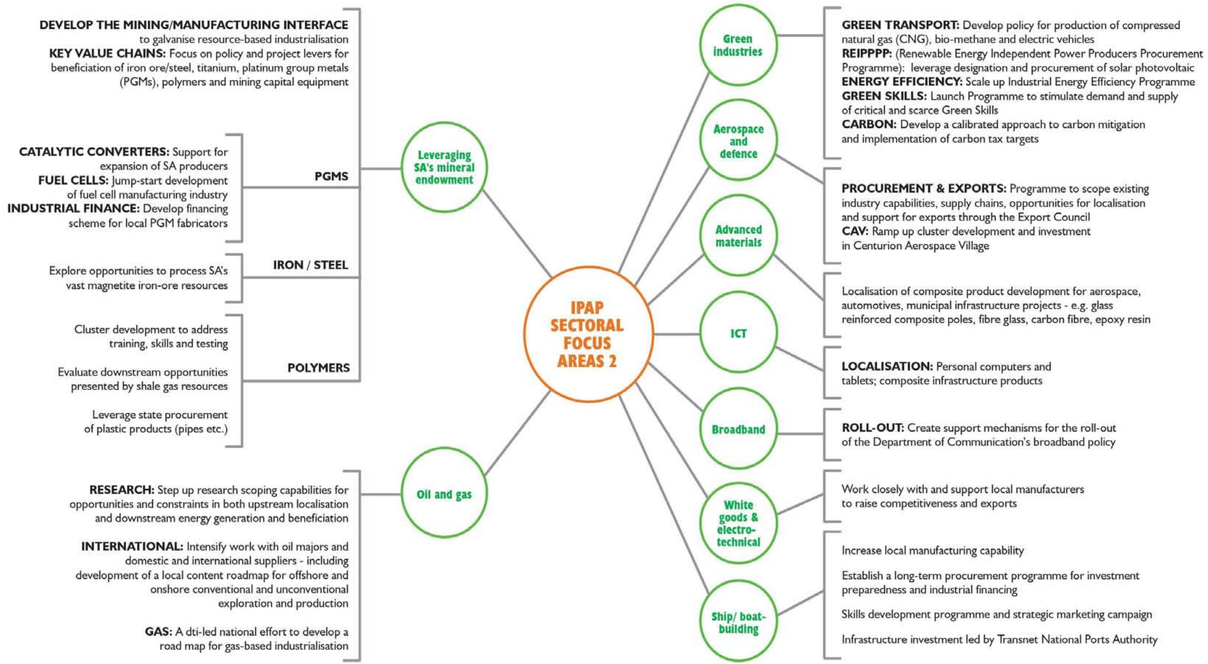
Lead departments/agencies: the dti.

Supporting departments / agencies: NT.

SECTORAL INTERVENTIONS 2



IPAP 2015/16 – 2017/18 SECTORAL FOCUS AREAS CLUSTER 2



SECTORAL INTERVENTIONS 2

Leveraging South Africa's mineral resource endowment

Gas industrialisation

Maximising the Industrial Potential of Southern Africa's Petroleum Resources: towards responsible gas industrialisation policy

Introduction

Historically, South Africa has been an archetypal mining jurisdiction, with petroleum activity generally confined to exploration, downstream refining and liquid fuels distribution. Indeed, South Africa has limited oil reserves of just 20 million barrels and proven gas reserves of approximately 0.57 trillion cubic feet ("tcf").[18]

However, this is about to change dramatically. With the discovery of potentially large-scale onshore unconventional gas reserves and expectations of substantial near-term offshore crude and gas discoveries - off the back of historic finds in neighbouring waters - South Africa is poised to transform into a petroleum jurisdiction.

The resource potential

The wider Southern and Eastern African region, itself historically known mainly for mining, has recently (and rather dramatically) entered the global stage as a ground-breaking petroleum region, led by recent large-scale, mainly offshore, discoveries. These have the cumulative potential to be a game-changer, both for individual jurisdictions and the wider region. In the coming decade, Moçambique is likely to become the world's third largest exporter of liquid natural gas (LNG) - behind only Qatar and Australia - with total gas reserves of approximately 200-250 tcf and plans by Anadarko and ENI consortia to develop multi-billion US dollar LNG projects in the country in the near term. Tanzania, too, reports discoveries of an estimated 40 tcf of gas; enough to make it a major player in LNG exports behind Moçambique.

[18] United States Energy Information Administration (EIA) (www.eia.gov/countries/country-data.cfm?fips=SF). Accessed 25 October 2013.

Meanwhile, in South Africa, technically recoverable resources in the Karoo shale gas fields are estimated to be as great as 390 tcf.[19] In addition, substantial potential coal-bed methane resources are in the process of being brought towards commercial development, both in South Africa and across the region.

Interest in offshore potential, particularly in deep water, is clearly evidenced by the substantial increase in farm-in and exploration activity over recent months, and in exploration drilling campaigns planned for the near future.

Some of the largest petroleum companies in the world have recently farmed into South African exploration blocks and are leading these exploration initiatives - including ExxonMobil, Shell, Total and Anadarko, among others.

Underpinning these moves is the expectation of significant offshore resources that can realistically be predicted for South Africa's East Coast in terms of its geological contiguity with the game-changing recent finds in East Africa; and, likewise, for South Africa's West Coast, the salience of big finds in Namibia and the Falkland (Malvinas) Islands.

These developments are all the more significant given the history of very limited deep-water exploration offshore of South Africa. The new dynamic presents substantial investment opportunities for petroleum investors across the value chain: initially in the upstream sector; then - further ahead, in the medium to long term - for downstream beneficiation and refining in the South African liquid fuels and petrochemicals sectors.

Towards responsible gas industrialisation policy

The potential for transformative gas industrial policy is profound. As first stated in last year's iteration of IPAP, to truly unlock the industrial potential of these developments it is essential that South Africa gets its policy decisions correct. This will require the development of a long-term strategic programme to maximise the multiplier effects of petroleum resources domestically and in the region.

More specifically, such a strategy would have to consider the manner in which deep forward, backward and lateral linkages are developed along the entire value chain, from the exploration and development of newly discovered petroleum deposits though to the onshore refinement and regional and domestic use of the refined products - all of this underpinned by focused and concerted onshore investment and appropriate skills transfer.

[19] EIA (www.eia.gov/analysis/studies/worldshalegas/). Accessed 25 October 2013.

All of these elements need to be recognised and systematically implemented if South Africa (and the region in general) is to demonstrate a serious commitment to avoiding the characteristic policy and regulatory errors that have given rise to the idea of the 'resource curse'.

A clear opportunity is at hand to maximise the onshore value of a potentially hugely significant oil and gas resource endowment, both for South Africa and for the wider Eastern/Southern African region (from Tanzania to Moçambique, Namibia and Angola). Grasping this opportunity will give South Africa a priceless chance to transform its historical legacy of developing resources for the benefit of the few to a future where the newfound resources are developed for the benefit of the many. Gas industrial policy is the appropriate lever to ensure stakeholder cooperation, appropriate incentives and regulation, good governance and national value enhancement; all of which must be aimed towards efficiently achieving developmental outcomes that are decisively transformative - in both economic and social/quality-of-life terms - for local populations.

Low oil price environment: underlining the need for gas industrialisation

Far from minimising the game-changing nature of Southern Africa's oil and gas resource potential, the current low oil price environment only serves to emphasise the urgency and importance of responsible and appropriate gas industrial policy.

Key issues:

- ***Imported product is cost-effective during low oil price periods***

  In the short term, South Africa must import gas (and oil) in order to establish the fundamentals of a gas economy (and supply its refining capacity). During periods of low oil prices such imported product is much more cost-effective given its low pricing. This should serve as an important catalyst for the early stages of development of South Africa's gas economy and of its gas industrialisation policy.

- ***Regional opportunity and cooperation critical***

  Because the development of South Africa's more speculative domestic resources - particularly Karoo shale gas - will likely be deferred during a period of low oil prices, the importance of regionally-sourced product is heightened, as a means of providing a bridge towards the next cycle of investment and development of this potentially critical new domestic resource.

  The dynamic possibilities of gas exploitation can already clearly be identified in Moçambique, where emerging gas projects are seen as having every chance of progressing successfully, given both the scale of proven reserves and – very importantly - the advanced stage of project development.

  South Africa is therefore looking at both emerging, close-at-hand supply capabilities and significant opportunities for local companies to participate in the development of Moçambican gas resources. Involvement in this process should not be underestimated, since it offers significant opportunities for developing new skills and know-how that could be critical for the longer-term evolution of a strong South African industrial gas economy.

- ***Opportunity to improve and calibrate regulatory and policy regime***

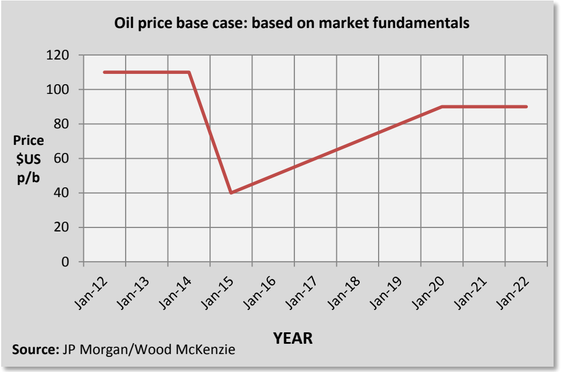
  Low oil price periods expose inadvisable and unconsidered regulatory and policy outcomes; but they can also afford a crucial opportunity to improve such regimes in order to ensure optimal governance.

  The dti has a key role to play in absorbing the lessons of successful regional gas exploration and exploitation, drawing carefully and critically on every area of emerging neighbouring-country practice to craft a sophisticated gas industrial policy for South Africa that is fully integrated with broader regional developmental initiatives and complementarities.

Forecast

According to market analysts such as JPMorgan and Wood Mackenzie, given current fundamentals a likely oil price scenario is price recovery in the fairly near term (perhaps 18 to 24 months) - with the price steadily rising and achieving a level around US$90 per barrel that could be sustained stably over the medium to long term (unforeseen regional geo-political shocks excepted).

Figure 1: Oil price base case



Source: JP Morgan/Wood McKenzie

The history of oil price fluctuation supports the general conclusion that an oil price recovery will occur over the medium term and usher in a new phase of core investment, as the long term fundamentals of the oil price and economy pick up and begin to support more robust pricing over time.

Key Action Programme

Long Term Strategic Framework to leverage the opportunities presented by recently discovered African regional petroleum and gas resources.

Nature and purpose of the intervention

The intervention is aimed at identifying the potential drivers of economic growth, employment opportunities, skills development and ancillary issues which may arise from the up-, mid- and downstream petroleum and gas industries, with a view to designing a long term strategic programme which would maximise the multiplier effects of recently discovered regional and South African resources, both domestically and for the Southern African region as a whole.

Economic Rationale

Research indicates that global investments made into the oil and gas sector are intended to increase significantly over the next 16 years, with most of the investments finding their way into historically low-income developing economies in Sub-Saharan Africa, as resources in developed countries continue to decline. More specifically, it is estimated that approximately US$11 trillion will need to be invested in oil and gas by 2030. Investment in the first two trains of the Moçambican LNG project is estimated to be more than US$20 billion and development of major Karoo shale gas acreage could easily approach US$50 billion. To ensure that the effects of these investments are maximised for the benefit of the host countries as a whole, a clear strategy needs to be developed that establishes and deepens all possible linkages into and out of these industries.

Targeted outcomes

A long-term strategy that considers various petroleum and petro-chemical value chains, including the production of electricity from gas and liquid fuels from refined products in their entirety, with a view to establishing and deepening backward, forward and lateral linkages from these chains, both domestically and regionally.

Key milestones

2015/16: Q1: Concept Report:

- Establishment of a working group made up of key government leaders and their advisors to spearhead the research and policy development.

2015/16: Q2-Q3: Interim Report/Strategy:

- Fact-finding missions to relevant jurisdictions that have successfully harnessed the potential for onshore development of newfound gas and petroleum resources.

2015/16: Q4: Final Report.

Primary Minerals Beneficiation and Construction

Introduction

In 2010 Citibank estimated SA's non-energy mineral resources at US $2.5 trillion, whilst in 2012 Eco Partners, using data from over 90 SA mining companies, estimated the value of SA's minerals at over US $6 trillion - with 60% of this value residing in precious minerals. But the big problem remains the preponderance of raw commodities in the export basket: the value of unbeneficiated mineral exports over the past 5 years standing at over 50% of total mineral exports. There is no doubt that the immediate to mid-term future of the sector will to a large extent be shaped by the degree of success that can be achieved in rapid development of the value of the entire minerals value chain.

Over the years there has been strong debate on whether mineral value chains can be further expanded to allow for more value addition within South Africa, thus converting the comparative advantage presented by mineral endowment into a sustainable competitive advantage. Over the past 10 years less than 10% of iron ore, less than 5% of gold and less than 15% of PGMs have been sold to SA-based beneficiators. In 2014 the Parliamentary Portfolio Committee on Trade and Industry invited stakeholders to present on the status and prospects of beneficiation for South Africa. The outcomes of the Beneficiation Colloquium, whilst confirming some long held positions, concluded that SA would benefit hugely from further beneficiating its natural endowment into value- added tradable goods.

Government, led by the DMR, published the Beneficiation Strategy as far back as 2011. The Strategy proposed 5 value chains for analysis: coal and nuclear, iron and steel, titanium pigment and metal, PGMs and precious metals for jewellery inputs. **The dti** has since then investigated the PGM, ferrous metals, titanium and coal/polymers value chains, including the supply of upstream goods and services. It is also investigating the viability of expanding steelmaking capacity - with a special focus on SA's massive magnetite resources and the industrial opportunities presented by the oil and gas sector - including the strategic consideration of shale gas.

Key Opportunities

- Increased foreign and domestic investment;
- Oil and gas discoveries in South Africa and the Southern African region;
- Employment creation;
- Transfer of technology and skills development;
- Creation of economic linkages through supplier development for the mining, oil and gas sectors;
- Planned regional integration of SACU, SADC, COMESA and EAC.

Key Constraints

- Delays in finalising key legislative enablers (the MPRDA Bill, 2012);
- Mining Charter revision;
- Competition Act amendment;
- Conclusion of cases by the Competition Commission;
- Conclusion of scrap steel export tax proposals;
- Delays in finalising clean fuels policy;
- Access and pricing of key inputs (energy/power, skills, iron ore/steel, scrap metal, polymers);
- Inadequate and expensive infrastructure: rail branch-lines, roads, electricity, water supply and ports;
- Slow pace of regional integration and development of regional physical and trade infrastructure.

Key Action Programmes

1. Development of Mineral Beneficiation Action Plans (MBAP)

Nature and purpose of the intervention

Develop and get approval for a suite of action plans, informed by the published Beneficiation Strategy and completed value chain analyses, which will increase levels of value-add in SA produced ores. The proposals will be guided by the MPRDA Amendment Bill process; and the action plans will be aligned to the provisions of the final Act as assented to by the President.

Targeted outcomes

The MBAP will unpack the Minerals Beneficiation Strategy (2011) and give specific policy guidance with regard to minerals beneficiation. The action plans will seek to (i) extend and expand selected value chain activities in SA, with priority given to iron and steel; (ii) attract investment; (iii) improve access and pricing of inputs; (iv) facilitate exports of value added products; and (v) improve the linkages between the minerals sector and the rest of the economy.

Key Milestones

2015/16 Q2: Finalise and workshop Mineral Beneficiation Action Plans with key stakeholders.

2015/16 Q3: Present the MBAP for approval to the economic cluster.

2015/16 Q4: Present the Steel Industry Position Paper for approval.

Lead departments/agencies: the dti, DMR, EDD, IDC, DST.

2. Stimulation and expansion of the capital goods sector – Resources Capital Goods Development Programme (RCGDP)

Nature and purpose of the intervention

Despite loss of market share in the home and export markets over the past decades, the SA capital goods sector still has a significant cluster of firms in mining equipment and related services operating at the global technological frontier. The multipliers in promoting manufacture of capital goods are significant and promoting the sector will complement the state's procurement localisation strategy.

Through the development and introduction of a coherent and targeted cluster support programme (skills, jobs, R&D, capex, opex, exports, etc.), the resources capital goods sector has the potential to expand rapidly off the domestic and continental markets and to become a significant employer, exporter, fiscal revenue contributor and centre of technological innovation, with spillovers into other sectors. This action programme is aimed at assessing the viability of implementing a support programme for mining capital goods to stimulate local content and exports of mining capital equipment.

Targeted outcomes

- Targeted support measures to increase the supply of mining capital goods (plant, machinery, after-market) that can unlock and deepen capital goods manufacturing industries in SA for local consumption and export into key markets.
- Strategic input into the legislative review of the Mining Charter (2010) to include the recognition and reward of local content.

Key Milestones

2015/16 Q2: RCGDP interim report including the assessment of capital goods tariffs, proposing a mechanism for RCGDP to support skills, research and development, exports, capex and opex and required policy interventions.

2015/16 Q3: RCGDP final report completed, approved and presented to stakeholders.

2015/16 Q4: Develop and implement programme as informed by study recommendations.

2015/16 Q1 - Q4: Provide input into the Mining Charter review process.

Lead departments/agencies: **the dti**, DMR, IDC, DST

Supporting departments/agencies: **the dti**, DMR, DST, EDD

3. Expansion of the PGM beneficiation industry – Fuel Cells

Nature and purpose of the intervention

South Africa has the world's largest known PGM resources endowment, estimated at about 80% of total global reserves. Whilst SA is a major supplier into the global market, current beneficiation of PGM's in SA stands at less than 15% - essentially limited to the manufacture of auto catalytic convertors.

The following interventions are aimed at developing and growing PGM beneficiation in SA beyond current levels, enabling further development of catalytic converter production and the creation of a globally competitive fuel cell industry.

Fuel cells represent an exciting window of opportunity for SA where our PGM endowment, existing fabricators and research and technology development initiatives can enable early entry into this high-tech industry.

Constraints

Key constraints to fuel cell commercialisation and industrialisation in SA include:

- The relatively high capital cost per KWh, given the low production volumes.
- Lack of investment, tailored incentives and total cost of ownership finance models.
- Lack of supporting and enabling policy and regulations.
- The absence, to date, of real-world commercial demonstrations of the technology to its potential customer markets.

Opportunities

There is undoubtedly significant market potential in SA and Sub-Saharan Africa for stationary, mobile, materials-handling and distributed generation applications. (For example: cell-phone tower masts, data centres, back-up power, forklifts).

The major advantages of fuel cell applications include lower emissions, improved efficiency and ease of replenishment. They are also not weather-dependent (like wind or solar). Moreover – and very importantly - ex-factory costs are expected to decrease by as much as 90% by 2020 as demand escalates and economies of scale come into play.

Targeted outcomes

A multi-faceted and structured approach covering demonstration, market development and identification of early market adoption activities to increase demand and catalyse the development of the fuel cell value chain in SA.

The main steps involved are: (i) Investment promotion initiatives to secure potential financing, in collaboration with key technology partners and supported by local R&D initiatives; (ii) the consequent unlocking of technology, system- and component-level innovation; and (iii) the enhancement of engineering capabilities in the industry.

Since it is evident that market demand will drive the rate of industrialisation, the economic viability of establishing the industry in SA depends on structured and focussed market development, early adoption and demonstration activities at a significant scale.

The intervention aims to catalyse practical collaboration between the local mining industry, fuel cell OEMs and component manufacturers and potential public and private users.

The key envisaged outcomes will be: (i) successful demonstrations of the technology: (ii) market development - including early-adoption applications; and (iii) successful mobilisation of funding and incentives packages to develop the industry in SA.

Key Milestones

2015/16 Q1: Demonstration of small-scale static commercial fuel cell application.

2015/16 Q2: Investment-promotion activities: development of a clear value proposition to promote localisation and investment in fuel cell manufacturing in SA.

2015/16 Q2: Analysis and engagements on required policy, regulatory and institutional interventions.

2015/16 Q1-Q4: SA advocacy, market development and awareness campaign with potential public sector procuring entities.

2016/17 Q1 –Q2: Large scale real world demonstration of technology/ies.

Lead departments/agencies: the dti, IDC, DOE.

Supporting departments/agencies: DMR, EDD, DST.

4. Viability of unlocking iron ore and titanium resources in the Bushveld Complex

Nature and purpose of the intervention

Finalisation of a scoping study initiated in 2014 to assess the economic viability of exploiting the Bushveld Complex (BC) magnetite deposits to produce iron-ore/steel and titanium (metal and pigments) in SA.

The study - whose outcomes will be used to attract major investments - will examine options to link existing iron-ore mining and downstream steel projects/plants in a manner that will optimally unlock the resource to produce both steel and titanium pigment or metal.

Targeted outcomes

SA has major iron-ore and titanium magnetite resources which have to date not been economically exploited – mainly because conventional technologies are not suited to this unique and huge mineralisation. The economic impact of the proposed assessment of the BC magnetite complex could be of great significance to value-added exports, job creation (direct and downstream) - primarily as a result of intermediate feedstocks (steel, pigment and titanium metal/powder) becoming available at competitive prices (EPP).

The assessment will indicate whether such a project would be economically viable and what support or facilitation it may need.

Key Milestones

2015/16 Q2	Interim Report submitted.
2015/16 Q3	Final Report including proposals on industrial opportunities, technology providers, configuring and linking to existing plants and/or projects and requisite interventions approved by the Steering Committee.

Lead departments/agencies: the dti, EDD and IDC.

Supporting departments/agencies: DMR, DST.

5. Leveraging the infrastructure-build programme to increase local content of construction materials

Nature and purpose of the intervention

Investigate and recommend for designation or preferred local procurement identified goods/inputs for the infrastructure-build programme [using section 9(3) of the PPPFA]. Evaluate the infrastructure challenges that inland beneficiators face, and engage SOCs and other service providers to ensure timely delivery of inputs at competitive rates.

Targeted outcomes

Through the PICC, SA will be spending R 845 billion on the expansion and upgrading of roads, rail, ports, power, water and communications infrastructure. Besides ensuring that such infrastructure developments consider and are aligned to the beneficiation aspirations of the country for the minerals value chain and the oil and gas sector, **the dti** will ensure that locally produced goods and services are prioritised in the construction process.

Key Milestones

2015/16 Q3	Construction designation instruction note submitted to NT covering 11 investigated products.
2015/16 Q4	Final summary report on the local content demand of the infrastructure SIPS.
2015/16 Q4	Final Report on the infrastructure challenges of SA-based beneficiators.

Lead departments/agencies: the dti, EDD, IDC.

Supporting departments/agencies: DPW, DOT, DPE, DWA.

Green industries

Introduction

South Africa continues to be one of the most energy- and carbon-intensive economies in the world despite the fact that the country accounts for only 1.5% of the global GHG emissions.

South Africa's GHG emissions are heavily driven by the energy, industry and transport sectors. In 2010, these three sectors accounted for 61%, 19% and 8% of the country's total emissions respectively. Moreover, if electricity emissions are allocated to end-use sectors, industries then account for 67% (13% for energy) of total emissions. Reducing South Africa's GHG emissions is therefore deeply linked to mitigating emissions from local industries.

During 2014 **the dti** conducted an international benchmarking exercise to shed light on what might be the optimum policy package to reduce South Africa's carbon footprint, taking into account factors such as:

- government's ability to coordinate and implement multiple policies, some of which may not necessarily be complementary with one another;
- industry's willingness to (and likelihood of) adhering to the selected measures;
- the financial cost to both government and industry;
- environmental impact; and
- consideration of international best practice.

In addition to benchmarking, this work also provided a critical evaluation of the types of instruments available to mitigate GHG emissions from industrial sectors, making use of a framework developed by the International Panel on Climate Change (IPCC). A study was also conducted to analyse the interplay between climate change mitigation and industrial development in the South African context.

The policies available to reduce GHG emissions with a view to mitigating climate change can be divided into six overarching categories, namely: 1) price-based economic instruments; 2) quantity-based economic instruments; 3) regulatory approaches; 4) information and education measures; 5) government provision of goods and services, including public procurement; and 6) voluntary approaches.

Ultimately no single measure is in a position to effectively reduce emissions in isolation while taking into account all other considerations. In the end, each measure presents both advantages and disadvantages which must be understood and weighted. In broad terms though, the most mitigation-efficient policies generally raise competitiveness concerns and/or fiscal affordability issues, whilst more voluntary and supportive instruments tend to lack environmental effectiveness.

The interaction between policies - both in terms of trade-offs and synergies - must be considered when designing and implementing a mix of policy instruments for low-carbon development and climate change mitigation. Problematic combinations of instruments occur when multiple policies at the same level are aimed at addressing the same areas of market failure. The combination of a carbon tax and a cap-and-trade programme is a case in point. Problems can also occur when combining an emissions pricing policy and a performance standard in order to limit emissions per unit of production. For example: emissions pricing is hailed as the most cost-effective approach; but if facilities need to meet the demand of an additional performance standard, this added policy requirement either makes the pricing mechanism redundant or compromises its cost effectiveness (IPCC, 2014c).

In practice, the effective quality of policy packages lies in their management and performance over the long haul, rather than at any single point in time. Moreover, what constitutes an optimum policy package will differ from region to region and from country to country based on numerous factors including geography, the nature of industrial activity and pre-existing regulatory frameworks.

The relationship between climate change policy and industrial development in South Africa is not straightforward, particularly in the short to medium term, and includes a series of potential trade-offs. Fundamentally, industrial policy is at the core of economic, social and environmental sustainability, and is the main channel towards achieving inclusive green growth. Additionally, maintaining the international competitiveness of domestic companies is deeply intertwined with mainstreaming low-carbon technologies.

The development of a green growth strategy for the country is driven by the Department of Environmental Affairs (DEA); notably through the National Climate Change Response Policy White Paper (NCCRP) and the National Strategy for Sustainable Development and Action Plan 2011-2014 (NSSD1). Policy interventions are, however, scattered between various departments.

Direct support for industries providing green goods and services falls under **the dti**, while fiscal incentives (i.e. taxes and subsidies, such as the introduction of a carbon tax aimed at promoting green growth), are under the mandate of the National Treasury. Then, the Department of Science and Technology is responsible for technology policy and fosters research and development in all sectors of the green economy. At the sectoral level, departments such as the Department of Energy and the Department of Mineral Resources all have to include the drive for sustainable development within their mandate and operations.

Likewise, the Industrial Development Corporation (IDC) and the Development Bank of Southern Africa (DBSA) - South Africa's two main development finance institutions, which provide a large share of the financial requirements for the transition to a greener economy – are respectively governed by the Economic Development Department and the National Treasury.

Ultimately, then, South Africa's frameworks for industrial development and climate change mitigation overlap rather uncomfortably, in terms of policy, funding and institutional arrangements.

Nevertheless, opportunities do exist to address the areas of misalignment and coherently re-align them in order to achieve our long-term objectives. Narrowing down to the interplay between climate change mitigation and industrial development, numerous touch-points emerge. In the long run, the alignment of the two policy frameworks must obviously be beneficial to both climate change and industrial objectives. In the short term, a series of trade-offs must be considered – most notably around the speed and scale of the economic transformation the country requires.

Transitional support to key industries faced with strong competitiveness concerns should be implemented to assist with the implementation of new, greener equipment and processes. Government has an imperative to shoulder the impact of mitigation measures on core, vulnerable industries by providing conditional technical and financial support. What is essentially required is a mix of support for research and development, energy efficiency improvements, industrial upgrading, renewable energy and co-generation.

At present, the threat of green protectionism to South African firms is underestimated. Creeping protectionist measures that are not as obvious as tariff barriers can ultimately have a significant impact. (e.g. private labelling schemes and the greening of value chains). An in-depth threat analysis of competitive trade and climate change measures is needed at sectoral level, as preparation is key to dealing with the associated risks.

Finally, generating the appropriate GHG emissions data (based on Statistics South Africa's Standard Industrial Classification codes) will constitute an important milestone on the road to implementing and monitoring coherent climate change policy in South Africa. Positioning the generation of appropriate data (in terms of GHG emissions, energy efficiency, energy consumption, water consumption, etc.) - as a prerequisite to receiving any government support - would substantially fast-track the climate change agenda in the country, with no direct adverse impact on industrial structures.

Key Action Programmes

1. Industry development through leveraging procurement in the Renewable Energy Independent Power Producer Procurement Programme (REIPPPP)

Introduction

The REIPPPP has so far made a determination to procure 6,925 MW of renewable energy power by 2020. Of this capacity, 3,916 MW has already been procured by 64 preferred bidders in Bid Windows 1 to 3. These windows have a total committed investment value of R 120 Billion, of which R 23 billion is committed to local content. By Bid Window 3, local content commitments ranged between 44% and 54%, depending on technology.

Key opportunities

Localisation through leveraging government and private sector procurement, when done effectively, is an extremely powerful instrument to promote economic growth, job creation and industrialisation. It can enhance the competitiveness of national industry, enable the development of new national industrial and technological capabilities and ultimately increase exports.

The key driver of price premiums in relation to the value that is extracted from a procurement, regardless of whether the procurement contains supplier development requirements, is the quality and rigour of the planning, market engagement process, contracting and the contract management process.

The localisation programme has so far attracted investments of over R 760 million in renewable energy manufacturing facilities, mainly wind and solar PV. More investments are expected in the near future; hence a need to continue reviewing and increasing local content thresholds and targets in subsequent bid windows, whilst investigating and implementing other tools to attract investment. The opportunity to export equipment to the African region also exists - and will allow manufacturers to achieve optimum economies of scale and improve competitiveness.

Key constraints

- A lack of policy coherence and alignment within government can undermine the effectiveness of procurement as a lever to promote economic growth.
- The ability to optimise the developmental impact of (particularly large fleet) procurements, even when supplier development and localisation are included in a procurement programme, can be reduced due to coordination challenges between the procuring organisations and supporting departments and agencies. This can lead to reduced ability to strategically direct suppliers towards priority developmental capabilities.
- Investment in the local renewable energy industry is dependent on the size and pace of the renewable energy roll-out. Investments are made based on the published Bid Determinations, and the success of these ventures will depend on a stable and continuous roll-out of renewable energy in South Africa.

Nature and purpose of the intervention

This entails the review of minimum thresholds of local content aligned to the building of industrial capacity and capability. It will be done through research and continuous engagement with industry. Linked to this will be the establishment of a strong monitoring mechanism.

Targeted outcomes

- Strategic sourcing: ability to plan, engage the market, contract and manage the implementation of the contract in a robust and rigorous manner.
- Investment in the capabilities to design, engineer, manufacture and service more complex products in the REIPPPP.
- Increased localisation; deeper and more diversified industrialisation; economic growth; sustainable job creation.

Key Milestones

2015/16 Q1:	Establish a formalised intergovernmental structure for decision-making on - and monitoring of - economic development and implementation criteria for the Independent Power Producer Programme.
2015/16:	Annual review of economic development criteria for the REIPPPP, aligned to the timeframes of the bidding windows.
2016/17:	Annual review of economic development criteria for the REIPPPP, aligned to the timeframes of the bidding windows.
2017/18:	Annual review of economic development criteria for the REIPPPP, aligned to the timeframes of the bidding windows.

Lead department: DoE.

Supporting departments /agencies: **the dti** and EDD.

2. Resource efficiency and cleaner production

Introduction

The South African industrial sector has developed in an atmosphere that assumed the secure supply of cheap coal and electricity. This has been beyond the control of producers since the bulk of the electricity in South Africa is supplied by Eskom and the generation mix is determined by the Department of Energy. At present, approximately 85% of SA's total energy supply is from fossil fuels, and 85% of electricity is generated by coal-fired power plants.

The behavioural changes required by existing firms to reach South Africa's climate change mitigation and adaptation objectives can be summarised down to four options: (i) reduce their energy intensity (total energy consumption per $ GDP); (ii) reduce carbon intensity (in the case of South Africa this means a reduction in coal consumption as a percentage of total energy consumption); (iii) structural change (produce or consume goods with a lower energy or carbon intensity); or (iv) the closure of carbon- or energy-intensive sectors.

Energy efficiency (reducing energy intensity) remains the option that presents the best business case, given that it responds directly to the increasing pressure on South African industry to remain competitive under the burden of high administered prices - most notably, massive increases in the price of electricity.

As the country moves toward rebalancing the energy mix in a manner that is increasingly weighted in favour of cleaner energy initiatives and technologies, the efficiency with which we use energy from conventional sources presents the greatest opportunity for conversion to less energy-intensive manufacturing.

The National Cleaner Production Centre (NCPC-SA) was established by **the dti** in 2002 as the leading force to improve the competitiveness of industrial sectors, promote market access and contribute to economic growth and job creation - through Resource Efficiency and Cleaner Production (RECP) assessments – while at the same time engaging in advocacy on environmentally sound business practices. The NCPC-SA is now in a position to draw on 12 years of experience in order to further develop meaningful offerings to SA industries and significantly expand on its existing RECP training portfolio.

The NCPC-SA is tasked with strengthening activities that support green industry developments and the transition to lower carbon development. It does this mainly by building capacity in energy, waste, materials and water efficiency practices, filling knowledge gaps and enhancing industrial development through the promotion of greening industries.

The "Industrial Energy Efficiency Improvement in South Africa Project" (IEE Project) was launched in 2010 with the aim of responding to the electricity crisis that arose in 2008. The project is being implemented by NCPC-SA in collaboration with the United Nations Industrial Development Organisation (UNIDO) on behalf of the South African government, with additional funding supplied by the Swiss State Secretariat for Economic Affairs (SECO) and by the UK Department for International Development (DFID). Phase II of the IEE Project is set to commence in the latter half of 2016.

Key opportunities

Phase I of the IEE Project generated a wealth of data to be used during Phase II to aid in the development of Energy Systems Optimisation (ESO) in Industry and in benchmarking emerging best practices to inform the corrective measures needed to further improve energy efficiency in industry. The project also envisages: (i) ramped-up and expanded training of engineers and consultants in scarce skills needed to further implement Energy Management Systems (EnMS) and ESO; (ii) the development of a new service sector linked to EnMS and ESO; and (iii) the expansion of project reach to enable more companies to benefit from reduced reliance on energy and fuel and reap the resulting benefits in terms of reduced costs and improved competitiveness.

The 'Green Skill Development' aspect seeks to institutionalise and formalise green skills training in the education system as an important element in the transition to a lower carbon economy. Bridging the current skills gap will increase the employability of appropriately skilled personnel, whilst contributing to long term economic, education and social development. Existing technological and tacit knowledge build-up will be leveraged to contribute to the critical goals of job creation and retention.

Key constraints

Although the constraints related to data availability have largely been addressed by IEE Phase 1, challenges remain to the implementation of wide-scale industrial energy efficiency improvements through EnMS and ESO and the wider RECP. Chief among these is limited implementation by companies of energy audit outcomes (largely due to low levels of awareness and inadequate policy alignment within companies, creating barriers to investments in energy efficiency).

While there is high recognition of EnMS and ESO training courses amongst the relevant professional bodies/associations, there remains a lack of recognition by government higher education authorities. New ESO course topics still need to be developed and promoted. Lack of policy co-ordination across government - specifically concerning the uncertainty surrounding the introduction of carbon tax, the development of Energy Efficiency Management Plans and the implementation of the Desired Emission Reduction Outcomes (DEROs) - compound challenges surrounding implementation and funding of RECP.

Specific to the green skills component, challenges include a) the lengthy development and approval process of for new qualifications; and b) learning institutions' readiness to integrate green skills learning modules into their existing curricula.

Key Action Programmes

1. Industrial energy efficiency

Nature and purpose of the intervention

Based on the success of IEE Phase I, the IEE Phase II Project envisages building on the infrastructure and gains made in IEE Phase I. The focus in Phase II will be concentrated on value addition and providing more efficient coordination of activities by all government department activities directed at industry - whilst developing sector-wide guidelines, operational procedures and training offerings.

Targeted outcomes

Enhanced industrial growth through improved energy efficiency and resultant reductions in cost, improvements in competitiveness and sustainability

Key Milestones

2015-16 Q1:	Project documentation and resourcing finalised.
2015-16 Q3:	Procurement of service providers commenced by UNIDO and initial project implementation commenced.
2015-16 Q4:	Project implementation continues.
2016/17 Q1:	Monitoring and evaluation commences.
2016/17 Q2:	Project mid-term impact evaluation commenced.
2019Q4:	Project final impact assessment report and closure report finalised.

Lead departments/agencies: the dti, NCPC, UNIDO.

Supporting departments/ agencies: DoE, DEA, SANEDI, DST, DHET.

2. Green skills

Nature and purpose of the intervention

Increase uptake of green technologies, awareness of energy-saving methodologies and the sustainability of greening industries in South require a new skill set. In this regard, Resource Efficiency and Cleaner Production (RECP) skills will play a critical role in the transition to a lower carbon economy.

Targeted outcome

A recognised, institutionalised set of green skills qualifications.

Key Milestones

2015-16 Q1/Q2:	Identify a crucial green economy skills set relevant for economic development.
2015-16 Q3/Q4:	Development of learning units/outcomes areas and modules that will be used for occupational qualification development, both for vocational training and professional development.
2016-17 Q1/Q2:	Develop backward- and forward-linked institutional arrangements for skills development, creating strong employment opportunities for green skills graduates.
2016-17 Q3:	Develop green skills to enhance recipient industries' profitability, and
2016-17 Q4:	Explore a financing model for green skills development through existing skills development mechanisms.

Lead departments/agencies: the dti, NCPC.

Supporting departments/ agencies: DEA, DST, DHET.

3. Green transport

Introduction

The transport fuels used in South Africa are predominantly petrol, diesel and jet fuel, with a basic fuel cost of ca. 150 SA cents/kW.

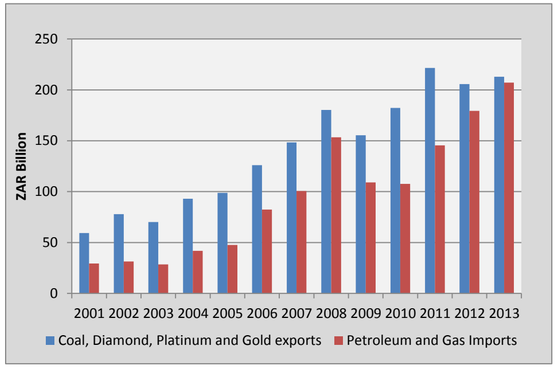
According to research by the IDC. the fuel cost for transport is about 10X more expensive when the price per Gigajoule is compared to that of fuel for electricity

During 2013 petroleum and gas products to the value of R 207 billion were imported. The South African demand for imported petroleum products is in the order of about 800 litres per second with a cost of ca R 5,000 per second (R 450 million per day). Macro-economically, to maintain South Africa's balance of payments requires the income from roughly all platinum, gold, coal and diamond exports to balance out petroleum product usage. Even having a well-developed refining sector or making further investments in the refining sector will do little to reduce this problem, as more than 90% of the total costs of a refinery are accounted for by crude oil inputs.

The IDC has carried out an extensive analysis of alternate (and clean) transport fuels backed by international studies and confirmed by SANEDI analysis. This shows that the cleanest and most efficient transport fuel supply options are natural gas and purified biogas (both being methane). These can be adopted in the short term, whilst electricity can be adopted into the vehicle market over the longer term..

Natural gas and purified biogas are typically (internationally and in South Africa ex-pipeline) available at about R 50-R 100/GJ – i.e. about 30-60% lower than the cost of petrol and diesel - excluding the necessary compression, storage and distribution costs for use in vehicles, as well as the vehicle conversion costs.

Figure 1: Comparative resource exports and imports



In the transport sector, the cost of fuel typically makes up about 50% of total transport costs and more than 70% of variable costs. The next largest cost item is capital cost - at about 20% of total costs. A reduction in the operating cost of vehicles will not only save the public money, but will also result in a multiplier effect across the economy – reducing costs in many sectors, since most have a significant transport component.

The transport sector contributes approximately 8% of the country's emissions; so any opportunity of reducing emissions in this sector holds the potential for widespread impact on the move towards setting the economy on a low-carbon development path. Transport provides an excellent opportunity for modelling options and trade-offs, and advancing ways forward. The two KAPs set out below focus on modelling some of these opportunities.

Key opportunities

Gas powered vehicles

Petrol vehicles such as conventional sedan taxis and minibus taxis can be converted to run on both methane and petrol (dual fuel) at a cost of about R 20,000. Diesel or compression ignition engines are not suitable to run on methane, so require different engines - generally better achieved through new investments - although conversions are possible to run on mixtures of 20-80% gas or 100% gas. Internationally, about 17 million vehicles are running on methane gas. This is the fastest growing global fuel type, with major OEMs supporting its use through increased availability of gas vehicles. These programmes have produced major air quality (and associated health) benefits, whilst at the same time leading to massive forex savings.

Major local possibilities include:

- Manufacture of gas vehicles in South Africa – including components - plus conversions of existing vehicles.
- Manufacture of gas-fuelling infrastructure and supply of gas fuel.
- Manufacture of green gas compressed vehicle fuel from Southern African sources: these can include (i) natural gas imported from neighbours such as Moçambique; (ii) biogas from municipal landfill sites and sewage sludges; (iii) green waste via anaerobic digesters; (iv) biogas from industrial wastes, such as manures, foods and abattoirs; and (v) biogas (also by anaerobic digesters) from energy crops grown on fallow (under-utilised) rural land. These manufacturing opportunities are all extremely labour-intensive and have significant job creation potential.

Electric vehicles

While certain existing vehicles can easily be converted to methane gas operation, new vehicles - and in particular those used for urban commuting and delivery purposes - are ideal candidates for battery electric operation. Electricity pricing systems that allow for low off-peak times and rates (surplus capacity being available from Eskom) to charge these vehicles will accelerate the uptake. Even though the upfront cost of these vehicles is currently higher than the price of internal combustion engine vehicles, their energy efficiency and low maintenance costs make their operating costs and thus overall cost of ownership more attractive over the extended lifespan of the vehicle.

Electric vehicles do not produce any emissions at point-of-use; and it is also possible to power them via solar energy charging. Batteries can also act as a storage option for electricity to support lack of capacity at peak times.

Key constraints

- Lack of policy and policy alignment. In general, the complex, integrated nature of the programme and the current fragmentation of policy in this space mean that the overall developmental responsibility lies outside the mandate of any one individual department, putting a premium on effective coordination.
- There is currently a lack of incentives (uneven playing field) to support the uptake of biogas (and natural gas) utilisation in the transport market (vs. the electricity market). The challenge for gas used in the transport sector is that the greater capital costs of distribution of gas (and the cost associated with vehicle conversions) must be recovered by a lower price or cost of gas relative to petrol and diesel.
- Investment in gas supply and off-take (vehicle conversions) must be aligned and co-ordinated right through the value chain.

Key Action Programmes

1. Develop and model policy and regulations to support biogas and natural gas use in transport

Nature and purpose of the intervention

To develop the necessary information to inform effective policy, regulations and incentives. The achievement of a green biogas transport fuels programme largely involves the public sector, and must be based on sending the correct signals to potential investors.

To confirm and/or revise existing policy, using both the information gained from modelling and the lessons of International best practice findings (adjusted for the South African environment) to develop incentives (or disincentives) that will compensate different transport fuels and projects fairly.

Targeted outcomes

New policy and existing policy alignment will (i) support the capturing of available waste sources of biogas; (ii) support the use of clean biogas and methane in transport, particularly in public transport; (iii) provide certainty on the long term incentives (and disincentives) for clean (and dirty) fuels; and (iv) send appropriate signals to the market and investors to start and maintain the growth of this sector.

2. Develop and implement biogas projects

Nature and purpose of the intervention

Review and select the most appropriate commercial biogas projects to pilot and test regulations and incentives.

Pilot projects in at least the following areas:

- Landfill gas projects based on municipal sites.
- Waste-to-biogas anaerobic digester projects.
- Energy crops bio-digester in rural areas.

Targeted outcomes

The target is a maximum of seven projects or a maximum 50 million litres diesel equivalent from the projects. Assessments of the projects will inform the refinement of regulations and incentives in the longer term.

Key Milestones

2015/16 Q4: Develop policy and regulatory framework.

2015/16 Q4: Business cases for projects finalised, with the impact of potential incentives (and disincentives) specified.

Selected projects to be implemented, with monitoring and feedback defined.

2016/17 Q4: A refined regulatory framework – with incentives and disincentives - for the different markets and sources of alternate gas fuels.

Lead Departments/Agencies: the dti, Department of Transport, Department of Cooperative Governance and Traditional Affairs, Department of Environmental Affairs, DoE, SANEDI.

3. Facilitate and promote the introduction of electric vehicles (Low-carbon Transportation Project)

Introduction

Electric vehicles (EVs) present a high potential to reduce GHG emissions, in particular if powered by renewable energy (RE) sources.

Key opportunities

While certain existing vehicles can easily be converted to methane gas operation, new vehicles and in particular those used for urban commuting and delivery purposes are ideal candidates for battery electric operation.

Key constraints

- Lack of necessary policy and incentive programmes to encourage early market take- off and first movers;
- Low awareness within the public of the opportunities associated with EVs;
- Lack of the necessary supporting infrastructure to develop sustainable alternative forms of transportation. The growth of non-motorised transport, in particular cycling, has been very low in almost all developing countries due to a large extent to low quality physical infrastructure.

Nature and purpose of the intervention

In consultation with SANEDI and all relevant Government Departments, UNIDO has developed a project to promote energy efficient low-carbon transportation in South Africa (LCT Project).

Its aim is to generate the information necessary to inform the development of policy, regulations, standards and support infrastructure to facilitate the mass introduction of electric vehicles in urban areas and into niche markets such as solar-powered game viewing vehicles, underground mining vehicles etc.

Targeted outcomes

The incremental introduction of electric vehicles, particularly in urban transport.

With greater certainty on long term incentives (and disincentives) for clean (and dirty) fuels - and with the envisaged positive impact of demonstrations under the LCT Project - the aim is to stimulate the uptake of electric vehicles into the SA transport sector, triggering a range of spin-off opportunities for new businesses supporting the industry with recharging infrastructure, energy-storage components (batteries) and so forth.

Key Milestones

2015-16 Q1: Project Document and resourcing finalised.

2015-16 Q2: Procurement of service providers commenced by UNIDO and initial project implementation commenced.

2015-16 Q4: Project Implementation continues.

2016-17 Q1: Monitoring and evaluation commences.

2016-17 Q2: Project Mid-term impact evaluation commences.

2018-19 Q3: Project Final Impact assessment.

Lead Departments/Agencies: the dti, in partnership with DoT, SANEDI, UNIDO.

Supporting Departments/Agencies: DEA, DoE, DST, TIA.

Ship/Boatbuilding and Associated Services Industry

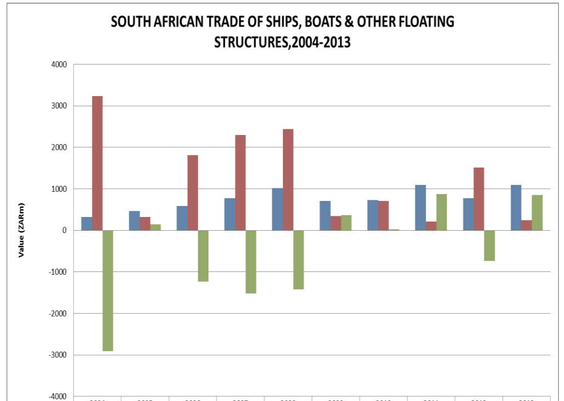
Introduction

The South African boatbuilding industry specialises in the manufacture of multihull catamarans and is the world's second largest producer of vessels in this category. A number of local companies have been acknowledged for the excellence of their work and are considered to be global leaders.

The South African commercial boat building sub-sector generally performed well, and it continues to experience significant market growth. In particular, demand for working boats in Africa has greatly increased, mainly driven by the need for maritime patrol vessels to combat piracy on the East and West Coasts of the continent. The requirements of the burgeoning offshore oil and gas industry have also contributed to the industry's upward trajectory. Interest in waterborne rescue craft has soared in Africa as well, because the level of preparedness of organs of state to effectively conduct disaster management operations has been coming under increasing scrutiny.

Statistics indicate that the ship/boatbuilding sector continues to maintain a positive trade balance. Exports across the broader sector grew by 41% in 2013, increasing from R 772m in 2012 to the current level of R 1.1bn. Imports in the sector fell from R 1.5bn in 2012 to R 248m in 2013. A comparative analysis of trade data for the period 2004 to 2013 is illustrated in the table below.

Figure 1: Trade data of commercial vessels



	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Export	318873712	467918227	582927615	774867752	1020404146	703166692	732623644	1092767524	772770457	1095889142
Import	3227989528	322634631	1811534586	2298718842	2437523783	338975445	709792005	216786455	1509694638	248823799
Trade Balance	-2909115816	145283596	-1228606971	-1523851090	-1417119637	364191247	22831639	875981069	-736924181	847065343

Source: StatsSA

Sector economic data

Variable	Contribution in 2013
Manufacturing employment	5 600
Trade balance	R 84 million

Based on current capabilities and performance, the South African ship/boatbuilding industry faces the following major opportunities and constraints:

Key opportunities

- Opportunities to expand exports in non-traditional markets driven by industrial and tourism development in emerging markets, particularly including sub-Saharan Africa and the Middle East.
- Substantial growth opportunities in the commercial boat market, particularly including sub-Saharan Africa, with an emphasis on offshore speed craft, ferries, water ambulances and working boats.
- Opportunities to develop training, repair and maintenance operations in sub-Saharan Africa.
- Greater governmental collaboration with African countries and facilitation of expanded trade, e.g. through funding assistance.
- Opportunities to increase innovation through collaboration between industry and research organisations to improve the competitiveness of the industry in terms of international standards.
- The development of sector-specific training and skills improvement programmes.

Key constraints

- Lack of available berths and inadequate mooring infrastructure.
- Less than optimal price competitiveness, given the fact that the industry is dependent on imports for a high proportion of core components.
- Many companies are undercapitalised, leading to difficulties in investing in product development.
- In addition to this, because ship repair is largely US dollar-based, the volatility of the Rand has caused budget-planning difficulties for the local industry.
- Lack of transformation - mainly because of high production costs and the high threshold cost of starting a business in this industry.
- A shortage of skilled labour: in particular, the scarcity of highly specialised marine engineering skills (with the partial exception of the Western Cape).
- Lack of a clear roadmap for future ports expansions.

Key Action Programmes

1. Ship/Boatbuilding Skills Development Programme

Nature and purpose of the intervention

The Ship/Boatbuilding Skills Development Programme seeks to establish a centralised, centrally funded, industry-driven training initiative that includes an apprenticeship system and an effective industry support mechanism for the enhancement of the industry's global competitiveness. The intervention proposes the implementation of a National Boatbuilding Training Programme to address the following concerns:

- Sectoral skills deficit.
- Lack of information on skills development and training.
- Mismatch between industry needs and the forms of training currently available.
- In-house training: which is generally informal, inconsistently applied and production-dependent.
- Deficiency of specialist trainers.
- Lack of innovation and technology development.
- Unavailability of training beyond NQF Level 4.

Targeted outcomes

The creation of a pool of skilled workers in the core ship/boatbuilding industry and wider value chain; consolidation of industrial placements; enhancement of innovation and technology use in the sector.

Key milestones

2015/16 Q1 - Q2:	Development of a skills strategy with options that will inform the development of a demand-led skills programme.
2015/16 Q3:	Industry consultation on the appropriate architecture of the skills programme.
2015/16 Q4 - 2016/17 Q1:	Development of the institutional arrangements that will govern the implementation of the skills plan.
2016/17 Q2:	Implementation of the skills development programme.
2016/17 Q3 - Q4:	Monitoring and evaluation through a Technical Working Group (TWG) including industry, **the dti** and training institutions.

Lead departments/agencies: **the dti.**

Supporting departments / agencies: NT, SETA, DHET, DOT, Industry.

2. Strategic marketing campaign

Nature and purpose of the intervention

South Africa currently has less than 1% of global market share in shipbuilding, ship repair and rig repair; but its great potential strength lies in its strategic location, with 134,000 vessels, including oil rigs, passing SA's shores on an annual basis. The purpose of this intervention is to develop a strategic marketing campaign targeted at developing maritime nations with which South Africa has bi- and multi-lateral trade agreements, in order to increase South Africa's market share by 100%.

Targeted outcome

The packaging of an integrated maritime value proposition comprising shipbuilding, ship repair, rig repair, port management operations and training for developing maritime nations in Africa.

Key milestones

2015/16 Q1 – Q4:	Conduct an industry analysis and investigation of current opportunities in the following countries: Angola, Namibia, Moçambique, Nigeria, Tanzania, Kenya and Ghana.
2016/17 Q1 – Q3:	Develop the strategic marketing campaign.
2016/17 Q4:	Launch of the strategic marketing campaign.

Lead departments/agencies: **the dti.**

Supporting departments / agencies: DIRCO, IDC, industry, Transnet.

3. Localisation Programme

Nature and purpose of the intervention

Research has indicated that industry and various stakeholders are of the opinion that the procurement of locally manufactured vessels for the public sector will provide a stimulus to the sector's weak domestic market and will contribute significantly to job creation in both the core ship/boatbuilding sector and the wider value chain. The purpose of this intervention is to develop a localisation programme for government departments and entities which prioritises local content in order to grow the South African market.

Targeted outcome

Increase local manufacturing capacity by 90% through local procurement, based on a thorough demand and supply side analysis that will feed into the designation process.

Key milestones

2015/16 Q1 - 2015/16 Q3:	Analysis of the value chain of working vessels for further designation of components.
2015/16 Q1 - Q2:	Establish government and state owned companies' long-term total demand (capex) for working vessels.
2015/16 Q3 – 2016/17 Q1:	Establish SA's capacity to deliver on this demand and influence capabilities that could be developed with government support.
2016/17 Q2 – Q3:	Complete a 5-year Designation Implementation Plan.

Lead department/agencies: the dti.

Supporting department/agencies: Transnet, Armscor, SAMSA, MIASA, eThekwini Maritime Cluster, Industry, DAFF, DEA, NT, DOT.

Advanced Materials

Composites

Composites are two or more materials with markedly different physical or chemical properties that retain their identities without dissolving or merging completely into one another, producing benefits that are 'more than the sum of the constituent parts'. Composites are therefore categorised as a 'matrix' or 'reinforcement' of complementary materials.

Composites incorporate various materials in such a way as to establish a sufficient aspect ratio (length to thickness) to provide a discernible reinforcing function in one or more directions. Materials that are incorporated to produce composites include polymer matrix resin (polyester, epoxy etc.); fibre reinforcement (glass, carbon, kevlar, aramid, kenaf, flax etc.); concrete; silica sand; acrylic or vinyl polymers; polypropylene fibres; catalysts; calcium; carbon fibre; e-glass and pigment.

The application of composite technology is associated with superior benefits which include: light weightedness (as compared to most woods and metals); high strength to weight ratios; weather and harsh chemical corrosion resistance; design flexibility (allowing for production of complicated shapes); dimensional stability (where products retain their shape and size when exposed to hot, cold, wet or dry environments); part-consolidation (which implies a single piece replacing an entire assembly of metal parts – thus reducing the number of parts in a machine or a structure, saving time and cutting down on the maintenance needed over the life of the item); non-conduciveness and non-magnetism (since no metals are incorporated into the design); radar-transparency (implying that radio signal transmission is not obstructed - hence rendering composites ideal materials for use in the vicinity of radar equipment, whether on the ground or in the air); low thermal conductivity (implying good heat or cold insulation qualities); and durability (long life and little need for maintenance).

The SA Composites Environment

South Africa already has the capabilities, the know-how and the experience to capture niche markets in the manufacturing of advanced composite products. Composites technology in South Africa presents valuable opportunities for the development of advanced products and processes locally, which is key to future competitiveness in both local and export markets.

However, South Africa has a problem with regard to the future 'shaping' of the industry. On the one hand, there is no single enterprise with a large enough share of the composite market to be able to decisively influence the industry's direction; on the other hand, there is little or no access to reliable data about contribution to GDP, growth and employment, because composites are input components into various industries.

Nevertheless, certain opportunities have been realised in a number of key sectors. For example, a growing number of aerospace and automotive manufacturers use composite materials for widely divergent end-products. The aerospace sector is leading the move away from metallic structures towards advanced composite materials. Some of the most important reasons for the accelerating trend towards composite materials in this sector are (i) enhancement of performance related to weight reduction; (ii) savings in maintenance costs; (iii) longer part or component lifespans deriving from better fatigue-resistance properties.

Key opportunities

The Presidential Infrastructure Coordinating Committee (PICC) identified 18 Strategic Integrated Programmes (SIPs) which offer opportunities for inclusion in public procurement. Of particular interest to the composites industry are the spatial, energy, water, sanitation and social infrastructure SIPS – the latter including electricity, construction, housing, health and educational infrastructure. Research has led to the realisation that municipalities and other public sector entities are moving away from steel and ductile iron products to composite products made out of polymer concrete and other polymer-based materials. The main reason for this trend is the effort to avert widespread theft, damage and vandalism to public infrastructure through the installation of composite inspection chambers/manhole covers and frames, catch-pit inlet curbs, handrails, street poles and gulley gratings. (Composites having no ready-made resale value).

- **Opportunities in the Aerospace & Defence industry**

  The requirement for new aircraft with superior characteristics mostly associated with composite material application has been a strong global economic driver; and for this reason South African has placed composites squarely on the national agenda. New military applications in the fields of post-conflict reconstruction, ballistic or blast protection have created new scope for the application of composites, and a significant local investment has been made in a SOC aerospace

composite facility to manufacture products ranging from simple aircraft parts to complex main rotor blades for helicopters.

South African companies are active in the production of aircraft interior panels, ballistic products to secure military vehicles (such as helicopters and armoured vehicles), wind turbine blades, mine ventilation fans and parts for smaller aircraft (UAVs, gliders etc.) The use of composites to reduce the weight of armoured vehicles will contribute significantly towards consolidating South Africa's top position in this market.

- **Opportunities in the Automotive Industry**

  Over the past decade the automotive sector has been considerably increasing its demand for lighter, stronger and smarter materials and structures to keep up with the technological advances requested by OEMs.

- **Infrastructure and construction Industry**

  Due to a growing demand for housing, alternatives such as composite buildings that are more affordable without compromising safety, with environment-friendly materials and manufacturing processes are becoming important. Composite schools, houses, and police stations can now be erected in less than four days and can incorporate integrated noise and thermal insulation qualities. Significant global market opportunities for composites lie in (i) the manufacture of corrosion-resistant pipes that reduce leakage in the transportation of drinking water and sewage; (ii) the reduction of corrosion and abrasion in paper and pulp processing, and in the petrochemicals, oil and gas industries; (iii) transparency to radio waves; (iv) making composite material suitable for manufacture of housing and covers for antennae, radar etc.

  Other industrial applications include green industry applications such as solar and wind energy infrastructure.

- **Nanotechnology**

  The next wave in manufacturing technology is already on the horizon with the introduction of nanotechnology into the production process for composite materials. This will contribute to even further reducing the need for metallic structures in manufacturing processes.

Key constraints

- Local research activities in this field are inadequate, and the industry has experienced declining growth in recent years.
- A lack of technological infrastructure.
- A polarised industry in terms of technology developments.
- insufficient skills development.
- An incomplete local value chain.
- Inferior imports and the absence of proper SQAM measures, compounded by the absence of an adequate import duty structures for composite products.
- Barriers to entry, including steep initial costs of investment and the high technical standards required for participation in the global composites market.

South Africa needs to invest heavily in both R&D and manufacturing processes if it wants to remain competitive. The existing players in the aerospace and automotive industries, as well as in the academic and research communities, should prioritise knowledge-exchange and information-sharing in order to jointly promote the use of composites in local manufacturing.

Key Action Programmes

1. Localisation of composite infrastructure products

Nature and purpose of the intervention

An analytical study is currently under way which aims to inform **the dti**'s approach to the localisation potential of composite infrastructure products that are procured for the state infrastructure-build programme.

Once appropriate quality standards and functional safety requirements are in place, the designation of specific composites will add strength to the localisation drive and at the same time send clear signals to potential investors.

A new wave of investment would carry with it the potential for a broadening spread of industrial applications for composites, upscaling of production capacity, higher value addition, increased competitiveness against imports and possible entry into global export markets.

Targeted outcomes

- Enhancement of local technological manufacturing capabilities, attraction of investment into the industry and job creation.
- A strengthened local manufacturing base with enhanced market access to local and global supply chains.
- Extension and deepening of the high-tech skills base that underpins the South African composites industry.

Key milestones

2015-2016 - Q2: Research into two new products in glass-reinforced composite poles used for lamp posts, street signage, telephone poles, traffic lights etc.

2015-201 - Q2: Submit a proposal to SABS to ensure the inclusion of adequate standards of quality, safety and functionality in composite infrastructure products.

2015-2016 - Q3: Work to create dedicated investment attraction mechanisms in pertinent areas of input components: fibre-glass, carbon fibre and epoxy resin.

2016 - Q4: Designation of glass-reinforced composite poles and engagement with municipal engineers and supply chain officials to increase awareness of the existence of alternative composite materials.

Lead departments/agencies: **the dti** (IDD&TISA), EDD and NT.

Supporting agency: SABS.

Aerospace and Defence

Sector Profile

The aerospace and defence sectors share a related technological and manufacturing base, with the boundaries between civilian and defence applications often overlapping. The combined sector is technology-intensive, creates substantial exports and has multiple positive spillover effects to other industries. These are mainly related to knowledge generation and transfer (especially at the higher systems levels), scarce skills development and increased competitiveness (especially in manufacturing). It also has relatively high employment multipliers.

The South African government has committed to continue supporting the aerospace and defence industry in view of the fact that a) it is a national strategic asset providing armaments and services to the SANDF, SAPS and the rest of the security cluster, and b) already has a strong footprint in global value chains.

One of the main interventions by government was the establishment in 2012 of the Joint Aerospace Steering Committee (JASC) to provide a national, interdepartmental platform to co-ordinate, position and expand the competitiveness of the aerospace and defence industries. The business context of increased globalisation, reduced government (especially military) budgets, and increasing involvement from a number of government departments and funding agencies in aerospace and defence has confirmed the role of JASC as the primary national body to maximise funding allocations, streamline incentives and promote coordinated technology development.

A recent study commissioned by **the dti** (concluded in October 2014) has confirmed that the sector has a very strong science, engineering and technology profile, with some 70% of professional/technically skilled employees (as opposed to the national average of about 36% for other industrial sectors). Its technological innovation index stands at 0.71; and it has a demonstrated capacity both to create new products and processes and to compete successfully in global markets. It has also, over the last 10 years, showed a positive trade balance.

The SADI has an export propensity of almost 65% and tops all the other SA industrial sectors in innovative capability. In general, those SADI firms that have established international partners have performed better in exports than those without them.

The export successes that have been achieved in recent years have largely been the result of a readjustment of response to the post-apartheid re-entry into the SA defence sectors of the big international players. This caused the SADI to radically re-asses, rethink, and ultimately fall back on its core strengths: closeness to international partners and clients, real operational experience, a vanguard of operational-technical problem-solvers, "can-do" operational fixers and accumulated adeptness in small-scale industrial solutions.

The industry is currently mulling options to further leverage its innovation, design and manufacturing capabilities and become a light aircraft Original Equipment Manufacturer (OEM), having proven through the Rooivalk project that it has the capacity to develop an indigenous South African aircraft. If the project takes off, it should be a catalyst for further significant economic growth, infrastructure development and job creation.

Key opportunities

The present main opportunities are in:

- A **dti**-led programme to scope capabilities, supply chains and opportunities for RFP/NIP localisation in civil and defence procurement and in support of exports through the Export Council.
- Increasing the strategic profile and business relationships with OEMs such as Airbus, Boeing, Embraer, etc.
- Ramping-up cluster development and investment in the Centurion Aerospace village aero-mechanical cluster.
- Unlocking present incentive programs to support the aerospace and defence industry.
- Integrating the sub-tier suppliers into the local and global supply chain by developing industry-wide manufacturing capabilities and competitiveness in engagements with integrators.
- Leveraging government or State Owned Companies' acquisitions of aircraft, land and maritime systems and related equipment to boost local manufacturing by participating in offset programmes and building further on global supply value chains.
- Strengthening the industry's footprint in existing export markets and enhancing its capabilities to enter into new niche markets.

Key constraints

- The National Industrial Development Strategy needs to be updated to guide the relevant interventions.
- Lack of large development programmes to build technology, expand localisation and develop human capital.
- Fragmentation and duplication of components and products.
- Slow industry transformation.
- Inadequate comprehensive aerospace and defence support programmes, resulting in escalating equipment costs and a shortage of start-up financing resources..

Key Action Programmes

1. Development of the National Aerospace and Defence Industry Strategy.

Nature and purpose of the intervention

Significant growth in the aerospace and defence industry has generally been as a result of special aerospace and defence packages within state programmes like the National Industrial Participation Programme (NIPP), the Defence Industrial Development Programme (DIPP) and as a result of foreign policy-related initiatives (government-to-government deal-making).

These packages have multi-year reach and involve product and component commissioning and manufacturing, maintenance and overhaul and substantial professional, managerial and technical job creation. They have also delivered significant 'cross-fertilisation' spin-offs into new areas like the SA National Space Programme.

What is needed now is a concerted defence-related Industrial Development Strategy. Through such a strategy, and In partnership with other key stakeholders, **the dti** intends to support the enhancement of SADI strategic capabilities - focussing particularly on shipbuilding, helicopters, missiles, armoured vehicles and trucks – and to provide guidance on appropriate investment strategies.

Targeted outcome

A strengthened sovereign local manufacturing industry with strong spillovers to the related civilian sectors.

Key milestones

2015/16 Q1: Commissioning of the Industrial Development Strategy.

2015/16 Q3: Workshops with relevant stakeholders and consolidation of inputs.

2015/16 Q4: Approved Industrial Development Strategy.

2. Broadening industry participation through a supplier development incentive scheme

Nature and purpose of the intervention

The South African aerospace manufacturing industry's two major players - Denel Aerostructures and Aerosud – require critical support from a number of smaller suppliers, including SMME machine shops, in order to deliver on their contracts and increase their output volumes to international OEMs.

In order for the industry to transform and broaden its supplier base, significant investment is required by the integrators to ensure that the lower-tier suppliers are certified to meet the international quality standards of OEMs like Boeing and Airbus.

To encourage local integrators to invest in broadening their supplier base, an incentive scheme is proposed, based on the increase in annual turnover of the qualifying SMMEs. This increase should be as a direct result of contracts placed by the integrator for aerospace component manufacture. Participating SMMEs will be evaluated based on the following criteria:

- BB-BEE status;
- Technological, organisational and business capabilities;
- Technology readiness levels;
- Potential for sustainability and growth;
- Acceptance/ identification by the systems integrators.

Targeted outcome

Inclusion and integration of a representative and reliable supplier base which would otherwise not have had the opportunity to participate in the industry.

Key Milestones

2015/16 – Q1: Evaluation of the previous year's take-up and the impact of the scheme with a view to its further development and fine- tuning.

2015/16 – Q2: Industry consultations and calls for proposals.

2015/16 – Q3: Incentivising Integrators and assessment of the scheme.

Lead and supporting departments/agencies: the dti, IDAP.

3. Incorporation of Aerospace and Defence Industry Infrastructure into the Critical Infrastructure Programme (CIP)

Nature and purpose of the intervention

The objective is to include the Aerospace and Defence Industry within the Critical Infrastructure Programme (CIP), by amending the guidelines and the definition of Critical Capital Infrastructure to include a Strategic National Aerospace and Defence Technical Infrastructure.

Economic Rationale

The South African aerospace and defence industry is high-tech and is dependent on its niche capabilities to implement specialised solutions, provide tailor-made equipment, components, parts and services for unique environments.

To strengthen and develop these cutting-edge technical facilities, it needs the support of a strategic national aerospace and defence technical infrastructure and associated facilities. At present, there is no specific support mechanism within **the dti's** suite of financial incentives and other instruments.

The facility should keep up with the industry`s evolving innovations and be able to issue safety and quality certificates that are internationally recognised. It should provide functions such as testing, calibrations, inspections, integration and evaluations of industry products and systems to stringent international standards.

Targeted outcome

A strengthened defence aerospace industry supported by specialist services that strengthen aerospace manufacturing competitiveness and build up on the existing global supply value chains.

Key milestones

2015/16 – Q1: Concept Document developed and drafting of the proposed amendments including the definition of "Critical Infrastructure'.

2015/16 – Q2: Incorporation of Aerospace and Defence Industry into the Critical Infrastructure Programme.

Lead department: the dti.

Supporting entities: The defence aerospace industry.

4. Localisation of radar systems

Nature and purpose of the intervention

South Africa, with its long coastlines and inland borders - coupled to the vast ocean areas that it is expected to manage under UN-mandated legislation - is heavily reliant on technologies able to provide the necessary surveillance over these areas. Radar is a technology with a well-established base in South African industry. But it needs to be further nurtured if the state is to obtain the full benefit of maintaining the industry's status as a leading international supplier of systems for both the industrial and security markets.

Targeted outcomes

Strongly sustained, strengthened and developed radar-based defence capabilities, characterised by deepened localisation (through designation) and associated supplier development.

Key milestones

2015/16 – Q2: Collection of industry data.

2015/16 – Q3: Research Development for designation of radar systems.

2015/16 – Q4: Designation of the radar systems.

Lead and supporting departments / agencies: the dti.

Electro-technical industry

Support for Broadband Policy roll-out

South Africa has world-class engineering facilities, an internationally accepted system of standards and testing, and a base of capacity and capabilities including skills that can be optimised for the electronics industry.

Supported by **the dti** and IDC, private investors have built the capability to produce a wide range of electronic products. These include set-top boxes (already designated for local procurement), electrical and telecoms cables (designated), televisions (rebate system), residential electricity meters (designated), personal computers and laptop assembly.

Domestic manufacturers have demonstrated capacity to support government initiatives such as digital broadcasting migration, broadband roll-out, e-learning platforms and the electrification programme. SA telecommunications companies invest around R 20 billion per year on infrastructure and this spending is projected to continue for the next three to five years. It is important to leverage these programmes for the benefit of the local industry as they raise aggregate demand and contribute to job creation and general economic development and growth.

Key opportunities

The key opportunities identified for this industry are as follows:

- To leverage public procurement within the sector to support localisation;
- To develop local skills and technology;
- To attract foreign direct investments into the industry;
- To promote exports and participation of the industry in large continental projects.

Constraints

- High volumes of imported devices and components;
- High cost of technology and infrastructure investments (e.g. PC Board populating machines);
- Lack of interest by telecommunications companies in buying local;
- The current absence of tariffs on computer-related products (WTO agreement);
- Poor regulatory environment, with influx of illegal imports;
- Poor compliance with standards and industry-compulsory specifications.

Key Action Programmes

1. Development an action plan to support Broadband roll-out

Nature and purpose of the intervention

The objective of this work will be to consider industrial policy interventions that can support and stimulate electronics manufacturing and assembly arising from the broadband roll-out programme. Building on the designation of STBs, cables, residential electrical meters and on the broadband policy and ICT policy review process, this work will seek to implement action focusing on existing standards, compulsory specifications; incentives and industrial financing for critical products manufactured by domestic electronics companies.

Targeted outcomes

- A revitalised and scaled-up local electronics industry, leveraging on the potential of both broadband and e-learning platforms to raise aggregate demand.
- Improved competitiveness of local industry and increased employment.

Key milestones

2015/2016 Q1: Support the industry in putting an application to ITAC for a rebate system on components for manufacturing of electronics products.

2015/2016 Q3: Develop an ICT-specific incentive package that supports manufacturing and incentivises telecoms companies to buy local.

Lead and Supporting Departments/agencies: the dti, IDC, DTPS, CSIR, SARS, ITAC, SABS and PICC.

Water Metering Systems

Introduction

South Africa has been a pioneer of metering solutions within the utilities industry since the 1980s. There is a well-developed domestic production capability within the electricity segment of the prepayment market. This technology has been transferred to applications within other areas of the utilities environment, and in this case specifically to residential and industrial electricity and water distribution and consumption.

With the increase of water shortages and wastage in the country it becomes critical that these capabilities be deployed for demand and supply management. There have been various municipal roll-outs of prepaid water meters across the country, with some areas (for example, Mogale City) having an estimated 50% of customers receiving water though pre-paid systems. Prepaid water meters have the ability to facilitate cost-recovery and accelerate private sector participation in the provision of water services.

Industrial meters are purchased in large volumes by metros and water boards and there are a number of different products within the range that serve to enhance effective management of distribution and consumption.

In South Africa households are entitled to 6 kilo-litres of free water per month. The implementation of this legislation has, however, been causing enormous challenges to local authorities and service providers. In contrast, prepaid water meters have allowed households their free monthly provision of 6,000 litres of water in a planned manner before the water supply is shut off. Perhaps more importantly from the consumer point of view, water from these units typically costs less than water billed directly from the utility.

The basic objectives of water metering systems are quite simple:

- To Improve the management of water by the municipalities and water boards; and, in particular, the administration of free basic water;
- To encourage and entrench consumer consent to payment for water services and self-regulation.

Nature and purpose of the intervention

There has been considerable market development within the prepaid water meter industry. There are different costs (and benefits) associated with different customers and with the three different uses of pre-paid meters: public stand-posts, individual household connections and institutional customers.

The research so far indicates that the introduction of pre-paid systems can be complex and costly, especially when quantifying all of the related costs (beyond the installation of the pre-paid meters) including the technical infrastructure for selling and loading credit, software development and IT integration, customer sensitisation, vendor commissions, spare parts and customer support.

Even taking into account these overheads, prepaid systems that dispense high volumes (especially for institutional customers, and possibly for stand-posts) can generate enough economic benefit to become attractive to utilities, as there are no billing costs, no billing inquiries, no credit management, and no arrears to be financed. As a result, there has been considerable growth in the number of domestic and foreign companies participating in the manufacturing of prepayment water meters.

Key Opportunities

Increasing the procurement of locally produced prepaid water meters, particularly at municipality level. In the light of increasing water shortages, the inbuilt control and conservation features of prepayment metering systems gain greater salience, allowing for the possible expansion of existing manufacturing facilities and of new entrants into the sector.

This will require:

- Investigating the capacity of local manufacturers to meet local demand over the next 3-5 years.
- Manufacturing at plants which could add prepaid water meters to existing product lines - e.g. production of dual (water and electricity) meters.
- Positioning SA for increased exports into other parts of Southern Africa.
- Reviewing duties on components and products and introducing a tariff on imported prepaid meters (WTO Bound Rate 10%).

Key constraints

Constraints affecting the competitiveness and therefore the growth of the industry include:

- The current high volume of imports;
- High input costs, specifically import prices of components;
- Stiff competition from low-cost imported products from the Asian market.

Key Action Programmes

1. Designate the Procurement of Water Metering System in terms of the PPPFA

Nature and purpose of the intervention

The main objective is to designate the water metering system, which will provide a well-researched and structured approach to ensure that a minimum local content threshold will be applied in all state procurement tenders.

Targeted outcome

Increase in the demand for locally produced units, enabling the local industry to capture a bigger market share, and hence create more sustainable employment over the medium term.

Key Milestones:

2015/16 –Q3: Conclusion of Industry research and completion of internal review process.

2015/16 – Q4: Departmental decision to designate formalised, and sent to NT for issuing of the Instruction Note.

Lead Departments/agencies: the dti, EDD, ITAC, Water Affairs, Rand Water, municipalities.

2. Quality of supply meters (electricity) – Industrial meters

Introduction

This work to be done here builds on the electrification and electricity metering programmes undertaken over the past 10 years or so; and is driven by the urgent need to electrify about 97% of all households in South Africa by 2025, as committed to in the Department of Energy's Electrification Master Plan.

Energy management in South Africa has become an acute national challenge, as seen in what has come to be known as "the ongoing power crisis". One of the ways of managing the demand side of the crisis is obviously through domestic and industrial metering.

There is, however, also an increasing need to ensure that the *quality* of supplied electricity is within required levels of system tolerance – minimising, for example, damaging post-load-shedding power surges and spikes.

Managing such risk can be achieved through the installation of Quality of Supply Meters (QSMs). These instruments essentially monitor and measure any peculiar activity within the electricity distribution network and help utilities to plan, manage and minimise the possibilities of major disruptions or blackouts.

Key Opportunities

The key opportunities identified within this sector are as follows:

- To take advantage of current public spending within the sub-sector by supporting locally produced QSMs – the main procurers being Eskom, municipalities and industry.
- To continue developing local technology and skills in this area.
- To create a suitable environment to attract new investments.

Key Constraints

In common with the electronics manufacturing space as a whole, the main constraints on the sub-sector's growth are dependence on imported electronic components and aggressive market penetration by imported, often cheaper products. In this context, there is a need for focused government programmes and policy interventions aimed at assisting local companies that are prepared to do the hard work of upping their competitiveness to survive and thrive into the future.

Key Action Programmes

1. Designation of Electricity QSMs in terms of the PPPFA

Nature and purpose of the intervention

The objective of this work is to ensure that government leverages its own procurement of these products as the primary procurer within this sector.

Targeted outcomes

- Achievement of at least 40% local content in QSM manufacturing.
- Stimulation of increased local demand, with direct spin-offs into after-sales, repair and general maintenance and indirect spin-offs into sectors such as packaging and plastic moulding (casings for QSMs).
- Improved product quality and enhanced competitiveness in the sub-sector.

Key Milestones

2015/2016 Q1 – Q4: To designate QSMs in terms of the PPPFA as amended in December 2011.

Lead departments: the dti and EDD.

Supporting Departments/ agencies: Eskom, Department of Energy, Municipalities.

Critical Support: Municipalities (Association of Municipal Electricity Utilities) and Eskom.

IT Equipment

Business Monitor International (BMI) expects the South African IT market to grow from R 106 billion in 2014 to R 139 billion in 2017, while contributing around 3% to GDP. It also forecasts the growth of the hardware market from R 37.4 billion to R 47.7 billion over the same period. National Treasury estimates that a figure of around R 5 billion was spent on hardware by the state in 2013 (excluding State Owned Entities).

Most of this spending still, of course, goes to globally designed, manufactured and assembled products by OEMS who normally set up sales offices or partner with distribution companies in South Africa.

Given the lack of local content in personal computers, South African companies in the industry are only involved in semi-knock down operations, but they do have the capacity to meet both government and private sector specifications for the assembly of desktops, laptops and tablets.

Key opportunities

Government is committed to making use of ICT to deal with an array of socio-economic challenges in areas such as education (The "One Laptop per Teacher, One Tablet per Learner" project etc.) and health services (telemedicine, electronic patient records and management systems, etc.). The State and its entities are expected to continue spending on IT equipment for administration and day-to-day operations for the foreseeable future. The capability of both local PC assemblers and contract manufacturers to meet this demand presents an opportunity for the State to leverage on its procurement requirements to stimulate job creation in the sector.

Key constraints

- Lack of industry organisation – engagements with individual companies as opposed to an Industry Association.
- No import duties on computer related equipment, as per WTO rules.
- Lack of local content.
- Fierce global competition.

Key Action Programme

1. Local procurement of PCs and Tablets

Nature and purpose of the intervention

The intervention seeks to ensure that the state procures locally-assembled personal computers and at the same time promotes foreign direct investment (for assembling and manufacturing of components) to supply both South Africa and regional markets. It also proposes a review of the tariff structure in the smart-phone industry to support local assembling and manufacturing.

Economic rationale

- To entice already existing OEMs (Hisense, LG, etc.) and other local investors to consider increasing production lines to locally produce other devices such as tablets and smart phones.
- To create a value proposition for OEMs such as Dell and HP (which previously had assembly plants in SA) to invest again in local assembly of their products.

Targeted outcome

A sustainable and growing market for local assemblers and contract manufacturers to supply government and other state-owned entities.

Milestones

2015/2016 Q2: Together with National Treasury, develop a methodology on strategic procurement of personal computers and tablets.

2015/2016 Q2-Q4: Through TISA, introduce a programme to attract investment in both local assembling and component manufacturing (PC boards and panels).

Lead Departments: the dti, NT, DTPS and SITA.

ABBREVIATIONS AND ACRONYMS

AAT	Aerosud and Aerodyne Aviation Technology
ABC	Aerial Bundled Conductor
ADEP	Aquaculture Development and Enhancement Programme
AECMSA	Association of Electric Cable Manufacturers of South Africa
AIDC	Automotive Industry Development Centre
AIDS	Acquired Immune Deficiency Syndrome
AIS	Automotive Investment Scheme
APDP	Automotive Production and Development Programme
APDP	Automotive Policy Development Plan
API	Active Pharmaceutical Ingredients
ARSO	African Organisation for Standardisation
ART	Antiretroviral Treatment
ARV	Anti-retroviral
AsgiSA- EC	Accelerated and Shared Growth Initiative for South Africa - Eastern Cape
ASCCII	Automotive Supply Chain Competitiveness Improvement Initiative
ATF	Aluminium Trifluoride
B-BBEE	Broad Based Black Economic Empowerment
BC	Bushveld Complex
BI	Black Industrialist
BNDES	Brazil's Banco Nacional de Desenvolvimento Econômico e Social
BMI	Business Monitor International
BPS	Business Process Services
BOP	Balance of payment
BTSA	Bombardier Transportation South Africa
BTX	Benzene, Toluene and Xylene
CAGR	Compound Annual growth rate
CAV	Centurion Aerospace Village
CDC	Coega Development Corporation
CDP	Cluster Development Programme
CDM	Clean Development Mechanism
CEF	Central Energy Fund
CIACM	Competitiveness Improvement of Automotive Component Manufactures
CIC	Customer Innovation Centre
CIP	Critical Infrastructure Programme
CKD	Completely Knock Down
CMMI	Capability Maturity Model Integration
CMT	Cut, Make and Trim
COC	Centre of Competence
COM	Chamber of Mines
COMESA	Common Market for Eastern and Southern Africa
CSA	Corrugated Seamless Aluminium
CRM	Customer Relations Management
CRE	Customs Risk Engine
CSDP	Competitive Supplier Development Programme
CSID	Corporate Strategies and Industrial Development
CSIR	Council for Scientific and Industrial Research
CSP	Customised Sector Programme

CTS	Concentrated Thermal Solar
CTCP	Clothing and Textiles Competitiveness Programme
CTLF	Clothing Textiles, Leather and Footwear
DAC	Department of Arts and Culture
DAFF	Department of Agriculture, Forestry and Fisheries
DBSA	Development Bank of Southern Africa
DERO	Desired Emission Reduction Outcomes
DFIs	Development Finance Institutions
DFID	Department for Internal Development
DG	Director General
DIRCO	Department of International Relations and Cooperation
DIP	Defence Industrial Development
DMR	Department of Mineral Resources
DoC	Department of Communications
DOD	Department of Defence
DoE	Department of Energy
DoH	Department of Health
DHET	Department of Higher Education and Training
DoJ	Department of Justice
DoL	Department of Labour
DoT	Department of Transport
DPE	Department of Public Enterprises
DPW	Department of Public Works
DST	Department of Science and Technology
the dti	The Department of Trade and Industry
DTH	Direct to home television
DTT	Digital Terrestrial Television
DWEA	Department of Water and Environmental Affairs
EAC	East African Community
EC	Eastern Cape
ECIC	Export Credit Insurance Corporation
EE	Energy Efficiency
EEC	Ekurhuleni East College
EDD	Economic Development Department
EIA	Environment Impact Assessment
EIP	Enterprise Investment Programme
ELIDZ	East London IDZ
EMIA	Export Marketing and Investment Assistance
EPI	Extended Programme of Immunisation
ERA	Enterprise Reference Architecture
ESO	Energy Systems Optimisation
ESKOM	Electricity Supply Commission
EU	European Union
EV	Electric Vehicle
FAT	Free Trade Area
FAW	First Automotive Works
FDI	Foreign Direct Investment
FET	Further Education and Training
FIETA	Forest Industries Education and Training Authority
FILDA	International Fair of Luanda Trade Exhibition

FPM	Fibre Processing and Manufacturing
FPSO	Floating Production Storage & Offloading
FRIDGE	Fund for Research into Industrial Development Growth and Equity
FRP	Fibre-reinforced polymer
FSA	Food Safety Agency
FSA	Forestry South Africa
FTPP	Forestry, Timber, Pulp and Paper
GDP	Gross Domestic Product
GE	General Electric
GHG	Greenhouse Gas
GHS	Globally Harmonised System
GFCF	Gross Fixed Capital Formation
GW	Gigawatt
GWH	Gigawatt Hour
GSK	GlaxoSmithKline
ha	hectares
HASA	Hyundai Automotive South Africa
HF	Hydrogen Fluoride
HIV	Human Immune Virus
HRD	Human Resource Development
HS	Harmonised System
ICT	Information Communication Technologies
IDAP	Integrated **dti** Aerospace Programme
IDC	Industrial Development Corporation
IDAD	Incentive Development and Administration Division
IDTV	Integrated Digital Television
IDZ	Industrial Development Zone
IEE	Industrial Energy Efficiency
IFPI	International Federation of the Phonographic Industry
INES	Integrated National Export Strategy
IPAP	Industrial Policy Action Plan
IRP	Integrated Resource Plan
ISAW	Iveco South Africa Works
ITAC	International Trade Administration Commission
ITED	International Trade and Economic Development
JASC	Joint Aerospace Steering Committee
JV	Joint Venture
KAP	Key Action Programme
KDB	Korean Development Bank
KZN	KwaZulu-Natal
LCT	Low-Carbon Transportation
LNG	Liquid Natural Gas
LSOH	Low Smoke Zero Halogen
m	metres
MACC	Mobilisation, Alignment, Capacity Building and Cooperation
MBAP	Mineral Beneficiation Actions Plans
MCC	Medicines Control Council
MCEP	Manufacturing Competitiveness Enhancement Programme
MerSETA	Manufacturing, Engineering and Related Services SETA
MHCV	Medium and Heavy Commercial Vehicles

MIC	Middle Income Countries
MIDP	Motor Industry Development Programme
MNC	Multi-National Corporations
MOA	Memorandum of Agreement
MOGS	Mining, Oil and Gas Services
MoU	Memorandum of Understanding
MSD	Merck Sharp & Dohme
MSTF	Medium term Strategic Framework
MTBPS	Medium Term Budget Policy Statement
MTBS	Medium Term Budget Statement
MTIDC	Malawi-Tanzania Industrial Development Cluster
MW	Megawatt
NAAMSA	National Association of Automobile Manufacturers of South Africa
NADP	National Artisan Development Programme
NAMC	National Agricultural Marketing Council
NBCLI	National Bargaining Council of the Leather Industry of South Arica
NCPC	National Cleaner Production Centre
NCSDP	National Craft Sector Development Programme
NCCRP	National Climate Change Response Policy White Paper
NDP	National Development Plan
NDT	National Department of Tourism
NECSA	South African Nuclear Energy Corporation
NEDLAC	National Economic Development and Labour Council
NEF	National Empowerment Fund
NECSA	Nuclear Energy Corporations
NERSA	National Energy Regulator of South Africa
NFVF	National Film and Video Foundation
NGP	New Growth Path
NIPF	National Industrial Policy Framework
NIPP	National Industrial Participation Programme
NLA	National Laboratory Association
NMISA	National Metrology Institute of South Africa
NNR	National Nuclear Regulator
NOA	National Outsourcing Association
NQF	National Qualification Framework
NPA	National Prosecuting Authority
NRCS	National Regulator for Compulsory Specification
NSDS	National Skills Development Strategy
NSF	National Skills Fund
NSSD	National Strategy for Sustainable Development and Action Plan
NSSS	Nuclear Steam Supply System
NT	National Treasury
NTB	Non-Tariff Barriers
NFTN	National Foundry Technology Network
NTI	National Tooling Initiative
NTP	Nuclear Technology Products
OEMs	Original Equipment Manufactures
OSD	Oral Solid Dosage
OTGC	Oiltanking Grindrod Calulo
OTMS	Oiltanking MOGS Saldanha

P-AIS	People-carrier Automotive Investment Scheme
PET	Polyethylene Terephthalate
PFMA	Public Finance Management Act
PGM	Platinum Group Minerals
PGWC	Provincial Government of the Western Cape
PI	Production Incentive
PIC	Presidential Infrastructure Committee
PILC	Paper Insulated Lead Covered
PMI	Purchasing Managers Index
PPA	Power Purchase Agreement
PPP	Public Private Partnership
PPPFA	Preferential Procurement Policy Framework Act
PRASA	Passenger Rail Agency of South Africa
PSA	Proudly South African
PV	Photovoltaic
PVG	Premier Valves Group
REFIT	Renewable Energy Feed in Tariff
REIPP	Renewable Energy Independent Power Producers
REIPPPP	Renewable Energy Independent Power Producer Procurement Programme
RFP	Request for Proposals
RIBS	Rigid Inflatable Boats
RPO	Radiation Protection Officers
R&D	Research and Development
RSDIP	Regional Spatial Development Initiatives Programme
RSV	Resilient Seal Valve
QCTO	Quality Council for Trades and Occupations
QSM	Quality of Supply Meter
SA	South Africa
SaaS	Software as a Service
SAA	South African Airways
SABC	South African Broadcasting Corporation
SABS	South African Bureau of Standards
SADC	Southern African Development Community
SAFVCA	South African Fruit and Vegetable Canning Association
SAHC	South African Handmade Collection
SANS	South African National Standards
SANAS	South African National Accreditation System
SAOGA	South African Oil and Gas Alliance
SAOSO	South African Organics Sector Organisation
SAPS	South African Police Services
SARS	South African Revenue Services
SARi	South African Renewables Initiative
SASTAC	Southern African Sustainable Textile and Apparel Cluster
SAT	South African Tourism
SATS	South African Technical Standard
SANAS	South African National Accreditation System
SASTAC	Southern Africa Sustainable Textile and Apparel Cluster
SDI	Spatial Development Initiatives
SDP	Supplier Development Plans

SECO	Secretariat for Economic Affairs
SEDA	Small Enterprise Development Agency
SETA	Skills Education and Training Authorities
SEZ	Special Economic Zones
SIP	Strategic Integrated Programmes
SKD	Semi-Knock Down
SME	Small and Medium Enterprises
SMME	Small Medium and Micro Enterprises
SOCs	State-Owned Companies
SOC-ATD-TT	State-Owned Companies Artisan Development Task Team
SOEs	State-Owned Enterprises
SPS	Sanitary and Phyto-sanitary Standards
SQAM	Standards, Quality Assurance and Metrology
SSAS	Sector Specific Assistant Scheme
SSP	Sector Skills Plans
STB	Set Top Box
SWH	Solar Water Heaters
SWOT	Strength, Weakness, Opportunity and Threats
TAPMA	Thailand Automotive Parts Manufactures Association
TBT	Technical Barriers to Trade
TEO	The Enterprise Organisation
T/G	Turbine Generator
TISA	Trade and Investment South Africa
THRIP	Technology and Human Resources for Industry Programme
TPA	Tonnes Per Annum
TNPA	Transnet National Ports Authority
TSAM	Toyota South Africa Motors
TSP	Team Software Process
TV	Television
TVC	Technology Venture Capital
UNIDO	United Nations Industrial Development Organisation
UNFCCC	United Nations Framework Convention on Climate Change
UNCTAD	United Nations Conference on Trade and Development
US	United States
VAT	Value Added Tax
WC	Western Cape
WTO	World Trade Organisation

NOTES:

NOTES:

NOTES:

THE DTI CAMPUS
77 Meintjies Street
Sunnyside
Pretoria
0002

THE DTI POSTAL ADDRESS
Private Bag X84
Pretoria
0001

THE DTI CUSTOMER CONTACT CENTRE
0861 843 384

www.thedti.gov.za

ISBN: 978-0-621-42601-4
RP: 97/2014: 978-0-621-42601-4

the **dti**

Department:
Trade and Industry
REPUBLIC OF SOUTH AFRICA