AFRICA CEO FORUM

The African energy opportunity

Abidjan, March 21st, 2016

Africa's energy gap: The costs of the divide

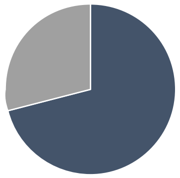
4/5

OF THE POPULATION (727 MILLION)

Rely on solid biomass, mainly fuel wood and charcoal, for cooking

621
MILLION

Africans do not have access to electricity



Of SSA's energy is consumed by South Africa

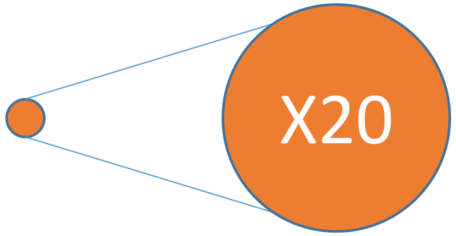
89
BILLION

US dollars of petroleum exported by Nigerian in 2013

93
MILLION

Nigerians lack access to electricity

In Africa, the poorest households spend



MORE PER UNIT OF ENERGY THAN THE WEALTHIEST HOUSEHOLDS

with connection to the grid

600,000

AFRICANS ARE KILLED EVERY YEAR

By air pollution caused by the use of solid biomass for cooking

In 9 African countries, more than

80%

OF PRIMARY SCHOOLS HAVE NO ELECTRICITY

On current trends, it will take Africa until

2080

TO ACHIEVE UNIVERSAL ACCESS TO ELECTRICITY

SOURCE: Africa Progress Panel

Key messages for you today

1. We are already seeing a seismic shift in the energy landscape in Africa

2. The investment gap is massive and is a central priority for change – also, it is a key driver of innovation

3. The fundamentals driving these shifts are expected to continue to accelerate

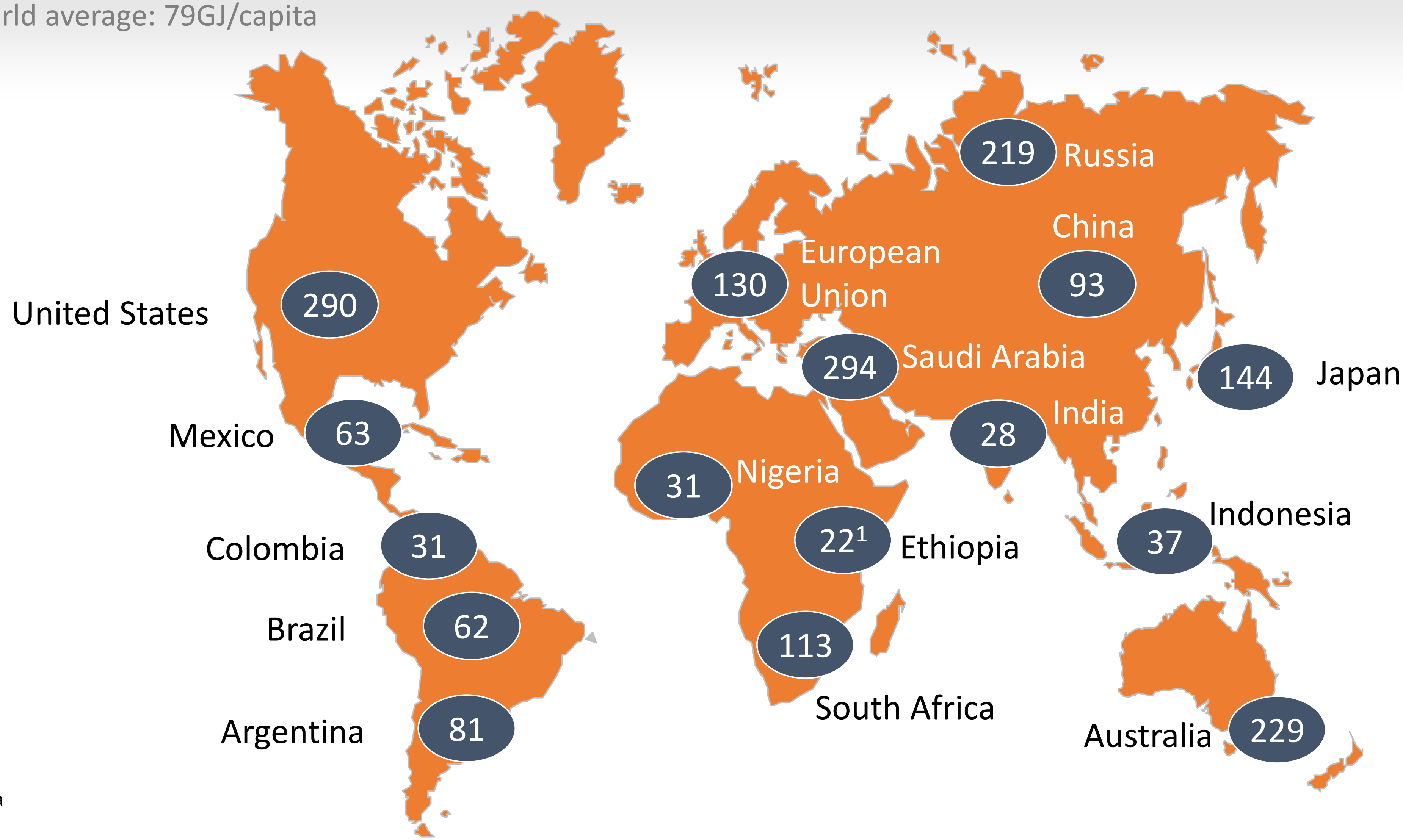
4. As a result, new energy solutions are already emerging and some are delivering at surprisingly large scale

5. There is still lots of work to do, but Africa is beyond the point of no return

Current energy per capita varies significantly across the world

XX Average per capita primary energy consumption
GJ/capita

2014, World average: 79GJ/capita

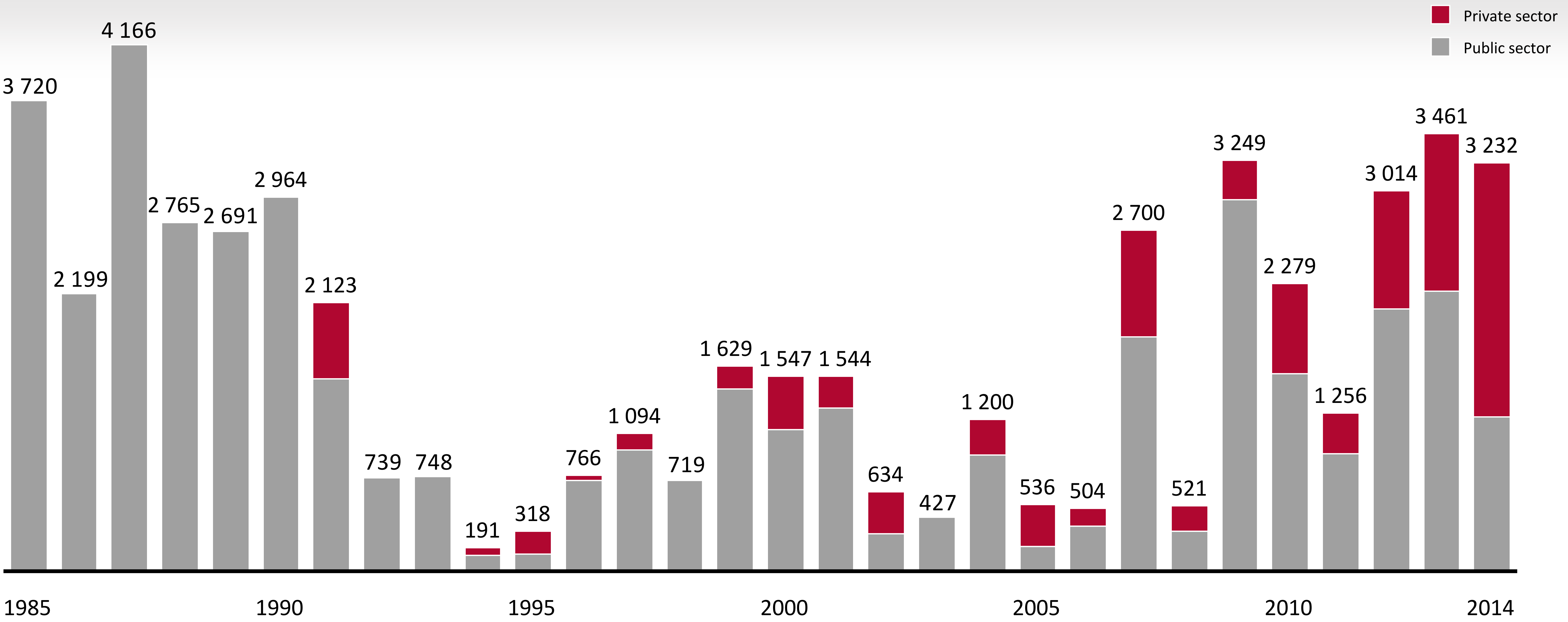


1 2013 due to limited data

SOURCE: Enerdata (2015), Historic actuals; UN Population Division (2015), World Population Prospects: The 2015 Revision.

After a 15 year drought, Africa is building new capacity, this time with more private sector engagement

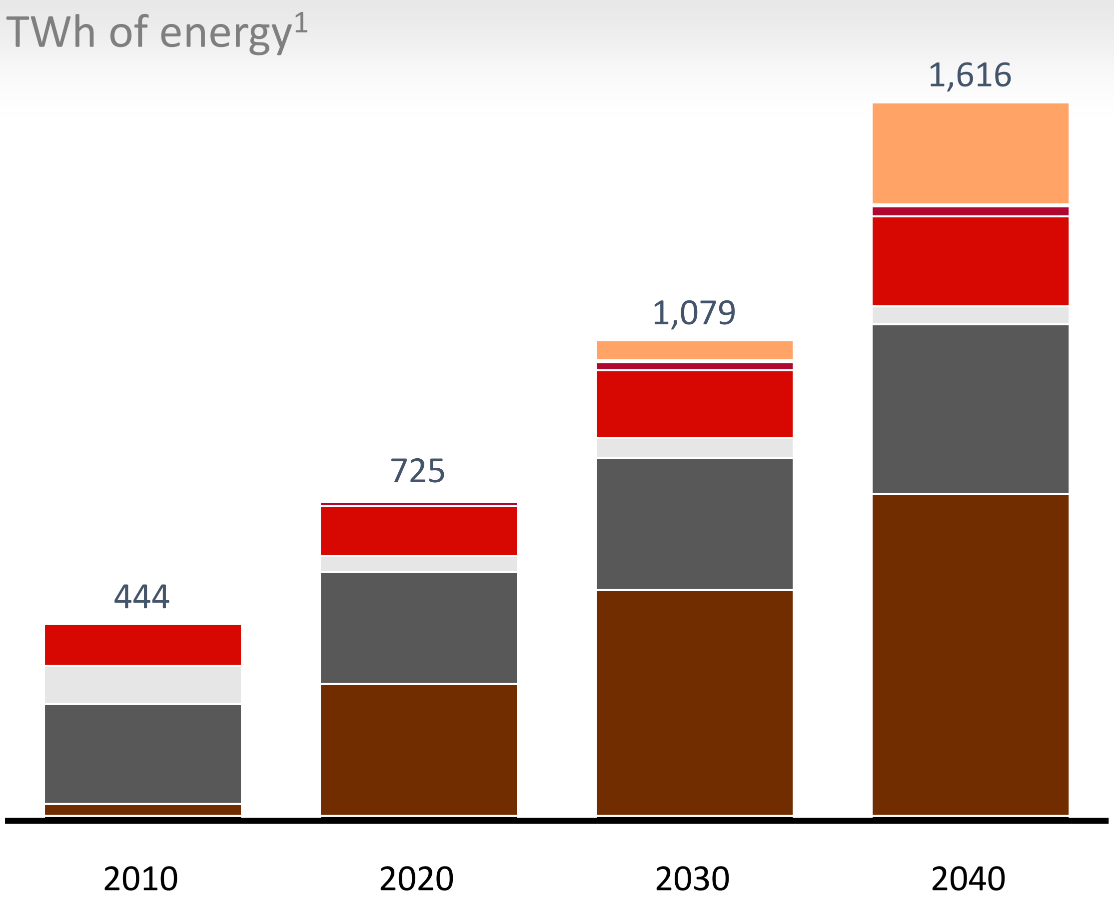
MW installed



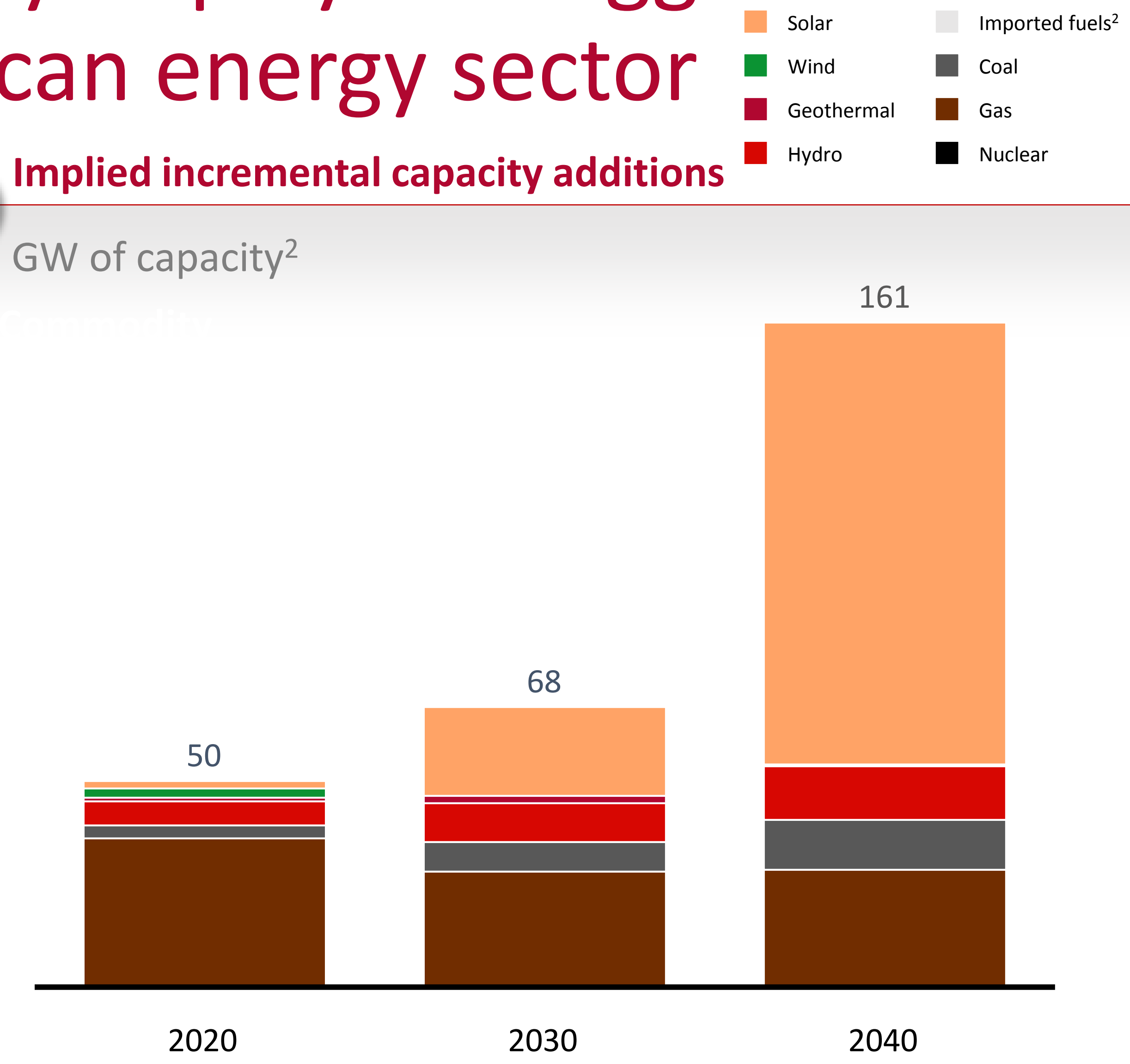
SOURCE: Africa Power Plants Database - UDI

Gas and solar are likely to play the biggest role in the future African energy sector

Evolution of energy supplied – "aggressive solar"



Implied incremental capacity additions



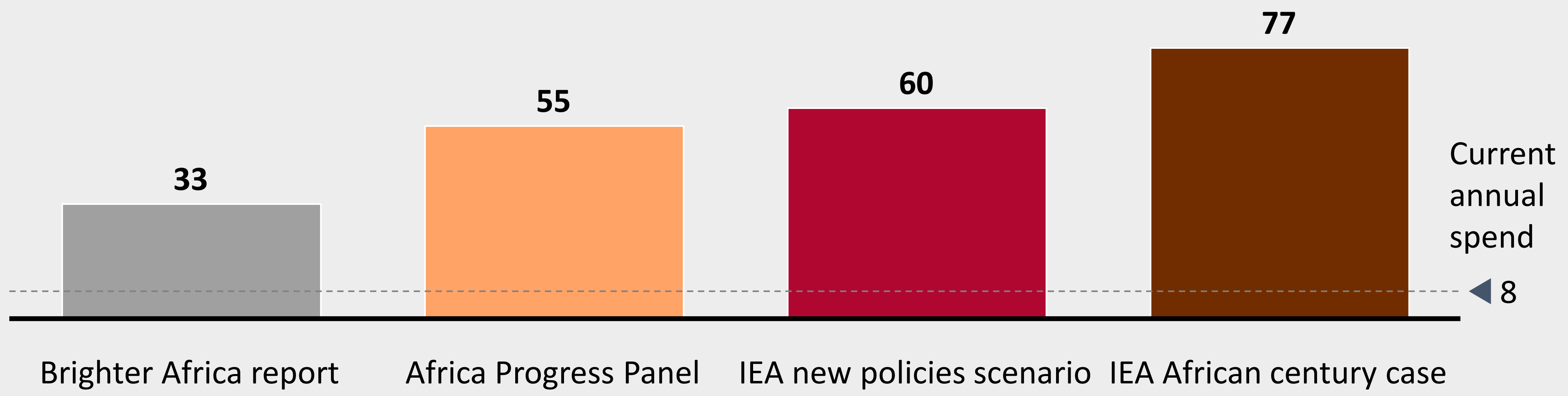
1 2010 values are actual; 2020 to 2040 are forecasts. Figures may not add up due to rounding

2 Based on differentiated load factors by technology: coal = 80%; gas = 85%; geothermal = 80%; wind = 25%; hydroelectric = 45%; solar = 20%

SOURCE: Bloomberg; World Development Indicators; IHS Global Insight; Global Terrorism database

Depending on who you ask, the power sector investment requirement ranges from $30 billion to $80 billion per year

Investment in power sector p.a.
USD billion



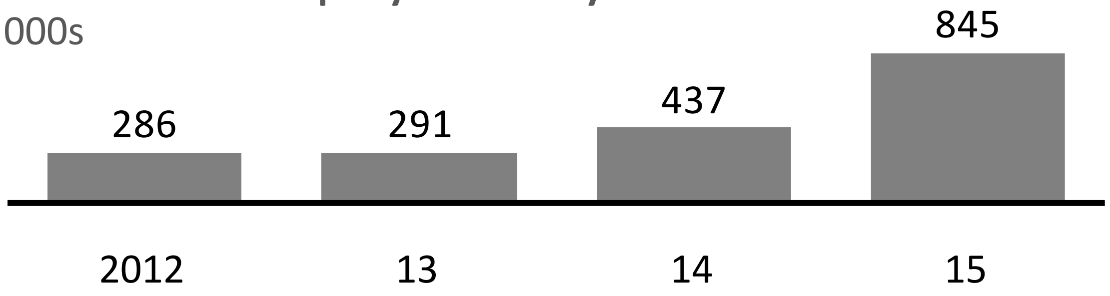
	Brighter Africa report	Africa Progress Panel	IEA new policies scenario	IEA African century case
Capital investment 2014-2040 USD billion	845	1430[3]	1624	2084
Target electrification rate %	71	100	73	85

1 2010 values are actual; 2020 to 2040 are forecasts. Figures may not add up due to rounding; 2 IEA Africa Energy Outlook 2014 estimates; 3 Africa Progress Panel numbers are for 2015-2030
SOURCE: McKinsey African Regional Electricity Model (AREM); WEO IEA Africa Energy Outlook 2014; Africa Progress Panel 2015; Brighter Africa 2014

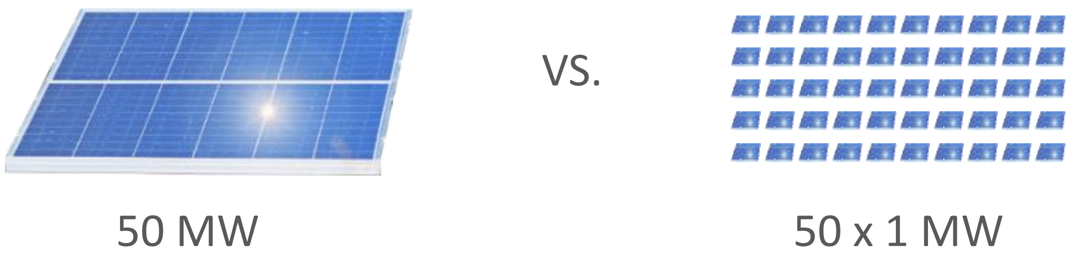
A number of other fundamentals are driving revolution in the African energy sector

1 Seismic shifts in delivered electrification

New connections per year in Kenya
000s



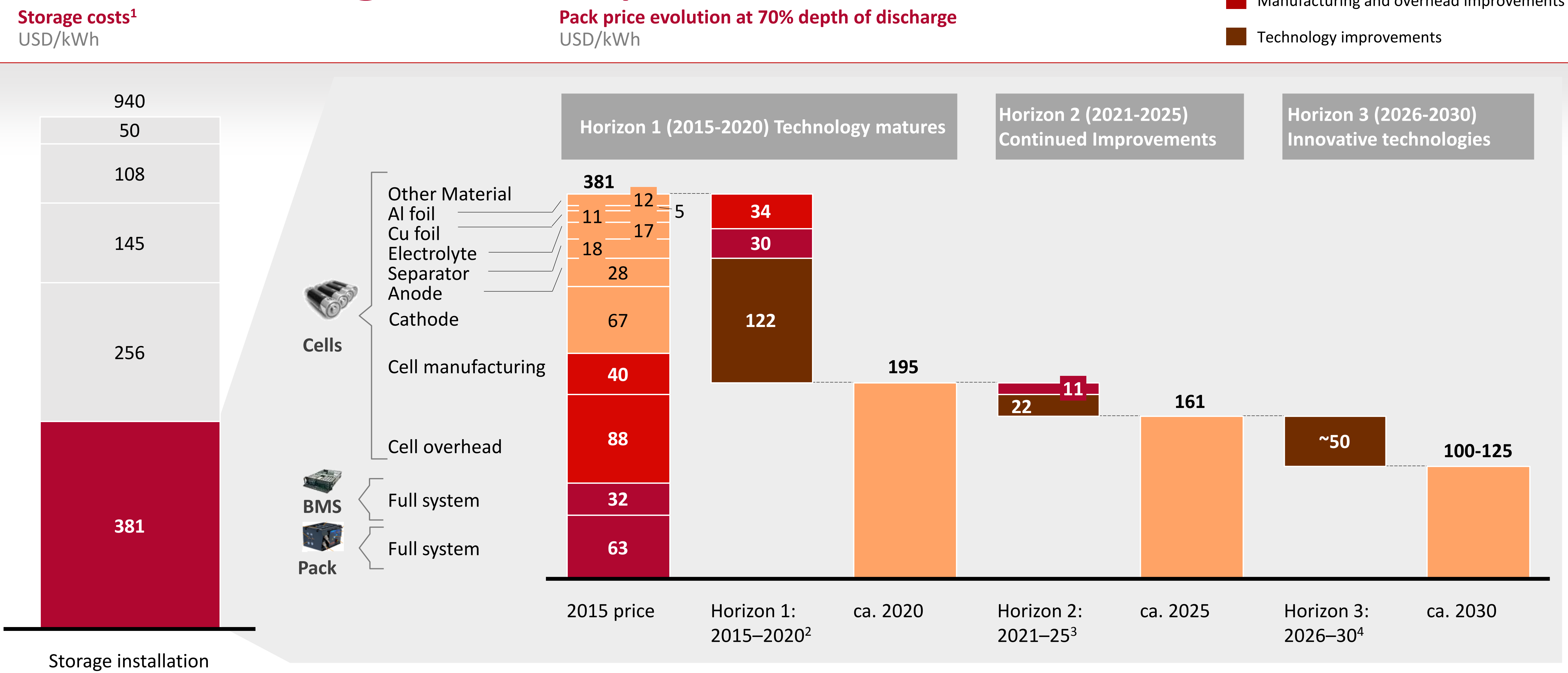
2 Increased emergence of micro scale projects, which are easier to finance



3 Electricity increasingly becoming top priority for donor organizations

4 Pay-Go models increasingly becoming financially viable

And we expect to see rapid cost reduction in storage development costs as well



1 Remaining cost components refer to power control system (PCS), communication & control, ancilliary activities and service costs (bottom to top)

SOURCE: McKinsey

Five big challenges to increasing electricity access in Africa

Domestic policy/ regulatory environment

- Support cost-reflectivity & transparency in cross-subsidy reform

Financing

- Stable tariff path will bring in long term financiers – pension funds etc.
- State should only finance "social equity" type investments e.g., distribution grid

Role of the private sector and role of the utility

- Utility provides stable environment and credible off-taker
- Private sector to bring in new financing, technology innovation and skills

Rural electrification

- Ensure that the intersection between off-grid and on-grid is effectively managed and delivered

Political will

- Commit to ensuring the necessary reforms are implemented through the political cycle

The opportunity is now

> *It is time to take decisive action and turn around the narrative: to light up and power Africa – and accelerate the pace of economic transformation, unlock the potential of businesses, and drive much needed industrialization to create jobs*
>
> **AfDB President - Akinwumi Adesina**