

## Regional Electricity Market under the AfCFTA: Prospects and Challenges for Ethiopia

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The African Union (AU) launched the Africa single electricity market (AfSEM) initiative in 2021 to boost the African electricity sector sustainably and promote an integrated continental market for electricity to support human development, augment economic prospects of the continent leveraging the African Continental Free Trade Area (AfCFTA), and strengthen productive transformation, industrialisation, digitalisation and job creation.<sup>1</sup>

AfSEM is to be implemented in phases and expected to become fully operational by 2040. It has the objective of harmonising regulatory frameworks and integrating generation, transmission and distribution masterplans.<sup>2</sup> AfSEM is also expected to create diversified energy resources, trade and investment, and bridge the power infrastructure gaps across the continent by capitalising on the AfCFTA.<sup>3</sup> To achieve the objectives of the AfCFTA, there is a need for robust transportation, communication and other infrastructure facilities which require energy security. Therefore, AfSEM will contribute to creating energy security that could also facilitate the achievement of the AfCFTA's objectives.

AfSEM is expected to alleviate Africa's energy deficit and enable households, companies, transport sectors (mainly railways and road), telecommunication sectors and cities to access secure, affordable and sustainable electricity. AfSEM is designed to support development of Africa's renewable energy sources; to bring full access to electricity by 2030 in accordance with the African Union (AU) Agenda 2063 and the Sustainable Development Goal (SDG) 7.

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<sup>1</sup> African Union Launches World's Largest Single Electricity Market (AFSEM) (04-062021) <https://au.int/en/pressreleases/20210604/african-union-launches-worlds-largest-single-electricity-market-afsem> accessed 18 September 2023

<sup>2</sup> Africa-EU Energy Partnership page (28.06.2021) <https://africa-eu-energy-partnership.org/african-single-electricity-market-afsem-launched/> accessed 12 September 2023

<sup>3</sup> Ibid

Among African countries which have ample renewable energy resources, Ethiopia stands out. It has nearly 4 500 MW of installed electricity generation capacity and the potential to generate over 60 000 MW of electric power from sources such as hydroelectric, wind, solar and geothermal.<sup>4</sup> In fact, most of the electricity generation in Ethiopia comes from hydro (nearly 90%). In addition, it has 14 hydro power plants and three wind power plants in the country.<sup>5</sup> On 10 September 2023, Ethiopia completed the fourth phase of filling the reservoir on Grand Ethiopian Renaissance Dam (GERD) which is expected to contribute to access to electricity and economic advancement.

Like in other African countries, electricity generation has been dominated by the Ethiopian government until recently. However, since public-private partnerships are provided for by Proclamation No. 1076 in 2018, the private sector in conjunction with public enterprises and independent power producers have started to collaborate in power generation.

While striving to ensure widespread access to electricity in the country, Ethiopia exports up to 100 MW electricity to Djibouti and Sudan, and it also has a Power Purchase Agreement (PPA) with Kenya to export 400 MW electricity. Ethiopia also signed a memorandum of understanding (MoU) with South Sudan to start exporting electric power in May 2022.<sup>6</sup>

An efficient regional electricity market enables nations to better manage the demand and supply differences in the region. For instance, South Africa has supplied electricity to countries in southern Africa, including supplying Zambia and Zimbabwe with emergency power in 2016.<sup>7</sup>

Regional electricity trade occurs through the five regional power pools established by the regional economic communities (RECs) in Africa, which are Eastern Africa Power Pool (EAPP), Southern African Power Pool (SAPP), West African Power Pool (WAPP), Central African Power Pool (CAPP) and Maghreb Electricity Committee (COMELEC).

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<sup>4</sup> Ethiopia Renewable Energy, International Trade Administration (21-07- 2022) <https://www.trade.gov/market-intelligence/ethiopia-renewable-energy> accessed 12 September 2023

<sup>5</sup> Ibid.

<sup>6</sup> Charné Hundermark, Further Africa Page (23-5-2022) [South Sudan and Ethiopia sign 100MW electricity trade agreement \(furtherafrica.com\)](https://furtherafrica.com/south-sudan-and-ethiopia-sign-100mw-electricity-trade-agreement) accessed 11 September 2023.

<sup>7</sup> Eskom: South Africa supplies neighboring Zambia and Zimbabwe with emergency power <https://www.polity.org.za/article/eskom-south-africa-supplies-neighbouring-zambia-and-zimbabwe-with-emergency-power-2016-01-15> accessed 12 September 2023

SAPP is the most developed of these power pools. South Africa has been the key player for decades, though in recent years it has faced a significant energy deficit. This power pool was established in 1995 at the Southern African Development Community (SADC) summit in South Africa and has 12 members including Angola, Botswana, Democratic Republic of Congo (DRC), Eswatini, Lesotho, Malawi, Mozambique, Namibia, South Africa, Tanzania, Zambia and Zimbabwe.<sup>8</sup>

Ethiopia is a member of the EAPP, which was established in 2005 to coordinate cross-border electricity trade in the Eastern Africa region.<sup>9</sup> EAPP's general secretariat is based in Addis Ababa with the authority to coordinate the development and operation of the power pool.<sup>10</sup> This power pool includes Burundi, DRC, Djibouti, Kenya, Libya, Rwanda, Somalia, Sudan, South Sudan, Tanzania and Uganda as members.

EAPP improves the usage of energy resources available in the region by putting together regional investment programmes in power generation, transmission and distribution.<sup>11</sup> It tries to reduce generation costs in the region by using power system interconnection and increased power exchange between countries. It also facilitates the long-term development of the electricity market in the region.<sup>12</sup>

The AfCFTA has the objective of creating a single market for goods and services, facilitated by movement of persons, capital and business which enhances economic integration of the African continent. This is to be achieved through liberalisation of trade in goods and services, and requires that Ethiopia also opens its market, improves its laws and policies, and creates an enabling business environment for investors from African countries.

Ethiopia ratified the AfCFTA in March 2019 and developed its AfCFTA implementation strategy in 2022. It has also been engaged in awareness-raising in contributing the AfCFTA to government offices, non-state actors and the private sector, including small and medium enterprises (SMEs).

Energy-related services are not yet included in the AfCFTA trade in services agenda, unlike SADC where energy-related services have been included in the first phase of the negotiations even though the major focus was on fossil fuels. Besides, SADC has a protocol on energy and energy-related services which

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<sup>8</sup> Alfonso Medinilla, Bruce Byiers and Karim Karaki [African power pools: regional energy, national power \(researchgate.net\)](https://www.researchgate.net/publication/354111111) accessed 11 September 2023.

<sup>9</sup> East Africa Power pool page <https://eappool.org/> accessed 11 September 2023

<sup>10</sup> Ibid.

<sup>11</sup> Ibid.

<sup>12</sup> Ibid.

calls for members to cooperate on energy development and harmonise policies, strategies and procedures across the region.<sup>13</sup> Currently, nine members of SADC have integrated their electricity grids into the SAPP by decreasing costs and forming a competitive common market for electricity in the region. SADC also established the Regional Electricity Regulatory Association, which has assisted in harmonising the region's regulatory policies on energy.<sup>14</sup>

## Prospects

When the AfCFTA becomes fully operational, it will be a good opportunity for Ethiopia as aims to attract foreign direct investment from the continent in wind, hydro, solar and thermal projects which will increase the amount of electricity produced and provide the possibility of trading with countries in the region. Currently, hydropower accounts for 95% of the nation's electricity demand while the rest is covered by solar (0.1%) and wind (3.8 %).<sup>15</sup> Thus far, Ethiopia has engaged in bilateral electricity trading arrangements. However, the launch of trading under the AfCFTA could encourage Ethiopia to consider continental PPAs.

The AfCFTA opens a large market for Ethiopia to trade its electricity and energy-related services including, but not limited to, energy advisory services, energy assets installation, and energy management.<sup>16</sup> Ethiopia is a member of COMESA since 21 December 1981. However, it is yet to be a member of the COMESA FTA. COMESA has an energy programme that aims to harmonize energy policies and regulatory frameworks, facilitate trade in energy services, and develop regional infrastructure.

## Challenges

In conclusion, it is important to consider some challenges that Ethiopia needs to address to fully leverage its opportunities in the continental energy market. Continental electricity trade requires a regional grid for transmission of energy. Old and limited infrastructure, and outdated regulatory frameworks, could present a major conundrum for Ethiopia. Another challenge could be physical distance between countries which could cause energy loss along the transmission grid. Investment in

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<sup>13</sup> Energy, Programmes and Projects <https://www.sadc.int/pillars/energy> accessed 17 September 2023

<sup>14</sup> Ibid.

<sup>15</sup> Energy consumption in Ethiopia <https://www.worlddata.info/africa/ethiopia/energy-consumption.php> accessed 17 September 2023

<sup>16</sup> Energy as a Service Innovation Landscape Brief [https://www.irena.org/-/media/Files/IRENA/Agency/Publication/2020/Jul/IRENA\\_Energy-as-a-Service\\_2020.pdf](https://www.irena.org/-/media/Files/IRENA/Agency/Publication/2020/Jul/IRENA_Energy-as-a-Service_2020.pdf) accessed 13 September 2023

the transmission could negate the adverse effects of large distances. Lack of trust among some members of EAPP, the inability to mobilise investment for electricity ventures domestically, and lack of rules for access to the transmission grid could be serious challenges. Finally, the inadequacy of the legal framework for electricity trade and lack of regional regulation and an appropriate mechanism for dispute resolution need to be addressed by Ethiopia.

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