

Fact Sheet: Thabametsi Coal-fired Power Station

May 30, 2019

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1. Overview

The Thabametsi Coal-fired Power Station project is to construct 630 MW capacity coal-fired power station in Limpopo, South Africa as part of South Africa's Coal Baseload Independent Power Producer Procurement Programme (CBIPPPP). The CBIPPPP aims at procuring 2500 MW electricity from coal-fired IPP power stations. Although Exxaro Resources Ltd. (Exxaro), a South African mining company, and Engie (the former GDF Suez), a French electric utility company, originally proposed this project with the capacity of 600 MW~1200 MW, Marubeni Corporation is now leading the project with Korea Electric Power Corporation (KEPCO) as its partner. Thabametsi Coal-fired Power Station will be fueled by Thabametsi coal mine which is owned by Exxaro.

Eskom, a South African public electricity utility, is planned to purchase the electricity from the power station under the Power Purchase Agreement (PPA) with the project.

In October 2016 the project has been selected as a preferred bidder¹ and expected to begin operation in 2023.²

- Project Purpose: To construct a 630 MW (315 MW x 2 units) capacity coal-fired power station using circulating fluidized bed (CFB) boiler (subcritical-pressure boiler).
- Project Executant: Thabametsi Power Company Proprietary Ltd. sponsored by Marubeni Corporation and KEPCO.
- Financial Institutions³: Being considered by South Africa Public Investment Corporation, Development Bank of Southern Africa, Industrial Development Corporation, Standard Bank, Nedbank, ABSA, Rand Merchant Bank.
- Cost: 2 billion USD
- Coal Type: Fine coal (planning along with Thabametsi coal mine)

2. Location

Located in Lephalale area, Limpopo province, approximately 300 km northwest of Johannesburg.



Source: Google maps

¹ https://www.sourcewatch.org/index.php/Thabametsi_power_station

² <https://www.biznews.com/energy/2019/04/17/standard-bank-coal-thabametsi-khanyisa>

³ <https://www.politicalanalysis.co.za/2017/06/29/sa-banks-facilitating-climate-change-by-funding-thabametsi-project-cer/>
(The link expire as of 24th May 2019)

3. Major Process

February 25, 2015	The chief of director of the Development of Environmental Affairs (DEA) of South Africa granted Thabametsi an environmental authorization for the proposed 1200 MW capacity power station.
May 11, 2015	Earthlife Africa, a South African environmental NGO, lodged an appeal with the Minister of the DEA in terms that the climate change impact assessment had not been implemented properly. ⁴
May 15, 2015	Earthlife Africa and supporters marched on the French consulate in Johannesburg demanding that the French government and Engie withdraw from Thabametsi project. ⁵
June 3, 2015	Engie withdrew from the project. ⁶
November, 2015	Marubeni Corporation announced its participation. ⁷
March 7, 2016	Against Earthlife Africa's appeal, although the Minister of Environmental Affairs required Thabametsi to conduct a climate change impact assessment for the power station, the Minister upheld the environmental authorization.
August 23, 2016	Earthlife Africa brought a lawsuit, asking the court to review and set aside the DEA's decision to authorize the proposed power station, as well as the Minister of Environmental Affairs' decision to uphold that authorization on appeal. ⁸
October, 2016	Marubeni and KEPCO were selected as preferred bidders. ⁹
March, 2017	The North Gauteng High Court ruled in favor of Earthlife Africa that the former environmental authorization was illegal.
June, 2017	The operator submitted the final climate change impact assessment to the DEA and the Government of South Africa will consider the environmental authorization based on the final assessment.
November, 2017	South Korea's Doosan Heavy Industries & Construction Co. made a provisional EPC contract.
January, 2018	The Minister of Environmental Affairs issued the environmental authorization for the project ¹⁰
March, 2018	Earthlife Africa, groundWork, and the Centre for Environmental Rights instituted the court proceedings to challenge the environmental authorization decided by the Minister of Environmental Affairs ¹¹
August, 2018	Minister of Energy published the draft Integrated Resource Plan 2018 for public comments ¹²
September, 2018	Marubeni announced its policy not to enter into any new coal-fired power generation in principle ¹³
January, 2019	Nedbank, FirstRand and Standard Bank withdraw finance for the project ¹⁴

⁴ <https://www.businesslive.co.za/fm/fm-fox/2017-03-02-earthlife-case-to-test-law/>

⁵ <https://cer.org.za/news/media-release-earthlife-africas-appeal-pushes-back-new-coal-fired-power-station-in-water-stressed-limpopo>

⁶ <https://reseaumctionclimat.org/engie-charbon-turquie-lettre-francois-hollande/>

⁷ <http://www.miningmx.com/news/markets/13255-exxaro-raises-red-flag-on-covenants-dividends/#.VoxZOpMrL-Y>

⁸ <https://cer.org.za/news/environmental-organisation-turns-to-court-over-new-coal-fired-power-plant>

⁹ <http://www.chosunonline.com/m/svc/article.html?contid=2016101200738>(The link expire as of 24th May 2019)

¹⁰ <https://cer.org.za/news/thabametsi-coal-plant-given-go-ahead-despite-staggering-climate-impacts>

¹¹ <https://cer.org.za/news/battle-against-the-climate-destroying-coal-ipps-escalates>

¹² <http://www.energy.gov.za/IRP/irp-update-draft-report2018/IRP-Update-2018-Draft-for-Comments.pdf>

¹³ <https://www.marubeni.com/en/news/2018/release/00028.html>

¹⁴ https://www.banktrack.org/project/thabametsi_coal_fired_power_plant#updates/inform=1

4. Position of the project in the Integrated Resource Plan 2018

The government of South Africa determined to develop 39730MW of new generation and committed to develop 2500MW of new coal fired IPP including the project.

On the other hand the government determined the gradual decommissioning of the existing coal fired generation. Based on the determination Eskom will cumulatively decommission 28GW of its coal generation by 2040 and 35GW by 2050 respectively to assume that contribution of coal to power supply which is approximately 90% at present will reduce to less than 30% by 2040 and less than 20% by 2050.

Draft IRP2018 assumes additional capacity of 13770MW PV and wind generation from 2020 to 2030 followed by additional 1000MW coal generation from 2023 to 2024.

New coal fired power station comprised of additional and committed ones will be unnecessary if development of PV and wind generation which is much cheaper than coal would be accelerated.

5. Problems/Issues

1. The project will bring higher tariff to worsen the poverty

Minister of Energy Jeff Radebe has confirmed that electricity consumers will pay 1.9c/kWh more by 2030 on a projected electricity tariff of 119c/kWh, a cumulative R23-billion to accommodate the two independent power producer (IPP) including the project.¹⁵

On the other hand IRP2018 imply that the scenario without renewable energy annual build limits provides the least-cost option.

Furthermore a report released by the University of Cape Town's Energy Research Centre (ERC) shows that the project would not be in the public interest as it increase the emission of greenhouse-gas (GHG) and spend an additional unnecessary cost

Although 7.2 million households using grid technology and over 143 432 households from off-grid technology to connect houses in the country which resemble 90.3% access to electricity, poor people cannot afford to pay for electricity because of its expensive rate.

The project will make the rate much more expensive to worsen the serious situation of poor people.

2. Low efficiency

Thabametsi Coal-fired power station is planned to be a subcritical-pressure boiler with 630 MW capacity (315 MW x 2 units), however, this project has low efficiency comparing to other coal-fired power facilities already being constructed in South Africa because Thabametsi's carbon intensity is 1230g-CO₂/KWh. From the perspective of the OECD Sector Understanding on Export Credits for Coal-fired Generation Project which was adopted in November 2015, although the project is not an export credit project, its capacity and efficiency are not admittable in principle.

3. The project will worsen the air pollution

Both the Matimba coal-fired power station (3,990 MW) and the Medupi coal-fired power station (4,765 MW) are operating or being constructed in this area. Therefore, according to the World Bank's project

¹⁵ <https://www.engineeringnews.co.za/article/radebe-outlines-additional-cost-of-coal-ipps-to-consumers-2018-10-01>

appraisal document¹⁶, it is expected that sulfur dioxide (SO₂) concentrations on the ground will exceed the standard very frequently in the event that the Thabametsi coal-fired power station is fully operational without installing flue gas desulfurization equipment.

In the Appendix E: Air Quality and Health Risk Specialist Study of Thabametsi's environmental impact assessment, a simulation of power station operation and its effects on the atmospheric environment was conducted. However, this simulation was inappropriate as the result did not include the impact of Medupi coal-fired power station's units 1-6.

4. **The project will worsen the water scarcity**

Regarding Thabametsi's water supply, Electricity Generation License Application Form¹⁷ states that Phase 1 water will be allocated to this project although the project site is a water scarce area. Furthermore, according to the World Bank's Inspection Panel Report, water availability and water use in this area are only in balance without the use of power plants. Thus, in the event that phase 1 water is allocated to the Thabametsi coal-fired power station, water will be probably unavailable to local populations.

5. **Inconsistency with power sector reform**

There is a question about the necessity of this project as South African current-improved generation performance and new build program have delivered excess electricity. The country's electricity supply has increased from 42 GW in 2010¹⁸ to 51 GW in 2018¹⁹ at peak hours while the demand has decreased from 34 GW in 2015²⁰ to 27 GW in 2016²¹ as growth in electricity demand has been low (~1%), partially attributed to the economic slow-down.²²

In addition, Eskom has expressed a reluctance to sign the PPA with new IPP until it received guidance from the Department of Energy on the future of IPP programmes²³ as it forecasts a generation surplus by 2022.²⁴ On the other hand reform of Eskom operation is necessary as its loose management might has caused recent planned and unplanned blackouts in the country.

Therefore the project would be invalid if justified and accountable power procurement is realized in the ongoing power sector reform in the country including separation of power generation and transmission.

¹⁶ <http://documents.worldbank.org/curated/en/126361469672138599/pdf/534250R20101005914.pdf>

¹⁷

<http://www.nersa.org.za/Admin/Document/Editor/file/Electricity/Application%20Form/Electricity%20generation%20licence%20application%20form.pdf> (The link expire as of 24th May 2019)

¹⁸ <http://www.energy.gov.za/IRP/irp-2010.html>

¹⁹ <https://www.usaid.gov/powerafrica/south-africa>

²⁰ <https://www.get-invest.eu/market-information/south-africa/energy-sector/>

²¹ <https://www.enca.com/money/margin-between-peak-electricity-demand-and-available-capacity-is-27>

²² <https://www.africa-eu-renewables.org/market-information/south-africa/energy-sector/>

²³ <http://www.miningweekly.com/print-version/big-development-finance-backing-for-r40bn-coal-ipp-programme-2016-10-10>

²⁴ <https://www.get-invest.eu/market-information/south-africa/energy-sector/>