



## Orion Minerals

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# Orion targets Net-Zero Carbon Emissions at Prieska Mine with collaboration on a new mega-scale renewable energy hub under discussion

The collaboration paves the way for the Prieska Copper-Zinc Project to be entirely powered by renewable energy and green hydrogen sources, positioning it at the forefront of new future-facing metal projects globally.

- ▶ Orion enters discussions with the Central Energy Corporation (CENEC) to investigate the potential inclusion of the Prieska Copper-Zinc Project as part of CENEC's landmark Prieska Power Reserve™ Project.
- ▶ The Prieska Power Reserve™ Project is a mega-scale renewable energy hub currently being planned for the Prieska district.
- ▶ Access to the Prieska Power Reserve™ could potentially help Orion achieve Carbon Net-Zero at the Prieska Project, with the mine potentially powered entirely by renewable energy and green hydrogen sources.
- ▶ The use of renewable energy has the potential to significantly reduce mine operating costs, with recent bids by South African renewable energy providers returning an average cost of just ZAR0.473 per kilowatt hour<sup>1</sup>, compared with the 2020 base cost estimate of ZAR0.93/kWh<sup>2</sup> used in the Prieska Bankable Feasibility Study.
- ▶ Collaboration with CENEC has potential to build on a previous collaboration agreement signed with the leading global renewable company juwi, in March 2019 to investigate a bespoke renewable energy generation plant for Prieska Mine discussions are now underway between Orion, juwi and CENEC for the potential incorporation of this project into the Prieska Power Reserve™ Project.
- ▶ The Prieska District has been selected by CENEC as the preferred site for the renewable energy hub due to a range of favourable geographic, climatic, strategic and logistical factors.

Orion's Managing Director and CEO, Errol Smart, commented:

*"We are delighted to be in discussions with both CENEC and our existing renewable energy partner, juwi, regarding the potential incorporation of the Prieska Mine into CENEC's Prieska Power Reserve™ Project, which is set to become one of the largest renewable energy hubs in South Africa.*

*"The establishment of an independently owned and developed, large-scale renewable energy production and storage facility right on our doorstep represents a hugely exciting opportunity to establish Prieska as one of the*

<sup>1</sup> <https://www.dailymaverick.co.za/article/2021-11-04-best-plan-to-keep-the-lights-on-solar-and-wind-power-officially-cheaper-than-coal/>

<sup>2</sup> Refer ASX / JSE release 26 May 2020.

lowest carbon emission sources of copper and zinc supply globally, with the potential to ultimately achieve carbon neutrality for the project.”

*“Following South Africa's signing of the Just Energy Transition Partnership agreement at the COP26 Conference earlier this month, South Africa is set to make a rapid transition away from the reliance on fossil fuels, and Orion intends to play a leading role in supporting this transition. This is a really exciting opportunity for us to play a pivotal role in the global energy transformation by delivering one of the largest new projects capable of meeting soaring demand for critical metals, such as copper and doing so in a way that goes above and beyond our corporate and ESG objectives, dramatically reducing our carbon footprint.”*

Orion Minerals Limited (**ASX/JSE: ORN**) (**Orion** or **Company**) is pleased to announce that it has commenced discussions to collaborate with the Central Energy Corporation (**CENEC**) to include its flagship Prieska Copper-Zinc Project (**Prieska Project**) into CENEC's Prieska Power Reserve™, a mega-scale renewable energy hub currently being planned for the Prieska district in the Northern Cape Province of South Africa (Refer <https://www.cenec.com/index.php/news>).

The Prieska Power Reserve™ is a large-scale initiative aimed at generating electrical energy from renewable sources and storing this energy as green hydrogen and ammonia on a long-term basis. The project intends to achieve energy independence and to avoid the constraints and limitations of the national electricity grid.

Access to the Prieska Power Reserve™ would significantly reduce carbon emissions from the Prieska Project, with the potential that the mine could be entirely powered by renewable energy and green hydrogen sources to potentially achieve net-zero carbon emissions. This would position Prieska as one of the greenest and lowest-carbon-emission copper and zinc producers anywhere in the world.

In addition, it would also have the potential to significantly reduce mine operating costs, with the recent results of the fifth round of South Africa's Renewable Energy Independent Power Producer Procurement (REIPPP) Program returning an average bid price of ZAR0.473/kWh for renewable energy – less than half the assumed base power cost of ZAR0.93/kWh used in the Prieska Project Bankable Feasibility Study published on 26 May 2020.

These reduced power costs also open the door to potentially incorporate future value-adding beneficiation and downstream processing at Prieska using reliable, low-cost, clean renewable energy.

The collaboration with CENEC builds on an earlier collaboration agreement signed with juwi Renewable Energies (Pty) Ltd South Africa (**juwi**) (refer ASX / JSE release 5 March 2019) to investigate the feasibility of generating and supplying 35MW of electricity for the Prieska Project from a bespoke hybrid power system using integrated wind and solar technologies.

Orion, juwi and CENEC are now in discussions regarding the potential inclusion of this bespoke power production plant at the Prieska Project into the Prieska Power Reserve™, for an off-grid power supply solution. These discussions come at a time when recent changes in South African law governing the licencing and operation of embedded electricity generation facilities have made it more conducive to use self-generation electricity supply solutions.

In August 2021, the South African government gazetted amendments that exempt self-generation facilities, with a generation capacity of no more than 100MW, from the requirement to obtain a generation licence<sup>3</sup>. The amendments also permit power generators to be able to “wheel” (i.e. convey electricity from the point of connection to a point of consumption), through the national transmission grid as had not been the case under the previous legislation.

Registration of self-generation facilities with the National Energy Regulator of South Africa (NERSA) will still be required, a shorter less onerous process than obtaining a generation licence. Given that the Prieska Project will require only 32MW, eventually supplied from renewable energy facilities adjacent to the mine, these recent legislative changes will significantly shorten licencing timelines and costs to commissioning an off-grid power supply setup, as well as accelerating the progress towards net-zero carbon emissions for the operations.

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<sup>3</sup> Amendments to Schedule 2 of the Electricity Regulation Act 4 of 2006, as detailed in Government Notice 737 in Government Gazette 44989 of 12 August 2021.

The Prieska district is already home to significant renewable energy infrastructure due to its highly favourable climatic conditions, including extremely high solar irradiation and sustainable wind potential. The district also has advantageous transport infrastructure, lying on the main N10 road haulage and national rail haulage route to the port of Gqeberha which has the potential to be established as a major hydrogen shipping hub in South Africa.

CENEC has selected the Prieska district as the preferred site for its renewable energy hub due to this unique combination of factors.

Having historically relied heavily on fossil fuel consumption, South Africa will soon be at the forefront of the global transition to green energy following its signing of the Just Energy Transition Partnership at this month's U.N. Climate Change Conference (**COP26**). Under the deal, South Africa will receive US\$8.5 billion in grants and subsidised loans over the next three to five years to assist in the transition away from coal power. Funded by the United States, Britain, France, Germany, and the European Union, the program is designed to help South Africa achieve the lower end of its emissions targets under the Paris Agreement.



**Figure 1: The Prieska Copper Zinc Mine site with existing, independently owned, wind generation facility.**

For and on behalf of the Board.

Errol Smart  
**Managing Director and CEO**

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