

## Stepping up QUALITY CONTROLS

**CoreSlab has been appointed by Elettronica Santerno South Africa to manufacture inverter station bases for two new utility-scale solar power stations that are being built in the Northern Cape under the fourth round of the Renewable Energy Independent Power Producer Procurement Programme (REIPPP).**

CoreSlab was awarded the contract on the strength of its internal quality controls and long legacy designing and manufacturing innovative precast-concrete solutions for public- and private-sector clients. This is in addition to the company's willingness to implement further measures at its factory to significantly raise traceability and quality assurance processes – a critical requirement for participation in these high-profile projects.

Elettronica Santerno South Africa is a subsidiary of the Italian Elettronica Santerno SpA, a leading designer and manufacturer of, among other products, high quality modular inverter stations for the solar industry, with more than 850 MW of inverter-based solutions in its 2019 portfolio.

Elettronica Santerno was appointed to design, manufacture, install and commission 34 inverter stations, as well as the associated supervisory control and data acquisition system on behalf of the engineer, procure and construct contractor of the two solar farms in February this year. Valued at about EUR 11-million (R160-million), these turnkey contracts further cement Elettronica Santerno's strong presence in South Africa where it has already installed inverter stations with a total capacity of about 435 MW.

Luigi Guerra, country manager of Elettronica Santerno South Africa, says that all components used for its cutting-edge "plug-and-play" solution are critical and, therefore, undergo the same strict quality controls.

"Selecting a suitable manufacturer for the precast-concrete bases that provide secure support for the equipment installed on the inverter stations, inverters, switchgear, oil-insulated transformer and other electrical componentry was, therefore, not taken lightly," Guerra says. "Importantly, we had to pay meticulous attention to the concrete mix and batching process deployed at the factory in Limpopo. As an additional quality control measure, regular batch testing is undertaken by our engineers to ensure a robust and durable final product that will not crack under the heavy loads. Each unit, including the precast-concrete bases and fully-equipped containers, weigh a staggering 27 tons," Guerra says. Working to tight deadlines,

Elettronica Santerno also had to ensure that CoreSlab would be able to maintain high levels of precision at its factory to avoid delays.

Each base has been accurately manufactured according to the company's exact design specifications. Importantly, they have been designed to ensure a tight fit to avoid water from entering in between the equipment and bases, as well as to restrict movement when they are being transported over long distances to and handled on site. Openings at the bottom of the bases also need to accurately line up with the transformer oil-disposal points that have been established on site ahead of the arrival of the units, as well as to facilitate the connection of the stations with the medium-voltage (MV) and low-voltage (LV) cables laid down on site.

Elettronica Santerno opted for precast-concrete bases as a more cost-effective alternative to in-situ concrete or steel foundations that are also commonly deployed in these applications without foregoing quality. Moreover, this modular approach assists ease of maintenance and repair.

Assembly of the units is undertaken at Elettronica Santerno's state-of-the-art factory in Tshwane according to strict international quality standards and then transported over a distance of more than 1 000 km to the two construction sites in Aggeney and Pofadder where they are installed and commissioned by the company's team.

Notably, the complete units comprise as much as 60% local content, demonstrating Elettronica Santerno's commitment to the Department of Energy of South Africa's localisation policies under the REIPPP banner. Among other benefits, these policies have ensured the transfer of critical skills and experience to local companies as the country transitions from primarily fossil-fuel based energy generation into clean energy production.

Jaco de Bruin, managing director of CoreSlab, describes complying with Elettronica Santerno's high traceability and quality-assurance processes as a steep learning curve and lauds the company for its willingness to train and to assist his team wherever possible. "Certainly, record-keeping has been extremely onerous. Every element that we have manufactured thus far has been accompanied by comprehensive documentation, including designs and a complete history, such as proof of testing, certifications and declarations. Elettronica Santerno's quality controller scrutinises these and incorporates them with the extensive records of the other South African suppliers for inspection by the independent-power producer and energy utility," De Bruin says.

Notably, CoreSlab's willingness to learn and constantly improve its performance has enabled the company to diversify into new markets. For example, the company also recently manufactured precast-concrete benches for an upmarket development in Gauteng.

Guerra compliments the company for the high quality of its workmanship and ability to meet due dates under a very strict delivery schedule, describing the precast-concrete bases as among the best that the company has used on its many other projects.

"In terms of the high quality batching and manufacturing processes deployed at the factory, we have also learnt a lot from this supply-chain partner and certainly look forward to building on this businesses relationship as we grow our presence in the country. The REIPPP is acknowledged as one of the top ten global renewable energy programmes, and we welcome the country's government's renewed commitment to RE integration," he concludes. ■

