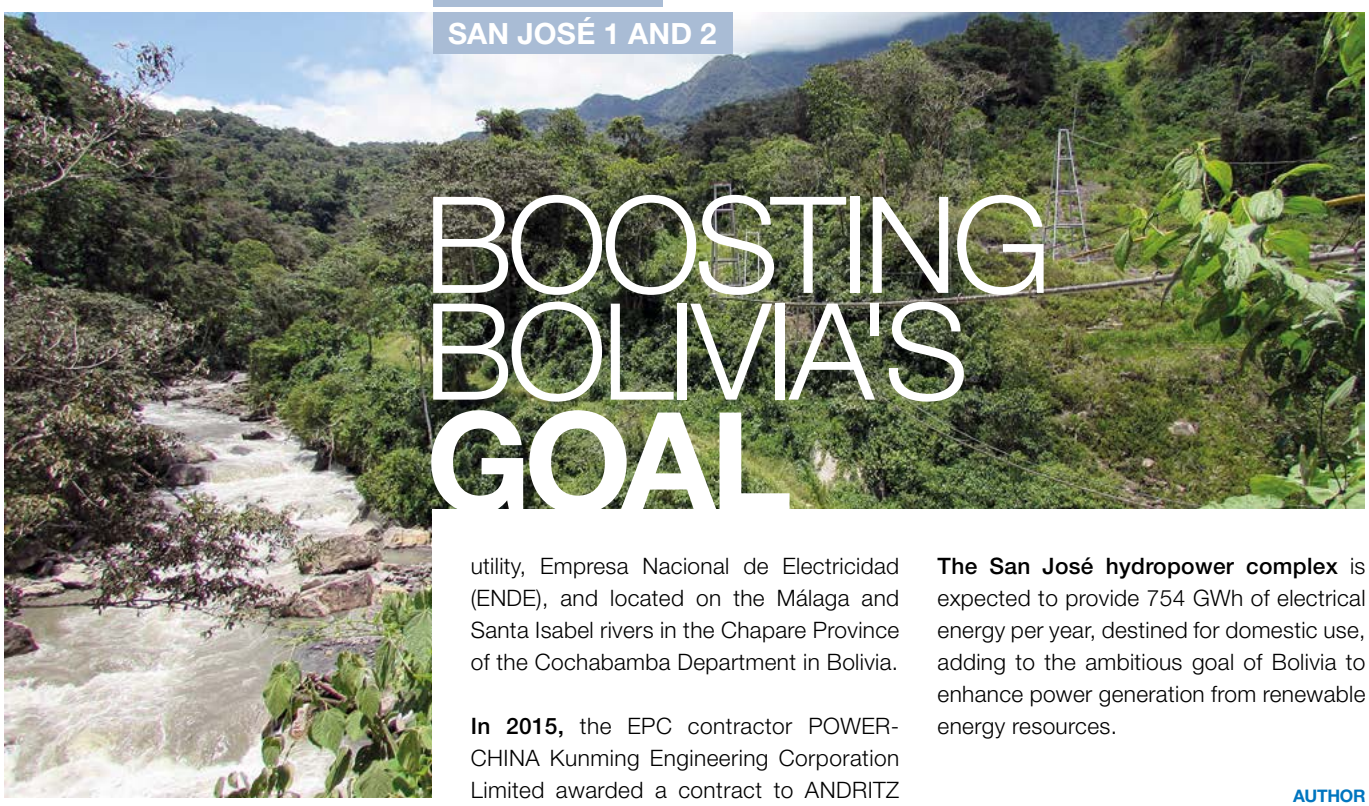
SITE REPORTS

SAN JOSÉ 1 AND 2



BOOSTING BOLIVIA'S GOAL

BOLIVIA – An important part of Bolivian plans to increase renewable energy production is the San José hydropower complex. The Bolivian government has set a target that 70% of its domestic electricity should be generated by renewable energy sources, mainly hydropower, by 2025. As of 2017, only about 20% comes from hydropower. To boost installed hydro capacity from 475 MW up to more than 11,000 MW, various plans are in execution.

This includes the San José complex, consisting of two powerhouses – San José 1 (56 MW) and San José 2 (70 MW) – which is owned by Bolivia's state power utility, Empresa Nacional de Electricidad (ENDE), and located on the Málaga and Santa Isabel rivers in the Chapare Province of the Cochabamba Department in Bolivia.

In 2015, the EPC contractor POWERCHINA Kunming Engineering Corporation Limited awarded a contract to ANDRITZ Hydro China. This deal covered the supply, installation supervision, and commissioning supervision of all four Pelton turbines at the San José hydroelectric complex. By November 2017, the installation of HPP San José 1 was finished and the commissioning was successfully completed.

Especially challenging for the project execution team was a complicated interface among the involved parties, EPC contractor Kunming, ENDE, and ANDRITZ Hydro. For example, the documents submitted had to be trilingual – Chinese-English-Spanish – and there is a 12 hour difference in time zones. To meet the contractual terms with short delivery dates and repeated changes to key data, the design and manufacturing periods had to be shortened. Fortunately, the highly efficient project team cooperated very well with all involved parties and all components were delivered to the site on time.

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The San José hydropower complex is expected to provide 754 GWh of electrical energy per year, destined for domestic use, adding to the ambitious goal of Bolivia to enhance power generation from renewable energy resources.

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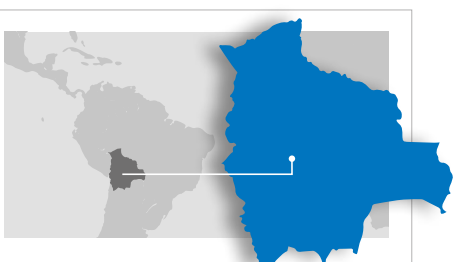

San José 1 and 2 | Bolivia

Technical data San José 1:

Total output:	56 MW
Scope:	2 × 28 MW
Head:	294 m
Speed:	375 rpm
Runner Diameter:	1,860 mm

Technical data San José 2:

Total output:	70 MW
Scope:	2 × 35 MW
Head:	342 m
Speed:	428 rpm
Runner Diameter:	1,740 mm
Av. annual production:	754 GWh

For further content use the QR-Code on p.5