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[Note] ENERGUATE is legally separated into two entities, namely Distribuidora de Electricidad de Oriente S.A. and Distribuidora de Electricidad de Occidente S.A., and commercially registered as such. For practical purposes, the two entities are more commonly referred to collectively as ENERGUATE than by their registered corporate names.

Guatemala is the most populous country in Central America and has the region"s highest population growth rate. Its strategic location, with access to both the Pacific and Atlantic oceans, is key to the country"s trade with South and North America. To support its growing population and economy, the country is embarking on an ambitious energy expansion plan that will upgrade aging infrastructure and integrate more renewables into its energy mix.

As part of this expansion, Transportista El?ctrica Centroamericana S.A. (TRELEC), one of the leading utilities in the region, is upgrading the national power system. New substations and transmission lines will be built and aging substations replaced to secure electricity supply throughout the country.

The country is simultaneously launching an Electricity Expansion Plan (PET), that aims to increase the share of renewable energy in the energy mix and guarantee electricity supply to all Guatemalans by 2032. Renewable energy share from hydro, wind and solar currently makes up 58 percent of the total generation capacity and is expected to reach 80 percent with the ambitious plan.

To facilitate fast installation and energization, ABB will supply 145-kilovolt (kV) integrated gas-insulated switchgear (GIS) in the capital city of Guatemala. It is an ideal application for this compact technology, as land in the urban area is scarce and costly. Integrated GIS is an innovative solution that includes primary and secondary equipment such as control, protection and monitoring in a robust prefabricated housing. It can enable up to 70 percent savings in installation and commissioning time compared to conventional GIS, making it the ideal solution for fast grid expansions.

"We are pleased to work with TRELEC to support the integration of renewable energy and expansion of the power network in Guatemala", says Giandomenico Rivetti, Head of ABB"s High Voltage Business Unit within its Power Grids division. "Our innovative and space-saving GIS technology will enable fast deployment and energization with minimum on-site installation."

ABB pioneered high-voltage GIS more than 50 years ago and continues toinnovations in this space. As a market and technology leader in high-voltage GIS technology, ABB offers ratings and applications from 72.5 kV to 1200 kV and has a global installed base of more than 30,000 bays. ABB"s latest offering includes eco-efficient and digital capabilities.

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During this project, a framework will be developed for coupling the energy systems demand-supply aspects, proposing clean electrification solutions for the Central American region, starting from case studies in Guatemala. The candidate will perform fieldwork with Cristina Dominguez in Guatemala for one month (based in Guatemala City, but constantly traveling to rural areas) and s/he will be able to interact directly with the Guatemalan partners of this project.

The objective of this project is to create a framework for providing a portfolio of possible clean electrification solutions based on the estimated energy demand, existing infrastructure and renewable energy potential. Although the requirement is that the created framework should be applicable and validated for Guatemala, it should have the potential of replicability for the rest of Central America.

The candidate must have knowledge in statistics, energy systems modelling, Python or R (preferably), and ArcGIS. The candidate must speak Spanish fluently, as s/he will be in direct contact with the Guatemalan partner institutions along the project.