

VISIBILITY

Powering Ecuador's journey
to a brighter future

Empresa Eléctrica Quito S.A. – Quito, Ecuador

How EcoStruxure™ Grid enabled the future-ready
transformation of a national energy distribution network

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Rebuilding the grid

Ecuador is a country of huge potential and matching ambitions. But 10 years ago, the country’s ambitious development plans, aimed at improving quality of life for all Ecuadorians, encountered a significant obstacle – fragmented management of the distribution network with very limited visibility.

After years of underinvestment, the national grid was operated by 20 different companies and plagued by frequent power outages caused by the aging infrastructure. The quality of customer service was low and, despite favorable natural conditions, most of the country’s energy came from non-renewable resources.

Aware of the crucial role of reliable energy supply, Ecuadorian utilities and institutions initiated the SIGDE (Sistema Integrado para la Gestión de la Distribución Eléctrica) project in 2008, aimed at modernizing the national distribution network and upgrading it for the future.

Bringing the pieces together

The SIGDE project was launched as a joint effort between the Ministry of Electricity and Renewable Energy and Ecuadorian electric distribution utilities, including the largest distributor Empresa Eléctrica Quito S.A., as well as other commercial companies providing technological solutions and advice on the integration strategy.

Schneider Electric, a key partner in the project, delivered its smart grid solutions, including EcoStruxure ADMS – an Advanced Distribution Management System recognized multiple times as the best on the market. “Schneider Electric has become a true strategic partner for the Ecuadorian power sector and accompanied us throughout the project implementation cycle,” said Cornelio Castro, Director of the National Control Center for Distribution Utilities.

The first crucial step for grid modernization was mapping the distribution infrastructure. Due to heavy fragmentation in the sector, visibility of the network at the launch of SIGDE project was at just five percent. After implementing EcoStruxure ADMS and opening the National Distribution Control Center in 2015, visibility has improved to staggering 94 percent.

Comprising a DMS (Distribution Management System), SCADA, OMS (Outage Management System), and EMS – PCS (Power Control System), EcoStruxure ADMS has also introduced intelligence to different layers of the network to enable new capabilities, including comprehensive monitoring, analysis, control, optimization, and planning.

Goal

Modernize and future-proof the power distribution network to increase the reliability of energy supply, improve customer satisfaction, and enable integration of renewables.

Story

Each of the country’s utilities had its own system for managing its distribution network. As a result, it was difficult to provide the same quality of energy services to all Ecuadorians.

Solution

EcoStruxure Grid solutions with EcoStruxure ADMS, encompassing SCADA, DMS, OMS – MWM (Outage Management System – Mobile Workforce Management) and EMS – PCS (Power Control System), interoperable with third-party solutions.

Results

Between 2012 and 2016 the visibility of distribution network rose from 5% to 94%, laying a foundation for advanced energy management, greater grid reliability, and efficiency.

From insight to profit

Today, information collected from 20 distribution companies, 335 substations, more than 3,000 IEDs, and over five million customers are aggregated in EcoStruxure ADMS and made available to 150 field crews in real time. The plans are to cover 1,000 teams in the near future.

A comprehensive customer database lets operators track energy consumption trends and communicate transparently in case of network issues. The Outage Management System has helped significantly improve the response time to power failures by facilitating location and diagnosis of incidents.

The crews are now dispatched to a specific location, knowing the type of fault, so that intervention costs have been decreased. With access to full incident information, operators can track recurring faults, and address long-term issues, improving continuity, reliability, and efficiency across the grid.

A new era of power distribution

Completion of the SIGDE project, crowned with an inaugural event at the National Distribution Control Center, was a huge

step forward for Ecuador. “This really marks the beginning of a new era for distribution management, for the management of the electricity sector in the country,” a government official said at the event.

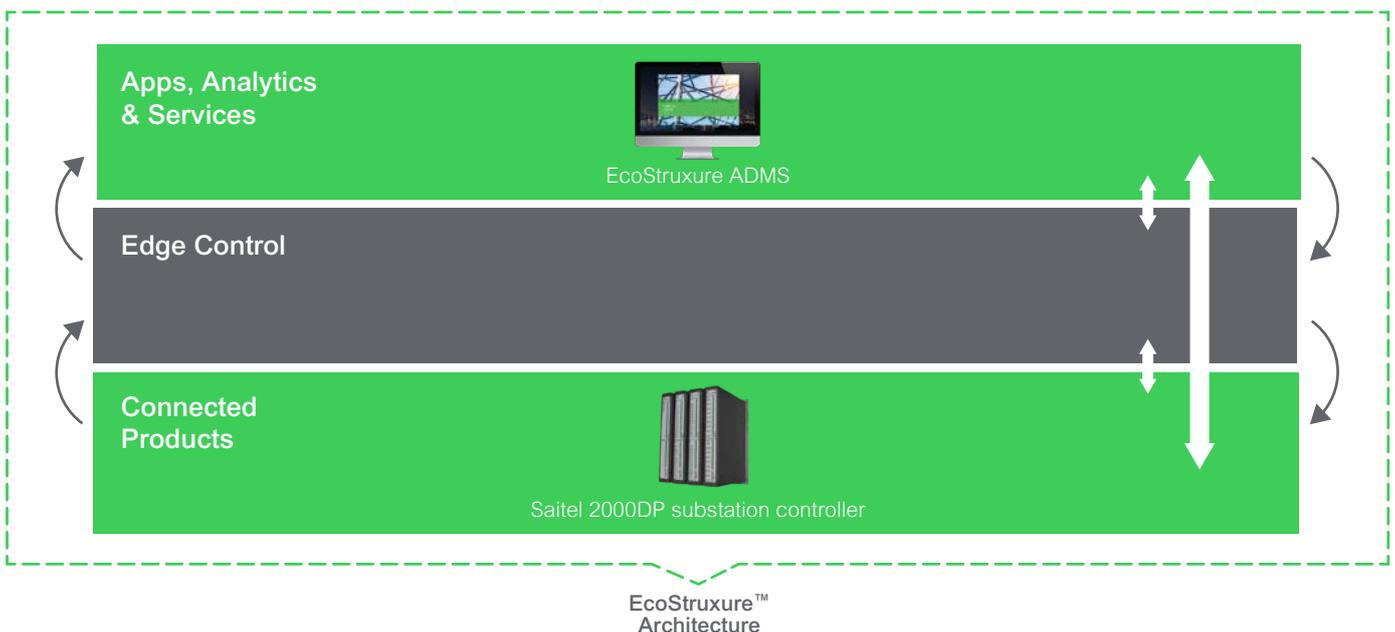
Having successfully transformed its power distribution market, the country continues its collaboration with Schneider Electric. In progress are two project extensions, including the integration of six more power plants and development of an interface for corporate systems. More opportunities for future cooperation are being discussed.

Ecuador’s spectacular grid upgrade has become an example and a reference point for other sectors facing similar challenges and has also opened new opportunities for the country. Rich in renewable energy resources, Ecuador is now prepared to integrate renewables, as EcoStruxure ADMS fully supports distributed energy management. With this huge challenge behind it, Ecuador can focus on building a brighter and more sustainable future.

94%

grid visibility achieved, from a starting level of 5%

EcoStruxure Grid



EcoStruxure™

Innovation At Every Level

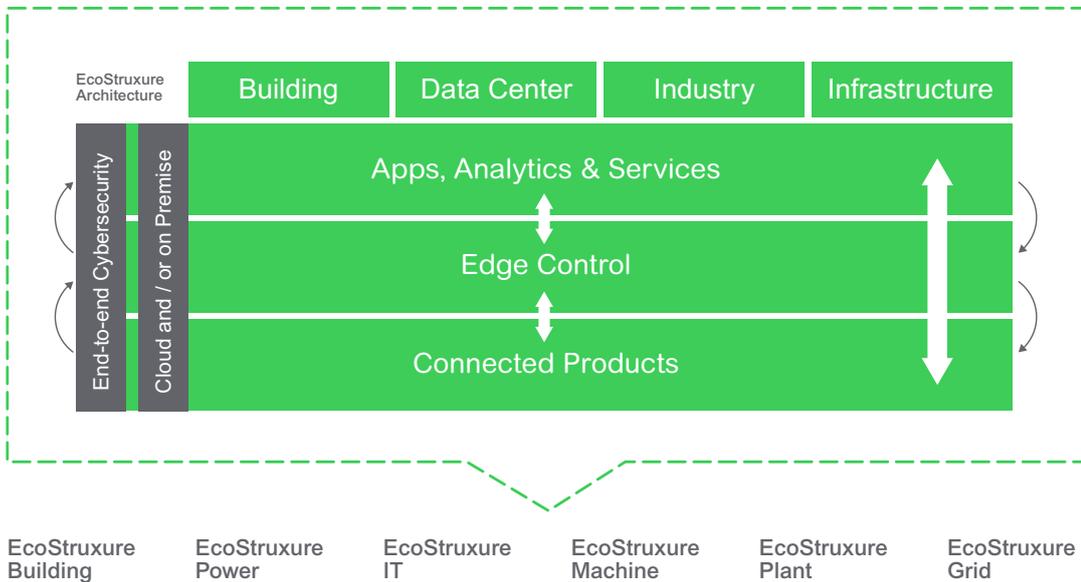
IoT-enabled solutions that drive operational and energy efficiency

EcoStruxure is Schneider Electric’s open, interoperable, IoT-enabled system architecture and platform.

EcoStruxure delivers enhanced value around safety, reliability, efficiency, sustainability, and connectivity for our customers.

EcoStruxure leverages advancements in IoT, mobility, sensing, cloud, analytics, and cybersecurity to deliver Innovation at Every Level including Connected Products, Edge Control, and Apps, Analytics & Services. EcoStruxure has been deployed in 480,000+ sites, with the support of 20,000+ system integrators and developers, connecting over 1.6 million assets under management through 40+ digital services.

One EcoStruxure architecture, serving 4 End Markets with 6 Domains of Expertise



Connected Products

The Internet of Things starts with the best things. Our IoT-enabled best-in-class connected products include breakers, drives, UPSs, relays, sensors, and more. Devices with embedded intelligence drive better decision-making throughout operations.

Edge Control

Mission-critical scenarios can be unpredictable, so control of devices at the edge of the IoT network is a must. This essential capability provides real-time solutions that enable local control at the edge, protecting safety and uptime.

Apps, Analytics & Services

Interoperability is imperative to supporting the diverse hardware and systems in building, data center, industry, and grid environments. EcoStruxure enables a breadth of agnostic Applications, Analytics, & Services for seamless enterprise integration.

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Find out more about EcoStruxure ADMS



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Discover the strategies to unleash the digital grid and empower your utility



See how French utility SICAE has optimized grid management for 35,000 households



Get expert support for your business with field and automation services

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