CGI

Experience the commitment®

CGI OpenGrid

Energy Control

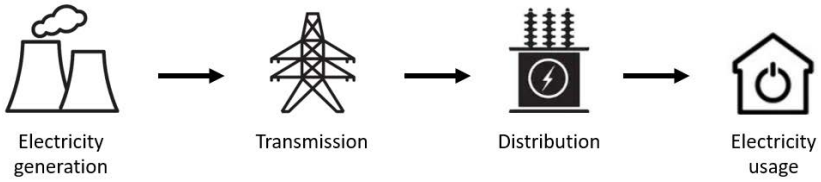
Extending network management and operation using edge device capabilities

CGI OpenGrid Energy Control correlates and filters massive volumes of data generated by edge devices and offers control capabilities to support efficient network operations, microgeneration, electric vehicle (EV) charging and grid balancing.

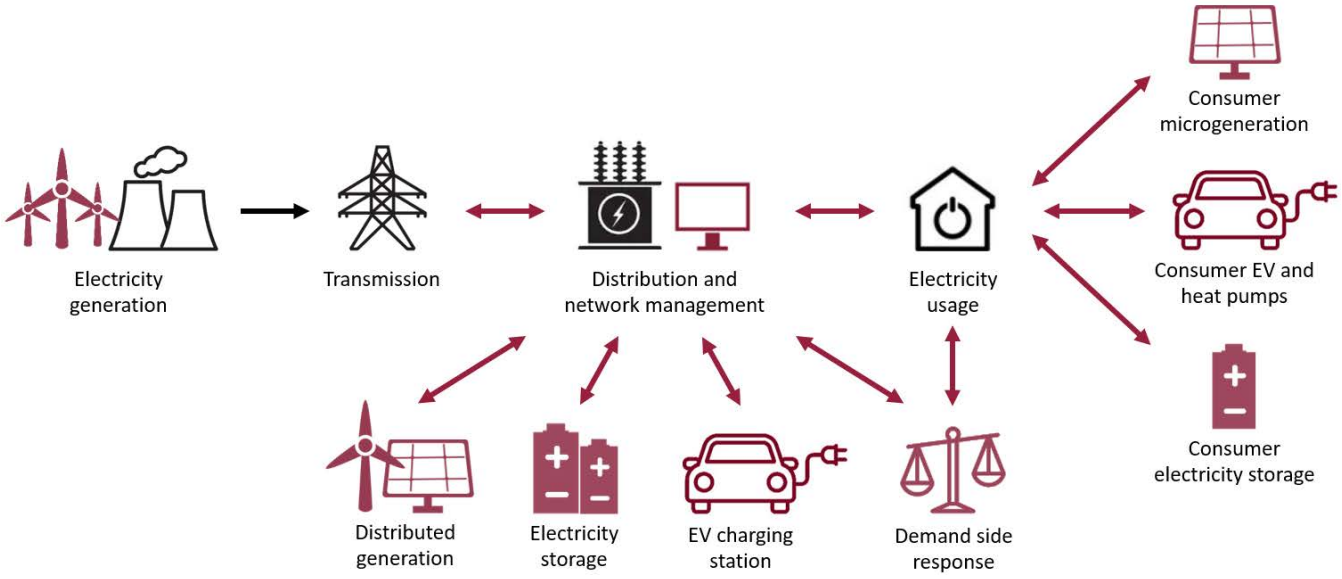
A new multidirectional energy flow paradigm

The new energy paradigm is being driven by consumers who really care about sustainability, who generate renewable energy, who power their electrical vehicles at home and who are willing to transmit energy back to the network during periods of high demand.

The paradigm has changed from a one-directional simple flow:



to a multidirectional, complex flow:



CGI OpenGrid Energy Control leverages edge devices to assist network owners and operators in ensuring a reliable, balanced and multidirectional flow of electricity while continuing to improve the quality of service and reducing operational costs.

Improving the performance of edge devices with advanced monitoring and analysis

CGI OpenGrid Energy Control uses network device events, alarms and historical key performance indicators (KPIs) to support top-down advanced monitoring and analytics, with the aim of improving the performance of edge devices.

Monitor the operational performance of your edge devices:

- Manage and monitor smart devices installed in the low voltage network and understand their location in the grid topology.
- Gather and display real-time events and alarms generated by smart devices (such as meters, renewable gateways and sensors).
- Display relevant KPIs grouped by geospatial location and/or network topology.
- Gain valuable insight from intuitive analytics dashboards.

Predict the failure of your edge devices:

- Use historical alarms and events generated by your edge devices, as well as other telemetry, to build, train and test machine learning models.
- Run tested machine learning models against real-time data to detect condition failure patterns.

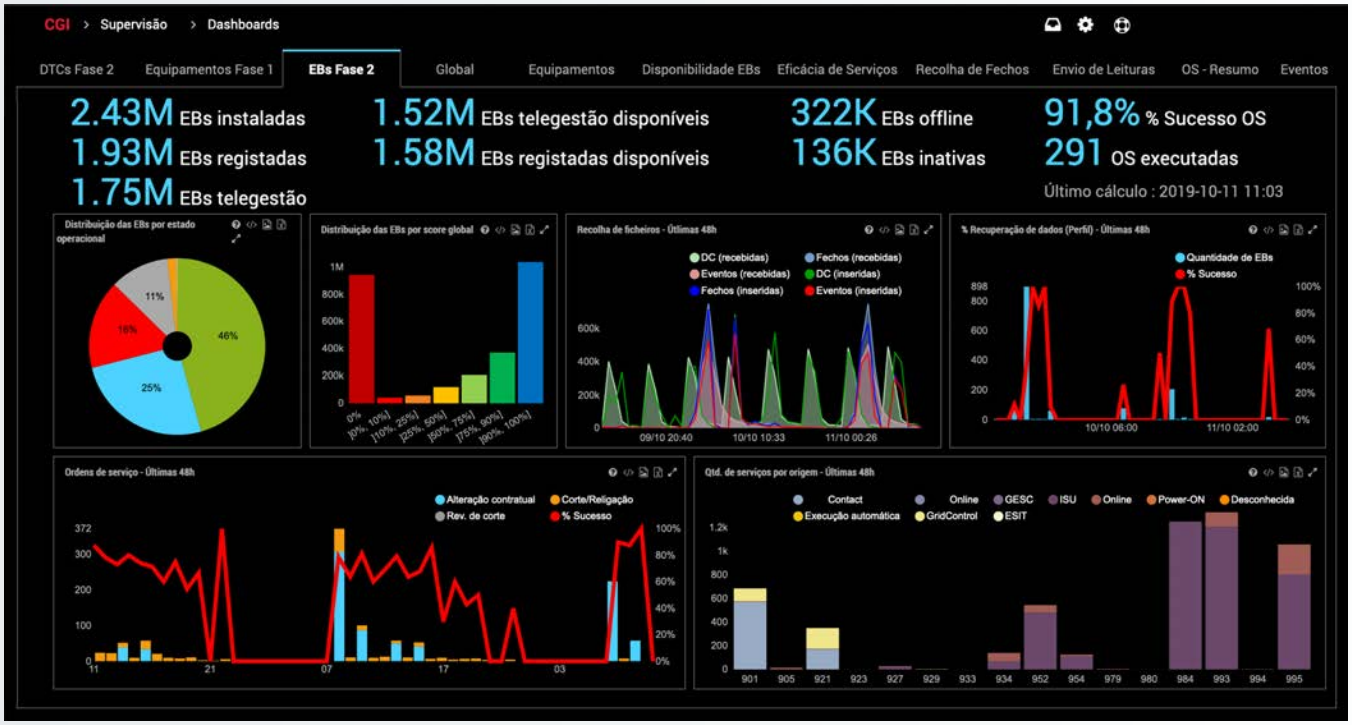
CGI OpenGrid Energy Control offers an out-of-the-box advanced monitoring and analytics tool to operate edge devices, including meters, inverters and Volt/VAR control devices.

Determine underperforming device types or manufacturers

- Compare actual KPIs against SLAs.
- Benchmark different device manufacturers and technologies.

Improve the performance of the communications network

- View mesh network KPIs via an intuitive display.
- Use map tools integrated with the topological view (such as satellite view, street view, elevation profile and distance calculation) to evaluate potential topology problems in a specific region.

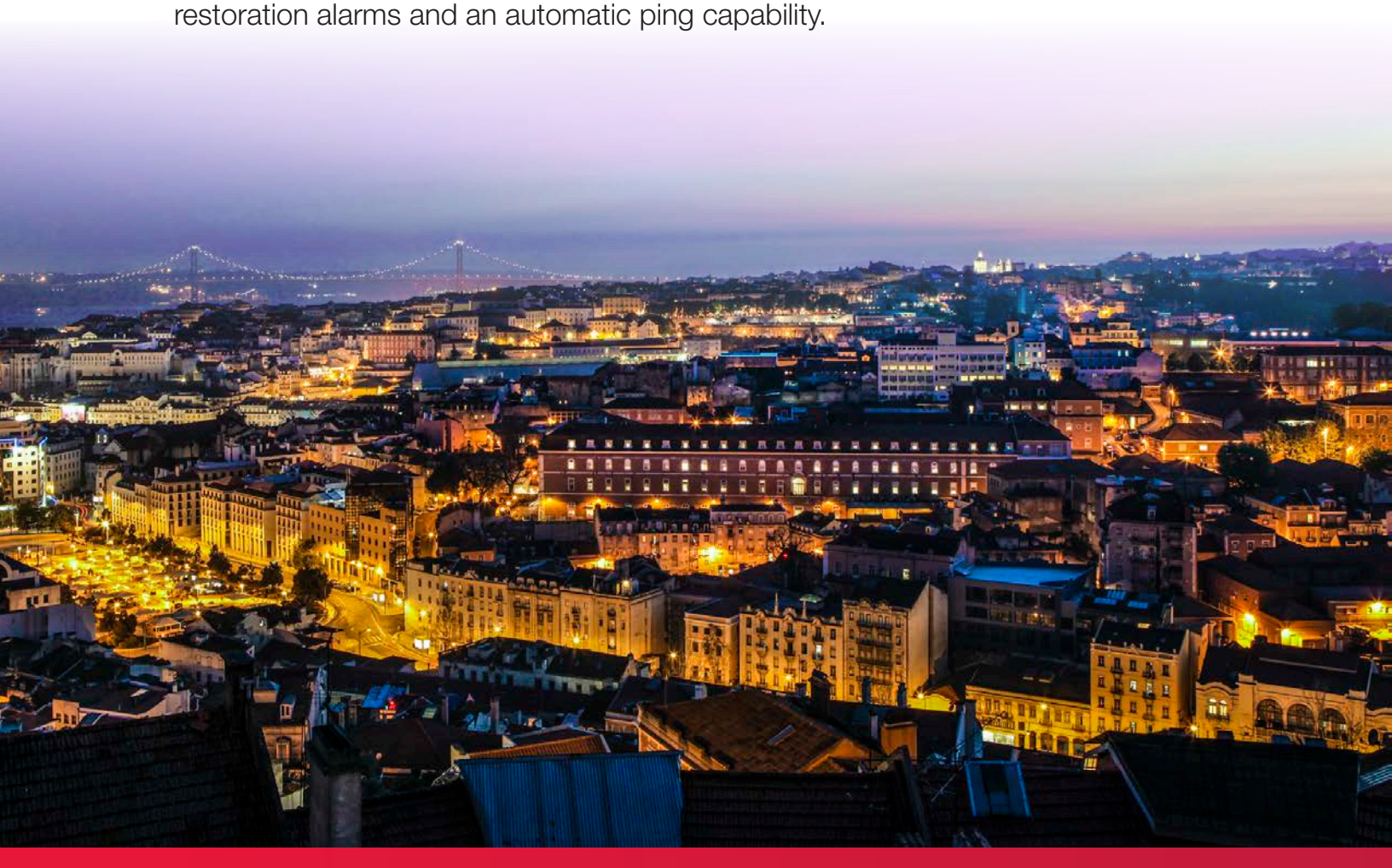


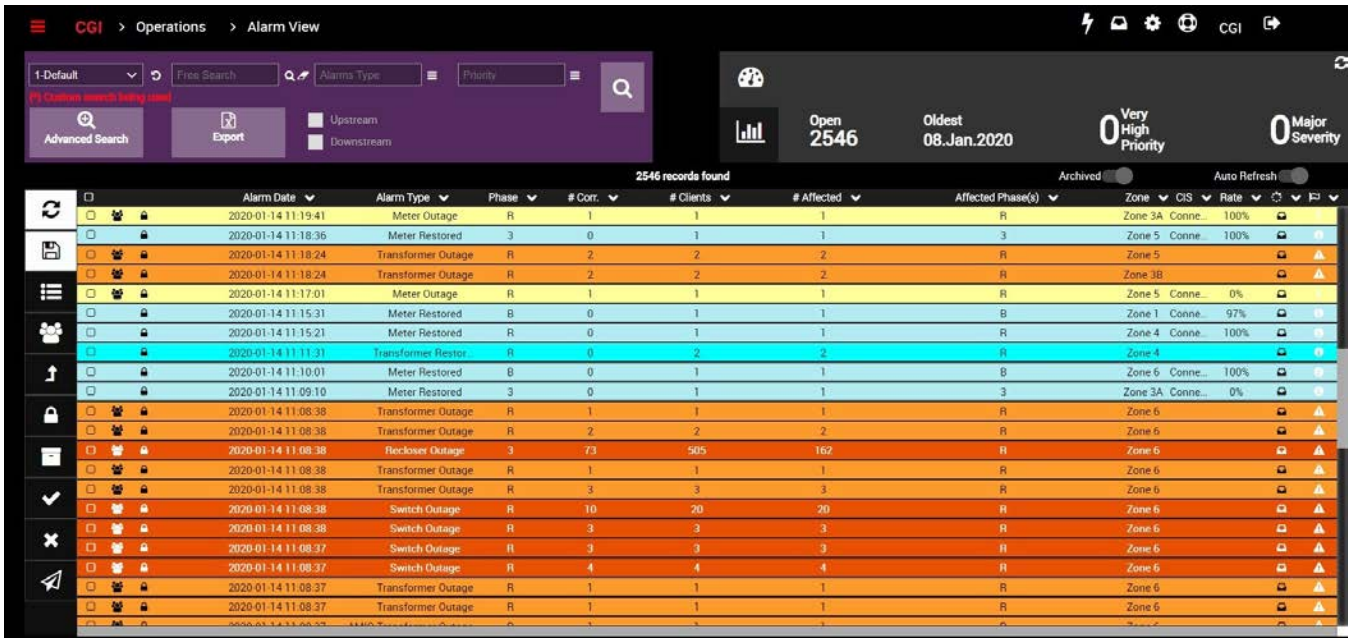
Enhanced outage detection to reduce incident duration and cost

CGI OpenGrid Energy Control processes events and alarms from smart devices in the grid, correlates with grid topology and applies automatic or user-defined rules (for example filtering, enriching and correlating) to enhance outage detection and confirm outage restoration. This improves reliability indicators, such as CAIDI and SAIDI, and reduces operational costs.

Reduce outage time

- Detect outages faster due to intelligent correlation and filtering of meter events and smart ping capabilities.
- Achieve faster and more accurate identification of failed network device and affected phases.
- Confirm restorations, and detect and report nested outages, based on meter restoration alarms and an automatic ping capability.





Reduce outage costs

- Reduce unnecessary truck rolls and related costs through more effective outage and nested outage detection.
- Assure an outage is resolved before the field team leaves the field (by pinging the affected meters).
- Gain faster detection of nested outages.
- Avoid regulatory penalties through improvement of reliability indicators.

Improve vegetation management

- Detect specific outage patterns related to vegetation problems, such as recurring outages of very short duration.
- Correlate data from different active network sensors located nearby.

Flexible load operation to ensure a reliable and balanced network

CGI OpenGrid Energy Control supports real-time, two-way communication with control devices or smart sensors to monitor and control flexible energy resources. These include renewable micro-generation assets, energy storage, behind-the-meter electric devices, electric vehicles and heat pumps.

Better support active prosumers

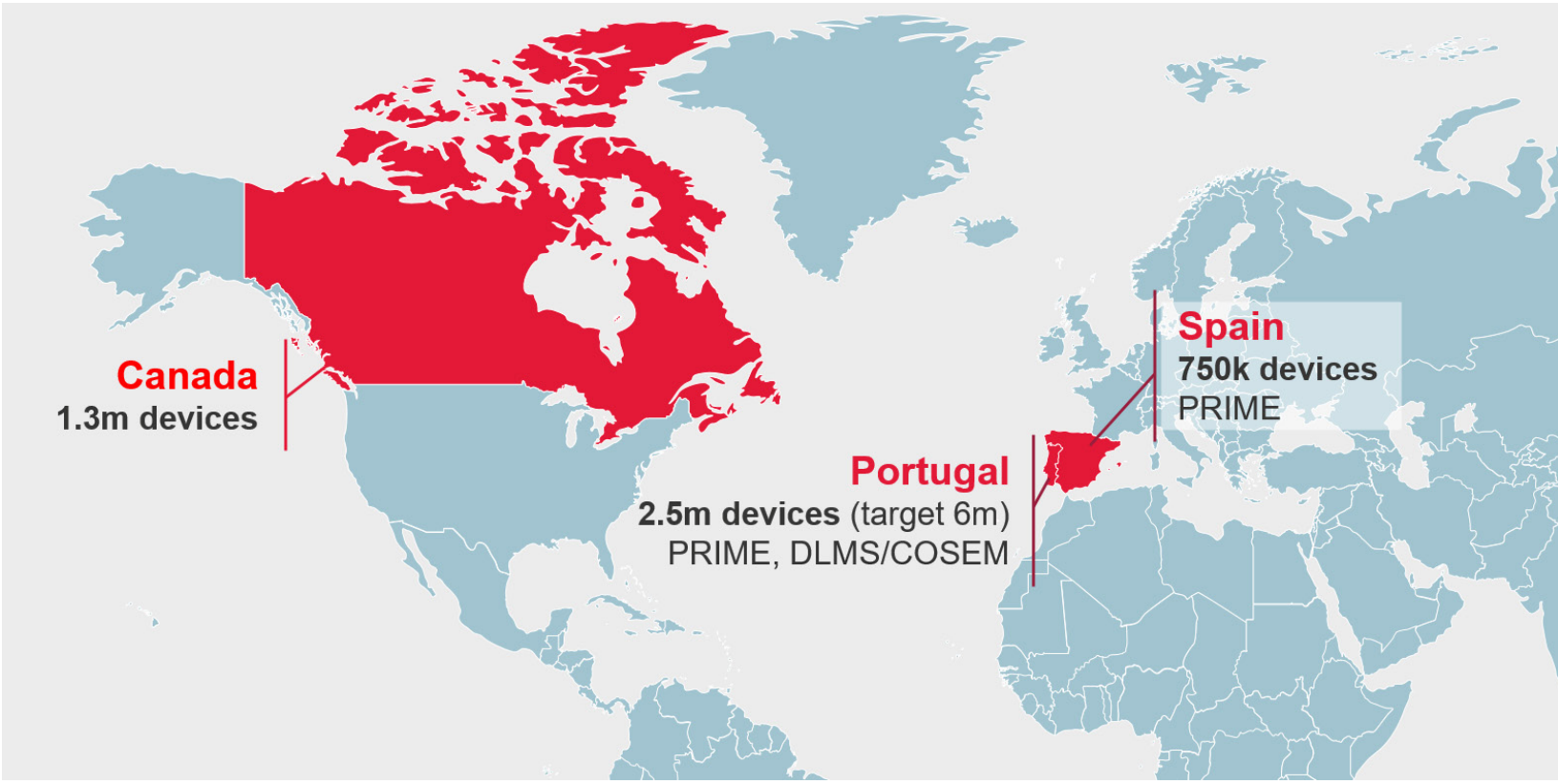
- Effectively monitor, measure and control behind-the-meter demand and generation.

Contribute to building a reliable and balanced network

- Send commands / set points to relevant smart devices to resolve power flow constraints and reposition normal values when resolved.
- Aggregate generation and consumption values by grid topology, providing support for local and regional balancing of capacity. This ensures customers are able to operate with the maximum level of efficiency that optimizes, but does not unduly stress, the network.

Contribute to increased flexibility of demand-side management

- Achieve holistic real-time operation of demand response, behind-the-meter generation and energy storage, including active use of EV batteries.
- Support active demand-side response by allowing control of behind-the-meter demand and generation.



> "... with this system we have been able to screen 5,000 more calls, which has translated into 5,000 fewer truckrolls, amounting to considerable OpEx savings"
>
> *Program Director Smart Grid, Hydro One*

Trusted partner focused on your needs

CGI is trusted by the world's leading utilities to implement their most complex and mission-critical systems. Drawing on more than 30 years of industry experience as an end-to-end services provider that has co-developed successful industry solutions with our clients, CGI OpenGrid360 is designed to meet the unique needs of transmission and distribution (T&D) utilities.

CGI in Utilities

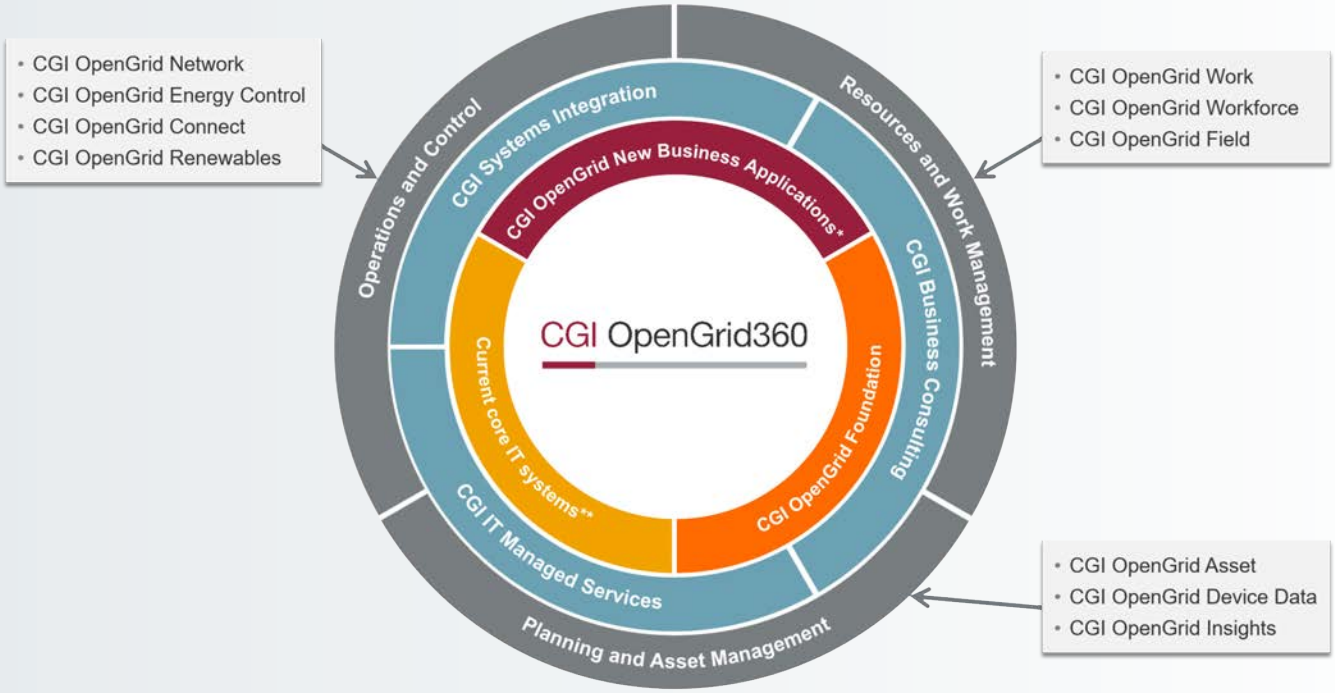
As the move to a secure, affordable and fair low-carbon energy ecosystem intensifies, CGI supports the energy transition by helping utilities transform to address growing volumes of distributed energy resources, exploit data insights and other digital enablers to diversify revenue streams, support real-time operational excellence, and enhance customer experience, all while keeping the business secure.

CGI OpenGrid360

Accelerating innovation by unlocking the value of data for the move to a sustainable future grid

Utility transmission and distribution (T&D) utilities need to accelerate change, optimize operations and support future energy market needs. CGI OpenGrid360 is an innovative suite of solutions and services designed to improve your data insight and accelerate innovation to meet the evolving demands of the new energy system. It supports the complete network value chain from asset to outage management and more.

Co-developed with large network operators on UK smart grids innovation programs, for example, the hub of the solution is the CGI OpenGrid Foundation, a master data management and integration layer that provides a single view of a utility's network. By allowing data to be centralized and securely shared across IT, operational technology (OT) and business systems, our unique approach supports real-time decision-making and more rapid development of new applications and services for a competitive edge. This kind of business value is not possible using traditional relational databases or unstructured data lakes. CGI OpenGrid360 streamlines deployment of in-house and third-party applications to launch new services for consumers, prosumers and other market parties, better utilize network assets, allow flexibility services and work more collaboratively in managing consumer-generated electricity.



* = Delivering deliver value-added services for consumers, prosumers and other market parties

** = Current core IT systems of utility transmission and distribution (T&D) utilities; CGI offering or offering from any other vendor

Connect with us to learn more

As a trusted advisor with a proven track record in the utilities industry, CGI is committed to your success.

Connect with us to learn more: *cgi.com/utilities* and *cgi.com/opengrid*

About CGI

Founded in 1976, CGI is among the largest IT and business consulting services firms in the world. Operating in hundreds of locations across the globe, CGI delivers end-to-end services and solutions, including strategic IT and business consulting, systems integration, intellectual property, and managed IT and business process services. CGI works with clients through a local relationship model complemented by a global delivery network to help clients achieve their goals, including becoming customer-centric digital enterprises.

Learn more at **cgi.com**.

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