



Optimise.
Transform.
Secure.

Digitally enabling the energy transition in Australia

CGI

The strategic decisions that Australian power utilities make in 2022 are critical to the future of a decarbonised and sustainable energy system.

To navigate the journey ahead, you need a technology integration partner that is trusted to do complex things well.

Facing a uniquely Australian energy challenge



When it comes to powering Australia, the nation's harsh physical landscape is just the beginning of the challenge. You also face these four important hurdles:

- 1 The shift to intermittent, inflexible renewable sources of generation fundamentally changes the dynamics of the energy system. Real-time visibility is increasingly essential to optimising the network and enabling the economic integration of green energy while maintaining secure and resilient supply.
- 2 The proliferation of intelligent devices, and the convergence of Operational Technology (OT) with Information Technologies (IT) leave traditional OT security solutions vulnerable.
- 3 The passing of the Security Legislation Amendment (Critical Infrastructure) Bill 2020 intensifies the need to secure critical infrastructure systems against cyber threats. This Bill broadens the cybersecurity obligations and prescribes cybersecurity activities for entities responsible for systems of national significance.
- 4 The changes to Ministerially imposed operating licence conditions that have driven the reversal of offshored security and network operation functions and the need to establish sovereign capability.

Under pressure on so many fronts, you need the right technology partner to face future challenges.

It's time to optimise, transform and secure your network assets, systems and operations.

Optimise

Optimisation of current network operations is essential to protect the energy supply to homes, businesses and critical social infrastructure, such as hospitals. Optimisation uses real-time visibility across the network to create the foundation for a rapid energy transition.

Here are some of the solutions we provide to help you achieve this:

Remote Telemetry Units (RTUs) and Substation Automation

Our RTUs and substation automation system software offer improved asset utilisation and increased reliability through real-time data visibility and control. Our RTU solutions deliver flexibility and scalability that helps you transition to intelligent, flexible energy systems. Designed in Sydney and built in Brisbane specifically for harsh Australian operating conditions, our RTUs have been extensively proven across Australian electricity transmission and distribution networks. The highly configurable range of modular devices deliver powerful control logic and intelligent processing, which include:

- Substation management and automation
- Audio frequency load control
- Transformer management
- Distributed Energy Resource (DER) constraint management
- Integrated WebHMI

CGI SensorInsights360

Developed in Australia, CGI SensorInsights360 is a flexible, real-time data platform that delivers an end-to-end approach to IoT, asset data collection and asset management. It enables acquisition and analysis of any type of data from sensors, and its supervision and real-time trends capability informs real-time responses. The platform is device agnostic and supports predictive and proactive operational models to:

- Reduce costs
- Improve asset utilisation
- Increase operational efficiencies

Machine Vision

Our Machine Vision Artificial Intelligence software leverages edge computing to analyse video imagery in real time, providing more detailed observations than traditional sensors. It optimises operations by providing an 'always on' method of measuring things that previously required human observation. It can be configured to support operational efficiency as well as regulatory and safety processes. This data can then be fed through CGI SensorInsights360 to leverage its supervision, trending and advanced analytics capability to optimise future decision making.



CGI Intelligent Maintenance of Electric Lines (MILES)

MILES is our advanced analytics solution, developed in collaboration with Hydro Quebec and UK Power Networks, for improving the reliability of the distribution network. It uses an innovative combination of sensors, voltage drop fault location algorithms and cloud computing capabilities to identify the likely cause and the precise location of both permanent and transient faults, preventing outages. Benefits include:

- The accurate dispatch of crews to resolve the issue and restore power more quickly, thereby reducing customer minutes lost and improving service
- Improved customer satisfaction as a result of reduction of outages
- The reduction of ineffective interventions and repeat jobs

Earth Observation Data and CGI GeoData360

Space-based Earth Observation (EO) technologies are an emerging capability for the monitoring and assessment of the natural and manufactured environment. Our CGI GeoData360 state-of-the-art data processing platform for geospatial data and satellite imagery delivers critical insights. For example, EO can identify the impact of vegetation on energy networks or land movements on transmission towers. CGI GeoData360 can then analyse the data to identify risk levels and actions required, enabling the targeted use of drone or helicopter resources to confirm findings.

Transform

As the energy transition accelerates, it will create valuable opportunities to transform business operations and models. Building on the foundation provided by optimised processes, we can help you to transform through the development and implementation of a data-driven, digital roadmap.

From strategy to reality

Our Digitalisation Strategy Framework focuses on aligning investment in intelligent assets and new data systems with the ability to generate value from the data available. We work with you to identify, quantify and prioritise tactical (quick wins) and strategic (long-term) initiatives that maximise value in a data-driven and consumer-centric, operationally excellent environment.

Data strategy in action

In practice, our Digitalisation Strategy Framework will make data work hard for your energy operation. After a thorough assessment, we work in collaboration with your domain leaders to develop or adapt solutions to create the capabilities you need to deliver a safe and reliable energy supply.

CGI OpenGrid360

Our OpenGrid360 architectural framework supports utility infrastructure and system operators' end-to-end operations. It helps our utility networks clients to transition from being a Distribution Network Service Provider (DNSP) to becoming a Distribution System Operator (DSO) by breaking down data silos and enabling data to be securely shared across OT and IT systems. It also allows you to plan and actively operate distribution assets to support the optimal use of distributed energy resources across the system.

For more information, visit:
cgi.com/en/utilities/opengrid360



Secure

Successful optimisation and transformation need connectivity, but this widens the attack surface and, without the right security, leaves your operations vulnerable. As the threat landscape becomes more complex, organisations won't survive without the right security controls to prevent operational disruption, protect assets and maintain safety.

Key security challenges

The convergence between OT and IT is gathering pace – driven by its ability to optimise and transform operations. But, as you upgrade your technology and systems, issues like unpatched legacy systems, siloed data and a relaxed approach to device authentication create more backdoors for threat actors. The attack landscape widens further when you add in the increased connectivity of cloud-based systems, connected/intelligent devices, 5G networks and the growth in remote working.

The responsibility for protecting energy businesses sits firmly with each organisation's board. The Security Legislation (Critical Infrastructure) Bill 2020 amendment requires specific cyber security processes and a risk management programme for all critical infrastructure. Being cyber-resilient is now an obligation, not a choice.

Security solutions

Protecting an energy business starts with our assessment phase to identify potential security risks from an organisational and technical point of view.

This comprehensive review includes business continuity, security maturity, compliance, network status, risk assessments and an evaluation of mitigation preparations.

To enable you to remain secure and fulfil your legal and regulatory obligations throughout your energy transition journey, we help you to adopt the right security controls using a non-disruptive approach to protect your environment, guided by key industry and global standards, guidelines and frameworks. This includes creating an organisational culture of cyber awareness, as well as introducing protective segmentation within your network and identity and access management.

From our onshore Australian-based Security Operations Centre (SOC) we will help you stay vigilant to possible threats with 24x7 continuous monitoring of your IT and OT systems, networks, devices, personnel and environment. From applying a Security Information Event Management (SIEM) system to using Artificial Intelligence (AI) to detect threats, we establish systems that defend energy assets and enhance cyber-resilience.

Our services include:

IT and OT Managed Security Services

- Threat intelligence
- Use case development
- Detection and response management
- Vulnerability and patch management
- Access management
- 24x7 Onshore Australian Security Operations Centre (SOC)
- Security Analyst as a Service – 'Eyes on Glass'
- SOC as a Service - Security platforms powered by Microsoft and Fortinet partnerships
 - Microsoft Sentinel
 - Microsoft Defender for IoT
 - FortiSIEM

IT and OT Security Engineering Services

- Architecture, design and implementation
- Network and configuration management
- Logical and physical security testing

IT and OT Strategic Security Services

- Security strategy development
- Governance risk and compliance
- Asset management
- Training and awareness





Why CGI?

Energy and utilities heritage

We have a strong heritage in the Australian energy and utilities sector and have delivered high quality services and products tailored to the Australian market for over 40 years. Today, we continue to be trusted by a large proportion of Australian utilities across both state-owned and private enterprises to deliver critical infrastructure enabling services.

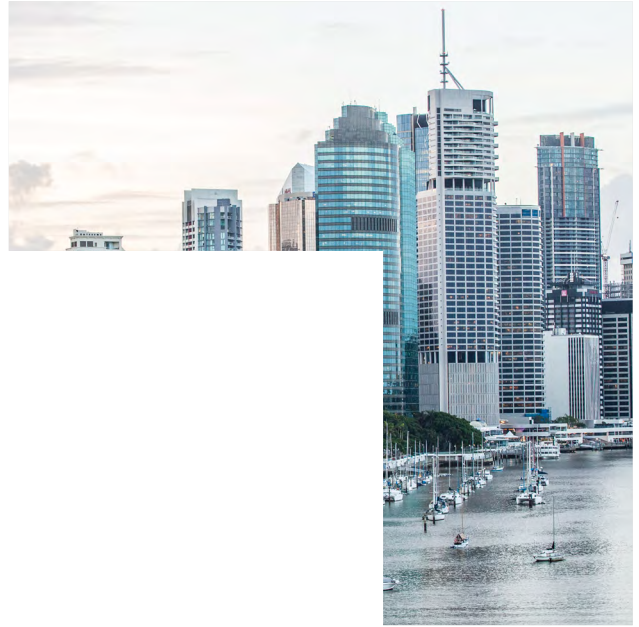
Australian-designed technology

We deliver expertise at the local level – our local teams combine innovative Australian-designed technology solutions and a deep understanding of the sector and regulatory environment in which you operate. Through basing our teams alongside our clients we create a culture of accountability that drives outstanding local support and expertise, building value in the communities we serve.

Local knowledge and global strength

Our local teams collaborate with our global community, drawing on our long-standing expertise in OT and security. This enables them to bring and leverage insights from other territories and sectors for the benefit of our clients, and access our worldwide network of industry innovation centres.

Get in touch to find out how we can help your organisation optimise, transform and secure its energy operations.



About CGI

Insights you can act on

Founded in 1976, CGI is among the largest IT and business consulting services firms in the world.

We are insights-driven and outcomes-based to help accelerate returns on your investments. Across 21 industry sectors in 400 locations worldwide, our 80,000 professionals provide comprehensive, scalable and sustainable IT and business consulting services that are informed globally and delivered locally.

cgi.com/au | sales.aus@cgi.com

[@CGI_Australia](https://twitter.com/CGI_Australia) | [linkedin.com/company/cgi](https://www.linkedin.com/company/cgi)