

## BC Hydro – Vancouver

# A Foundation for Improved Protection and Automation

BC Hydro is transformed into a digital company, connecting its electric grid with Cisco® networking, security, and smart grid solutions.



### The customer summary

**Customer name**

BC Hydro

**Industry**

Energy

**Location**

Vancouver,  
British Columbia

## From Once Every Two Months to Twice a Day

BC Hydro needed to upgrade their digital system to better serve their power customers and achieve greater efficiency throughout their operations. Cisco's components created the architecture to address this need. With the recent transition in Vancouver from above-ground power lines to under-ground power lines, the timing was right for the utility to implement these digital upgrades. The monitoring improvements are striking, and indicative of the overall scale of change across different systems: the utility went from monitoring power use once every two months to twice a day.

## Assessing the Need for a Smart Network Architecture

For Vancouver and its surroundings, storms can take out power for an entire area, or vehicular accidents will disrupt power on a city block. BC Hydro needed to fulfill its promise to restore power as soon as possible in these scenarios. When the utility sought assistance from Cisco, they already had certain networking initiatives in place. Plus, BC Hydro had to prepare for a future with greater population and more power demands, so they wanted to set structures that were scalable and adaptable to future needs and technology. Finally, they needed a secure and safe network, where power safety issues could be instantly addressed and network access would be reliable and secure. Cisco began its upgrade to a smart grid by implementing its FAN architecture. Because FAN is an open standards and IP-based architecture, it can change and grow according to the utility's future needs.



### Daily Power Monitoring Improves Service, Saves Energy

Power usage is digitally tracked twice a day.



### Cisco's Robust Network Quickly Identifies Faults and Outages

Field grid routers continually send data to the Cisco I/Ox platform.



### Secure and Future-Proof Network

Cisco's ISE engine safeguards data, and its network can address future needs.

## Efficiency and Security Go Hand-In-Hand

With Cisco routers throughout the smart grid and Wi-Fi in every corner of BC Hydro's operations— from trucks in the field to remote sub stations to main offices—monitoring capabilities ensure that data is protected and the system is secure. Cisco's ISE engine protects the security of the network, and Cisco's relays, ethernet switches, and fibre optic cables allow for near immediate fault protection, which, in turn, improves power service to customers. Cisco's RF Mesh network is another technology that enhances quality, services, and dependability throughout the service area. The RF Mesh network is BC Hydro's foundation for general scalability, allowing for future projects such as smart street lighting, insightful analytics, and automated demand response.

## Multiple Benefits From Monitoring in Real-Time

Because Cisco's solutions derived from an open architecture, they could build upon the systems already in place at BC Hydro as well as support future upgrades and changes. With the power lines now underground in Vancouver and the newer distribution open loop system in place, the benefits of the upgraded network architecture were immediate. The open loop system locates the fault, and isolates it for service rotation. With Cisco grid routers feeding data into the Cisco IOx software platform, the system is monitored hourly, and the data is fed to customers twice a day. This allows customers to adjust their energy consumption in real-time based on current usage, and it allows the utility to identify any outages or security breaches as soon as they occur. This instant notification means BC Hydro can send out repair crews immediately, diminishing the time it takes to restore power.

## Smart City Power Solutions Promote Efficiency and Safety

Like most smart city technology, Cisco's intersecting solutions for BC Hydro's smart grid promote greater efficiency, security and safety.

- Near real-time monitoring improves service to customers and promotes energy savings.
- Grid routers throughout the system feed data to the Cisco IOx platform so faults and outages are quickly addressed.
- Cisco's ISE engine keeps the network secure, and the RF Mesh network provides an architecture to contain future projects and demands.

