Chemical Industry



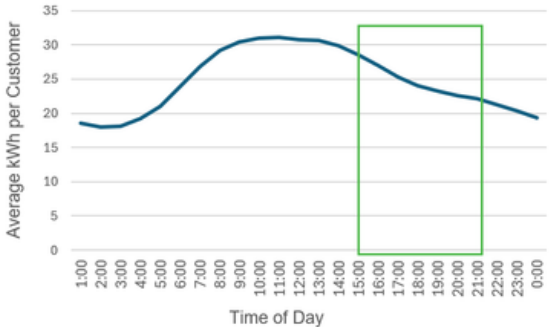
BC Hydro Demand Response Program

DEMAND OPPORTUNITY

Chemical Plants offer strong demand potential as:

- They have large concentrated electrical loads such as large motors, pumps, compressors, and chillers.
- Some processes have thermal inertia or storage buffers that provide flexibility.
- Batch operations can often be shifted by several hours without affecting overall production targets, particularly if the plant has intermediate or final product storage on site.

Average Load Profile for the Chemical Industry



PROGRAM OVERVIEW

Program Incentive	$50 per average kilowatt (kW) of demand reduction per season
Event Duration	Up to 20 events per season, no more than four hours each
Event Season	November 1 – March 31
Advanced Notification	One business day
Participation	Must have successfully performed in at least 50% of all events

PARTICIPATION BENEFITS



FINANCIAL INCENTIVES



NO COST TO ENROLL



RISK-FREE

INDUSTRIAL DR BEST PRACTICES

- Develop a DR event plan that identifies specific systems or equipment, control actions, monitoring requirements, and procedures for actions before, during, and after the event, including returning systems to normal operation.
- Assign clear roles and responsibilities so staff understand required actions, and ensure adequate staffing, particularly if the event occurs outside normal operating hours.
- Focus on controllable loads that operations staff can adjust through centralized plant SCADA/DCS or local controls.
- Monitor potential adverse impacts (including building conditions, inventory levels, product quality, safety) and determine any critical levels which will require return of systems or equipment to normal operation.
- Use automated control systems where possible to implement DR actions quickly and consistently. This could include pre-programmed shutdown sequencing.
- Perform a mock DR event when conditions are suitable. Use lessons learned from the test event to identify flaws and correct or adjust where possible.
- Following DR events, review performance and document lessons learned to improve future event execution.



> **"The 24-hour notice gives us time to make a business decision. We can look at inventory, customer demand, staffing, and determine whether participating makes financial and operational sense."**
> **- KEVIN, FERUS INC.**

CASE STUDY: FERUS INC.

Ferus Inc. operates a liquid nitrogen production facility in Dawson Creek, where electricity is the largest operating cost. After learning about BC Hydro's Demand Response (DR) program while researching energy-saving opportunities, the team recognized it as a practical way to reduce operating costs while supporting grid reliability. Previous experience participating in Alberta's operating reserve program also gave them the confidence to explore BC Hydro's program.

Due to the nature of its operations, Ferus has limited ability to reduce production incrementally. They have two production trains and each needs to be either fully operational or shut down. This means participating in a DR event typically involves temporarily shutting down one or both production trains rather than adjusting individual pieces of equipment.

When BC Hydro issues a 24-hour event notification, Ferus evaluates whether participation makes business sense by considering several operational factors, including:

- Customer demand for liquid nitrogen and available product inventory.
- Staffing requirements and availability for shutdown and restart.
- Expected financial incentives based on recent electricity demand.

Once Ferus decides to opt-in for a DR event, their established procedures and implementation plan help make participation straight forward.

During the 2024/25 event season, Ferus participated in four DR events, achieving an average demand reduction of approximately 7.3 megawatts (MW), which is equivalent to the electricity to power between 5,800 to 7,300 typical homes in BC.

For Ferus, the program helped offset operating costs while enabling the company to maintain customer service levels and operational priorities.

Key benefits of participation included:

- Cost savings through demand response incentives.
- Flexibility to participate based on operational requirements.
- 24 hours' notice to support production and workforce planning.
- A predictable and manageable process that integrated smoothly with normal operations.

Ferus plans to continue participating in the DR program when operational conditions allow. For their team, demand response is less about reducing energy use and more about balancing production, inventory, customer commitments, and electricity costs to make sound business decisions.

DEMAND RESPONSE OPPORTUNITIES

- Pause non-critical production lines.
- Shift batch production schedules.
- Reduce electrochemical process rates where feasible.
- Sequence, stagger, or temporarily reduce operation of non-critical pumps, compressors, chillers and other large motor-driven equipment.
- Power down idle or standby equipment and eliminate unnecessary base loads.
- Reduce or shut down ventilation in non-critical or unoccupied areas.
- Defer non-essential cleaning, washdown, and maintenance activities that require significant electrical loads.
- Use on-site thermal or battery storage systems.

HOW DO I SIGN UP?

Enroll in the program via the Demand Response Behavioural link or QR code, log into your MyHydro account and provide:

- A list of the sites you want to enroll.
- The name and contact info for the person on site who will receive event notices.

BC Hydro