



Trident Seafoods makes a splash with Puget Sound Energy demand response

Trident Seafoods is the largest vertically integrated commercial seafood company in North America. The company’s mission – working together to responsibly share wild Alaska seafood with the world – is made possible by their 9,000 full-time and seasonal employees, and 5,400 independent fishermen and crew members who serve customers in 58-plus countries around the globe.

Headquartered in Seattle, Washington, Trident’s focus on commercial fishing and primary processing operations continues to be in Alaska. Since Trident’s founding in 1973, the scope of species they harvest and process has expanded from king crab to include virtually every commercial species of salmon, whitefish, and crab harvested in Alaska, as well as Pacific whiting off the West Coast. Trident also expanded their global supply chain to include sourcing from a network of trusted seafood producers worldwide.

Trident is a privately held, 100 percent U.S.-owned company. They maintain shore-based processing operations throughout the Alaskan and Pacific Northwest coastlines, with dozens of additional processing and production plants, sales, and support sites located throughout the continental United States and internationally.

With a commitment to energy efficiency and sustainability, Trident was looking for solutions to make progress on an aggressive energy reduction plan, so participating in demand response aligned with their business goals.



CASE STUDY



Industry

Food and beverage



464 kW

of demand able to be curtailed during an emergency event; 178 kW during a peak demand event



\$24,300+

in earnings from dual participation in Puget Sound Energy’s Emergency and Peak Demand programs (mid-season enrollment)



DR strategy

involves shutting off a compressor and evaporation for cold storage during an event

“

It's the right thing to do. If Trident can help the power grid on high-demand days and shut down cold storage to run at lower peak hours and get paid for our efforts, it's a win.”

—Jeff Johnson
Refrigeration Manager, Trident Seafoods

Diving into demand response

Demand response is a critical reliability resource leveraged by the electric grid to ensure supply and demand remain balanced to avoid blackouts and brownouts. By leveraging flexibility in their operations, facilities can earn payments by making targeted energy reductions when there is insufficient supply to meet demand, helping maintain a reliable and cost-effective grid. Many grid operators and utilities across North America offer demand response programs, and Puget Sound Energy (PSE) in Washington state is one of them.

Trident Seafoods became aware of PSE's Business Demand Response Program (BDRP) through direct communication with PSE. With a 30-year history of successful collaboration with PSE on various energy programs at their Anacortes processing facility, Trident was optimistic about the potential benefits of participating in the BDRP and that they could get paid for temporarily shutting down equipment. This long-standing partnership made Trident's team confident in the benefits and feasibility of the BDRP.

Trident's recipe for demand response participation

PSE introduced Trident Seafoods to their exclusive demand response partner, Enel North America, to build out a plan for success. As part of this bilateral partnership, Enel helps facilities enroll in the BDRP, develop customized curtailment strategies to implement when called upon to participate in demand response events, and maximize payments while keeping operational disruption to a minimum.

To develop a curtailment strategy, also known as an energy reduction plan, Enel and Trident worked together to test which equipment Trident could temporarily shut down without affecting production. In this way, Enel could build a strategy that would enable Trident to make periodic energy reductions to participate in the BDRP – without impacting their ability to do business.

When Trident receives a notification from Enel about an upcoming demand response event, they shut down all evaporation, unload the main compressor for cold storage, and shut the compressor down. Then, after the curtailment window

is over, they pull the cold storage back down to temperature that night. This strategic load shifting allows Trident to participate without disrupting operations.

Through proactive and effective communication, PSE and Enel ensured a seamless participation process for Trident Seafoods. When asked how easy it is to participate in the BDRP, Jeff Johnson, Refrigeration Manager at Trident, said, “Overall, our experience has been great. They do a great job of communicating before curtailment, including email, text, and phone calls.”

Maximizing opportunity with broad-scale participation

The BDRP offers two flavors of demand response: the Emergency Program and the Peak Demand Program. The Emergency Program avoids potential blackouts or brownouts on the PSE grid, and peak shaving programs help stabilize the PSE grid and keep energy prices lower.

Enrollment in both programs enables Trident to maximize value by earning significantly more revenue and reducing capacity charges. They earn payments for being on standby and on-call when a demand response event occurs.





Trident enrolled into the BDRP during the middle of the 2023/2024 winter season but has already seen success with the program even though they haven't participated for an entire season at the time of this case study publishing. They are set to receive \$27,304.16 for their dual enrollment. They accomplished this by performing at 100% of their nominations in the Peak Demand and Emergency Programs, curtailing 178 kW on average for the Peak Demand Program and 464 kW on average for the Emergency Program.

This performance sets them up to achieve even more in the 2024 summer season and the 2024/2025 winter season.

Jeff believes that helping the power grid on high-demand days, shifting operations to lower peak hours, and receiving compensation make the BDRP highly beneficial. He encourages other facilities to investigate the feasibility of demand response participation: "It's the right thing to do. If Trident can help the power grid on high-demand days and shut down cold storage to run at lower peak hours and get paid for our efforts, it's a win."

Contributing to sustainability goals for a win-win solution

Trident recognizes that they have a critical responsibility to operate in ways that are good for the planet and its people to ensure a sustainable future. With an aggressive energy reduction plan and a current initiative with PSE targeting an 8% decrease in plant energy use, Trident is building on their commitment to energy efficiency and sustainability with demand response embedded into their strategy.

Demand response has sustainability value, enabling Trident to contribute to greener peak capacity on the grid and avoid drawing energy from the grid at times when fossil fuels would have to be burned to power peaker plants. They are also helping to maintain affordable electricity in their community

and provide a clean, cost-effective alternative to building new power plants.

Trident Seafoods' participation in the PSE BDRP demonstrates how a strategic approach to demand response can support operational goals and broader sustainability initiatives. Their successful experience highlights the value of collaboration with energy partners and the benefits of proactive energy management strategies.

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