

Case History – Reducing Energy Expenses and Emissions

Four Seasons Resort & Spa, Whistler BC, is one of North America's top year-round mountain resorts. The hotel features over 300 rooms, has an award winning spa, and guests benefit from easy access to the downhill skiing site of the 2010 Olympic Winter Games. Managing operational efficiency at a resort of this caliber requires diligence, creativity and innovation.

Fuel Prices for the propane heating system at Four Seasons Whistler have maintained a cost of over \$17 per GJ of propane since 2005. When factoring in the propane system's boiler efficiency the cost of delivered heat to the building is well over \$23 per GJ. With the Four Seasons elaborate outdoor pool, spa system and the hot water demand of a hotel, energy prices have a serious impact on the operational expense at this facility.



Energy costs have driven heating expenses in large commercial facilities to record highs.

Responsible environmental practices have transformed from a social responsibility into a customer expectation.

Priyan Jayetileke from Four Seasons has found a solution...

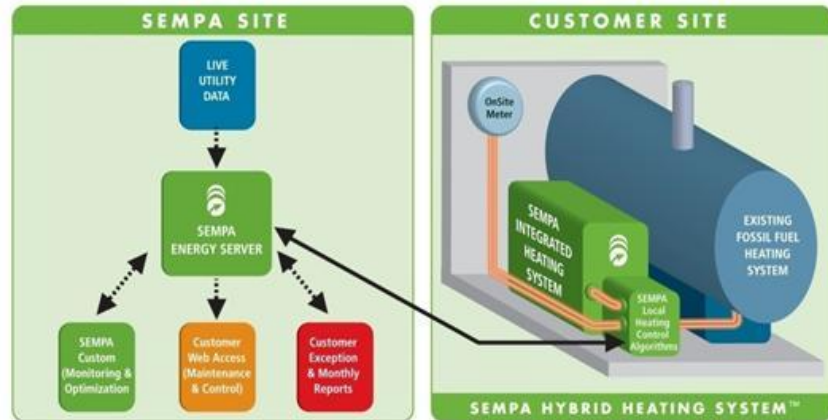
In 2006, after doing considerable research, Priyan Jayetileke (PJ) from Four Seasons implemented a Sempa Power Hybrid Heating solution at the Four Seasons Whistler Resort. Since then this system has enabled Four Seasons to cut annual energy costs by more than \$250,000 and reduced greenhouse gas emissions by over 40%. Does this sound too good to be true? That's what PJ thought too.

In 2005 PJ heard about two properties in Whistler BC that were seeing considerable economic and environmental savings from using Sempa Power's Hybrid Heating System to switch between off peak electricity and propane to generate heat.

"I went to Whistler and didn't believe they could save that much. I talked to the plant engineers and the general managers - they had to convince me that this was a good way to go." Priyan Jayetileke (PJ)

Sempa Power designs, builds and manages Hybrid Heating Systems. Hybrid Heating provides a secondary method to produce heat energy in commercial facilities. This is achieved by integration and management of customized electrical appliances in parallel to existing gas fired or steam systems.

Creating access to different energy supply options (electric, gas, steam) allows organizations to capture price advantages created by variable demand. By utilizing lowest cost and energy options Sempa customers have been able to reduce energy expenses by 10-30%.



Sempa's Hybrid Heating System has allowed Four Seasons to tap electricity as a second source of energy to support the heating demand in the building. The management services Sempa provides allows the system to recognize when low cost electricity is available to generate heat. When low cost electricity is available propane is displaced and economic and environmental savings are generated.



Priyan Jayetileke with the Sempa Hybrid Heating System at Four Seasons Whistler

In BC users of electricity with demand of 35 kW and over are charged for demand or peak charges which represent the highest rate of consumption in kilowatts (kW) as well as for energy use or total consumption in kilowatt hours (kWh). A comparative analogy for demand and consumption of electricity is the speed and distance of a trip in an automobile. Electrical demand can be compared to the fastest speed the automobile traveled during the trip and electrical consumption as the distance the automobile went during the trip. Off peak or after demand electricity is available for Heat generation at approx \$ 10 per GJ of delivered heat.

The electrical demand profile of the Four Seasons Whistler provided enough low cost off peak electricity to cut operational costs by more than \$250,000 a year. The cost to implement the Hybrid Heating System was approx \$380,000.

By switching to Hydro Electricity the hotels emissions have been cut dramatically. Between June 2006 and May 2007, Hybrid Heating displaced 900 tons of greenhouse gas (GHG) emissions, the equivalent of taking 153 Honda Accord sedans off the road for almost four million kilometers of driving. This is a significant impact, one that customers pay attention to.

How Green is Your Bottom Line?

Reduce Energy Expenses
and Green House Gas Emissions

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powerful responsible energy solutions



"At Four Seasons Resort Whistler, we installed two hybrid systems to serve our 254-room hotel. In the first year of operations we saved over \$250,000 in heating costs. Sempa Power enabled Four Seasons to tap a lower-cost energy source while reducing annual greenhouse gas emissions by more than 1,100 tonnes."

Priyan Jayetileke, Director of Engineering
Four Seasons Hotel Vancouver and
Four Seasons Resort Whistler

www.sempapower.com



With such a compelling payback in the business case of Hybrid Heating PJ and the Sempa team implemented a second system at the Four Season Residences in Whistler in 2007. Recently PJ and Sempa have assessed the Four Seasons Vancouver and will kick off a project this spring.

"It's a great system - you'll definitely get your money back if you run it properly. I think it's the future of all new construction and properties." ~*~

