

CASE STUDY

OPUS Client, Microwatt, Installs Power Ecosystems 35kW Back-Up Generator / Cogeneration System



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MICROWATT
Making Safety Work

POWER ECOSYSTEMS provides both electric power & heat from a single source, called a Combined Heat and Power (CHP) system, also known as cogeneration. Instead of paying for electricity and heat production, you pay only once with a cogeneration boiler that simultaneously produces electricity at nominal cost.

Challenge:

Finding innovative products has enabled Micro-Watt to excel in the industries it serves. Its new head office needed to further that statement and lead by example.

Solution:

OPUS is a Calgary based, full service commercial real estate developer that has been operating in Western Canada for over 30 years. Since opening its doors in 1983, Opus has developed over 25 million square feet of attractive and functional buildings. OPUS projects span the country from British Columbia to Ontario where they have delivered quality spaces for mixed use, commercial, office, industrial and retail clients across Canada.

Micro-Watt selected Opus to build its new headquarters in Calgary. Founded in 1984, Micro-Watt Control Devices Ltd. has been proudly serving Western Canada for over 25 years. As an established leader in the supply of process control, safety and instrumentation products, Micro-Watt Controls services and sells to many different industries some of which include: oil and gas, pipelines, refineries, petrochemical facilities, pulp and paper, mining, food and beverage, original equipment manufacturers (OEM), engineering, construction, and municipal utilities. With an emphasis on finding new and innovative products, Micro-Watt continuously strives to offer its customers a diverse product mix to fulfill their needs. Micro-Watt has selected a 35kW Yanmar cogeneration system from Power Ecosystems to provide comfortable in-floor hydronic space heating while simultaneously powering most of its new head office. In the event of a black out, so long as natural gas is available, the company will stay up and operational thanks to its new cogeneration system.

Reducing utility costs is mainly why Micro-Watt chose a Power Ecosystem, but keeping the company powered and operational in the event of a grid outage was considered a substantial additional benefit.

Buy or Lease:

Power Ecosystems offers the CHP system or cogeneration boiler for outright purchase or as a turnkey solution at no upfront cost to the building owner or tenant (Discount Energy Purchase).

What is a CHP System?:

A CHP system is made up a generator set, heat recovery equipment and a highly sophisticated control system for monitoring building electricity, heat load needs as well as 70 other system optimization parameters. As the lead boiler on the building, our CHP system uses natural gas, producing electricity and heat simultaneously for electricity and space heating with no vibration.



Executive Summary		
Yanmar 35 CHP Unit	Operating Hours: 6,132	
Value of electricity	33 /kWe @ \$0.12 /kWh	\$3.96
Heat displaced	52.5 kW/hr. = 0.189 GJ @ 0.8 efficiency	0.24
Value of heat	0.24 @ \$5 /GJ	\$1.20
Total conventional operating costs		\$5.16
Fuel for CHP unit	0.41 GJ/h @ \$5	\$2.05
Maintenance of CHP	33 /kWe @ \$0.012 /kWh	\$0.40
Total CHP operational costs		\$2.45
Total Savings - per hour		
Total Conventional Operating Costs	\$5.16	
Total CHP Operational Costs	\$2.45	
Total Savings per hour		\$2.71
Payback		
Total savings per annum	=2.71 X 6132 hours plus GHG	\$18,157.25
Simple Payback		4.73 years



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