

Tim Hortons Guelph Distribution Centre Commits to Reducing Peak Demand Power – Earn Significant Revenue

Company Profile

The Tim Hortons chain was founded in 1964 in Hamilton, Ontario, Canada. The chain's focus on top quality, always fresh product, value, great service and community leadership has allowed it to grow into the largest quick service restaurant chain in Canada specializing in always fresh coffee, baked goods and homestyle lunches.

DISTRIBUTION:

Five warehouse distribution centres, located in Guelph, Ontario; Calgary, Alberta; Debert, Nova Scotia (Truro); Kingston, Ontario; and Aldergrove (Langley), British Columbia presently service the Tim Hortons restaurants across Canada and the U.S.

TIM HORTONS INC. TOTAL REVENUES (2011): \$2.9 billion (CDN)

FRANCHISE RESTAURANT SALES (2011):

Canada \$6.0B

U.S. \$439M

CORPORATE STRUCTURE:

The TDL Group Corp. employs over 1,800 people across their principal offices, regional offices, distribution centres and manufacturing facilities. The franchised restaurant locations retain a staff of over 83,000 people.



Tim Hortons Guelph Distribution Facility

Project Summary

With new technologies and a growing population, Ontario's electricity needs continue to grow. Seasonal periods of high demand can drive up wholesale prices and put a strain on the grid, affecting the reliability of everyone's electricity.

"The project proved to be a sound economic investment for the Tim Hortons organization in addition, the Safety Power solution was designed to provide a positive environmental and social impact for the community."

Ken Hare, Director of Supply Chain Sustainability

Under the Ontario Power Authority's (OPA) Demand Response Contractual DR3 (DR3) program organizations such as Tim Hortons agree to make a firm commitment to reduce its energy use during periods of peak demand. In exchange, the participant receives an annual incentive from the OPA.

When Rodan Energy Inc., one of the authorized Demand Response Providers in the province approached Ken Hare, Director of Supply Chain Sustainability for Tim Hortons Distribution Limited, Guelph facility, with a proposal for participation in the DR3 program using the existing standby generators, he immediately recognized the economic, social and environmental benefits and commissioned Rodan Energy and their partner Safety Power Inc., to submit a detailed plan for executive consideration. "Although the business case submitted by Rodan Energy and Safety Power had a significant capital investment requirement," said Ken Hare, "it proved to be a sound economic investment for the organization in addition to providing a positive environmental and social impact for the community, which is keeping with the company's mission and vision for sustainable development."

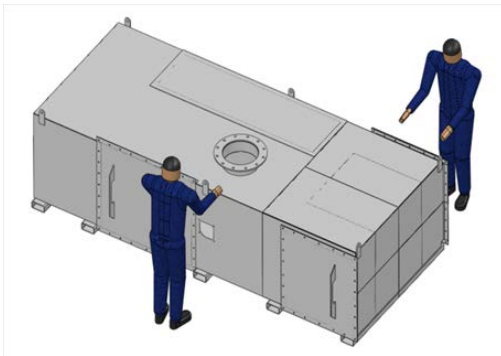
Technical Situation

In order to enroll a standby generator into the DR3 program with the intent of displacing grid supplied energy by drawing on the generator's capacity, the Ontario Power Authority requires proof of environmental approvals issued by the Ontario Ministry of Environment.

Under the Ministry of Environment regulation 010-2463, stationary generators operated in non-emergency scenarios must meet emission limits for NOx, PM, CO, and NMHC. These emission limits are amongst the most stringent in North America.

MOE EBR 010-2463 Emission Limits for Non-emergency Use				
Power- kW (hp)	NOx g/kw-hr (g-bhp-h)	NMHC g/kw-hr (g-bhp-h)	CO g/kw-hr (g-bhp-h)	PM g/kw-hr (g-bhp-h)
Effective 1 Jan 2011				
Any Size	0.40 (0.30)	0.19 (0.14)	3.5 (2.6)	0.02 (0.015)

Solution



3 Series ecoCUBE™

Safety Power is the global innovator and largest Canadian supplier of emission control products for large scale stationary engines. Safety Power's proposal to reduce the air and noise emissions from the existing standby generators in order to meet the MOE emission limits was to retrofit the engine exhaust systems by installing Safety Power's ecoCUBE™ emission control package, which included Selective Catalytic Reduction (SCR), Diesel Oxidation Catalyst (DOC), Diesel Particulate Filter (DPF), and Hospital Plus Grade silencing in a single modular package.



3 Series ecoCUBE™ on TDL 900kW Cummins Diesel

The compact design of the ecoCUBE™ along with some minor structural additions allowed for a simple retrofit of the engine's exhaust system. Installation of the ecoCUBE™ reactor housing was completed in a few hours minimizing the downtime of the standby generators. The balance of the electrical and mechanical work was completed over a few weeks without impacting the availability of the generator.

Project Facts & Benefits

Engine Mfr.	Model	Rating	ecoCUBE™ Emissions Solution & Reduction Required				
				NOx	CO	PM	NMHC
Cummins	DQKAB	2000kW	5 Series	95%	80%	50%	50%
Cummins	DFHC	900kW	3 Series	96%	80%	80%	50%

- ecoCUBE™ solution also provided 35 – 42dB[A] sound attenuation.
- Total capital cost of retrofit including permitting - \$470,000 CAD.
- Simple payback – 3.5 years.

The Ontario Power Authority Demand Response DR3 program offers a compelling financial incentive to participants. Depending on where the load reduction is located on the Provincial electrical distribution system and the

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Ken Bohill, Manager of Plant & Facilities

terms and seasonal criteria of the contracts between the participant and their Demand Response Provider, DR3 annual payments can be up to \$130,000/Megawatt/Year.

“Participating in the OPA DR3 program was a natural fit for our organization”, said Ken Bohill who manages the plant and facilities at the largest of Horton’s distribution centers located in Guelph Ontario. “Energy costs are a significant portion of our annual operating costs so we are constantly assessing means of reducing those costs through best practices and the latest in energy efficient technologies.”

Rodan Energy Products and Services

Rodan is a leading North American smart grid company delivering integrated energy solutions to electricity consumers, distributors and power producers. Combining their expertise in metering, energy management and demand response, they are enhancing power system reliability, reducing energy costs and developing a sustainable energy future.

Rodan Energy’s full suite of energy management solutions includes:

Metering & Smart Grid Services

Rodan Energy are one of the largest independent metering service providers (MSP) in North America.

EnerShift Demand Response

It’s easy. Reduce load, shift load or self generate. No cost, no risk, easy to enroll and a big payment for participation.

EnerVu Energy Monitoring and Shadow Billing

Let Rodan turn your raw energy data into meaningful information to improve energy productivity. Find out how.

Power Systems Engineering & Construction

Rodan Energy’s Generation Team has in-depth knowledge and industry experience, which are reflected in both the breadth and quality of the services they provide. This includes: feasibility assistance, regulatory submissions, connection impact assessments, metering, monitoring, settlement, project management and turn-key EPCM services.

www.rodanpower.com

Safety Power Products and Services

Safety Power Inc. designs and manufactures Selective Catalytic Reduction, Diesel Particulate Filter and Oxidation Catalyst after-treatment systems to control Nitrogen Oxides, Particulate Matter, Carbon Monoxide and Hydrocarbon emissions for diesel and natural gas engines. As a global innovator Safety Power make extensive use of advanced control technologies and Computational Fluid Dynamics to deliver state-of-the-art custom solutions.

Safety Power provide complete environmental solutions that allow diesel and natural gas engines to meet all major global emissions standards with the smallest possible size and pressure drop. Safety Power’s design can integrate silencing into the emissions control products allowing a traditional silencer to be replaced by a fully integrated emissions solution. Safety Power offer a family of pre-engineered products that allow very flexible exhaust input and output connections allowing you to fit an emissions solution into any space.

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