

ONTARIO POWER AUTHORITY

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**Where to go for help:
OPA Industrial Conservation Programs**
A presentation by Sean Brady, Director Demand Response and
Industrial Programs

What is the OPA?

- Created in 2004 by the Ontario government, began operations in 2005
- Mandate is to ensure reliable, long-term electricity supply for Ontario
- Responsible for:
 - developing the Integrated Power System Plan
 - leading conservation initiatives
 - ensuring investment in new supply
 - facilitating development of electricity sector

Electricity situation in Ontario

- Nuclear generating units are nearing the end of their useful lives and need replacing or refurbishing over the next 20 years.
- All coal-fired generation will be shut down by 2014 for environmental reasons.
- In total, about 80 percent of existing electricity supply needs to be replaced within 20 years with a combination of new supply and reduced demand.
- Ontario's economy and population continue to grow at an average rate of 1.1 percent per year.
- High-growth areas of the province are facing looming power shortages.



Integrated Power System Plan

- Outlines the steps needed for a reliable electricity supply – includes conservation and generation, transmission.
- Covers the next 20 years; updated every three years
- Includes actions for the near term, develops options for the medium term, explores opportunities for the longer term
- Four key results:
 - Growth in demand is limited through conservation.
 - Coal is replaced in the power supply mix with renewable energy and natural gas.
 - Nuclear power is restored through refurbishments and new builds.
 - Transmission is reinforced for better and reliable service as well as to enable renewable energy to be developed.

Conservation in Ontario

- **Why is conservation important?**
 - Represents supply for the future
 - Protects the environment – reduces use of fossil fuels
 - Reduces energy costs
 - Creates jobs in delivering products and services
 - Less expensive than building new generation
- **Conservation targets**
 - 6,300 MW reduction in peak demand by 2025
 - Working toward interim target of 1,350 MW by 2010
- **OPA role:** to lead, coordinate, facilitate, build capability
- **How is this achieved:** energy efficiency, fuel switching, customer-based generation, conservation behaviour/demand management



Energy in your business

- Energy consumption is the single most controllable cost available to industrial business today – and often the most overlooked.
- Energy costs are expected to rise.
- Energy savings go directly to your bottom line.
- It's estimated that at least 60% of industrial electricity is consumed as driven loads, including process cooling and compressed air.



How to better manage energy costs

- Treat energy as a strategic business resource.
- Make energy efficiency a part of everyday business decision-making.
- Include energy efficiency as an organizational imperative in your business plan.



What do you want to do?

- Are you building a new building?
 - High Performance New Construction Program
- Are you retrofitting an existing building or upgrading equipment?
 - Electricity Retrofit Incentive Program
- Are you reviewing your processes to become more energy efficient?
 - Industrial Energy Efficiency Program
- Can you curtail demand when required?
 - Demand Response programs

High Performance New Construction Program

This program offers assistance for incorporating conservation and demand management measures into the design, construction and operation of new and substantially renovated buildings



HIGH PERFORMANCE
NEW CONSTRUCTION

A high-performance building:

- uses less energy, so peak demand charges can be reduced.
- reduces maintenance costs
- reduces environmental impact

Savings come from energy-saving features such as increased insulation, windows and doors designed to reduce heat transfer, high-efficiency heating and cooling systems, energy-saving equipment and lighting, and innovative technologies such as advanced meters, renewable energy and combined heat and power systems.

High Performance New Construction Program

Three participation tracks:

- **Prescriptive equipment incentives and basic track (up to 25 percent)** - Applicant/owner incentives of \$250 per kilowatt (kW) are available.
- **Advanced track (26 to 50 percent)** - Applicant/owner incentives of \$300/kW and architect incentives of \$50/kW are available.
- **High-performance (HP) track (greater than 50 percent)** - Applicant/owner Incentives of \$400/kW and architect incentives of \$100/kW are available.

Support available:

- Modelling simulation and software support for evaluating and incorporating proven energy-efficient technologies
- Incentive funding to partially offset the incremental costs for the purchase and installation of approved high-performance equipment
- Commissioning services
- Project measurement and verification

Once completed, your building will be tested to confirm that the final project matches the energy-efficient design

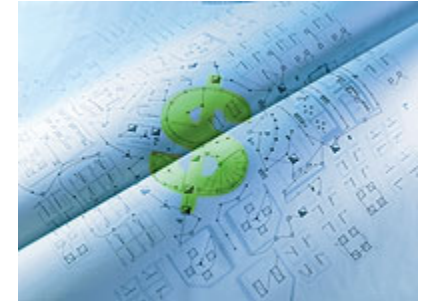


Electricity Retrofit Incentive Program

This program offers assistance to retrofit an existing facility with newer equipment that is more energy efficient.

Focuses on:

- Lighting
- Motors
- Heating, ventilation and air conditioning
- Overall electricity systems.



Who can participate?

- Applicants may be owners or tenants of business premises supplied by a participating LDC. If a tenant, permission must be obtained from the property owner for installation of the measures for which an incentive is claimed.

What projects qualify?

- pre-approved projects that result in measurable reductions in electrical peak demand.
- may be completed using energy-efficient technologies prescribed by the program or may be based on innovative custom initiatives.

Electricity Retrofit Incentive Program

Two Ways to Conserve

- **Prescriptive track** -- predefined technologies with corresponding per-unit or performance-basis savings measures -- tend to involve replacements and upgrades to existing systems. The incentive is based on what is installed.
- **Custom track** -- for businesses using a more specific solution to electricity efficiency retrofitting -- all technology equipment and systems are evaluated on the basis of their power and energy performance improvement. The incentive offered is based specifically on the level of improvement.

Includes:

- **Food service** gas griddles and fryers
- **Hot water heating** – Solar, non-electric tank and instantaneous water heating, and drain water heat recovery
- **Space cooling** – Absorption and engine-driven chillers, ground-source heat pumps, desiccant dehumidification
- **Cooling equipment** – unitary A/C units up to 25 tons that are ENERGY STAR qualified or CEE compliant, fans, heat controllers, thermostats
- **Lighting** – Fluorescent lighting systems (T8, T5, CFL), metal halide lighting systems, LED exit signs, occupancy sensors
- **Motors** – three-phase premium-efficiency motors 1 – 200 HP

Industrial Energy Efficiency Program

- The OPA will be making resources available – funds, human capital, tools, training and expertise – to help industrial companies become energy efficient.
- Open to industry in all sectors, of all sizes and in any location.
- A team of experts can offer integrated and process-specific assistance for implementing energy-saving projects.



Industrial Energy Efficiency Program

Customized, holistic approach unique to each organization

- Not limited to a single system -- a broader approach captures more savings.

Financial incentive available for energy reductions

- Five cent per kilowatt-hour incentive available for energy reductions, to a maximum of 50% of project costs.

Monitoring and targeting to help find savings

- Up to \$75,000 is available to monitor electricity consumption

Support for an energy manager

- Will provide up to 80% of the cost for an energy manager up to \$100,000 per year for one, two or three years

Support for energy assessment and feasibility studies

- Up to \$10,000 is available for an energy assessment to uncover opportunities, up to \$50,000 for a more detailed feasibility study



What is demand response?

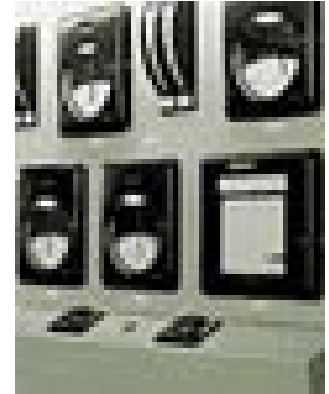
Demand response:

- is also called load management
- involves action that results in short-term reductions in peak electricity demand
- enables electricity demand to be managed in response to supply conditions
- customers reduce their consumption for brief periods at critical times of high demand or in response to market prices
- is practiced in other jurisdictions in North America and internationally
- is a critical component of the OPA's conservation strategy

OPA Demand Response Programs

Demand Response 1 – a voluntary demand response program targeting high-value hours for load curtailment

Demand Response 3 – a demand response program with contractual obligations to reduce load during certain periods of the year.



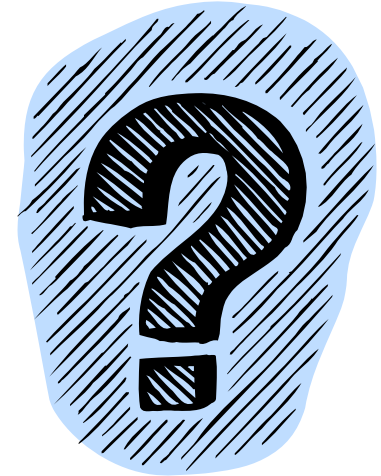
Demand Response 3 Program

How it works:

- During a high demand period (typically a hot summer day), a signal is provided that demand response needs to be activated.
- Pre-determined action is implemented (either by the management system or automatically) to reduce participants' electricity demand for a specified period.
- The OPA pays aggregators – companies that assemble the electricity demands of their clients into larger blocks of about 25 megawatts – to provide guaranteed demand response .
- Participants are compensated based on their contract with the aggregator.

Why use the programs?

- Significant cost savings can be found, including a potential new revenue stream with demand response.
- Considerable support is available, including experience and expertise that may not be found in your own organization.
- Improve your environmental stewardship – important to customers and communities.
- Your competitors may be taking advantage of this opportunity.



Next Steps

- Talk to us.
- Apply to the program that addresses your situation.
- Take advantage of the assistance available.
- Save energy and money.



More information

<http://business.everykilowattcounts.com>

Sean Brady, 416-969-6394

sean.brady@powerauthority.on.ca

