# THE OTTAWA HOSPITAL (Civic, General and Riverside) ENERGY CONSERVATION AND DEMAND MANAGEMENT (CDM) PLAN 2019-2024





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## Commitment and senior management approval:

The Ottawa Hospital (TOH) will allocate the necessary resources to develop and implement an Energy Conservation and Demand Management Plan as required under Regulation 507/18 of the Electricity Act 1998. Energy management planning helps avoiding cost increases, improve service delivery, and support local industry while protecting human health and the environment. Our Energy Conservation and Demand Management Plan will reduce our energy consumption and its related environmental impact as outlined in our overall target. Senior management will support Facilities management, and other departments in any recommended work towards achieving the objectives presented in this plan and that progress towards those objectives is monitored on an ongoing basis. The plan will be updated as required under Regulation 507/18 of the Electricity Act 1998 or any subsequent legislation.

We will strive to continually reduce our total energy consumption and associated greenhouse gases (GHGs) through wise and efficient use of energy and resources, while still maintaining an efficient and effective level of service for our patients, stakeholders and the general public. This will involve a collaborative effort to increase the education, awareness, and understanding of energy management within the hospital. Total energy consumption includes electricity, natural gas, and oil. While commitment from Senior Management is crucial, everyone has a role in the wise use of energy and to showcase appropriate leadership within corporate facilities and operation.

TOH will work towards including energy efficiency as a main criterion into all areas of our activity including our organizational and human resources management procedures, procurement practices, financial management and investment decisions, and facility operations and maintenance. As a major component of the operating costs of municipal facilities and equipment, energy costs will be factored into the lifecycle cost analysis and asset management analyses and policies of the hospital.

TOH Energy Conservation and Demand Management Plan was completed to reduce our overall energy consumption by 2% from 2018 (based on baseline data) to 2024 with the following goals:

1. Maximize fiscal resources and avoid cost increases through direct and indirect energy savings.

- 2. Reduce the impact on the environment.
- 3. Increase the comfort and safety of staff, patients and families.
- 4. To create a culture of conservation within the hospital.
- 5. To improve the reliability of the equipment and reduce maintenance.

Signature:

Name:	Joanne Read
Title:	Vice President, Planning and Support Services
Date:	30 June 2019

## **Executive Summary:**

The purpose of The Ottawa Hospital (TOH) energy conservation and demand management (CDM) plan and policies is to promote good stewardship of our environment and community resources. In keeping with our core values of efficiency, concern for the environment, and financial responsibility, The Ottawa Hospital's energy conservation and demand management program will reduce the overall energy consumption, operating costs, and greenhouse gas emissions. It will also enable us to provide compassionate service to a greater number of people in the community in addition to complying with Ontario Reg 507/18.

The only site that have a change in the area at TOH is the Civic site as a fifth building is erected in 2018 and added to the University of Ottawa Heart Institute four buildings. The new building serves Intensive Care and Operations with area approximately 143,650 ft2. We will compare the baseline year 2014 to the year 2017 before the increase in the area. The new building is expected to be of high Energy Use Index due to the high occupancy and function. The General and Riverside sites have no changes to the floor area for the period from 2014-2019. Through past conservation and demand initiatives from 2014 – 2018 (except for the Civic 2014-2017 due to area increase in 2018), The Ottawa Hospital has achieved the results shown in Table 1 below compared to 10% target reduction over the 5-year term of the 2014-2019 plan:

Site	Reduction (Increase) in Electricity use %	\$\$ savings (increase) electricity consumption (2018 rate)	Electricity consumption decrease (increase) kWh	Reduction (Increase) in Thermal use %	Decrease (increase) in thermal consumption (ekWh)	Reduction (Increase) in GHG emissions (ton CO2)	% Overall Reduction (Increase) in Energy (ekWh)
Civic (2014- 17)	3.7%	\$81,291	1,593,939	4.4%	3,189,311	3,127	4.1%
General	3.8%	\$120,846	2,197,196	(0.4%)	(213,605)	2,072	1.8%
Riverside	5.8%	\$21,386	318,498	(18.9%)	(2,182,429)	107	(10.9%)

Table 1 – Executive Summary for the Energy consumption changes from 2014-2018 / 3 sites

2019-24 CDM will be guided by many principles to achieve its goals like taking a strategic approach, supporting mission critical goals, pursuing long term change to core business practices, fostering organizational commitment and involvement, obtaining solid economic returns and using available resources and assistance.

### New Target for the EMP 2019-24

With energy management an integral part of business decisions, The Ottawa Hospital can expect to achieve the following targets by 2024:

- 2.00% reduction in total energy use
- 1000-ton reduction in carbon equivalent emissions
- \$50,000 utility cost reduction annually to the bottom line (\$250,000 over 5 years)
- Energy investments will achieve a minimum 10% internal rate of return (IRR) or 5 years payback through a blend of short term and long-term payback initiatives.

To further strengthen and obtain full value from energy management activities, a strategic approach will be taken: the organization will consider energy management as a criterion into its business decision-making, policies, and operating procedures.

Active management of energy related costs and risks in this manner will provide a significant economic return to the organization and will support other key organizational objectives.

## Energy savings projects 2014-18:

The following tables 2-4 show the activities, completed between 2014 and 2019 associated with managing overall energy consumption, lowering annual operating costs, and reducing greenhouse gas emissions. These activities may, or may not, have been included in The Ottawa Hospital – 3 sites' 2014 CDM plan and include the following:

Project scope	kW savings	kWh savings	m <sup>3</sup> Gas savings
Lighting upgrades to LED including controls	455.5	2,080,940	0
Elevators Upgrades	50.63	365,389	0
Walk in Freezer controls	0	14,642	0
Steam traps audit and repairs	0	0	315,408
Honeywell project	0	948,449	290,904
HW/Steam pipe insulation	0	0	12,540
Honeywell Attune Commissioning project	0	196,188	0
Deep Freezers Upgrades	39.15	311,994	0
TOTAL	545.28	3,917,602	618,852

Table 2 – Civic site energy savings projects:

Table 3 – General site energy savings projects:

Project scope	kW savings	kWh savings	m <sup>3</sup> Gas savings
Lighting upgrades to LED including controls	209.7	1,157,832	0
Elevators Upgrades	58.8	437,143	0
CT Scan Upgrade	19.6	76,784	0
Steam traps audit and repairs	0	0	603,912
Data Center Virtualization	86.5	758,068	
HW/Steam pipe insulation	0	0	4,814
Ambulance Garage Ventilation	0	27,859	0
Air leakage audit	0	42,711	0
Honeywell project	0	2,590,746	447,270
TOTAL	374.6	5,091,143	1,055,996

Table 4 – Riverside site energy savings projects:

Project scope	kW savings	kWh savings	m <sup>3</sup> Gas savings
Lighting upgrades to LED including controls	52.8	278,396	0
Dual Duct Upgrades	0	0	39,862
New boiler	0	0	11,567
Steam traps audit and repairs	0	0	43,392
M127 Critical Fan HVAC upgrades	6.7	26,856	0
Air leakage audit	0	39,612	0
Honeywell project	0	181,541	0
TOTAL	59.5	526,405	94,821

## 2014-19 EMP Evaluation

In July 2014, The Ottawa Hospital developed goals and devised green initiatives to decrease the facilities annual energy consumption and resulting greenhouse gas emissions. The following shows the values of some indicators over the term of the 2014-19 plan to evaluate the success of the plan:

## 1. Normalized Energy Use Index

This KPI represent the total energy used in calendar year for each ft2 of area and for each Heating Degree day for the area with units (Wh/ft2/HDD). As per the MOE report for 2016, an average ON acute care hospital use 14.4 Wh/ft2/HDD. The chart below shows the performance of TOH sites for the period from 2014-18.



## 2. Energy Use Index EUI (ekWh/m<sup>2</sup>)

This KPI is a measure for the total energy used (including hydro and gas (thermal)) for each m2 of area. RETSCREEN use 709 ekWh/m2 for acute care hospital. The chart below shows the EUI for TOH sites from 2014-18:



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## 3. Total Energy (ekWh)

This KPI monitors the total energy for the site including hydro and gas converted to equivalent kWh (ekWh) as shown below:



## 4. Proposed vs. Actual EUI (ekWh/m<sup>2</sup>)

The EMP 2014-19 put a target to reduce the energy consumption for OCH by 2% annually or 10% over the 5-year plan period. The chart below shows the proposed vs. actual EUI for the period from 2014-18.



## Energy cost \$

This section will deal with the energy cost for hydro and gas (thermal) in order to compare to other sites for benchmarking and to check if there are any opportunities for cost savings at any site.

#### a. Hydro





#### b. Thermal

The Ottawa Hospital has 3 sites with each site is different from the other in getting the thermal energy requirements for heating, humidification, domestic hot water and other process heating as follows:

- 1. Riverside site: Is outpatient site served by gas boilers to provide steam
- 2. Civic: Is acute care hospital served by steam and Hot water boilers
- 3. General: Is acute care hospital that import steam and HW from Transalta Cogen plant in addition to some buildings served by steam / HW boilers.

The chart below shows the thermal unit cost in \$/ekWh



The chart above shows that the Civic and Riverside thermal unit cost is very close while the General is much higher due to importing steam and HW from the Cogen plant in addition to in-house boilers. Assuming the General and Riverside unit cost is the same, the \$\$ potential savings is as below:



## Physical Factors affecting the EMP 2014-18:

1. TOH employee's growth:



2. TOH Inpatient visits:

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3. TOH Outpatient visits:



#### 4. TOH Number of beds:



#### 5. HDD /CDD for Ottawa:



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# **Energy End Use Breakdown**

Energy end-use estimates are based on an ESCO project report that was implemented back from 2003-2005. Specific energy uses that may overlap several categories are explained in their respective sections.

## 1. Civic Campus:

#### a. Electricity



## Observations on Electrical End-Use Breakdown:

The highest 4 contributors to the hydro consumption are as follows:

- 1. HVAC Fans & Pumps: 59%
- 2. Plug Loads/Miscellaneous: 11%
- 3. Lighting: 19%
- 4. Medical Equipment: 8%

#### b. Natural Gas



## **Observations on Natural Gas End-Use Breakdown:**

Domestic Hot Water & Process: 28%

Process loads include steam consumption for humidification, sterilization, and cooking. Space Heating: 72%

Space heating includes perimeter heating, reheats and HVAC (heating) loads.

#### c. Total Energy



d. Total utility breakdown % by category



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## 2. General Site:

#### a. Electricity



## **Observations on Electrical End-Use Breakdown:**

The highest 4 contributors to the hydro consumption are as follows:

- 1. HVAC Fans & Pumps: 44%
- 2. Plug Loads/Miscellaneous: 22%
- 3. Lighting: 12%
- 4. HVAC space Cooling: 12%

#### b. Steam



## Observations on Steam End-Use Breakdown:

Domestic Hot Water & Process: 55%

Process loads include steam consumption for medical equipment, sterilization, and cooking.

Space HVAC (Heating): 45%



#### c. Medium Temperature Hot Water (MTHW)

## **Observations on MTHW End-Use Breakdown:**

Domestic Hot Water & Process: 10% Space HVAC (Heating): 90%

#### d. Total Energy





## 3. Riverside site:

#### a. Electricity



## **Observations on Electrical End-Use Breakdown:**

The highest 4 contributors to the hydro consumption are as follows:

- 1. HVAC Fans & Pumps: 40%
- 2. Plug Loads/Miscellaneous: 20%
- 3. Lighting: 19%
- 4. HVAC space Cooling: 10%

#### b. Natural Gas



## Observations on Natural Gas End-Use Breakdown:

Domestic Hot Water & Process: 44%

Process loads include steam consumption for humidification, sterilization, and cooking. Space Heating: 56%

Space heating includes perimeter heating, reheats and HVAC (heating) loads.

#### c. Total Energy *Total utility breakdown % by type of utility*





# The Ottawa Hospital values related to Energy Management

The Ottawa Hospital (TOH) has the following vision, mission and core values:

#### Vision

To provide each patient with the world-class care, exceptional service and compassion we would want for our loved ones.

#### Mission

- The Ottawa Hospital is a compassionate provider of patient-centered care with an emphasis on tertiary-level and specialty care, primarily for residents of Eastern Ontario.
- The Ottawa Hospital educates future health-care professionals in partnership with the University of Ottawa and other affiliated universities, community colleges and training organizations.
- The Ottawa Hospital develops, shares and applies new knowledge and technology in the delivery of patient care through world-leading research programs in partnership with the Ottawa Hospital Research Institute (OHRI).

The Ottawa Hospital also plays an active role in promoting and improving health within our community. The Ottawa Hospital collaborates with a wide range of partners to address the needs of the community and to build a strong, integrated system for regional health-care delivery.

The Ottawa Hospital functions in English and French while striving to meet the needs of the culturally diverse community we serve.

#### **Core Values**

- Compassion
- A Commitment to Quality
- Working Together
- Respect for the Individual

The above statements for vision, mission and core values targets a world class care also to develop, share and apply new technologies to deliver patient care. Since our facilities are a primary source of giving care and an integral part of the healing environment, then we should be able to use our facilities efficiently and effectively. This results in TOH being able to direct more resources toward patient care. Not only that, but by reducing our environmental footprint, we are also doing our part to create a healthier environment. Something that is essential to the people we serve and that which helps them to lead healthier lives.

TOH started investing in energy reduction projects since 2003 when an RFP was posted to retain the services of ESCO to reduce the energy consumption through HVAC and lighting upgrades, building envelope upgrades and water conservation.

# **Guiding Principles for Strategic Energy Management**

TOH's energy management will be guided by these principles:

**Taking A Strategic Approach:** While TOH actively manages energy costs by implementing opportunities as they are identified, by acting strategically, TOH can significantly improve its energy-related performance. Internalizing energy management into our organization's every-day decision-making, policies, and operating procedures will help assure substantial and long-lasting reductions in energy use throughout the campus.

**Supporting Mission-Critical Goals:** Strategic energy management will directly support TOH's mission-critical goals of caring for the environment and the community; optimizing the healing and working environment; improving the hospital's financial bottom line by reducing unnecessary energy costs; optimizing the capacity of existing energy systems to meet current and expanding operational needs. The impacts of TOH's energy management efforts on those goals will be tracked and reported wherever possible.

**Pursuing Long-Term Change to Core Business Practices:** The core of a strategic approach is the consistent incorporation of energy management into our organization's core practices and decision making such as the strategic planning and budgeting processes. Change in energy-related business practice will cover all applications of energy management – new construction and major renovations, existing facility operations and upgrades, and the economic analysis and procurement practices underlying these practices.

**Fostering Organizational Commitment and Involvement:** Executive and organizational commitment and involvement is critical to successful strategic energy management. Management at TOH will work with facility managers and other key staff to ensure that adequate organizational support and resources are provided to maximize the benefits of energy management to TOH. Energy management will be integrated into the strategic planning and capital budgeting processes.

**Obtaining Solid Economic Returns:** Energy management investments will yield solid economic returns that meet TOH's standard [Internal Rate of Return] [Return on Investment] requirements applied through the hospital's capital budgeting process. TOH will apply consistent financial analysis methods that consider life-cycle costing to reduce total cost of facility ownership and operation.

**Using Available Resources and Assistance:** Use national, regional, and local sources of strategic, technical, and financial assistance to help achieve our energy management goals. These include utilities and the 3 levels of government.

# The Business Case for Strategic Energy Management

Below are the central business arguments for TOH's pursuit of strategic energy management. The next section presents the business proposition – the results of analysis

of the energy efficiency opportunities and their associated costs and internal rate of return.

#### Strengthened Community Leadership and Environmental Stewardship

Energy management is a visible, public commitment to the community and environment. Through aggressive energy management, TOH can provide leadership in promoting sustainable communities, efficient business practices, and environmental stewardship. Faced with a tough market that has forced cut backs on hospital support staff, this is an excellent opportunity to provide leadership and reduce costs at the same time.

#### Enhanced Healing and Working Environment

In existing facilities, efficient operating practices improve patient as well as employee comfort with more stable air temperature, and better indoor air quality and lighting. In new facilities that meet new codes, more daylight and smarter control of comfort contribute to a healing and patient-focused environment, also to an improved working environment. Recent research has found that daylight eases surgical pain and contributes to substantial savings in pharmacy costs.

#### Improved Financial Health and Operating Cost Reduction

Strategic energy management presents a highly leveraged opportunity to reduce operating costs and positively impact TOH's bottom line. Further, investments in energy projects typically have a lower risk of performance over time relative to other investments. Savings from energy projects are easier to forecast reliably than savings or revenue increases expected from more uncertain types of investments.

#### **Optimization of Capacity to Meet Current and Expanding Operational Needs**

Energy efficiency / retro commissioning and Energy audits optimize inefficient or poorly designed and operated equipment /systems. The increased system capacity due to working in optimum working parameters can be reclaimed to avoid expanding operational needs. This "free capacity" can eliminate the need to add major new energy capacity and be much less expensive.

# **Business Proposition**

- If energy management considerations are integral to relevant business practices, policies, procedures, and decision-making processes, TOH's energy-related costs can be reduced by an *additional* 2% over a 5-year period.
- Based on 2018 utility rates, this will result in \$40,583 in annual value to the bottom line based, or a total \$202,915 over a 5-year period. Integration of energy management into organizational decision making and business practices will continue to produce value annually for a much longer period.
- To support the achievement of these financial benefits, TOH will invest up to \$2 million in energy-related capital and operating improvements, meeting an Internal Rate of Return (IRR) of 10% or better over the 5-year period (2019-24).

# **Energy Management Goals**

The following outlines some of the Strategic Energy Management Plan (SEMP) goals that will be adopted by TOH. They include, but not limited to, the following:

- 1. Goal: SEMP Approval, Resources to Implement
- 2. Goal: Implement Financial Practices and Decision-Making Processes
- 3. Goal: Establish Purchasing Specifications for Energy Efficient Equipment and Services
- 4. Goal: Implement Enhanced Design & Construction (D&C) Practices
- 5. Goal: Improve Building Operating Performance
- 6. Goal: Implement Cost-Effective Facility Upgrades
- 7. Goal: Actively Manage Energy Commodity
- 8. Goal: Monitor, Track, and Reward Progress

#### 1. Goal: SEMP Approval, Resources to Implement

- Executive approval process adjustments and resource allocations to support initiatives
  - Support from key staff (financial management, purchasing/procurement, capital renewal, building operations, etc.)
  - > Creation of mechanisms/processes to make resources available
  - Clarification and communication of staff roles and responsibilities, performance goals, and energy management reporting

#### 2. Goal: Implement Financial Practices and Decision-Making Processes

- Money spent to achieve energy efficiency is viewed as an investment, not a cost
  - Financial decision makers consistently use life cycle cost analysis (LCCA) on all new construction, major renovations, and equipment replacements over lower costs
  - Internal rate of return (IRR) as "pre-approved" by the Hospital administration or board
  - Train staff on life cycle cost analysis and financial requirements and decision-making process
  - Decisions about energy management investments will be part of TOH's high-level, long range process of budgeting for capital and operations

## *Goal: Establish Purchasing Specifications for Energy Efficient Equipment and Services*

- Establish and consistently use purchasing specifications that minimize life-cycle costs for energy efficient equipment and services
  - Establish efficiency specifications for standard equipment routinely replaced (e.g. lights, motors, and unitary HVAC equipment)

- Establish efficiency guidelines that apply LCCA for custom equipment purchases (e.g. chillers)
- Increase the awareness of purchasing staff to work with Facilities Management to apply for available incentives by the utilities to be included when doing the LCCA
- Establish efficiency standards for design and construction, and for building operations and maintenance services

## Goal: Implement Enhanced Design & Construction (D&C) Practices

- Implement improved new construction practices in all large capital projects that specify early team collaboration and "integrated design" (ID).
  - > Integrated design required for funding
  - > RFPs, contract terms & conditions, & fee structures will support ID.
  - Apply LCCA and financial hurdle rates described above to support decisions
  - > Apply established purchasing procedures and specifications
  - > Include incentives and tax credits wherever available
  - Educate all owner's project managers or construction managers and contractors on integrated design and their respective roles in master planning pre-design, design, construction, testing, commissioning, and monitoring
- Set and meet clear energy performance targets for new buildings; measure and improve over time
  - Establish baseline for measuring performance goals (e.g. CSA code, or national reference standards like ASHRAE 90.1)
  - Set target to implement energy efficiency measures to achieve at least by stimulation more efficient building compared to a standard reference like MNEC for buildings
  - > Measure performance and improve over time
- Specify commissioning as a standard procedure.
  - > Retain the services of an independent third-party commissioning agent
  - > 100 percent of fundamental building systems and elements will be designed, installed, and calibrated to operate as designed
  - > Design team, commissioning agent, and building operators will work closely throughout the design process and occupancy to ensure good transition

## Goal: Improve Building Operating Performance

- Equipment tune-up and improved operations and maintenance (O&M) will achieve the following results while supporting patient care, facility comfort and safety
  - Achieve reductions in operating costs for existing facilities by an average of 2% over 5 years and continue to improve by 0.5% per year for the 5 years thereafter
  - Reduce the total EUI to be within 700 ekWh/m<sup>2</sup> less than the RETSCREEN average acute hospital at 709 ekWh/m<sup>2</sup> by 2024. The EUI will be adjusted

for variances in patient days and IT intensity in addition to the other projects that are implemented during the 5-year term that would change the energy consumption at the hospital. International Protocols for Measurement & verification will be used to estimate the EUI at 2024

- > Reduce TOH energy consumption by 400,000 kWh per year.
- Consider ENERGYSTAR as TOH is an active Energy Star participant and so far, it is the only hospital in Ontario that is participating

## Goal: Implement Cost-Effective Facility Upgrades

- Implement equipment and system upgrades where justified by life-cycle cost analysis
- Expand the use of qualified service providers as needed. Develop standard RFP documents, contract terms, and reporting standards

## Goal: Actively Manage Energy Commodity

- Minimize utility costs and exposure to market risks. Utility costs include natural gas, electricity, oil, water, and sewer
- Participate in the energy/utility regulatory process

#### Goal: Monitor, Track, and Reward Progress

- Track progress on SEMP
- Track energy reductions [quarterly][annually]
- Reward staff for successes

## **Baseline Energy Use**

The baseline energy profile for the second SEMP will be the calendar year utility data 2018. This baseline will be used to calibrate energy end-use estimates and as the reference case for calculating energy savings.

## TOH energy savings streams to achieve plan targets:

The Ottawa Hospital started implementing energy savings measures from 1991 when a heat recovery heat exchanger was installed at the Civic campus to capture a good portion of the flue gases energy from the steam boilers serving the site. Projects continued to reduce the foot print of the sites with 2003 marking a \$17 million project with an ESCO to save approx. \$2.7 million in utilities. The project included HVAC upgrades, lighting upgrades, water conservation and building envelope improvements.

The Ottawa Hospital continued upgrading and improving the systems efficiency after the ESCO project is done.

We are planning to consider energy efficiency to be an essential criterion in our capital projects and when the financial analysis is within the specified Internal rate of return (IRR) or simple payback limits mentioned earlier.

The main categories that we expect to invest in order to reduce our Energy Use Intensity (EUI) with good IRR or payback are in the areas of lighting, HVAC equipment and medical equipment.

The projects to be implemented in the future would rely on the following streams:

- 1. Steam traps audit and repairs to avoid steam loss.
- 2. High pressure steam traps monitoring for early detection of failures.
- 3. Monitoring the boiler plant efficiency and upgrade when possible.
- 4. Working with capital projects to implement energy efficiency.
- 5. Retro commissioning and commissioning the projects properly to achieve optimum performance during operation.
- 6. Maintaining the insulation for HVAC and steam / HW pipes in good condition.
- 7. Sub meter and monitor on phases the critical loads at the sites.
- 8. Lighting upgrades when feasible.
- 9. Building envelope improvements.
- 10. Staff involvement and awareness increase to help save energy.
- 11. Water conservation despite being the only utility that is not incented so far, but due to the high increase in the unit cost (doubled since 2002 rates), we will continue our efforts to save water and sewer. TOH received the OHA water conservation award in 2013.
- 12. Chiller plant monitoring and optimization on the supply side, at the same time optimize the demand side by minimizing the Air handling Units running time through precise schedules at the Building Control Center (BCC) and to optimize the operating parameters such as the static pressure and motors speed.
- 13. Working jointly with other departments to implement energy efficiency like Medical Equipment upgrades (Biomedical Engineering), new buildings and renovations at the sites (Capital & Renewal), efficient new equipment based on life cycle costing (Purchasing department).
- 14. Energy Star equipment specification when available as TOH is the only Energy Star participant.
- 15. Train and refresh the training for the stationary engineers operating the equipment.

- 16. Apply for the available incentives programs like OPA's saveONenergy program, Enbridge gas conservation program and others if available to improve the feasibility of the energy conservation project so that it is approved for implementation faster.
- 17. Plan for better contribution in the Demand Side management Programs in order to reduce the demand during ON peak hours and reduce the Global adjustment charge.