Energy Water Reporting and Benchmarking (EWRB) + Benefits & Challenges

Regulation 506/18

Presented by:

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www.Energy-Efficiency.com
1) Energy and Water Reporting and Benchmarking (EWRB)

2) Tools@Work
   Real Time Monitoring, Measurement and Verification, EB Cx, CuSum, Training

3) Energy@Work’s Approach
   Energy Management Action Plan (E-MAP)
   Case Studies: Multiple Buildings / Portfolio Success!

4) Challenge

5) Final Thoughts
Background: Ontario Regulation 506/18

Ontario Regulation 506/18, Reporting of Energy Consumption and Water Use (EWRB) came into force January 1, 2019, reintroducing EWRB into the Electricity Act.

Outcomes:

Ontario owners of commercial, industrial, multi-unit residential and other building types that are 100,000 square feet or larger are required to report their building’s energy and water consumption, and greenhouse gas emission data annually by July 1st, 2019.

Toronto Hydro has determined that any request for data submitted AFTER June 1st 2019 may not receive data by the July 1st deadline.

History & Timeline:

Year 1: July 1, 2018
- Commercial & industrial (C&I) buildings over 250,000 square feet had to report

Year 2: July 1, 2019
- C&I + multi-unit residential buildings over 100,000 square feet

Year 3: July 1, 2020 Consumption Data from 2019 Calendar Year
- C&I, + multi-unit residential buildings over 50,000 square feet
Energy Water Reporting and Benchmarking? Benefit & Challenges

**EWRB**
A legal requirement that may appear challenging but is the first time that utilities are required to provide data that the customer needs to have to understand their building.

**Program Objective**
Ontario is seeking to help customer reduce energy and water costs without imposing a carbon tax or other cumbersome legislation.

**Challenge**
EWRB has ‘growing’ pain aka – EWRB is new and made difficult because the utilities are not set up to provide their customers with the data that they need to manage.

*We are transitioning to where we need to be – Change takes work!*
Getting Started – 3 Step Approach

**Step 1**
Obtain building information: Understand the Building – ask smart questions to “Understand Right”

**Step 2**
Complete the federal database: “Portfolio Manager”
Verify the data is correct by a Licensed Professional – need accurate information!
“Use Right”

**Step 3**
Review the Energy and Water consumption data is submitted into the Portfolio Manager portal “Buy Right”

**“Understand, Use and Buy Right”**
Our philosophy: Start a smart conversation,
aka: Why did my water use double last month?
Why is my building using less energy this year? – what is HAPPENING?
1. Utility use is one of the largest operating expenses in commercial and residential buildings.
   - It represents about 1/3 of typical building operating budgets, according to www.energystar.gov.
   - A 30% decrease in commercial buildings are available from utility efficiency strategies.

2. Energy and Water Reporting and Benchmarking (EWRB) provides the information building owners and managers need to understand how energy and water is being used.
   - The largest barrier to identifying cost efficiencies and making existing buildings more efficient is a lack of access to the data needed to measure and track energy performance.
   - The vast majority of buildings in jurisdictions that benchmark have taken steps to improve performance by investing in low- or no-cost changes.
   - Energy@Work’s database of over 30 Million SqFt has an average Energy Use Intensity of 20 ekWh/sq.ft. compared to BOMA average of 27 or 35% Better!
The Why? Increasing Value

Energy@Work’s Focus: Operational Excellence

Commercial Office Study, i.e.: “Green is better”

- Net effective rents: 3.7 % better
- Rent concessions: 4 % better
- Occupancy rates: 18.7 % better
- Tenant renewal rates: 5.6 % better
- Tenant satisfaction scores: 7 % better
- Energy consumption: 14 % better

Leaders are creating a “sustainability” presence others are using “green wash”
See discussion in the Green Paper: https://www.energy-efficiency.com/green-paper
Complex Market: Need Professional Partners to Navigate Ontario’s Dynamic Energy Landscape

Consistent Increases in Utility Rates: Global Adjustment in April over $1 BILLION/Month!
- 10% increase in natural gas rate – cost of carbon
- 10% increase in water rates every year
- Electricity costs continue to rise and insists on being complicated!

Other Emerging Issues and Opportunities
- Industrial Conservation Initiative & Global Adjustment (GA) Mechanism
- Carbon Tax – where will $$ be spent?
- Incentive programs Changing? DSM / CDM <MARCH 21st Announcement>
- Mandatory Energy and Water Reporting – July 1, 2019

Success is Achieved Through Proactive Planning: Avoid Risk & Achieve Benefits
DATA is King – Need Information

1) **EWRB Regulation:**
   Utilities are required to provide aggregated data “Yours to Discover”

2) **Real Time Monitoring (RTM)**
   “Seeing” what the building is doing

3) **CO2/Temperature and Relative Humidity**
   Measuring what is happening
Tools@Work with accurate data + There are many more tools!

Cu Sum – every property should have one!
- Ensures data is recorded
- Tracks progress
- Flag increase/decrease

Measurement and Verification (M&V) Plan
- Ensure progress is REAL!
- Meet utility programing
- Supports business cases
Energy@Work’s Results Using E-MAP

Energy Management Action Plan: Average Saving is $400/Day

- 16 years in business + Ontario Hydro’s National and International award winning in-house program
- Helping: Industry, Institutional - 30 M SqFt of Commercial offices
- Annual targets are being achieved through low and no cost operational improvements

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<th>%Savings</th>
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File name: 2019-05-29 OPSaver Project Tracking Template (Energy@Work) excel R6
Location: Z:\EnergyShare Reorganization\4.0 E@W Toolboxes\1 OPSaver\April 2019 OPSaver Files
Revision Date: 43598

*Understand Right. Use Rights. Buy Right.*
E-MAP Case Study: Mid-Tier Property
First Year Savings 10.4%
Verified by THES (13.25 kWh/SqFt compared to BOMA @17 kWh/SqFt)

1. Commercial Building: E-MAP Established Energy & Water Key Performance Indicator (KPI) and Baseline
Success Spreads: First Building Expanded to 3 and NOW 5
Note: Next Property’s Electricity Use Intensity- what potential!

First: 10.4%  Second: 6% and climbing  Third: 21% and all 3: NO CAPITAL COST!

<table>
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<tr>
<th>Property</th>
<th>GFA</th>
<th>Start Date</th>
<th>kWh Used Jan-Dec 2018</th>
<th>EUI (kWh/SqFt.)</th>
<th>Baseline kWh</th>
<th>Actual kWh M&amp;V</th>
<th>kWh Saved</th>
<th>% kWh Savings</th>
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<td>13.67</td>
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Source File: 2019-04-17 Madison Energy@Work E-MAP

Note: EUI is the Electricity Use Intensity of the building i.e. kWh/sqft. BOMA's average EUI is 17 kWh/sqft.
Toronto Office Commercial Portfolio: Benchmarking Led to Measurable Results!

Energy & Cost Avoidance

- Energy Reduction: 46,512,503 ekWh
- Avoided GHG Emissions: 24,748 Metric Tons
- Avoided Costs: $6,051,940
Challenge Understanding EWRB?
“Spotting the woman in the Red Dress”

1) Dear Scott Rouse P. Eng:
This is to confirm the receipt of the following Data Request:
Response sent: 06/14/2019 11:16 AM
Response includes: 1 properties
Response sent to:
Ontario Ministry of Energy, Northern Development and Mines
Ontario Ministry of Energy, Northern Development and Mines
77 Grenville Street
Toronto, ON M7A 2C1
Response sent by: Scott Rouse P. Eng., Energy@Work
250 The Esplanade, Suite 401 A
Toronto, ON M5A 1J2
Response sent on behalf of: Owner
Property and Address
Sincerely, ENERGY STAR Commercial and Industrial Program

2) A second email is sent from the Ministry that confirms acceptance

3) Need to see meaningful feedback
Suggested Approach, Use EWRB to Develop your own: Energy Management Action Plan (E-MAP)

1. Use EWRB to ask the questions: What is our Energy and Water Use Intensity?
   - Is it above BOMA Average of 27 ekWh/Sqft for energy or 0.7 M^3/M^2?

2. Invest in the tools that work
   - NRCan’s Existing Building Commissioning (EB Cx)

3. Understand the information being collected
   - What is the data telling us and what are options and Utilize all programs to improve performance

4. Have Fun: This is a win-win-win proposition!
Engage Operations

Operators: “The Eyes and Ears” of your building
- Engage, Inspire and IMPROVE!
1) Who can Report and Why?
   1) Property Managers that are **qualified** can report. Why qualified – three reasons:
      i) Avoid “Garbage in = Garbage out!” - we do not want to waste this opportunity!
      ii) Interpretation and understanding the data: the output from EWRB is confusing
      iii) Analysis leads to other benefits aka rates, unusual consumption, etc.
         - **best example was a $541,000 saving!**

2) Is EWRB necessary?
   YES – If we are going to improve we need to know where to start.

3) What if I do not report? **-YOU ARE CHEATING YOURSELF AND YOUR PROPERTY!**
   Not having accurate Energy & Water Use Intensity is a mistake and disadvantage to those that use it.
   This is your **opportunity** to see what the property is doing and **compare** with yourself and others.
What are Your Next Steps?

1. _____________________________________________________
   (ask for the building energy and water performance)

2. _____________________________________________________
   (check out the tools that are available)

3. _____________________________________________________
   (talk it up – others are thinking and responding)
Feel free to contact: Energy@Work

& use our web site: www.Energy-Efficiency.com

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Fax: 416.352.7424
Web: www.Energy-Efficiency.com
twitter.com/EnergyatWorkInc

Energy@Work
Understand Right. Use Right. Buy Right.®

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