

Ontario's Electricity System: Program and Pricing Update

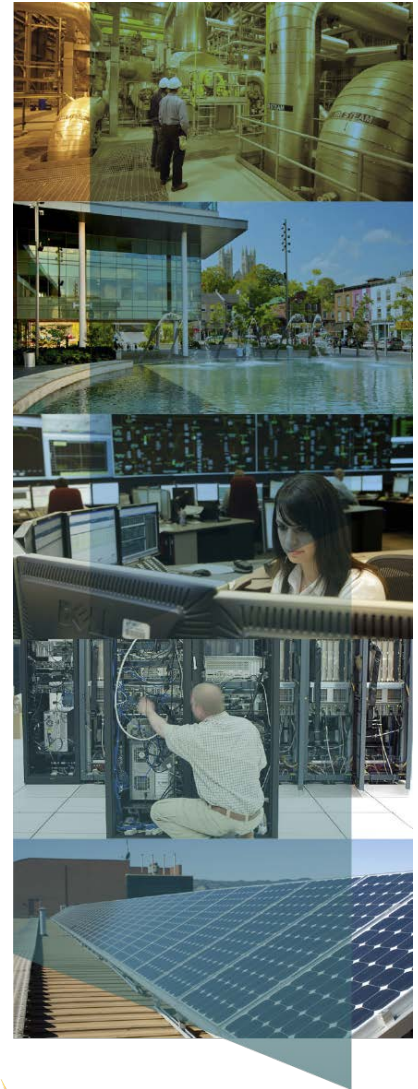
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Stakeholder Relations, IESO

August 11, 2016

Who We Are and What We Do

The Independent Electricity System Operator (IESO) ensures there is enough power to meet the province's energy needs in real time while also planning and securing energy for the future. It does this by:

- Long term and short term planning
- Enabling conservation by overseeing funding of Save on Energy programs offered by LDCs
- Ensuring supply through contracts, real time energy and operating reserve market and ancillary services such as regulation and blackstart
- Operating the IESO-controlled grid
- Engaging stakeholders and communities



Current Environment

Decisions made over the past decade mean that Ontario demand supply picture will remain positive for the foreseeable future

- Adequate supply from a diverse supply mix
- Demand expected to remain flat for the long-term
- Growth to be offset by conservation savings
- Developing a work plan to renew Ontario's electricity market
- Conservation First Framework mid term review

Conservation

Building a Culture of Conservation

Pre-2011
Conservation

2011-2014
Framework

2015-2020
Conservation First

Success to Date

- **9.9 billion kilowatt-hours** of electricity savings through SOE programs and changes to codes and standards in the past 10 years
- **6,553 gigawatt-hours** of energy savings between 2011 and 2014 through the SOE suite of programs
- **928 megawatts** of demand reduction for the province
- **9.8 million products** purchased using Save on Energy coupons
- **5,000 people** participated in IESO-supported training programs between 2011 and 2014

Putting Conservation First

- Conservation provides the **cleanest and most cost-effective** alternative to new generation at less than 4 cents/kWh
- Conservation lowers peak demand, deferring or avoiding the need to build new infrastructure
- Helps Ontarians better manage their energy costs
- Favourable return on investment for customers

SAVE ON ENERGY
POWER WHAT'S NEXT

8.7

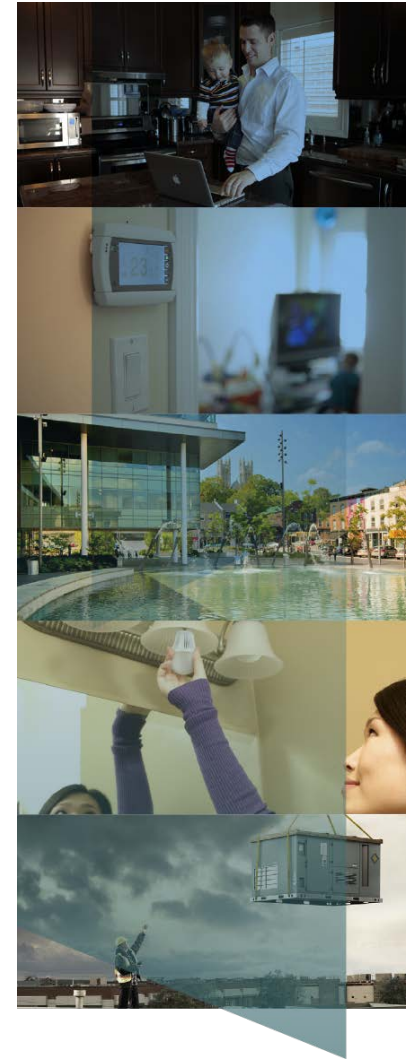
terawatt-hours
by the end of 2020

Save on Energy Programs Cover All Sectors



Multi-Distributor Customer P4P Pilot

- Strong organizational commitment to energy management
- Possess, or are willing to implement at own cost, information systems to monitor building energy performance at minimum on a monthly basis and to have processes in place to monitor and respond to changes
- Desire to move beyond simple retrofits
- Interested in improving bottom line by managing energy use and associated costs
- Currently working with stakeholders to develop the program requirements



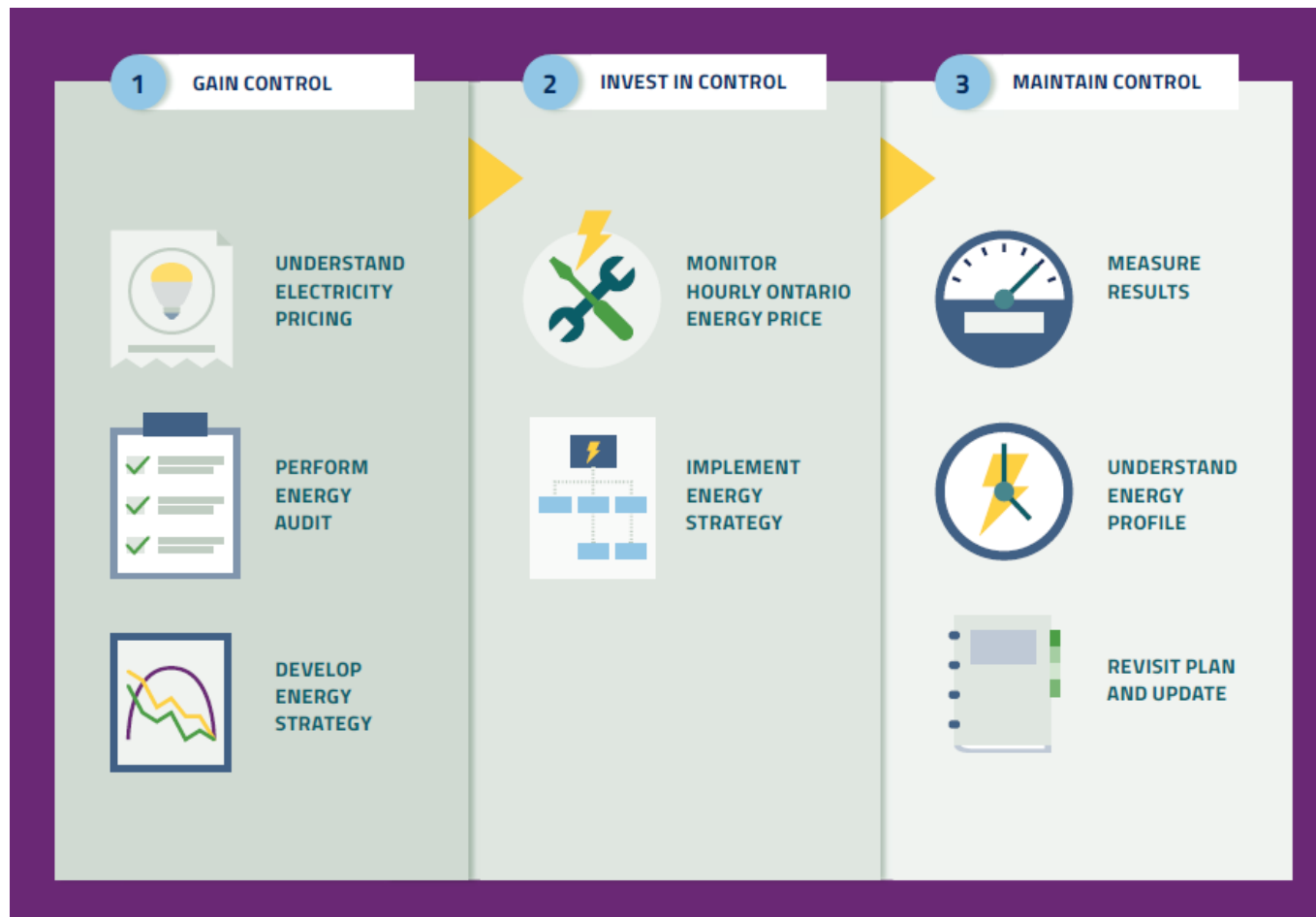
Integrating Demand Response

Demand Response (DR) provides an opportunity for customers to participate, reduce consumption and help mitigate costs

- DR has reduced peak demand on summer days by as much as **1,200 MW**
- Transitioning DR to a market mechanism began with moving the DR3 program to the **capacity-based DR program**
- The first **DR auction** in December 2015; will contribute 391.5 MW for 2016 summer season and 403.7 MW for 2016-17 winter season
- **DR pilot projects** represent up to 80 MW of DR from five companies covering 20 projects ranging from 1 MW to 35 MW

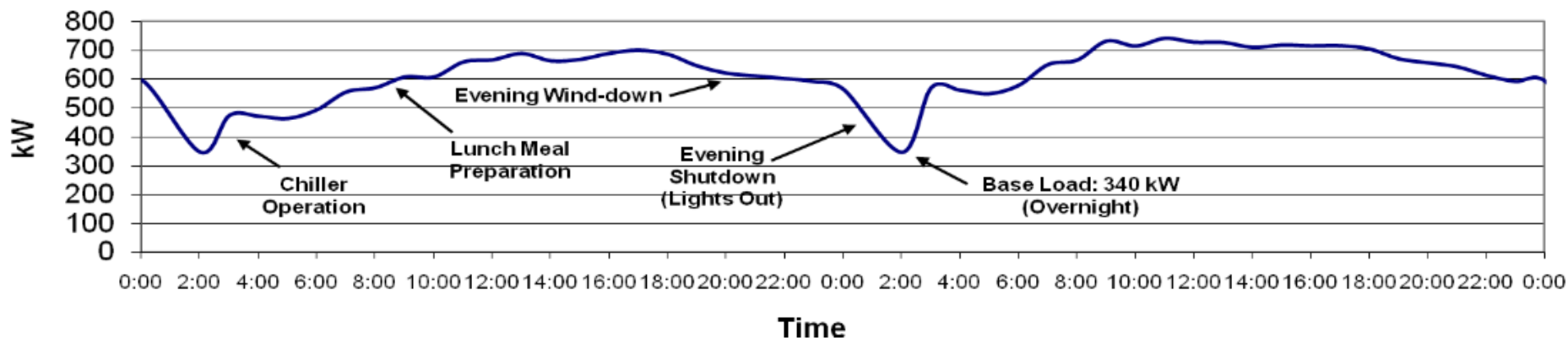
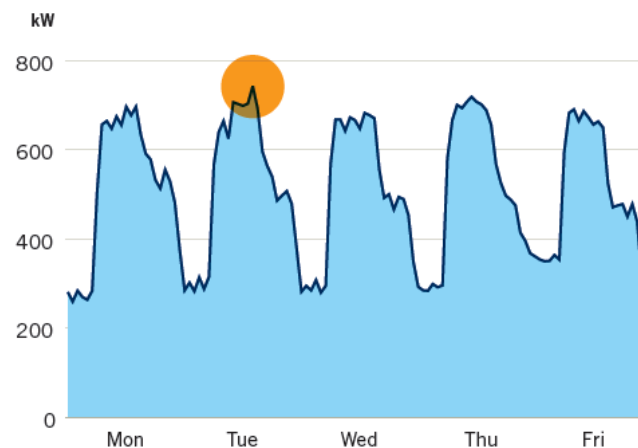


Making an Energy Management Plan



Analyzing Your Electricity Profile

- Understand the measurements
- Find your peak demand
- Understand the rates



Calculating Avoided Costs

MANUFACTURING COMPANY XYZ

Account Number
0000 0000 0000
Meter Number
000 000

Billing Date: November 20
Your Service Type: General Service - Demand
Your Local Hydro Company

HOW WE CALCULATED YOUR CHARGES

Metered Values

Metered Consumption	45,000 kWh
Metered kW Demand	150 kW
Metered kVA Demand	161 kVA
Loss Adjustment Factor	4.8%

Calculated Values

Adjusted Consumption	47,160 kWh
Power Factor	93.2%
Billing Demand	150 kW

Line Item	Rate	Amount	Total
1 Hourly Ontario Energy Price	0.03	47,160 kWh	\$1,414.80
2 Global Adjustment	0.08	47,160 kWh	\$3,772.80
3 Regulatory: Wholesale Market Service	0.0057	47,160 kWh	\$268.81
4 Debt Retirement	0.007	45,000 kWh	\$315.00
5 Standard Supply Services	0.25	—	\$0.25
6 Delivery: Monthly Service Charge	85.00	—	\$85.00
7 Delivery: Distribution Charge	4.00	150 kW	\$600.00
8 Delivery: Transmission Network	3.65	150.0 kW	\$547.50
9 Delivery: Transmission Connection	2.45	150.0 kW	\$367.50

Total Monthly Electricity Charges

\$7,371.66

Energy efficiency projects
have saved 5,000 kWh/month

Total kWh charges:
12.2¢/kWh



Avoided Monthly Cost
\$613.50

Wholesale Market Price and Global Adjustment

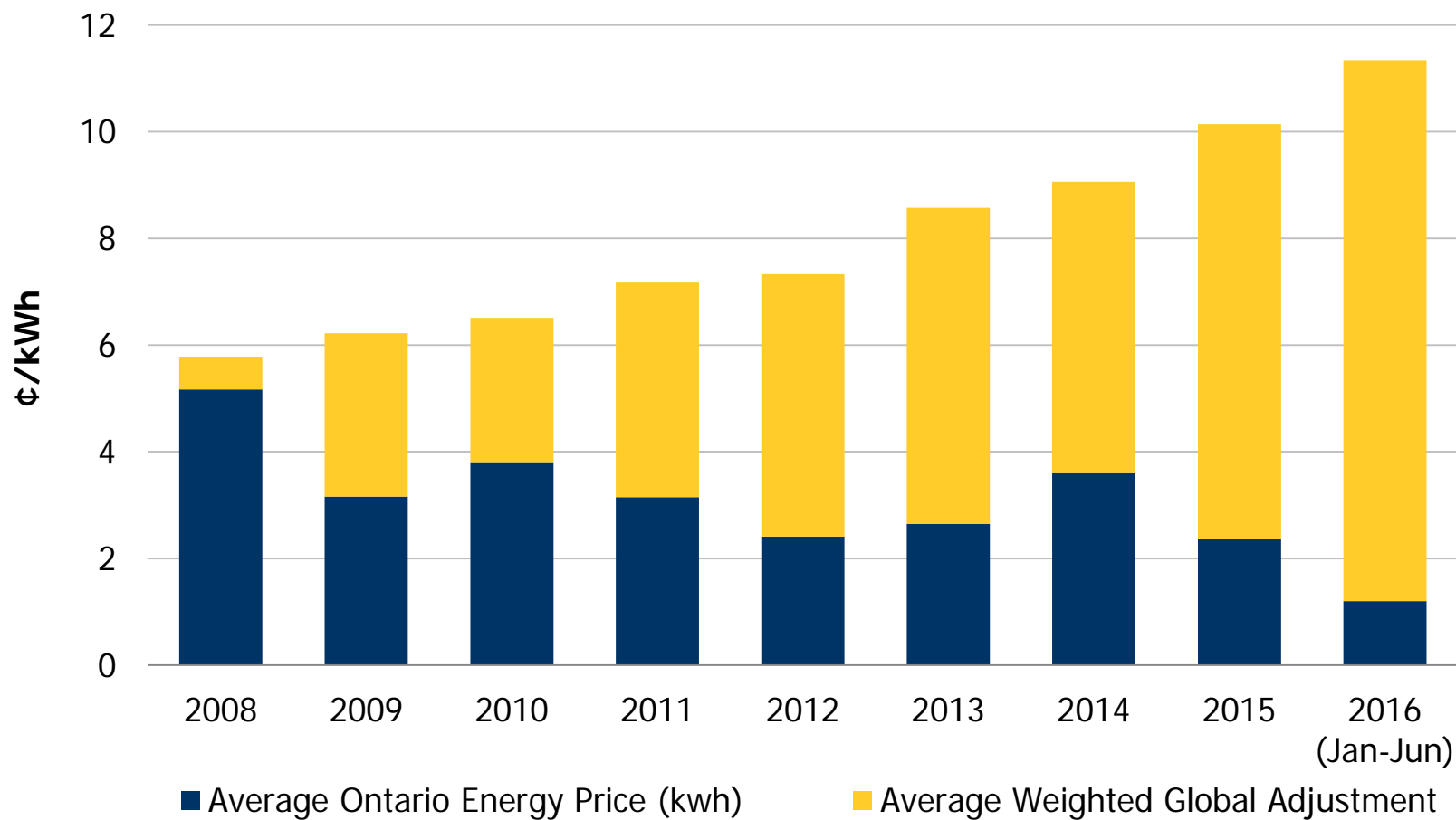
Wholesale Price (HOEP)

- Signals current supply and demand situation
- Covers operational costs of production – such as fuel
- Varies by hour and impacted by weather, time of day, year or day of the week

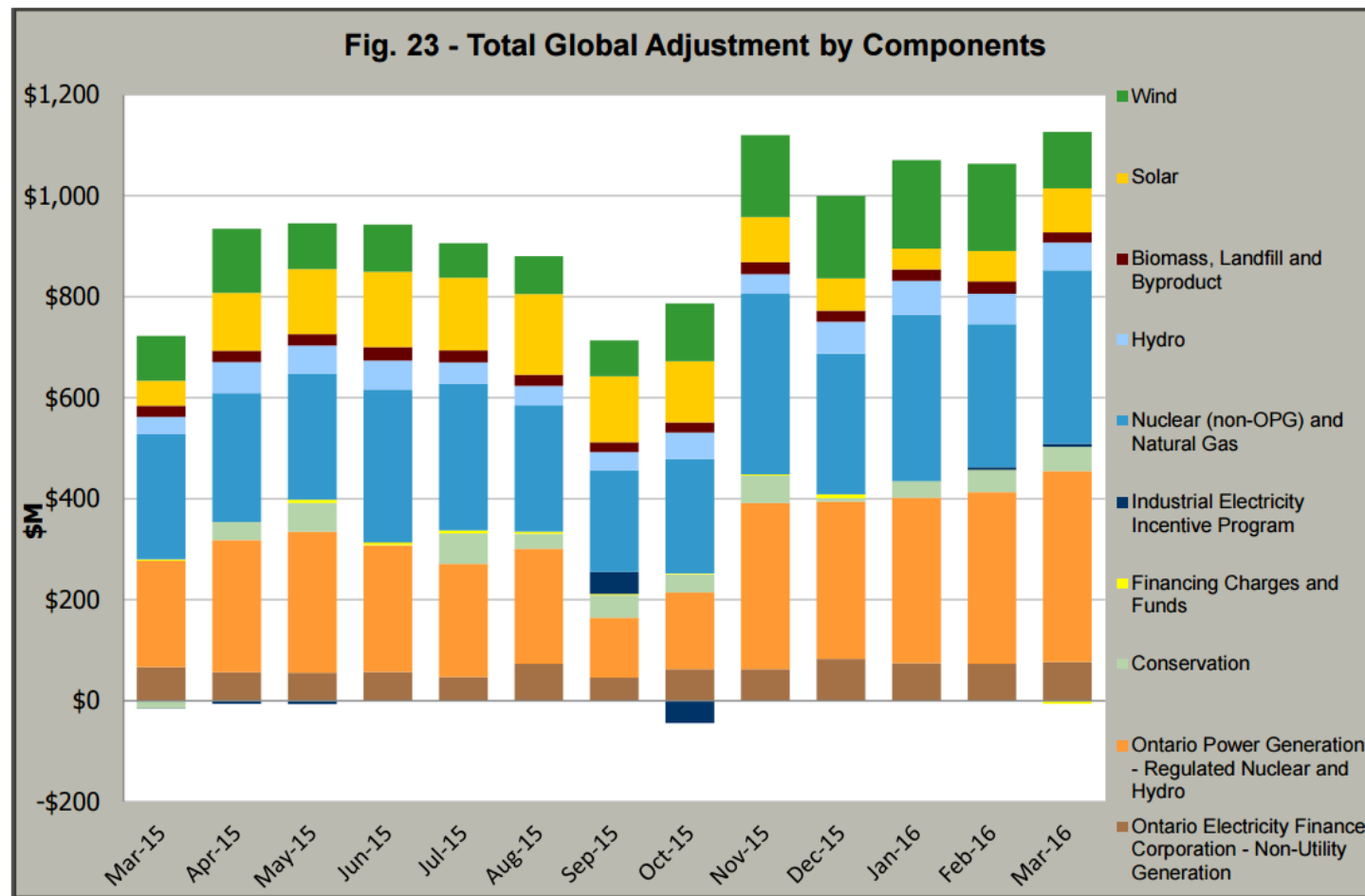
Global Adjustment

- Investment or capacity costs to build or refurbish infrastructure – that are not covered through market revenues
- Includes contracts, and regulated rates to generators and other suppliers as well as conservation
- Generally speaking, when the HOEP is lower, then the GA is higher in order to cover all system costs.
- The GA also changes when new projects come into service, contract payments take effect or as a result of changes in demand

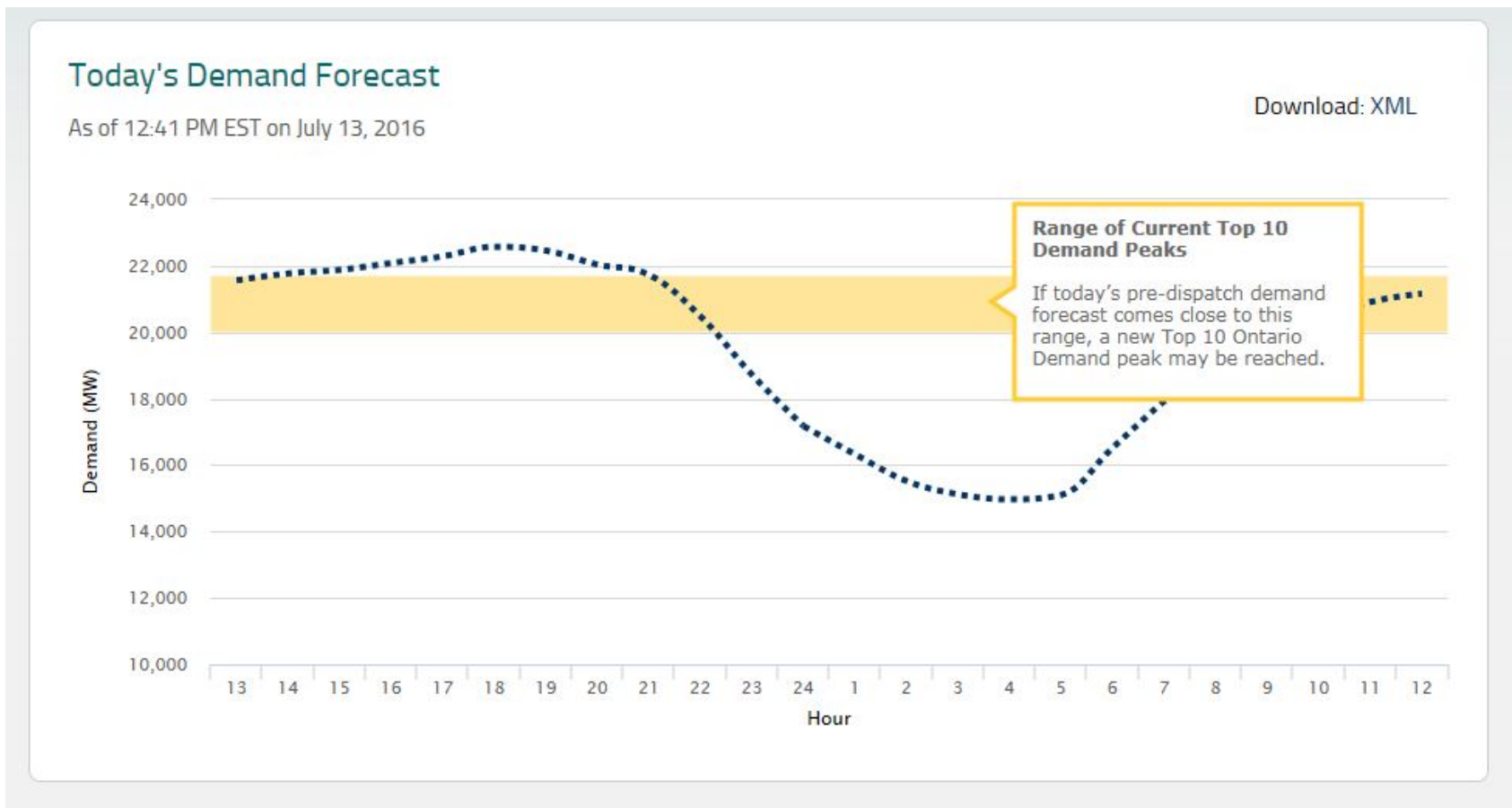
Electricity Pricing Trends



Global Adjustment by Components



Industrial Conservation Initiative (ICI)



- www.ieso.ca/peaktracker

IESO Resources – *Keep in Touch*

The Bottom Line on Energy Management
Making Ontario's Electricity Market Work for Your Business

INSIDE

- Why demand response is worth a second look
- Now is the time to take control of your electricity costs
- How Western University is investing in the future of higher learning

SAVE ON ENERGY
POWER WHAT'S NEXT

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AUDIT FUNDING +

EXISTING BUILDING COMMISSIONING +

Energy Managers +

HIGH PERFORMANCE NEW CONSTRUCTION +

PROCESS AND SYSTEMS +

DEMAND RESPONSE

Business Programs

SMALL BUSINESS LIGHTING

Along with saving energy, new lights for your business can provide more attractive product displays and improve worker productivity.

LEARN MORE

ENERGY MANAGERS

Hire an energy manager to recommend and implement energy savings initiatives for your business. Your customers, employees, and your bottom line will thank you.

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