



ONTARIO POWER AUTHORITY

March 2008



Windsor-Essex Electrical Service Needs and Solutions

OPA's Four Main Functions

1. Conservation

- Execute conservation and demand management initiatives
- Build conservation capabilities across all sectors
- Advance a sustained conservation culture

2. Planning

- Develop and deliver a comprehensive long-term plan that addresses CDM, generation and transmission

3. Supply

- Obtain needed generation capacity in a timely way that also supports long-term sector development

4. Development

- Facilitate risk transfer from electricity customers to investors
- Promote development of new renewable, CDM and supply technologies

Evolving Industry Structure: 1906 - present

Ontario

Ontario

Ontario

Ontario



ONTARIO POWER GENERATION

ONTARIO POWER GENERATION

hydro One

hydro One

IMO Independent Electricity Market Operator

ieso Power to Ontario. On Demand.

Electrical Safety Authority

Electrical Safety Authority

OIEFC

OIEFC

Market Participants (Generators, Distributors, Retailers, Wholesalers, etc.)

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OPA Ontario Power Authority

1906 - 1973

1973 - 1998

1998 - 2005

2005 +

VERTICAL INTEGRATION

COMPETITION

HYBRID OPA Ontario Power Authority

Ontario's Integrated Power System Plan

Electricity Act

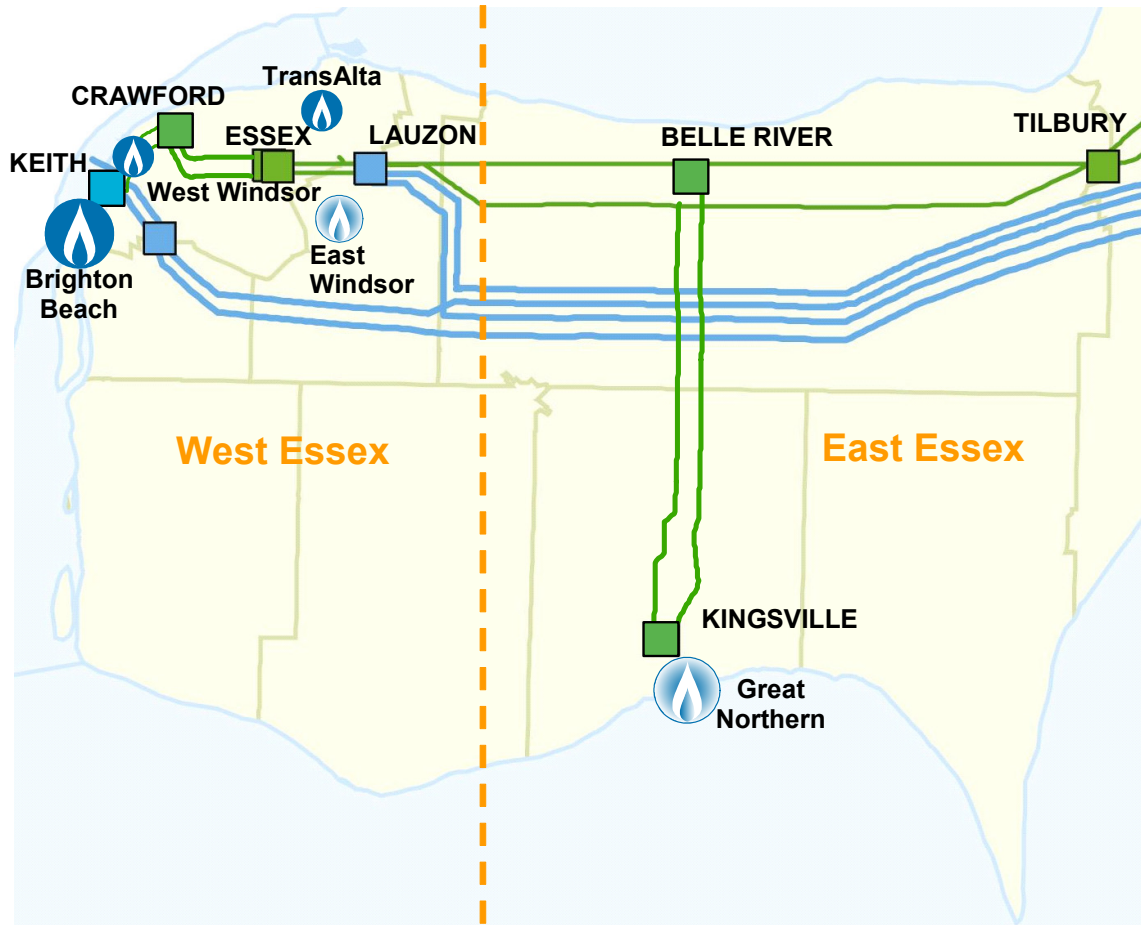
Integrated power system plan

25.30 (1) Once during each period prescribed by the regulations, or more frequently if required by the Minister or the Board, the OPA shall develop and submit to the Board an integrated power system plan,

- IPSP is the abbreviation
- Foundation in the *Electricity Act* and its Regulations
- Shaped by three government policy priorities:
 - Creation of a “conservation culture”
 - Preference for renewable sources of energy
 - Replacement of coal-fired generation
- 20-year rolling plan with 3-year update cycle

Local Area Reliability

- As part of the IPSP, the OPA looks at regional needs and identifies an integrated solution
- Windsor-Essex is one such area



Needs in Windsor-Essex

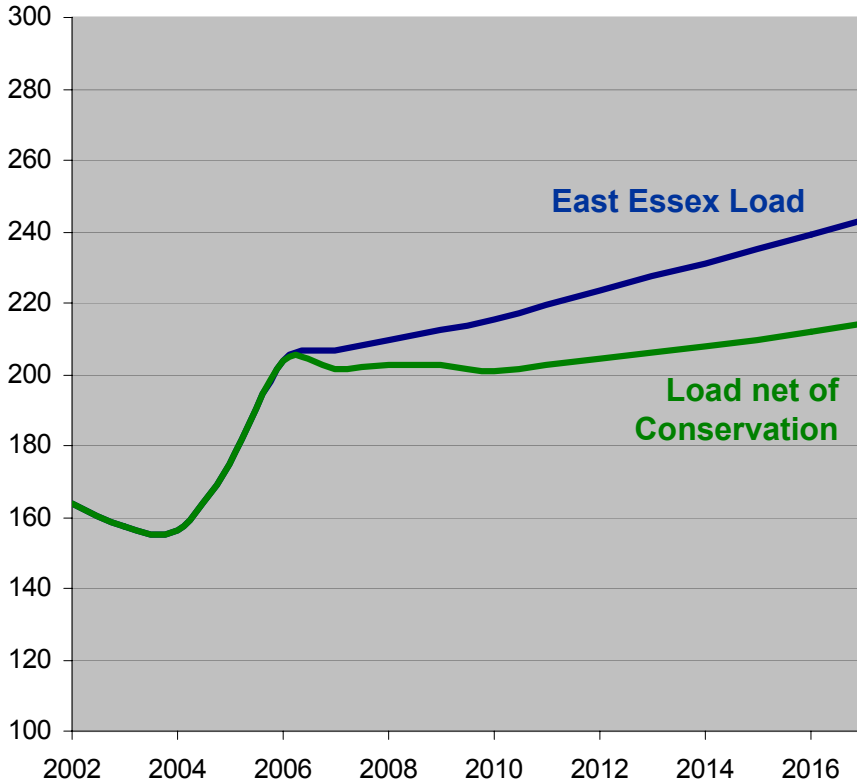
- Inadequate supply capacity in East Essex
- Reduced security of supply for the whole of the W-E Area should a contingency affect one of the area's 230 kV lines
 - It may not be possible to restore supply to a large number of customers until the failed line is returned to service
- Inadequate transmission capacity for delivering generation from the west part of Windsor to the transmission grid (congestion)

Proposed Solution

Integrated solution consisting of:

- Targeted conservation
 - for reducing the demand in the area
- Transmission reinforcements
 - Two options as described by Hydro One
- Factoring in local generation if and when it occurs resulting from the various OPA resource procurement programs

Conservation Solution in East Essex



Target of 15 MW of conservation by 2010

- “calculated” based upon provincial target
- also have a target for West Essex

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
East Essex Conservation	7	9	15	17	19	21	24	26	27	29

Local Generation Opportunities

- There are or will be a number of provincial-wide procurement initiatives for system resources that could be of interest to this area:
 - Renewable Energy Supply (RES)
 - Renewable Energy Standard Offer Program (RESOP)
 - Clean Energy Standard Offer Program (CESOP)
 - Combined Heat & Power (CHP)
- OPA will incorporate the outcome of these procurements as move forward with the plan
- However, the OPA does not expect that generation developments in the area will be sufficient to address the needs identified
 - Will need to upgrade and reinforce the transmission system to meet all the area needs

Implementation

Conservation

Programs & procurements funded by OPA

Transmission & Distribution

Work completed by Hydro One

Generation

Procurements run by Electricity Resources group at OPA

Next Steps

- In the IPSP indicated the 230/115 kV autotransformer station near Woodslee was the preferred solution because:
 - preliminary estimates indicated it cost less
 - it requires less land, which should result in less disruption to adjacent property owners
- However, because discussions with stakeholders, officials and affected communities are still required, approval of this project will proceed separately
- The decision as to the preferred transmission option is still open
- Will identify the preferred option for the integrated plan based on information received:
 - Updated costs
 - Community consultation
 - Environmental Assessment process