

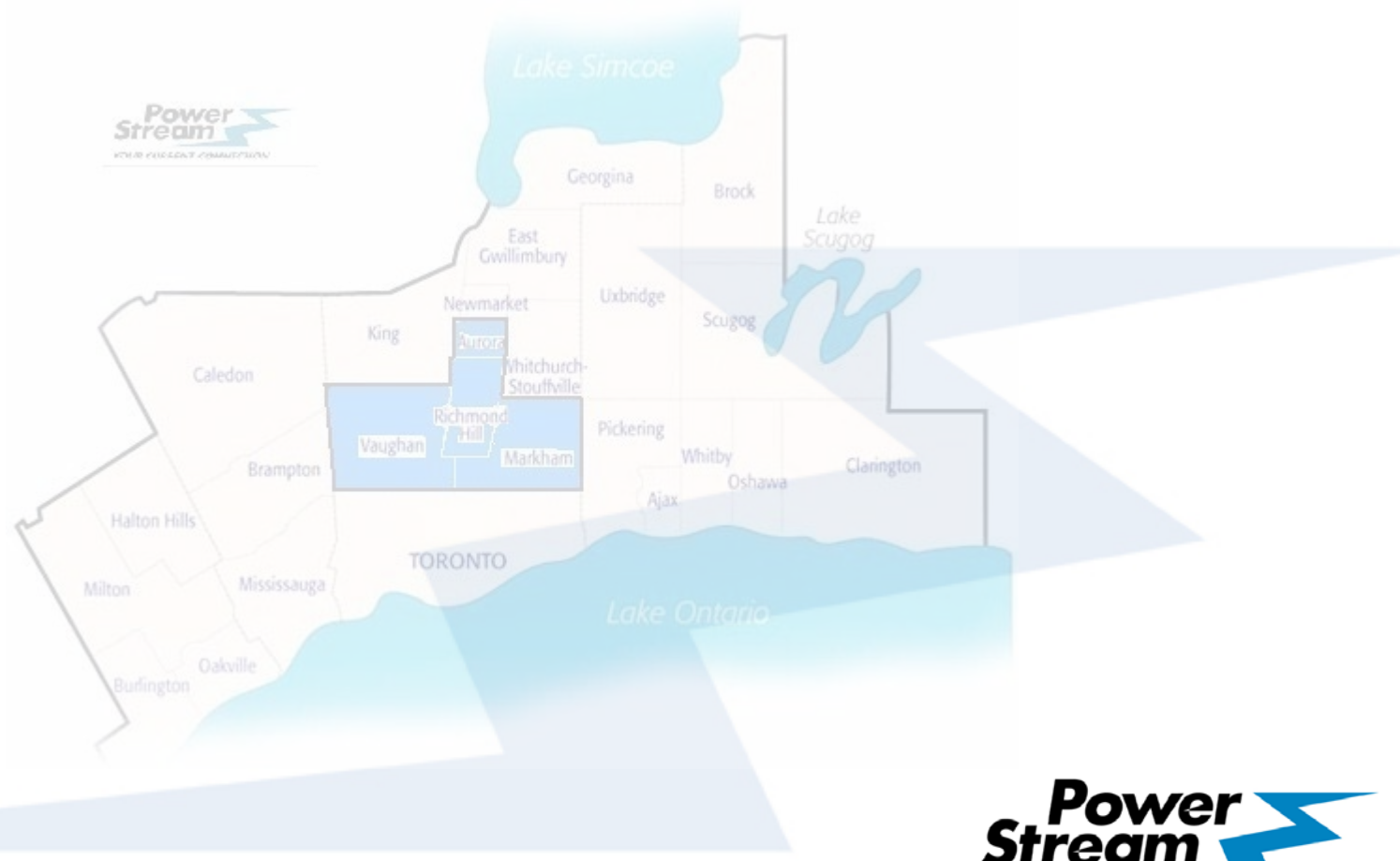
PowerStream Inc.

Distributed Energy In Ontario
Natural Resources Canada
LDC Prospective

February 15, 2007

Patrick Guran
Chief Energy Conservation Officer

PowerStream Service Area





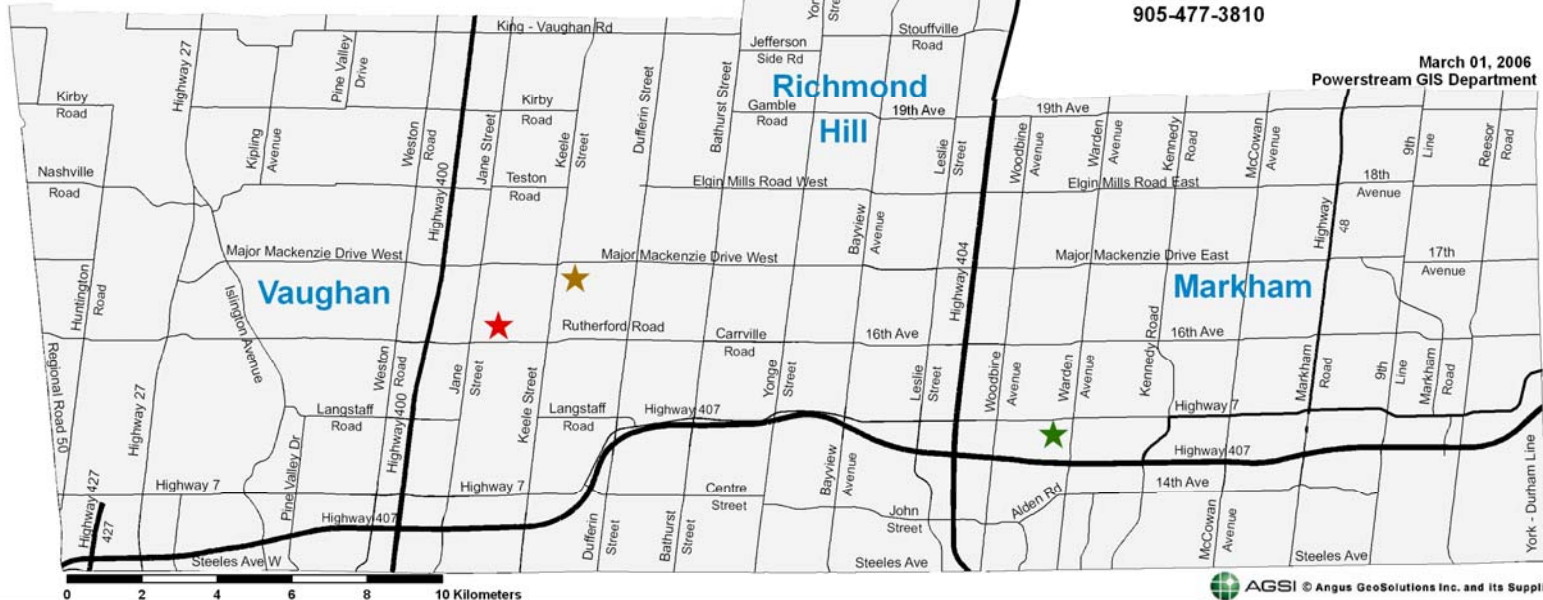
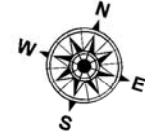
Service Area

Serving more than 220,000 customers
over an area of 640 km²

★ **Head Office**
2800 Rutherford Road
Vaughan, Ontario
L4K 2N9
905-417-6900
(no cashier at this location)

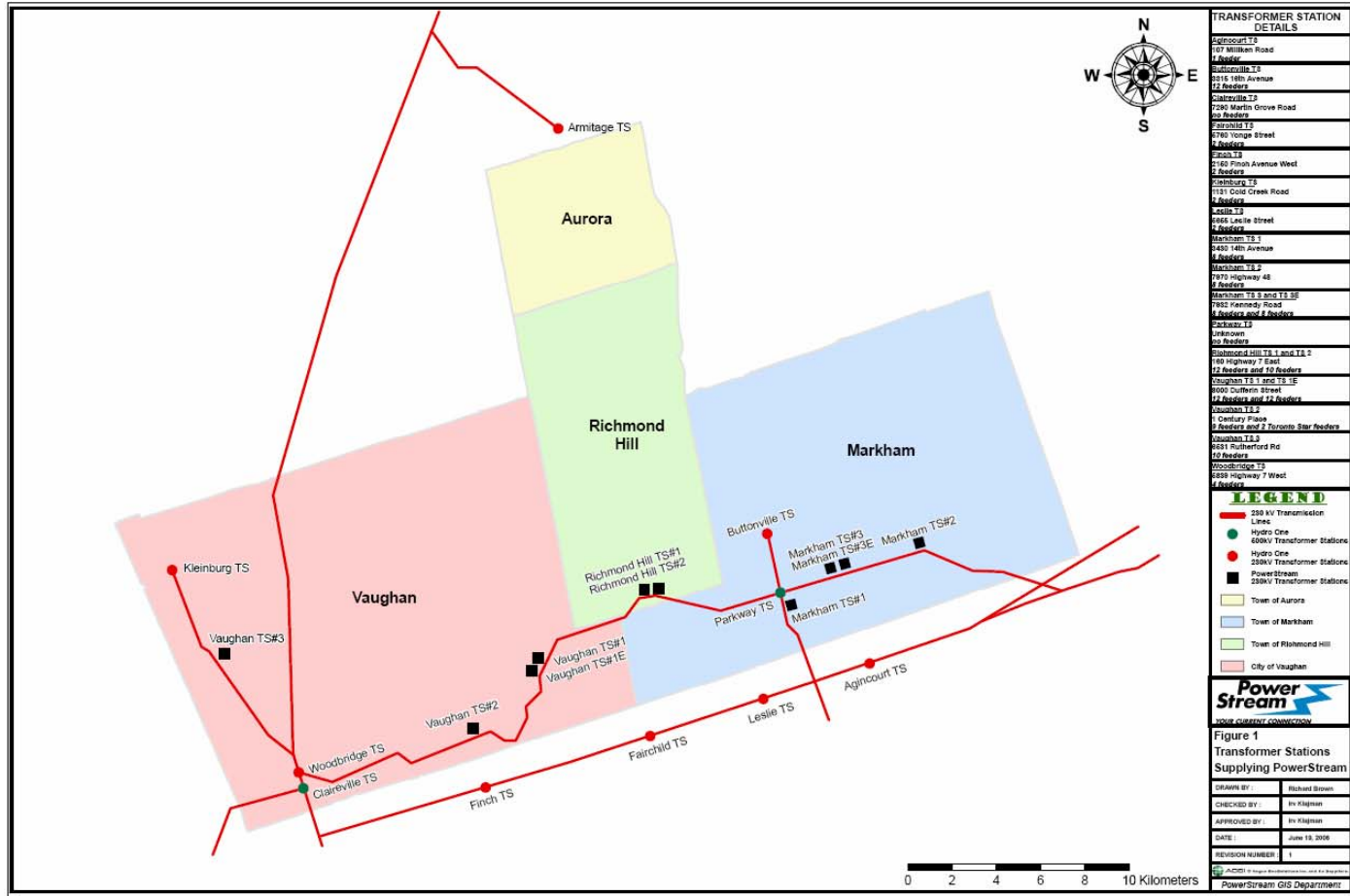
★ **Vaughan Cashier**
Vaughan Civic Center
2141 Major Mackenzie Dr West
Vaughan, Ontario
L4K 5N2

★ **Markham Office and Cashier**
8100 Warden Avenue
Markham, Ontario
L3R 8H7
905-477-3810

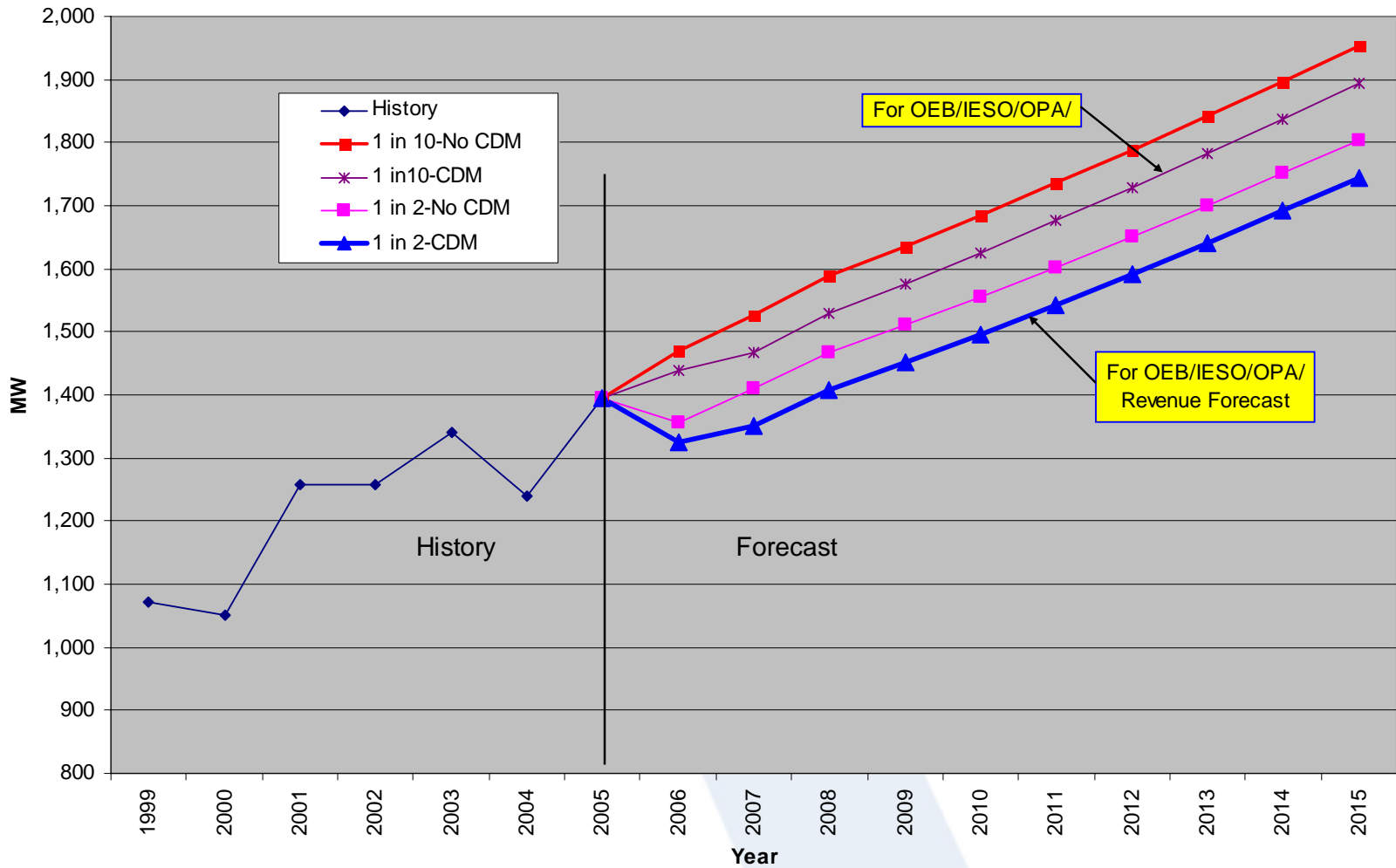


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PowerStream 2006-2015 Coincident Peak Demand Forecast (Base Growth) in MW



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Market Evolution & Role of the LDC

Two Options:

1. Pure Wires or Asset Management Model
2. Broader Public Policy Mandate & Role:
 - Key Enabler
 - Conservation & Demand Management
 - Multi-Unit & SMART Metering
 - “Customers Are Our Business”

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Conservation

- Our Objective – Provide Market Leadership & Enable key initiatives
- Increase our reliability with more alternatives
- “Customers Are Our Business”

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Distributed Energy Procedures

- The OEB has created rules within the Distribution System Code (DSC) to facilitate the connection of embedded generation to a LDC Distribution system. The DSC rules are generic in nature and it is up to individual LDCs to customize their approach to embedded generation connection

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Definitions

- Standard Offer Program (SOP) Connection – a renewable generator (10MW or less) that connects to the distribution system and is compensated through the Ontario Power Authority (OPA) SOP.
- Net Metering Connection – a generator (< 500kW) that connects to the distribution system as a Net Metered customer as allowed through the Distribution System Code DSC.
- HOEP Connection – a generator that connects to the distribution system and settles payments through the Hourly Ontario Energy Settlement Price (HOEP), as determined by the IESO.

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Market Evolution Principles

- Engineering Standards & Design
- Customer Service – Billing
- Engineering Planning – Records/GIS
- Engineering Planning – Station Design
- Engineering Standards & Design
- Metering
- Operations – System Control and load growth planning
- Protection and Control
- Finance

Communication Process PowerStream Inc.

The OEB has created rules within the Distribution System Code (section 6.2.4.1) that require LDC's to facilitate a queuing process for the connection of embedded generation facilities.

- Step 1 – Initial Contact – Provision of Information
- Step 2 – Initial Consultation (15 days)
- Step 3 – Connection Impact Assessment (60-90 days)
- Step 4 – Connection Cost Agreement and Offer to Connect (30 days)
- Step 5 – Generator Detailed Plans & Connection Agreement (60+ days)
- Step 6 – Billing and Operating (Ongoing)

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Connection Impact Assessment Fees

- >10kW No processing fee
- 10kW < 500kW \$1500 fee
- 500kW <1MW) \$2,000 fee Mid
- 1MW < 10MW) \$4000 fee Large
- 10MW and larger \$6000 fee

Note that fees are non-refundable.

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Connection Impact Assessment

- Impact on feeder ampacity
- Impact on feeder phase & ground fault protections;
- Impact on short circuit ratings
- Impact on customer reliability and review of transfer trip requirements
- Impact on feeder voltage levels
- Impact on existing operating agreement between Generator and PowerStream
- Assessment of remote monitoring & metering requirements.

DE Needs Assessment for LDC's

- Address reliability issues
- How does the utility capitalize the asset
 - OEB (rates)
 - OPA (global)
- Finalize the LRAM issue and integrate into the forecast process
- Staffing and resources needed to administer and connect –internal coordination
- Dealing with the stranded asset and feeder utilization
- Integration into the scada system opposed to independent dispatch system

DE Needs continued

- Sign up contractual arrangements with customers (DG, DR, CDM) “champions”
- Creating a capacity market that customers will want to participate
- DG may include offer customers switches to increase their reliability
- Can DR and DG be addressed at the site application stage –transmission constraints
- Programs have to be kept simple and realistic to both the customer and LDC
- Need to aggregate various CDM programs

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The Case for Load Serving Entities

- Partnership with Epcor
- Counterbalances Generator Market Power and represents Load in the Market
- Supports supply adequacy priority of the market
- Shifts risk to the private sector
- Allows DE to play in a market to offset avoided costs of generation

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Successes

- *peaksaver* Programs e.g. remote A/C control
- “Haul Away Your Energy Hog Appliance Retirement Program”
- Demand Response with Rodan
- Distributed Generation – Safety Power
- Wind generator project with Honda Canada 75kw
- Co-generation with long term care facility 360KW
- Co-gen with a condo 67KW
- District heating and cooling system

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Issues

- Challenge of Cultural transformation
- Losing momentum from 1st Generation initiatives
- Need certainty for 2nd Generation funding & timing
- Need certainty to address Revenue Erosion
- Load compensation for loss of DE may cause false peaks on wholesale metering points \$\$\$ to LDC
- Need to demonstrate societal benefits and program sustainability