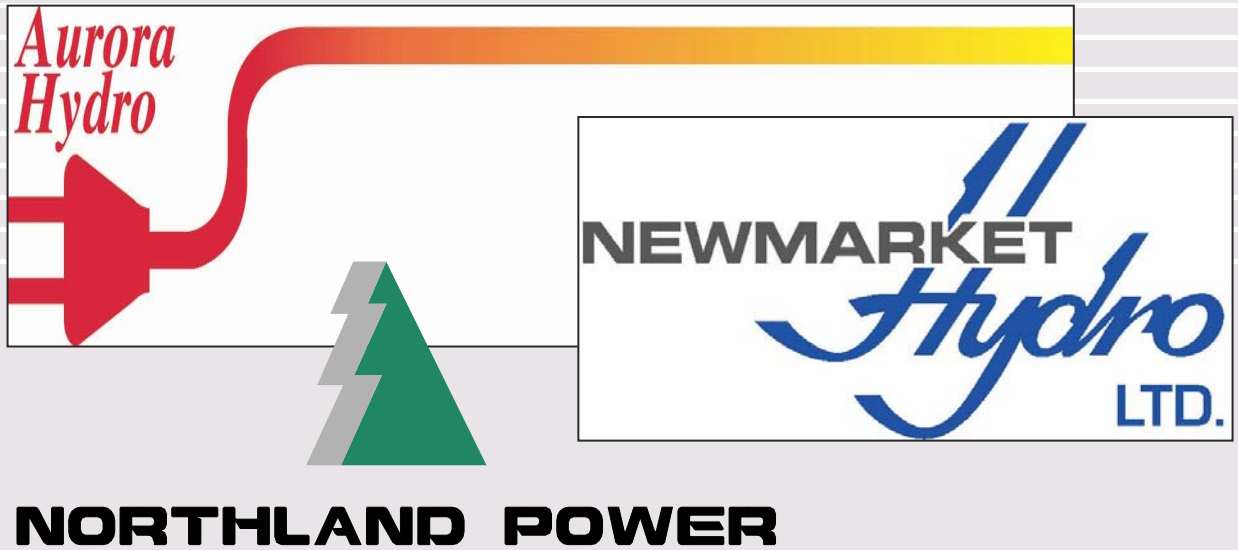
Newmarket Distributed Generation Project

York Region Planning Committee

March 2, 2005



Pressing Need for Additional Peak Capacity

- Northern York Region experiencing growing demand
  - Need new, local generation or transmission by winter 2006/07
  - Customers will be subject to brown-outs if action not taken
- Province committed to replacing coal-fired facilities
  - Fast-response, peaking facilities needed in province's generation portfolio to efficiently supply peak demand
  - 2500 MW RFP and Renewables RFPs will not meet total requirements
- IESO confirmed peaking facility is acceptable alternative to transmission
  - Alleviates transmission overload situation
  - Defers transmission project by ~10 years, depending on load growth

Distributed Generation Versus More Transmission

- New distributed generation option:
  - Defers/avoids new transmission line
  - Supplies power closer to points of demand; reduces transmission losses and congestion; improves grid reliability for withstanding outages
  - Can meet need date
  - Supports the power supply needs of Newmarket, Aurora, East Gwillimbury, King, Whitchuch-Stouffville, and Georgina Townships
  - Cost and timing more certain; represents the lowest cost and lowest risk solution for ratepayer
  - Proposed technology is reliable and proven
  - Has public and political support
  - Supports the province's off-coal strategy and provides environmental benefits

- New transmission line option:
  - Does not provide additional capacity to Province
  - Cost uncertain; doubtful can be built by winter 2006/07
  - Strong opposition to high-rise transmission lines

Project Description

- Net 265 MW natural-gas-fired, simple-cycle facility
  - Six 45 MW, efficient GE LM6000 turbines (net heat rate 9,427 Btu/kWh)
  - Efficient “peaker” provides fast response, reliable generation
  - Will operate ahead of less efficient, less responsive existing peaker plants
    - Economic and environmental benefits
    - Likely to be dispatched only about 1000 hrs in year 1 (11% of full time) to 1800 hrs (20%) in year 20
  - Located in industrial park in Newmarket
  - Technology is proven and this application is common in other jurisdictions
  - Northland Power will finance, build and operate

The Environmental Screening Process

- The Environmental Screening Process, or ESP, is a process established by the Ontario Ministry of the Environment (MOE) for electricity generation projects under Ontario Regulation 116/01 of the *Environmental Assessment Act*
- The ESP includes an assessment of air quality, noise, natural environment, land use, visual effects, archeology, and social and economic considerations
- Many decisions about construction, the configuration of the station, and design details are influenced by information collected from local stakeholders during the ESP
- More information about the ESP can be found on the MOE's *Guide to Environmental Assessment Requirements for Electricity Project (March 2001)*
  - The Guide can be viewed on the MOE's website at; http://www.ene.gov.on.ca/envision/gp/index.htm#EnvironmentalAssessment

Why Natural Gas?

- Adequate domestic natural gas supply and pipeline capacity*
- Clean burning at an affordable price*
- The proposed facility will use proven dry low NOx technology, resulting in low NOx emission rates
- Improved air quality: replacement of coal-fired plants by natural gas plants would significantly reduce or eliminate 30 pollutants*
- Reduction in the frequency, intensity and duration of smog events and thereby improve public health*
- Proven safety record for use in electricity generation, industrial manufacturing and residential/commercial heating

***Excerpted from the Ontario Clean Air Alliance website: (http://www.cleanairalliance.org)**

Low Level Emissions from Natural Gas

- MOE and local municipal health authorities have confirmed gas-fired generation suitable within urban boundaries
- All emission levels are lower than coal plants and three of the emission levels are less than Lennox GS

	Newmarket GS	Lakeview GS	Nanticoke GS	Lennox GS (1)
Nitrogen oxide	**0.25 kg/MWhr**	1.2 kg/MWhr	1.2 kg/MWhr	0.66 kg/MWhr
Sulphur dioxide	**0.0019 kg/MWhr**	5.8 kg/MWhr	3.9 kg/MWhr	1.3 kg/MWhr
Particulate matter	**0.005 kg/MWhr**	0.13 kg/MWhr	0.33 kg/MWhr	0.002 kg/MWhr
Carbon monoxide	**0.23 kg/MWhr**	0.58 kg/MWhr	0.35 kg/MWhr	0.06 kg/MWhr
Carbon dioxide	**350 kg/MWhr**	895 kg/MWhr	927 kg/MWhr	655 kg/MWhr

1. Lennox uses both oil and natural gas and is required by regulation to have electrostatic precipitators. While oil causes higher NOx, SO2 and particulate, it has lower CO than natural gas.

Annual Emissions Far Lower than Displaced Power Plants

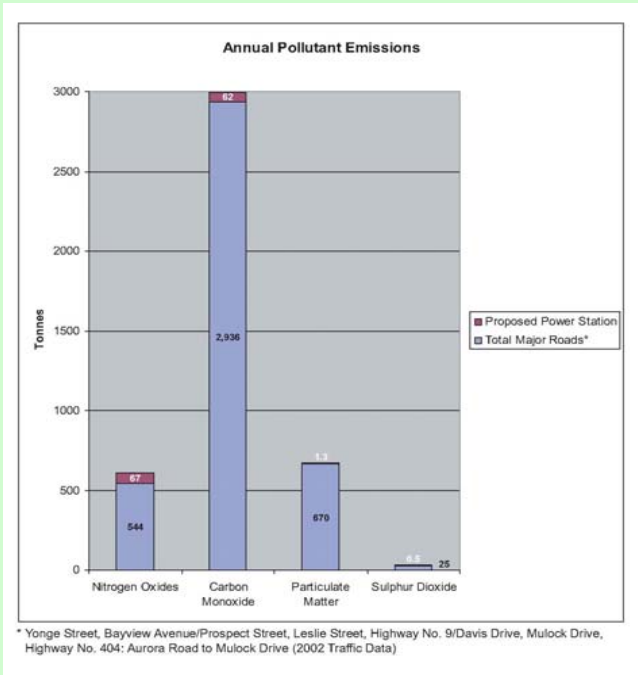
Data based on 265,000 MWh of production from all plants

	Newmarket GS (1)	Lakeview GS (2)	Nanticoke GS (2)	Lennox GS (2)
Nitrogen oxide	**67 tonnes**	318 tonnes	318 tonnes	175 tonnes
Sulphur dioxide	**0.5 tonnes**	1,458 tonnes	1,034 tonnes	345 tonnes
Particulate matter	**1.3 tonnes**	34 tonnes	87 tonnes	0.530 tonnes
Carbon monoxide	**62 tonnes**	154 tonnes	93 tonnes	16 tonnes
Carbon dioxide	**92,750 tonnes**	237,175 tonnes	245,655 tonnes	173,575 tonnes

Plant Emissions Compared to Vehicular Sources (2002)

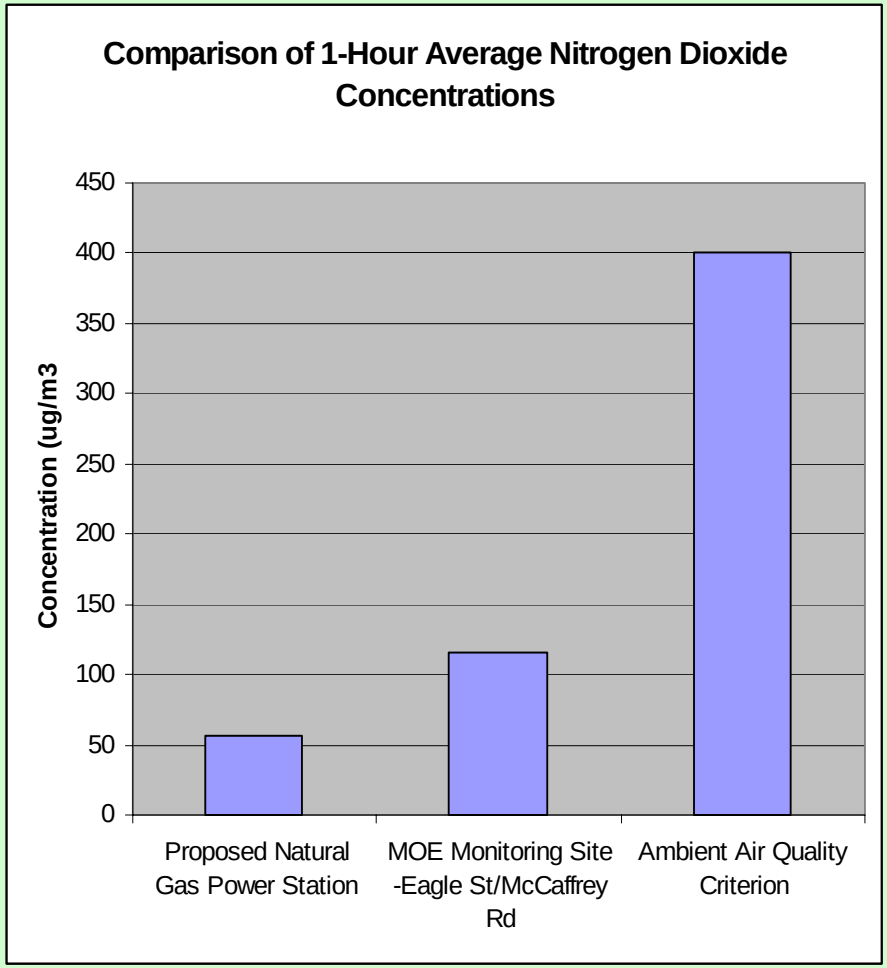
Annual Motor Vehicle Emissions (tonnes) Along Five Major Arterial Roads and Hwy 404 Compared With Proposed Natural Gas Power Station

Emissions Based on 2002 Traffic Data				
Road	**Nitrogen Oxides**	**Carbon Monoxide**	**Particulate Matter (PM10)**	**Sulphur Dioxide**
Yonge St.	94	586	130	5
Bayview Ave/ Prospect St.	31	195	43	2
Leslie St.	58	364	81	3
Hwy 9/Davis Dr.	116	551	161	6
Mulock Dr.	78	483	107	4
Total of 5 Major Roads (2002)	377	2179	522	20
Hwy 404 Aurora Rd to Mulock Dr. (2002)	167	757	148	5
Total of 5 Roads plus Hwy 404 (2002)	**544**	**2936**	**670**	**25**
Proposed Natural Gas Power Station (2007)	**67**	**62**	**1.3**	**0.5**



1. **Vehicle data is for Newmarket only – Aurora and balance of York Region is not included in the vehicle data.**
2. **No allowance has been made for idling at intersections –above emissions therefore understated.**
3. **No allowance for vehicle emissions on all other streets – only five major streets plus Hwy 404 included - above emissions therefore understated.**
4. **Vehicular emissions data provided by Stantec Consulting**

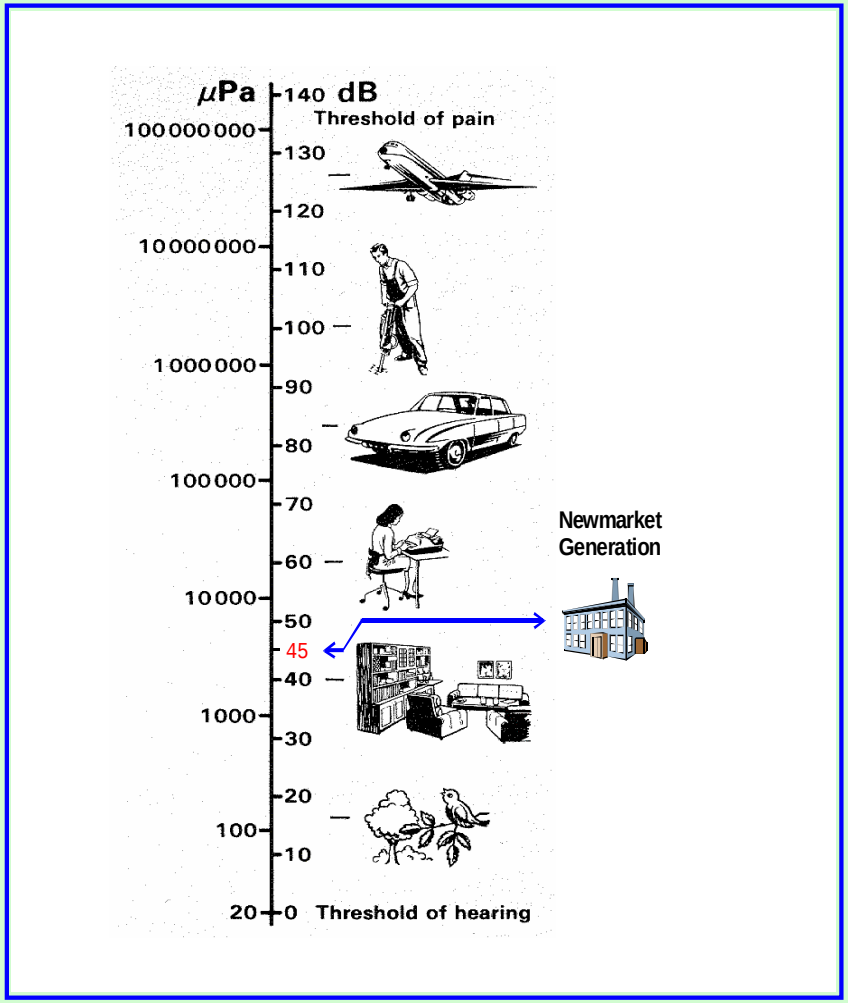
Plant NOx Emission Concentrations Compared to Ambient Conditions



Noise

- Noise level will be **below the level at the quietest hour** during any day of the week **at the closest residence.**

- Plant will be designed to ensure that the noise level at the closest residence will be less than 45 decibels. Normal conversation is in the range of 60 decibels.



Plant Layout

- 6 x GE LM 6000 gas fired turbine generators
- 30 foot -high, architecturally treated wall will conceal facility
- Exhaust stacks will discharge minimal plume. There is no odour from burning natural gas.
- 80 foot stack will be far lower than existing 140 foot 230 kV towers adjacent to the site

Public and Political Support

- Distributed generation project well supported
  - York Regional and Newmarket councils
  - Boards of Newmarket Hydro and Aurora Hydro
  - Public interest groups and individuals are supportive

- Public outcry against transmission project
  - Ministry of Environment received 200 letters requesting “bump-up” from Class Environmental Assessment to Individual EA

- Northland Power will follow normal EA process for power generation projects, including public, provincial and municipal government consultations

Municipal and Regional Ancillary Project Benefits

Electrical

- Can be designed to provide local supply if bulk system fails, providing increased reliability locally (faster system restoration). Attractive to industry and consumers.
- Delays or avoids building unwanted new transmission lines.
- Improves use of existing transmission.
- Size of power plant capacity closely matched to northern York Region load – demonstrates responsible regional supply planning principles.
- Will solve the power supply problems of Newmarket, Aurora, East Gwillimbury, King, Witchurch-Stouffville and Georgina Townships.

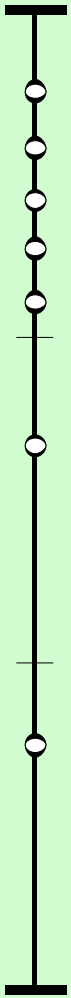
Economics

- Provides Newmarket and Aurora with the opportunity to invest in the project.
- Municipalities in York Region are not required to contribute towards the cost of the project
- Generates additional industrial tax revenue for Newmarket.
- Represents ~$250 million of investment, and about 500 person-years of construction employment and high-paying full-time jobs.
- Reduces transmission line losses of $1.3 million annually – potentially benefiting local consumers

Environment

- The project will improve air quality by displacing existing plants with higher emissions

Proposed Timeline



March 8, 2005	Notice of Commencement
May 1, 2005	**First Public Open House**
July 15, 2005	**Second Public Open House**
August 31, 2005	Sign PPA
October 31, 2005	Obtain All Permits (Including Air, Noise and Site Plan)
April 1, 2006	Start of Construction
March 31, 2007	Start of Plant Operation

On-going Public Consultations

- Key component of Environmental Screening

- Consult with area residents, community organizations, and government agencies throughout process

Action Requested of York Region

- Pass a resolution in support of Northland's Generation Project proposal.