Presented to CEC-IJC

Consultation on Emissions from Coal-Fired Electrical Utilities

July 21, 2004

# Alberta Clean Air Strategic Alliance: Addressing Electricity Emissions

CASA

Clean Air Strategic Alliance

# Presentation Outline

- Clean Air Strategic Alliance
  - origins
  - process
  - Electricity Project Team
- Emissions Management Framework for the Alberta Electricity Sector
  - key elements
  - benefits

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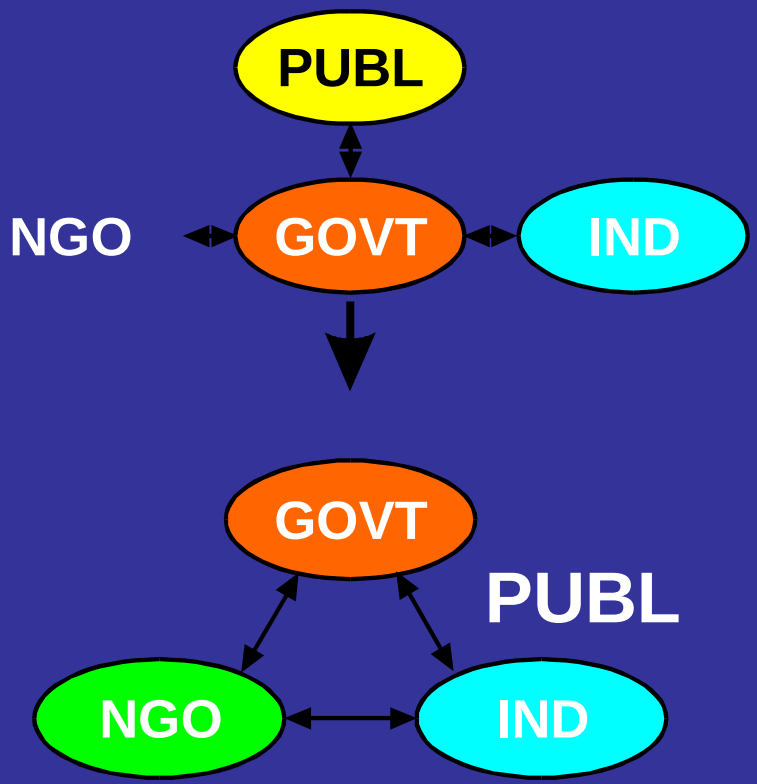
# Shared Responsibility




*Government as Arbitrator*
*Special Interest Lobbying*
*Win/Lose Outcomes*

*Government as Partner*
*Government as Facilitator*
*Win/Win Outcomes*

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# Clean Air Strategic Alliance

- non-profit organization established by Government of Alberta in 1994
- multi-stakeholder
  - government
  - industry
  - NGOs
- consensus* decision making
- collaborative process / shared responsibility
- numerous teams / successes

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# CASA Vision

The air will be odourless, tasteless, look clear and have no measurable short or long-term adverse effects on people, animals or the environment

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# Examples of CASA Successes

- Electricity Project Team
- PM and Ozone Management Framework
- Flaring Recommendations
- Breathe Easy – Vehicle Scrappage
- Target/Critical Loads for Acid Deposition
- Six Regional Airshed Zones
- Data Warehouse
  - www.casadata.org

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# Background to Electricity Project Team (EPT)

- **June 2001** – Alberta Environment Minister announced intent for new approach to develop air emission standards for coal plants
- **Jan. 2002** – Alberta Environment asked CASA to recommend new approach, including performance expectations and standards for new and existing plants
- **Mar. 2002** - CASA Electricity Project Team formed
- **Nov. 2003** - EPT final report with recommendations
- **Mar. 2004** – Provincial Government adopts report as government policy

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# EPT Stakeholder Partners

Government
- Alberta Environment
- Alberta Energy
- Alberta Health & Wellness
- AB Energy and Utilities Board
- Environment Canada
- Local Governments

Industry
- TransAlta
- Epcor
- Calpine
- ATCO
- Coal Assn. of Canada
- Cdn. Assn. of Petroleum Producers - CAPP
- Chemical Manufacturers - CCPA
- Petroleum Products – CPPI
- TransCanada

Non-government Organizations
- Pembina Institute
- Cdn. Public Health Assn.
- Toxics Watch
- other local organizations

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# Priority Emissions

- Coal and gas-fired generation contributes a significant % of air emissions in Alberta

| | |
|---|---|
| **Sulphur dioxide ($SO_2$)** | **21%** |
| **Nitrogen oxides ($NO_x$)** | **14%** |
| **Particulate matter (PM)** | **9%** |
| **Greenhouse gases (GHG)** | **21%** |
| **Mercury (Hg)** | **~ 80%** |

- These are the substances that are the focus of the framework

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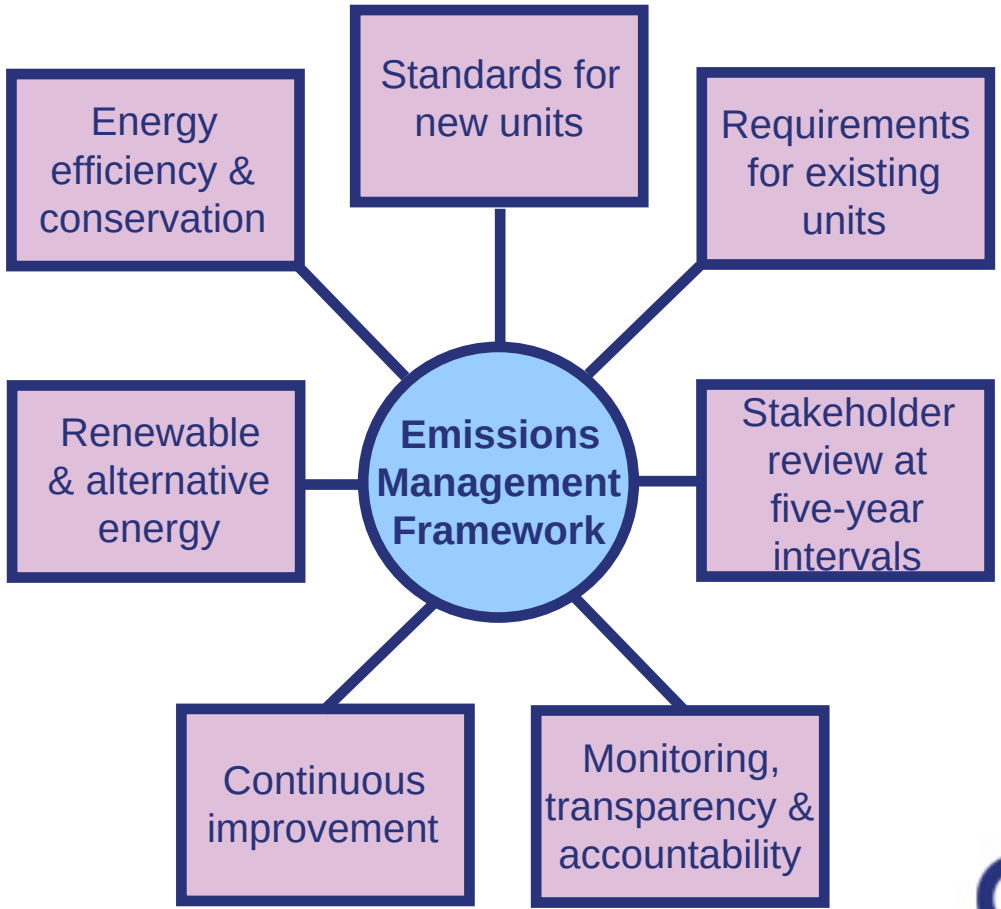
# Emissions Management Framework

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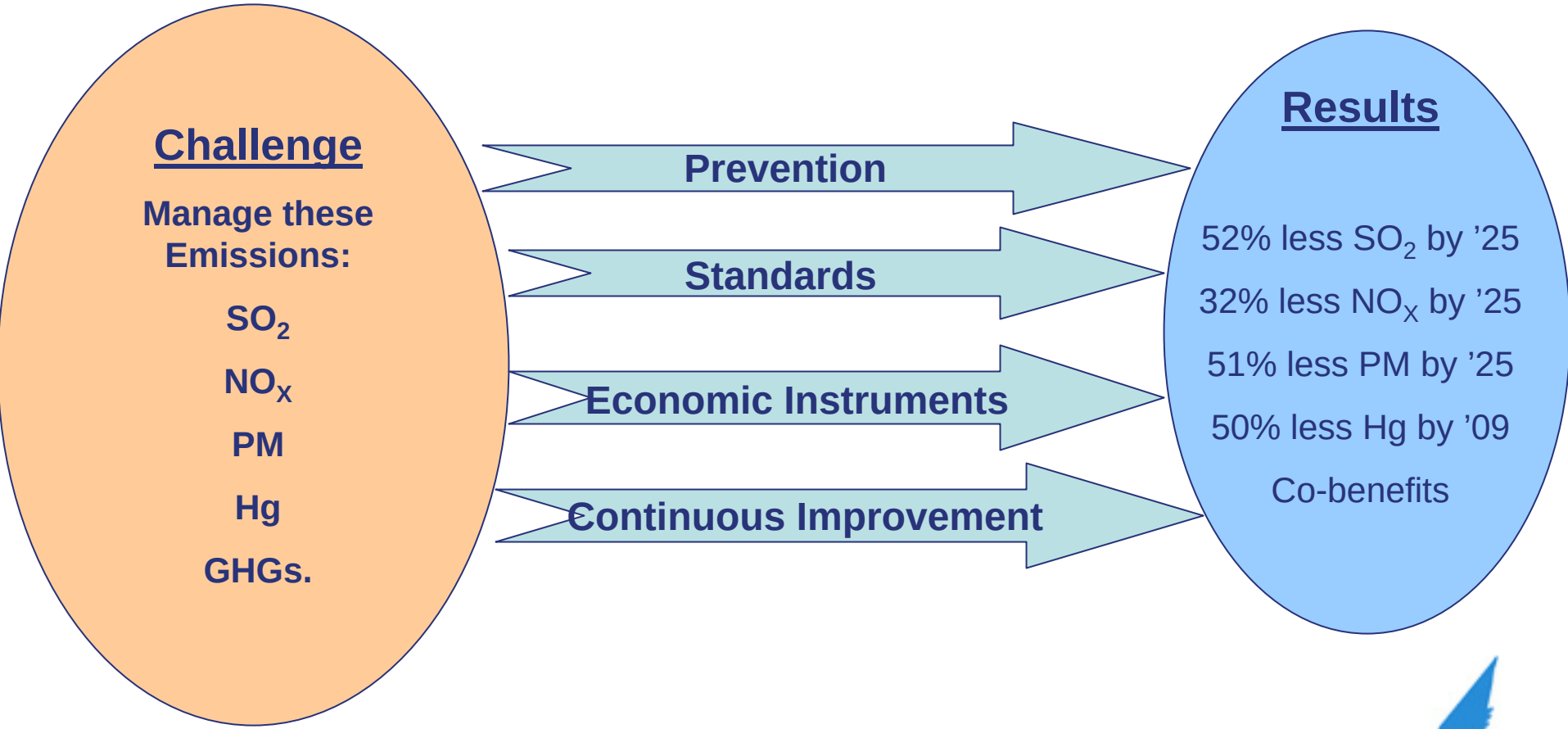
# EPT's Alberta Electricity Sector Management Framework At A Glance




**Founded On Ongoing Multi-Stakeholder Involvement**

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# CASA's Recommendations: A Complete Package

The package reflects:

- Significant emission reductions over time (new and existing units)
- A balanced approach in terms of timing and cost (allows for normal capital stock turnover)
- Multi-pollutant optimization versus pollutant-by-pollutant optimization (considers co-benefits)
- The creative use of economic instruments (e.g. emission trading for NOx and SO2)
- A mix of management strategies and related transparent processes
- Ongoing stakeholder involvement and review

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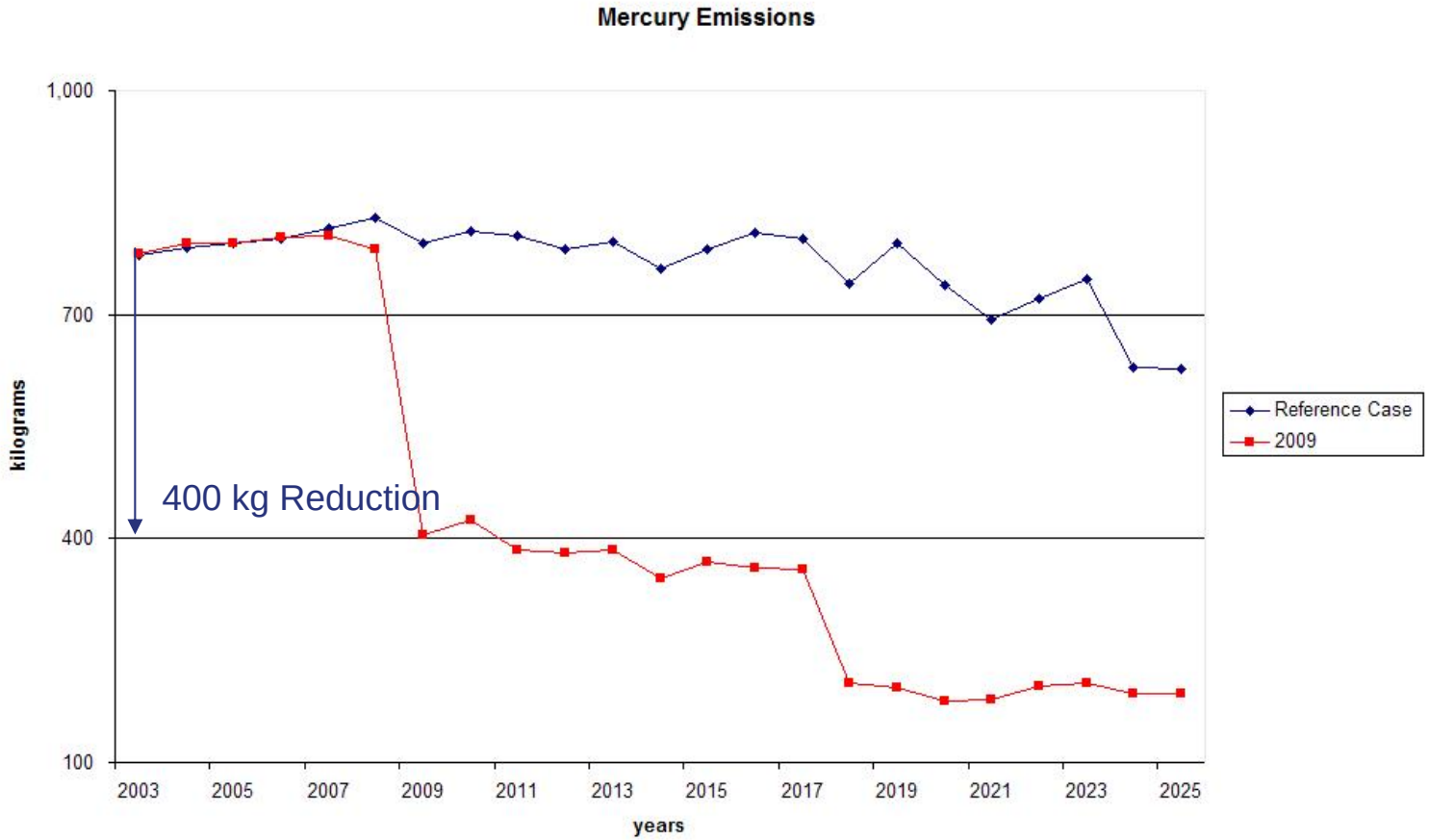
# Mercury (Hg) Emissions

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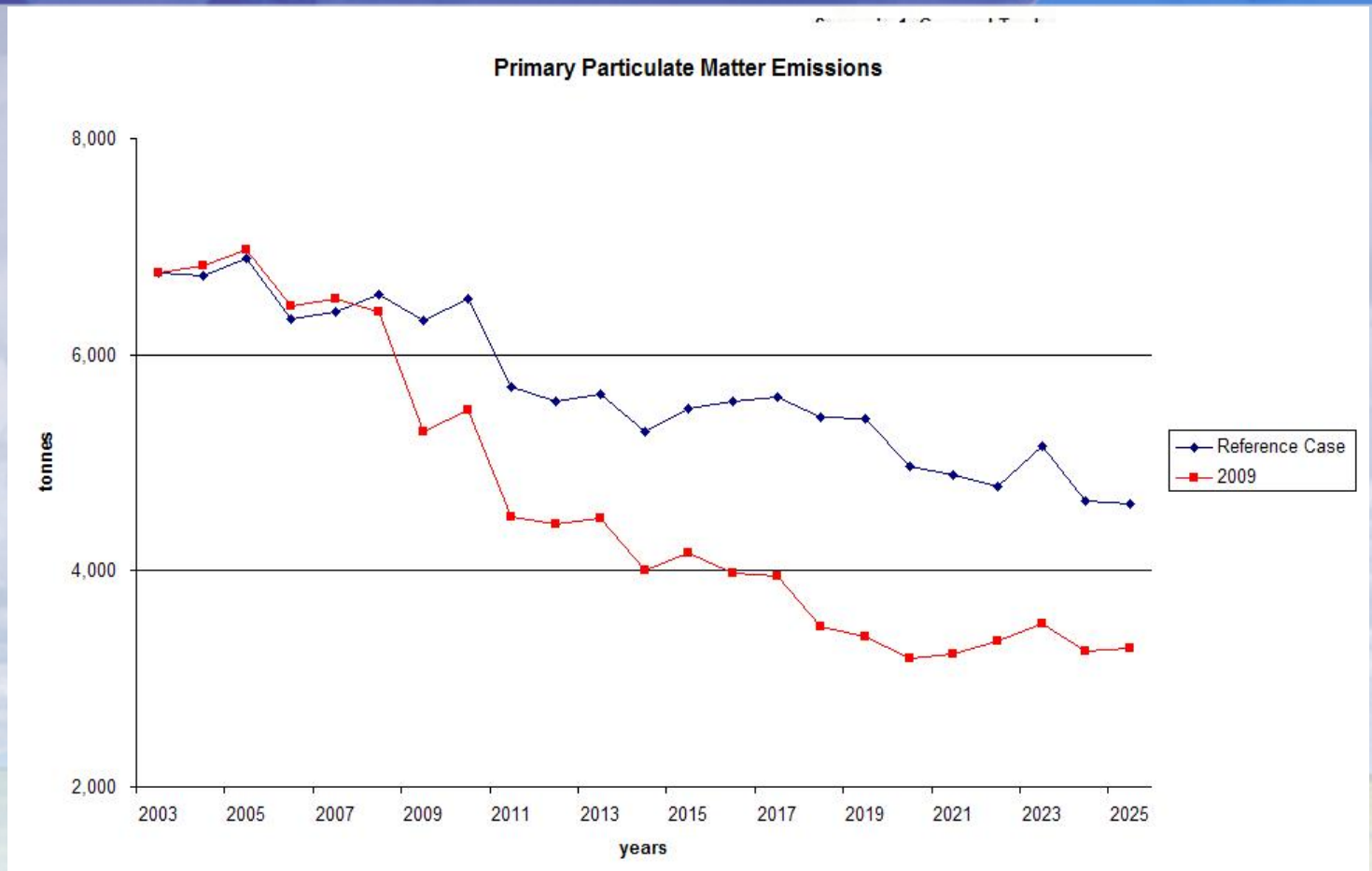
# Primary Particulate Matter Emissions

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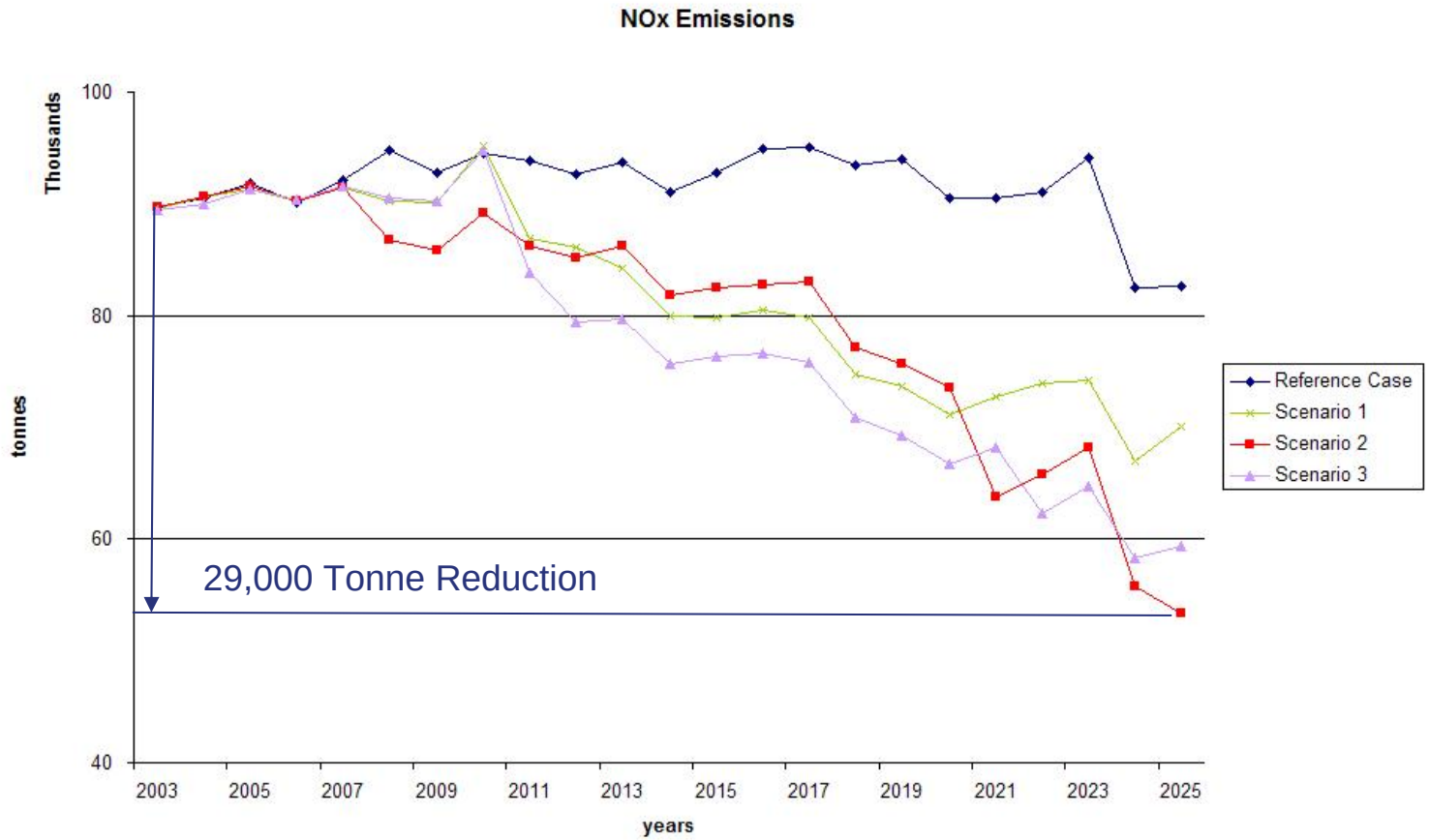
# Nitrogen Oxides ($NO_X$) Emissions

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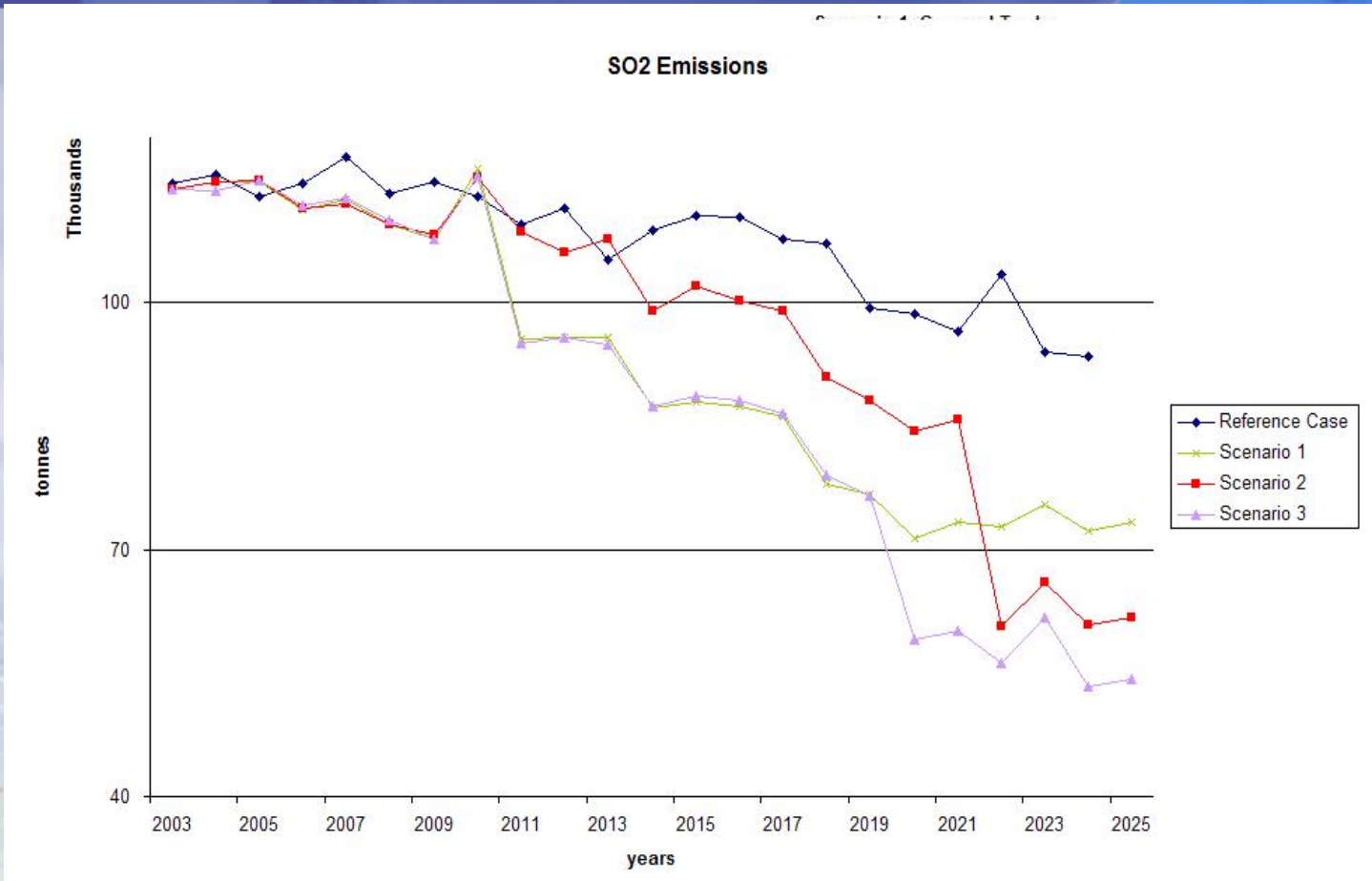
# Sulphur Dioxide ($SO_2$) Emissions

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# Benefits of the EPT's Emissions Management Framework

- Levels of protection built into design
- Increased long-term regulatory process certainty for all parties
- Defined process for revising and updating framework elements

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# Benefits, cont'd

- Multi-stakeholder input on emission reduction targets
- Ongoing multi-stakeholder involvement with the framework
- First-time mercury emission management in 2009/10
- Emission trading to provide flexibility

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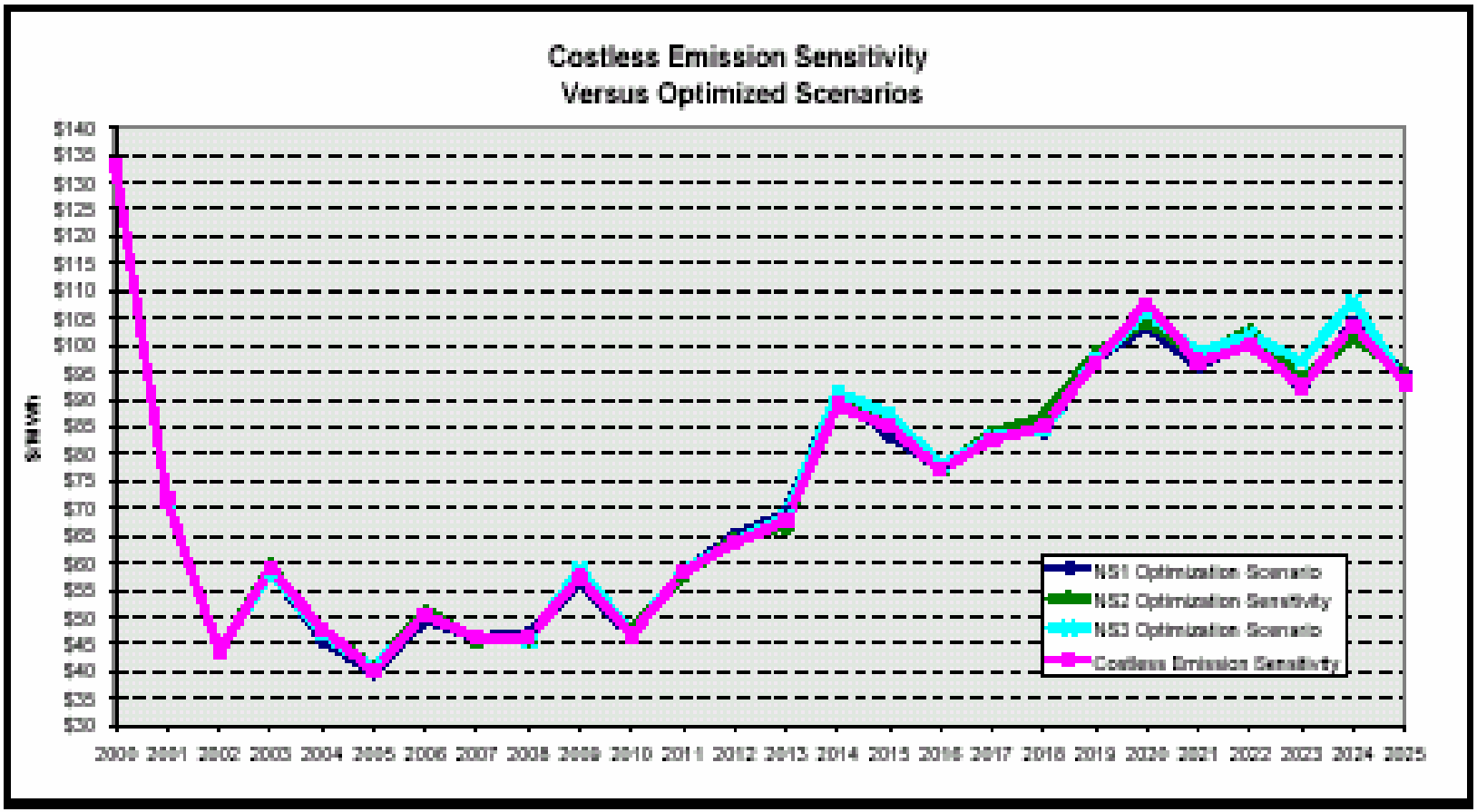
# Wholesale Price Impact




**The price impact of three scenarios, including the "costless" scenario.**

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# Ongoing Work

- final report of EPT GHG Subgroup to be released soon
  - recommends a framework for GHG reductions, but consensus not reached on specific targets
- Renewable/Alternative Energy and Energy Efficiency teams still in process

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# CASA websites

- www.casahome.org
- www.casa-electricity.org
- www.casadata.org
- www.cleanbus.ca

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# $SO_2$ and $NO_x$

- New BATEA limits for post-2006 coal and gas units
  - For coal:
    - **$SO_2$: 0.80 kg/MWh**
    - **$NO_X$: 0.69 kg/MWh**
  - For gas units including co-generation:
    - **0.30 kg/MWh* - for unit's larger than 60 MW**
    - **0.40 kg/MWh - for unit's in 20 – 60 MW size range**
    - **0.60 kg/MWh - for unit's smaller than 20 MW**
  - *** Would only generate credits if performance is < 0.20 kg/MWh.**

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