



Natural Resources Canada's New Housing Programs and ENERGY STAR

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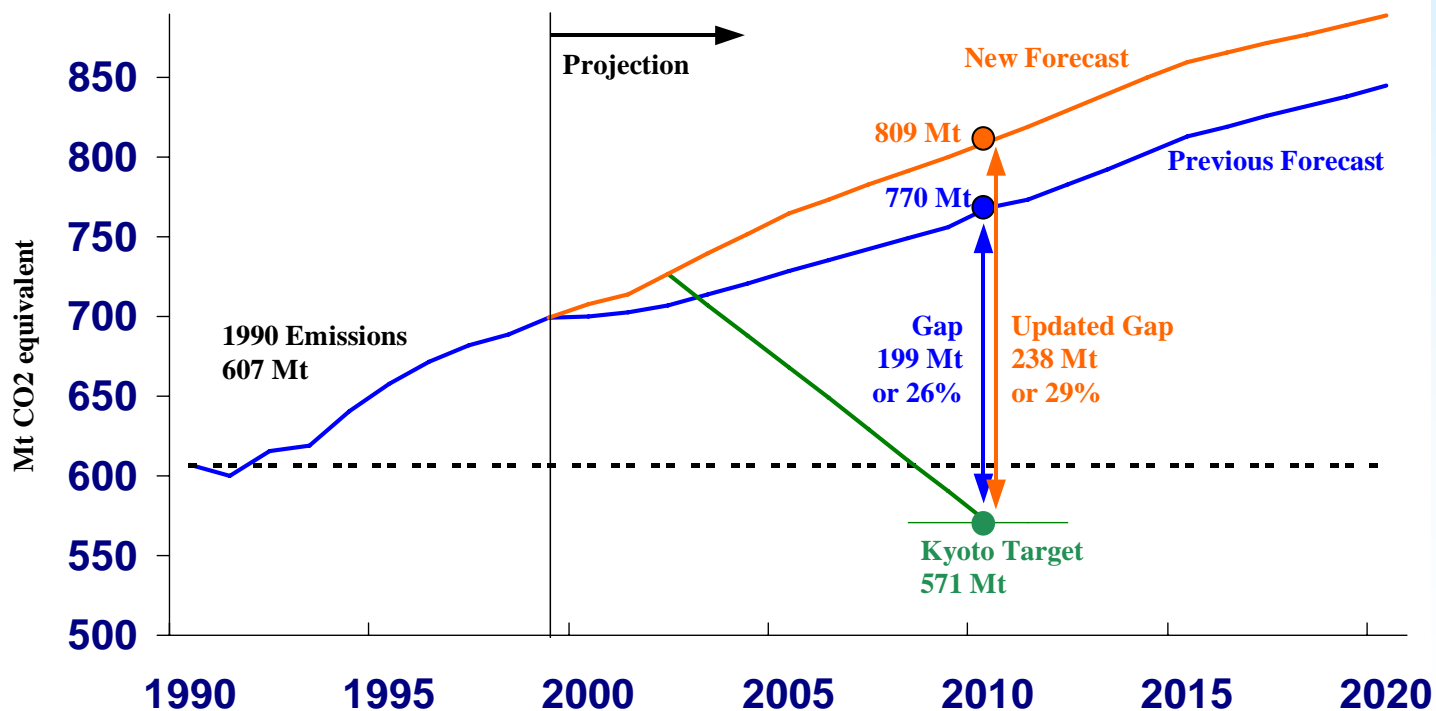


The "Kyoto Gap"



THE ANALYSIS AND MODELLING GROUP

Updated Projected GHG Emissions And The Kyoto Target



GLOBAL CLIMATE CHANGE / LES CHANGEMENTS CLIMATIQUES



Natural Resources
Canada

Ressources naturelles
Canada

Canada



Government of Canada

Mandate

- **Climate Change - reduce the impact of house construction and operation by reducing greenhouse gas emissions**
 - Coordinated approach – provincial governments, utilities, industry, etc....
 - A house is a house, what is new today is existing tomorrow.
- **Improve the energy and resource efficiency of new houses by labelling houses that meet a voluntary energy performance standard**
 - Target is to have all new housing built to the R-2000 Standard and/or EGNH level of 80 by the year 2010 and now ENERGY STAR for new homes
 - Performance measurement and data tracking
- **Create early market for energy-efficient equipment, healthy materials, environmental products**
 - Training – R-2000/EGNH/HRAI





New Housing Options for Canadians

- R-2000 Standard
 - *A voluntary performance standard and quality assurance procedure for the construction and certification of energy-efficient home*
- EnerGuide for New Houses
 - *An energy evaluation program developed by Natural Resources Canada (NRCan) that helps homeowners understand their current energy use and identifies ways to make their house more comfortable and energy-efficient.*
- *ENERGY STAR for New Homes*
 - *Modelled after the US experience and approach.*





The R-2000 Performance Standard

All Building Code prescriptive legal minimums, plus requirements for:

- energy performance
- indoor air quality (ventilation and low-emission materials)
- environmental responsibility
- Quality assurance process





How to improve the EE of all new houses?

- R2000: leading edge, 30 % more energy efficient than conventional new housing
- But only 0.3% of new housing starts are certified R-2000
- EGNH is for the professional assessment and energy rating of existing housing to encourage energy efficiency improvements during renovations...so
- Need tools that targets the large tract builders and majority of new housing starts






What is EnerGuide for Houses?

An energy evaluation initiative developed by Natural Resources Canada (NRCan) that helps homeowners understand their current energy use and identifies ways to make their house more comfortable and energy-efficient. Each evaluation includes a written report as well as a rating label that shows how energy-efficient the home is. Done during purchase of home to understand EE and request upgrades prior to construction.





EGNH label

ENERGUIDE

FOR HOUSES POUR LES MAISONS
16 Yourstreet Ave, Ottawa, Ontario K1P 0I9

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Basic/
Base

Improved/
Amélioré

High/
Haut

Level of energy efficiency/Niveau d'efficacité énergétique
70-74 75-79 80+

Energy Efficiency Target/
Objectif d'efficacité énergétique

Estimated annual energy consumption
Estimation de la consommation annuelle d'énergie

electricity/
électricité :

gas/
gaz :

oil/
mazout :

File number/N^o de dossier : _____

Date of construction/Date de construction : _____


Builder/Constructeur : _____


Energy evaluation performed by/Évaluation énergétique effectuée par : _____


An energy report has been provided to the homeowner.
Un rapport d'évaluation énergétique a été fourni au propriétaire.

Date: _____

www.nrcan.gc.ca / www.nrcan.gc.ca 1 800 O-Canada

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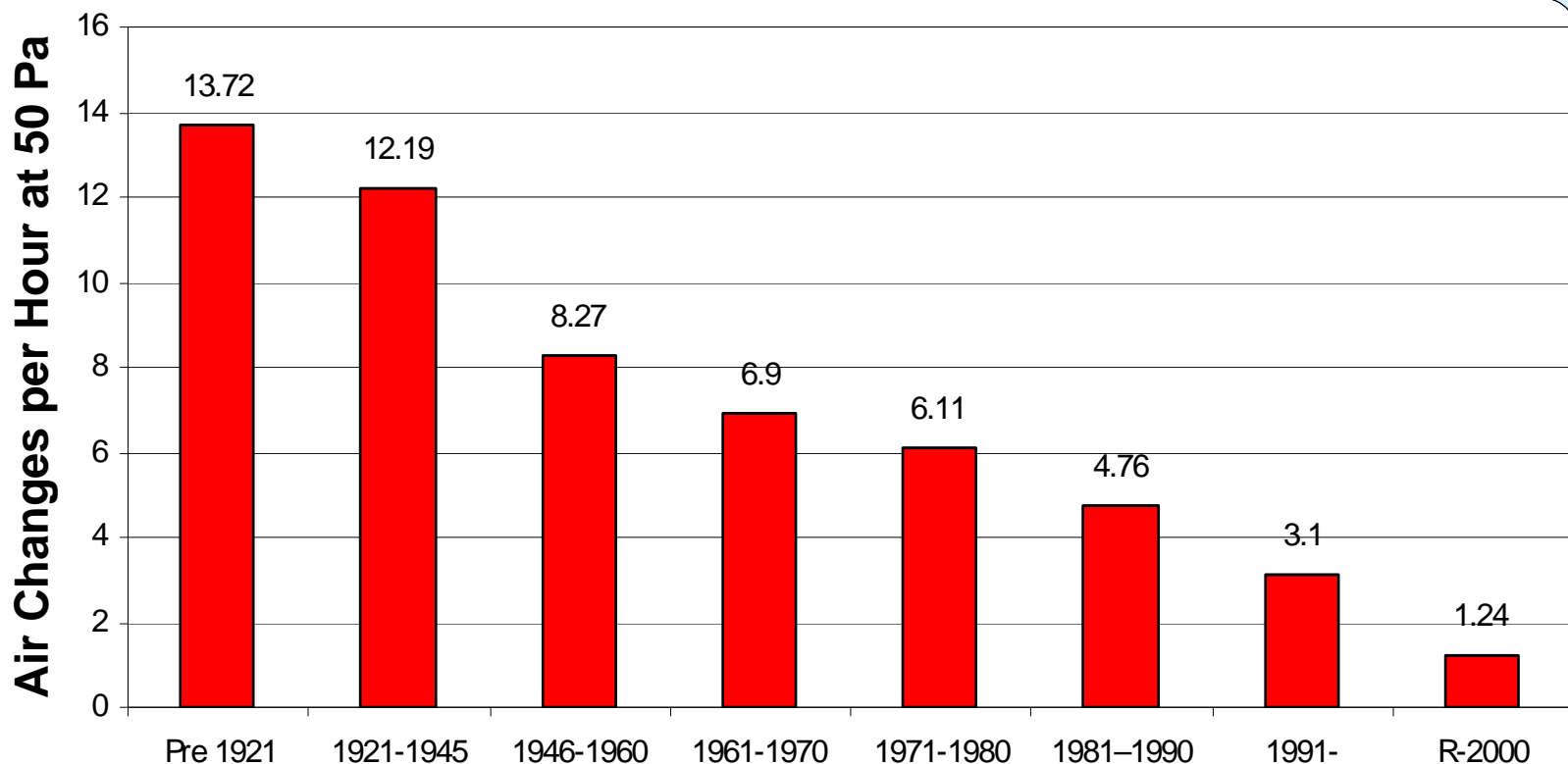
EGNH Tool

- Operating Conditions
 - Four occupants (2 adults and 2 children) present in the house 50 % of the time
 - Temperature set-point of 21C for the main floors and 19C for the basement
 - Consumption of 225 litres of DHW per day
 - Electrical consumption (light and appliances) of 24 kWh per day
 - Total minimum monthly ventilation rate of 0.30 ach during the heating season (October through April), including both natural and mechanical ventilation.
- HOT2000/HOT2 XP Only (latest versions)
- In-house plan design evaluation
- Prescriptive Approach
 - Except Orientation + Air-tightness
- Final
 - Inspection (only identified upgrades)
 - Orientation
 - Air-tightness





Airtightness Improvement





ENERGY STAR® for New Homes





A Recognized Brand

Over 200, 000 homes certified to the ENERGY STAR standard in the US last year, and millions of appliances and products bearing the label.

ENERGY STAR is the most recognized energy efficiency label in North America.

ENERGY STAR means best in class.

Consumers know they are getting the best energy-performing product on the market.





ENERGY STAR Benefits:

- **Consumers can identify a product that saves energy, reduces utility costs, and is better for the environment**
- **Builders have a specification and third-party certification to distinguish themselves and their homes as industry leaders**
- **Industry has the potential to sell more energy efficient product and services**
- **Utilities have can manage demand better**
- **Governments have a voluntary program to reduce energy, air pollution, and climate change**





Pilot Project

- **Voluntary program and requirements**
- **Pilot in Ontario only, but a nation program will follow**
- **Government-backed label with third-party inspectors**
- **About 40% more efficient than OBC code requires**
- **Easier than R-2000**
- **Promotes both fuel and electrical savings**
- **Random sampling**





ENERGY STAR

Builder Packages

- **Energy Star Builder Packages available in two OBC zones, with builder-selected options**
- **Builder Packages include:**
 - **Specified insulation levels**
 - **Full-height basement insulation**
 - **Energy Star high-efficiency windows**
 - **Energy Star high-efficiency furnace or boiler**
 - **Achievable ventilation & airtightness requirements**
 - **Electricity savings target**





Benefits to Builders

- **Simplified prescriptive specification package**
- **Best-in-class product**
- **Identification as a market leader**
- **Timely predictable rating process**
- **Low admin. cost and minimal paperwork**
- **Increased sales and higher margins**
- **Technical and marketing support**





The problem..... untrained builders and trades





Training

- Heating, Refrigeration and Air-Conditioning Institute of Canada (HRAI)
 - Residential HL/HG
 - Residential Air Systems Design
 - Residential Integrated Combo Systems
 - Residential Mechanical Ventilation Design
 - Residential Mechanical Ventilation Installation
 - Residential Commissioning and Residential Radiant Hydronic courses
- Building Officials
- **EGNH Builder In-House Plan Evaluation Workshop**
- **EGNH Energy Advisor Workshop**
- **R-2000 training**





Building Canada

- Value Optimization of the builder's operations
- Most of the savings must be re-invested into EE related upgrades to the product line
- Confidentiality and trust
- Three teams (east, central and west)
- All team costs paid for by NRCan

