

Climate Change

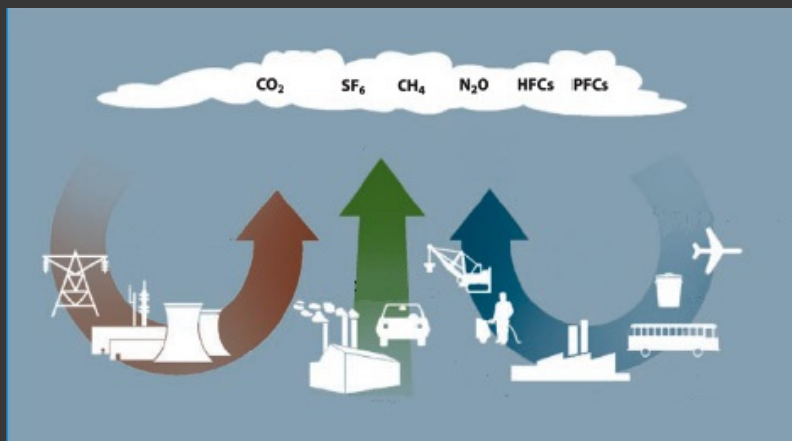


EAC
January 2019

Dealing with Climate Change

MITIGATION

Reducing greenhouse gas (GHG) emissions



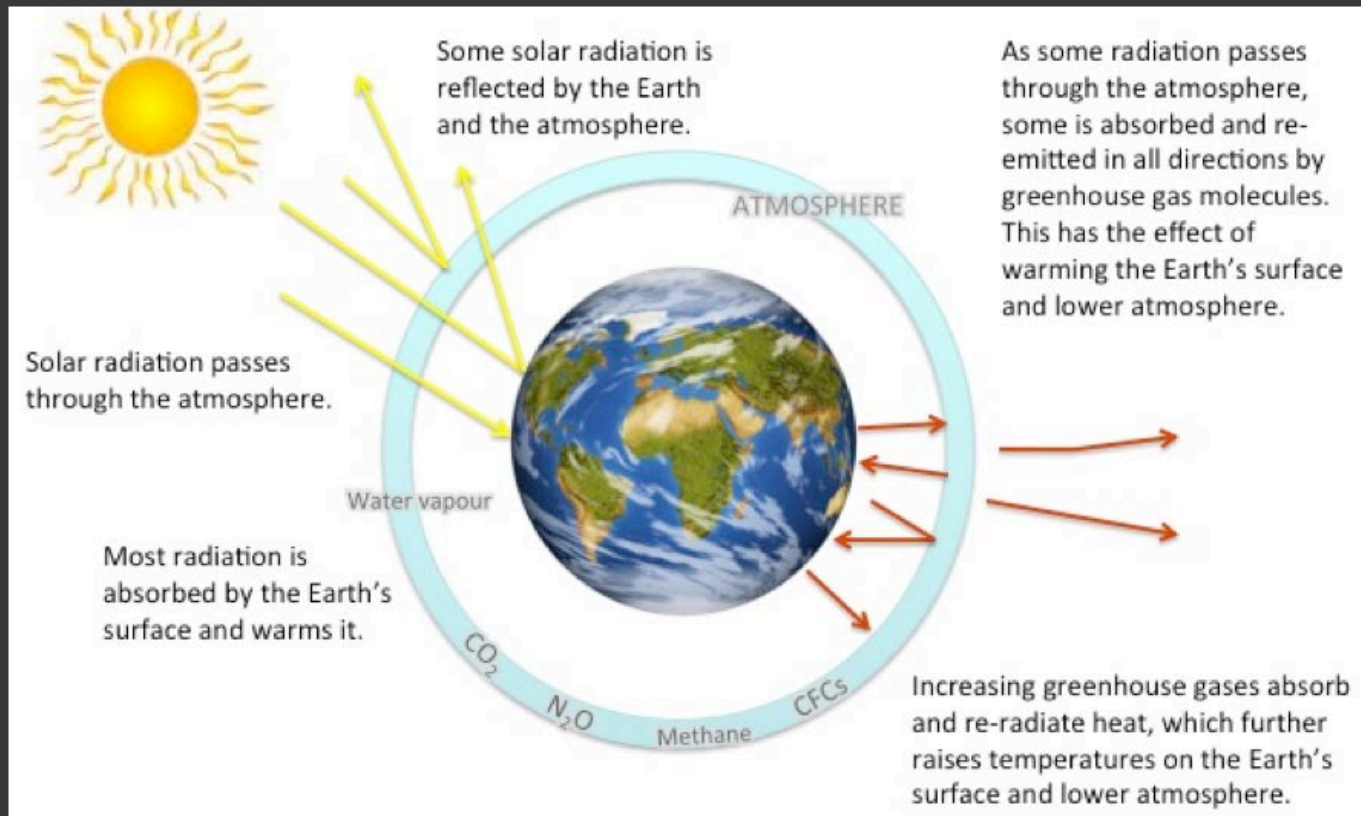
ADAPTATION

Preparing for and dealing with climate change



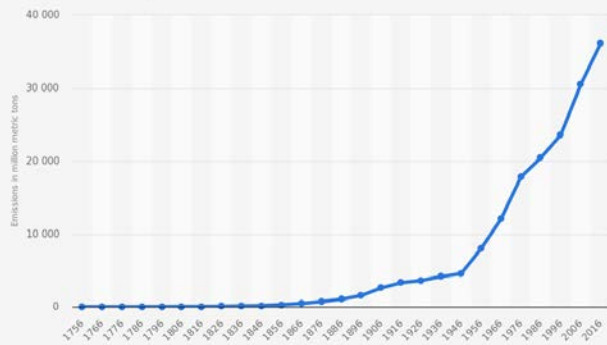
The more we emit the more we need to adapt

Warming Planet



Worldwide CO₂ Emissions

Historical carbon dioxide emissions from global fossil fuel combustion and industrial processes from 1756 to 2016 (in million metric tons)*



Source:
Global Carbon Project
© Statista 2018

Additional Information:
Worldwide

Coal Fired Electricity Generation Stations

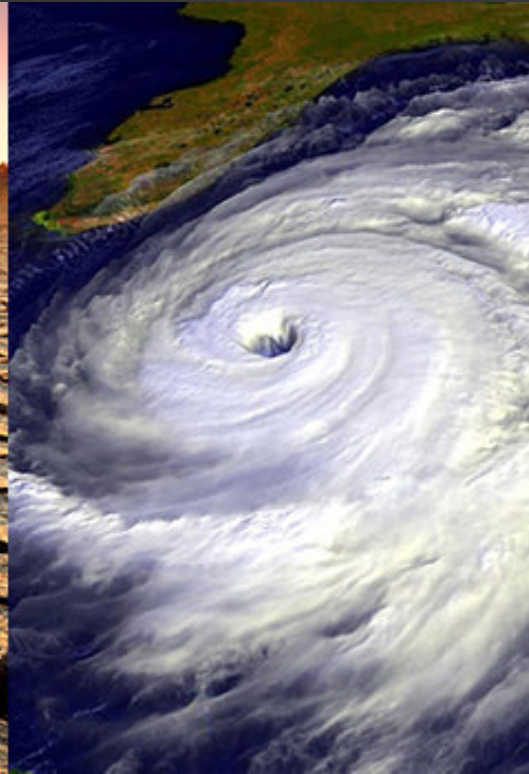
Belledune, NB



2.7 million tonnes CO₂^e/yr

PEI emits 1.9 million tonnes CO₂^e as whole annually

Changing Climate Risks

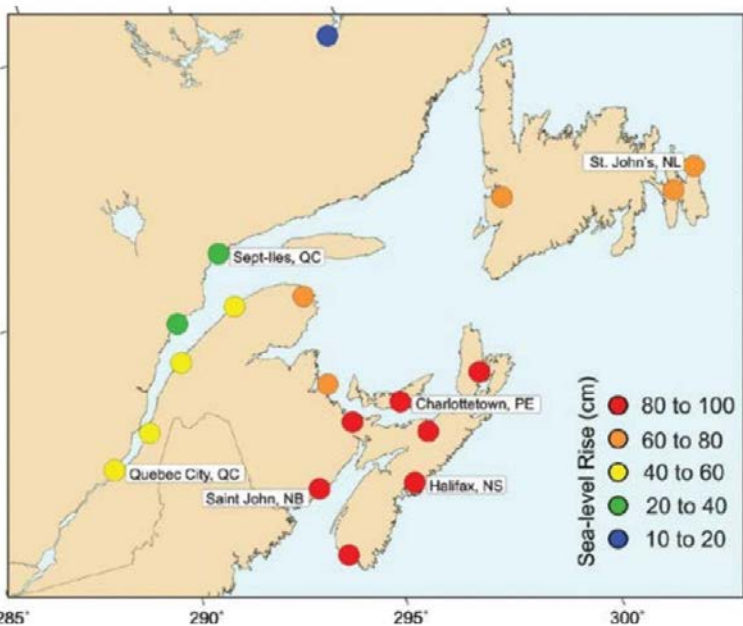


Climate change impacts

Global sea level rise

1900-2009 → 1.7 mm/year

1993-2009 → 3.2 mm/year



Implications of a changing climate

Sea Level Rise



Implications of a changing climate

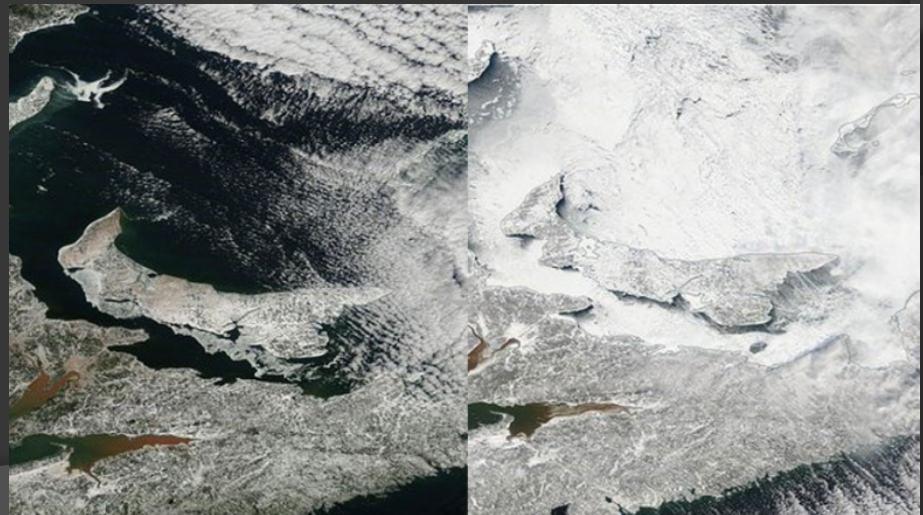
Temperature

Continued warming, particularly in the winter

Warmer winter temps have reduced ice cover; Gulf of St. Lawrence could be ice free by 2100

→ increased wave energy

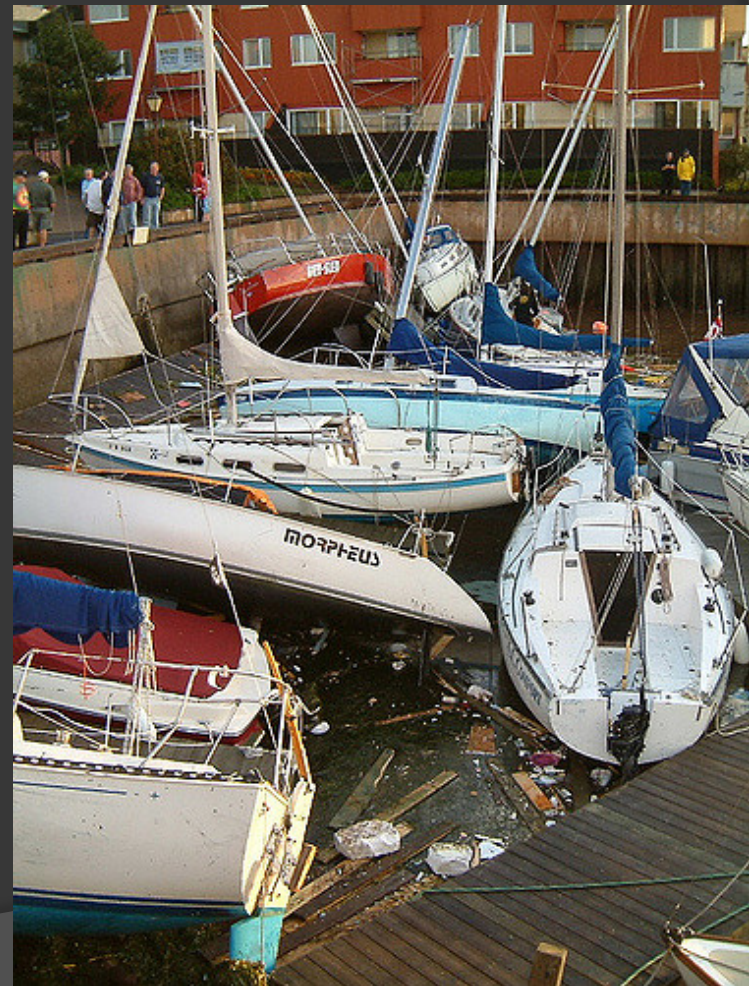
→ increased coastal erosion and coastal flooding



Implications of a changing climate

Warming atmosphere, warming ocean

- increased energy, more storm activity
- northward shift in the storm tracks is expected
- Less hurricanes but larger



Implications of a changing climate

Precipitation

- Increased frequency of intense rainfall events
 - impacts upon stormwater infrastructure, transportation routes



156 mm in 24 hrs, Dec 2014 (PEI)



225 mm (~9 inches) in 24 hrs, October 2016 (Sydney, NS)

Credit: Canadian Press



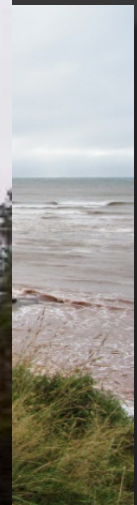
Reducing Risks from a Changing Climate

Vulnerable Infrastructure

Stay or Go?



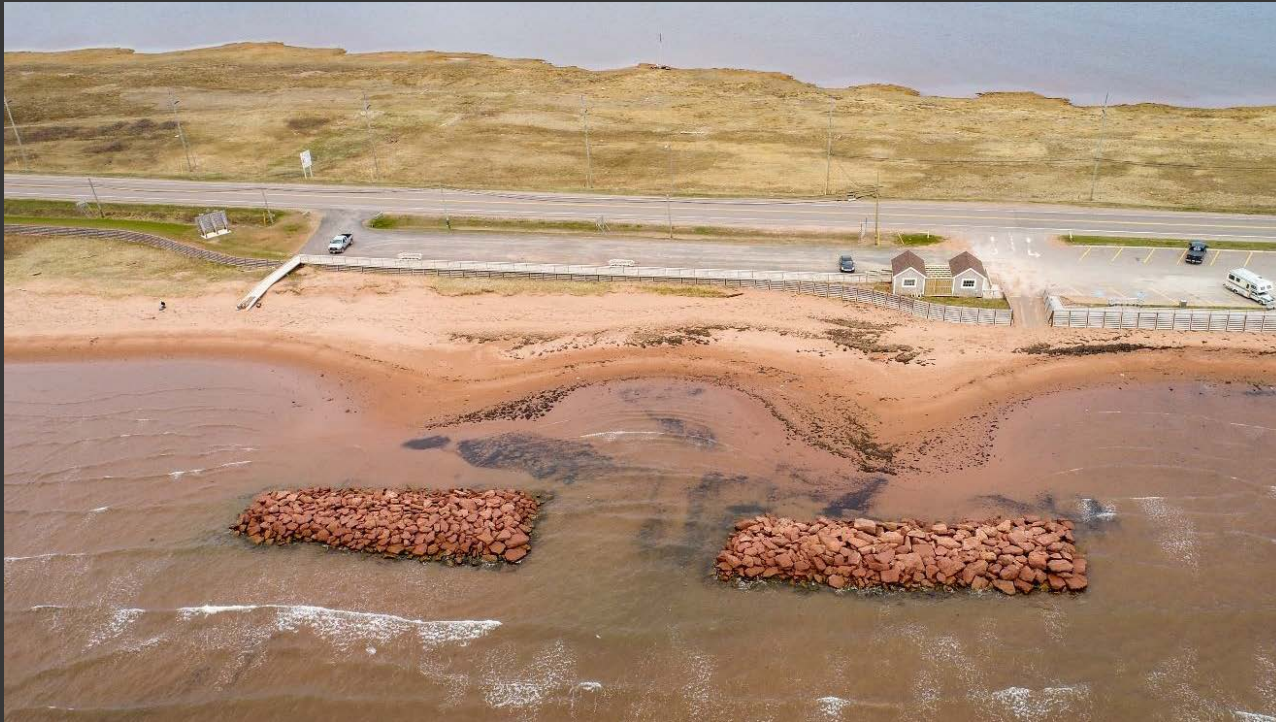
Vulnerable Infrastructure



Stay



Pilot inter-tidal reef construction



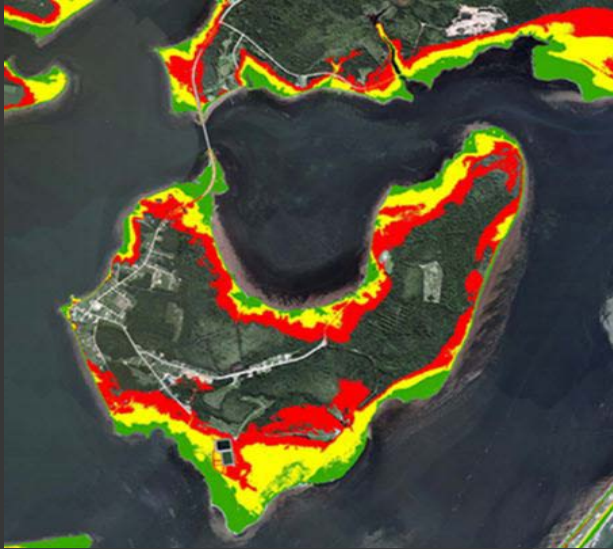
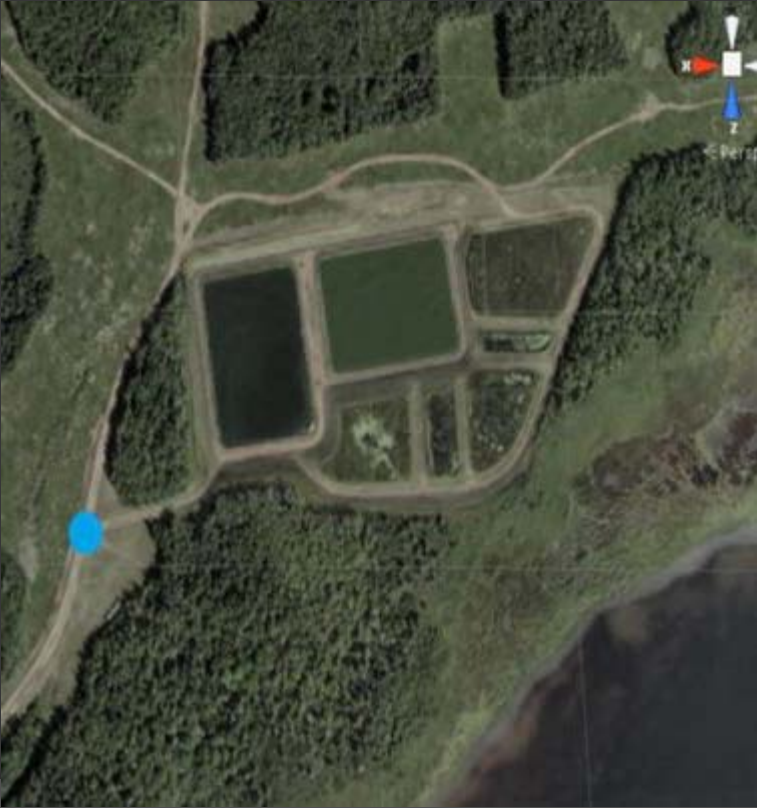
Souris, PE

Wastewater Treatment



Sewage Treatment: Coastal Flooding

Lennox Island, PEI



Climate Change Adaptation

Island Wide Flood Risk Mapping by 2019

Where are we vulnerable?
Tools for municipalities

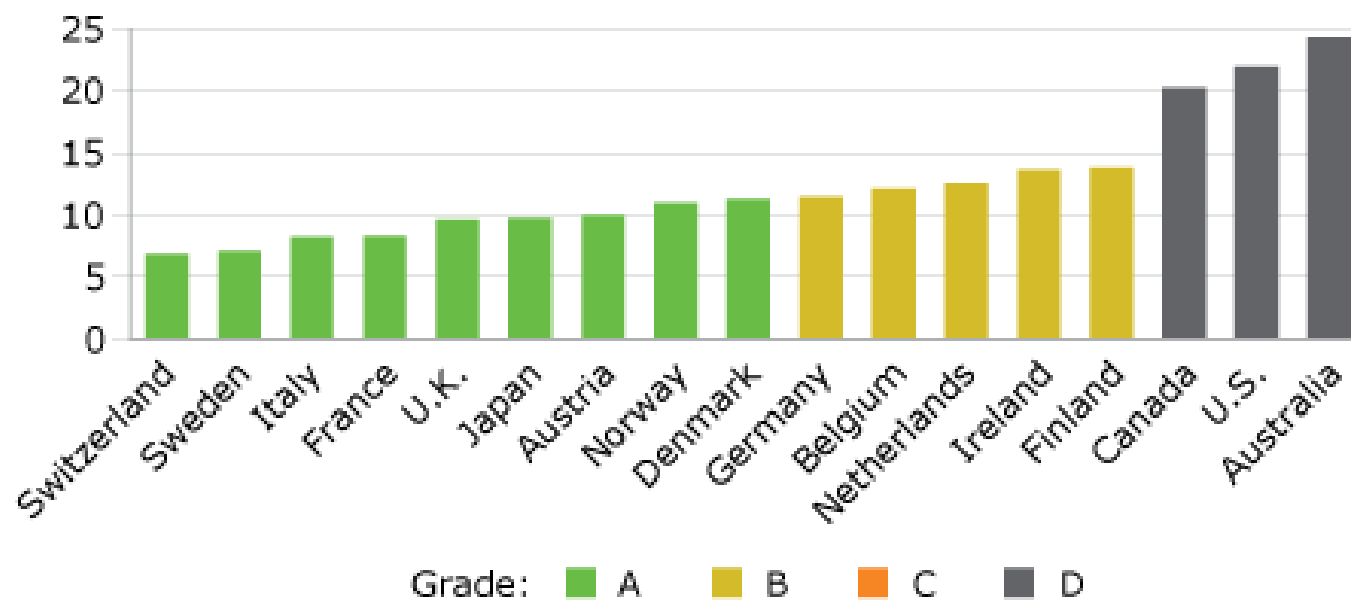




Reducing our GHG Emissions

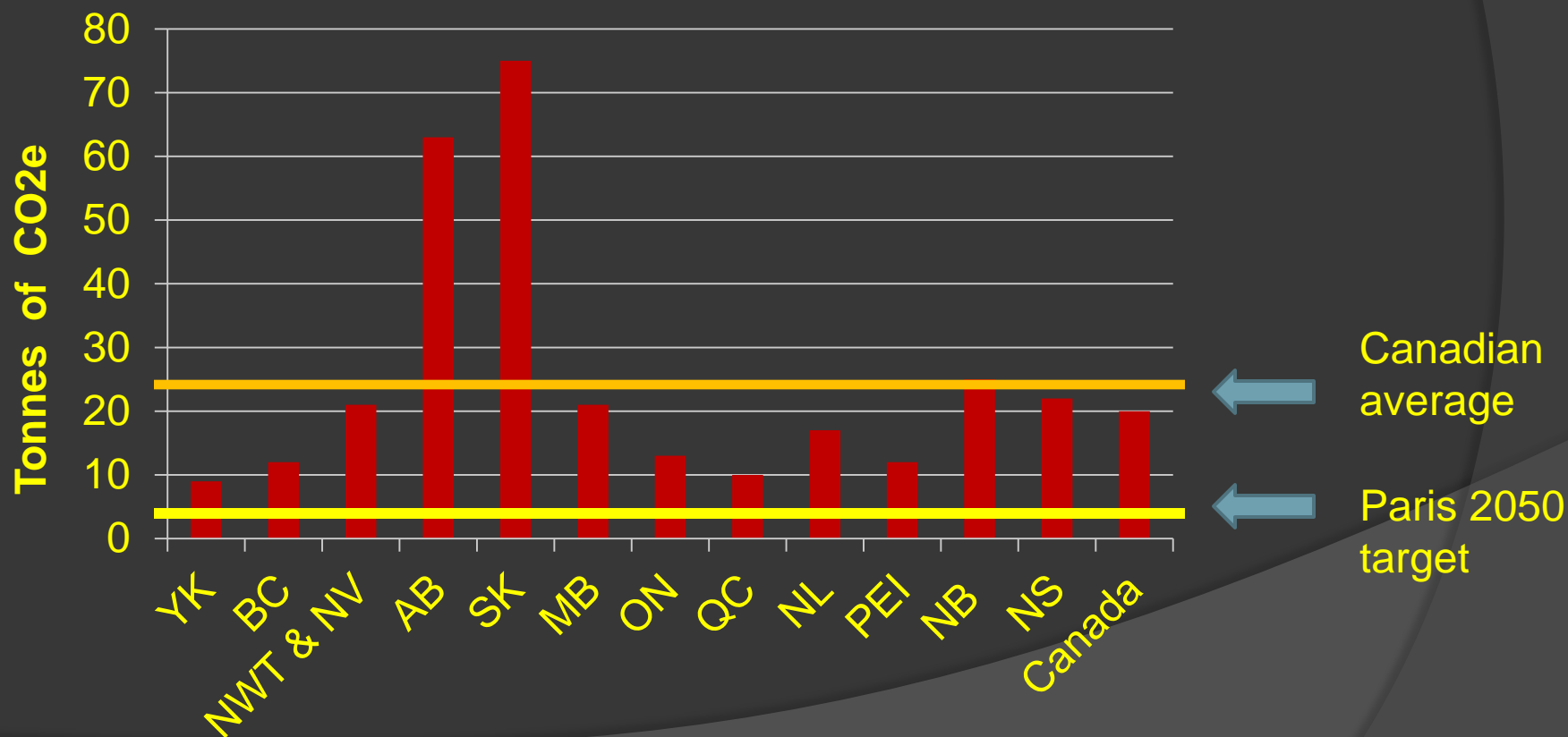
Canada is a High GHG Emitter Per Capita

GHG Emissions, 2010
(tonnes of CO2 equivalent per capita)



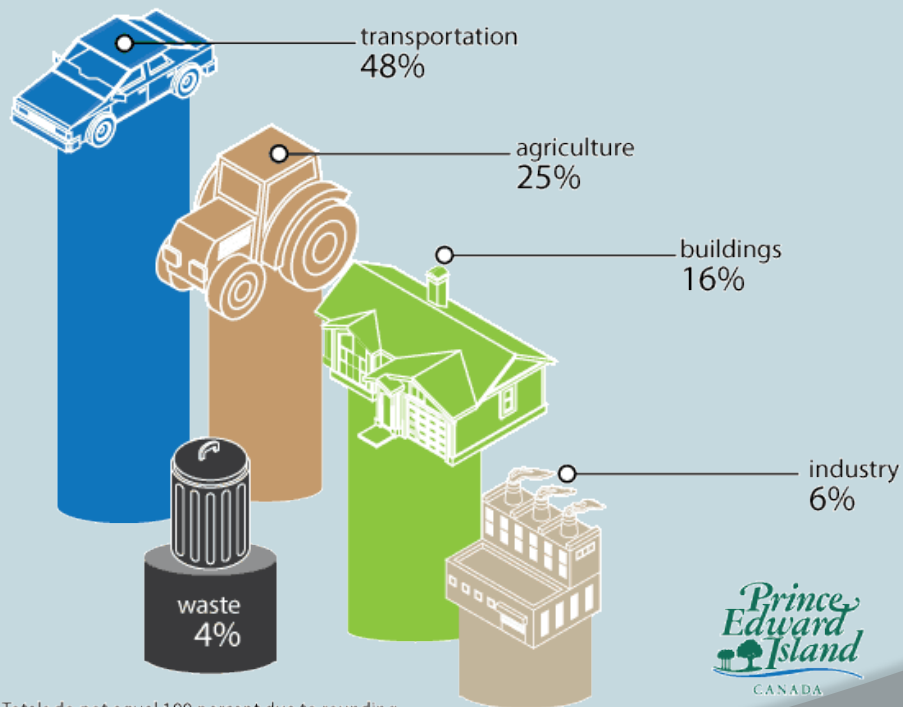
Emissions: How does PEI Compare?

Per Capita Emissions



Greenhouse Gas Emissions (2016)

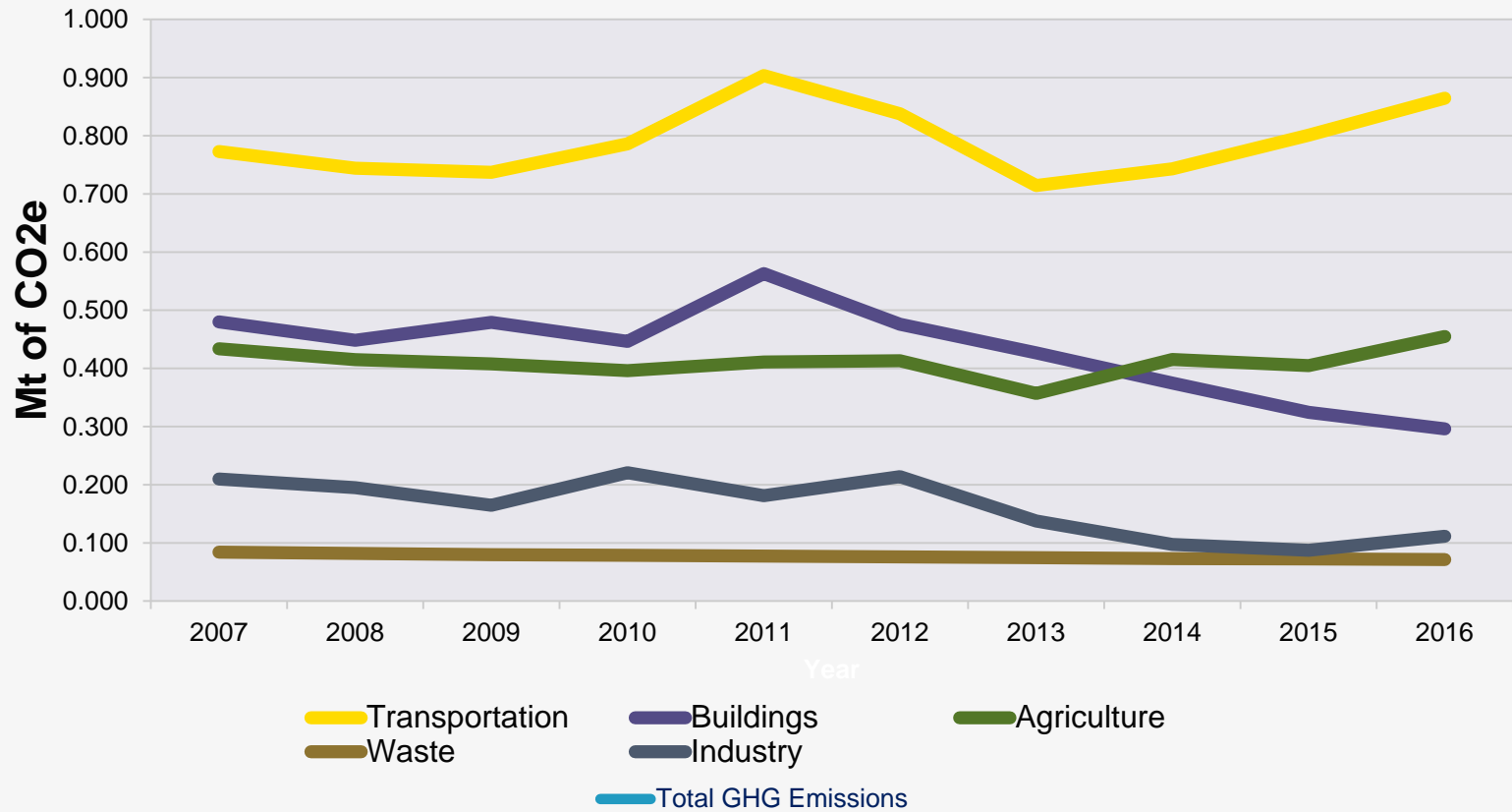
Where do our greenhouse gases come from?



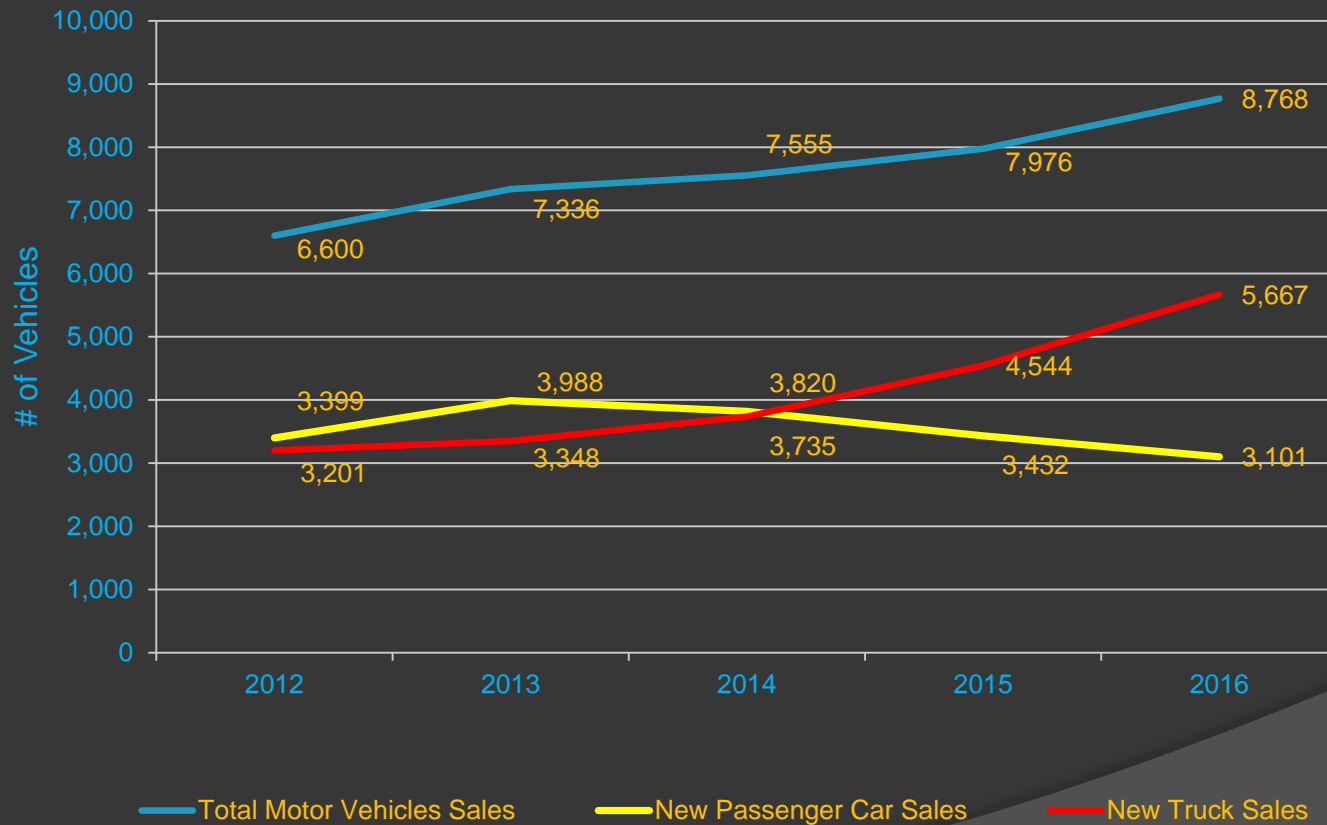
Totals do not equal 100 percent due to rounding

PEI GHG Sector Emissions

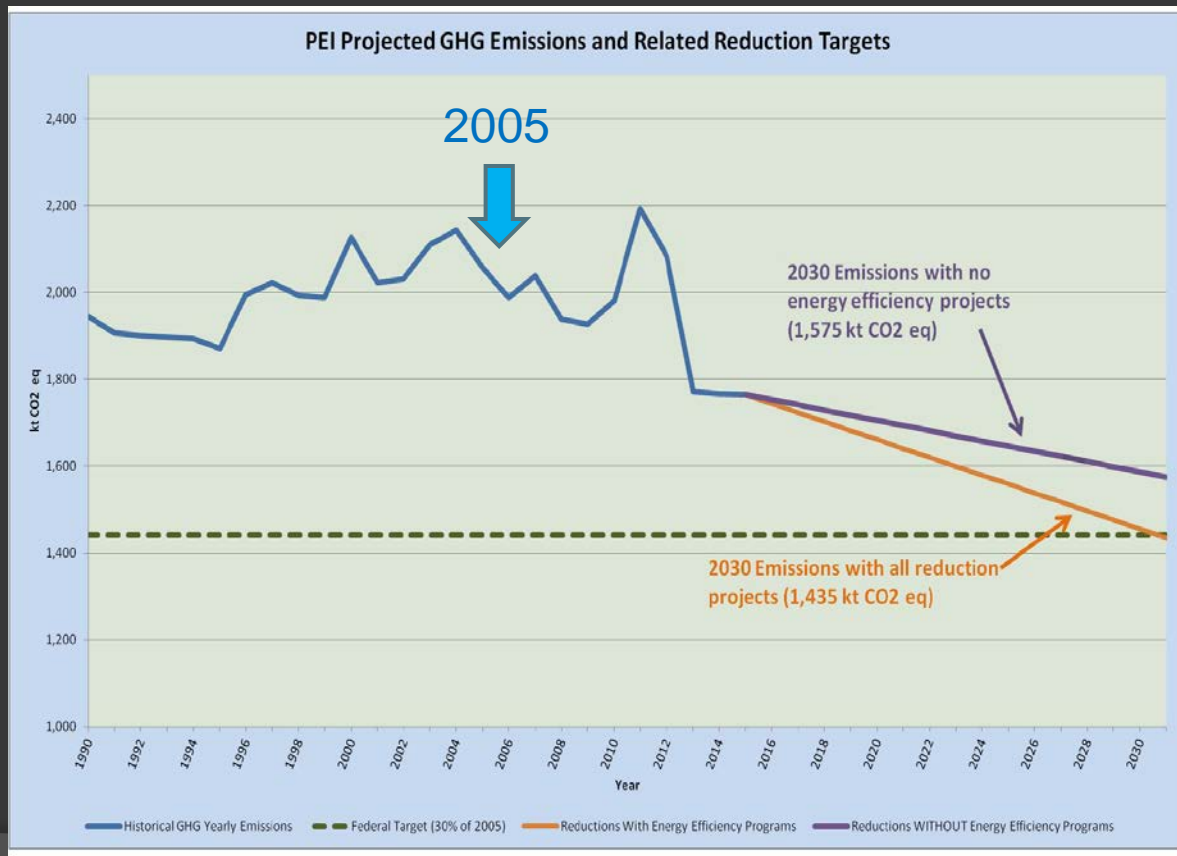
PEI GHG Emissions by Sector (2007-2016)



Transportation Emissions Rising Vehicle sales PEI



PEI's GHG Target (30% below 2005 by 2030)



ECCC Reference Case: Includes only federal measures (HFC, HDV, Methane regulations etc)

2030 Target



Carbon Pricing

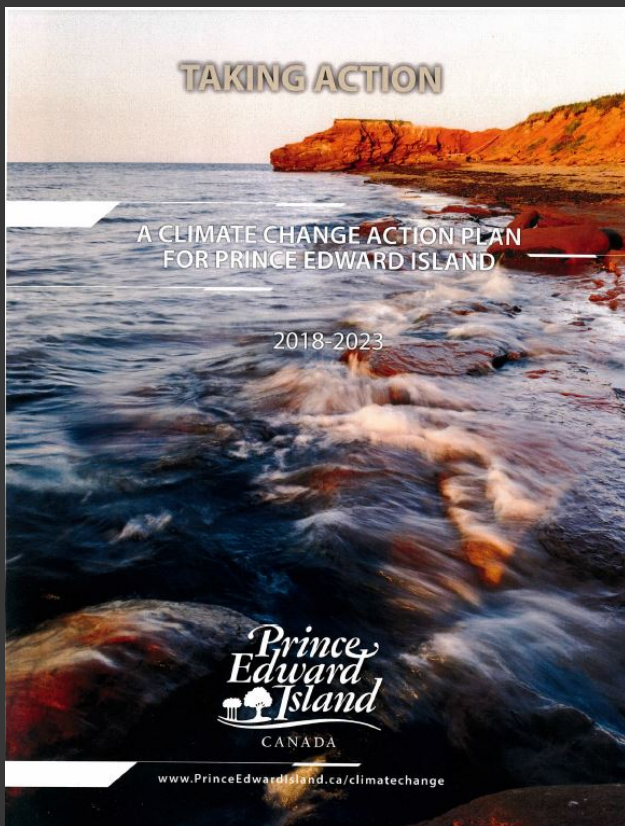
April 1, 2019

Price at the pumps will rise April 1, 2019
Marked fuel is exempt (farmers-fishers)

Big emitters subject to Output Based Pricing System (OBPS)
Facilities over 50K tonnes in OBPS (Cavendish Farms)
Facilities between 10-50K have opt-in option

Proceeds to be returned to Islanders

Climate Change Action Plan



5 year plan

Charts path to reduce PEI's
Greenhouse Gases

The move from Oil to Electricity

2-3x more mini-split installations vs 2017



Heating with Biomass

Move from oil to wood

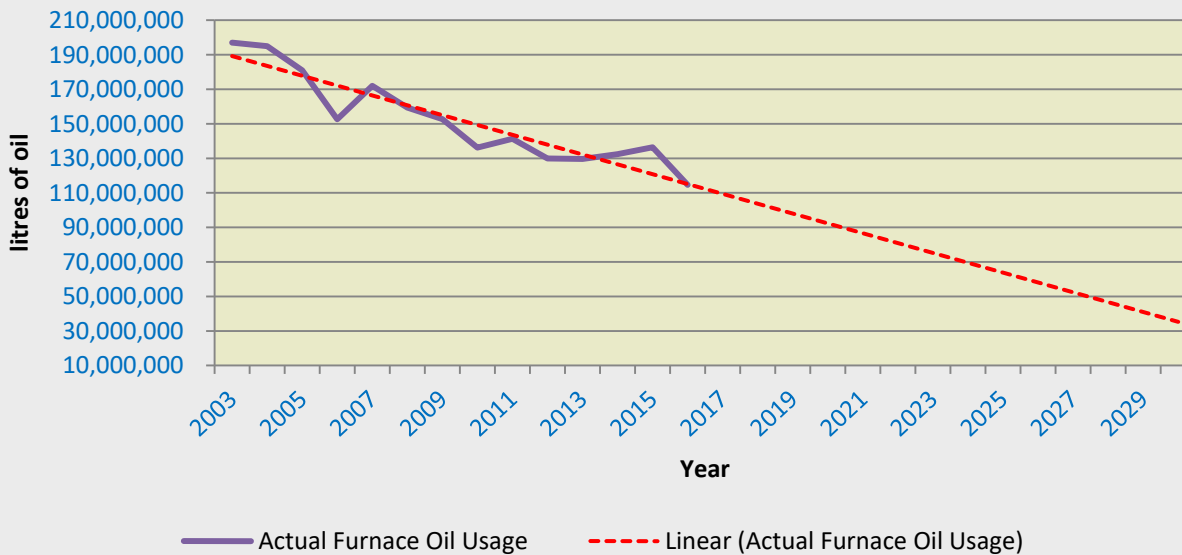


(Decline in home heating oil)

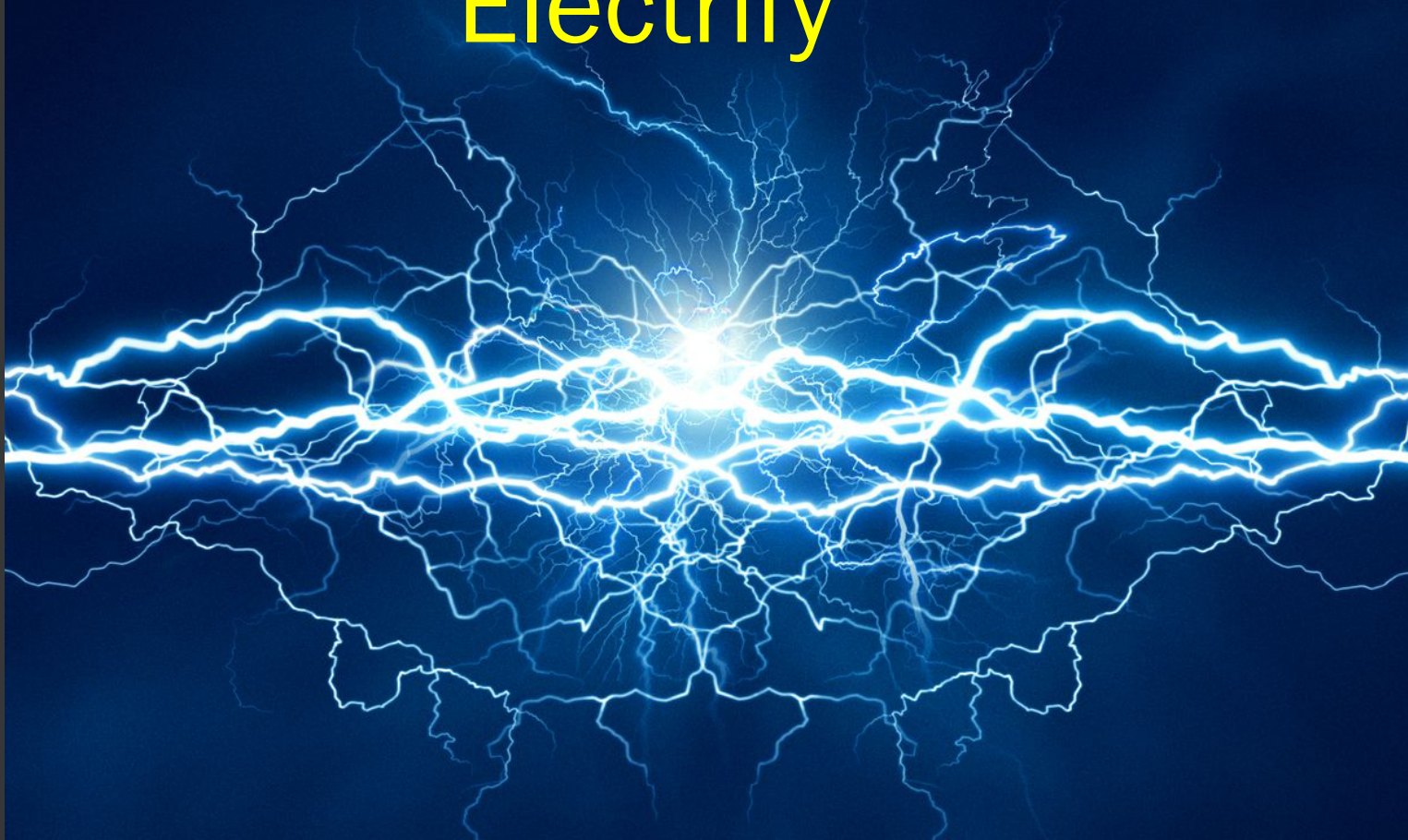
(30+% reduction from 2003. ~70,000,000+ litres)

Reduction in electricity rates and incentives through efficiencyPEI will help
Installation of 20 additional biomass heating systems in public buildings will help

Furnace Oil Usage & Estimation (2003-2030)



Electrify



Electric Cars and Islanders



- ~400 km range
- charge at home overnight
- 1 hour at direct charger
- charge while you eat/shop when travelling



Electric Vehicles

Goal: increase adoption of electric vehicles (EV's)

- charging infrastructure 2019
- increase use of EVs in government fleet to 20% by 2030
- pending transportation strategy





Transportation Strategy Pending

Home Comfort

One of 14 expanded/new efficiency programs

All work is free of charge to low-income clients – value of \$9000 on average

400 homes

Collaboration with FHS ,TIE

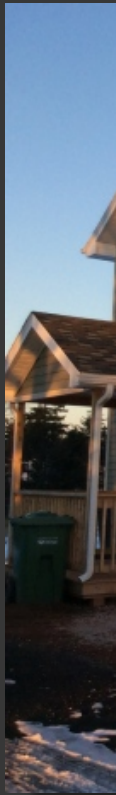


New Home Construction

- **Objective:** Incentivize homeowners to build to ENERGY STAR® (20% better than code) or R2000 standard (50% better than code)
- Building to ENERGY STAR® = \$2000 rebate
- Building to R2000 = \$5000 rebate
- + 400 % more interest than anticipated. ~7.5 % of new homes have applied



Pa



t
to heat

Agriculture

DEVELOPING BEST PRACTICES TO REDUCE OR REMOVE GREENHOUSE GAS EMISSIONS ON ISLAND FARMS (Fed of Ag)



1. Nutrient Stewardship
2. Conservation cropping
3. Energy efficiency
4. Feeding strategies for cattle
5. Performance tracking and cattle sorting improvements
6. Feeding technologies and innovative techniques to improve true feed efficiency
7. Dairy production systems, including milking technology
8. Food loss in agricultural production and post-harvest handling and storage

Forestry

Reducing Greenhouse Gases by Sequestering Carbon

PEI will enhance its capacity for carbon sequestration through conversion and afforestation of idle and/or less productive agricultural land.



Through the Alternative Land Use Services 2 (ALUS2) Program and Forest Enhancement Program (FEP), both voluntary programs for PEI landowners, the Province of PEI supports tree planting and sensitive land retirement.

Building with Wood Sequesters Carbon

Brock Commons is one of our newest residence areas. It is home to Tallwood House—currently the tallest mass timber building in the world at 16 stories—which opened in July 2017 on UBC campus in Vancouver.

New PEI Building code allows 6 stories



Charlottetown

Very energy intensive materials...cement, steel....



Opportunities

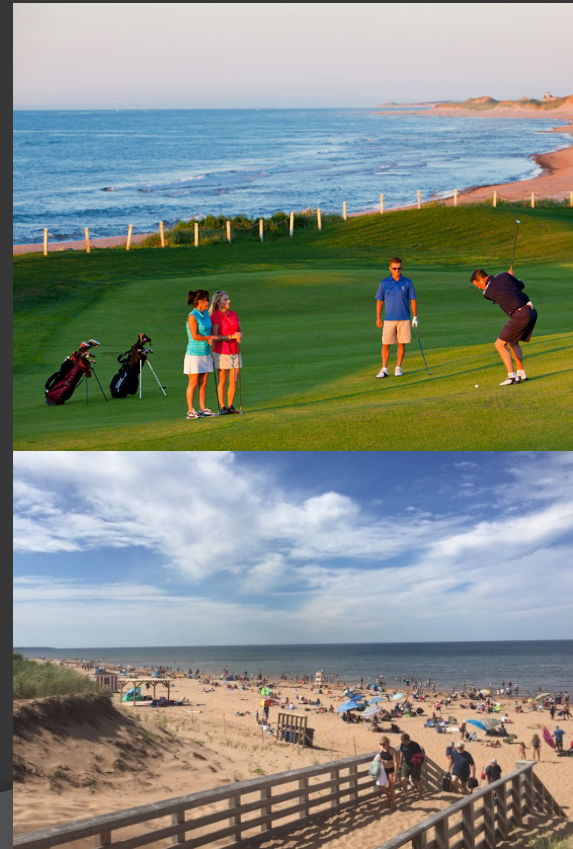
What we grow

 **Arlington Orchards**
about 4 months ago 

Finally our peach harvest! and we are picking them by the wagon load this year. As far as we know this is Prince Edward Islands very first commercial peach harvest. They will be available this week end at Arlington orchards Farm Markets.



What we do





Questions