

Taking Action on Climate Change

In Nova Scotia, we're already seeing warmer, wetter winters and hotter, drier summers compared to a few decades ago. We're experiencing more floods and dry spells, and more frequent extreme weather events, which are compounded by rising sea levels.

Coastal sensitivity maps show that most of Nova Scotia is vulnerable to the effects of climate change. Much of our infrastructure was not built for a higher frequency of extreme weather. Important economic sectors (agriculture, fisheries, forestry and tourism) are also sensitive to the effects of climate change.

By the end of the century, we can expect rapid acceleration in climate change, far beyond what we've seen to date. Likely impacts on the environment, society and economy need to be addressed if we don't want to feel the full effects of more frequent and intense weather events, rising sea levels and changes in our biodiversity and ecosystems.

Our Approach to Reducing Emissions

The *Environmental Goals and Sustainable Prosperity Act* requires that Nova Scotia reduce GHG emissions to at least 10% below 1990 levels by 2020. Nova Scotia is currently on track to meet our 2020 target. GHG emissions in 2013 were already 9% below 1990 levels.

The province has reduced GHG emissions largely by shifting to renewable energy and cleaner sources of energy in the electricity sector, while investing in efficiency. Industrial transitions, such as the switch from heating oil to lower-emitting natural gas at several industrial facilities and the closure of pulp and paper operations, have also contributed to lower province-wide GHG emissions.

In 2001, only 8% of electricity in Nova Scotia came from renewable sources. Today, more than 25% comes from renewables. Nova Scotia's Electricity Plan (2015) indicates that we are on track to meet and possibly exceed our legislated target of 40% by 2020 using a combination of hydro (including from the Maritime Link), wind, solar and tidal energy.

Declining GHG caps for the electricity sector (2010-2030)

Electricity is Nova Scotia's largest source of GHG emissions. Nova Scotia was the first jurisdiction in Canada to issue hard caps on GHGs from the electricity sector, and the only jurisdiction with regulated caps out to 2030.

Greenhouse gases such as carbon dioxide trap heat, which warms the Earth. The consequence is climate change. Scientists say that limiting global warming to less than two degrees Celsius is needed to avoid catastrophic climate change.

Nova Scotia's Total Greenhouse Gas Emissions

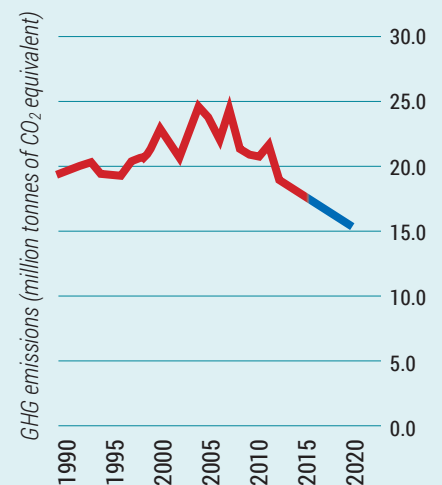


Fig. 1 Total NS GHG Emissions

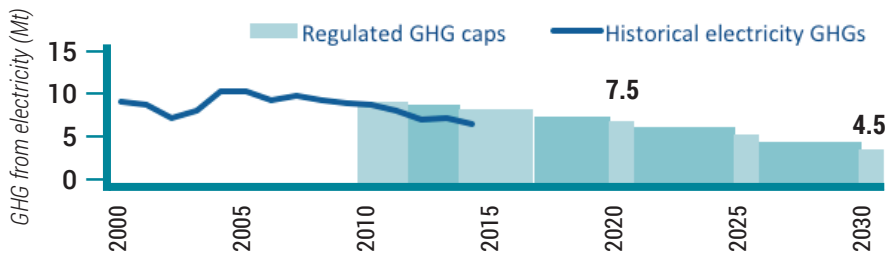


Fig. 2 Greenhouse Gas Emissions Regulations: Declining GHG caps for electricity

Nova Scotia's regulations provide flexibility by allowing compliance to be determined over a multi-year period. The caps decline predictably over time to require GHG reductions of 25% by 2020 and 55% by 2030. Nova Scotia Power must meet the caps in whatever way is most cost effective for ratepayers.

Effort to reduce our carbon footprint is triggering innovation and investment and helping to develop the greener economy in growing sectors such as clean tech, energy efficiency and renewable energy innovation.

- The Maritime Link project will provide access to renewable hydro-electric energy from Newfoundland & Labrador through an undersea transmission cable.
- The province's new electricity plan, *Our Electricity Future*, includes innovation funding pilot programs, a focus on solar PV pilot projects, and continued support for tidal energy research initiatives such as the Fundy Ocean Research Center for Energy (FORCE) and Canada's first tidal energy feed-in tariff.

An equivalency agreement on coal-fired electricity between the Government of Canada and the Government of Nova Scotia ensures that Nova Scotia's GHG regulations apply instead of Canada's coal-fired electricity regulations. Nova Scotia will achieve GHG reductions that are the same or better than federal regulations at a much lower cost to ratepayers.

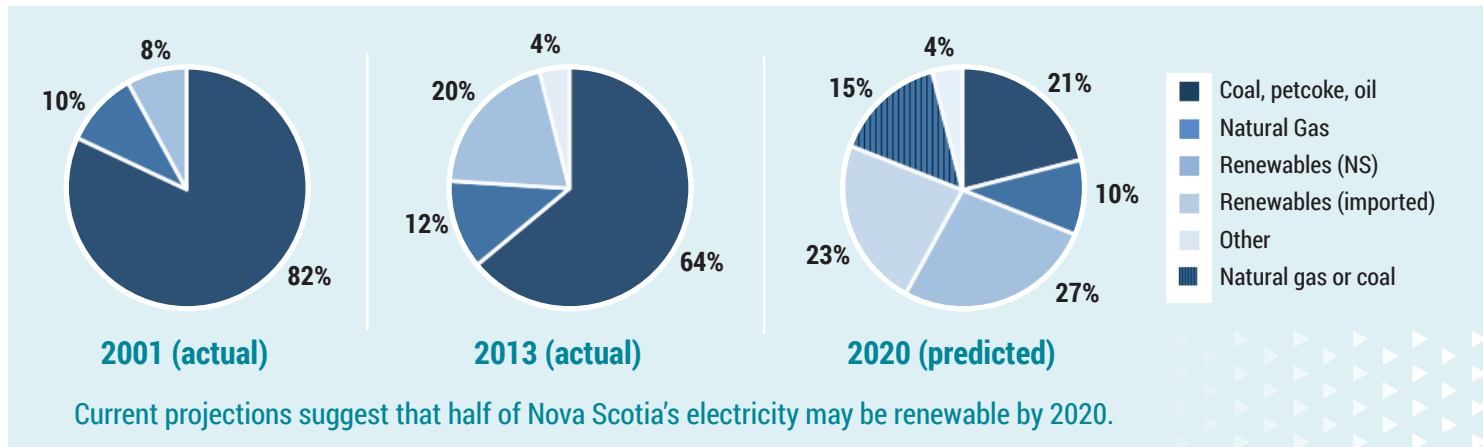


Fig. 3b Electricity fuel sources (actual and predicted) 2001-2020

Investing in efficiency

Nova Scotia law requires the electricity utility to invest in energy efficiency when it is the most cost-effective option for ratepayers. In addition

- the province has adopted the *National Energy Code of Canada for Buildings*, which applies standards for energy efficiency, and set minimum efficiency standards for new structures and appliances

- Nova Scotia is the first province or state in North America to make LED streetlights the law. LEDs are the most efficient streetlights available.
- \$37 million will be invested by NSPI shareholders over 10 years to upgrade all electrically heated low-income homes

Reductions in other sectors

Work is also happening outside of the electricity sector to reduce greenhouse gas emissions. Transportation is the second largest source of GHGs in Nova Scotia (27% of total emissions). The *2013 Sustainable Transportation Strategy* has resulted in investments of \$3.7 million in projects to improve active transportation infrastructure, community transit services, data collection and monitoring, and electric vehicle integration.

Recycling

Nova Scotia is also making efforts to reduce GHGs by composting, recycling and creating a circular economy. When organic matter decomposes in a landfill, it produces methane, a greenhouse gas that is 25 times more powerful than carbon dioxide. Progress on waste diversion is reflected in a 30% reduction in GHG emissions from the waste sector since 2002.

Making Nova Scotia more resilient to climate change

Climate change adaptation is the work of preparing for a more unpredictable climate while maintaining a productive economy, a healthy environment, and thriving communities. It is a process that involves building the resilience of communities, and minimizing risks and vulnerabilities.

Adaptation is not one-size-fits-all. It includes plans, actions, and decisions happening at all levels of society, in all parts of the economy, all over the province.

Raising awareness through research and a network of experts

Nova Scotia has focused on building relationships with those best placed to expand our knowledge and take decisive action to address local impacts of climate change, including the federal government, other Atlantic provinces, Nova Scotia's municipalities, professional associations, and NGOs. Involvement in the Atlantic Climate Adaptation Solutions Association is key to that work.

Sharing what we've learned

Nova Scotia shares climate change information through workshops and presentations, conferences, and a dedicated climate change website (climatechange.novascotia.ca) that includes information about the impacts of climate change for Nova Scotia, future climate projections, research and approaches that can be applied to prepare for climate change.

Nova Scotia's energy efficiency industry contributes \$192 million annually to our economy and provides 1,200 full-time jobs across the province.

The Atlantic Climate Adaptation Solutions Association (ACASA) works to build adaptive capacity by developing and sharing practical tools and resources. ACASA has provided new knowledge about climate risks and vulnerabilities in Nova Scotia, with a particular emphasis on coastal erosion, coastal and inland flooding, infrastructure design, and groundwater management. Nova Scotia partners include seven provincial government departments, 13 municipalities and four academic institutions and NGOs. ACASA has a website that provides over 150 free adaption resources.

atlanticadaptation.ca/

Supporting communities through adaptation programs

Community groups and municipalities are often at the frontline of floods, storm surges, and other climate-related events, so they play a key role in helping Nova Scotia prepare for climate change. In addition to the millions of dollars in funding support provided through the ACASA, Nova Scotia's Climate Change Adaptation Fund has provided approximately \$200,000 to support 18 local, community-scale projects. These programs have enabled communities to build their capacity to prepare for climate change.

Since April 2013, Nova Scotia has contributed approximately \$9 million toward community flood assessments and flood risk studies, flood mitigation infrastructure and dyke improvements, and maintenance and repair. An inter-departmental flood group is improving coordination and capacity to address flood management in Nova Scotia and ultimately reduce flood risk.

Strengthening adaptive capacity across government

Nova Scotia's innovative Adaptation Workplan includes an interdepartmental network with enhanced knowledge, skills, and commitment to address climate change adaptation and develop specific adaptation projects. Participating departments at this time include: Fisheries and Aquaculture, Agriculture, Municipal Affairs, Internal Services, Transportation and Infrastructure Renewal, Office of Planning and Priorities, and Environment. This unique approach helps build Nova Scotia's overall resilience and results in climate-smart policies and practices.

Municipalities in Nova Scotia each have a Municipal Climate Change Action Plan, a unique approach in planning for climate change. The plans help communities to identify hazards, determine potential impacts, examine social, economic and environmental considerations in light of climate change, and select priorities for action. The initiative – the first of its kind in Canada – was funded through the Canada-Nova Scotia Agreement on the Transfer of Federal Gas Tax Revenues.

Learn more.
climatechange.novascotia.ca

