



An Approach to GHG Regulation of the Electricity Sector

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GHG Regulation Overview

- Tailored to the needs of Nova Scotia's specific energy, environment and economy dynamic
- Key component of meeting our EGSPA target – 10% below 1990 by 2020
- Flexibility and harmonization with other provincial government strategies – EE and RES
- Reductions start in 2010 and increase to 2020.

Responding to a unique situation

- Electricity generation disproportionate GHG and air pollutant emissions in NS
- Reduced demand and increased clean generation capacity most cost effective solutions to meet growing energy needs

Percent of NS Emissions*			
Sector	CO ₂	SO ₂	NO _x
Electricity	90	92	83
Pulp and Paper	0	1	3
Cement	2	1	2
Refining	6	4	6
Manufacturing / Other	2	2	6

*Facilities that emit more than 100,000 tonnes of CO₂e annually are required to report to the National Greenhouse Gas Inventory. Facilities that emit more than 20 tonnes of SO₂ or NO_x annually must report their emissions to the National Pollutant Release Inventory. Data represented is for 2007.



An Integrated Approach

- Nova Scotia's caps and targets optimize compliance efficiency and effectiveness
- Builds on current initiatives RES and DSM to limit rate impact
- Actions to decrease air pollution emissions could counter GHG reductions, and vice-versa.
- Dealing separately with air pollutants and GHGs separately increases costs and limits long-term reduction opportunities.
- Reducing GHGs and air pollutants drives infrastructure investment needed for deeper cuts beyond 2020.



Regulatory principles

- Accountability
- Flexibility
- Investment
- Transformation



What's covered

- All electricity sold in Nova Scotia
 - All electricity sold by NSPI
 - All electricity sold to NSPI
 - All electricity sold to municipal utilities
- All units/facilities emitting more than 10,000 tonnes of GHGS annually
- All six Kyoto greenhouse gases



Accountability

- Series of increasing stringent caps to 2020
- Reduction schedule with 5 compliance obligations – “compliance periods”
- Annual reports to track progress
- Penalty provisions of the Environment Act apply

Accountability

- Caps and reduction schedule

Calendar Year	Annual Sector GHG Entitlement (million tCO ₂ e)	Budget (million tCO ₂ e) (cumulative)	Compliance Report Date
2010	9.7	19.22	01-Mar12
2011	9.52		
2012	9.34	18.5	01-Mar-14
2013	9.16		
2014	8.98	26.32	01-Mar-17
2015	8.8		
2016	8.54		
2017	8.28	24.06	01-Mar-20
2018	8.02		
2019	7.76		
2020	7.5	7.5	01-Mar-21

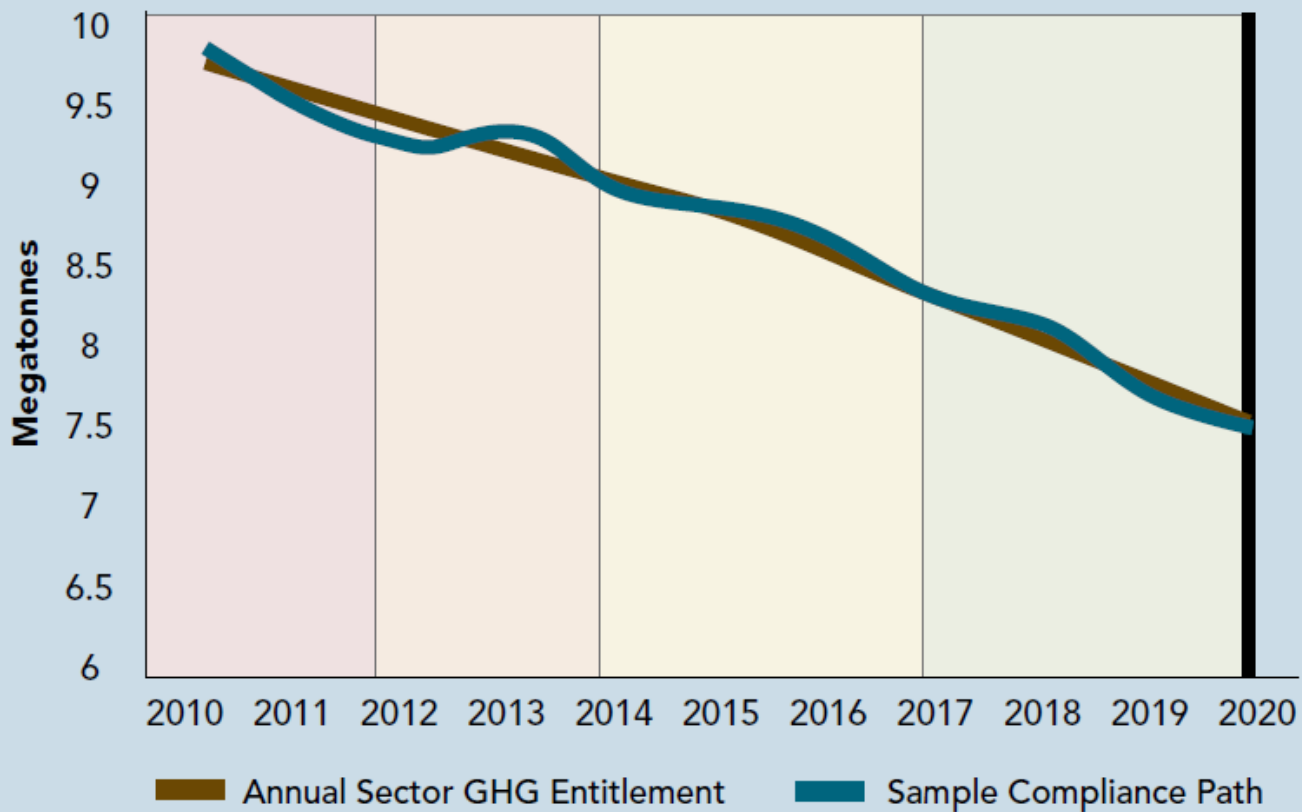


Flexibility

- Annual electricity supply and demand dependent on a wide range of variables (wind, water, temperature, economy)
- Budget period approach enhances flexibility while ensuring constant reductions
- Rigid annual entitlements place upward pressure on electricity rates

Flexibility

Sample Reduction Compliance Path





Investment

- Allows up to 3% additional budget period emissions for investment in “green transmission”
- Promoting the development of Nova Scotia based renewable resources
- Could generate \$100 million in transmission infrastructure investment to 2020
- Cost per tonne of additional emissions increases to \$60 – encouraging early investment

Investment

Budget Period	Cost per tonne of Transmission incentive	Maximum transmission incentive (millions of tonnes of CO _{2e})
1 (2010 - 2011)	\$15	0.58
2 (2012 - 2013)	\$25	0.56
3 (2014 - 2016)	\$40	0.79
4 (2017-2019)	\$60	0.72



Transformation

- Preparing for deeper reductions post 2020
- Does not compromise future choices
- Investment in transmission enables options
- Non-prescriptive standard allows for new technologies to compete for NS future power generation



Rate impact

- 2010 – 2013
 - The tools for compliance are largely in place - RES, DSM and transmission incentive
- Post 2014 rate impact depends on:
 - availability and cost of clean energy imports and new, Nova Scotia-based renewable energy supply
 - the price difference between coal and natural gas generation in the future
 - our success at achieving energy efficiency gains,
 - and the availability and cost of carbon capture and storage, among other options



Conclusion

- EGSPA goals require significant contribution from the electricity sector – this regulation will get it
- Other sectors will be studied in this year to determine the optimal reduction strategy and the potential for incremental economic benefit from GHG reduction (trading)

Thank you

All climate change materials are available at:

www.climatechange.gov.ns.ca

