



September 27, 2019

Nova Scotia Department of Environment
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RE: Sustainable Prosperity Act: Consultation

The Department of Environment invited comments regarding the proposed Sustainable Prosperity Act and Heritage Gas appreciates the opportunity to comment on this important issue.

The Environmental Goals and Sustainable Prosperity Act of 2007 (EGSPA) laid the foundation to achieve a healthy environment and long-term prosperity for Nova Scotians. The EGSPA established a framework to support a transition to cleaner sources and sustainable uses of energy by supporting and enabling energy efficiency, sustainable transportation options, increased renewable energy, the enhanced use of natural gas to displace oil and coal, and enhanced innovation through globally competitive research and development.

Heritage Gas fully supports the creation of new legislation and regulations to advance further toward the achievement of the Province's long-term goal to build a sustainable, prosperous province with strong, inclusive growth, a clean environment, and a healthy, resilient population. As a province burdened with some of the highest energy costs in Canada, Heritage Gas proposes the inclusion of "**energy affordability**" as an important goal to help build a strong, growing, and prosperous economy in Nova Scotia. Heritage Gas also agrees that the new legislation and regulations should be based on the five main concepts: i) Netukulimk, ii) sustainable development, iii) inclusive economic growth, iv) circular economy, and v) interconnected, shared responsibility.

Natural gas can make a significant contribution to GHG reductions in Nova Scotia with relatively little cost compared to other alternatives. Heritage Gas submits there is no single type of energy that will enable Nova Scotia to achieve all of its GHG emissions reduction goals. To meet Nova Scotia's diverse energy



needs in a low carbon future, the proposed Sustainable Prosperity Act should establish goals to improve the energy efficiency of buildings and support Nova Scotia's transition to a mix of cleaner and affordable energy sources – cleaner electricity, renewable energy, and lower-carbon fuels.

To build on the foundation laid by the EGSPA, Heritage Gas proposes the inclusion of four recommendations in the new Sustainable Prosperity Act in the key focus areas of Cleaner Energy and Circular Economy:

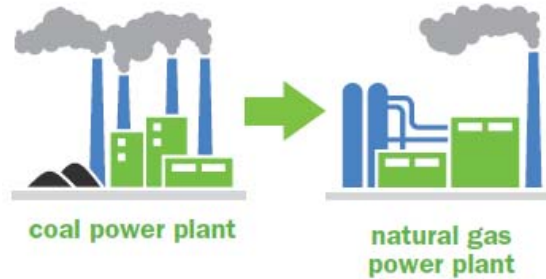
- **Improve Energy Efficiency of Buildings**: The energy efficiency of buildings can be improved in many ways, including upgrading the building envelope, installing high-efficiency HVAC or heat pump systems, switching to LED lights, or Combined Heat & Power (CHP) to generate both thermal energy and electricity on-site. Nova Scotia has improved the efficiency of electricity use through the implementation of demand side management policies and programs. Similar improvements and cost reductions in thermal energy use can also be achieved with CHP generation. Thermal energy typically accounts for 60% of total energy use in large commercial and institutional buildings, while electricity accounts for the remaining 40%. CHP integrates the production of thermal energy (heat) and electricity (power) in a single, highly efficient process. CHP systems generate electricity while capturing and using waste heat to produce thermal energy, achieving efficiency ratings of 80-90%.

Recommendation #1: Improve the energy efficiency, energy affordability, and energy security of large commercial buildings, institutions, and industries by supporting and enabling the installation of combined heat & power generation.

- **Transition to Cleaner Electricity**: Significant progress has been made to meet the EGSPA target of 40% of Nova Scotia's electricity needs with renewable energy sources by 2020; significantly reducing GHG emissions from electricity generation in Nova Scotia. Despite this progress, coal-fired generation still accounted for approximately 55% of electricity generation in 2017, resulting in GHG emissions intensity of approximately 600 kg CO₂e/MWh, more than four times higher

than the Canadian average of 140 kg Co₂e/MWh. Converting Nova Scotia's coal-fired electricity generation to lower-emitting natural gas can significantly reduce the carbon intensity of electricity generation in Nova Scotia.

Recommendation #2: Support the conversion of coal-fired electricity generation to natural gas.



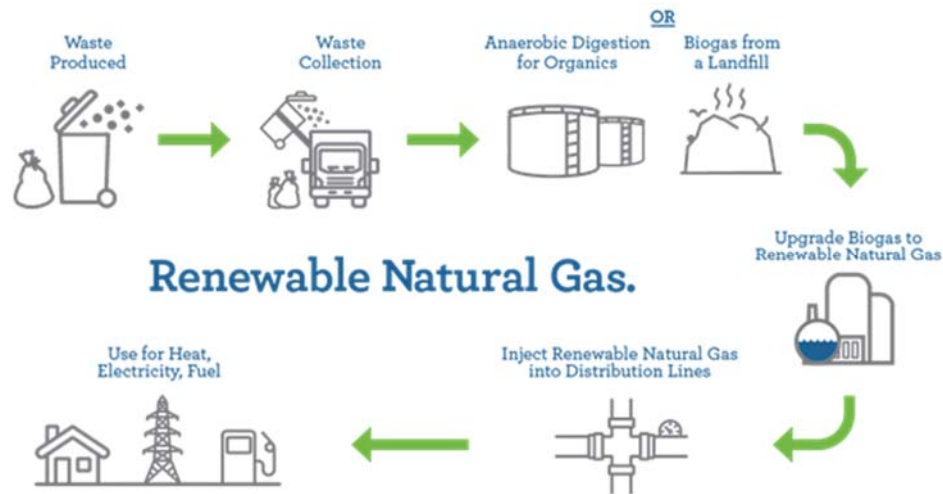
- **Support Renewable Energy Opportunities:** The commitments made in the EGSPA to add more renewable electricity to the Province's generation mix has significantly reduced the carbon intensity of electricity generation in Nova Scotia. However, electricity still accounts for 42% of Nova Scotia's total GHG emissions while providing only 25% of the Province's energy supply¹. Importantly, there are limits to the amount of renewable electricity that can be added to the grid without creating reliability concerns, and keeping electricity rates affordable.

Recommendation #3: Help reduce the carbon intensity of fuels by supporting the development and adoption of other forms of renewable energy, including biofuels, renewable natural gas, and Power-to-Gas as a bigger part of Nova Scotia's overall energy mix.

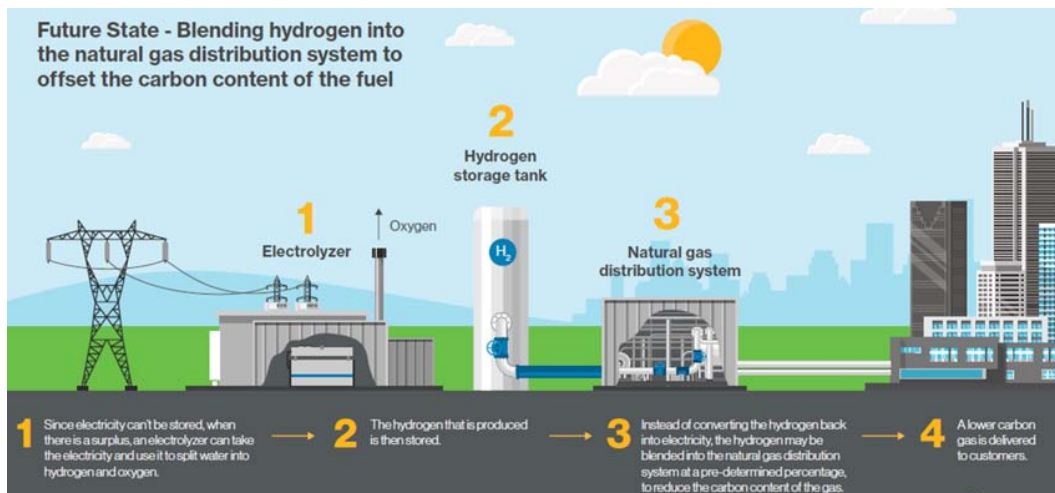
Renewable Natural Gas (RNG) is a low-carbon fuel that is produced by capturing, cleaning, and upgrading biogas from landfills, organic waste from municipal green bin programs, farms or wastewater treatment plants. RNG is distributed through the existing natural gas lines to lower the carbon-intensity of natural gas used by Nova Scotia homes, businesses, and industries. Home

¹ Energy Sources in Nova Scotia: Statistics Canada, Supply and demand of primary and secondary energy, 2017.

heating and domestic hot water typically accounts for approximately 80% of household energy use and is the largest source of GHG emissions for most households in Nova Scotia. Switching to RNG could significantly reduce a household's carbon footprint.



Power-to-gas technology can be utilized to store excess renewable energy, like wind, that is produced during peak generation periods so it can be used in future peak demand periods. The power-to-gas process uses surplus electricity to create renewable hydrogen or renewable natural gas (methane) that can be stored in natural gas pipelines or storage facilities and used as needed.



- **Cleaner Energy for Buildings, Industries, and Heavy Transportation:** Switching from higher-emitting fuels like oil to lower-emitting energy sources like natural gas can reduce GHG emissions by 35% or more. Meeting Nova Scotia's energy needs with electricity is practical in some cases to replace higher-emitting fuel sources (i.e. electric light-duty vehicles, electric heat pumps for space heat, LED lighting). However, electricity is not a practical energy source for certain applications, including industrial processes that require high temperature heat, or heavy-duty trucks. In these sectors, switching from oil to natural gas or other lower-emitting fuels can significantly reduce GHG emissions. For example, switching heavy-duty trucks from diesel to compressed natural gas can reduce fuel costs by 15-20% while reducing GHG emissions from 18-25%.

Recommendation #4: Strengthen Nova Scotia's commitments from the EGSPA to adopt and implement a framework to support a transition to cleaner sources of energy by helping more Nova Scotia homeowners, businesses, industries, and heavy trucking fleets to displace their use of oil and coal with lower-emitting natural gas. This would include expansion of natural gas infrastructure to connect new communities in Nova Scotia and help lower the carbon footprint where people work, eat, or play.

Heritage Gas is supportive of the proposed legislation and would be pleased to work with government as Nova Scotia continues to establish long-term goals with the Sustainable Prosperity Act.

If there are any questions, please do not hesitate to contact the undersigned.

Regards,
HERITAGE GAS LIMITED

A handwritten signature in blue ink, appearing to read "Michael Johnston".

Michael Johnston
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