

## NATIONAL INDUSTRIAL SYMBIOSIS PROGRAM (NISP) MODEL SUPPORTING CANADA'S SUSTAINABLE DEVELOPMENT GOALS\*

\*As presented in the Draft Federal Sustainable Development Strategy, February 2016

GOAL	TARGET & RATIONALE	INITIATIVES	INITIATIVE RATIONALE	DEPTS	NISP ALIGNMENT
TAKING ACTION ON CLIMATE CHANGE	<p><b>National Leadership on Climate Change:</b> Relative to 2005 emission levels, reduce Canada's total GHG emissions 17% by 2020 and 30% by 2030.</p> <p>A Pan-Canadian framework for climate change which will include national GHG emissions reduction targets (Minister of Environment and Climate Change)</p>	Voluntary sustainable development actions to reduce GHG emissions	Encourage businesses and Canadians to take voluntary action to reduce GHG emissions. Voluntary approaches such as incentives, providing information, and developing standards and codes of practice can promote environmental sustainability while maintaining flexibility and supplementing or reducing the need for regulation.	FIN, TRANSPORT, ISED	<b>NISP will engage at least 120 businesses per year, per region in voluntary, profitable actions to reduce GHG emissions. The NISP model to Canada will provide businesses with a tried and tested tool, capable of benefiting their businesses while reducing GHG emissions.</b>
		Regulations to limit GHG emissions	Develop and implement regulations to limit GHG emissions, promote compliance, and carry out enforcement activities. Regulation is a key policy instrument that the government uses to protect the environment and human health. Laws and regulations can authorize or restrict certain activities, set standards for environmental performance, or create requirements such as monitoring and reporting on emissions.	ENVIRONMENT, TRANSPORT, HEALTH	<b>NISP model will help companies achieve targets set by the new regulations.</b>
		International agreements and initiatives on climate change	Ensure Canada plays a leading role in international efforts to combat climate change. Negotiate on behalf of the Canadian government, represent the government's interests in international fora such as the United Nations Framework Convention on Climate Change, the Climate and Clean Air Coalition and the Arctic Council, and implement international agreements. Participating in negotiations allows Canada to help shape international agreements and initiatives which in	ENVIRONMENT, TRANSPORT, GLOBAL, AG, HEALTH	<b>NISP-Canada would support Canada's commitments under COP21; G7 Alliance for Resource Efficiency; and UN SD Goals. NISP-Canada would join 21 (and counting) other international programs. Canada has an opportunity to take global leadership with respect to NISP performance measurement &amp; analytics, as well as in the application of NISP to the agricultural / bio-industry sector.</b>
TAKING ACTION ON CLIMATE CHANGE	<p><b>Resilience to Climate Change:</b> Facilitate reduced vulnerability and improved resilience of economic sectors, regions, communities and of individuals, to the impacts of climate change through the development and provision of information and tools for decision making. (Minister of Environment and Climate Change)</p>	Voluntary sustainable development actions to increase climate resilience	Encourage businesses and Canadians to take voluntary action to increase resilience to climate change. Voluntary approaches such as providing information and incentives, and developing standards and codes of practice, can promote environmental sustainability while maintaining flexibility and supplementing or reducing the need for regulation.	HEALTH	<b>NISP-CANADA will help businesses to reduce energy and water consumption, making them more resilient to market transformation away from fossil fuels and to potential water shortages.</b>
		Domestic and international collaboration on climate change adaptation	Provide opportunities for collaboration and participate in joint adaptation initiatives with domestic and international partners. Sharing information and working with others to address sustainable development issues can help coordinate activities, reduce duplication, and produce solutions and approaches that reflect diverse perspectives	HEALTH, NR CAN, INAC	<b>NISP-CANADA is nationally-coordinated, with regional delivery and collaboration. NISP-CANADA will be part of a 21+ country network of NISPs and will be able to share knowledge with respect to how other businesses are increasing their climate resilience.</b>

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TAKING ACTION ON CLIMATE CHANGE	<p><b>Sustainable Energy:</b> Work closely with the provinces and territories to advance a Canadian Energy Strategy to protect Canada's energy security, encourage energy conservation, and bring cleaner, renewable energy onto the electricity grid. (Minister of Natural Resources)</p>	Investment in clean energy technologies	Support the development, demonstration and deployment of clean energy technologies. Technology development and dissemination can support economic growth and improved quality of life for Canadians, and provide environmental benefits.	SDTC, NR CAN	<b>100% of NISP-CANADA opportunities are clean tech solutions. Of these, 20% involve clean tech innovation e.g., R&amp;D or technology scale-up.</b>
		Domestic collaboration to promote clean energy	Collaborate with provinces, territories and other stakeholders to promote clean and renewable energy. Sharing information and working with others to address sustainable development issues can help coordinate activities, reduce duplication, and produce solutions and approaches that reflect diverse perspectives.	Atlantic Canada Opportunities Agency	<b>The NISP-Canada process has proven invaluable for general business-to-business sustainability knowledge transfer, including around renewable energy. The collaborative approach fostered by NISP-Canada can facilitate group uptake of renewable energy technologies.</b>
		Voluntary sustainable development action to reduce GHG and air pollutant emissions	Encourage businesses to adopt clean energy technologies. Voluntary approaches such as providing information and incentives, and developing standards and codes of practice, can promote environmental sustainability while maintaining flexibility and supplementing or reducing the need for regulation	FINANCE	<b>Federal investment in NISP-Canada would catalyse at least 120 clean tech solutions per year in each participating region, as well as at least 24 clean tech innovations.</b>
TAKING ACTION ON CLIMATE CHANGE	<p><b>Reduce Greenhouse Gas Emissions from Federal Government Operations:</b> The Government of Canada will reduce energy-related greenhouse gas emissions from its facilities and fleets by 17% below 2005 levels by 2020 and 30% by 2030. Set a target to align the national GHG emissions reduction targets in the Pan-Canadian framework for climate change.</p>	Policy research and analysis for departmental GHG implementation plans	Conduct policy research and analysis to support renewal of departmental GHG implementation plans. Identifying, assessing and evaluating policy options allows the government to decide on a course of action to achieve its objectives, assess results and adjust its approach over time.	ALL	<b>By supporting NISP-Canada, the federal government will increase its market intelligence with respect to GHG reduction actions that may be market-driven with little need for incentive as well as associated environmental and economic benefits from those actions.</b>
		Leading by example on GHG emission reduction	Demonstrate leadership by taking action to reduce federal GHG emissions. Managing federal facilities and equipment sustainably can result in environmental benefits as well as cost savings. As the federal government owns or manages a substantial portfolio of facilities and fleets, reducing its environmental footprint can have a significant impact.	ALL	<b>Where applicable, federal facilities can participate in the NISP-Canada process, pursuing GHG emission reduction symbiosis partnerships with regional businesses. This could include facilities such as research stations, laboratories, vehicle maintenance, and federally regulated entities such as ports and airports.</b>
CLIMATE CHANGE	<p><b>Real Property Environmental Performance:</b> Effective fiscal year 2017-2018, departments will reduce the environmental impact of their real property portfolio.</p>	Technical analysis on the environmental impacts of federal facilities	Conduct technical analysis to assess and benchmark the environmental impact of federal facilities. Understanding the environmental performance of real property is an essential first step toward effective action to improve it.	ALL	<b>Where applicable, federal facilities can participate in the NISP-Canada process. The NISP model has a third-party verified methodology for calculating a number of indicators for facilities implementing a symbiosis opportunity.</b>

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<b>TAKING ACTION ON CLI</b>		Leading by example on reducing the environmental footprint of facilities	Demonstrate leadership by reducing the environmental footprint of federal facilities. Managing facilities sustainably can result in environmental benefits as well as cost savings. As the federal government owns or manages a substantial portfolio of facilities, reducing its environmental footprint can have a significant impact.	ALL	Where applicable, federal facilities can participate in the NISP-Canada process, pursuing GHG emission reduction symbiosis partnerships with regional businesses. This could include facilities such as research stations, laboratories, vehicle maintenance, and federally regulated entities such as ports and airports.
<b>CLEAN TECHNOLOGY, JOBS &amp; INNOVATION</b>	<b>Clean Technology and Green Infrastructure:</b> Make strategic investments in developing and manufacturing clean and sustainable technology, support companies seeking to export those technologies, and support the development of a 10-year plan to deliver significant new funding to provinces, territories and municipalities to ensure increased investments in green infrastructure. (Minister of Innovation, Science and Economic Development and Minister of Natural Resources)	Investment in green infrastructure and technologies to reduce GHG and air pollutant emissions	Invest in green infrastructure and support the development, demonstration and deployment of technologies that reduce greenhouse gas and air pollutant emissions. Technology development and dissemination can support economic growth and improved quality of life for Canadians, and provide environmental benefits.	TRANSPORT, ENVIRONMENT, ISED, NR CAN, SDTC, REGIONAL EC DEV E.G., WD, STANDARDS COUNCIL	100% of NISP-CANADA opportunities are clean tech solutions. Of these, 20% involve clean tech innovation e.g., R&D or technology scale-up. NISP-CANADA could catalyse up to 120 clean tech solutions and 24 clean tech innovations per year, per region (metro area).
		Voluntary sustainable development actions to reduce GHG and air pollutant emissions	Encourage businesses and Canadians to take voluntary action to reduce greenhouse gas and air pollutant emissions. Voluntary approaches such as providing information and incentives, and developing standards and codes of practice, can promote environmental sustainability while maintaining flexibility and supplementing or reducing the need for regulation.	ISED, ACOA< STANDARDS COUNCIL	NISP will engage at least 120 businesses per year, per region in voluntary, profitable actions to reduce GHG emissions. The NISP model to Canada will provide businesses with a tried and tested tool, capable of benefiting their businesses while reducing GHG emissions.
		Domestic collaboration to reduce GHG emissions	Provide opportunities for collaboration and work with provinces, territories and other stakeholders to implement shared approaches to reducing greenhouse gas emissions and improving air quality. Sharing information and working with others to address sustainable development issues can help coordinate activities, reduce duplication, and produce solutions and approaches that reflect diverse perspectives.	ENVIRONMENT, ISED, NR CAN, STDS COUNCIL, WD	NISP-CANADA will involve collaboration among provincial governments (multiple departments), regional and local governments, and local businesses. The NISP model has been audited and verified to significantly reduce GHG emissions (at less than \$2CAD per tonne in the UK).

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CLEAN TECHNOLOGY, JOBS & INNOVATION	<p><b>Sustainable Workplace</b>  <b>Operations:</b> Effective fiscal year 2017- 2018, departments will reduce the environmental impact of materiel and services by implementing modernized, green procurement and sustainable workplace practices.</p>	Leading by example on sustainable workplace operations	Demonstrate leadership by taking action to reduce the environmental impact of materiel and services. Improving the sustainability of workplace operations can result in environmental benefits as well as cost savings. As the federal government owns or manages a substantial portfolio of facilities and purchases a large variety of goods and services, reducing its environmental footprint can have a significant impact.	ALL	Where applicable, federal facilities can participate in the NISP-Canada process, pursuing GHG emission reduction symbiosis partnerships with regional businesses (thereby substituting by-products for virgin materials and/or providing by-products to offset other businesses virgin material purchases). This could include facilities such as research stations, laboratories, vehicle maintenance, and federally regulated entities such as ports and airports.
CLEAN TECHNOLOGY, JOBS & INNOVATION	<p><b>Sustainable Agriculture:</b> Support the agriculture sector in improving the sustainable management of agricultural working landscapes in a manner that contributes to national targets:            Agri-Environmental Performance Metrics achieve a value between 81-100 on each of the Water Quality and Soil Quality Agri-Environmental Performance Metrics by March 31, 2030.            By 2020, agricultural working landscapes provide a stable or improved level of biodiversity and habitat capacity.            (Minister of Agriculture and Agri-Food)</p>	In-kind support and funding for sustainable agriculture	Provide funding for provinces and territories to deliver sustainable agriculture programming. Transfer payments and other forms of support can help further the government's broad policy objectives and priorities while engaging a wide diversity of skills and resources outside the federal government.	AG	There is significant interest from provincial agriculture departments and the bio-industry sector in NISP-Canada. NISP-Canada can help industry to develop new value-add products for existing wastes and by-products, especially cross-sectoral eg., partnership between ag company and a building products company.
		Investment in sustainable agriculture technologies	Support the development, demonstration and deployment of technologies that enable sustainable agriculture. Technology development and dissemination can support economic growth and improved quality of life for Canadians, and provide environmental benefits.	SDTC	Any symbiosis involving ag or bio-based businesses would involve a clean tech solution; 20% of those would represent clean tech innovation.