



News Release

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EarthShift Global, WSP and Introspective Systems to Develop

Life Cycle Assessment Modeling Tool for Canadian Clean Fuel Standard

KITTERY, Maine and HALIFAX, Nova Scotia, January 29, 2019 — A team of three companies led by sustainability consulting and software firm EarthShift Global has been selected to develop a Life Cycle Assessment (LCA) modeling tool to support the Canadian Clean Fuel Standard (CFS), a new regulation being developed under the Canadian Environmental Protection Act, 1999 that will reduce Canada's carbon emissions from all fuels by 30 million tonnes per year in 2030 (the equivalent of 7 million vehicles' annual emissions).

Global engineering and professional services consultancy WSP and software developer Introspective Systems, Portland, Maine, will join EarthShift Global (which recently opened its Canadian office in Halifax) to create a rigorous, scientifically valid, ISO-conformant modeling tool for calculating the life cycle carbon intensities of the full range of liquid, gaseous, and solid fuels used in Canada.

The LCA model and software will provide essential new visibility into the life cycle greenhouse gas emissions of each fuel's production and use, incorporating information about raw

materials (feedstock), supply chains, and fuel conversion and combustion technologies. The resulting insights will inform development and implementation of the CFS by Environment and Climate Change Canada (ECCC), which awarded the LCA modeling contract.

The interdisciplinary three-company project team will collaborate on conceptual modeling, with WSP bringing substantial energy-sector expertise to both fossil and low-carbon fuel aspects of the project. Introspective Systems will contribute heavily to development and documentation of the modeling tool, applying its xGraph software to future-proof EarthShift Global's Spinney software technology. This will enable the system to be user-friendly, transparent, robust, and easy to update. EarthShift Global will leverage its experience developing advanced LCA techniques to guide the project while also handling overall management, with work being reviewed and tested by an advisory panel of Canadian academic experts in fuel production and LCA.

“This is a complex and significant project, and we knew from our background in public policy development that the required combination of expertise simply didn't exist in any single organization,” said Lise Laurin, CEO of EarthShift Global. “The upside of that is that we were able to bring together powerhouse practitioners in each discipline from our existing partnership network. This team is uniquely qualified to support Canada's large and regionally variable energy sector and the Canadian people who will benefit from the Fuel LCA tool for decades to come.”

The participating teams include a substantial proportion of Canadian members and have extensive experience modeling Canadian fuel production pathways, developing robust, user-friendly software tools to support environmental management; and understanding Canadian energy and policy contexts.

“WSP will draw upon previous and continuing work in the Canadian oil and gas sector as well as extensive biofuels LCAs conducted in the United States over the past decade,” said Julie Sinistore, Project Director on WSP USA's Sustainability, Energy and Climate Change team. “WSP brings extensive experience, including supporting the development of US fuel assessment models like GREET and California-GREET for the US Renewable Fuels Standards (RFS2) and California Low Carbon Fuels Standard (CA LCFS).”

“Introspective Systems is delighted to collaborate on this important project, which we believe will serve as a role model for future environmental impact efforts,” said Kay Aikin, CEO of Introspective Systems. “Our team has the experience and tools to model this complex and data-intensive problem: expertise in life cycle assessment, insight into energy usage, and an

advanced software platform. Together, we can create a tool that will improve the environment for Canada and the world.”

Introspective Systems has significant expertise in energy systems in its work with the US Department of Energy in modernizing the electrical grid and in developing microgrid energy systems that efficiently model and use multiple sources of energy, including fossil and renewables.

The CFS will reduce lifecycle carbon intensities of fossil fuels over time by setting increasingly stringent reduction requirements for fossil fuels used in transportation, industry and buildings. The LCA model will be used in the regulations to set Canadian national average fossil fuel carbon intensities and low-carbon fuel facility specific carbon intensities and it will inform the cost-benefit analyses. ECCC currently expects to publish proposed regulations for liquid fuels in 2019 and final regulations in 2020. Proposed regulations for gaseous and solid fuels are planned for late 2020 and final regulations in 2021.

About EarthShift Global

EarthShift Global helps top-level executives, front-line practitioners, academic researchers and policymakers worldwide achieve their objectives by providing software, consulting services, and training that de-mystify the path to sustainability. Our proven approach emphasizes engagement, adaptability and credible, measurable results, and the incorporation of performance-enhancing sustainable thinking into everyday business decisions. More information is available at www.EarthShiftGlobal.com.

About WSP

As one of the world's leading professional services firms, WSP provides technical expertise and strategic advice to clients in the Transportation & Infrastructure, Property & Buildings, Environment, Industry, Resources (including Mining and Oil & Gas) and Energy sectors, as well as offering project and program delivery and advisory services. Our experts include engineers, advisors, technicians, scientists, architects, planners, surveyors and environmental specialists, as well as other design, program and construction management professionals. With approximately 48,000 talented people in 550 offices across 40 countries—more than 8,000 in Canada and 9,500 in the U.S.—we are uniquely positioned to deliver successful and sustainable projects, wherever our clients need us. www.wsp.com

About Introspective Systems, LLC

Introspective Systems is the developer of xGraph, a breakthrough software platform that enables developers to build systems, optimize their entire environment of distributed systems, and deploy seamlessly. Designed for complex software ecosystems, xGraph combines edge computing with distributed analytics to speed processing time, enabling companies to scale, adapt to change, and manage large volumes of disparate data efficiently and securely. xGraph is AI-enabled for systems that require autonomous and collaborative decision-making. Companies use xGraph to meet the challenges of complexity in environments including healthcare, IoT, energy, and science. Learn more at IntrospectiveSystems.com

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