

## SUMMARY FOR PUBLIC RELEASE

***Through research, development, and demonstration of advanced technologies, Sustainable Technologies for Energy Production Systems (STEPS), a Business-Led Network of Centres of Excellence, will be the national focus for leading-edge scientific and engineering innovations that address hydrocarbon energy production sustainability challenges for resources that are difficult to access and monetize, thereby ensuring a secure and affordable supply of clean energy to Canadians.***

### Background

The World Energy Council (WEC) and the International Energy Agency (IEA) have acknowledged that fossil fuels will remain the primary source of energy for decades to come. As the burgeoning economies of countries like China, India and Brazil increase the standard of living for their citizens, the need for hydrocarbon resources grows in step. Meanwhile, world reserves of conventional light oil are decreasing, placing more and more pressure on heavy oil and extra heavy oil development. In this regard, Canada is in a particularly favourable position as a supplier of this resource, owning over 40% of the world's known heavy oil and bitumen deposits. However, justified environmental and economic concerns exist over the extraction and development of this resource.

These concerns have translated, and will continue to translate, into more stringent regulation of the industry by markets and governments. However, the current sets of challenges represent a significant departure from prior hurdles to industry and require quick deployment of technologies in order to mitigate environmental and economic impacts. Meeting these sets of challenges requires that governments, researchers and industries work together so that the economic benefits are realized for all Canadians, while the sustainability of the environment is maintained.

### What is STEPS?

Through the Sustainable Technology for Energy Production Systems (STEPS) Network of Centres of Excellence, the challenge of a clean and affordable hydrocarbon industry in Canada becomes a tangible reality. By engaging in research, development, and demonstration of advanced technologies, this business-led STEPS Network will be the national focus for leading-edge scientific and engineering innovations in enhanced oil recovery. These innovations will focus keenly on environmental sustainability challenges that also address enhanced hydrocarbon energy production to ensure a secure and affordable supply of clean energy to Canadians and the world.

STEPS is driven by a belief that the time for further hydrocarbon scoping studies is over, and the time for research integrated with field application has arrived. This network of centres of excellence will inherit the Regina-based Petroleum Technology Research Centre's (PTRC) successful management approach to research development and deployment – wedding enhanced oil recovery bench-scale laboratory modeling with field demonstration and observation, leading to fundamental understanding of reservoir processes and technologies. To date, this unique model has been extremely successful in the advanced development and deployment of technology used by PTRC in its *IEA GHG Weyburn-Midale CO<sub>2</sub> Monitoring and Storage Project* (WMP), its *Joint Implementation of Vapour Extraction* (JIVE) consortium project, and most recently in the SDTC-funded deep saline aquifer CO<sub>2</sub> geological storage project, *Aquistore*. Through an innovative and collaborative approach to project management, research, development and demonstration, which fast-tracks commercial deployment, Canada will realize the best model for solving the challenges facing the heavy oil and bitumen industry in a timely, effective and environmentally responsible manner.

As STEPS draws researchers from across the globe to see their work move quickly through the continuum of tangible research projects, pilot-scale demonstrations and commercialization of

technology, Canada will also realize a boost to its research capacity. Attraction of the world's emerging best and brightest researchers to Canada will be significant. In terms of recruitment and retention of technical experts, STEPS provides both an attractive opportunity to researchers and a strategic advantage to Canada.

Canada's oil resource is representative of similar extraction and monetization challenges faced worldwide; as such, Canada stands to benefit from STEPS and become an innovation leader. As STEPS works quickly to move its technology to commercialization, the benefits to Canadians, our trading partners and our environment will synergize and provide lasting advantages for decades to come.

### **ABOUT THE PTRC (Lead Organization for the STEPS Business-Led Network of Excellence)**

The PTRC is a not-for-profit corporation established in 1998, which undertakes research, development, and demonstration (RD&D) projects to enhance the production and value of Canadian petroleum resources, with a particular focus on heavy oil. Its mission is:

To develop world-leading enhanced oil recovery and CO<sub>2</sub> storage technologies that ensure sustainable and environmentally-sensitive development of Canada's energy resources

The PTRC was founded by the University of Regina (U of R), the Saskatchewan Research Council (SRC), Natural Resources Canada (NRCan) and Saskatchewan Ministry of Energy and Resources (SER). Its vision is

To be committed to being a world leader in the development, advancement and application of economically viable petroleum and energy technologies, and to achieve this through a workforce of dedicated, respected and empowered professionals, a network of world-class governmental and industry sponsors, and the finest researchers and research materials available.

The PTRC is located in a new, dedicated, energy-efficient facility at Regina's Innovation Place Research Park that also houses the Saskatchewan Research Council's Energy Division and the Petroleum Systems Engineering Faculty at the University of Regina. The PTRC maintains strong engagement with industry through its Board of Directors and its external Technical Advisory Group; industry constitutes the majority in both. PTRC's management and governance structure will form the basis for STEPS. STEPS will be administratively-centred at PTRC.

#### **For more Information Contact**

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