2015/2016 Bowman Centre Program's Three Big Projects

The Bowman Centre[1]has:

1. Collaborated with the Canadian Academy of Engineering's Energy Pathways Task Force since 2005 investigating major Canadian energy opportunities
2. With the financial support of the Alberta Government and various private sector organizations, has published the following reports/books (among others) on its findings
    - Canada Power Grid Task Force, Volumes 1 and II – ISBN 978-0-9730830-5-7)
    - Canada: Winning as a Sustainable Energy Superpower – ISBN – 978-0-9730830-8-8
    - Canada: Becoming a Sustainable Energy Powerhouse – ISBN 978-1-928194-00-2
    - The Case for a TransCanada Energy Link; An Incremental Approach – EIC Climate Change Technology Conference 2015
3. Defined nine new big projects that Canada could undertake over the current half-century that will continue Canada's long nation-building trajectory
4. Selected three of these projects ready to be launched in the near term.
5. Plans to further develop the following three Big Projects:

    Project 1 – Sarnia Lambton Advanced Bitumen Energy Refinery (SABER Project)

    Project 2 – Project 2 - Interconnecting Canada with a HV Power Grid

    Project 3 – Energizing Manufacturing around the Energy Industry

    Program details are provided on the following pages.

[1] The Bowman Centre is a research organization established by the County of Lambton Community Development Corporation

Project 1 – Sarnia Lambton Advanced Bitumen Energy Refinery (SABER Project)

1. With the input of its team of senior industry executives (see below), the Bowman Centre has prepared the Business Case, including conceptual design, supply and marketing plans, and profitability analysis for the above project. The executives contributed their time pro bono: the commercial value exceeds $1.5 million.

2. The Bowman Centre seeks public and private sector funding to cover costs for:
    a. Project Manager.
    b. Travel for meetings with prospects.
    c. Industry credible fuels marketing and logistics analyses.
    d. Developing a logistics option to return diluent.
    e. Update margin analysis reflecting current crude oil prices.

    The Project Manager for this work will be Don E. Wood, Vice-President, Logistics and Business Development, Polysar (retired)

    Pro Bono Support for Project 1 has been provided by:

    Clement Bowman, C.M., PhD, PEng, HCIC, HCAE: Founder, The Bowman Centre; Past Chairperson of the Alberta Oil Sands Technology and Research Authority (AOSTRA)

    Walter F. Petryschuk, PhD, PEng, FCIC, FCAE: Associate, The Bowman Centre; Retired – Manager, Suncor Sarnia; Retired – Sarnia Site Manager, Polysar Ltd.

    Donald E. Wood, B.Sc. (RMC), B.A.Sc. (U of Toronto), P. Eng. (Ret), Past Vice President of Polysar Limited and Marsulex Inc.

    Bruce Cater: Retired – Refinery Economics, Suncor

    Kirk M. Wilson: Retired – Senior Vice President and Head of Bayer Technology Services Americas, Bayer Business and Technology Services, LLC.

    Ed Brost: President, JE&M Consulting Ltd.

    Terrence Hoffman, PhD, FCIC, FEIC: Emeritus Professor of Chemical Engineering, McMaster University; Retired – Principal Chemical Engineer, Polysar Ltd.; Retired

    Larry MacDonald: Retired – CFO, Nova Chemicals

    Gordon E. Currie: Retired, Past CFO of Gennum Corporation, Westcast Industries, Emco Limited, and Polysar Limited Assistant Treasurer

Project 2 - Interconnecting Canada with a HV Power Grid

1. As an activity for the Canadian Academy of Engineering, the Bowman Centre has developed a conceptual plan, with extensive private sector input and out-of-pocket costs of $100k, for building a national electrical power grid, see (www.clembowman.info/PDFs/CAE-PowerGridReport-Vol1-Apr13.pdf). This study included investigations of existing, committed and potential interconnection ties.

2. Extended this work to include an evolutionary approach to achieving a national grid with the initial step being a major enhancement of Ontario/Quebec interconnections, described in a report presented at the EIC Climate Change Technology Conference 2015.

3. Identified the opportunity to further reduce both the future costs of electricity and the emissions associated with the generation of that electricity through access to the renewable resources available in all provinces. Furthermore, Canada has an opportunity to integrate our electrical transmission systems and to dramatically increase the sale of premium priced, low carbon, electricity to the United States.

4. The Bowman Centre seeks private and public level support to undertake detailed evaluations of sequential interprovincial interconnection ties in collaboration with key stakeholders.

5. The Project Manager for this work will be Peter R. Smith, B.Sc. P.Eng, Director, Commercial Management Eastern Canada, TransAlta (retired)

Project 3 - Energizing Manufacturing around the Energy Industry

1. As an activity for the Canadian Academy of Engineering, the Bowman Centre has published a book 'Canada: Becoming a Sustainable Energy Powerhouse' (www.bowmancentre.ca) that:
    - noted the dramatic decrease in Canadian value-added exports in the past ten years, and as a counterbalance to this,
    - recommended that active efforts are needed to boost the Canadian content in the high value manufactured inputs to resource projects

2. Developed a plan for meeting the main objectives of Project 3 as follows:
    - building on supply chain studies already undertaken by CME, undertake a more detailed evaluation of the product and service categories required by current and existing energy projects,
    - identify real matches/opportunities available to current Ontario manufacturers where grass root development would be needed to access other opportunities;
    - identify how to catalyze the development of new manufacturing technologies for the energy industry;
    - identify programs required to ramp up the skill sets/programs needed to advance training and education for Canadian technicians and trades persons to fill the high quality jobs to be generated in the sector;
    - take actions to garner from current manufacturers the forms of support needed, including government/commercial financing support arrangements to fund related R&D, growth in working capital and other growth-focused action plans.

3. The Bowman Centre seeks private and public sector support to undertake the above mentioned work, and to develop the business case for an Ontario Manufacturing Innovation Centre. Each stage in this investigation will have matching support from non-Ontario Government organizations.

4. The initial Project Manager for this work will be George Mallay, General Manager, Sarnia Lambton Economic Partnership. He will work with key engineering and supply chain organizations and strategic alliances, such as the members of the Sarnia-Lambton Industrial Alliance.