Workshop on Major Activities in IETS and in Finland on Industrial Energy Efficiency and GHG Mitigation

Canada Progress Report

29th IETS ExCo in Espoo, Finland, November 27-28th 2019
Canada Progress Report on IETS-Annexes:

ANNEX XI
START DATE: 2008-06-01
END DATE: 2020-12-31
Industry-based Biorefineries

ANNEX XVIII
START DATE: 2018-11-01
END DATE: 2019-11-30
Digitalization, Artificial Intelligence and Related Technologies for Energy Efficiency and GHG Emissions Reduction in Industry
ACTIVITIES DURING 2018

- Three webinars with short presentations of Decision Support System (DSS) softwares were organized:
  - 1st webinar on introducing I-BIOREF software as one of the potential DSS on January 31st with 24 attendees from Austria, Canada, France, Germany, Italy, Netherlands, and Sweden;
  - 2nd webinar on introducing ENPAC tool for scenario development and Prospective LCA tool, as well as detailed description of the proposed New Task on April 24 with 17 attendees from Austria, Australia, Canada, France, Ireland, Italy, Netherlands, and Sweden;
  - 3rd webinar on introducing I-BIOREF software to the Bioenergy Australia members on May 9.

- The new Task proposal was prepared and presented:
  - The new Task proposal was shared with the IEA Bioenergy Task 42 member countries on November 6;
  - The final approval of the new Task on DSS occurred during the ExCo meeting in Rome, November 27-28, 2019.

Responsible author: Isabel Cabrita, DGEG – Directorate-General of Energy and Geology, Portugal
Annex members: Belgium, Canada, Portugal, Sweden and the Netherlands.
WORK PLANNED AND ACHIEVED FOR 2019

- **Positioning of the new Task** through discussions with partners, including Portugal, Sweden, Finland, and Netherlands;
- **Creating of a Task Force** composed of Canada, Sweden, and Portugal to **rethink and renew the Annex XI vision** and related activities;
- Creating a formal liaison with **IEA Bioenergy Task 42**;
- Reviewing IEA Bioenergy Tasks and IETS Annexes and identifying potential synergies with the IETS Annex XI;
- **Identifying interested country experts** (Brazil, Canada, Sweden, Finland and The Netherlands) leading to the initial workshop for December 2019.
- **Identifying new ideas** for New Tasks within the revised vision and mandate of Annex XI:
  - Site-level energy analytics for biorefinery integration
  - Energy and GHG intensity of biorefinery value chain
  - Artificial intelligence to biorefinery transformations
  - Circular economy and biomass-oriented industrial symbiosis

CONTACT DETAILS
Annex manager:
Paul Stuart, Chemical Engineering Department – Polytechnique Montreal
E-mail: paul.stuart@polymtl.ca
Marzouk Benali, CanmetENERGY – Natural Resources Canada
E-mail: marzouk.benali@canada.ca
ACTIVITIES DURING 2019 (TASK 1)

- Interviews to establish country member interests, from June to August 2019
- Development of a matrices of interests, September 2019
- Development of a lexicon on common terms used in digitalization, September 2019
- Meeting 2 Webinar in September, 17 2019: Country Member Interests and Preliminary Task Proposals
  - Discussions around the matrices of interests
  - Presentation of 9 pitches on potential task proposals by country members
  - Identification of synergies between the nine ideas of proposals
- Minutes of meeting 2, October 2019.

CONTACT DETAILS
Annex manager:
Mouloud Amazouz, CanmetENERGY – Natural Resources Canada
E-mail: mouloud.amazouz@canada.ca

Task 1 manager:
Paul Stuart, Chemical Engineering Department – Polytechnique Montreal
E-mail: paul.stuart@polymtl.ca
Canada Progress Report: Annex XVIII (cont’d)

ACTIVITIES DURING 2019 (TASK 1)

- Meeting 3 Face-to-face meeting in Paris on October 15-16, 2019: Annex XVIII Future Tasks Definition
  - 14 attendees from 8 countries (Austria, Canada, Denmark, Finland, France, Italy, Netherlands, Switzerland)
  - Keynote presentation by Milan Korbel, McKinsey, Australia on “AI in processing plant”
  - Review of the lexicon on digitalization
  - Five task proposals have been made and discussed
  - Three new task proposals have been selected and will be submitted to the IETS ExCo for approval:
    - **Task 2: Methods and Applications of Digital Twins (DT)** (Lead and co-lead: Rene Hoffman (AU) and Eemeli Hytönen (FL))
    - **Task 3: Lessons learned and created values by digitalization** (Lead and co-lead: Zheng Ma (DE) and Michelle Levesque (CA))
    - **Task 4: Looking forward: Digitalization implementation roadmaps** (Lead and co-lead: Daiane Piva (NL) and Paul Stuart (CA))

CONTACT DETAILS

**Annex manager:**
Mouloud Amazouz, CanmetENERGY – Natural Resources Canada
E-mail: mouloud.amazouz@canada.ca

**Task 1 manager:**
Paul Stuart, Chemical Engineering Department – Polytechnique Montreal
E-mail: paul.stuart@polymtl.ca
Thank you for your time and attention!

For further information, please contact:

Eric Soucy, ing., P. Eng., MBA
Directeur | Director
Optimisation des procédés industriels | Industrial Systems Optimization

CanmetÉNERGIE | CanmetENERGY
Ressources naturelles Canada | Natural Resources Canada
1615, boul. Lionel-Boulet, C. P. 4800 | 1615 Lionel-Boulet Blvd. P.O. Box 4800
Varennes, QC J3X 1P7

Téléphone | Telephone: +1-450-652-4299
Courriel | E-mail: eric.soucy@canada.ca
www.mcan.qc.ca | www.nrcan.gc.ca