CANADA

DBFZ Research and Project Country Profile
Activities & Partners

DBFZ Activities

DBFZ has long lasting research ties with Canada. Dry fermentation processes and detection of methane emissions in biogas plants have been permanent pillars of different cooperation projects. In addition, bioeconomy issues, biorefinerie (bio fuel) aspects and the utilization of solid biomass are frequently mentioned topics of common interest.

On highlight in the mutual cooperation was the hosting of the Canada Bio-Economy Cooperative R&D Partnering Mission, organized jointly by the Canadian Embassy, Projektträger Jülich (Project Management Jülich, PtJ) and DBFZ, in March 2020.

DBFZ R&D and Project Focus

R&D projects with Canadian partners have focused on the following aspects so far:

- Dry fermentation technologies
- Measurement of methane emissions (laser based)

Besides, there are close links between DBFZ and Canada within different IEA task forces.

DBFZ Future Activities

In terms of energetic and material related utilization of untapped agricultural residues, Canadian-German collaborative projects are promising. In particular, future activities may include:

- Cooperation on biogas (mainly emission measurement)
- Potential analysis and resource monitoring (and mapping)
- Small-scale furnaces and catalytic emission control
- Separation technologies (solid-liquid and liquid-liquid separation)
- Process simulation for and assessment of biorefinery concepts
- 2nd generation fuels
- Increased exchange of visiting scientists

DBFZ Partners

Cooperation Agreements	
Project Partners	University of Alberta, Edmonton Boreal Laser
Institutional	Agriculture and Agri-Food Canada (AAFC)

Picture: www.nationalflaggen.de

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Project References

Cooperation	Alberta Innovates

DBFZ Reference Projects (selected)

11/2012	**Assessment of aggregate values for the canola production in different regions in Canada** In this project, solid biofuel industry players were informed and trained regarding standards and certification. Feedback was collected and provided to related standardization committees and policy makers. The action focused on the organization of 35 training events for producers, traders and end-users of solid biofuels as well as actors involved in standardization and certification.
01/2012-12/2015	**Development of a method for the determination of substrate characteristics for an anaerobic percolation processes (Post-secondary Investments Alberta Innovates - Technology Futures)** SECTOR (Production of Solid Sustainable Energy Carriers from Biomass by Means of Torrefaction) was a large-scale European project with 21 partners from industry and science involved. The project had two objectives: On one hand, the further development of torrefaction-based technologies for production of solid bioenergy carriers up to pilot-plant scale and beyond, and on the other hand market introduction support for torrefaction-based bioenergy carriers.
06/2014-05/2016	**Development of Feed-stock Suitability Assessment Methods for Batch Dry Anaerobic Digestion (Post-secondary Investments Alberta Innovates - Technology Futures)** This project aimed at construction and launch of a new biomass operated heating boiler of medium size (250 – 500 kW). The resulting boiler was equipped with innovative filtering and automatic loading systems.

DBFZ Reference Publications

Thrän, Daniela; Millinger, Markus; Meisel, Kathleen (2017): Biofuels between manifold expectations - how to assess their potential for sustainable transportation? In: Biofuels 2017. 7th International Congress on Biofuels and Bioenergy. October 02-04, 2017, Toronto, Canada. *Journal of Fundamentals of Renewable Energy and Applications* 7 (7), S. 68.

About the DBFZ

DBFZ is the leading German research institute in the field of energetic and related material use of biomass. The DBFZ monitors and evaluates the most promising applications for bioenergy in theory and practice, realizing research and collaborative research projects at both national and international level, with partners and stakeholders from industry, administration, politics and academia. Currently about 180 scientists in the departments Bioenergy Systems, Biochemical Conversion, Thermo-chemical Conversion and Biorefineries carry out application-oriented R&D that also provides scientifically-based results to support informed political decision making.

Coordinator for international affairs
Dr. rer. pol. Sven Schaller
Phone: +49 (0)341 2434-551
Fax: +49 (0)341 2434-133
E-Mail: sven.schaller@dbfz.de

Research Coordinator
Dr. rer. nat. Elena Angelova
Phone: +49 (0)341 2434-553
Fax: +49 (0)341 2434-133
E-Mail: elena.angelova@dbfz.de

Coordinator for Innovation
MSc. Karen Deprie
Phone: +49 (0)341 2434-118
Fax: +49 (0)341 2434-133
E-Mail: karen.deprie@dbfz.de

General Management DBFZ
Prof. Dr. Michael Nelles
Phone: +49 (0)341 2434-122
Fax: +49 (0)341 2434-133
E-Mail: michael.nelles@dbfz.de