



Flexible Production of Synthetic Natural Gas and Biochar via Gasification of Biomass and Waste

Issue 5 / April 2024

Since the last newsletter FlexSNG has carried out a second test campaign, been granted an extension, and had a successful week in Canada presenting the project and meeting potential new collaborators. Keep reading for a round up of all the project activities, past and future.

Contents

1. FlexSNG Webinar Series
2. Second Topical Workshop
3. Networking Opportunities in Canada
4. New FlexSNG videos
5. FlexSNG at CINEA Cluster Event

1. FlexSNG Webinar Series

Don't miss FlexSNG's upcoming webinar series, in this short series of 1 hr webinars you will have the opportunity to hear from the researchers about different parts of the value chain. The schedule for the webinars is as follows:

- **Webinar #1 - 10th April 2024 - Biochar**
Project partners EIFER delve into the world of biochar. Learn how biochar is produced, discover its properties, and explore potential applications, including the innovative FlexSNG concept for biochar production.
Register Free: [FlexSNG Webinar #1 - Zoom](#)
- **Webinar #2 - 8th May 2024 - Supply chain**
We hear how Creative Optimization and Skogforsk are developing and tailoring cost-effective feedstock supply chains for the new gasification process to enable secure, long-term supply of sustainable biomass/waste feedstocks.
- **Webinar #3 - 22nd May 2024 - SNG**
The overarching target of this project is to develop and validate a feedstock-flexible gasification process based on a novel Bubbling Circulating Fluidised-

Bed (BCFB) gasifier that can switch between two operational models presented by the project coordinators VTT.

- **Webinar #4 - 10th Oct 2024 - The Case Studies**
Evaluation of the implementation potential of the FlexSNG concept in different regions in Canada and Europe and identify the most economically attractive environment for a subsequent flagship demonstration.

The graphic is a dark blue rectangle with the FlexSNG logo at the top center. Below the logo, the text reads: 'WEBINAR #1 Wednesday 10th April '24 14:00 - 15:00 CEST'. To the right of this text, it says 'Biochar: Production routes, properties and potential uses'. At the bottom, there are three circular headshots of speakers: Claudia Vannuchi (Research Fellow - EIFER), Mauro Giorelli (Politecnico di Torino), and Karol Witkowski (Research Engineer - EIFER).

Figure 1: Webinar #1 - Biochar

2. Second Topical Workshop

FlexSNG held a half-day workshop at this year's PaperWeek Canada in Montreal, on how this gasification-methanation is being systematically developed, and where the de-risked process is expected to lead to improved economics and a competitive position as the demand for synthetic natural gas (SNG) grows.

If you missed the conference, or want to watch it again, the full workshop recordings are available here: [Second Topical Workshop](#)

Event was a huge success with 105 viewers online and in person, hearing from experts in the field of gasification, starting with David Longdon, SFW, who covered a brief history, described the current activities and aspirations into the future and areas of focus to ensure that “now is the right time!”. We then heard from the project coordinator, VTT, represented by Ilkka Hiltunen, Erik Rönqvist, from Creative Optimization, and Dr Andrew Steele, Johnson Matthey.

The event rounded off with a lively roundtable discussion panel focusing on ‘De-Risking FlexSNG’ in which our project researchers shared some challenges they have already faced or expect to face during the project or in the future.



Figure 2: Second Topical Workshop, Montreal, Canada

3. Networking Opportunities in Canada

During FlexSNG's trip to Canada the consortium took advantage of the long journey from Europe to stay a few days more to meet other industries and research centres for knowledge sharing and to explore possibilities of potential future collaborations.

On 7th February, the team had the pleasure of a site visit to **FPIInnovations R&D laboratories**. FPIInnovations is a private not-for-profit organization that specializes in the creation of solutions in support of the Canadian forest sector's global competitiveness.

On 8th February 2024 FlexSNG was hosted by Greenfield Global at their Varennes biofuel production site. Where the team learnt how ethanol, animal feed, and corn oil, are produced from grain provided by farmers within a 75-kilometre radius. The Greenfield Global biofuel plant is one of the biggest in the world, and significantly contributes to Canada's domestic gasoline market.

On 9th February 2024, we had a fruitful meeting with Natural Resources Canada (NRCan) at their CanmetENERGY site in Ottawa. At this site the research and development focuses on clean energy innovation for a low-carbon future, the relevant aspect to FlexSNG is that NRCan is researching gasification techniques. During the meeting we were also given a tour of the biofuel and gasification experimental labs.

With the new Pillar II agreement recently signed between Canada and the European Commission for inclusion in the Horizon Europe programme there is now a real opportunity for Canadian and European

researchers to collaborate, perhaps even in a follow up to FlexSNG.



Figure 3: The project team at Greenfield Global

4. New FlexSNG videos

To find out more about what the FlexSNG team have been up to both at the pilot site and in Canada you can watch these two new videos.

[FlexSNG - Second Pilot Test Campaign](#)

This video summarises FlexSNG's second pilot test campaign held in November 2023 at VTT's Pilot Centre Bioruukki, Finland. The focus was to maximise biomethane production mode and demonstrate a smooth transition between operation modes. DTU's proof-of-concept oxygen transport membrane (OTM) module was operated successfully in direct integration with the gasification process.

[FlexSNG Interviews at Second Topical Workshop](#)

For the first time in the project we hear directly from the project partners! Filmed during the FlexSNG second topical workshop each partner tells us about their role, why it's important for the project, and about their experience at BIOFOR, PaperWeek Canada.



Figure 4a: Interview video



Figure 4b: Second Test Campaign Video

5. FlexSNG at CINEA Cluster Event

The integration of forest, agro and waste biomasses FlexSNG project took part in a CINEA cluster event for H2020 and Horizon Europe research projects dealing with biofuels and biomethane. The event took place on Monday, 02 October 2023 in Brussels at CINEA.

The event hosted around twenty project coordinators from Biomethane and Advanced Biofuels topics and provided a valuable opportunity to receive updates on policy developments and future funding opportunities directly from CINEA. In addition, the cluster event was a unique opportunity to meet other projects, exchange experiences and information, and explore the possibility of collaborating and exploiting synergies in the areas of project execution, dissemination, and communication.

Minna Kurkela, VTT, presented FlexSNG as a poster, that can be downloaded [here](#).



Figure 5.: CINEA cluster event



PROJECT PARTNERS



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This project has received funding from the European Union's Horizon 2020 Research and Innovation Programme under Grant Agreement No. 101022432 and the Government of Canada's New Frontiers in Research Fund (NFRF) and the Fonds de recherche du Québec (FRQ).

