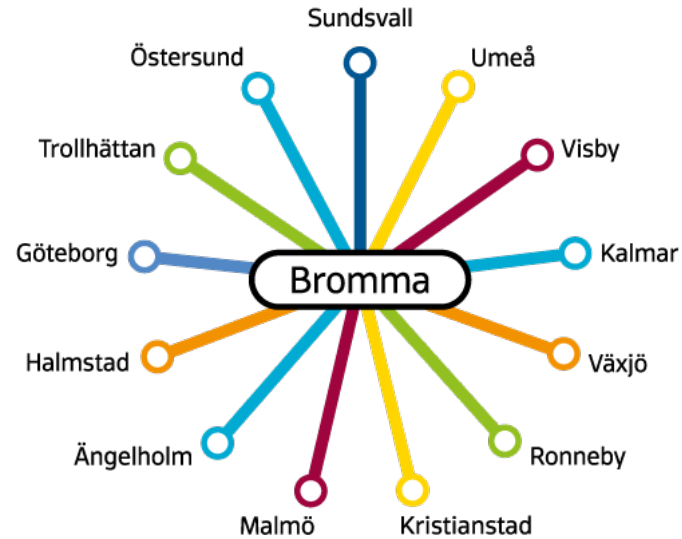




What does Swedish domestic aviation need
to be sustainable and fossil free?

Braathens Regional Airlines



Fossil free domestic aviation 2030 is our goal.



- First airline to become ISO14001 certified in 2009
- Operate with fuel efficient ATR 72-600 turboprop
- First airline to offer bio fuel to customers (2017)
- First airline to climate compensate for all emissions of Green House gases (2019)





We need sustainable and affordable
bio fuel to be produced in larger
scale in the Nordic region.

Biojet Pre-study

Nov 18 – 2019, Validation and demonstration of forest based biojet fuel, step 1.

Partner



Role

- End user of Bio Jet
- Business case development

- End user of Bio Jet
- Business case development

- Bio Jet fuel certification & distribution
- SAF project development knowledge and experience
- Business case development

- Business case development

- Communication
- Business case development

Support from



Partner



Role

- Commercial offer and cost estimates for gasification equipment
- Gasifier equipment supplier, scale-up
- Business case development

- Technology provider with relevant FT technology
- Interested in developing and demonstrating their technology

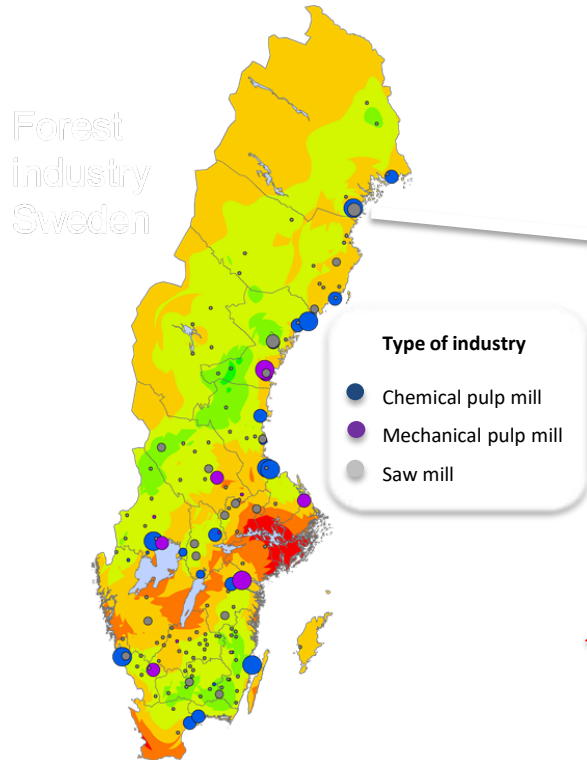
- Pulp Mill owner & operator
- Feedstock provider
- Business case development

- Largest forest owner in Sweden
- Business case development

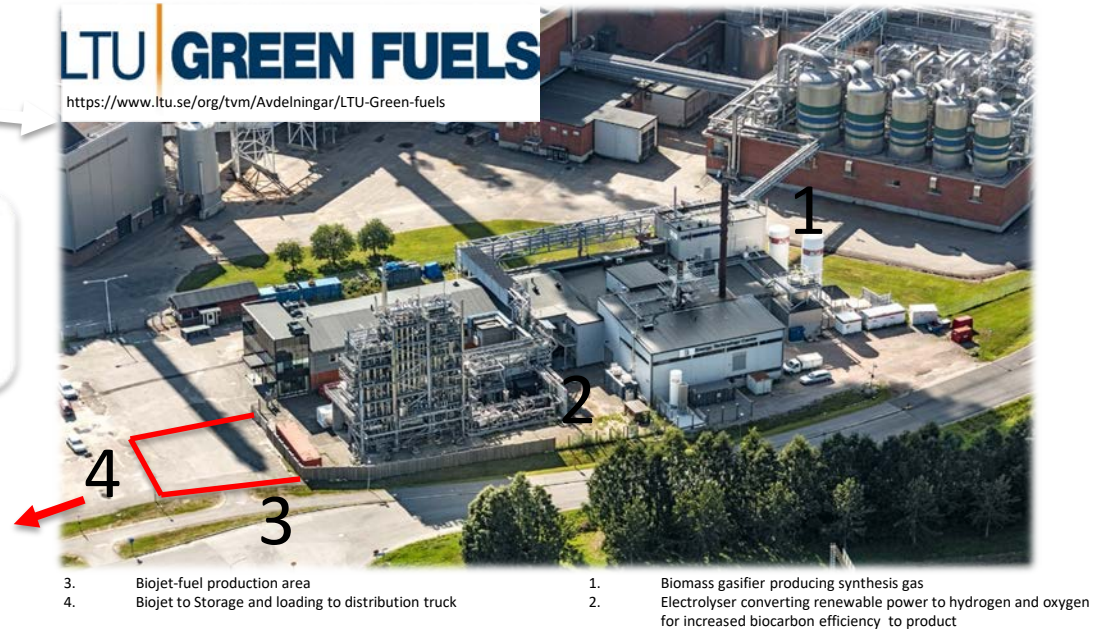
- Technology scale-up
- Extensive experience with the existing gasifier
- Techno-economic analysis

- Pilot plant ownership and operation
- Knowledge & experience with gasifier operations
- R & D of gasification technology etc.

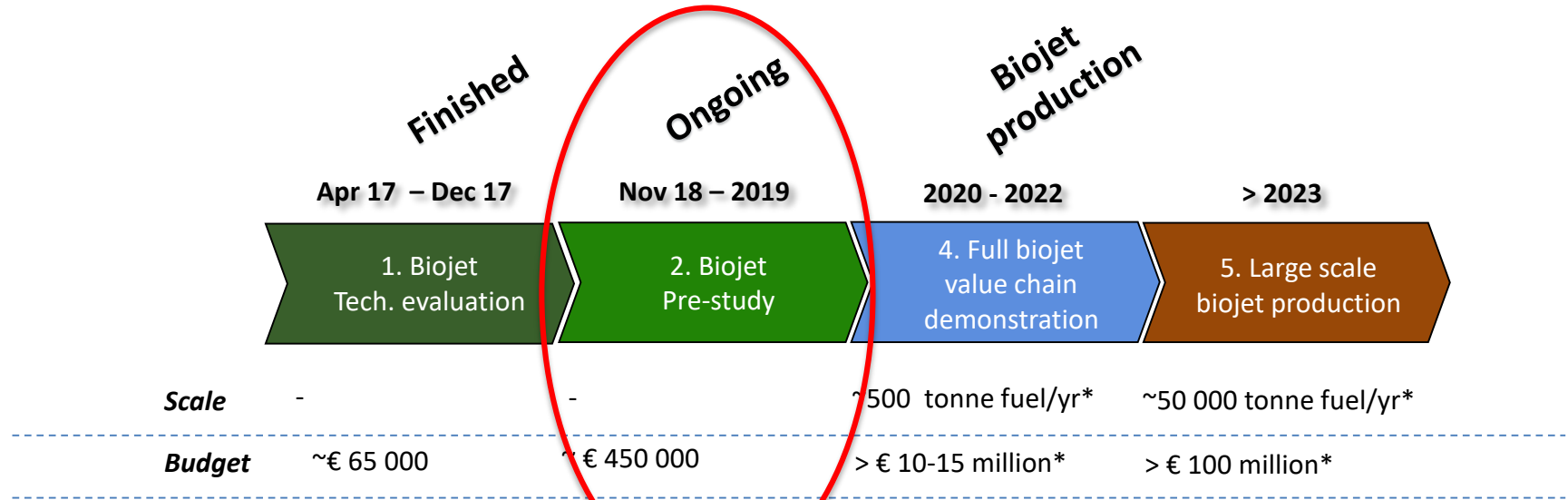
LTU Green Fuels BioJet initiative



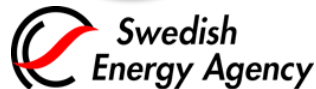
Retrofitting of LTU Green Fuels 3 MW gasifier with a Fischer-Tropsch and upgrading unit has the potential to produce 300 to 600 tonnes of biofuel per year using an ASTM certified pathway for a pre-commercial full value chain test evaluation.



BioJet initiative



* Indicative



Drivers for sustainable aviation fuel, (SAF) in sweden

National ambitions

The Swedish Aviation Industry has set a target for fossil free domestic aviation from 2030 onwards

The government set aside 100 million SEK to research and development of aviation biofuels between 2018-2020

In February 2018 a Govt Committee was appointed to propose new legislation to advance the use of SAF in Sweden

An aviation tax was implemented 1st of April 2018

The Govt. investigation was presented on 4th of March 2019. Referral responses to be sent in to Gov. 18th Sep 2019.

European policy context

EU, Renewable Energy Directive (RED II) which will be in place from 2021 onwards

The RED II includes preferential treatment for biofuels used in aviation compared to roadtransport (1.2 x multiplier). This will provide a significant financial incentive

All crop-based feedstocks are phased out, transition to wastes and residues

EU ETS includes emissions from aviation

Future global regulation

Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA).

Starting 2020 with a demand for climate compensation for int., air transport emission above 2020 level.

Thank you!

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