

# NISA

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Nordic SAF – leadership – “wrap up in short”

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# Key notes

- Boing and Airbus are already in the SAF business
- Several airlines are testing and have keen interest in SAF
- Several airports have started, ready for more
- Supply chains are developed
- Norway – drop in has been decided, 1% to be scaled up
- HTL and crude oil to further upgrading and CO<sub>2</sub> to E-fuels
- Preem are in the transition and in collaboration with SAS for SAF
- Swestep pyrolysis of waste streams
- NESTE – HEFA – 4 plants – 2 in Finland – 2,7 Mt/y – part for SAF and scaling up, Collaboration with Air BP, 12 airport in N+S
- Topsoe working with oils, fat and others to SAF – isomerization and hydrogenation
- Catalytic hydroxyolysis in one step – wood to fuel – 60% energy recovery
- Thermal gasification of biomass with no O<sub>2</sub> in the syngas, to fuel + E-fuels by more H<sub>2</sub>
- Perspectives for E-fuels by CO<sub>2</sub> + H<sub>2</sub>, SOEC + plasma
- Organic microbial lipids by sugars and acids to fuels, lignin to chemicals, syngas to ethanol etc.
- Biobutanol from wastes + H<sub>2</sub> + acids = AtJ-SPK
- CAD to optimize process design, cope with mill. of data

# Today`s Highlights

## How to be producers - not only consumers in the Nordic countries

- We have a lot of sustainable resources – first of all – forests - lignocellulose
- We have a lot of wastes and waste streams including straw
- We have and will increase the amounts of Green electricity to make hydrogen
- We have companies already in the business
- We have competencies to develop new processes and production facilities
- We have initiatives in some of the Nordic countries but **not in all**

# What we need

- **About 270 million liters of SAF in 2050 for a blend-in ratio of 50%**
- **About 170 million liters of SAF in 2030 for a blend-in ratio of 30%**
- **Political awareness and initiatives in all the Nordic Countries and further coordination of activities – focus on the needs for aviation as well as for maritime – not only road transport**
- **Funding of R&D, pilot- and demonstration plants as well as incentives for “the front end” production in commercial scale**
- **All in the business to speed up and work together for Nordic Solutions**

# What we do **not** need

- No Taxation on aviation – but incentives to the development and blend in of SAF
- “Carrots rather than Sticks”

Let's go for it: We need  
to fly and to fly green.

**Lets us be the  
producers not  
only consumers  
in the future**

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