Power-to-X and the potential to make transportation sustainable with synthetic fuels like eFuels in scale

Päivi Varvemaa | Head of Initiatives, Power-to-X 3rd European Conference Hydrogen and PtX, 15-16 June 2022, Copenhagen



Neste in a nutshell

Founded in **1948** to secure oil supply for the state of Finland

World's

#1

producer of Renewable Diesel & Jet Fuel from waste and residue One of the world's most sustainable companies by the Corporate Knights Global 100 Index

> In 2021, our renewable products helped our customers reduce GHG emissions by

> > 10,9 Mt

We are 4,872 dedicated professionals committed to our purpose

Renewable products production capacity 3.2 → 4.5 Mt/a in 2023

The journey continues and PtX will be part of it!

70% of R&D budget

of R&D budget invested in researching and testing future raw materials



Why do we need fuels when we have electrification?

Sustainable transport requires all low-carbon solutions

Power-to-liquids, hydrogen,





4

• EVs and renewable fuels can substitute more than 50% of crude oil in transportation

 Smart regulations is needed to make it happen!

Neste's way forward



Growth beyond waste oil and fats

We are set to become a global leader in renewable and circular solutions with a strong focus on innovation



Business Platforms aim at commercial operations by 2030

Raw materials and technologies

Renewable hydrogen

Pilot project ongoing at Neste's Rotterdam refinery with partners. clean hydrogen (H₂)project at Neste's Porvoo refinery in feasibility phase, selected for EU Innovation Fund grant.

Power-to-X (eFuels)

Technology end-to-end mapping ongoing.



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Algae

Technology platform build-up ongoing.

Lignocellulose

Conversion technology alternatives evaluated. Project development ongoing.

Municipal solid waste

Initial assessment of scalable technologies ongoing.

End-use segments

Renewable aviation

Renewable polymers and chemicals

Renewable road transportation

eFuels and PtX Solutions

Rapid deployment of new PtX technologies and feedstock mobilization required to supply sustainable fuel volumes 2030+



NESTE

Building a platform for green hydrogen (H2) and Power-to-X Grow availability of raw materials for eFuels and eFeedstock through deployment of electrolysis and Power-to-X conversion technologies.



Green hydrogen (H2) and Carbon Capturing are key enablers in the Power-to-X route

This is a journey together with partners





Collaboration is required for scale-up

Strengthening our partnership and networks across the value chain in the business platform Power-to-X



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Low-emission technologies are scaling up - we just need the right frameworks for developing them faster

Renewable raw materials hold significant potential to accelerate the reduction of CO_2 emissions, in particular in the transportation sector.



Source: International Energy Agency (2021), Net zero by 2050, IEA, Paris Emissions refer to global CO2 emissions in 2020

Conclusion

Availability of low cost renewable electricity Supportive regulation - the climate needs smart regulations

Industrial scale-up and cost reduction of power-to-X technologies

Regulators hold the **key to enable a broad renewable raw material pool** to unlock the fuel emission reduction potential in transportation and beyond.



Neste aim to be among the first companies bringing eFuel volumes to the market



NESTE

Change runs on renewables

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18