# Neste

# Sustainable Growth through Innovation

Dr. Lars Peter Lindfors, Senior Vice President, Technology

lars-peter.lindfors@neste.com



### **Neste in numbers**





# RENEWABLES: From low quality raw material to high quality products

We are the world's number

renewable diesel provider with the capacity of 2.6 million tons (planning to reach 4 million tons in the early 20's) The share of waste and residues is almost

80%

of our renewable raw materials

Neste MY Renewable Diesel reduced GHG emissions by the amount equaling annual emissions of

> **2.4** million passenger cars



The organic development of the new business leg has resulted in the transformation of Neste

Comparable EBIT, MEUR





#### Demand growth for renewable diesel continues to be strong both in Europe and North America



Renewable diesel demand, Mton/a

- Demand for renewable diesel almost doubles to 2021, as conventional biofuels face blending limitations and GHG-based targets spur demand for waste-based renewable diesel
- European demand continues to develop favourably, particularly in the key Nordic markets
- US demand growing as markets at federal and state level support growth to 2021 and beyond
- Biodiesel demand estimated to grow from 28 Mton in 2017 to 33 Mton in 2021

Source: Neste analysis based on Platts, 2017; IEA, 2016

## PROGRESSIVE REGIONS blaze the trail

**CALIFORNIA** -18% carbon intensity **S W E D E N** 30-40%

ITALY

17-19%

**F R A N C E** 15% N O R W A Y 40%\* FINLAND 30% CANADA Clean Fuels Standard under development

Selected countries' envisioned renewable fuel targets 2030

\*indicative target



#### WASTE AND RESIDUE RAW MATERIAL ARE THE KEY to deliver cost-efficient CO<sub>2</sub> emission reductions in transport

Average cost to society (EUR) to reduce 1 ton of CO<sub>2</sub> emissions in passenger cars and heavy duty vehicles



**Notes**: Data shown here reflect the median of the cost range and refer to situation in 2030. Oil price range of 70-113 USD/bbl. Expected 2030 cost for alternative powertrains. Includes required investments into infrastructure. EU average projected power mix (IEA). **Source**: Neste, based on Roland Berger, *Integrated Fuels and Vehicles Roadmap to 2030*, 2016

Heavy duty vehicle Passenger car

#### NESTE

#### Neste remains industry leader in the renewable diesel industry



## Renewable diesel nameplate capacity by company (Mt/a)





NES.

- Diamond Green Diesel
- Renewable Energy Group

• AltAir Fuels

Neste

TotalPreem

• UPM

ENI

- Co-processing (<10% bio-content)
- Other, incl. projects

NOTE: Co-processing includes Preem, Repsol, Cepsa and Galp. Other producers and projects: Andeavor, Ryze Renewables, Sinopec, ST1, UrbanX SOURCE: Company announcements

### Expanding our feedstock and technology portfolio



Long term

Fossil waste liquefaction

NESTE

Cleaner fuels on the roads

## Innovative solutions

Innovation is at the core of our business. We strive to create cleaner solutions for the future.

Low-sulfur bunker fuel at seas Renewable solutions for chemicals industry

Renewable jet fuel in the air



### **Neste MY Renewable Diesel**



- Behaves better than fossil diesel it is a pure aliphatic hydrocarbon
- Can be blended without limitations no best before date
- Fully compatible with existing infrastructure
- Excellent solution for improving air quality
- Offers up to 90% CO<sub>2</sub> reduction compared to fossil diesel



#### Responsible choices in the city: Renewable cities of California

• Californian cities of San Diego, San Francisco, Oakland, Walnut Creek, Carlsbad and the County of Sacramento have used Neste MY Renewable Diesel in their city fleet.

80% lower GHG emissions air quality in the cities

"By transitioning to renewable diesel, we're significantly reducing the pollution caused by city vehicles that serve the public on a daily basis."

KELVIN L. FAULCONER, MAYOR, CITY OF SAN DIEGO



CASE

# Responsible choices in the air: Cleaner flights

- Neste MY Renewable Jet Fuel has been used on commercial flights by Lufthansa and KLM and at the airports of Oslo and Geneva.
- Hamburg Airport has managed to significantly reduce emissions of its ground fleet, thanks to Neste MY Renewable Diesel.

**1,187** Lufthansa flights running on Neste MY Renewable Jet Fuel

"The first commercial long-term use of aviation biofuel with more than 1,000 consecutive flights demonstrated that Neste MY Renewable Jet Fuel is ready for use in daily aircraft operation."

JOACHIM BUSE, LUFTHANSA'S VICE PRESIDENT, BIOFUEL.



\*The tests, where the reduction of 1,500 tonnes in CO2 emissions was achieved, were carried out by Lufthansa in 2012 on a total of 1,187 flights between Frankfurt and Hamburg and one intercontinental flight between Frankfurt and Washington D.C.

#### NESTE

We cannot change the past. But by making responsible choices now, we can change the future.

Are you in?

