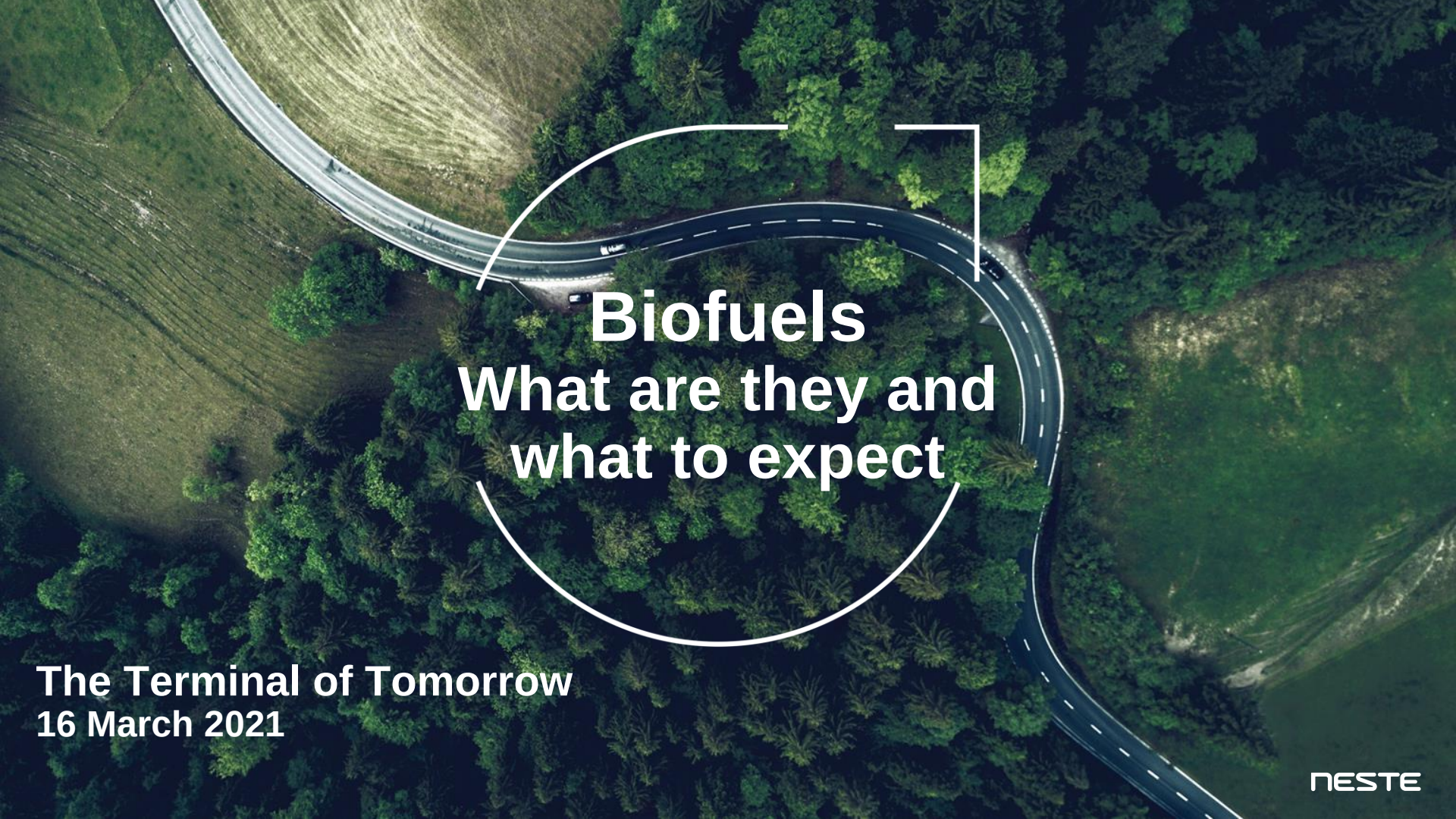


Biofuels
What are they and what to expect

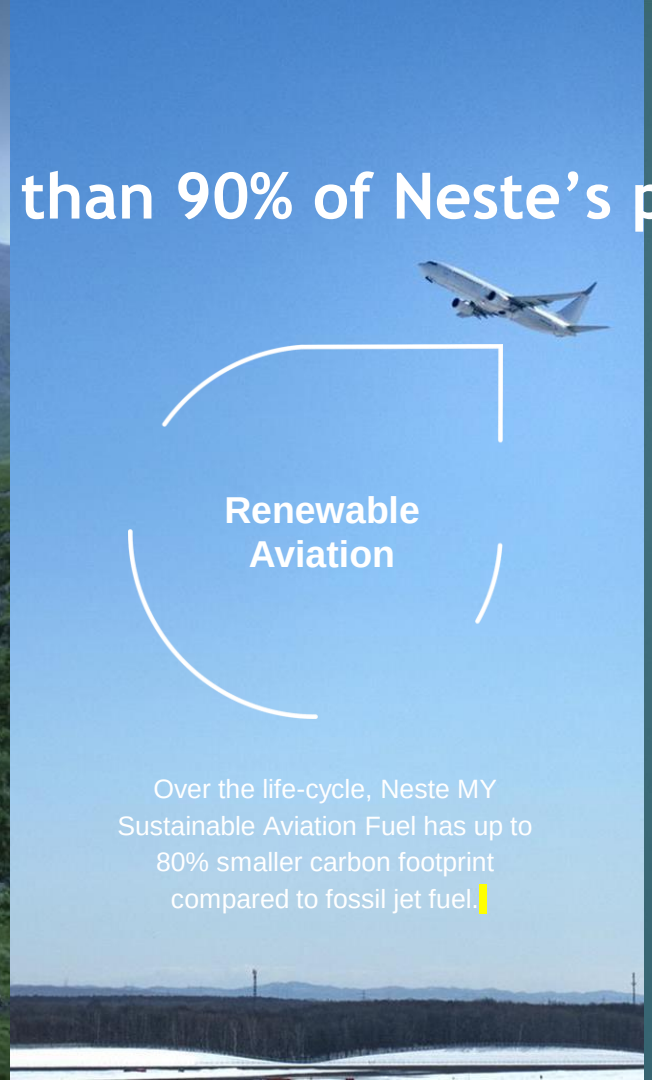
The Terminal of Tomorrow
16 March 2021

NESTE

Renewables: more than 90% of Neste's profitability*

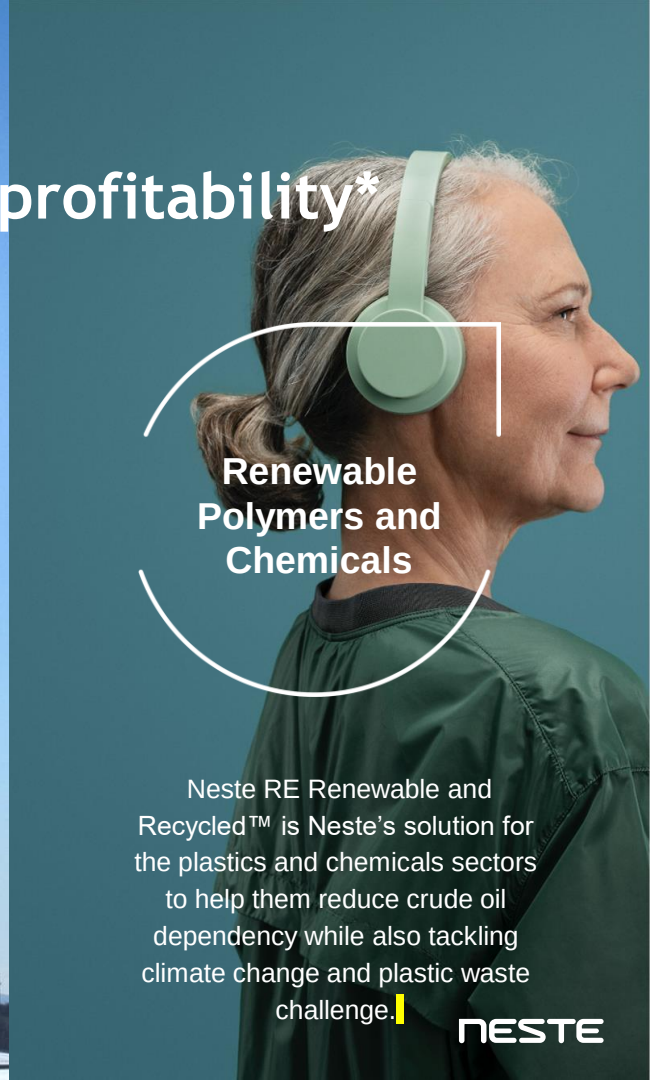
Renewable Road Transportation

Over the life-cycle, Neste MY Renewable Diesel reduces greenhouse gas (GHG) emissions by up to 90% compared to fossil diesel.



Renewable Aviation

Over the life-cycle, Neste MY Sustainable Aviation Fuel has up to 80% smaller carbon footprint compared to fossil jet fuel.



Renewable Polymers and Chemicals

Neste RE Renewable and Recycled™ is Neste's solution for the plastics and chemicals sectors to help them reduce crude oil dependency while also tackling climate change and plastic waste challenge.

*Comparable operating profit

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Our climate commitments

HANDPRINT

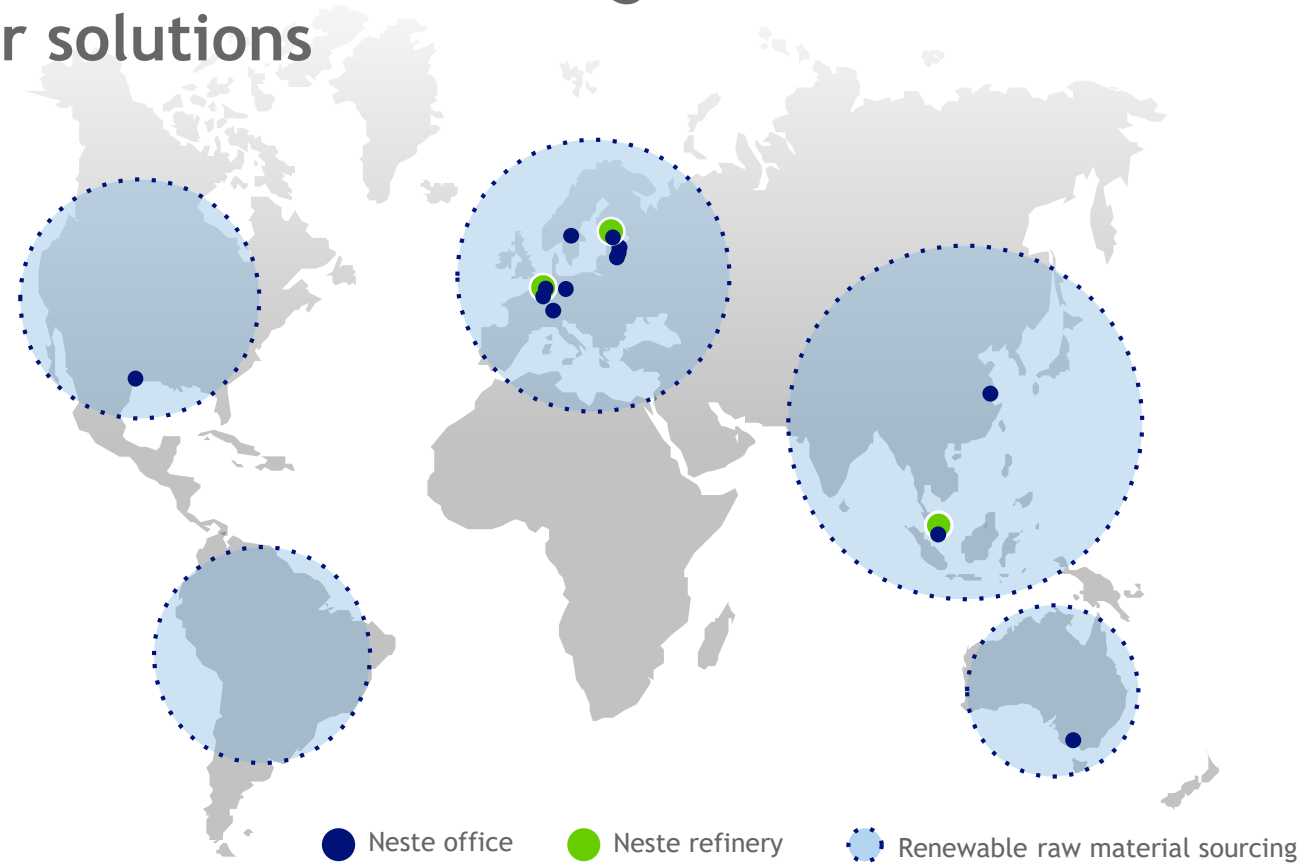
Neste to reduce customers' greenhouse gas emissions with its renewable and circular solutions by at least 20 million tons CO_2e annually by 2030

FOOTPRINT

Neste to reach carbon neutral production* by 2035

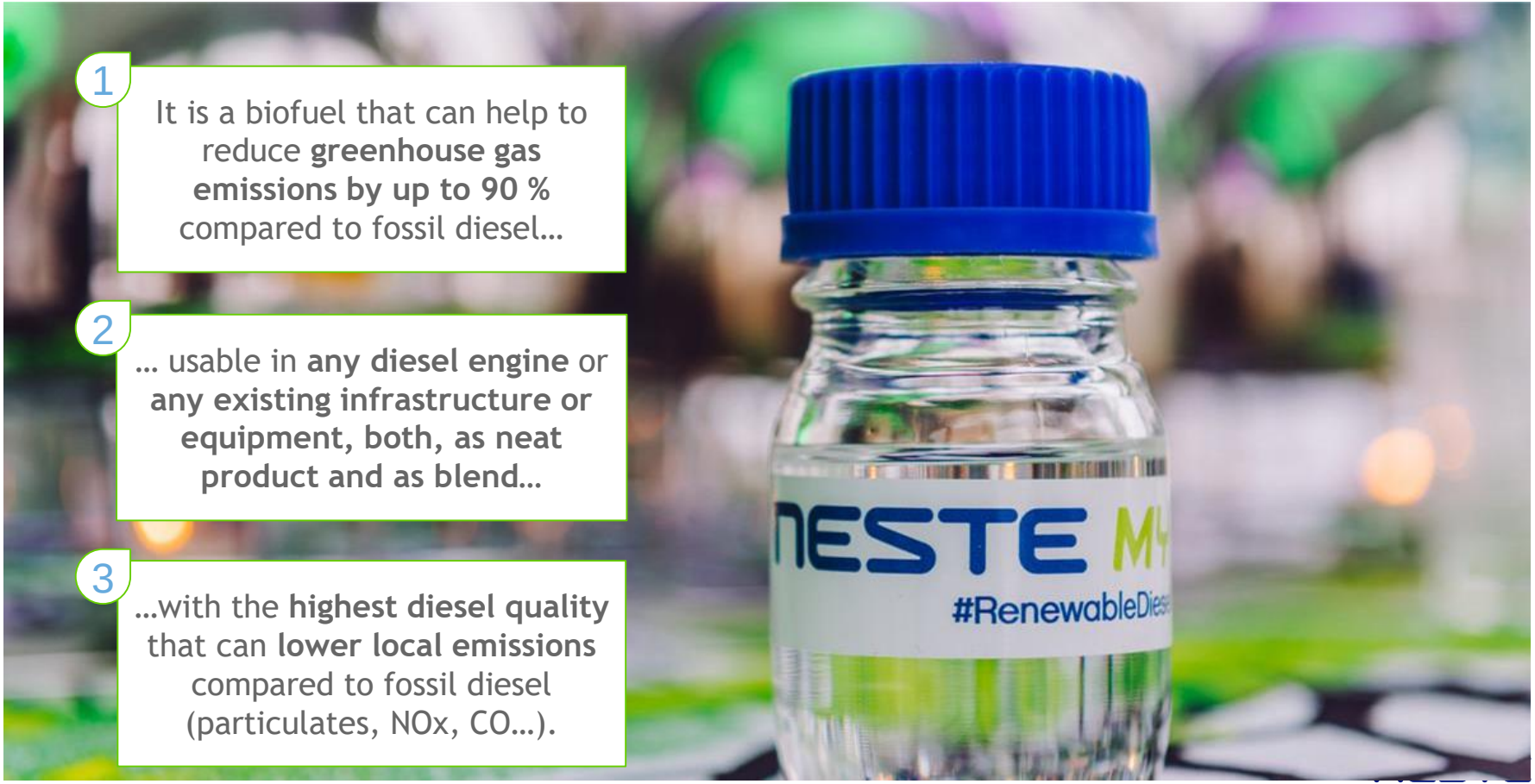
* Scope 1 & 2

Our ambition is to become global leader in renewable and circular solutions




Neste
Renewable
Diesel
NESTE

Our solution: Neste MY Renewable Diesel



1. It is a biofuel that can help to reduce **greenhouse gas emissions by up to 90 %** compared to fossil diesel…

2. … usable in **any diesel engine** or **any existing infrastructure or equipment, both, as neat product and as blend…**

3. …with the **highest diesel quality** that can **lower local emissions** compared to fossil diesel (particulates, NOx, CO…).

Renewable Diesel and Biodiesel

	Conventional fossil diesel	Renewable Diesel HVO100	Biodiesel (FAME / RME / UCOME)
Raw material	Crude oil	Waste and residue vegetable oil	Waste and residue vegetable oil
Chemical composition	C_nH_{2n+2} + aromatics	C_nH_{2n+2}	O II H_3C-O-C-R
Oxygen (wt-%)	≈ 1 (in B7)	0	≈ 11
Cetane number	> 46	> 70	> 51
Aromatics (vol-%)	< 4.8	0	0

Chemical composition → compatibility with all engine and infrastructure

Oxygen →
bad impact on long storage time, water absorption…

Cetane →
quicker combustion, reducing the formation of NOx, better combustion

Aromatics →
Increase engine-out emissions, toxic, bad smell…

FAME /RME /UCOME = Fatty Acid Methyl Ester/Rapeseed Methyl Ester/Used-cooking-oil Methyl Ester

Performance: Handling and storage

- **Almost zero risk of water absorption** or microbial growth, **non-polar**, will not clean out debris in older fuel tanks
- **Good oxidative stability = long shelf life**
- **Minimal to zero risk of filter blocking**
- **Well-suited for very cold weather conditions (up to -34°C)**

Neste Renewable Diesel is compatible with all applications :

Commercial and municipal bus fleets

Truck fleets

Construction, mining

Agricultural machinery

Utility (cleaning, waste, snow grooming etc.)

Marine

Power generators

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OEMs continue to approve Neste Renewable Diesel

Most HD OEMs have approved Neste Renewable Diesel for all or some engines:

- Volvo, Scania, Daimler, DAF, Iveco, MAN, Renault, Cummins

Passenger car approvals:

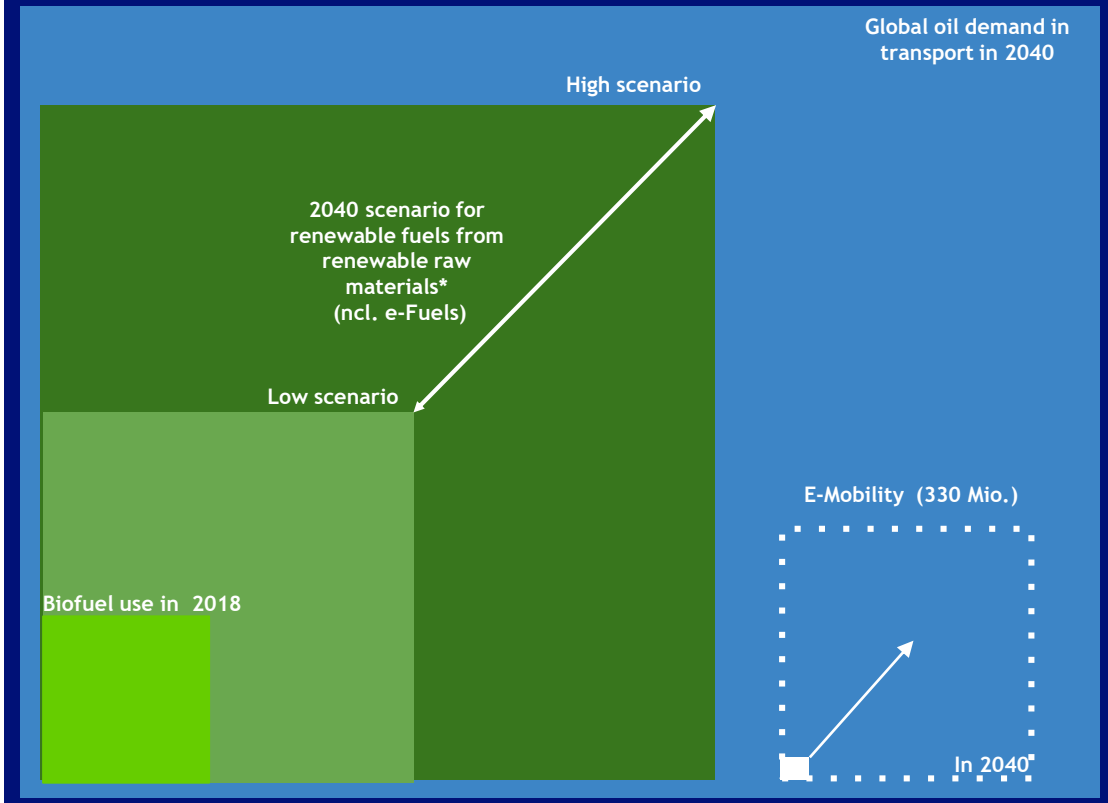
- Citroen, DS, Peugeot, Mercedes Benz (Nordic), Volvo, Renault

Major non road approvals include:

- Caterpillar, Deere, Agco Power, Steyr, Deutz, Volvo, Scania, MAN

Neste Renewable Diesel can be refined from a mix of more than 10 different wastes & residue raw materials

Global oil demand today (4,500 Mt/a)



The decarbonization challenge is huge

All decarbonization solutions are needed

* Waste and residue lipids, municipal solid waste, lignocellulosic material,, algae and power-to-x fuels

Illustration based on IEA, UNDP, ExxonMobil, Neste, et al 2019

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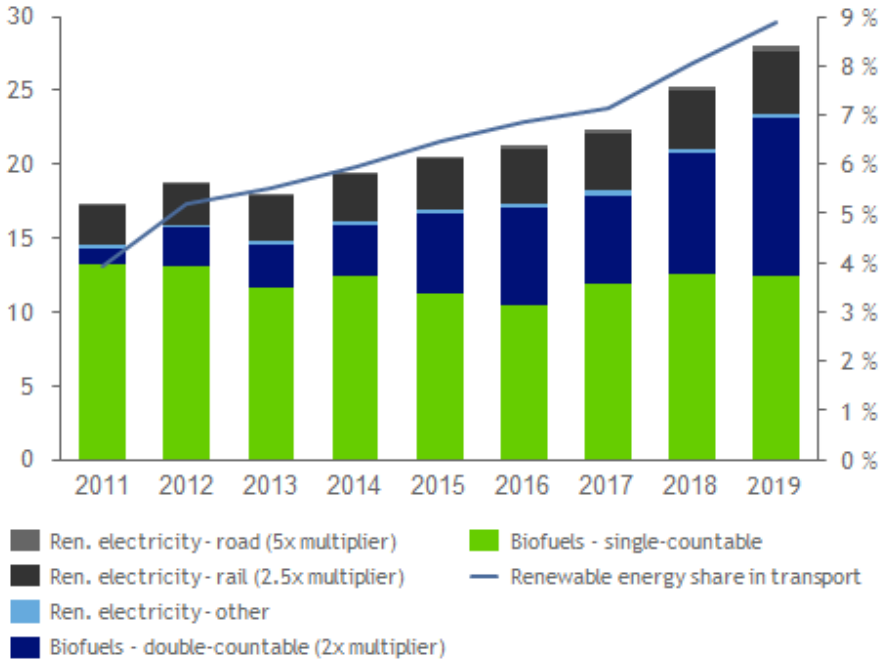
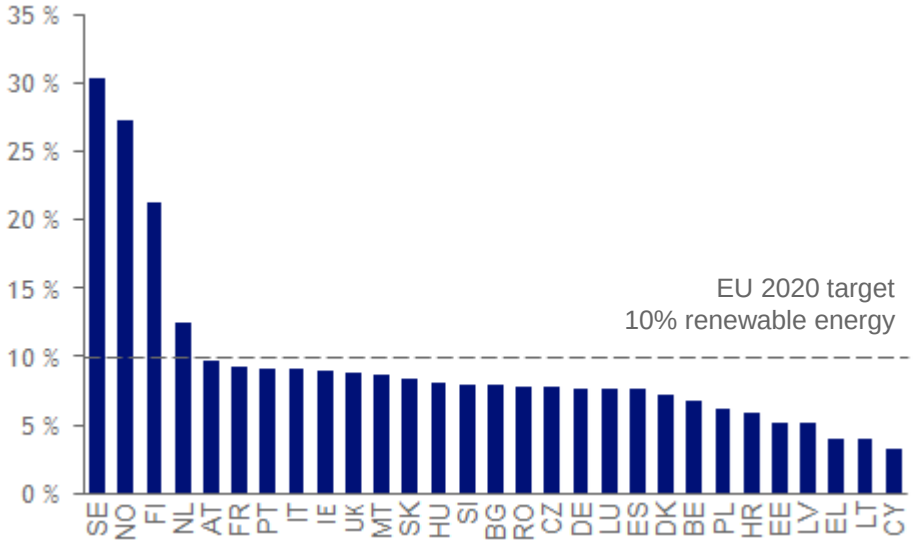
Outlook for Renewable Diesel Demand in Europe and Beyond

Biofuels are the primary source of renewable energy in transport in the EU. COVID-19 has not changed that!

EU28 renewable energy demand in transport 2011-19 (Mtoe)



2019 share of renewable energy in transport (Mtoe)



Source: Neste based on EUROSTAT, SHARES Tool

COVID-19 has impacted European fuel markets in 2020, but the outlook for biofuels remains strong

Estimates of market changes vs. 2019

European road transport fuel demand

Biodiesel and renewable diesel demand decline

Still only 10% of new passenger car sales

Road transport emissions

Note: figures reflect estimates based on different external sources, and change compared to 2019
Sources: Neste based on WoodMackenzie, PIRA/Platts, Square Commodities, EV-Volumes.com

Ambition level to reduce transport emissions remains high in both Europe and North America

NORTH AMERICA

Carbon intensity reductions		2020	2030
	British Columbia	9.1%	20%
	Oregon	2.5%	20%
	California	7.5%	20%
	Canada		13% *Proposal
	United States	Ongoing initiatives in Washington State and New York to pass Clean Fuels Programs in the near term	

1) Volumetric mandate. 2) GHG reduction mandate for diesel. 3) Energy content based mandate. 4) 2030 ambition for renewables share for road and rail

NORDICS

Mandate obligations		2020	2030
	Norway [1]	20%	40% *Ambition
	Sweden [2]	21%	66% *Proposal
	Finland [3]	20%	30%

REST OF EUROPE

Carbon intensity reductions		2020 Mandate	2030 Ambition
	France [3,4]	8%	15%
	Italy [3,4]	9%	22%
	Netherlands [3]	16.4%	27.1%
	Spain [3,4]	8.5%	28%
	EU RED II [4]		14%
	EU Green Deal		Carbon-neutrality 2050

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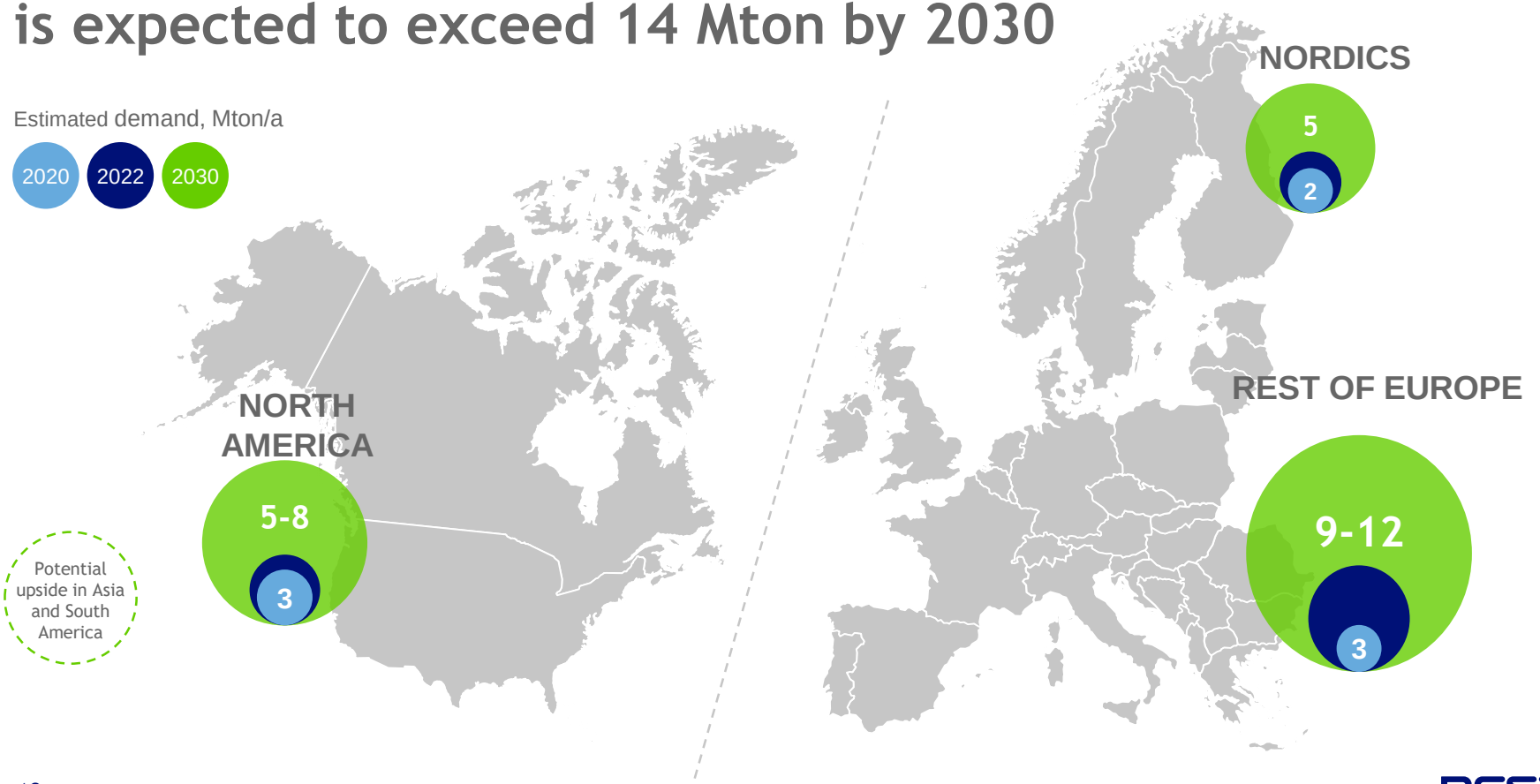
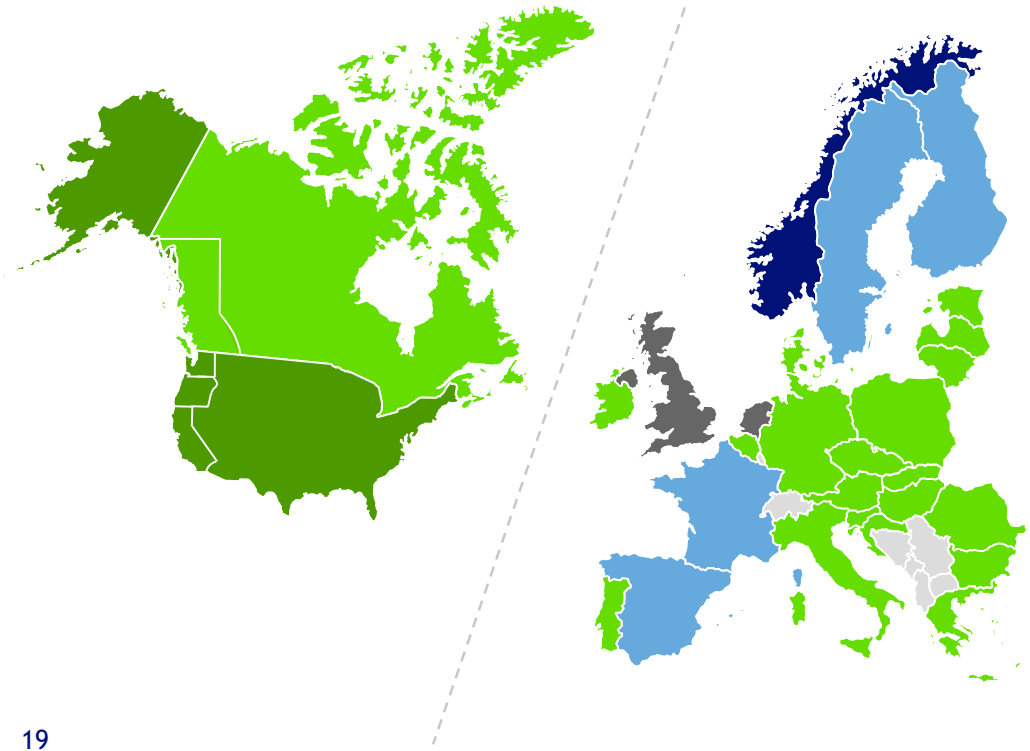
European renewable diesel demand is expected to exceed 14 Mton by 2030



Regulatory drivers start to form for sustainable aviation fuel



OPT-IN SCHEMES TO FULFILL ROAD TRANSPORT MANDATES:

- Enable fast scale up of SAF demand

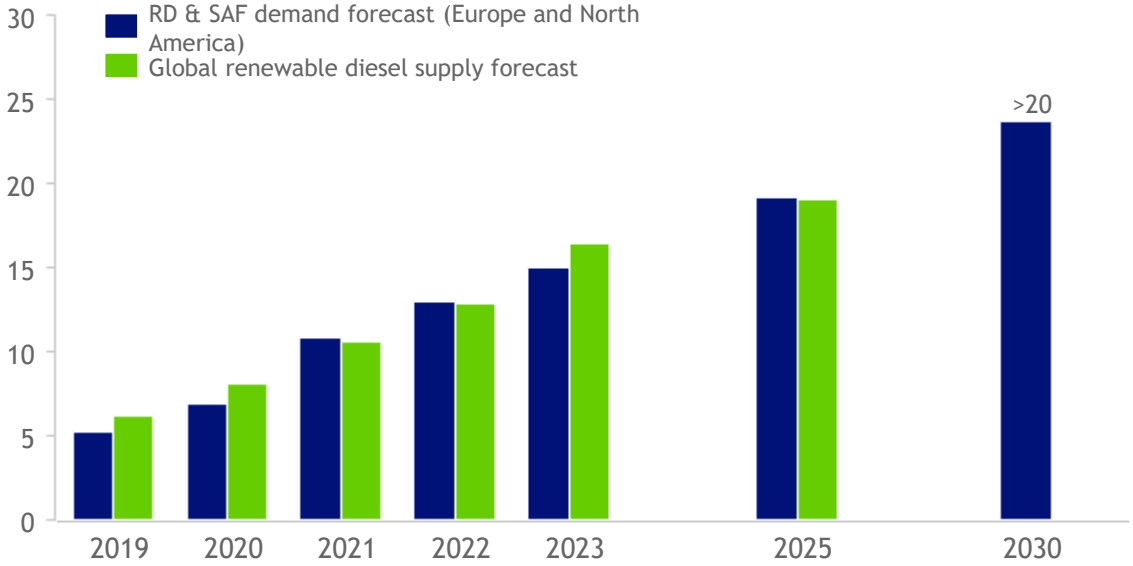
AVIATION SPECIFIC BLENDING OBLIGATIONS:

- Provide demand certainty
- Not cannibalizing road side market

- Mandate introduced in 2020
- Plans to introduce a mandate in the future (2021-2025) & Opt-in schemes to be implemented from 2021 onwards (e.g. EU RED II)
- Plans to introduce a mandate in the future (2021-2025) & Aviation opt-in for road transport mandates in place
- Aviation opt-in for road transport mandates in place
- Opt-in schemes potentially to be implemented from 2021 onwards (e.g. EU RED II and Canada Clean Fuel Standard)

Renewable diesel and SAF demand to exceed 20 Mton/a by 2030

Global RD supply and demand outlook (Mton/a)



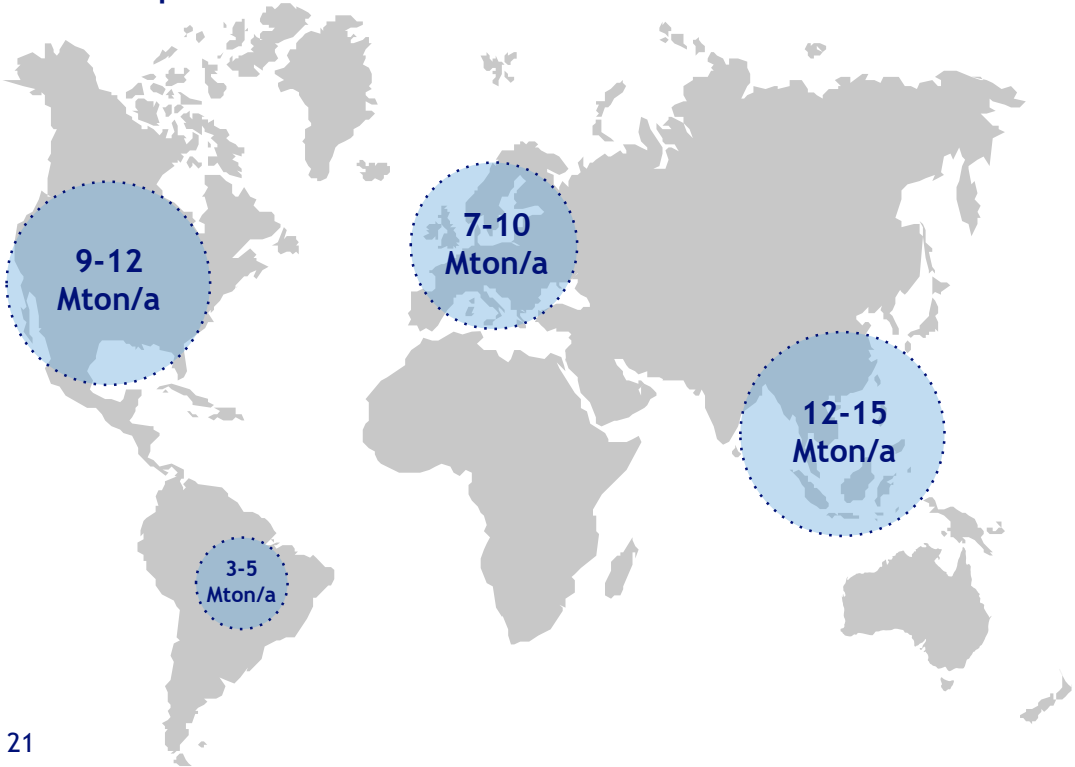
Source: RD supply forecast based on projects currently announced – a number of projects still subject to final investment decision
Demand forecast based on Neste analysis of existing and proposed regulation

Global demand **average growth more than 15%/a**

Upside demand potential via **new geographies and applications e.g. renewable polymers and chemicals**

Waste and residue feedstock availability to grow to over 35 Mton/a by 2030

Regional split of currently identified waste and residue fats and oils feedstock pool 2030



Existing feedstock pool growth to ~35 Mton

- Increased collection and aggregation rates
- Improved pretreatment technologies

2030

Significant waste and residue growth potential via new technologies

- E.g. lignocellulosics, municipal solid waste, algae oils

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The future is bright for the European renewable diesel and SAF markets

SUMMARY

Regulatory outlook remains firm

Strong demand growth for renewable diesel and SAF continues

Role of waste and residue feedstocks increases further

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Thank you