

NEW BIOFUELS FOR MARINE TRANSPORT

NGRF HTL EVENT – 28 JANUARY 2021

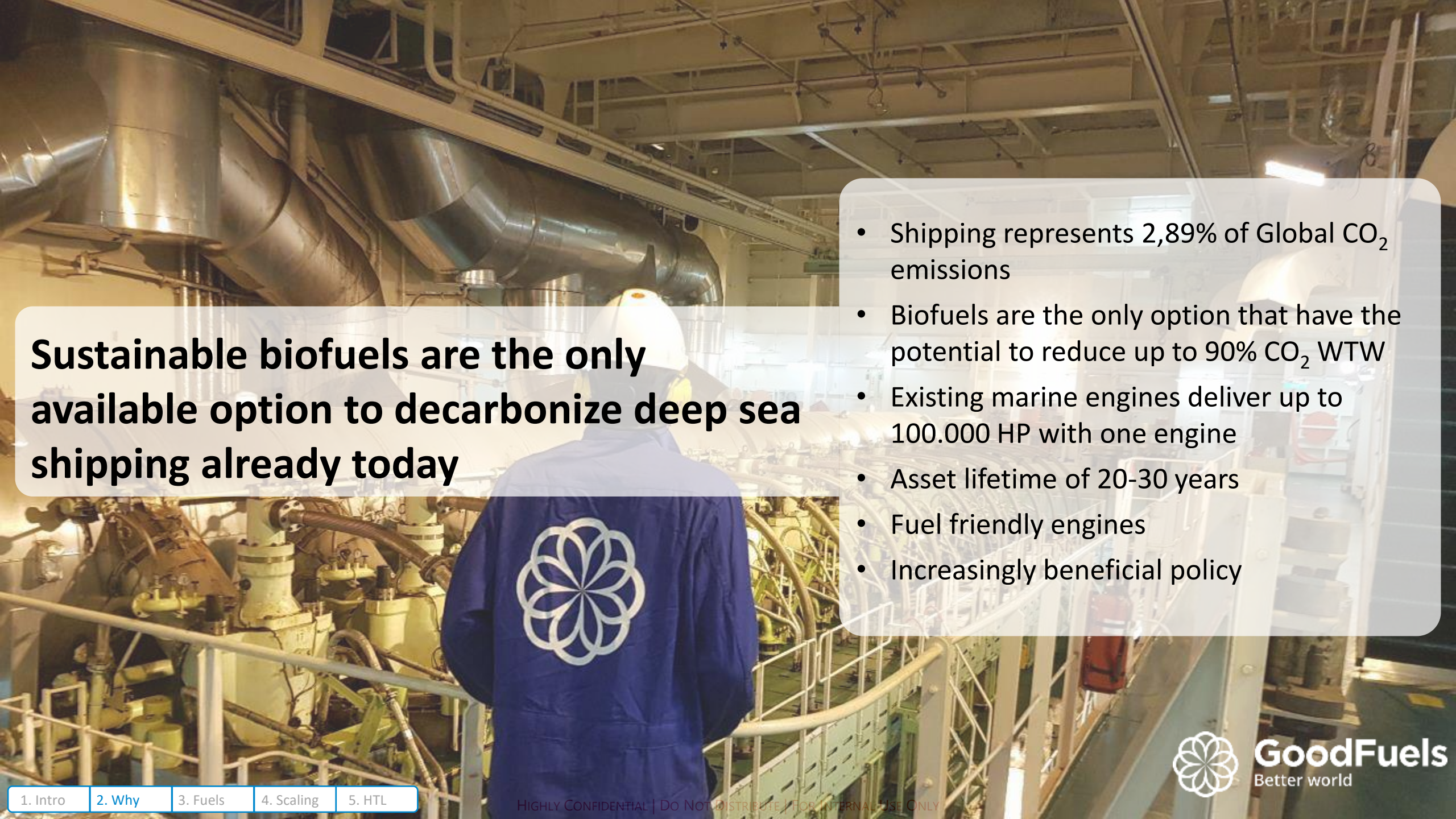
JOHANNES SCHURMANN





GoodFuels is a pioneer in commercializing sustainable biofuels

- Founded in **2015** – as of 2020 majority shareholder **Finco Fuel Group**
- Accelerating the energy transition in heavy duty transportation sectors
- Serving **Marine, Road and Rail**
- Serving cargo owners and creating a market through **GoodShipping**
- Accelerating the industry and product innovation through own **Innovation team**
- Uncompromised **sustainability**



Sustainable biofuels are the only available option to decarbonize deep sea shipping already today

- Shipping represents 2,89% of Global CO₂ emissions
- Biofuels are the only option that have the potential to reduce up to 90% CO₂ WTW
- Existing marine engines deliver up to 100.000 HP with one engine
- Asset lifetime of 20-30 years
- Fuel friendly engines
- Increasingly beneficial policy



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Different needs require different types of fuels – continuous development is required to scale

- Shipping is a conservative industry
- GoodFuels started with HVO in 2015 and built further on that
- In 2018 GoodFuels Bio Fuel Oil was launched with D/S Norden
- Since then GoodFuels has supplied this fuel as a 100% drop-in biofuel to a number of ships in different segments
- Experience with the fuel is continuously growing with e.g. different trials, different focusses and different Engine makers
- The available volumes are rapidly selling out

Clients include:

NORDEN

CMA CGM

JUMBO

Port of Rotterdam

Boskalis

DJN Jan De Nul GROUP

Loodswezen

NYK LINE



Scaling further requires a lot of testing with different feedstocks and conversion technologies

- The existing GoodFuels BFO can serve as an ideal carrier or blending component for new marine biofuels
- All pathways that produce diesel-type fuels are in scope and interesting to increase availability
- Often a Marine application allows the use of non- or mildly upgraded oil
- GoodFuels does not bet on a single pathway of feedstock
- GoodFuels has the testing experience needed to qualify for a marine application
- Many privately and publicly funded projects are being executed to scale as fast as possible



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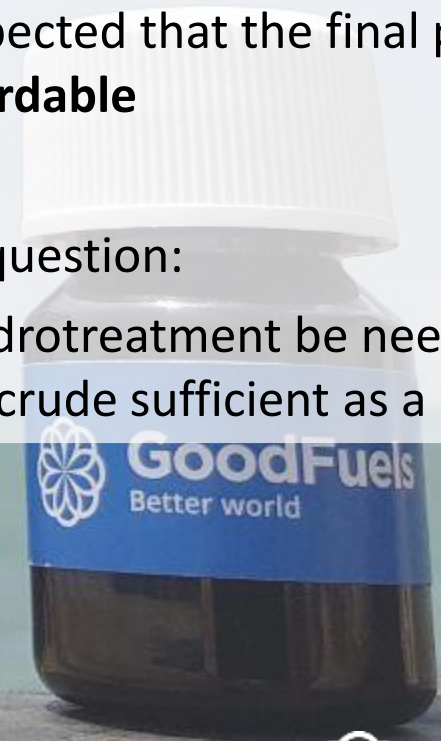


(hydrotreated) HTL biocrude shows potential to be a sustainable, scalable and affordable drop-in marine fuel

- Waste feedstocks can be used which are **sustainable**
- Wet and solid feedstocks can be used which makes the conversion route **scalable**
- It is expected that the final product will be **affordable**

Technical question:

- Will hydrotreatment be needed to make the biocrude sufficient as a marine fuel...



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