

SUSTAINABLE FUELS





BY 2030

EXPENDITURES FOR DECARBONIZATION

We want to spend up to an additional EUR 7bn on decarbonization measures by 2030.

We focus on the modes of transport using the most fuel and generating the most emissions.

Expenditures

AIR TRANSPORT

OTHER AREAS



EUR 66mn sustainable fuels¹⁾

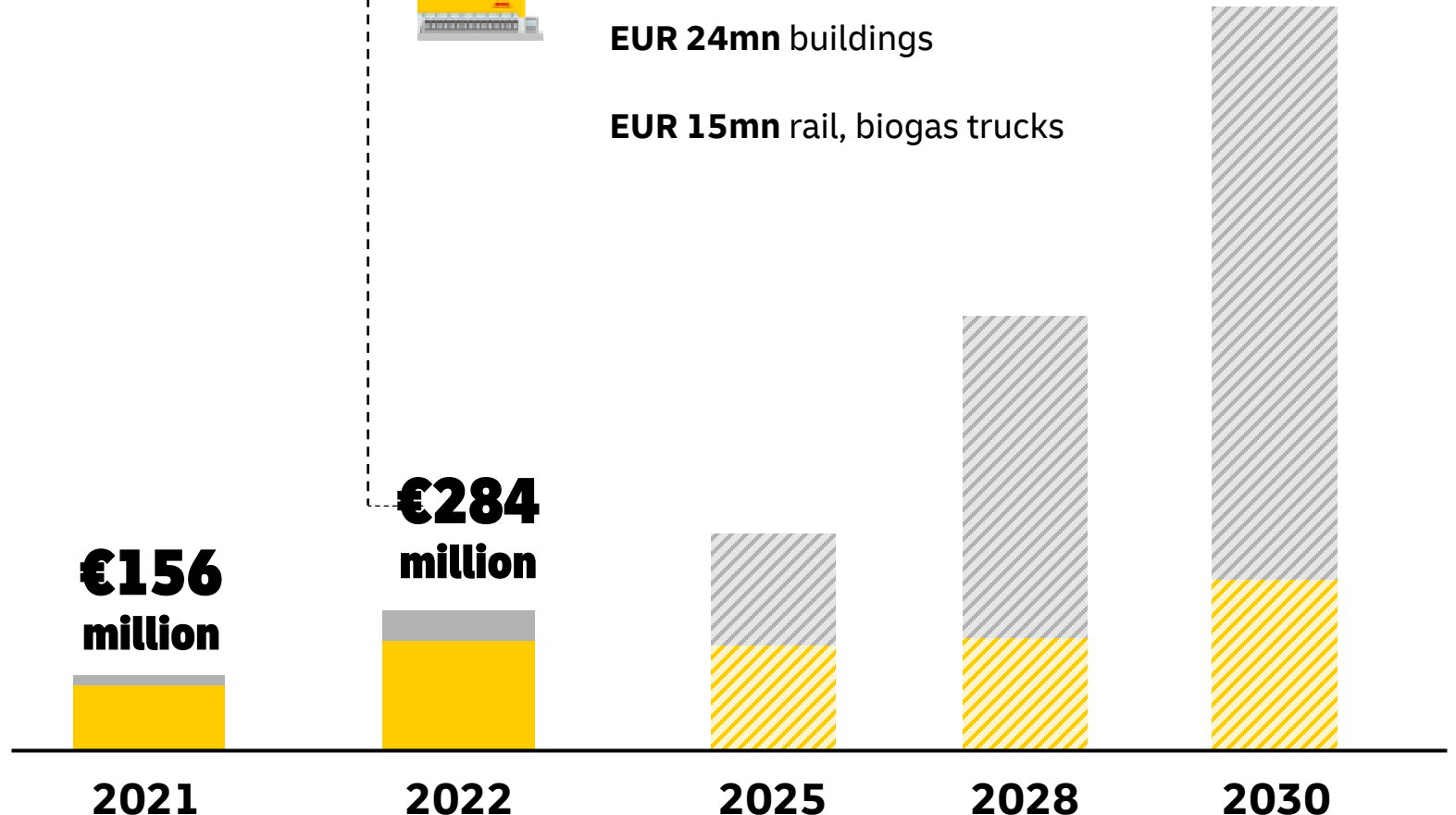


EUR 179mn fleet electrification



EUR 24mn buildings

EUR 15mn rail, biogas trucks



1) Without mandatory blending

OUR SUSTAINABILITY STRATEGY

Clean operations
for climate protection



SUSTAINABLE AVIATION FUEL

DHL aims to have over 30% of their aviation fuel to be **blended with SAF** by 2030



RE-FLEETING

When purchasing new aircraft, DHL will continue to invest in the latest **fuel-efficient**, SAF capable and alternative power solutions



FUEL OPTIMIZATION

Through plane weight **balance optimization**, further increasing the optimization of network design, and choosing fuel efficient carriers, emissions can be kept to a minimum

DHL Express

SUSTAINABLE AVIATION FUEL (SAF) IS A GREEN ALTERNATIVE TO TRADITIONAL JET FUEL

Kerosene (normal jet fuel) is obtained from petroleum, but SAF is produced from **alternative feedstock** with an improved sustainability profile (e.g., used cooking oil, corn, waste, hydrogen or CO₂ synthesis)

- The chemical structure of SAF is similar to traditional fossil-fuel based jet fuels. This allows for the use of SAF as a 'drop-in' fuel, blending with kerosene in aircraft without any engine modifications. Current blending rates are capped at 50% due to legal obligations
- SAF can effectively reduce lifecycle emissions of typical aviation fuel emissions by up to 70-80%
- SAF reduces other harmful emissions like particulates and Sulphur by 90% and 100% respectively

JET FUEL vs SAF

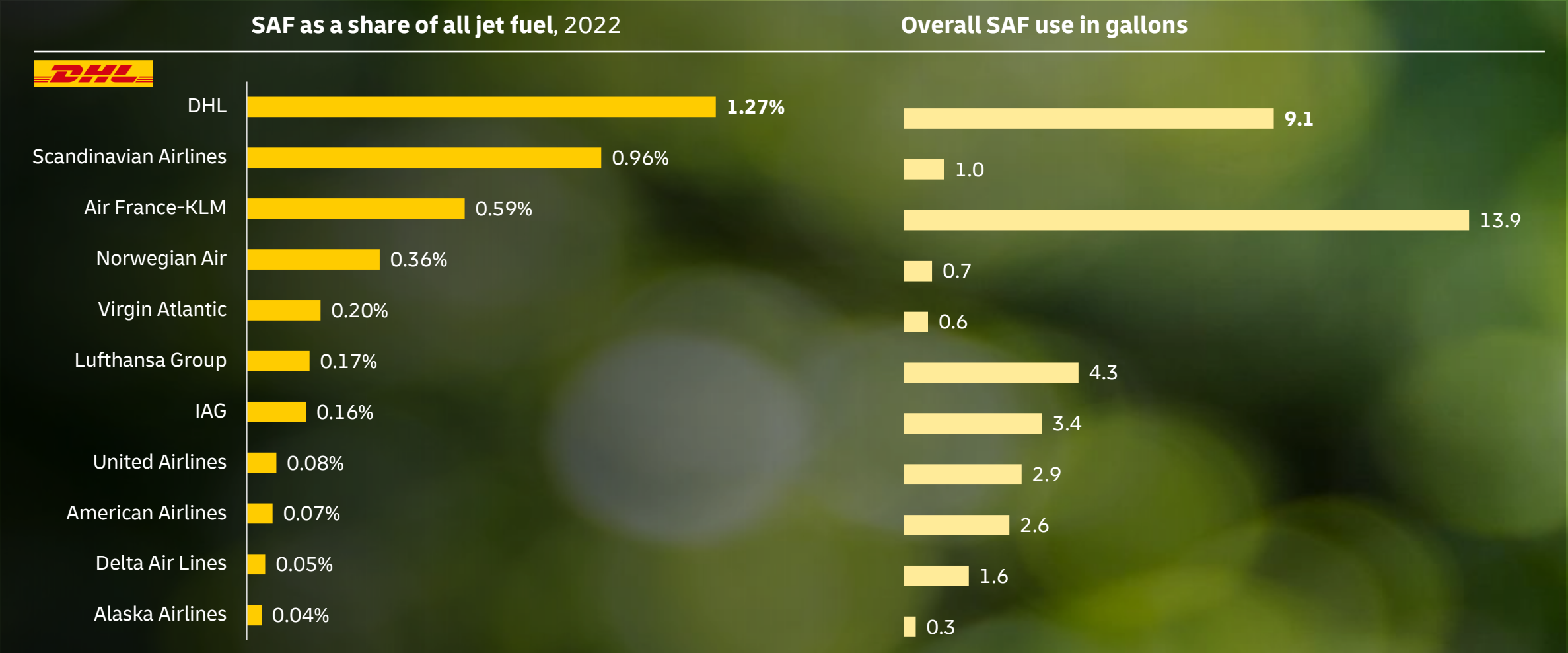
Life-cycle carbon footprint (gCO₂e/MJ)¹⁾



1) Jet fuel based on CORSIA baseline prescribed by SBTi. SAF LCA values based on ICCT data, assuming full lifecycle emissions from Used cooking oils, and vegetable oils derived from plants

DHL #1 position in the field of SAF confirmed by Bloomberg¹⁾

Ahead of the curve (2022)



1) Source: Airline reports, interviews with company officials, Bloomberg, October 05, 2023

SAF is the only **Scalable** solution for the next decades

| Technology | Current maximum range (km) | Technology readiness level ¹ | Infrastructure readiness level |
|------------------|---|---|--------------------------------|
| SAF | <div><div></div><div>~15,000</div></div> | <div><div></div><div>5-9</div></div> | VERY HIGH |
| Battery-electric | <div><div></div><div>~1,200</div></div> | <div><div></div><div>1-5</div></div> | LOW |
| Hydrogen | <div><div></div><div><1000</div></div> | <div><div></div><div>1-5</div></div> | LOW |

**KEY
TAKEAWAYS**

- SAF's are the only option for **long-range flights**
- SAF is available in the short-term
 - Other technologies are still in research and development stages
- SAF can leverage **existing** infrastructure

1 TLR provides an indication of technology maturity and is measure on a 1-9 scale. The indicated range corresponds to readiness of various technologies.
Source: Mission Possible Partnership analysis,





GoGreen+ Pricing

The abatement price

The base price is the market value of the carbon emissions that are removed. This is called the **abatement price** and this is **the cost of reducing 1 tonne of CO₂, caused by transportation.**

- The cost premium of SAF is taking into count. In other words, **the difference between fossil fuel and SAF**

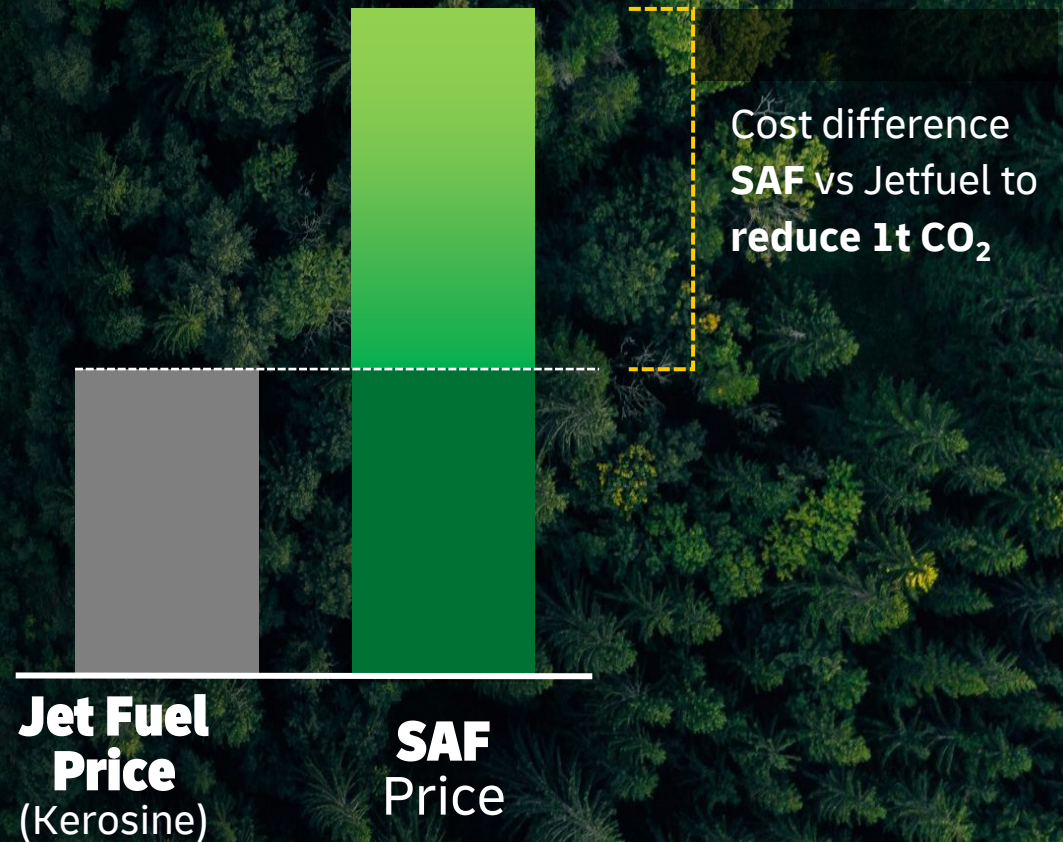
**CO₂ Abatement
cost**
(EUR/ tonne)

=

Sustainable Aviation fuel
costs/conventional fossil fuel costs

CO₂ savings from using
Sustainable Aviation Fuel

**The GoGreen Plus charge in 2023 is
325 EUR/tonne CO₂e**



When using biofuel, it is key to ensure the sustainability of the feedstock

Biofuel characteristics

1. Biofuels are made from **biomass**
 2. Have **identical physical & chemical properties** as their fossil equivalent
 3. Can **replace or be blended with fossil fuels like kerosene or diesel** without engine modification
 4. Can **reduce ~80% of WtW emissions** compared to fossil fuels
 5. Sustainable **biomass is limited** and will not satisfy global fuel demand
 6. Not every biomass feedstock is sustainable
- Need to **commit to strict sustainability criteria**



RSB

ISCC
International Sustainability
& Carbon Certification

DHL Global Forwarding



Sustainable fuel policy

DHL Group Sustainable Fuel Policy currently focus on **waste & residue** feedstocks such as used cooking oil, manure and tallow

Exclusive use of sustainably produced biofuels:

- Sustainable fuels' production does not contribute to **deforestation** or undesired **land-use-change**
- With certified LCA GHG(1) **emission reduction of >60%** according to relevant frameworks (e.g., EU RED, GREET) for each individual contract and targeting average reduction > 75% across the Group
- No negative impact on **local communities** by feedstock sourcing or processing (e. g. water depletion)
- No fuels from feedstocks with a high risk of unsustainable production – **ban on palm oil** and palm fatty acid distillate (PFAD) feedstocks.
- **Third party verification** required – for liquid fuels from ISCC or RSB or equivalent



To simplify the use of biofuel we need to overcome accounting barriers

The Theory

- **One-Atmosphere approach**

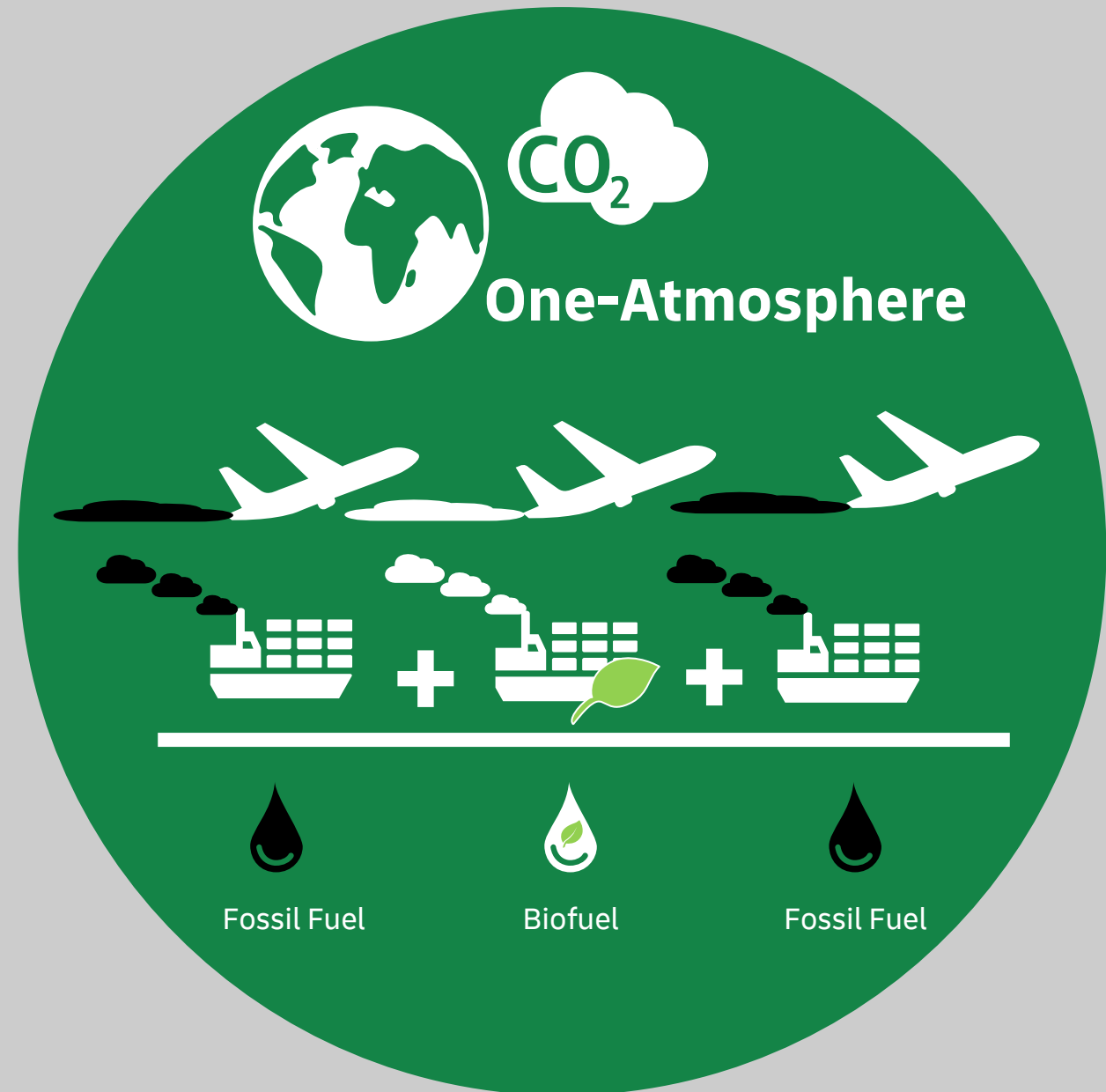
Overcoming geographical or physical sustainable fuel (SF) constraints by looking at the Airfreight or ocean shipping industry as one network

- **Insetting concept**

Ensuring that a verified sustainable fuel switch takes place in the same transport mode; i.e., same network but not on same aircraft/vessel

- **Book & claim model**

Permitting shippers to contribute and report emission profiles of SF, even if shipments were not physically transported in vehicles using SF



How do we leverage biofuels to reduce your transport emissions? With GoGreen Plus!

Operational Implementation

- 1. Booking:** Customer decides on fuel switch scope
- 2. Verification:** DHL calculates emissions, facilitates fuel switch and ensures 3rd party verification
- 3. Claiming:** Shipper receives verified reduction certificate to externally claim emission reductions

Add-on service for all core products:



AFR

Premium

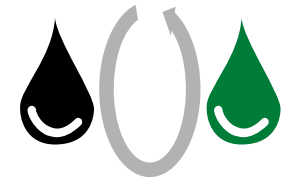


FCL

Premium

LCL¹⁾

Free



Worldwide Service



Maximum Flexibility

- Any trade lane
- One shipment or
- Some shipments or
- All shipments

DHL Ocean LCL includes GoGreen Plus service – as a default & at no extra cost

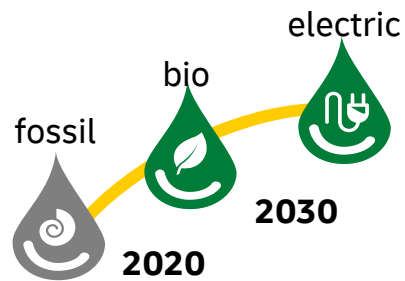
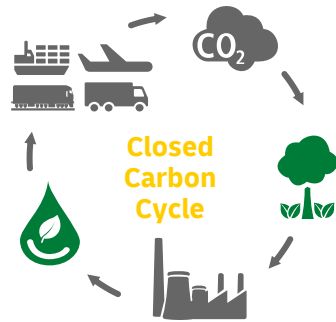
1) LCL GoGreen Plus included for all LCL shipments by default without any extra cost. only applicable to DHL Ocean LCL, excluding BCN and MCC



Burn clean – GoGreen Plus

Why sustainable fuels are key to success

- During ‘production’ of sustainable fuels, CO₂ is absorbed from the air. Only this **previously absorbed CO₂** is released during combustion of the fuel, making it a closed carbon cycle
- Biofuels and e-fuels** require no **or little change in engine technologies** and will play a **key role** in the next 10 years

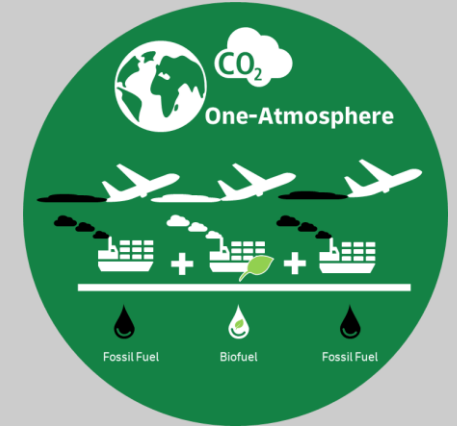


The DGF GoGreen Plus solution

The underlying philosophy:

One-Atmosphere Approach

To overcome geographical or physical sustainable fuel constraints we need to look at the Airfreight or ocean shipping industry as one network



The commercial concept:

Insetting

Decarbonization of given transport footprint by ensuring that a verified sustainable fuel switch takes place in the same transport mode; i.e., same network but not same aircraft/vessel

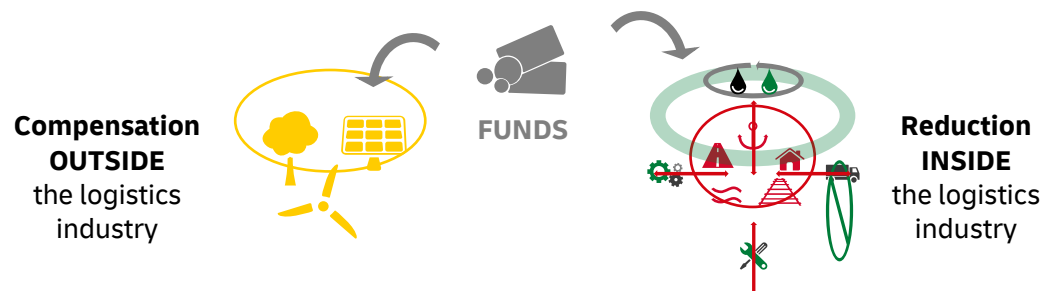
- Booking:** Shipper decides on fuel switch scope
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Insetting Solutions – CO₂ Reduction via Sustainable Fuel Switch

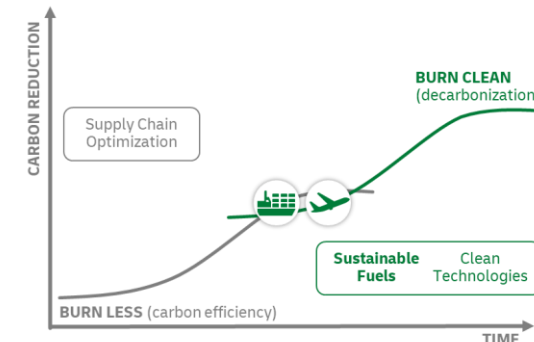


INSETTING CAN ACCELERATE DECARBONIZATION



OUTLOOK FOR 2030

Current container vessels and aircrafts are close to reaching their efficiency limits – first zero emission vessels/aircrafts are expected by 20230.

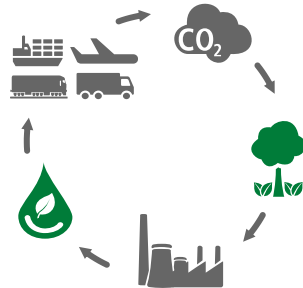


What can we do now to accelerate the decarbonization of transport?

SUSTAINABLE FUELS

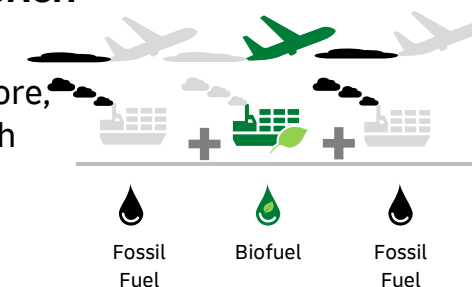
In the production of sustainable fuels, CO₂ is absorbed from air. During combustion, the same CO₂ is released closing the carbon cycle

Sustainable aviation & marine fuels are already available now!



LEVERAGE 'ONE-ATMOSPHERE' APPROACH

All container ships or aircrafts create exhaust in the same atmosphere. Therefore, it does not matter for our climate in which vessel or aircraft sustainable fuel is used instead of fossil fuel.



DHL Global Forwarding is offering GoGreen Plus solutions for each core product



AFR

Premium



FCL

Premium



LCL¹⁾

Free

- To help customers reduce their footprint
- To accelerate the uptake of sustainable fuels in freight forwarding
- To lead the transition to clean and sustainable air & Ocean Freight transport

GOGREEN
PLUS

1) only applicable to DHL Ocean LCL, excluding BCN and MCC



How do I benefit from LCL GoGreen Plus?

DGF GoGreen Plus for LCL combines **insetting service with offsetting**, i.e., a facilitated sustainable fuel switch for main haul activities and offsetting via Gold Standard carbon credits of all remaining emissions (pre- & on-carriage as well as all upstream emissions)

As a customer:

- All your DHL Ocean LCL¹⁾ shipments are automatically in scope for GoGreen Plus – at no extra cost
- Upon request you can **receive an annual insetting certificate** (in PDF-format, in Q2) confirming the exact amount of CO₂ which was reduced. In addition, you receive an offsetting certificate confirming the exact amount of CO₂ which was compensated on your behalf

The insetting certificate can be used by you to provide **evidence of your Scope 3 emissions reduction** (to your own auditors or customers). The offsetting certificate can be used for external communication

An independent third-party agency, Société Générale de Surveillance (**SGS**) verifies that the promised emission reductions & compensation were **indeed realized**

1) excluding BCN and MCC

Sustainability @DHL



*Certificates and reports can be made available upon request – **earliest in May** of the following calendar year*