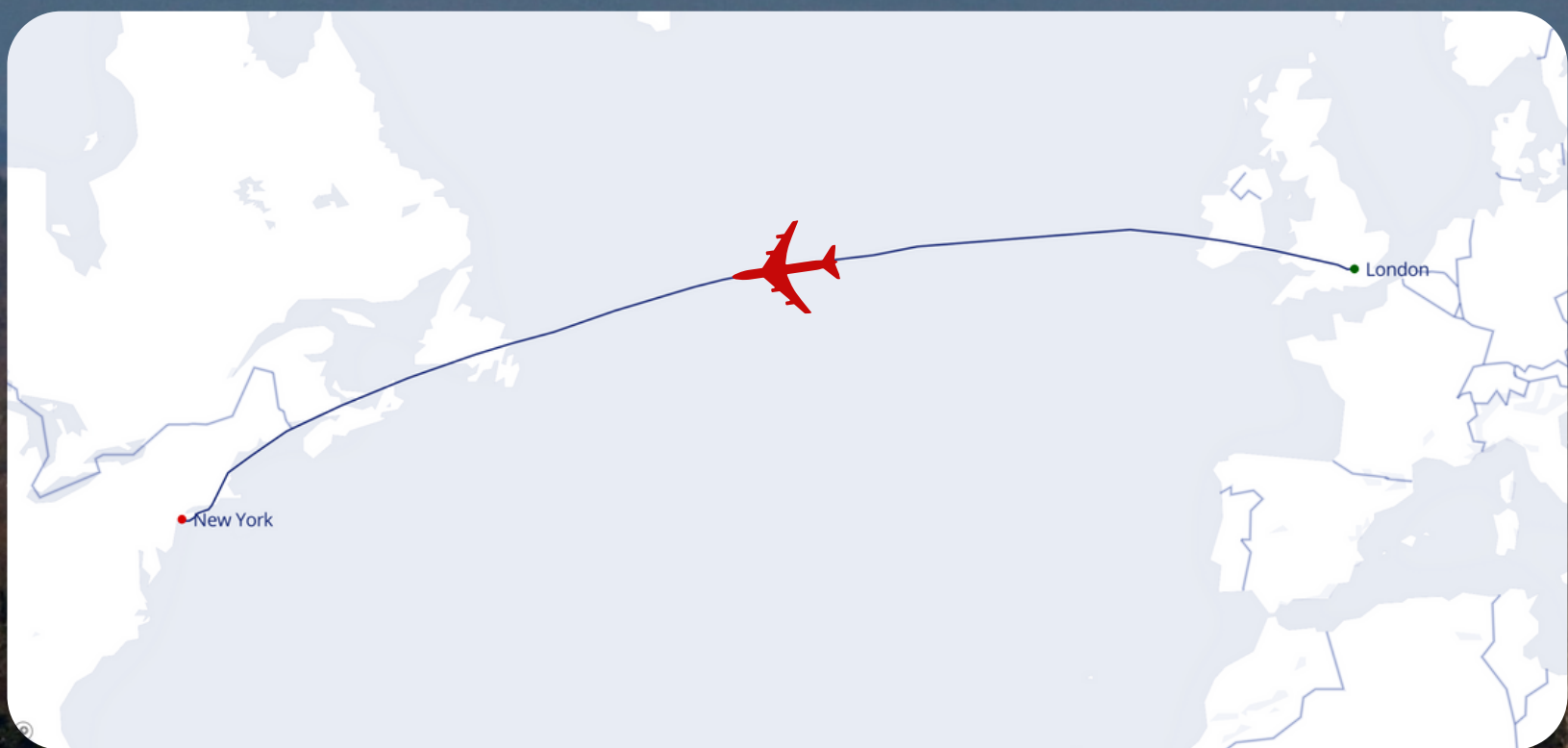


On November 28th 2023,
Virgin Atlantic flew a Boeing from
London to New York using 100%
Sustainable Aviation Fuel



We looked at the global climate impact of this flight using a lifecycle approach

CO2

Contrails

Other GHG

Fuel supply

Aircraft manufacturing and decommissioning

Airport usage

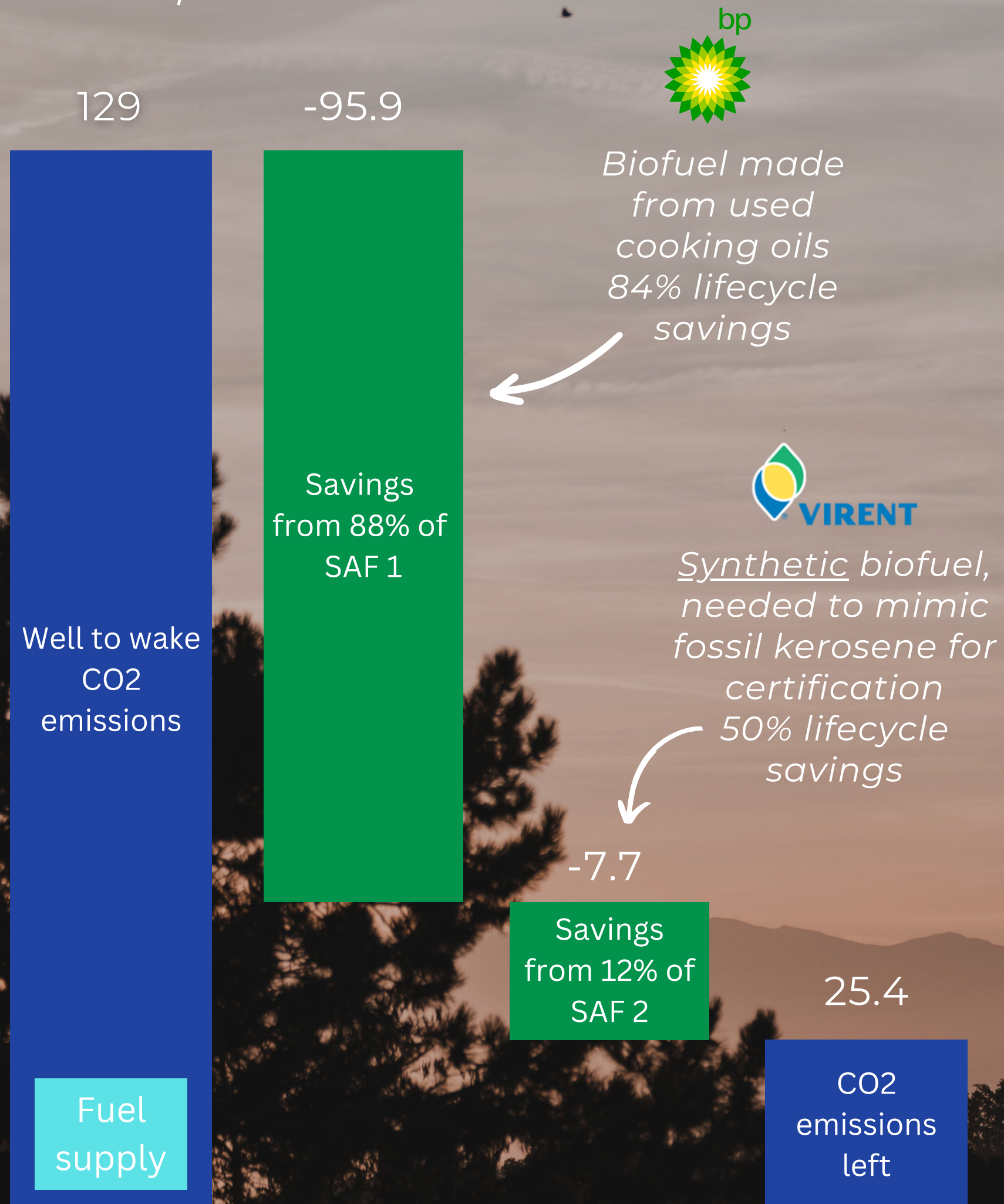
All expressed in CO2 equivalent

CO2

Fuel supply

Fuel-related CO2 emissions first

Tons CO2 equivalent

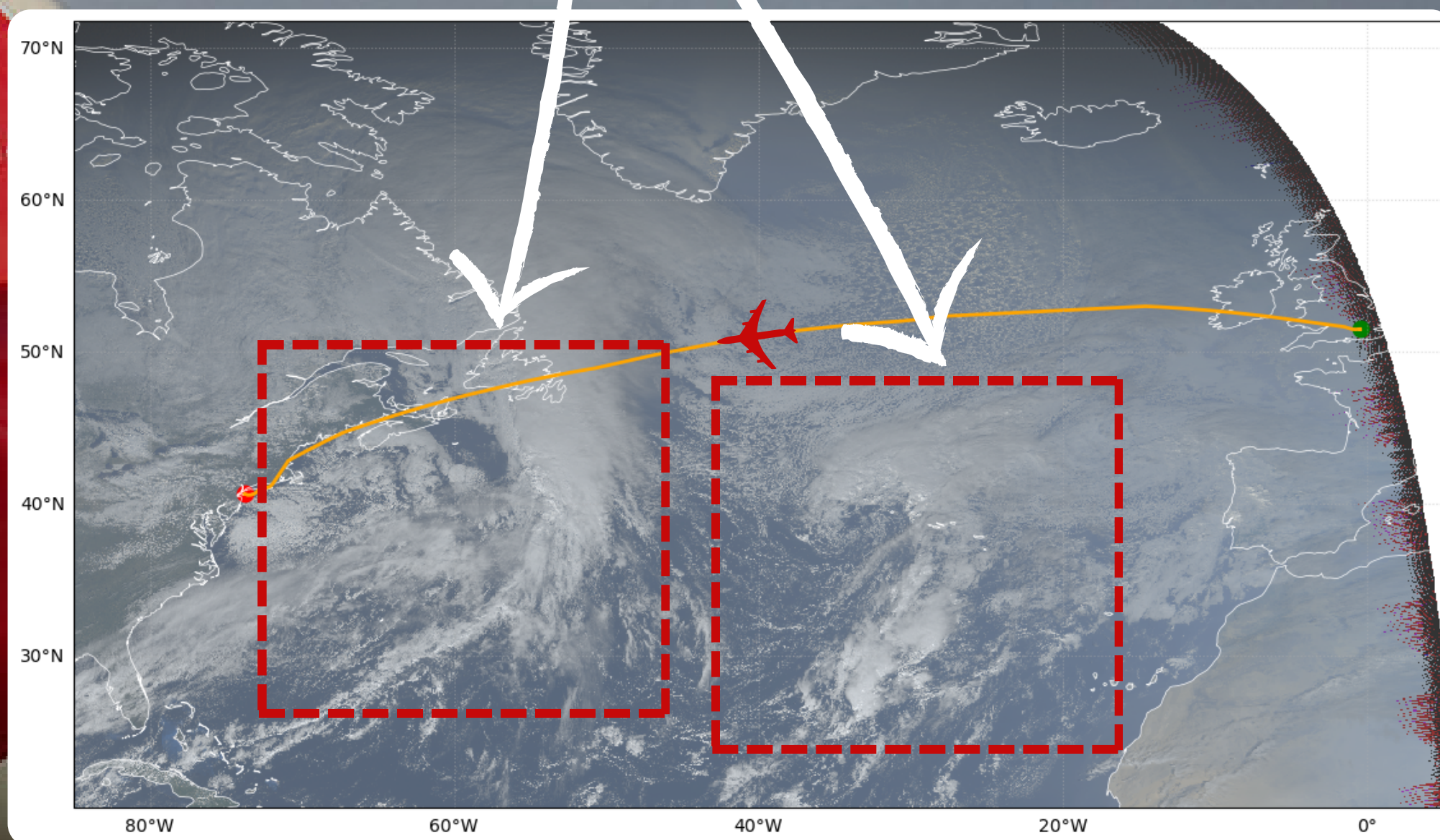


Source : Estuaire fuel model, Virgin Atlantic communication and CORSIA SAF lifecycle savings

Contrails

With two low pressure systems over the North Atlantic, the probability to meet a contrail area was high

Those two spiral weather shapes



Contrails

However it seems the aircraft flew high enough over the contrail areas



Contrails were probably generated, but only short lived

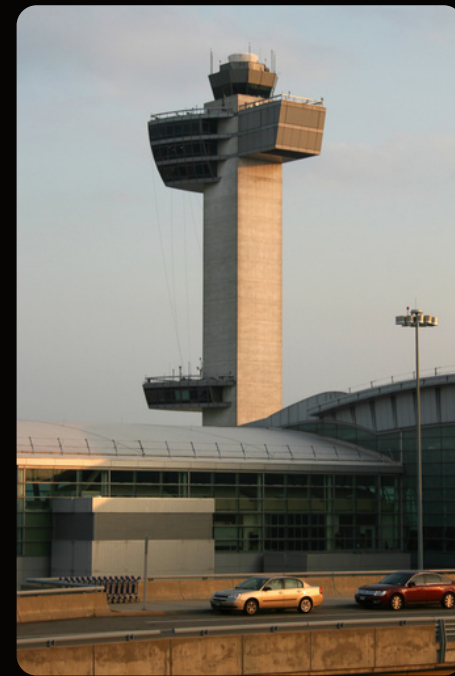
So no noticeable climate impact from contrails on this flight

The other lifecycle emissions are left



Raw material extraction and aircraft assembly emissions, distributed across the aircraft life

15



Considering carbon intensity of energy mix, distributed over all flights of the airport

4.7



3.1

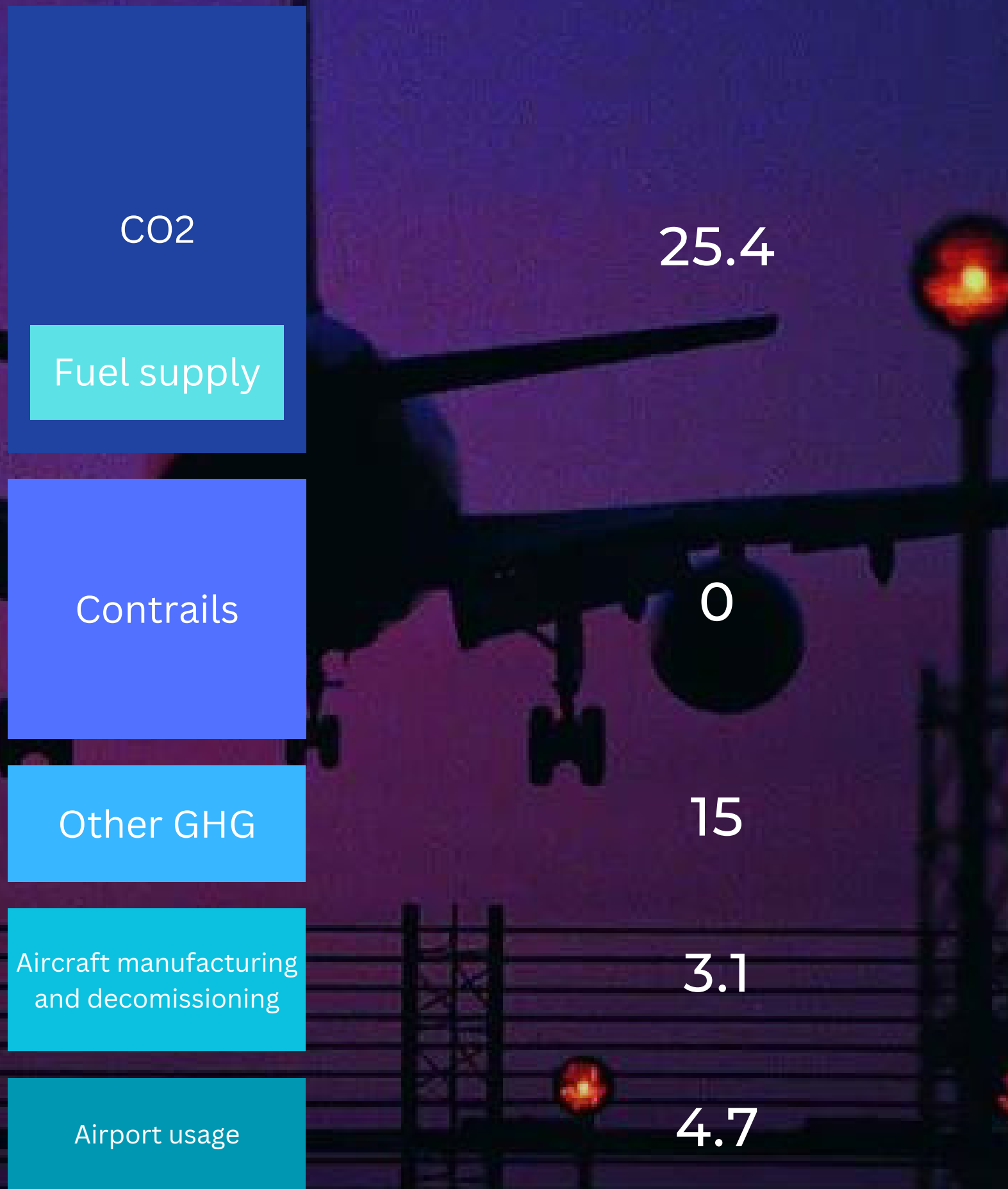
Aircraft manufacturing

Other Greenhouse gases



Airport usage

Adding things up...



48.2 tons CO₂eq

To close the loop, those emissions can be offset, as advertised by Virgin Atlantic

Scaling up that effort

Purchasing the biofuel for this flight and biochar carbon credits to offset the remaining 48 tons of CO₂ could have cost up to

190,000\$

Today, regular kerosene for this flight typically costs

24,000\$

Spread to all seats on board, this difference would amount to

645\$/seat