

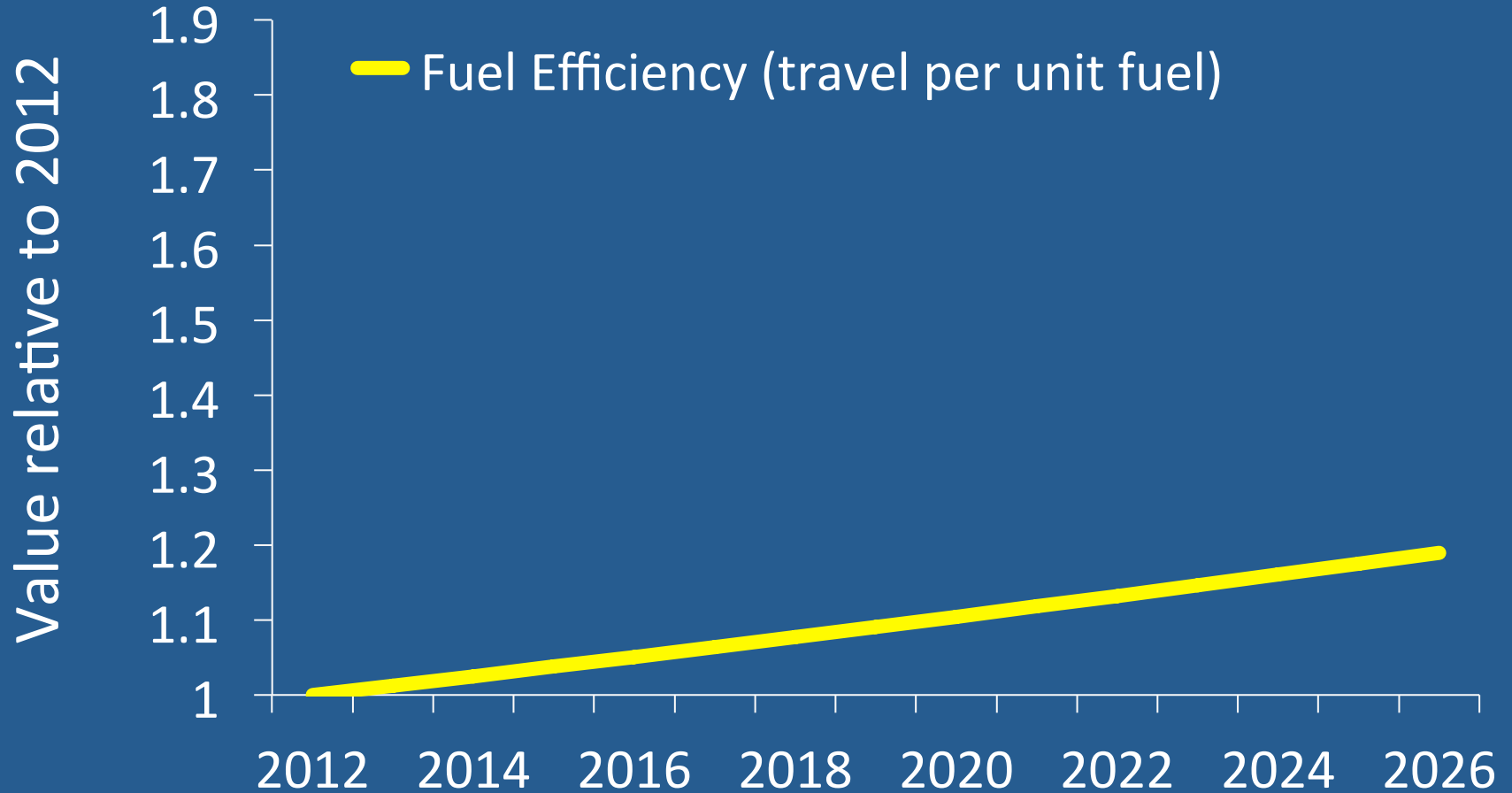
Reducing air travel's footprint

Modeling flight efficiency reveals new opportunities

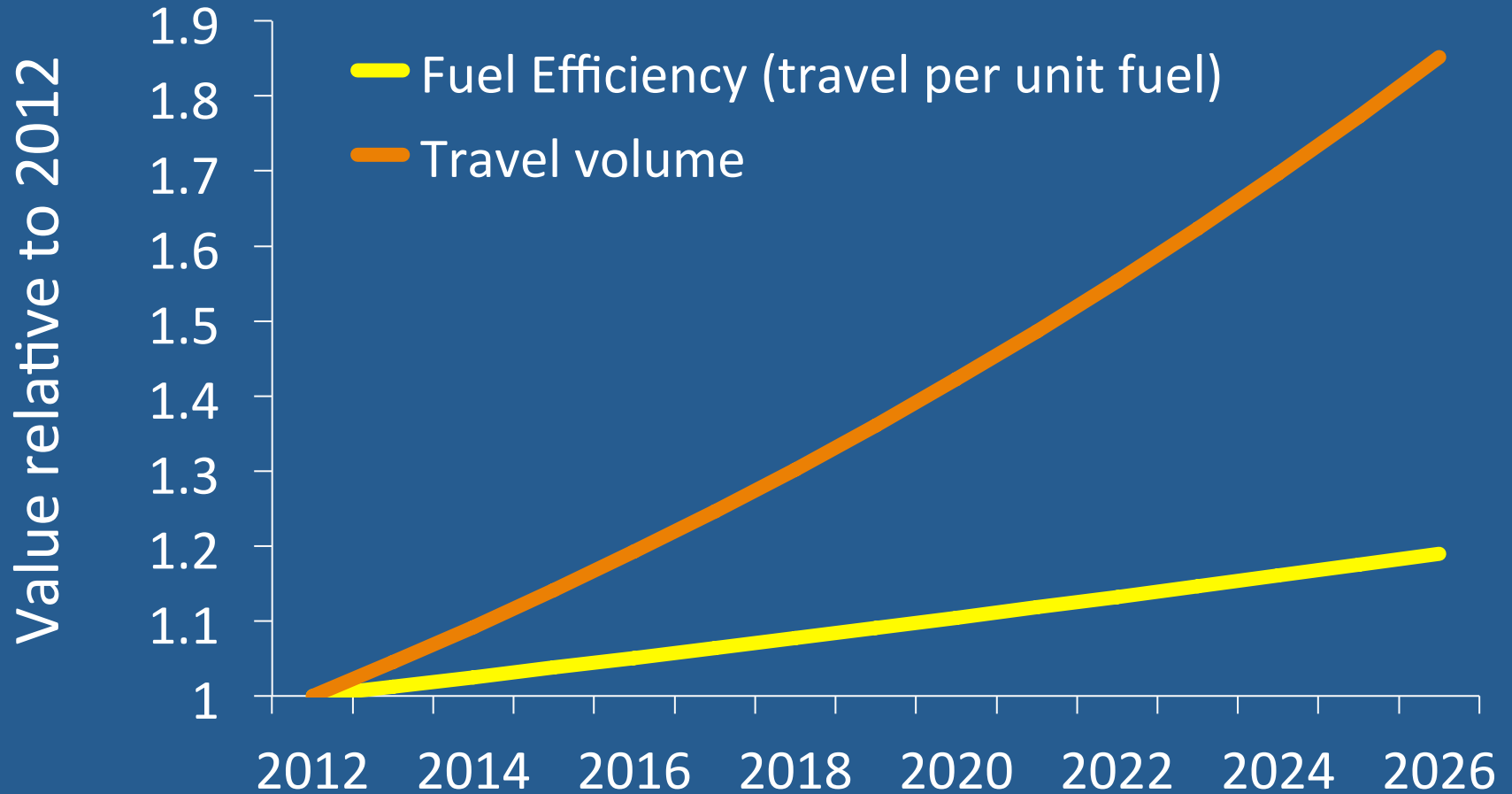


**Ian Hough and Matt Kling
Brighter Planet**

Air travel: a growing problem



Air travel: a growing problem



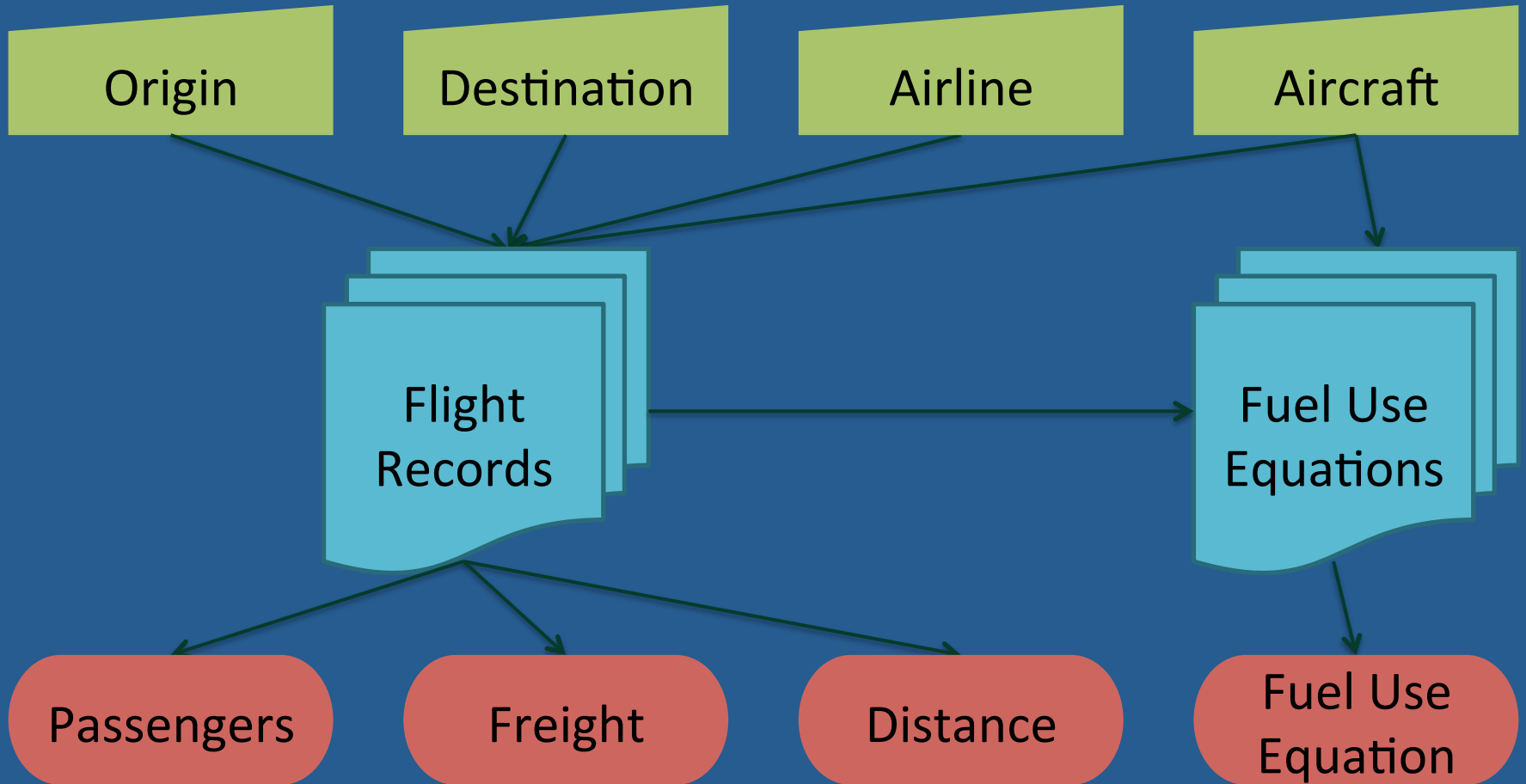
How can we reduce emissions?

Ask people not to fly!

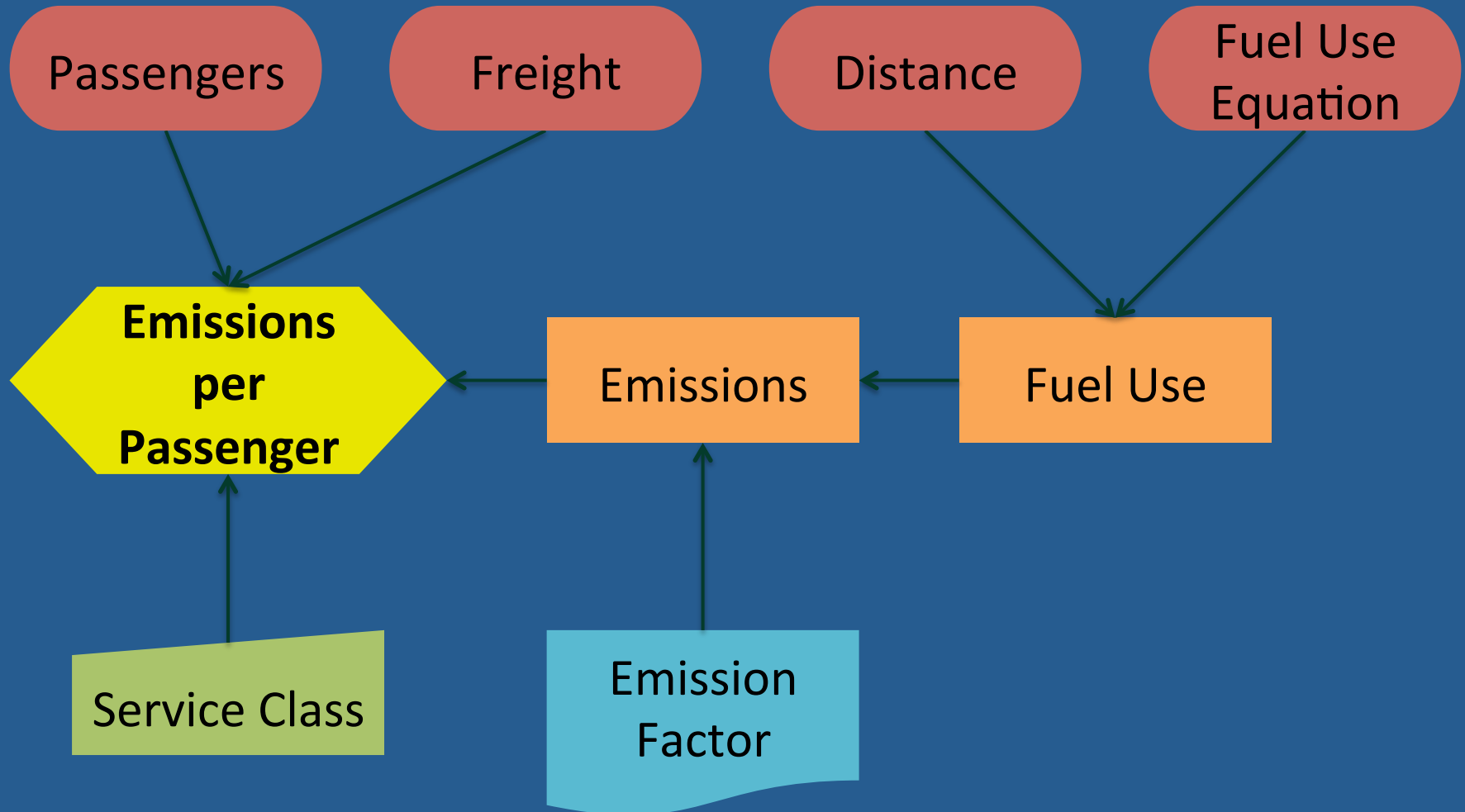
But many will anyway.

**Could travelers choose
cleaner flights?**

Our model: inputs & averaging



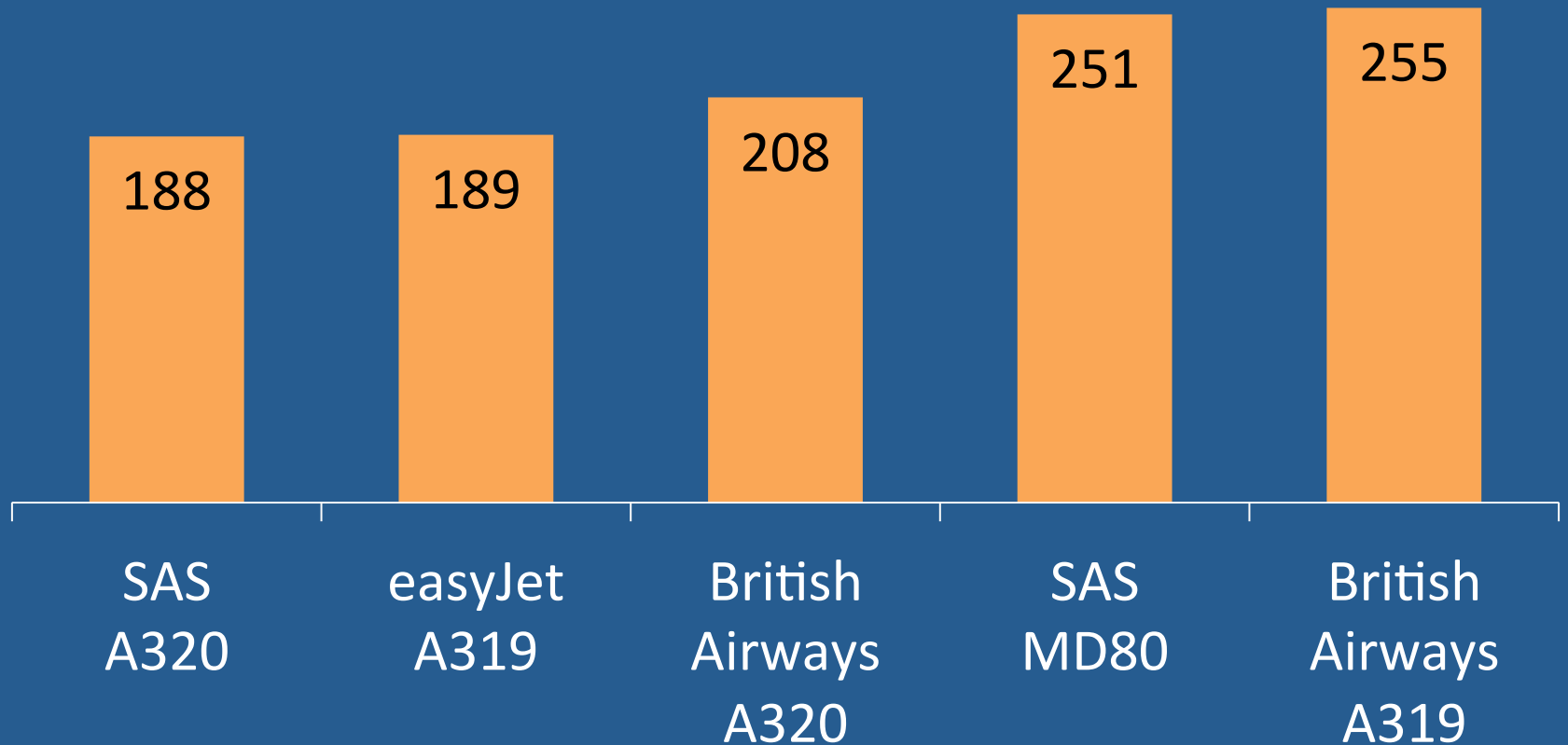
Our model: emissions calculation



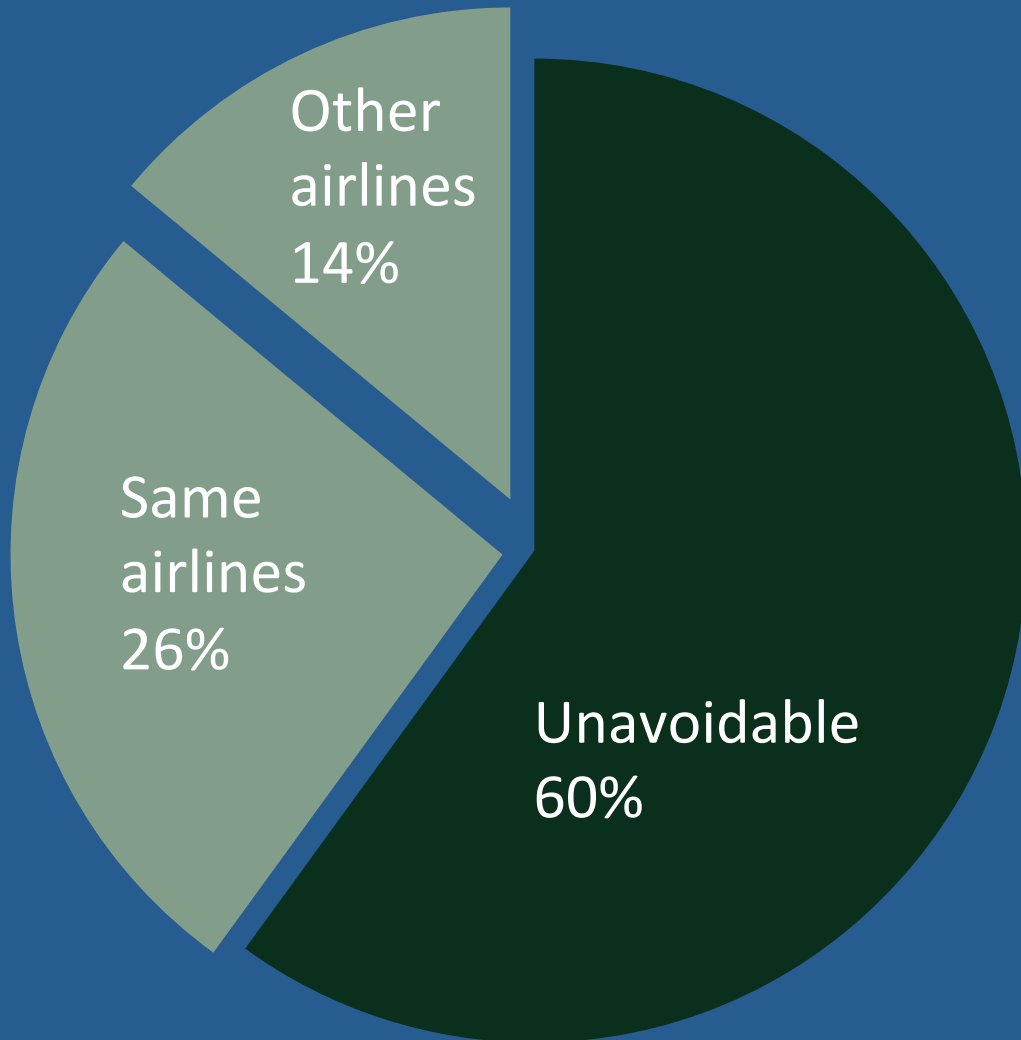
Flights vary in efficiency.

London - Copenhagen

kg CO₂e per passenger



A Fortune 500 company



Fortune 500 company

Top 100 routes

40% potential savings

Application: careplane.org

The screenshot displays the Kayak website interface for flight searches. At the top, the Kayak logo is followed by navigation links for Flights, Hotels, Cars, Deals, and More. The search bar shows the origin as Geneva, Switzerland and the destination as Kastrup, Denmark, with travel dates from 07/25/2012 to 07/28/2012. A 'Find Flights' button is visible. Below the search bar, the results are sorted by Price* (ascending). The first result is a Lufthansa / SAS flight for €399 with 1,517 lbs CO2e. The second result is a SAS flight for €415 with 1,256 lbs CO2e, which is circled in red. The third result is an Air France flight for €425 with 1,968 lbs CO2e. On the left side, there are filters for Stops (nonstop, 1 stop, 2+ stops) and Times (Take-off, Landing). The departure take-off time is set to Wed 6:00a - 8:00p and the return take-off time is set to Sat 1:00a - 8:30p.

KAYAK Flights Hotels Cars Deals More

Geneva, Switzerland ▶ Kastrup, Denmark 07/25/2012 ▶ 07/28/2012 Find Flights +

371 of 765 flights

Sort Price* ▲ Airline Takeoff Landing Duration Matrix +/- 3 days

Price alert Fare charts

Stops

- nonstop €415
- 1 stop €399
- 2+ stops €2219

Times

- Take-off Landing

Departure take-off

Wed 6:00a - 8:00p

Return take-off

Sat 1:00a - 8:30p

€399 Lufthansa / SAS 1,517 lbs CO2e

GVA 1:40p → CPH 6:05p 4h 25m 1 stop (FRA)
CPH 2:30p → GVA 4:30p 2h 00m nonstop Economy

Select Orbitz €399 Cheaptickets €399 Expedia Travelocity

€415 SAS 1,256 lbs CO2e

GVA 8:00p → CPH 10:00p 2h 00m nonstop
CPH 2:30p → GVA 4:30p 2h 00m nonstop Economy

Select Orbitz €415 Cheaptickets €415 Flysas €415

€425 Air France 1,968 lbs CO2e

GVA 10:30a → CPH 2:30p 4h 00m 1 stop (CDG)
CPH 6:55a → GVA 1:10p 6h 15m 1 stop (CDG) Economy

Select Airfrance €425

For more information...

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Model details & source code:

<http://impact.brighterplanet.com/models/flight>

Paper on Air Travel Carbon and Energy Efficiency:

<http://brighterplanet.com/research>

Careplane browser plugin

<http://careplane.org>