We're taking a data-driven approach to emissions. The aviation industry needs to be able to accurately calculate emissions generated from aircraft to develop methods to eliminate them. The industry, however, lacks a reliable method for estimating the carbon emissions of real-world flights and a single version of the truth for consistent benchmarking.

Through a data-driven approach, Cirium offers the most accurate, historic and predicted flight emissions data available in the marketplace today. We work with airlines, manufacturers and industry organizations on a more accurate approach.

### Methodology

1. **Flight Weight Estimation**
   - Accurate fuel burn calculation based on the true weight of physical aircraft
2. **Flight Operations**
   - Accurate fuel burn calculations per aircraft based on actual tracked flight time and taxi times
3. **Fuel Model**
   - Emissions calculations per entire flight

We allocate emissions by seat, considering variations in aircraft types, engines, and other modifications to improve emissions.

**Why this matters:**
This distinguishes between flights of a similar great circle distance, by considering different track routings, headwinds, holding patterns and fuel burn on the ground. This process takes that into account and is the end-result of the fuel estimate. We further adjust to account for the deterioration schedule or aircraft age. This results in a fuel burn number which we multiply by 3.16 (standard) to determine carbon emitted for the entire flight.

Where does Cirium get the data from?

Cirium collects best-in-class aviation data from airline schedules to flight status to aircraft configurations to passenger traffic. We partner with over 800 airlines and third-party providers to cover global commercial flights and ensure Cirium has the largest and most comprehensive fleet database in the world.