CARNEGIE ENDOWMENT FOR INTERNATIONAL PEACE

# Open Source Oil Modeling
# *Oil Data Gaps*

## **OPGEE** Upstream Production Data

1. Extraction method *(primary, secondary, EOR, other)*
2. Level of activity per unit production
   - Water-oil ratio *(for primary and secondary production)*
   - Steam-to-oil ratio *(for tertiary production)*
3. Location *(onshore, offshore, with GIS coordinates)*
4. Flaring rate
5. Venting rate *(level of fugitive emissions)*

## **PRELIM** Downstream Refining Data

1. Reporting on updated refinery process energy requirement data.
2. Oil assay parameters (specified below) and reported consistently for each global oil.

   Each parameter (except MCR/CCR) must be specified at each cut temperature* and cut temperature ranges must be standardized, as specified below or in another consistent format. *Note: Cut temperatures are currently reported out using a variety of inconsistent formats.*

   - API Gravity
   - Density
   - Sulphur content (wt %)
   - Nitrogen content (mass ppm)
   - Hydrogen content
   - Volume/Mass Flow (% recovery)
   - Micro-carbon residue (MCR) or Conradson carbon residue (CCR)
   - Viscosity (cST at 100 ºC) for Vacuum Residuum

**The cut temperatures and products currently used in the PRELIM refining model are:*

| Temperature (ºC) | Product Cut Name |
|---|---|
| 80 | LSR |
| 180 | Naphtha |
| 290 | Kerosene |
| 343 | Diesel |
| 399 | Atmospheric Gas Oil (AGO) |
| 454 | Light Vacuum Gas Oil (LVGO) |
| 525 | Heavy Vacuum Gas Oil (HVGO) |
| 525+ | Vacuum Residue (VR) |
| 399+ | Atmospheric Residue (AR) |