Oil - Exercise

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Workshop on energy statistics for the LA and the C regions
Diesel oil

• 500 kt of diesel oil were produced in a given year.

• 3000 kt of diesel oil were imported in a given year:
  - 100 kt were re-exported.

• The balance of withdrawals and deposits to main storage units amounted to an increase of 15 kt in storage.

• 575 kt used for transportation purposes, where:
  - 40 kt used to fuel ships going on international travel
  - 10 kt used for boats/ships on domestic trips
  - 525 kt delivered to buses, trucks, transportation companies

• 2700 kt were used to generate electricity:
  - 1300 kt by the main electricity company
  - 1000 kt by independent power producers
  - 300 kt by companies whose main activity is not in the field of energy
  - 100 kt by households private generators
Exercises

• How to account for this info in energy statistics?

• Calculate supply and calculate use.
  - Do they match? If not, what could be the causes?

• 525 kt were delivered to buses & trucks: do you have info on storage (stock) changes in the transport companies?

• How to fill the energy balance with this info?
  - Note: Default calorific value of diesel oil: 43 MJ/kg
How to account for this info in energy statistics?

• 500 kt of diesel oil were produced in a given year.
• 3000 kt of diesel oil were imported in a given year.
  - 100 kt were re-exported.
• The balance of withdrawals and deposits to main storage units amounted to an increase of 15 kt in storage.
• 575 kt used for transportation purposes, where:
  - 40 kt used to fuel ships going on international travel
  - 10 kt used for boats/ships on domestic trips
  - 525 kt delivered to buses, trucks, transportation companies
• 2700 kt were used to generate electricity
  - 1300 kt by the main electricity company
  - 1000 kt by independent power producers
  - 300 kt by companies whose main activity is not in the field of energy
  - 100 kt by households private generators
Exercises - answers

• Calculate supply and calculate use.
  - Supply: 500 kt + 3000 kt – 100 kt – 40 kt – 15 kt = 3345 kt
  - Use: 535 kt + 2700 kt = 3235 kt

• Do they match? If not, what could be the causes?
  - They don’t match by 110 kt (~3% of supply). Since they are measured independently, there may be discrepancies.
  - These discrepancies go in the “statistical difference”

• 525 kt were delivered to buses & trucks: do you have info on storage (stock) changes in the transport companies?
  - If you don’t, consider all this quantity as consumed
  - If you do, take into account the stock changes (subtract from consumption and add to the field stock changes)
Exercise: electricity production from diesel

**Diesel used for electricity:**

- The 1300 kt of diesel used by the main electricity company generated 5200 GWh, but only 5000 GWh sent to grid.
- The 1000 kt of diesel used by IPPs generated 3500 GWh, where 3400 GWh sent to grid.
- The 300 kt of diesel used by other companies produced 900 GWh, where 800 GWh used by them (400 GWh commercial and 400 GWh industrial) & 100 GWh sent to grid.
- The 100 kt of diesel used by households produced 250 GWh, which were consumed by households.

<table>
<thead>
<tr>
<th></th>
<th>Gross prod.</th>
<th>Net prod.</th>
<th>Own use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Main elec. Co.</td>
<td>5200</td>
<td>5000</td>
<td>200</td>
</tr>
<tr>
<td>IPPs</td>
<td>3500</td>
<td>3400</td>
<td>100</td>
</tr>
<tr>
<td>Other Cos.</td>
<td>900</td>
<td>900*</td>
<td>0*</td>
</tr>
<tr>
<td>Households</td>
<td>250</td>
<td>250*</td>
<td>0*</td>
</tr>
</tbody>
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