Questionnaire Key Points

IEA Training on Energy Statistics

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Tables 1&2: plants by energy source

- Nuclear
- Combustible fuels
- Geothermal
- Wind
- Waves, Tides
- Hydro
- Solar
Tables 1&2: plants by function

“Main activity” producer plants

- Undertakings generating electricity and/or heat for sale to third parties as their primary activity
- Regardless whether they are state or privately owned

Autoproducers

- Undertakings generating electricity and/or heat wholly or partly for their own use as support to their primary activity
- Again, regardless whether they are state or privately owned
Tables 1 vs. 2: **Gross** and **net** electricity production

- **GROSS**: electricity produced measured at output terminal of the main generator
- **OWN USE**: electricity absorbed by the generating auxiliaries + electricity lost in the final transformer
- **NET** = **GROSS** – **OWN USE**
Table 6: Fuel Input

For each combustible fuel:
INPUT shall:
- be reported both in natural units (Ktons) and energy units (TJ)
- match INPUT given in the other AQs. Check it!

INPUT (TJ) = INPUT (ktons) x NCV (TJ/ktons)

NCV shall:
- be in reference ranges
- match NCVs given in the other AQs
Gross vs. Net calorific value

**Ideal combustion**

- GCV/NCV approximately:
  - 10% natural gas
  - 5% oil
  - 5% coal

Heat in water

Useful heat content
Table 6: Electricity/Heat production

<table>
<thead>
<tr>
<th>FUELS</th>
<th>UNITS</th>
<th>MAIN ACTIVITY PRODUCER PLANTS</th>
<th>ELECTRICITY (ONLY)</th>
<th>CHP</th>
<th>HE. (ON)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>A</td>
<td>B</td>
<td>C</td>
</tr>
<tr>
<td>ANTHRACITE</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fuel input</td>
<td>1</td>
<td>10^3 t</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fuel input</td>
<td>2</td>
<td>TJ (NCV)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Elec. prod.</td>
<td>3</td>
<td>GWh</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Heat prod.</td>
<td>4</td>
<td>TJ</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Production (gross): electricity in GWh, heat in TJ

1 GWh = 3.6 TJ

A Wh is the energy produced by operating at a power of 1 Watt for an hour

1 W (1 J/s) ➔ 1 Wh = 3600 J

1 GWh = 3600 GJ

1 GWh = 3.6*1000 GJ

1 h = 3600 s
Generation Efficiency

Efficiency shall:
- be in reference ranges
- be anyway < 100%

Efficiency %

EFFICIENCY = OUTPUT / INPUT (in energy units)

Fuel Input

Heat Output

Electricity Output
Table 7a: Net Maximum Electrical Capacity

<table>
<thead>
<tr>
<th>Time</th>
<th>Net Electricity Production (NEP)</th>
</tr>
</thead>
<tbody>
<tr>
<td>31st December</td>
<td>Total “Nameplate power”</td>
</tr>
</tbody>
</table>

Capacity factor % = \[
\text{actual production} \div \text{maximum potential production}
\]

Capacity factor shall:
- be in reference ranges
- be anyway < 100%
Table 8: Electricity and Heat Trade

Differently from the trade rule for all other energy commodities, ALL the quantities of electricity and heat crossing national borders must be accounted, *including transit*.
Table 8: Electricity and Heat Trade cont’d

- Example GAS: *transit should not* be accounted under import/export
- Example ELECTRICITY: *transit should* be accounted under import/export
Thank you

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