Annex 73: Task A - Energy Targets Update

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## U.S. Targets – What They Currently Look Like*

<table>
<thead>
<tr>
<th>Building Type</th>
<th>ASHRAE Climate Zone:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1A</td>
</tr>
<tr>
<td>Office</td>
<td>108</td>
</tr>
<tr>
<td>Bank</td>
<td>191</td>
</tr>
<tr>
<td>Food market</td>
<td>324</td>
</tr>
<tr>
<td>Clinic</td>
<td>134</td>
</tr>
<tr>
<td>University</td>
<td>166</td>
</tr>
<tr>
<td>Hospital</td>
<td>288</td>
</tr>
</tbody>
</table>

* Primary energy use intensities
Limited Targets By Building Type Could Work In These Areas*

* The U.S. covers 20° latitude and is well represented by a single set of energy targets by building type.
Documents/Data Received

  – Contains reference and target “comparative” energy use intensities for heating and electrical energies by building type

  – Contains heating limits for non-residential but does not appear to be by building type or very limit building types

Targets – Consistent Format

• U.S. targets are total building primary energy use
  – Advantages: Few values per country/continent, little climatic variance; limited amount of data needed.
  – Disadvantage: Differing primary energy conversion multipliers

• Germany targets (comparatives) are for separate heating and electricity*
  – Advantage: Easier to calculate and understand
  – Disadvantage: Large variances in targets due to climate, thus many different targets within a single country and more uncertainty in targets; large amounts of data needed.

### Example Data Collection Template to Enable Development of Targets by Country (or Continent?)

Enter your buildings in this template (in yellow cells)

<table>
<thead>
<tr>
<th>Building #</th>
<th>Building Type</th>
<th>Floor area (value)</th>
<th>Floor area (unit)</th>
<th>Annual electricity use (value)</th>
<th>Annual electricity use (unit)</th>
<th>Total non-electric energy use (value)</th>
<th>Total non-electric energy use (units)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exa. 1</td>
<td>Office</td>
<td>66,300 sq ft</td>
<td>sq ft</td>
<td>994,500 kWh</td>
<td>1,115 MMBtu</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exa. 2</td>
<td>Clinic</td>
<td>18,200 sq ft</td>
<td>sq ft</td>
<td>273,000 kWh</td>
<td>943 MMBtu</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exa. 3</td>
<td>Dormitory</td>
<td>82,600 sq ft</td>
<td>sq ft</td>
<td>989,000 kWh</td>
<td>1,803 MMBtu</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exa. 4</td>
<td>Hotel</td>
<td>20,000 sq m</td>
<td>sq m</td>
<td>312 MWh</td>
<td>756 MMBtu</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exa. 5</td>
<td>Retail</td>
<td>1,500 sq m</td>
<td>sq m</td>
<td>23 MWh</td>
<td>109 MMBtu</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Do you have data? Will this form work for it’s collection?
Community/Campus Approach to Targets

- Build up from building metrics

<table>
<thead>
<tr>
<th>Building Type</th>
<th>Target EUI</th>
<th>Building Size (sq m)</th>
<th>Target Energy Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Office 1</td>
<td>356</td>
<td>2000</td>
<td>712,000</td>
</tr>
<tr>
<td>Office 2</td>
<td>356</td>
<td>1000</td>
<td>356,000</td>
</tr>
<tr>
<td>Clinic</td>
<td>490</td>
<td>500</td>
<td>245,000</td>
</tr>
<tr>
<td>Distribution Center</td>
<td>181</td>
<td>5000</td>
<td>905,000</td>
</tr>
<tr>
<td>Motel/Inn</td>
<td>517</td>
<td>2000</td>
<td>1,034,000</td>
</tr>
<tr>
<td>Vehicle service/repair</td>
<td>246</td>
<td>400</td>
<td>98,400</td>
</tr>
</tbody>
</table>

Campus Totals

- Building Floor Area: 10900
- Target Energy Use: 3,350,400

Campus Target EUI: 307
Data Are Needed

• Germany to provide data
• Limited data from many places is far more important than lots of data from a few places
• Can you help?
Questions?

Thank you!