

# ENERGee Watch

## T3. Data Processing and Verification

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# SECAPs and data



The baseline year is the reference year against which the emissions reduction target shall be compared to. Covenant signatories are free to choose the year for which they can get the **most comprehensive and reliable data**

- What kind of data we need for the baseline year (BEI)?
- Where we can find reliable data?
- How will we assess the situation of the Local Authority/ies in 2030?

# SECAPs and data



In the context of the Covenant, the local authority has to report the final energy consumed (in MWh) within its local territory in the CoM activity sectors

The BEI/MEI **shall cover three** of the key sectors and it is recommended to cover other activity sectors in the scope of the CoM in which the LA intends to take action

## 4 KEY CoM Sectors

1. Municipal Buildings, equipment / facilities

2. Tertiary buildings, equipment/facilities

3. Residential Buildings

4. Transport (Municipal fleet, Public transport, Private and commercial transport)

# Activity Sectors



Activity sectors and data to be included in the CoM inventories

| Activity sector                           | Description  |
|---|--|
| Municipal buildings, equipment/facilities | <p>All final energy consumption and related GHG emissions occurring in buildings and facilities public or owned by the local authority shall be reported in this activity sector; e.g. <b>government offices, schools, police stations, hospitals, etc.</b></p> <p>All final energy consumption due to the operation (e.g. electricity for pumping, natural gas for heating, etc.) of <b>municipal water supply system, solid waste and wastewater treatment and disposal facilities</b> are also included here.</p>   |
| Tertiary buildings, equipment/facilities  | <p>All final energy consumption and related GHG emissions occurring in buildings and facilities of the tertiary sector (services) shall be reported in this activity sector; e.g. offices of <b>private companies, banks, commercial and retail activities, private schools, hospitals, etc.</b></p> <p>All final energy consumption due to operation (e.g. electricity for pumping, natural gas for heating, etc.) of <b>private water supply system, solid waste and wastewater treatment and disposal facilities</b> shall be reported in this activity sector.</p> |
| Residential buildings                     | <p>All final energy consumption and related GHG emissions occurring in buildings that are primarily used as residential buildings for <b>cooking, heating &amp; cooling, lighting and appliances</b> usage shall be reported in this activity sector.</p> <p>All final energy consumption occurring in <b>social housing</b> shall be reported in this sector.</p>   |

# Municipal buildings and equipment/facilities



The local authority should be able to collect accurate and comprehensive final energy consumption data related to its own buildings and facilities. Well-advanced local authorities already have a full energy accounting system in place.

If they don't have 

- 1) identify all buildings and equipment/facilities owned/managed by the Local Authority,
- 2) identify all energy delivery points (electricity, natural gas, heat from heating district network, fuel oil tanks...);
- 3) identify the person / department receiving the invoices and energy data
- 4) organise a centralised collection of these documents/data;
- 5) select an appropriate system to store and manage the data (could be a simple spread sheet or a more elaborate software, available commercially);
- 6) make sure the data are collected and introduced in the system at least every year. Tele measurement is possible and can ease the process of data collection;

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# Buildings and other sectors

Collecting information from every individual energy consumer within the local territory is not always possible or practical. Therefore, a variety of approaches are likely to be needed to develop an estimate of energy consumption.

Several options are available, and often a combination of them is necessary to have an overall picture of the energy consumption within the local territory



# Reliable data

## Sources

- Regional/ national sources - National central databases and tools , Covenant coordinators, Regional Energy and GHG Emissions Observatories,
- Market operators
- EU Projects/Studies
- Local Initiatives
- Surveys /on site visits



# Reliable data

## Sources

**Regional/ national sources** - National central databases and tools , Covenant coordinators/Supporters, Regional Energy and GHG Emissions Observatories,

- In some Member States, such as the Netherlands, Denmark and Cyprus, as well as the UK, a central database and/or tool has been developed to provide local specific data to local authorities.
- The Covenant signatories are encouraged to approach coordinators and supporters and ask if they could provide local data
- "Regional Energy and GHG Emissions Observatories which are regional data centres providing energy and GHG emissions data to the local authorities (check Data4Action EU project)





# Reliable data

## Sources

### Energy / Market operators

- Because such data are generally considered as commercially sensitive ideally, a disaggregation between the residential, tertiary and industry activity sectors, for the different energy carriers for all the postal code(s) that relate to the local municipality should be obtained



**ENERGee Watch**

**Agreement** that all the energy data will be used for the LA SECAP and not for commercial purposes (develop good cooperation/ share any final results)



# Reliable data

## Sources

### EU Projects/ Studies

Results from European projects/studies can offer reliable data at local level for free (most of the time), covering the different key sectors



# Reliable data

## Sources

### Consumer survey/on site visits

- If all data cannot be obtained in the desired format from national authorities, energy operators etc. it may be necessary to contact surveys or site visits in order to obtain the missing data
- Energy, environmental or statistical agencies may already be collecting such data, so make sure that data are not available elsewhere before considering sending a questionnaire, organising physical interviews, visiting different sites



| Sources                         | How often<br>(real time, month, year) | How accurate<br>(1-5) | Access<br>(1-5) | Level of Spatial info<br>(country, region, city, postal code, neighborhoods) | GIS<br>(yes, no, maybe) |
|---------------------------------|---------------------------------------|-----------------------|-----------------|--|-------------------------|
| National strategies             | 5-10 years                            | 5                     | 5               | country/region   | yes                     |
| Statistical services            | 10 years (major census)               | 5                     | 4-5             | country/region   | yes                     |
| Electricity Authority, DSO, TSO | year                                  | 5                     | 3-4             | country, region, city, postal code, neighbourhoods                           | yes                     |
| Energy Audits, ISOs (50001)     | 3-10 years                            | 4-5                   | 2-3             | postal code  | no                      |
| Smart meters                    | real time/month                       | 5                     | 2-3             | postal code  | yes                     |
| EU research projects            | year                                  | 3-4                   | 1-5             | country, region, city, postal code, neighbourhoods                           | maybe                   |
| Studies/Grants                  | year                                  | 3-5                   | 4               | country, region, city  | maybe                   |
| Local Initiatives               | month                                 | 1-4                   | 5               | city, postal code, neighborhoods   | no                      |
| Local Competitions              | month                                 | 1-4                   | 5               | city, postal code, neighborhoods   | no                      |
| Questionnaires                  | month/year                            | 1-4                   | 5               | city, postal code, neighborhoods   | maybe                   |

# Reliable data



accuracy → Reliable data



accuracy → Low reliability

**Local Initiatives**

**Local Competitions**

**Questionnaires**

**Quantitative and Qualitative data:**  
assumptions, verification  
and conversion on a larger  
scale

# Reliable data



**Local Initiatives**

**Local Competitions**

**Questionnaires**

For higher accuracy and reliability, we need larger sample

| Population Size<br>(total amount of reported energy efficiency measures) | SIGNIFICANT SAMPLE     |     |       |                        |     |        |
|--|------------------------|-----|-------|------------------------|-----|--------|
|  | Confidence Level = 95% |     |       | Confidence Level = 99% |     |        |
|  | Confidence Interval    |     |       | Confidence Interval    |     |        |
|  | 10%                    | 5%  | 1%    | 10%                    | 5%  | 1%     |
| 100  | 49                     | 80  | 99    | 63                     | 87  | 99     |
| 500  | 81                     | 217 | 475   | 125                    | 286 | 485    |
| 1,000  | 88                     | 278 | 906   | 143                    | 400 | 943    |
| 5,000  | 94                     | 357 | 3,288 | 161                    | 588 | 3,845  |
| 10,000   | 95                     | 370 | 4,899 | 164                    | 624 | 6,247  |
| 50,000   | 96                     | 381 | 8,057 | 166                    | 657 | 12,486 |
| 100,000  | 96                     | 383 | 8,763 | 166                    | 661 | 14,267 |
| 500,000  | 96                     | 384 | 9,423 | 166                    | 665 | 16,105 |
| 1,000,000  | 96                     | 384 | 9,513 | 166                    | 665 | 16,369 |

**Table source:** Greek Centre of Renewable Energy Sources & Savings and EU project <http://multee.eu/>

# Thank you!

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