

# Building data templates

# WHAT

- Resource that identifies the **information** on EE projects that is **necessary to help attract investment** from external investors for **investment grade projects & programmes**
- **Tool** designed to give advice on the distinct **data points investors are looking** for as well as the **process by which they should be developed** and displayed
- **Sets a common language** for municipal teams and investors to understand and trust each other

# HOW

- Must be filled out by the engineering team and/or in collaboration with the ESCO

→ Cities must identify personnel with technical expertise or build  
**CAPACITY**

# WHO

- Targets external investors:
  - ✓ Development banks
  - ✓ Commercial banks
  - ✓ Sector-focused private investment funds

# SOURCES

- Investor Confidence Project Protocols
- CURB: Climate Action for Urban Sustainability
- GPC: Global Protocol for Community-Scale Greenhouse Gas Emission Inventories



**Building Efficiency**  
Accelerator

# ENERGY EFFICIENCY PROJECT DATA TEMPLATE

Jurisdiction: \_\_\_\_\_

*Building Efficiency Accelerator project document- Version 1, April 2017*



WORLD  
RESOURCES  
INSTITUTE



INVESTOR  
CONFIDENCE  
PROJECT



gef

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INVESTING IN OUR PLANET



| <b>Basic Information</b>                  |               |   |  |  |
|---|---------------|---|--|--|
| <b>Data Field Name</b>                    | <b>Values</b> | <b>Units</b>  | <b>Explanation</b>   | <b>Comment/specify alternate units</b> |
| Project Name                              |               | Text  |  |  |
| Project Description                       |               | Text  |  |  |
| Project Objective                         |               | Text  |  |  |
| Greenhouse gases targeted (if applicable) |               | Text  |  |  |
| Data Unit Type                            |               | International System of Units (SI) and/or inch-pound units (IP) |  |  |
| Currency Type                             |               | USD\$, €, or other currency (Text)                              |  |  |
| Project Developer                         |               | Text  |  |  |
| Building Owner                            |               | Text  |  |  |
| Building ID                               |               | Text  |  |  |
| Project Address Line 1                    |               | Text  |  |  |
| Project Address Line 2                    |               | Text  |  |  |
| City                                      |               | Text  |  |  |
| State                                     |               | Text  |  |  |
| Postal Code                               |               | Text  |  |  |
| Country                                   |               | Text  |  |  |
| Planned beginning of implementation       |               | Date  |  |  |
| Building Gross Floor Area                 |               | IP = SF; SI = m2  |  |  |
| Leasing/ownership structure               |               |   | Specify if the municipality is owner of the building, if the municipality or a public authority is lessee of the building or if a concession between the public company and private company exist. |  |

## Baseline Analysis

**Following fields are for each individual meter.** *If individual meters are not the method used to collect data, specify the method used and who collects the data.*

|                                  |  |          |   |  |
|----------------------------------|--|----------|---|--|
| Baseline Year                    |  | Year     |   |  |
| Baseline electricity consumption |  | MWh/year | If consumption or demand is available by month, please provide. |  |
| Baseline electricity demand      |  | MW/year  |   |  |
| Baseline natural gas consumption |  | GJ/Year  |   |  |
| Other                            |  | GJ/Year  |   |  |
| Other                            |  | GJ/Year  |   |  |

**Following fields are for each individual independent variable (Jan - Dec)**

|                                |  |                                      |   |  |
|--------------------------------|--|--------------------------------------|---|--|
| Electric Utility Rate Schedule |  | Text                                 |   |  |
| Electric Utility Rate          |  | IP = \$/kWh; \$/kW; SI = €/kWh, €/kW | If rates vary throughout the site, specify and provide an average value |  |
| Natural Gas Rate Schedule      |  | Text                                 |   |  |
| Natural Gas Rate(s)            |  | IP = \$/units; SI = €/units          | If rates vary throughout the site, specify and provide an average value |  |
| Other Fuel Rate Schedule       |  | Text                                 |   |  |
| Other Fuel Rate(s) Schedule    |  | IP = \$/units; SI = €/units          |   |  |

All the supporting calculation assumptions should be provided in an attachment



## Saving Calculations - Results

**Following fields are for each ECM.** For each ECM, specify the calculation methodology or standard used, and attach the calculations.

|  |  |                 |  |  |
|--|--|-----------------|--|--|
| ECM Annual Electric Consumption Cost Savings |  | IP = \$; SI = € |  |  |
|--|--|-----------------|--|--|

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|   |  |                 |   |  |
|---|--|-----------------|---|--|
| ECM Annual Electric Demand Cost Savings                                   |  | IP = \$; SI = € | For every energy saving estimate, specify estimation/calculation methodology and any product guarantee associated |  |
| ECM Annual Gas Consumption Cost Savings                                   |  | IP = \$; SI = € |   |  |
| ECM Annual Energy Consumption Cost Savings                                |  | IP = \$; SI = € |   |  |
| ECM Annual Cost Savings Total   |  | IP = \$; SI = € |   |  |
| ECM Implementation Costs  |  | IP = \$; SI = € |   |  |
| <b>Following fields are for each piece of equipment related to an ECM</b> |  |                 |   |  |

### Savings Calculations - Energy Model

|                                      |  |   |  |  |
|--------------------------------------|--|---|--|--|
| Savings Calculator Name              |  | Text  |  |  |
| Savings Calculator Email             |  | Email address                                       |  |  |
| Savings Calculator Phone #           |  | Phone Number  |  |  |
| Savings Calculator Credentials       |  | ASHRAE-BEAP; AEE-CEM; AEE-CEA; PE; or upload resume |  |  |
| Savings Calculator Credential Number |  | Number  |  |  |

### Project Financial Performance

|                              |  |                 |  |  |
|------------------------------|--|-----------------|--|--|
| Annual Baseline Energy Costs |  | IP = \$; SI = € |  |  |
| Annual Energy Cost Savings   |  | IP = \$; SI = € |  |  |
| Project Capital Cost         |  | IP = \$; SI = € |  |  |
| O&M Savings                  |  | IP = \$; SI = € |  |  |

## Measurement and Verification

|                   |  |                 |  |  |
|-------------------|--|-----------------|--|--|
| M&V Plan          |  | Upload M&V plan |  |  |
| M&V Provider Name |  | Text            |  |  |
| M&V Annual Budget |  | IP = \$; SI = € |  |  |

- **BASELINE ANALYSIS**
- **SAVINGS CALCULATIONS – RESULTS**
- **SAVINGS CALCULATIONS – ENERGY MODEL**
- **PROJECT FINANCIAL PERFORMANCE**
- **MEASUREMENT AND VERIFICATION**

➤ **80 data points to gather**

➤ **BEST PRACTICE to prepare an investment opportunity concept note**



**Building Efficiency**  
Accelerator

# ENERGY EFFICIENCY PROGRAMME DATA TEMPLATE

Jurisdiction: \_\_\_\_\_

*Building Efficiency Accelerator project document- Version 1, April 2017*



WORLD  
RESOURCES  
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PROJECT



GLOBAL ENVIRONMENT FACILITY  
INVESTING IN OUR PLANET

**UN**   
environment

### **POLITICAL LEADERSHIP**

Please describe your City's leadership in the area of building energy efficiency. What actions have you taken to support the adoption of energy efficiency in the building sector?

What is the overall goal for your City for energy efficiency? Describe any Climate Plan or targets that have been agreed on.

What other benefits are you seeking to pursue (e.g. income increase, job creation, air quality etc.)?

Are there other related policies the City has adopted or planning on adopting?

### **STANDARDIZATION**

What standardized tools and processes have you put in place in your energy efficiency programme development and technical assistance?

How do you promote these processes to the building sector in your city?

What certifications of public and private building energy efficiency projects do you require or recommend?

### **DATA**

Do you have a systematic process to collect public buildings data in your municipality? If so what is it?

### **CAPACITY BUILDING**

What city energy efficiency teams are in place and what is their qualifications?

What do you do to build capacity of the private sector to deliver effective energy efficiency projects?

### **RAISING AWARENESS**

What incentives does your city offer for building energy efficiency projects?

What is the jurisdiction doing to raise awareness of building codes and standards and ensuring they are implemented?

| <b>City Basic Data</b>  |              |                   |  |  |
|---|--------------|-------------------|--|--|
| <b>City Characteristics</b>   | <b>Value</b> | <b>Units</b>      | <b>Explanation</b>   | <b>Comment/specify alternate units</b> |
| City Name   |              | N/A               |  |  |
| Country   |              | N/A               |  |  |
| Implementing Agency   |              |                   |  |  |
| Baseline Year   |              | N/A               | Please choose a baseline year for the analysis, based upon the most recent year available to you, for the sector you are seeking investment for. |  |
| Implementation Period   |              | Range of Dates    | Please specify the year the City starts the programme and when it ends   |  |
| Area of city (excluding water, natural, and agricultural areas)   |              | Square Kilometers | If available in different units, please state in the column to the right.  |  |
| Climate   |              | N/A               | Continental, Desert, Dry, Highlands, Mediterranean, Sub-tropical, Tropical   |  |
| Population in Baseline Year   |              | Number of People  | Population for jurisdiction for which activity data is available.  |  |
| <b>Private Sector Building Data</b>   |              |                   |  |  |
| <b>This section asks for information on the quantity and types of buildings in the residential and commercial sectors. Please enter data for the Baseline Year.</b> |              |                   |  |  |
| <b>Residential Units</b>  | <b>Value</b> | <b>Units</b>      | <b>Explanation</b>   | <b>Comment/specify alternate units</b> |
| Share of residential buildings audited  |              | %                 | Based on the number of buildings/dwellings within residential housing  |  |

|   |              |   |   |  |
|---|--------------|---|---|--|
| Buildings renovated to date                                 |              | %   | From % of buildings audited, what % have been retrofitted to date?  |  |
| Total Residential Units                                     |              | Number of residential units               | Please estimate the total number of residential housing units in your city. Includes government owned/funded residential buildings.   |  |
| Single Family Detached Units                                |              | Number of single family residential units |   |  |
| Multi-family Units  |              | Number of Multi-family residential units  |   |  |
| <b>Residential Building Energy Consumption by Fuel Type</b> | <b>Value</b> | <b>Units</b>                              | <b>Explanation</b>  | <b>Comment/specify alternate units</b> |
| <b>Single Family Units</b>                                  |              |   | Please estimate the total amount of energy consumed within single family residential buildings for the Baseline year. If other types of energy are consumed please write in the appropriate fuel type in the left column and provide the value of energy consumption in the appropriate cell. |  |
| Electricity   |              | MWh/year                                  |   |  |
| Natural Gas   |              | GJ/Year                                   |   |  |
| Other   |              | GJ/Year                                   |   |  |
| Other   |              | GJ/Year                                   |   |  |
| Other   |              | GJ/Year                                   |   |  |
| <b>Multi-family Units</b>                                   |              |   | Please estimate the total amount of energy consumed within multi-family residential buildings for the Baseline year. If other types of energy are consumed please write in the appropriate fuel type in the left column and provide the value of  |  |
| Electricity   |              | MWh/year                                  |   |  |
| Natural Gas   |              | GJ/Year                                   |   |  |
| Other   |              | GJ/Year                                   |   |  |



|                                       |              |                    |  |  |
|---------------------------------------|--------------|--------------------|--|--|
| Other                                 |              | GJ/Year            | energy consumption in the appropriate cell.  |  |
| Other                                 |              | GJ/Year            |  |  |
| <b>Commercial Building Area</b>       | <b>Value</b> | <b>Units</b>       | <b>Explanation</b>   | <b>Comment/specify alternate units</b> |
| Share of commercial buildings audited |              | %                  | Based on the number of buildings within commercial building area   |  |
| Buildings renovated to date           |              | %                  | From % of buildings audited, what % have been retrofitted to date?   |  |
| <b>Retail</b>                         |              | Square Meters (m2) | Please estimate the total area of floor space and energy consumption that falls into the following categories. |  |
| Electricity                           |              | MWh/year           |  |  |
| Natural Gas                           |              | GJ/Year            |  |  |
| <b>Office</b>                         |              | Square Meters (m2) |  |  |
| Electricity                           |              | MWh/year           |  |  |
| Natural Gas                           |              | GJ/Year            |  |  |
| <b>Hospital/HealthCare</b>            |              | Square Meters (m2) |  |  |
| Electricity                           |              | MWh/year           |  |  |
| Natural Gas                           |              | GJ/Year            |  |  |
| <b>Educational</b>                    |              | Square Meters (m2) |  |  |
| Electricity                           |              | MWh/year           |  |  |
| Natural Gas                           |              | GJ/Year            |  |  |
| <b>Hotels</b>                         |              | Square Meters (m2) |  |  |
| Electricity                           |              | MWh/year           |  |  |

|  |              |                    |   |  |
|--|--------------|--------------------|---|--|
| Natural Gas  |              | GJ/Year            |   |  |
| Warehouse  |              | Square Meters (m2) |   |  |
| Electricity  |              | MWh/year           |   |  |
| Natural Gas  |              | GJ/Year            |   |  |
| <b>Electricity Service Saturation</b>  | <b>Value</b> | <b>Units</b>       | <b>Explanation</b>  | <b>Comment/specify alternate units</b> |
| Proportion of Residents in City with Electricity Service   |              | % of Residents     | Please estimate the proportion of city residents that have access to formal electricity service in their home   |  |
| <b>Municipal Buildings</b>   |              |                    |   |  |
| <b>This section asks for information on energy consumption by municipal buildings, streetlights, traffic lights and other types of public lighting. Please enter data for the Baseline Year.</b> |              |                    |   |  |
| Share of municipal buildings audited   |              | %                  | Based on the number of buildings within municipal building area   |  |
| Buildings renovated to date  |              | %                  | From % of buildings audited, what % have been retrofitted to date?  |  |
| <b>Total Floor Area</b>  | <b>Value</b> | <b>Units</b>       | <b>Explanation</b>  | <b>Comment/specify alternate units</b> |
| Office   |              | Square Meters (m2) | Please estimate the total floorspace (m2) for municipal buildings   |  |
| <b>Municipal Building Energy Consumption by Fuel Type</b>  | <b>Value</b> | <b>Units</b>       | <b>Explanation</b>  | <b>Comment/specify alternate units</b> |
| Electricity  |              | MWh/year           | Please estimate the amount of energy consumed within municipal (i.e. city-owned) buildings for the Baseline year. If other types of energy are consumed please write in the appropriate fuel type in the left column and provide the value of energy consumption in the appropriate cell. |  |
| Natural Gas  |              | GJ/Year            |   |  |
| Other  |              | GJ/Year            |   |  |
| Other  |              | GJ/Year            |   |  |
| Other  |              | GJ/Year            |   |  |

## Energy Costs

This section asks for information on energy costs to facilitate accurate financial analysis for the selected actions.

| Electricity Rates          | Value | Unit   | Explanation   | Comment/specify alternate units |
|----------------------------|-------|--------|---|---------------------------------|
| Residential Electricity    |       | \$/kWh | Please provide information on the electricity rates by end user in terms of USD/EUR per kWh. Proxy data is available, typically at a national level, if needed. |                                 |
| Commercial Electricity     |       | \$/kWh |   |                                 |
| Municipal Electricity      |       | \$/kWh |   |                                 |
| Industrial Electricity     |       | \$/kWh |   |                                 |
| Transportation Electricity |       | \$/kWh |   |                                 |
| Fuel Prices                | Value | Units  | Explanation   | Comment/specify alternate units |
| Natural Gas                |       | \$/kWh | Please provide local fuel prices, if available. If data is only available in different units, please provide details in the column on the right.                |                                 |
| Propane Gas                |       | \$/kWh |   |                                 |
| Butane                     |       | \$/kWh |   |                                 |
| Diesel/Gas Oil             |       | \$/kWh |   |                                 |
| Other                      |       | \$/kWh |   |                                 |
| Other                      |       | \$/kWh |   |                                 |
| Other                      |       | \$/kWh |   |                                 |
| Other                      |       | \$/kWh |   |                                 |
| Other                      |       | \$/kWh |   |                                 |

- **CITY BASIC DATA**
- **PRIVATE SECTOR BUILDING DATA**
- **MUNICIPAL BUILDINGS**
- **ENERGY COSTS**

➤ **60 data points to gather**

➤ **BEST PRACTICE to prepare an investment opportunity concept note**