



*simply positive*

## D4.6: Guidelines on how to use the SECAP methodology to trigger flagship PEDs within a city

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### Dissemination Level

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## Executive Summary

The aim of the deliverable is to present potential guidelines of utilizing the Sustainable Energy and Climate Action Plan (SECAP) methodology in order to support the development of Positive Energy Districts (PEDs).

In this sense, the current document identifies and presents the relevant steps of the SECAP methodology which may be used as an input to facilitate the operationalization of PEDs and the corresponding explanation on how these elements are to be used in such a context.

To implement this approach, common elements were determined between the SECAP methodology and the PED operationalization process, while determining the common elements that may be used as input to plan and monitor a PED. The common elements are identified in relation the PED framework and key performance indicators.

The document is structured following the SECAP elaboration steps outlined by the Covenant of Mayors methodology.

## List of Abbreviations and Acronyms

CF	context factor
CoM	Covenant of Mayors
DHW	domestic hot water
DSM	demand side management
EPBD	Energy Performance of Buildings directive
EU	European Union
FD	focus district
GHG	greenhouse gas
HVAC	heating, ventilation, and air-conditioning
ICT	Information and communications technology
IEA	International Energy Agency
JPI	Joint Programming Initiative
KPI	key performance indicator
PED	Positive energy district; for the purpose of this document this abbreviation also includes Positive Energy Neighborhoods (PENs)
PEN	Positive energy neighborhood
PV	Photovoltaics
REC	Renewable Energy Community
RES	Renewable Energy Sources
SECAP	Sustainable Energy and Climate Action Plan
UASTW	University of Applied Sciences Technikum Wien
WP	work package

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# 1 Introduction

## 1.1 Scope of the document

The scope of the present document is to describe potential guidelines that are easy to implement by stakeholders involved in PED development projects. The main target audience for this document is formed by potential PED developers, that also have the capability to participate or closely follow the SECAP development and implementation. This category mostly consists of public sector structures (e.g. municipality departments or development agencies), but private sector entities may also fall under this category (e.g. private real estate developers).

The present document focuses on trigger flagship PEDs using the SECAP methodology by identifying the synergies and interoperability between the two processes.

When considering the synergies between the SECAP methodology and process of operationalizing a PED, the current document sets out the main steps of the SECAP methodology. These steps, once taken, can be used as leverage to determine integration points for developing and monitoring a PED. To identify these elements, the report takes into consideration the following aspects:

- **Shared Principles or Goals:** outlining the common objectives or principles that both processes aim to achieve, thus establishing a foundation for interoperability
- **Compatible Frameworks:** identifying the structural elements of each methodology/process that are compatible or can be aligned, including implementation criteria
- **Common data management:** identifying sub-processes of data collection and management that are used in both methodologies, including data collection methods, analysis techniques that factor into performance indicators monitoring; this aspect also considers if both methodologies utilize similar data standards and formats
- **Integration Points:** identifying specific points where the elements from the SECAP methodology can be used to trigger flagship PEDs

When generally discussing interoperability between methodologies and processes, it's important to maintain a focus on how the integration of these elements serves the purpose and objectives of each methodology. The goal is to enhance the effectiveness of both methodologies by leveraging their commonalities without compromising their individual strengths and intended outcomes.

The premises of this document are that a SECAP is initiated prior to the development of a PED, the PED is generally a neighborhood within a city and a team/person has already been appointed to carry out the development of the PED (the target audience for the present document). Since SECAPs are developed at a municipality level, the system spatial boundaries may exceed those of a PED, which may be defined as a district or neighborhood within that municipality.

## 1.2 Relation to other Simply Positive results

The document is connected to project activities in the following way:

Activity / deliverable	Relation
D1.1. Report on operation scenarios, technical characterization and identified stakeholders of Focus Districts	How operation scenarios can be used by PED developers to find appropriate solutions and adopt them for their individual situation and how conducting an operation scenario analysis provides a characterization overview of the districts including parameters which identify energy use profiles and stakeholder identification.
D1.2 Key performance indicators for Positive Energy District/Neighbor-hood implementation assessment	PED Key Performance indicators are one of the most important factors to take into consideration when establishing the correspondence to the SECAP methodology. They must be taken into consideration at an early stage of the process.
D 3.1 Framework definition status and Methodology description for SIMPLY POSITIVE	The framework definition for a PED is the basis of setting the interlinks with the SECAP methodology and represents the main element to define the correlation between PED operationalization and SECAP development, implementation and monitoring.
D3.2 Gap analysis of Energy Balance Calculation Data, including the list and description of existing data sets as well as necessary additions	The gap analysis of energy balance calculation data within the Simply Positive focus districts presents an example of data availability challenges that should be taken into consideration when setting the process of triggering of PED development as part of the SECAP development.
D3.3 Assessment-Report on Focus Districts	Presentation of examples based on the Simply Positive focus districts related to: identifying goals, district characterization, energy balance assessment and calculation, closing gaps in existing datasets for energy balance calculations.
D5.2 Digital monitoring and visualization tool (Demonstrator)	The digital monitoring tool provides a free-source resource to complete the monitoring phase of the PED implementation process, in the context of SECAP monitoring.
D5.3 Updated Framework definition status and Methodology description for SIMPLY POSITIVE	Updated Framework definition status.
D6.1.: Report on available good practice	Examples from Simply Positive focus districts of good practices that can contribute to PED achievement and examples of main elements to characterize good practices that trigger PED achievement (categories of actions, quantitative KPIs reported such as quantification of energy savings etc.).

## 2 Context

### 2.1 Legislative Context

The European Union has prioritized tackling climate change by setting targets to reduce greenhouse gas emissions up to 2050. The "2020 climate and energy package" within the "Europe 2020 Strategy" aimed for a 20% emissions reduction, improved energy efficiency, and a 20% increase in renewable energy by 2020. The "2030 Climate and Energy Framework" builds on this, setting more ambitious goals for 2030: at least 40% emissions cuts, a minimum of 27% renewable energy, and a 27% improvement in energy efficiency. These targets align with the "Energy Roadmap 2050" for transitioning to a low-carbon economy, aiming for an 80% reduction in domestic greenhouse gases by 2050. The "2030 Framework" is also crucial for meeting the objectives of the Paris Agreement, which seeks to limit global warming to well below 2°C, with efforts to keep it to 1.5°C. The agreement includes mechanisms for reviewing ambitions, a financial package for solidarity, and promotes adaptation and resilience to climate change, encouraging various stakeholders to enhance efforts in reducing emissions and building resilience.

### 2.2 General overview of SECAP Methodology

The Sustainable Energy and Climate Action Plan (SECAP) methodology, developed by the Covenant of Mayors, is a framework designed to guide cities and municipalities in Europe to tackle climate change by reducing CO2 emissions and increasing resilience to climate change. The methodology is built around several key steps:

- **Adhesion:** A local authority voluntarily commits to the Covenant of Mayors by formally agreeing to its principles and objectives, which typically include reducing CO2 emissions by a certain percentage by a target year.
- **Baseline Emission Inventory (BEI):** The municipality creates a baseline inventory to assess the current levels of CO2 emissions within its territory. This inventory typically includes emissions from sectors such as residential, tertiary (commercial), transport, and industry.
- **Risk and Vulnerability Assessment (RVA):** This step involves assessing the risks and vulnerabilities of the local area to climate change impacts. It helps in understanding which areas, assets, or population groups are most at risk and informs the adaptation strategies.
- **Setting Targets:** Based on the BEI and RVA, the local authority sets ambitious and realistic targets for reducing emissions and enhancing climate resilience.
- **Developing the Action Plan:** The SECAP outlines specific actions to achieve the set targets. This includes measures for both mitigation (to reduce greenhouse gas emissions) and adaptation (to prepare for the impacts of climate change). The plan should be comprehensive, covering all relevant sectors, and should include timelines, responsible parties, and estimated costs and savings.



- **Implementation and Monitoring:** After adopting the SECAP, the local authority implements the planned actions and regularly monitors progress. This involves tracking changes in emissions, assessing the effectiveness of measures, and making necessary adjustments to the plan.
- **Reporting:** Regular reporting to the Covenant of Mayors is required to demonstrate progress and share experiences. This transparency ensures accountability and allows for the sharing of best practices among municipalities.
- **Engagement and Capacity Building:** Throughout the process, local authorities are encouraged to engage with stakeholders, including citizens, businesses, and local organizations, to build support and capacity for the initiatives.

The SECAP methodology is designed to be flexible and adaptable to the specific circumstances of each municipality while providing a structured approach to achieving sustainable energy and climate goals. It emphasizes the importance of local action in the global effort to mitigate climate change and adapt to its effects.

Signatories to the Covenant of Mayors agree to turn in their Sustainable Energy and Climate Action Plans (SECAPs) within two years of their adhesion. Additionally, they commit to regularly submit progress reports detailing the advancements in their action plan's execution.

The overview of the SECAP methodology is based on the official Guidebook 'How to develop a Sustainable Energy and Climate Action Plan (SECAP)' (2018), Part 1 - The SECAP process, step-by-step towards low carbon and climate resilient cities by 2030. The guidebook has been prepared by the Joint Research Centre Directorate-General (JRC) of the European Commission, with the support and input of the Directorate-General for Energy (DG ENER), Directorate-General for Climate Action (DG CLIMA), the Covenant of Mayors Office (CoMO) and experts from municipalities, regions agencies and private companies.

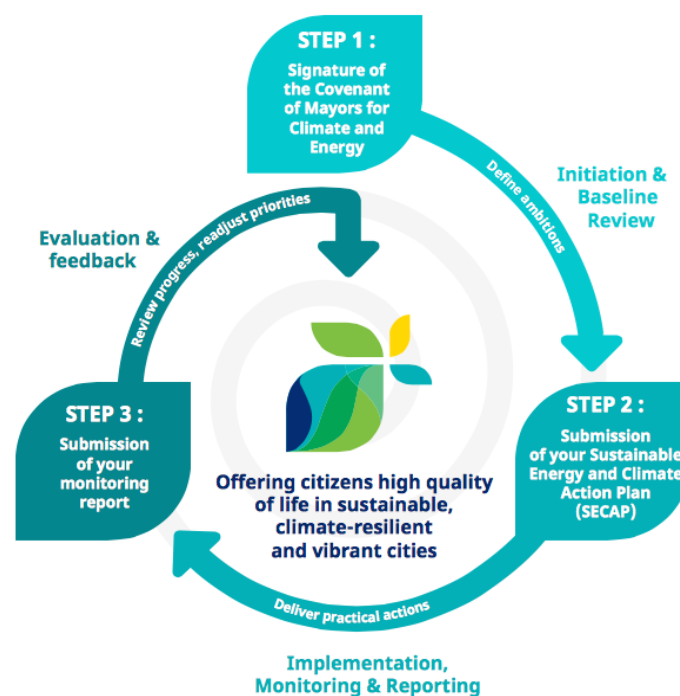


Figure 1 - Overview of SECAP steps

## 2.3 General overview of PED operationalization

Based on the findings of deliverable D3.1. Framework definition status and Methodology description for Simply Positive and D1.2 Key performance indicators for PED/PEN implementation assessment, this section presents the main elements of PED operationalization and monitoring process.

At the highest level of definition, a “Positive Energy District” if its total primary energy balance is positive for a year of operation. The definition offered by JPI Urban Europe for a PED is: *“Positive Energy Districts are energy-efficient and energy-flexible urban areas or groups of connected buildings which produce net zero greenhouse gas emissions and actively manage an annual local or regional surplus production of renewable energy. They require integration of different systems and infrastructures and interaction between buildings, the users and the regional energy, mobility, and ICT systems, while securing the energy supply and a good life for all in line with social, economic, and environmental sustainability”.*

When defining a PED, system boundaries must be taken into consideration in order to plan and monitor the proper operationalization:

- **Spatial system boundaries:** actual physical boundary of included energy services and supplies (district limits)
- **Temporal system boundaries:** balancing period, typically set to one operational year
- **Functional system boundaries:** specific energy functions, uses, or demands to be included or excluded according to function, rather than spatial proximity

The functional system boundaries, along with the encompassed energy services, can be categorized into three categories of system variants:

- **PED Alpha**, focusing solely on operational energy (minimum level)
- **PED Beta**, which includes the alpha level, but also incorporates private daily mobility
- **PED Omega**, which further encompasses the embodied energy associated with district construction, maintenance, repair, and mobility.

In real life applications, the PED definition should be linked to the district’s objectives regarding energy and emissions management. The main objective of the provided definition is to establish an equilibrium—it should be realistic and within reach, while also being adequately challenging to apply to a variety of urban and rural areas, consistent with the targets established for Paris for the year 2050.

As defined within the Simply Positive deliverable D1.2, a set of Key Performance Indicators were defined for the PED implementation assessment, categorized in 7 profiling indicators and 10 primary indicators:

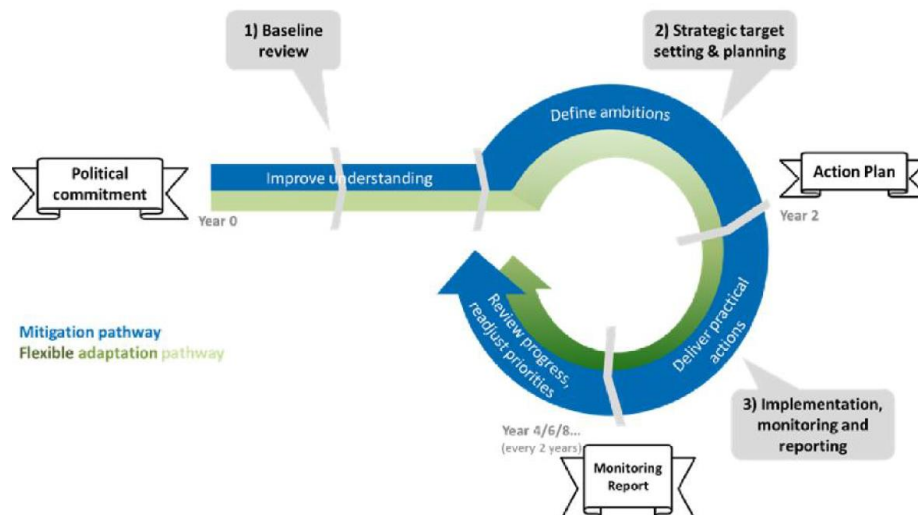
**Profiling indicators:**

1. Size of Focus District [m<sup>2</sup>]
2. Population of Focus District [# of citizens]
3. Density of Focus District [# citizens / m<sup>2</sup> of total area]
4. Built-up density [m<sup>2</sup> of built-up area / m<sup>2</sup> of total area]
5. Heating degree days [#]
6. Cooling degree days [#]
7. Average household income [EUR]

**Primary indicators:**

- |                        |   |
|------------------------|---|
| 1. Overall Indicator   | PED / PEN achievement rate [%]                    |
| 2. Energy related      | Final energy consumption [kWh/a]                  |
| 3. Energy related      | Primary energy consumption [kWh/a]                |
| 4. Energy related      | RES generation [kWh/a]                            |
| 5. Energy related      | Degree of energetic self-supply by RES [%]        |
| 6. Environment related | Greenhouse gas emissions [kgCO <sub>2</sub> eq/a] |
| 7. Acceptance          | People reached [%]                                |
| 8. Acceptance          | Success rate [%]                                  |
| 9. Economic            | Money spent [€]                                   |
| 10. Economic           | Return on investment [years]                      |

The monitoring of these indicators represents a mandatory requirement to determine the achievement of the PED status of a district.



**Figure 2. Overview of PED guiding steps, based on SECAP phases**

## 3 Guiding steps

The guiding steps are organized based on the structure of the SECAP guidelines, while each section presented below presents a short overview of the SECAP specific step and the possible means in which the PED developer might use the efforts and results of each step to support the PED development, operationalization and monitoring.

### 3.1 Initiation phase

#### 3.1.1 Political commitment

Following the SECAP guidelines, to guarantee the effectiveness of the process from design to execution and oversight of PEDs, the first step should be securing political commitment for PEDs. The SECAP methodology recommends highlighting the various advantages that implementing Sustainable Energy and Climate Action Plans (SECAPs) can offer to local authorities and this approach can also be implemented for the PED process.

#### **PED trigger guidelines**

##### **a. Underline PED benefits for the municipality**

When establishing the justification for political commitment in relation to PED development, highlight the specific advantages and benefits that PED achievement may bring to the municipality.

Highlight the specific advantages of developing a PED in your municipality. The specific advantaged should be defined according to your municipality's circumstances and priorities, such as:

- Environmental benefits: reduce impact on environmental factors such as resource management and reduced GHG emissions
- Social benefits: fostering inclusiveness, citizen engagement, improved well-being and opportunities for local businesses, combat energy poverty in historic urban districts
- Financing opportunities: development of PEDs in European cities is the subject of many EU-funded research and innovation projects

Furthermore, when establishing the justification for political commitment, some of the benefits exemplified in the SECAP methodology<sup>1</sup> can be used for PED justification:

- Contribute to the global fight against Climate Change - the global decrease of greenhouse gases will also protect the city against Climate Change
- Demonstrate commitment to environmental protection and efficient management of resources
- Improve the city's image

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<sup>1</sup> Detailed in Annex 2 of the Guidebook 'How to develop a Sustainable Energy and Climate Action Plan (SECAP)'

- Revive the sense of community around a common project
- Economic and employment benefits (such as retrofitting of buildings)
- Better energy efficiency and savings on the energy bill
- Develop a clear, holistic and realistic strategy for improvement in the situation
- Access to National/European funding
- Improve citizens well-being (reducing energy poverty)
- Local health and quality of life (improved air quality)
- Secure future financial resources through energy savings and local energy production
- Improve long-term energetic independence of the city
- Synergies with existing commitments and policies and systemic approach to energy and climate policies

**b. Underline strategic goals which PEDs contribute to**

To provide a solid basis for PED development, research the existing strategic framework set out by the municipality and determine the main elements that PED development may contribute to. Identify and document the goals of any other policies, plans, procedures and regulations, for which the successful implementation of a PED may contribute to.

In this sense, include any synergies with existing commitments and policies and plans that may exist at the municipality level and highlight how the PED can contribute to their objectives.

Examples of such documents may include: Local Development Strategies, Smart City Strategy and even the SECAP itself.

**c. Formalize PED commitment**

If feasible, following the equivalent SECAP step of signing the CoM, include the PED development commitment in a formal decision document (under which the municipal council or equivalent decision-making body assumes the responsibility to achieve PED status).

**Expected outcomes:**

Secure the commitment on highest political level that would trigger the entire process of PED operationalization

SECAP steps referenced	Reference to SECAP methodology
Political commitment and signing of the Covenant	Part 1, chapter 3

### 3.1.2 Mobilize all relevant stakeholders

While the SECAP methodology states the need to mobilize all municipal departments involved in the SECAP process, for the scope of PED development, this step should be extended to further include other stakeholders outside the municipality.

Effective SECAP implementation demands that various local authority departments work together and incorporate the process into their regular activities. Covenant signatories recognize their pledge involves coordinated efforts across all municipal departments and a comprehensive, resource-supported territorial strategy for both mitigation and adaptation. In this sense, a proposed administrative structure is offered under the SECAP methodology, which includes the following functions: Covenant coordinator, climate policy steering committee, working group(s). The methodology states the importance of interoperation between these functions and highlights the importance of adequate training in different fields, such as technical competencies (energy efficiency, renewable energies, efficient transport etc.) and project management, data management, financial management, development of investment projects, and communication. In the case in which local authorities do not have capacity to undertake the full development of the SECAP, other external support should be allocated, comprising of other public administrations or Energy Agencies.

#### **PED trigger guidelines**

##### **a. Map relevant stakeholders and their potential implication in the PED process**

As a first step to mobilize and actively include relevant stakeholders in the PED achievement process, map relevant stakeholders for your PED development project, taking into consideration the specific characteristics of your project.

Taking into consideration the multi-stakeholder method described in [Deliverable D1.1](#) of the Simply Positive project, depending on the PED development strategy, the following stakeholder categories may be taken into consideration:

- owners of the land to be redeveloped,
- various local and/or regional administrative departments,
- regional and/or national administrative departments,
- interdepartmental working groups,
- special purpose companies,
- public developers,
- private developers,
- citizen owned development groups,
- local initiatives (e.g., neighborhood cooperatives etc.),
- housing cooperations,
- research facilities/institutions,
- neighborhood management,
- private consultants,
- utility providers,
- existing residents,
- future inhabitants.

### **b. Develop a management structure for the PED project**

Taking into consideration the specifics of the PED project (including relevant stakeholders), develop a management structure that will coordinate the development, implementation and monitoring of the project. The structure should include at least the following functions:

- Project coordinator – a person or institution that is in charge of coordinating the whole project, from its initiation to the monitoring phase;
- Strategic steering committee – the committee should provide strategic direction and the necessary political support for the successful project implementation; one of the main attributes of this function would be to develop the PED project goals (aligned with the municipality's other strategic goals) and to follow the progress against those goals; in this sense, the committee should include representatives of the municipality administration;
- Working group(s) – including key persons from each stakeholder category that may have interest in or/and influence over the process of achieving a PED; each working group would be tasked with coordinating and monitoring the progress of the activities around specific issues, such as: data collection, specific activities implementation, stakeholder engagement and so on; the issues should be set according to each project's characteristics.

Special emphasis should be granted to identifying departments within the local authority that may be part of the management structures of the PED project.

While municipalities have different structures and organizational charts, departments and structures that deal with sustainable development and project implementation on a city level are a good option to undertake this responsibility. Alternatively, a distinct internal stakeholder engagement session may be carried out in order to identify the best-suited responsible department.

### **c. Map relevant positions within the management structure**

Once the management structured has been drafted, include qualification requirements for persons with expertise potentially related to PED operationalization, such as:

- project managers on energy efficiency
- plans and policy owners on energy efficiency and renewable energy development on municipality level (e.g.: department coordinators that have overseen the development of such specific policies and plans)
- stakeholder engagement experts

The relevant positions depend on the specifics of the PED project and the relevant stakeholder groups identified for each project.

### **d. Formalize the management structures**

Considering that the municipality has undertaken a commitment for PED achievement, the management structures should also be formalized under an official commitment from the municipality. The commitment could take the form of a municipality decision stating the formation of the management structures for PED achievement and naming the specific persons that occupy the relevant positions within those structures.

**e. Boost internal knowledge**

Include dedicated training sessions for each management structure on the topic of PED development, with emphasis on current definitions and frameworks, highlights of existing research results which may be used for operationalization at the municipality level, funding opportunities. Training sessions should also highlight topics that the respective management structure will work on.

**Expected outcomes:**

Assure responsibility for the triggering of the PED operationalization process

**SECAP steps referenced**

**Reference to SECAP methodology**

Mobilize all municipal departments involved

Part 1, chapter 4



### 3.1.3 Build support from stakeholders

Engaging stakeholders is crucial for encouraging the behavioral shifts required to support the technical measures both within the SECAP and the PED achievement process, ensuring a unified and coordinated implementation. Citizen and stakeholder input is essential early on and throughout the processes, including vision creation, objective setting, and priority determination. Participatory policymaking enhances transparency and democracy, as decisions made with diverse stakeholders and citizens draw from a wider knowledge base. This broad consensus not only improves the plan's quality, acceptance, effectiveness, and legitimacy but also ensures long-term support and viability due to the sense of involvement in the planning process. Additionally, PED development can receive greater backing from external stakeholders than from the local authority's own management or staff.

#### PED trigger guidelines

##### **a. Plan and implement communication campaigns**

After the stakeholder group categories have been identified within the stakeholder mobilization step, for each of these categories, targeted communication campaigns should be developed, considering the following themes:

- Project updates and implementation
- Information events and workshops
- Citizen integration and mobilization
- Celebration of successes

##### **b. Plan and implement stakeholder engagement strategies**

Stakeholder interaction strategies should be defined at an early stage of the PED project development, encompassing the specific PED benefits and potential expected interactions/contributions for each stakeholder. For example:

- Residents: main benefits may be the reduction of living costs; they are expected to participate by contributing to scientific research and to the monitoring processes [2]
- Entrepreneurs: benefits (especially for manufacturers) are the reduction of their carbon footprint (both for products or Scope 1 & 2) which may become a market advantage for them (by meeting emerging client expectations, regardless if their business model is B2C or B2B); expected contribution might be the covering of some/all expenses of the installation of renewable energy systems

The development of such an interaction strategy must be adapted to the specific context of each PED. Stakeholder engagement activities should be planned within each strategy to include an early-stage engagement process that would with the scope of obtaining a preliminary overall stakeholder acceptance for PED development and to gather feedback on the project plan and identify stakeholder needs and concerns.

#### Expected outcomes:

Trigger user acceptance for PEDs operationalization

#### SECAP steps

Build support from stakeholders

#### SECAP methodology reference

Part 1, chapter 5

## 3.2 Planning phase

### 3.2.1 Framework setting

The SECAP methodology outlines that the first step to assess the current framework is to analyze the relevant regulations, by identifying the existing municipal, regional and national policies, plans, procedures and regulations that affect energy and climate issues within the local authority. The next step in the methodology is to implement the baseline review, by calculating the Baseline Emission Inventory and Climate Change Risk and developing the Vulnerability Assessment. By extrapolating this approach to the PED project, this step is focused on setting the PED framework and collecting baseline data.

#### PED trigger guidelines

##### **a. Define PED spatial boundaries and collect profiling data**

Based on the specifics of the PED project, document the spatial boundaries of the PED implementation.

Identify data owners from the selected stakeholders mapped out in the previous steps and collect relevant profiling data:

- Size of Focus District [m<sup>2</sup>]
- Population of Focus District [# of citizens]
- Density of Focus District [# citizens / m<sup>2</sup> of total area]
- Built-up density [m<sup>2</sup> of built-up area / m<sup>2</sup> of total area]
- Heating degree days [#]
- Cooling degree days [#]
- Average household income [EUR]

*For more information on spatial boundaries please consult: [D3.1 Framework definition status and Methodology description for SimplyPositive](#).*

##### **b. Define functional system boundaries and collect baseline data**

Define functional system boundaries and relevant energy services to be included in the PED development.

In this sense, identify and involve key external stakeholders that are able to provide data for the PED area related to final energy consumption and renewable energy generated per the specific PED energy services.

This data is necessary for the calculation of the overall indicator and primary indicators related to energy and environment and for subsequent PED monitoring:

- Overall Indicator      PED / PEN achievement rate [%]
- Energy related        Final energy consumption [kWh/year]
- Energy related        Primary energy consumption [kWh/year]
- Energy related        RES generation [kWh/year]
- Energy related        Degree of energetic self-supply by RES [%]
- Environment related   Greenhouse gas emissions [kgCO<sub>2</sub>eq/year]

A first set of data should be collected along with the profiling indicators in order to set the baseline year. Appendix 1 presents an extensive list of raw data for the calculation of the PED overall indicator and primary indicators. The baseline should be project specific and is to be determined taking into consideration data availability.

Greenhouse gas emissions generated by the PED energy sectors should be calculated using the same methodology implemented for the baseline year. The CoM platform provides resources for free-source emissions factors under the webpage: <https://data.jrc.ec.europa.eu/collection/id-00172>.

Alternatively, specific emission factors may be used for various energy sources if the information is available (for example: yearly emission factors provided by grid energy suppliers).

Please note that the PED energy services and emission factors that are selected at this stage represent the working framework that needs to be consistent thorough the monitoring phase.

**Expected outcomes:**

Definition of functional system boundaries for PED, aligned with SECAP sectors.

SECAP steps	SECAP methodology reference
Assessment of the current framework: Where are we?	Part 1, chapter 6 and Part 3

**3.2.2 Documenting policy synergies**

The local authority's SECAP is a strategic framework aimed at achieving a sustainable vision by identifying and implementing actions that bridge the gap between the current state and the envisioned goals. The municipality's sustainability vision must align with the Covenant of Mayors' pledge (e.g. to reduce greenhouse gas emissions by at least 40% by 2030 and to enhance the city's resilience and adaptation to climate change effects) – the vision objectives must hold at least the same level of ambition as the CoM pledge.

On the other hand, the goal of the PED project is to achieve PED status. In this sense, according to D1.2. Key Performance Indicators for PED/PEN Implementation Assessment, PED status is achieved when the degree of energetic self-supply by renewable energy systems is at least 100% and greenhouse gas emissions reach 0 kgCO<sub>2</sub>eq per year.

**PED trigger guidelines**

**a. Aligning PED achievement with other municipality strategic goals**

When assessing the current strategies within the municipality, identify and document the goals of any other policies, plans, procedures and regulations, taking into consideration municipality goals for which the successful implementation of a PED may contribute to fulfilling or that may facilitate the PED implementation. Relevant topics under which these goals may be formulated include: decarbonization strategies and plans, smart city strategy, sustainable development strategy.

In this sense, include any synergies with existing commitments and policies and plans that may exist at the municipality level and highlight how the PED can contribute to their objectives.

When aligning PED achievement to other strategic objectives, energy balance simulations should be used to determine energy savings estimations following the implementation of different actions, based on operational scenarios.

*The Simply Positive deliverables [D3.2](#) and [D3.3](#) provide insight into the calculation methods for energy balance simulations.*

Furthermore, if operational scenario analysis is feasible at this early stage, determine the potential GHG emission reduction by achieving PED status, based on historical consumptions in the area, baseline PED metrics (collected at the previous point), future operation scenarios for the district / neighborhood / area and their contribution to the overall municipality GHG emission reduction contribution for the target year.

**Expected outcomes:**  
 Formalize PED achievement goals as part of an official strategic plan at municipality level.

SECAP steps	SECAP methodology reference
Establishment of the vision: Where do we want to go?	Part 1, chapter 7

### 3.2.3 Elaborate a PED action plan

The elaboration of a SECAP for municipalities involves assessing current energy and emissions, setting reduction targets, engaging stakeholders, developing strategies for energy efficiency and renewable energy and monitoring progress. The CoM methodology presents several recommended steps for drafting a successful SECAP: make a prospective of good practices, set priorities and select key actions / measures, carry out a risk analysis, specify timing, clear responsibilities, budget and financing sources of each action, approve the Action Plan and its associated budget, perform regular SECAP reviews.

Mirroring this approach, the PED project should include a documented, official action plan that would facilitate the project implementation.

#### PED trigger guidelines

##### **a. Include PED best practices**

Research PED best practices and highlight their potential contribution for reaching the municipality's strategic goals. While researching, take note of the best practices implementation context and its replicability options at the municipality's level. The good practices might include individual actions that lead to the achievement of PED status or whole case studies on areas that already achieved PED status.

Relevant examples may be found in the deliverable from Simply Positive project: [D6.1 Report on available good practice and success stories from Focus-Districts](#), which also provides input on elements to characterize good practices that trigger PED achievement (categories of actions, quantitative KPIs reported such as quantification of energy savings etc.).

##### **b. Define PED actions**

Depending on the specific conditions of the PED project, develop actions that will support PED achievement. To define these actions, energy balance simulations should be used in order to evaluate which operational scenarios would result in expected energy savings that would contribute to the achievement of a PED.

*The Simply Positive deliverables [D3.2](#) and [D3.3](#) provide insight into the calculation methods for energy balance simulations.*

Within the action plan, the key actions identified should include: specify timing, clear responsibilities, budget and financing sources.

Expected GHG reductions can be defined for each action and can be calculated based on historical consumptions in the area, baseline PED metrics (collected at the previous point), future operation scenarios for the district / neighborhood / area.

##### **c. Carry out a risk analysis for the PED achievement key action**

Taking into consideration the complexity of developing and achieving a PED, a preliminary risk analysis should be carried out at the drafting stage of the SECAP, taking into consideration the following elements:

- Project-related risks
- Government-related risks
- Technical risks
- Contractor-related risks
- Market-related risks
- Stakeholder acceptance risks

**d. Document and disseminate the action plan**

Document all the steps described until this point in a written PED Action Plan, including the stakeholder mapping and stakeholder engagement strategy.

The PED Action Plan may be officially approved at the municipality level and recognized as one of the municipality strategic documents.

The Action Plan should also include a Monitoring Plan with monitoring intervals no greater than once a year.

Once the Action Plan is complete and officialized at municipality level (if applicable), it should be disseminated to all identified stakeholders.

**Expected outcomes:**

Officialize PED development as a key action at municipality level.

**SECAP steps**

**SECAP methodology reference**

Elaboration of the plan: How do we get there?

Part 1, chapter 8

### 3.3 Implementation phase

#### 3.3.1 Implementation

Implementing a PED is a resource-intensive process that relies on stakeholder and citizen engagement. Success largely depends on the human factor—getting people involved and committed. Effective internal and external communication is crucial for raising awareness, educating, and garnering support for the SECAP. Regular monitoring of energy/CO<sub>2</sub> savings and climate risk reduction is vital.

#### PED trigger guidelines

##### **a. PED implementation**

Based on the PED Action Plan from the previous point, a structured implementation plan should be followed, taking into consideration the recommendations from the SECAP methodology:

- Utilize a Project Management approach with deadline and financial control, planning, deviations analysis, and risk management, alongside a quality management procedure.
- Break the project into parts and assign responsible individuals.
- Enhance horizontal cooperation across policy areas and integrate climate actions into sectoral strategies.
- Develop specific procedures and processes for each project part, using a quality system to align with objectives.
- Implement a score-card system for tracking progress, including indicators for deadline compliance, budget deviations, and emissions reduction.
- Schedule regular stakeholder meetings for updates and feedback, which can reveal innovative ideas or potential social challenges.
- Plan for future events, considering the time required for public project authorizations and approvals, and include security factors in early SECAP implementation planning.
- Create and launch a training program for those directly involved in the implementation.
- Provide motivation, training, and support to the team, recognizing internal staff as key stakeholders.
- Keep the city council or equivalent body frequently informed to secure their commitment and involve them in successes and failures.

Once the implementation of the PED has commenced, specific actions which are allocated to the PED may be tracked in a project management tool or using an integrated PED monitoring tool such as the [Simply Positive project Deliverable D5.2 Digital monitoring and visualization tool \(Demonstrator\)](#)

#### Expected outcomes:

Structured implementation of PED.

#### SECAP steps

Implementation

#### SECAP methodology reference

Part 1, chapter 9

## 3.4 Monitoring phase

### 3.4.1 Monitoring of PED achievement progress

Regular monitoring is a crucial component, enabling continuous improvement through timely adjustments. Covenant of Mayors (CoM) signatories are required to submit a Monitoring Report biennially after their SECAP submission to facilitate evaluation and verification. This report should include an updated monitoring emission inventory (MEI) that is consistent with the baseline emission inventory (BEI) methods and data sources for comparability. While annual CO<sub>2</sub> emission inventories are recommended, local authorities can opt for less frequent inventory reporting if annually is binding too many resources.

While PED monitoring may not be submitted to mandatory reporting requirements, a monitoring framework should be defined and implemented to follow the achievement progress.

#### PED trigger guidelines

##### **a. PED monitoring**

PED monitoring depends on relevant data collection from various stakeholders that are data owners. Monitoring should be carried at regular intervals (no greater than one year) and follow the Monitoring Plan defined in an earlier step.

Depending on the identified PED energy services, Appendix 1 presents an extensive list for PED Beta raw data to be collected to calculate the PED achievement rate.

Besides from raw energy data necessary for the PED monitoring process, progress of action implementation must also be followed. In this sense, as part of the PED actions monitoring, the percentage of budget spent for the implementation of specific actions may be documented on a yearly basis to have an accurate overview of the implementation status of actions.

If a SECAP monitoring process is carried out during the same as the PED monitoring, the SECAP data collection may be used as leverage for a good collaboration with data owners, if data collection is carried out simultaneously for both projects.

The data collection process could be carried out in parallel with the SECAP monitoring process if such a should include a separate version for PED-specific data collection (if the PED location boundaries are not overlapping the city boundaries).

If the PED is implemented on a smaller scale than the city boundaries subjected to the SECAP, the data collected for PED monitoring may not serve as a direct input for SECAP monitoring, but rather the SECAP monitoring requirements will serve as a trigger for facilitating data collection for the PED monitoring.

*In order to facilitate a structured monitoring process, a digital monitoring and visualization tool (demonstrator) is available as free-source within the [Deliverable D5.2 of the Simply Positive project](#).*



**Expected outcomes:**  
Structured monitoring of PED.

SECAP steps	SECAP methodology reference
Monitoring	Part 1, chapter 10
Reporting and submission of the implementation report Review	Reporting guidelines

## 4 Conclusions

The nature of PEDs presents a wide variety of specific characteristics for each project that need to be determined at local level depending on the local particularities and strategic approach for the district. In this sense, the current guidelines take into consideration this aspect and present in an organized manner the steps that a PED developer could follow to structure their PED project.

The SECAP methodology was used as a basis for the development of the current guidelines and was adapted to the scope of PED achievement. While some elements and steps of the SECAP methodology were not applicable to the PED concept, the SECAP methodology is a mature system that has been tested at a wide level (including the predecessor SEAP methodology), which is suitable for the city-wide transition processes. It also provides a structured, inclusive, and supportive framework for municipalities to effectively plan and implement their decarbonization strategies.

The current document has been developed under the Simply Positive project and has leveraged the results of other deliverables of the project that can be used for the development, implementation and monitoring of a PED project. The deliverables referenced in these guidelines provide detailed descriptions and methodologies for specific PED-related activities and can be used as guiding examples for different stages of the PED project, for: PED definition, set operation scenarios, energy balance calculation, following key performance indicators, monitorization of project progress in relation to PED status achievement, good practices.

Also taking into consideration the interconnection between Simply Positive deliverables, the lessons learned from the current guidelines will be leveraged to structure the deliverable D6.3 SIMPLY POSITIVE Booklet, which will consider the overall steps presented in this document.

## Appendix 1: Extensive list of raw data collection for PED monitoring

Raw data	U.M.	Description
Energy consumption: municipal buildings, equipment/facilities	kWh/a	actual quantity of energy consumed within the district by the municipal buildings, facilities and equipment owned by the municipality
Energy consumption: public lighting	kWh/a	actual quantity of energy consumed within the district by the public lighting, owned by the municipality
Energy consumption: other municipal category	kWh/a	other categories of municipality-owned sources of energy consumption
Energy consumption: institutional buildings, non-municipal	kWh/a	actual quantity of energy consumed within the district by the non-municipal buildings from the service sector
Energy consumption: other non-municipal category	kWh/a	actual quantity of energy consumed within the district by other non-municipal categories
Energy consumption: residential buildings	kWh/a	actual quantity of energy consumed within the district by residential buildings
Energy consumption: non-ETS industry	kWh/a	actual quantity of energy consumed within the district by industrial activities (non-ETS)
Energy consumption: ETS	kWh/a	actual quantity of energy consumed within the district by industrial activities (ETS)
Energy consumption: road fleet	kWh/a	actual quantity of energy consumed by the road vehicles owned by the municipality
Energy consumption: other fleet	kWh/a	actual quantity of energy consumed by other types of vehicles owned by the municipality
Energy consumption: public road transport	kWh/a	actual quantity of energy consumed by public road transport used for passengers
Energy consumption: public rail	kWh/a	actual quantity of energy consumed by public rail transport used for passengers
Energy consumption: public local and domestic waterways	kWh/a	actual quantity of energy consumed by public waterways transport used for passengers

Energy consumption: other public transport categories	kWh/a	actual quantity of energy consumed by any other public transport used for passengers
Energy consumption: private road transport	kWh/a	actual quantity of energy consumed by private road transport
Energy consumption: private rail	kWh/a	actual quantity of energy consumed by private rail transport used
Energy consumption: private local and domestic waterways	kWh/a	actual quantity of energy consumed by private waterways transport
Energy consumption: private local aviation	kWh/a	actual quantity of energy consumed by private aviation transport
Energy consumption: other private transport categories	kWh/a	actual quantity of energy consumed by any other private transport
Energy consumption: Other type of transport	kWh/a	actual quantity of energy consumed by any other types of transport
Agriculture, Forestry, Fisheries	kWh/a	actual quantity of energy consumed by agricultural, forestry and fisheries sectors
Other not allocated	kWh/a	actual quantity of energy consumed by other sectors
Local electricity production: wind	kWh/a	renewable wind energy generated in the district
Local electricity production: hydroelectric	kWh/a	renewable hydroelectric energy generated in the district
Local electricity production: photovoltaics	kWh/a	renewable photovoltaic energy generated in the district
Local electricity production: geothermal	kWh/a	renewable geothermal energy generated in the district
Local electricity production: other	kWh/a	other types of renewable energy generated in the district



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