

# Enabling PEDs through city instruments

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## Disclaimer

The document you are looking at is a working document and subject for discussion within the broader community working on the energy transition. This document was further sharpened during the intensive working sessions of the *Cities4PEDs* Deep Dive on 25 to 28 January 2022, *Cities4PEDs* Deep Dive on 27 to 30 June 2022. Insights from these international meetings of the consortium of Brussels, Stockholm and Vienna as well as expert interviews were processed and are now ready to be shared with other European cities to take a first step towards development of PEDs. Therefore, this working paper addresses public authorities, researchers, and practitioners who seek to promote the energy transition process

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# Introduction

Cities share the challenge of becoming climate neutral. A comprehensive transformation of energy production and consumption is necessary to achieve the requirements of international, European, and national climate and energy policy. This transformation aims a decarbonisation, switching from fossil fuels to renewable energies and—against the background of rising energy costs and growing energy consumption—seeks to transform the current central energy supply towards a more decentralized supply structure. The implementation of Positive Energy District (PEDs), i.e. districts that produce more energy than they consume, is considered a promising approach to pursue these objectives.

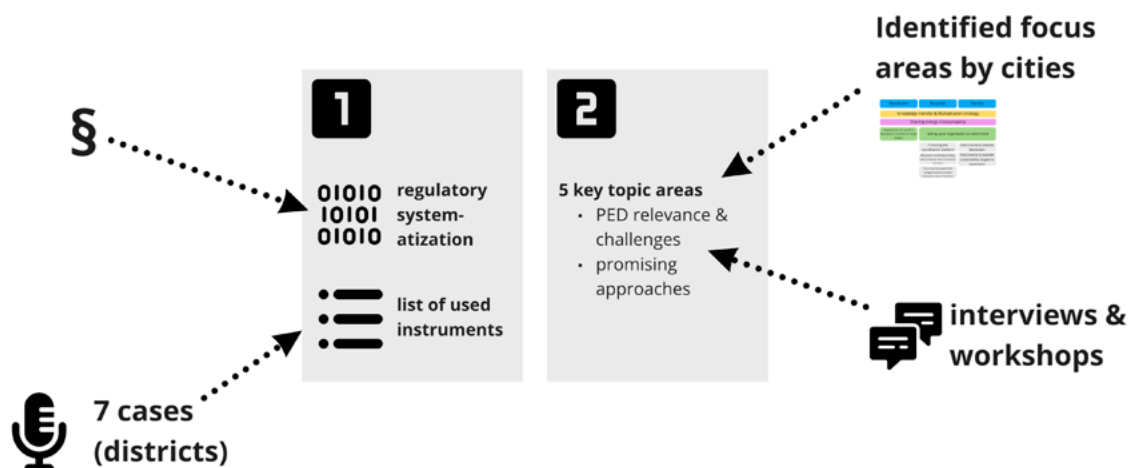
The JPI Europe funded project *Cities4PEDs* (2021–2022) with the partnering cities of Brussels, Vienna and Stockholm is dedicated to an in-depth exploration of PEDs. The project deliberately chose a city perspective, as cities are the “problem owners” when it comes to realizing PEDs. Key questions of the cities revolve around the implementation and the steering of PED projects and how cities can adapt and use their planning and implementation instruments to implement PEDs since there is limited knowledge in these areas.

As cities have diverse modes of energy production and supply, the challenges they face when it comes to PED implementation are very diverse. The same is true when it comes to identifying cities’ instruments that are suitable to address PED implementation.

Therefore, this paper is divided into two parts:

The first part gives the **structural frame**. It provides a brief legal systematisation of city instruments as well as a categorization of different steering approaches and instruments of cities to govern PED development which are mainly derived from interviews with district developers and practitioners in 2021. More information on the interviews can be found in the [PED Atlas](#).<sup>1</sup>

The second part is dedicated to **specific city challenges** regarding PED development in the *Cities4PEDs* partner cities Brussels, Stockholm, and Vienna. The city challenges were jointly identified and address topics where cities have a particular need for action or where unresolved problems exist in the implementation of PEDs. The relevance and the inherent challenges of each topic are discussed and promising approaches to tackle the respective challenge were investigated during interviews as well as project team meetings.



1 PED-Atlas (2021): <https://energy-cities.eu/wp-content/uploads/2021/11/Cities4PEDs-Atlas-Nov.-2021.pdf>

**Interviews** for investigating the city challenges were conducted with experts from the following organizations:

- **Brussels Environment**
- **Direction Service Planification** – City of Brussels
- **Projet Rénovation urbaine (Territoire Nord)** – City of Brussels
- **Environmental Health Administration** – City of Stockholm
- **BCE Beyond Carbon Energy Holding GmbH**
- **Ramboll Group**
- **Building Department** – City of Vienna
- **GB\* Area Management Vienna**

The main authors would like to thank the interviewees once again for their time and the insightful conversations.

# 1 Inventory & Systematization

## 1.1 Systematizing instruments: A regulatory perspective

The implementation of a PED has numerous implications with regard to the respective legal framework.

Given the **distribution of responsibility** within a federal system, generally not one lawmaker is exclusively responsible for all the legal matters concerned by PED development. Moreover, both in federal and in central government systems the extent to which cities have autonomous power to regulate and govern the implementation of PEDs varies. Cities may be confronted with not being in charge of regulating some PED-relevant legal matters at all, which complicates governance.

### Example

#### Distribution of responsibility concerning energy law in Belgium

The federal level is responsible for the security of supply, the nuclear fuel cycle, major energy generation, storage and transport infrastructures, and transmission tariffs. The three regions are responsible for the public distribution of power and gas, heat networks, new sources of energy, energy recovery by industries and other users, as well as rational use of energy. The competences at the municipal level are quite limited. Municipalities can implement some additional primes to complement the regional primes for renewable energy for and renovation.

Different legal approaches may be taken when it comes, e.g. to the transfer of energy and sustainability-related objectives to developers: in many cases, the form of action to be applied

may already be determined by the law. In the Austrian system, this differentiation is labelled as **juridical or non-juridical administration**.

### Example

#### Juridical and non-juridical administration in Vienna

Vienna is a city that is embedded in a civil law culture and a federal constitution. Juridical administration means the recourse to sovereign power (e.g. the granting of a permit) whereas administration in the field of civil law refers to instruments of civil law. To illustrate the difference: typically spatial planning is a matter of juridical administration, whereas the conclusion of Urban development contracts fall within the scope of non-juridical administration.

Another way of differentiating is to determine the **degree of bindingness** of the instrument. While there are mandatory instruments with an external legal impact, such as building law requirements, there are also instruments with a controlling, “soft” impact, such as incentives, advisory services, or awareness-raising measures.

### Example

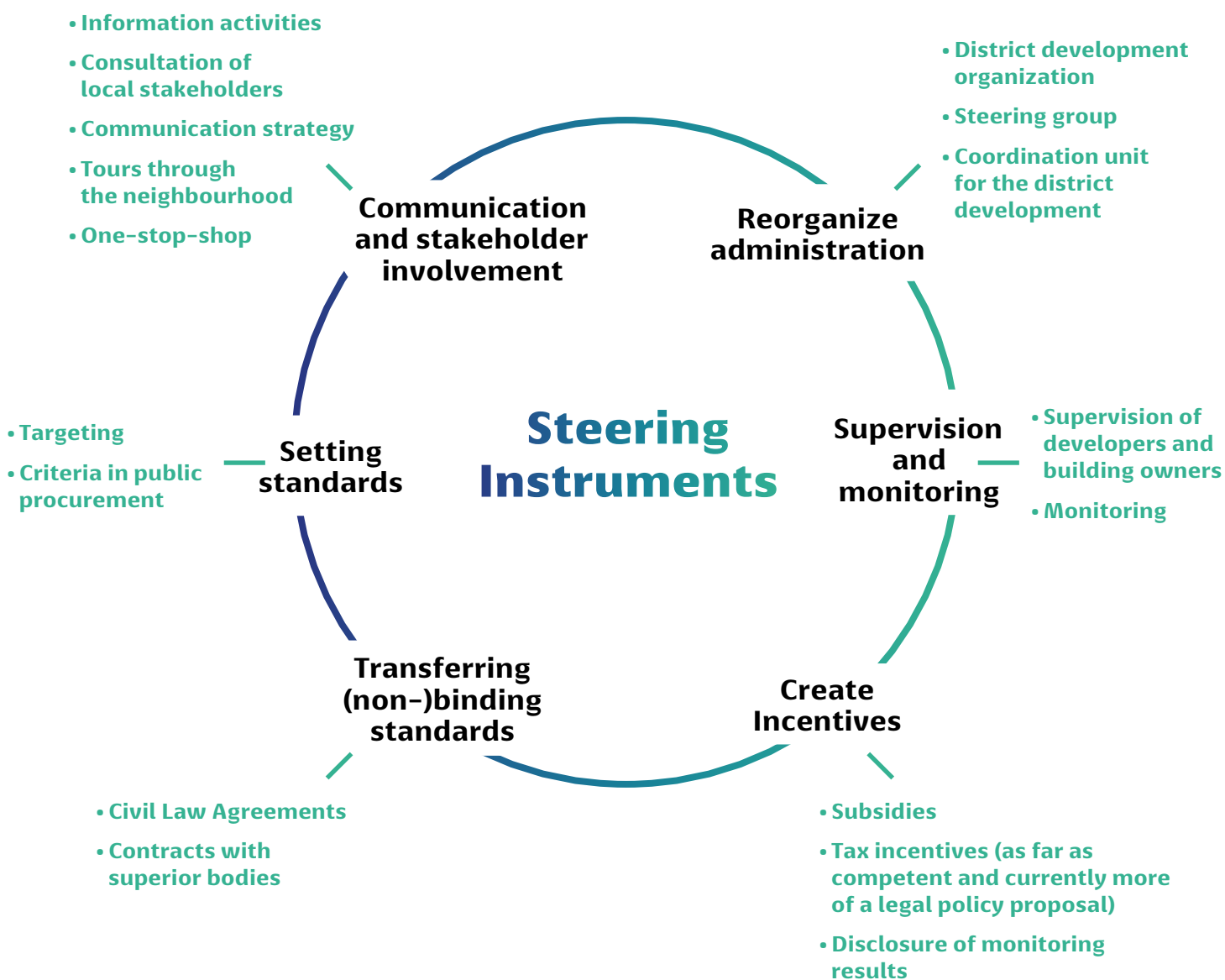
#### Making use of “soft-power” by the City of Stockholm

The city can put pressure on the developer through its “soft-power”. In Stockholm Royal Seaport (SRS), monitoring in all construction phases helps to assure that pre-set targets and standards are met. The disclosure of these monitoring results, e.g. those with regard to land sale contracts, is used successfully to ensure the developers’ compliance with set requirements.

## 1.2 Examples and categorization: Cities' steering approaches and instruments

A broad analysis including demonstration projects from other EU countries has shown that the participating cities have a **wide range of binding instruments as well as instruments without obligation** at their disposal to pursue PED-relevant objectives. These instruments are heterogeneous. The same applies to the steering

approaches that are pursued. The following list gathers examples derived from seven different cases of ambitious district developments and transformations across Europe as well as from information gathered at *Cities4PEDs* project meetings. Actors of the district developments and transformations have been interviewed in 2021 in the frameworks of the *Cities4PEDs* project. Further information on the seven cases can be found in the *PED Atlas*.<sup>2</sup> Therefore, the list shows a possible categorization of examples and does not claim to be complete. In addition, an in-depth analysis on methods, tactics, tools and practices for co-ownership and inclusive PED development, can be found in the Working Paper on Neighbourhood Dynamics.<sup>3</sup>



<sup>2</sup> PED-Atlas (2021): <https://energy-cities.eu/wp-content/uploads/2021/11/Cities4PEDs-Atlas-Nov.-2021.pdf>

<sup>3</sup> Link WP4 (not existing right now)

# 1. Communication and stakeholder involvement

Actively communicating ensures the awareness of objectives and it helps stakeholders (e.g. residents) to understand their own role in a PED project. By fostering two-way communication an open dialogue and acceptance can be achieved.

## a) Information activities

The objective is to include local stakeholders (residents, property owners, developers and local initiatives) with raising awareness and reducing scepticism against transformation processes by informing about the ongoing development processes in the district. Amongst others local exhibitions can provide information but also incorporate interactive methods for the collection of opinions.

### Practice examples:

- Information points for citizens in Seestadt Aspern ([PED Atlas, p. 22](#))
- Development of a game on energy transition in BospolderTussendijken (BoTu) – Rotterdam ([PED Atlas, p. 42](#))
- Exhibition with personal stories of local actors on the district's energy transition in BospolderTussendijken (BoTu) – Rotterdam ([PED Atlas, p. 42](#))
- Exhibition for collecting comments from the public in Lyon Confluence ([PED Atlas, p. 30](#))
- Game elements and presentation of local development plan in Stockholm Royal Seaport (PED Atlas, p. 10)

## b) Consultation of local stakeholders

By involving different local stakeholders in consultation processes, participation can be promoted and thus a (more) broadly supported strategy can be created. However, nowadays consultation processes frequently lack changes afterwards and are thus generating fatigue among neighbourhoods and participants.

### Practice examples:

- Nomination of resident representatives for consultations in Seestadt Aspern ([PED Atlas, p. 22](#))
- Participatory monitoring committee in Lyon Confluence ([PED Atlas, p. 30](#))
- Open visioning process for district strategy paper as well as map-based survey tool in Stockholm Royal Seaport ([PED Atlas, p. 10](#))
- Working tables with local stakeholders on pilot projects in Northern District Brussels ([PED Atlas, p. 16](#))

## c) Communication strategy

Creating a vision of the district's future is fostered by either reinforcing or developing a local identity from scratch. This is achieved with the knowledge of the local history and culture or by responding to the motivation of the respective actors and the corresponding adaptation of stories and narratives.

### Practice examples:

- Info campaign with target group-specific communication models in Eeklo ([PED Atlas, p. 36](#))



## d) Tours through the neighbourhood

To make the district more accessible and appealing, citizens are invited to tours of the neighbourhood to explain the specifics of the sustainability ambitions regarding energy, climate adaptation, etc.

### Practice examples:

- Open House at Slussen in Stockholm
- Guided tours and walks in BospolderTussendijken (BoTu) – Rotterdam ([PED Atlas, p. 42](#))

## e) One-stop-shop

Consolidating and streamlining administrative procedures into a one-stop-shop, i.e. a single point of contact for people can simplify interaction with the relevant public authorities and shorten communication processes.

### Practice examples:

- One-stop-shop on building refurbishment and PV installation in Limerick (“Citizen Innovation Lab”)
- One-stop-shops on building refurbishment as well as renewable energies and energy communities in Vienna (“[Hauskunft](#)” and “[Kompetenzzentrum Erneuerbare Energie](#)”)
- One-stop-shops on building refurbishment targeted at citizens and municipalities in Brussels (“Facilitateur Bâtiment Durable” and “RenoClick”)

## 2. Set standards

In order to pursue ambitious targets and to maintain high quality performance in all PED project stages it is of importance to set standards that are binding for the addressees.

### a) Targeting

Pursuing urban development by determining high ambitions by setting city-wide and district-wide targets. The binding character of targets can vary depending on the level of detail. Moreover, operationalization of targets can be supported by adding qualitative or quantitative indicators.

#### Practice example:

- The aspern klimafit standard sets criteria since 2020 for plots in Seestadt Aspern to create buildings that meet the requirements for greenhouse gas-neutral living. Six quality criteria were formulated: efficient energy use, energy flexibility, renewable energy supply, thermal comfort of buildings, CO<sub>2</sub>-reduced building construction and CO<sub>2</sub>-reduced mobility.

### b) Criteria in public procurement

Setting specific criteria in public calls for tender can help to implement ambitious targets and avoid high costs.

#### Practice examples:

- Direct citizen participation and local added value as criteria for public call on wind turbines in Eeklo ([PED Atlas, p. 36](#))

### 3. Transfer of (non-)binding standards

Supplementary requirements, not laid down in legislation but required to achieve PED objectives, can be transferred by legal means (typically civil law).

#### a) Civil-law agreements (e.g., Urban Development Contracts, Land sale contracts)

Urban Development Contracts are conducted between municipalities and developers to set binding requirements additional to existing legislation for the development of an area. Land sale contracts are another option to implement ambitious targets and provide certain opportunities, such as special requirements or financial contribution obligations.

##### Practice examples:

- Civil law contracts between the city of Stockholm and private developers for the sale and lease (linked to sustainability criteria) of city owned land ([PED Atlas, p. 10](#))
- Land sale contracts used by Aspern Seestadt to ensure high quality standards that have to be met by developers ([PED Atlas, p. 22](#))
- Lyon Confluence sets guidelines in the respective land selling contracts and supports the developers to fulfil them (e.g., concerning public spaces, refurbishment, percentage of social housing, architectural aspects and environmental performance) ([PED Atlas, p. 31](#))

#### b) Contracts with superior administrative bodies (e.g. Sustainable Neighbourhood Contracts)

The district development gets financial support for renovation and improvements via (comprehensive) program contracts targeting different areas of action (e.g. public spaces).

##### Practice examples:

- Sustainable Neighbourhood Contract (CQD) between Brussels-Capital Region and the City of Brussels implemented in Northern District Brussels ([PED Atlas, p. 16](#))

## 4. Supervision and monitoring

Supervising and monitoring performance is considered helpful to track the progress of PED projects. Especially if there are deviations occurring, corrections can be made towards the joint projected path.

### a) Supervision of developers and building owners

Dialog at an early development stage appears essential to raise awareness for sustainability and energy requirements among developers and to create involvement.

#### Practice examples:

- Capacity development program for developers in Stockholm Royal Seaport ([PED Atlas, p. 10](#))
- Word of mouth activation of building owners in Limerick ([PED Atlas, p. 48](#))

### b) Monitoring

Monitoring (by local authorities) helps to assure that pre-set targets and standards are met throughout the planning and implementation process as well as the further operation of PEDs.

#### Practice examples:

- Monitoring over all construction phases where developers submit documentation in web-based tool on sustainability requirements in Stockholm Royal Seaport ([PED Atlas, p. 10](#))

## 5. Create incentives

Incentives provide on the one hand (monetary) rewards and recognition for the receiving stakeholder and on the other hand for the one giving the incentive it is an effective behavioral modification tool, used to motivate desired behavior.

### a) Subsidies

With funding, not only the costs for district development can be covered but also thematic impulses in the district can be set.

### b) Tax incentives (as far as competent and currently more of a legal policy proposal)

Making high investment costs for renovation and improvement tax-deductible contributes to reducing the associated cost burden. Vice versa undesired systems could be counteracted with higher taxation.

### c) Disclosure of monitoring results

Disclosure of monitored data is important for informed decision-making and thus can provide an incentive for better performance.

#### Practice examples:

- Disclosure of monitoring results with regard to land sale contracts in Stockholm Royal Seaport ([more details see chapter 2.2.](#))

## 6. Reorganize administration

In order to meet the requirements of modern urban development, structurally reforming the administration is helpful. Targeted reorganization can not only increase efficiency but also reduce costs.

### a) District development organization

Due to certain flexibility, district development organizations bring the advantage that by orchestrating between public and private interests, decisions might be taken faster.

#### Practice examples:

- Private special purpose company in Lyon Confluence ([PED Atlas, p. 30](#))
- District development company “Wien 3420 aspern Development AG” ([PED Atlas, p. 22](#))

### b) Steering group

These high-level committees are made up of political decision-makers or staff from executive offices and are intended to enable regular updates and exchange with administrative units on issues or projects with strong political relevance.

#### Practice examples:

- Steering group led by the mayor together with representatives of the region in Lyon Confluence ([PED Atlas, p. 30](#))
- Political steering group of the Vienna PV Offensive ([more details see chapter 2.4.](#))

### c) Coordination unit for the district development

A formally appointed unit coordinates the communication between city and district level and between public and private actions and interests in order to develop or transform the district.

#### Practice examples:

- Interdepartmental coordination unit for Stockholm Royal Seaport ([more details see chapter 2.4.](#))

## 2 City challenges

At the beginning of the *Cities4PEDs* project, the involved cities prefigured pressing issues as “problem owners” within certain problem areas. These PED-related problems were taken up and identified, delineated, systematised, and analysed. In cooperative meetings and conducted interviews, the identified problems were re-worked and sharpened.

Looking at the case of **Vienna**, the transfer of sustainability targets to non-profit-oriented and especially profit-oriented developers is of particular interest as is the question of how to actively engage developers in the transformation. Furthermore, Vienna has a high potential for the use of surface-near geothermal energy in a large area of the city<sup>4</sup>. However, since it is difficult to exploit this potential in the densely built-up urban area and make it usable, the potential of geothermal energy in public spaces, e.g. streets and public parks receives special attention.

The city of **Brussels** is investigating different local district coordination structures and the potential financing possibilities which are available. Options could be public-private partnerships, or financing tools, which overcome the complex multi-level competences in the Brussels region.

**Stockholm** has expressed the need for economic assessment methods to implement PEDs, that describe environmental, economic and societal costs and benefits of positive energy systems. It is interested in how such a tool can be implemented into urban planning processes as it is vital for a holistic view.

With the help of experts, challenges that are of particular importance to each of the participating cities were identified. The city challenges were jointly identified and face topics where cities have a particular need for action or where unresolved problems exist in the implementation of PEDs:

- **Enabling energy sharing cross-property**
- **Transferring sustainability criteria to district developers**
- **Providing support schemes and systems**
- **Encouraging knowledge transfer and interdepartmental collaboration**
- **Closing organisational gaps on district level**

## 2.1 Enabling energy sharing cross-property

### a) Existing challenges and PED relevance

In order to work towards PED-objectives, e.g. reaching net zero CO<sup>2</sup> emission or a surplus production of renewable energy within a PED<sup>5</sup>, it is necessary to overcome certain concept-related issues. PEDs require interaction and integration between buildings, users, regional energy, mobility as well as information and communication technology (ICT) systems<sup>6</sup>. An important issue and thus essential component – when trying to realize a PED is to achieve an energy exchange (e.g. electricity, heat) across properties participating in a PED. Especially from a legal perspective, in contrast to a better-researched technical perspective, framework conditions are strictly defined. The relevant energy law framework to be applied in this context is strongly determined by EU law.

Stakeholders and experts involved in the participating cities of Stockholm, Brussels and Vienna repeatedly expressed that the possibility of transporting energy across properties is considered an essential building block for the implementation of PEDs. The (legal) complexity of cross-property energy sharing is evident: divergent legal and factual circumstances do not allow to make a general statement about the possibility of enabling an energy transfer, making individual considerations necessary from case to case.

The transition to decentralised energy production systems requires not only a low-threshold and clear incentivizing and in the best case a one-stop shop as a central contact point, but also the mobilisation of citizens, building upon participation opportunities and thus creating a mind shift for moving from consumers to prosumers. Complementary a preparatory and accompanying process oriented towards the

upcoming transformation is also considered important.

In this context, the Union legislation on the Clean Energy Package for all Europeans (CEP) forms a distinctive temporal demarcation point **by differentiating legal frameworks excluding and including ECs.**

The *Cities4PEDs* project team identified several important aspects that have to be taken into account in the respective individual case considerations:

- The exchange of energy across properties **requires the local production of renewable energy**<sup>7</sup> and therefore the installation and operation of local energy generation systems, such as a PV-system, whereby different legal matters must be observed. These include at least the building and spatial planning law, housing law (condominium/tenancy law), also energy law and provisions regarding subsidies.
- The actual sharing of energy across properties further requires a **legal framework that enables the transfer.** The lack of a corresponding legal possibility could endanger the implementation of PEDs. Besides Energy Communities (ECs), which were already (Brussels and Vienna) or are currently implemented (Stockholm), at least rudimentarily suitable legal possibilities were created in Stockholm and Vienna.

The European Union has recognized the need and taken up the advantages of decentralized energy supply. Within the Clean Energy Package for all Europeans (CEP), more precisely the Renewable Energy Directive (RED II) and the Internal Energy Market Directive (IEMD), the European Union created two different kinds of so-called Energy Commu-

<sup>5</sup> JPI Urban Europe (2021): <https://jpi-urbaneurope.eu/ped/>.

<sup>6</sup> JPI Urban Europe (2021): <https://jpi-urbaneurope.eu/ped/>.

<sup>7</sup> In contrast, accruing waste energy, which can also be exchanged between buildings with different cooling and heating needs, isn't produced actively.

nities (ECs) to exchange energy in the form of (renewable) electricity, biogas and heat. Due to their novelty, there are still **uncertainties regarding the practical applicability of ECs** for the purpose of cross-property energy transfer. While the implementation of ECs is already completed in Brussels and Vienna, the transposition process is still ongoing in Stockholm.

- The **form** in which **energy** is transferred across properties, whether in the form of (renewable) electricity, biogas or in the form of thermal energy (heat/cool), has relevance for the legal assessment, since different rules for different energy forms apply.
- Particularly in the area of electricity, the **type of energy distribution** is essential when considering individual cases. Almost every building has a connection to a public power grid, while private direct lines between buildings are an exception. Depending on the type of distribution, the related issues diverge. An example: While transmission over existing public grids is often associated with certain grid-related costs (e.g. grid usage fees), direct lines that are yet to be laid are more likely to raise questions about licensing and construction requirements, since certain usage fees do not apply.
- Electricity regulations contain provisions on the **rights and obligations of market participants**. For end users who produce electricity themselves and resell it, there is the possibility that they fall under the scope of electricity law provisions, e.g., qualifying them as a supplier. Fulfilling such provisions can lead to high administrative costs. **Different rules** may apply **for different market participants**, e.g. businesses, private individuals.

An exploration of the legal systems of the participating cities **excluding ECs** has led to the identification of relevant provisions. A matching regulation could be identified in the **Austrian** Electricity Industry and Organization Act. Since an amendment in 2017, the law provides the possibility to connect generation plants to common transmission lines in the vicinity of consumption systems. With regard to the geographical extent of such a joint generation plant, the law neither **refers to property boundaries** nor to uniform ownership of the properties. Rather, it is decisive that the generation facilities must be in the vicinity of the consumption facilities of the participating beneficiaries and that there must be a connection using only a main line, which ultimately means that only one house connection box must be available. Between the participants of such a joint generation plant civil law agreements are necessary, e.g. to agree on a price per kilowatt-hour. **Sweden** recently passed a law on non-concessional grids (icke koncessionspliktiga nät - IKN), regulating exemptions from the grid licensing obligation, allowing the sharing of energy in defined cases<sup>8</sup>. The implementation of the law addressed a certain issue which is of relevance for PEDs: due to a seasonal surplus in the production of energy and the missing legal possibility to transfer any surplus, house owners had to sell out the overproduced energy depending on the demand to a low price. As a result, there was practically no incentive to oversize local renewable energy production. **Brussels** legal framework does not contain specific regulations that enable energy exchange between buildings outside the EC framework. According to an interview conducted with an expert, testing of possible regulatory frameworks has already taken place within demonstration projects.

Legal frameworks of the participating cities that already **include ECs** provide specific citizens' initiatives, which are **conceptually focused on enabling energy transfer between their participants**. For this reason, they are presented separately in the next section as a promising approach pointed at enabling PEDs.

<sup>8</sup> Energimarknadsinspektionen (2022): <https://ei.se/bransch/koncessioner/undantag-fran-kravet-pa-natkoncession---ikn>.



## b) Promising approach: Energy Communities

The PED concept builds up on three main pillars: environmental, social, and economical sustainability. These pillars are becoming more and more visible in the European energy landscape: European citizens' energy initiatives have already delivered economic, social and environmental value to the communities they operate in, even going beyond mere benefits of the provision of energy services. The European Union recognized energy market specifics including the need for decentralization and engagement of consumers in energy generation, and therefore established through the CEP two kinds of energy communities: **renewable energy communities (RECs)**<sup>9</sup> and **citizen energy communities (CECs)**<sup>10</sup>, both aiming to provide environmental, economic or social benefits rather than financial profits only for its members. Both types fulfill certain criteria laid out in the RED II and IEMD. However, the CEP **does not outlaw other citizens' initiatives** based on private law or block complementary or parallel national measures aiming to foster the development of such initiatives.<sup>11</sup> CECs and RECs provide a flexible and citizen-oriented framework to enable participation in the energy transition through community energy schemes and allow for harnessing the potential of collective self-generation and local consumption, e.g. in terms of pricing<sup>12</sup>. RECs and CECs have in common that they are **legal entities**: they can act in their own name, can exercise rights and also can be subject to obligations. Nevertheless, differences are noticeable, e.g. concerning the membership structure or the spatial expansion (proximity criteria). A critical reflection on ECs as a promising approach was undertaken as well: from an economic perspective, implementing ECs could pose the risk of putting in too much effort compared to too little outcome, depending on the potential of the chosen areas. Furthermore, the transfer of heat within ECs is considered difficult because there is often no heat grid to connect to. Also different

types of buildings with different types of uses and load profiles, e.g. housing, supermarkets, are necessary to balance the feed in and withdrawal of energy.

Of both types, renewable energy communities (RECs) seem to be more suitable to support the implementation of PEDs. Already in the proposal for the RED II, the member states were – among other requirements – required to assess “existing barriers and [the] potential of development”, to “remove unjustified regulatory and administrative barriers” and to “provide tools to facilitate access to finance and making information available”.<sup>13</sup> A clear catalogue on rights and obligations for the generation of renewable energy providing legal certainty as well as incentives and privileges aimed to facilitate their establishment and operation indicate that. RECs allow those **participants to join, that are interconnected via the public power grid**, limited only by the proximity criteria. Currently in Austria a number of ECs, especially RECs, have already formed and started their operation – in Brussels and Sweden this is only a matter of time.

Although EU law provisions take the prevailing local and regional conditions into account to a far extent, interests that go beyond can and were already reflected with national citizens' initiatives which do not fall under the EU law regime. An interview conducted with a legal expert of Brussel brought forth, that Brussels implemented a third type of energy communities, a so-called “local energy community”, using the framework for RECs as a model, but with **softened ownership requirements and the ability to engage in the community for public authorities**<sup>14</sup>, in order to address specific needs.

<sup>9</sup> Art 22 RED II.

<sup>10</sup> Art 16 IEMD.

<sup>11</sup> Jasiak (2018a).

<sup>12</sup> Jasiak (2018b).

<sup>13</sup> Art 22 (3), Art 22 (4) (b) and Art 22 (g) of the proposal for the RED II.

<sup>14</sup> RED II (RECs) only allows membership for local authorities.

## c) Summary

### **Existing challenges:**

- Local generation systems for renewable energy are a precondition for energy sharing across properties
- Lacking legal frameworks form a bottleneck for energy transfer
- Different rules apply to different forms of energy and types of energy distribution
- Different rights and obligations may apply for different market participants
- Uncertainties regarding the practical applicability of ECs for the purpose of cross-property energy transfer

### **Available solutions:**

- National regulation approaches (e.g. Austrian Electricity Industry and Organization Act)
- CEP: Renewable Energy Directive (RED II) and Internal Electricity Market Directive (IEMD)
- ECs conceptually focus on enabling energy transfer between their participants
- Renewable energy communities (RECs) are more suitable for implementing PEDs because of a clear catalogue on rights and obligations as well as incentives and privileges

## 2.2 Transferring sustainability criteria to district developers

### a) Existing challenges and PED relevance

EU member states are obliged to set up long-term sustainable development strategies aiming to reduce greenhouse gas emissions in order to meet their commitments under the framework of the Paris Agreement and EU objectives<sup>15</sup>. However, the implementation of the strategies' measures has proven difficult since measures laid down in the national long-term strategies must be implemented by EU member states on a mandatory basis only in the upcoming years.<sup>16</sup> Yet cities, that are mandated with the measures' implementation, have to start the transformation process immediately whilst facing difficulties regarding the transfer of (yet) legally non-binding sustainability criteria in planned and ongoing building and refurbishment processes.

The goal of becoming a climate-neutral Europe is both an urgent challenge and an opportunity to build a better future.<sup>17</sup> PEDs can contribute to driving this process. Therefore, PED concepts have to fulfil multiple pre-set sustainability targets. Cities and boroughs are clear political units and the next level of legal action is the building site or the building itself. There are only a few options for setting compulsory standards for a district. In that regard, the **transfer of sustainability criteria on a district level has proven particularly difficult.**

From a legal perspective, there are two questions arising: On the one hand whether the submission to a framework can be achieved, although the framework is not binding (yet) – especially as the submission is certainly recommended from a sustainability point of view. On the other hand, how ambitious sustainability

standards can be made compulsory on district level, when national regulations set the maximum – yet not sufficient – requirements.

### b) Promising approach: civil law agreements

#### Urban development contracts

An analysis of **urban development contracts (UDCs)** in Europe shows the strong potential of the instrument to pursue climate and energy objectives. The following explanations reflect the case of Vienna and are made against the background of a constitution that highly emphasizes the principle of legality.<sup>18</sup> Nevertheless, as most of the EU member states set their focus predominantly on common law, similarities will arise.

UDCs are **civil law contracts concluded by municipalities** aimed to set requirements additional to existing legislation. Contracting parties are **property owners** or **long-term authorized owners** of properties potentially to be rezoned. The main objective in concluding UDCs is to involve property owners in bearing infrastructure expenses as well as to **promote the realization of spatial planning objectives.** Property owners may benefit from the fact that desired changes in the zoning plan might be potentially favoured. It has to be emphasized that the municipality's freedom in taking zoning decisions (e.g. to designate building land in the zoning plan) must be preserved at all times.<sup>19</sup>

The scope of application of UDCs in context of the energy transition is manifold. Subjects of UDCs can be **concepts for urban energy and climate protection**, further the **usage of renewable energy** or **combined heat and power**, as well as requirements regarding the **energy performance of buildings.** UDCs and other contractual spatial planning methods seem of high potential when transferring

<sup>15</sup> European Commission. (2022): [https://ec.europa.eu/clima/eu-action/climate-strategies-targets/2050-long-term-strategy\\_de](https://ec.europa.eu/clima/eu-action/climate-strategies-targets/2050-long-term-strategy_de).

<sup>16</sup> List of national long-term strategies provided by the European Commission: [https://ec.europa.eu/info/energy-climate-change-environment/implementation-eu-countries/energy-and-climate-governance-and-reporting/national-long-term-strategies\\_en](https://ec.europa.eu/info/energy-climate-change-environment/implementation-eu-countries/energy-and-climate-governance-and-reporting/national-long-term-strategies_en)

<sup>17</sup> European Commission. (2022): [https://ec.europa.eu/clima/eu-action/climate-strategies-targets/2050-long-term-strategy\\_de](https://ec.europa.eu/clima/eu-action/climate-strategies-targets/2050-long-term-strategy_de).

<sup>18</sup> According to the principle of legality all state administration shall be exercised only in accordance with the law.

<sup>19</sup> Schüßler-Datler (2020).

sustainability criteria to developers. Therefore, Germany serves as a good example as UDCs are used in particular for sustainability and energy issues.<sup>20</sup> With regard to the scope of application of UDCs in Vienna one of the conducted expert-interviews has shown that, although there is an increasing use of UDCs in urban planning in Vienna, UDCs are rarely used for energy-related purposes. This is due to another legal instrument: the newly introduced **energy zoning plans**, so called climate protection areas, in the building code. An ordinance authorization is established for such energy zoning plans which are then enacted by ordinance district by district. New buildings in these designated areas must be equipped with a climate-friendly energy supply system (e.g. decentralised renewable energy supply systems or district heating which is 80% based on renewables or combined heat and power).<sup>21</sup>

Contractual spatial planning brings many advantages such as flexibility and acceptance of administrative action. However, municipalities often face obstacles when it comes to the configuration of the legal framework of UDCs. To take advantage of the full potential of UDCs when it comes to the transfer of sustainability criteria, the following aspects might be helpful.

- The legal basis for UDCs should provide a **demonstrative (rather than an exhaustive) enumeration** of contractual subjects of regulation. Thereby the widest possible range of cases of application may be covered.
- Furthermore, a **necessary urban development context** must be taken into consideration. This also applies when regulating aspects of general climate protection by UDCs. However, reference may only be made to climate protection aspects resulting from the structural use of land, e.g. the pursuit of general climate protection goals detached from energy requirements of the municipalities would not be permitted.<sup>22</sup>

- Looking at European cities which have already successfully implemented UDCs, it becomes apparent that a **clear and precise legal base** with a high degree of determination is necessary. This will allow an expansion of the scope of application. Therefore, objectives and principles must not be designed too general or too broad. Exemplary is the German building code: it illustrates the need for anchoring climate-related contractual objectives in the legal authorization.<sup>23</sup>
- Furthermore, the **determination of the UDC** is essential. It prevents the framework conditions themselves becoming an obstacle. This is particularly important as pre-set criteria are discussed at an early stage in the planning process. Thus, it should be avoided to have to change contracts later due to deviations.

UDCs seem a fitting instrument for the transfer of sustainability criteria. Although it has to be taken into consideration that the scope of application is rather tight and can be **mainly used for newly built** rather than existing areas. In mixed areas (existing + newly built) Vienna took remedial action by establishing **quality assurance boards**. These quality assurance boards ensure consistent quality while also taking sustainability aspects into account. However, a distinction based on the financing method of the area in question is relevant, as quality assurance boards are primarily used in subsidised areas but rarely in free-funded areas.

Often considered a difficulty is the risk of contractual spatial planning being classified as state aid. Art 107 (1) TFEU stipulates a **general prohibition of state aid**.

- (1) *Save as otherwise provided in the Treaties, any aid granted by a Member State or through State resources in any form whatsoever which distorts or threatens to distort competition by favouring certain undertakings or the production of certain goods shall, in so far as it affects trade between*

<sup>20</sup> Parapatics (2021).

<sup>21</sup> Stadt Wien. (2022): <https://www.wien.gv.at/stadtentwicklung/energie/erp/index.html>

<sup>22</sup> Parapatics (2021).

<sup>23</sup> Parapatics (2021).

*Member States, be incompatible with the internal market.*

The term ‘aid’ within the meaning of Article 107 (1) TFEU is generally understood in a broad sense. On the one hand, it covers financial subsidies and contributions in kind (subsidies in the narrower sense); on the other hand, it also covers all measures reducing burdens usually borne by companies (e.g. tax exemptions). The qualification of measures as state aid requires that all conditions resulting from Art 107 (1) TFEU are cumulatively fulfilled. The action in question must be notified to the European Commission when meeting the criteria cumulatively.<sup>24</sup>

To determine whether a sale by a public entity is liable to affect trade between EU member states and distort or threaten to distort completion, a **private vendor test** has to be conducted. It will be tested whether the price paid by the (alleged) aid recipient is lower than the price a private vendor could have obtained under common market conditions.<sup>25</sup>

**Not qualified as state aid are small amounts of state aid (“de minimis”)** that are not subject to the state aid control. It is assumed that neither competition nor trade between the EU member states is affected due to the amount limit. These ‘de minimis’ aids do not have to be notified to the European Commission by the EU member states.<sup>26</sup>

State aid law in its current form does not sufficiently reflect sustainability efforts and might become an obstacle in certain constellations. For this purpose, UDCs can be based on planning documents or strategy papers to **avoid the qualification as state aid**. Complementary, a legal exception for the transfer of sustainability criteria would therefore be considered helpful to avoid being qualified as state aid.

## Land sale contracts

The instrument of **land sale and land lease contracts presents a proper method of imposing minimum sustainability requirements** e.g., for energy efficiency and energy supply. These civil law agreements coupled with certain requirements can be signed for the land owned by the city. Therefore, criteria such as price, quality, innovation as well as sustainability aspects can be transferred to developers. However, in some cases concluding land sale contracts might also be associated with contradictory objectives, e.g. decreasing property value due to pushed-up requirements.

The contract itself has to specify the extent to which these criteria must comply, as well as the consequences in case of default. Discussions with experts have shown that land sale contracts conducted by the City of Stockholm are built on a system based on persuasion rather than coercion. Thus, a breach of contract might not have direct legal consequences for the breaching party. However, breaches will be made public and might affect the reputation.

As already discussed, the (missing) legal framework might present an obstacle when it comes to the transfer of sustainability criteria. In the case of Stockholm, the national building code sets the maximum limit of requirements to be imposed on developers. Therefore, it is not possible to transfer additional (sustainability) requirements not covered by the building code. However, Stockholm is enforcing stricter requirements when selling or leasing land owned by the city by making use of land sale contracts to pursue the political target of becoming a city development frontrunner.

<sup>24</sup> Raza et al (2021).

<sup>25</sup> Raza et al (2021).

<sup>26</sup> Raza et al (2021).

## c) Summary

### **Existing challenges:**

- The configuration of the legal framework (eg. demonstrative enumeration, clear and precise legal base)
- UDCs themselves becoming an obstacle due to the degree of determinacy
- Scope of application of UDCs not explicitly pointed towards PEDs objectives
- Possible qualification of contractual spatial planning as state aid
- Missing legal consequences in case of breach

### **Available solutions:**

- Clear and precise legal base with high degree of determination
- Avoid only setting minimum sustainability standards in the legal base and not allowing additional higher standards not covered by it
- Taking remedial action by establishing quality assurance boards in areas not covered by UDCs
- Avoid UDCs being qualified as state aid by basing them on planning documents and strategy papers; Legal exception specifically for the transfer of sustainability criteria would be helpful
- Disclosure of monitoring effects to avoid breaches of contract

## 2.3 Providing support schemes and systems

### a) Existing challenges and PED relevance

Achieving ambitious climate and energy targets laid down in the EU member states' National Energy and Climate Plans (NECPs) requires a radical energy transition towards renewable energy sources. This transition is already in progress: According to the report "State of the Energy Union 2021" renewables overtook fossil fuels as the EU's main electricity power source for the first time in 2020, reaching a 38% share and leaving fossils with 37% and nuclear with 25% behind.<sup>27</sup>

The energy transition implies **cost-intensive changes in the existing energy infrastructure**.<sup>28</sup> This raises questions concerning costs and options of financing. Transforming the energy supply towards decentralised renewable solutions (e.g. photovoltaic elements on rooftops, balconies, or facades) is commonly associated with considerable acquisition costs. Furthermore, amortisation of the expenditures can only be expected after years of use. However, increasing prices of fossil energy – for example caused by the shortage of Russian gas supply – might shorten the duration of the amortisation.

The decentralised generation of renewable energy is a central component of the PED concept. The aspect of the individual financial feasibility of the transition, therefore, becomes relevant for certain population groups (e.g. low-income population). **Support schemes and funding are proven tools to compensate** for this. However, they differ regarding the funding provider, the funding recipient, or the type of funding. This applies especially in EU member states where funding can be granted using civil law (contracts) or under public law.

The *Cities4PEDs* project team points out that a distinction concerning the funding recipient is useful. If support schemes address private individuals as funding recipients, the analysis indicates that attention has to be given to specific demands. Although funding agencies are keen to inform potential funding recipients, there is a certain risk that these efforts will not have the desired effect. Thus, it has to be taken into consideration that the **average citizen might not be aware of or capable of handling the variety of subsidies** in the energy sector. One-stop-shops – single points of contact for private individuals – prove useful to counteract these difficulties due to their low-threshold nature. According to experts, the potential can be optimally utilized by **being accessible to interested parties through all communication channels**.

<sup>27</sup> European Commission (2021b): [https://ec.europa.eu/commission/presscorner/api/files/document/print/en/ip\\_21\\_5554/IP\\_21\\_5554\\_EN.pdf](https://ec.europa.eu/commission/presscorner/api/files/document/print/en/ip_21_5554/IP_21_5554_EN.pdf).

<sup>28</sup> BloombergNEF (2022): <https://about.bnef.com/blog/europes-path-to-clean-energy-a-5-3-trillion-investment-opportunity/>.

In this context, the **owner-user-dilemma remains an identified problem**. Often the person investing in the cost-intensive infrastructure conversion is ultimately not the beneficiary. Example: Commonly landlords face expenses when taking energy-efficiency measures, such as subsequent heat insulation. The tenant then economically benefits directly from the measures taken, through lower operating costs in cases where thermal energy is not included in the rent. The legal framework often fails to compensate for this. As a result, the owner-user dilemma might have a counterproductive effect on existing supporting schemes, leading to subsidies not being taken up.

Support schemes focusing on delimited areas can strengthen the participation of citizens and companies in the process of urban development (e.g. Sustainable Neighbourhood Contracts<sup>29</sup>, Grätzförderung<sup>30</sup>).

In Austria, the Climate and Energy Model Regions (KEMs) are a successful bottom-up funding instrument for municipalities and regions to support their energy transition process. These KEMs not only set an example for other regions but also provide multiplier effects and push the cooperation of municipalities within the region.<sup>31</sup> The conducted interviews concerning support schemes confirm that energy subsidies get more accessible for inhabitants within funded areas.

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<sup>29</sup> <https://quartiers1060.brussels/cqd/quest-ce-quun-contrat-de-quartier-durable/>

<sup>30</sup> <https://wieneuplus.wien.gv.at/graetzloerderung>

<sup>31</sup> Klima und Energiefonds (2022): [https://www.umweltfoerderung.at/fileadmin/user\\_upload/media/umweltfoerderung/Dokumente\\_Betriebe/KEM/kem\\_leitfaden.pdf](https://www.umweltfoerderung.at/fileadmin/user_upload/media/umweltfoerderung/Dokumente_Betriebe/KEM/kem_leitfaden.pdf).



## b. Promising approach: Sustainable Neighbourhood Contracts

Sustainable neighbourhood contracts (SNCs) are an instrument developed by the Brussels Region. SNCs aim to generate vulnerable neighbourhoods with certain objectives set out. Therefore, the focus is set on the improvement of life in existing neighbourhoods by overcoming significant urban problems. SNCs can be initiated as a mechanism of urban governance. For this purpose, any measures contributing to the physical and functional reorganisation of areas in need including renovation, rehabilitation, demolition, and construction, may be undertaken. Thus, SNCs are **urban regeneration programs at a local level**, covering part of the territory of a single municipality. Neighbourhoods on the stake are often characterised by high population density, unemployment, a large concentration of decayed buildings, and poor housing conditions. SNCs are considered **a complete and global approach** that considers both urban and social difficulties. To meet sustainability goals, neighbourhoods can take measures to improve the environmental quality of revitalization by increasing the energy efficiency and environmental performance of buildings.<sup>32</sup>

Neighbourhood contracts were implemented in Brussels in the early 1990s. Ever since SNCs are used to improve housing, urban planning, mobility, employment, green spaces, leisure, education, health as well as environmental and sustainable development and participation in certain areas. Measures covered by the SNC are financed through grants for the implementation of SNCs within the limits of available budgetary resources, over a limited period.<sup>33</sup>

In the case of funding instruments, the assessment of the funding volume is given a decisive role. An interview with stakeholders from Brussels has shown that in the case of the SNCs the funding volume tends to be rather not sufficient for ambitious initiatives. Furthermore, it is important to ensure that **sustained long-term effects will be achieved**. When looking at SNCs in Brussels it becomes apparent that the accomplishment of long-term effects has quite challenging. This implies the necessity to consider the desired long-term effects already during the planning phase of projects.

Environmental and energy-related objectives are covered by the legal scope of SNCs. Therefore, SNCs might be used to provide centralized solutions to meet the demands of the city's goal to become sustainable. Nevertheless, an interview conducted with experts for SNC's brought forth that, **priorities in the neighbourhoods are often set differently** as they struggle with serious social issues. For that reason, social rather than sustainability, related objectives are prioritised. Though, it must be empathised that energy subsidies get more accessible for citizens within the covered area.

<sup>32</sup> Romanczyk (2014).

<sup>33</sup> Romanczyk (2014).

## c) Summary

### **Existing challenges:**

- Energy transition implies cost-intensive changes in existing energy supply solutions
- Accessibility of funding systems due to a lack of awareness and capability of average citizens when handling the great variety of subsidies
- Amortisation of costs only after years
- Owner-user-dilemma: Only tenant benefits from the investments of the landlord

### **Available solutions:**

- One-stop-shops as single point of contact provide accessibility
- Create awareness through all communication channels to reach as many target groups as possible
- Strengthen citizens' participation by focusing on delimited areas (e.g. sustainable neighbourhood contracts, Grätzlförderung)
- Inclusion of long-term effects in the planning phase of projects

## 2.4 Encouraging knowledge transfer and interdepartmental collaboration

### a) Existing challenges and PED relevance

Many solutions and innovative approaches to tackle the climate crisis as well as for the urgently needed energy transition are available already today. Nonetheless, administrations on all levels are facing **obstacles with broad roll-outs of implementation programmes at the pace needed.**<sup>34</sup> In order to quickly go from pilot projects to scaling up, **knowledge transfer** and **capacity building** as continuous learning processes of all relevant stakeholders are substantial prerequisites. This holds essentially true when looking at PEDs and urban district development in general. There is an identified need to **establish organizational structures and processes** on a city level, which are **fostering the dissemination of innovations and learnings** from showcase district developments to established district development processes.

In addition, intertwined challenges such as the implementation of PEDs **require competence bundling from different thematic backgrounds.** In this context, interdepartmental cooperation can encourage to leave the silo-thinking, which commonly emerges through the disciplinary organization of city administration, but also support coordination and alignment of different actors and interests from municipal departments, as well as external stakeholders to jointly promote innovative solutions. Moreover, such forms of interdepartmental collaboration can contribute to moving certain issues forward faster as well as to more effective bureaucratic processes in general.

With regard to both knowledge transfer as well as interdepartmental collaboration several

existing challenges have been identified during joint meetings of the *Cities4PEDs* project team. Amongst others it was emphasized that a distinct **political commitment** is key for successful transformation of organizational structures and processes so that knowledge transfer as well as interdepartmental collaboration can function well. As such, there is a need for a **clear assignment** for all involved actors and possibly newly established organizational bodies or structures. Furthermore, the involvement of different actors in such processes essentially needs to be backed by sufficient resources. In order to achieve this, a change of mindset on political level as well as in high-level management will be necessary in most cases. Normally, assignments on responsibilities and tasks of different municipal departments and actors are set in regular city budgets or in the official organizational division of the city administration for a long period.

Nevertheless, it also remains necessary to look at organizational structures and processes for knowledge exchange and interdepartmental collaboration from a more **bottom-up perspective.** In this regard it was highlighted from several partners that strong hierarchies in city administrations often do not allow for a direct exchange of practices or collaboration on staff-level between different municipal departments. A possible way to circumvent these general conditions could be to focus on synergies and how planned activities and measures may affect or be of interest to other municipal departments. **Thus, framing interdepartmental collaborations along already existing assignments** might allow for getting relevant staff from other municipal departments on board.

34 European Commission (2021a): [https://ec.europa.eu/commission/presscorner/detail/en/IP\\_21\\_3541](https://ec.europa.eu/commission/presscorner/detail/en/IP_21_3541).

## b) Promising approach: interdepartmental coordination unit

The district development of ‘**Stockholm Royal Seaport**’ is coordinated by a **formally appointed interdepartmental unit**, which is staffed by the City’s Development, Planning, Transport as well as Environment and Health administrations and led by the City Development Committee. As such the interdepartmental unit is equipped with a dedicated budget and the necessary personnel resources.<sup>35</sup> Additionally, working groups with experts from different municipal departments as well as city-owned companies (e.g. Stockholm Vatten och Avfall AB, Ports of Stockholm etc) have been established. Each working group is in charge of a different focus topic (e.g. energy, transport etc) with the aim to **define guiding principles and requirements** for the district development as well as to **set ambitious sustainability targets**. Both the interdepartmental coordination unit as well as the different working groups have been identified as important tools for knowledge sharing between the different municipal departments. The process so far has shown that the continuous involvement and alignment of different stakeholders is essential for knowledge exchange. However, collaboration has been challenging for different working groups when actors involved have no clear assignment or resources to contribute to the project. Nevertheless, the district development of ‘Stockholm Royal Seaport’ serves as a showcase example within the city administration and shall allow for learnings to be replicated in other surrounding districts at a later stage.<sup>36</sup>

Another practical example for **interdepartmental collaboration** in city administration as well as beyond is demonstrated in the **City of Leuven** (ca. 100.000 inhabitants). In 2018, the initiative ‘Leuven 2030’<sup>37</sup>, a non-profit organization with members from civil society, businesses, knowledge institutions, authorities<sup>38</sup> and semi-public authorities, launched the “Roadmap towards a climate neutral Leuven by 2050”. This roadmap serves as a guide for achieving climate neutrality by 2050 (which will require emission reductions of at least 80%) and builds on Leuven 2030’s Scientific Rapport (2013).<sup>39</sup> In a next step, a professional **team of program facilitators** was set up in order to translate the roadmap into concrete actions (“Roadmap towards a climate neutral Leuven by 2050”). For each of the roadmap’s 13 programs with thematic focuses such as “Retrofitting residential buildings” or “Generating green energy” one or two program facilitators were appointed. In total 18 program facilitators are in charge of putting the ambitious roadmap into practice by coordinating different activities and involving relevant stakeholders. They are often made available by partner organisations on a part-time basis to work on the roadmap. Their professional backgrounds are very diverse including staff from city administration, academia but also from the private sector. The initiative ‘Leuven 2030’ highlights that with this model of implementation it wants to emphasize that reaching the goal of climate neutrality is a shared project and assigns a crucial role to every member of the city’s community.<sup>40</sup>

<sup>35</sup> PED-Atlas (2022): <https://energy-cities.eu/wp-content/uploads/2021/11/Cities4PEDs-Atlas-Nov.-2021.pdf>.

<sup>36</sup> City of Stockholm (2022): <https://vaxer.stockholm/omraden/norra-djurgardsstaden/in-english/>; sustainability report of the project: <https://www.norradjurgardsstaden2030.se/en>.

<sup>37</sup> Leuven 2030 (2022): <https://en.leuven2030.be/about-leuven-2030>.

<sup>38</sup> The City of Leuven is a founding member of the initiative ‘Leuven 2030’ and also provides a significant part of the funding.

<sup>39</sup> Leuven 2030 (2022): <https://roadmap-en.leuven2030.be>.

<sup>40</sup> Leuven 2030 (2022): <https://roadmap-en.leuven2030.be/why-this-roadmap>.

The urban renewal programme ‘WieNeu+’ of the City of Vienna is a successful example for **knowledge transfer with a district-by-district approach**. The programme is set to run for 10 years and started in early 2021 in the district area of Innerfavoriten. The idea is to test innovative solutions regarding refurbishment and energy, social neighborhood as well as public space in selected pilot districts that will serve as role models for the entire city. These district transformation processes for every pilot district run for 3 years, before the programme moves further to a subsequent district area. The programme thereby incorporates and transfers already collected experiences and learnings and applies them to a different project area.<sup>41</sup> Thus, knowledge transfer and dissemination of learnings largely focuses on the stakeholders involved in the programme, but can not be guaranteed for the city-wide level. In a similar way the City of Delft launched dedicated decarbonization teams, which work city-wide but look at each district individually one after another. More information on this initiative can be found in chapter 3.5.b on ‘Closing organizational gaps on district level’.

A practical example for **mission-oriented interdepartmental collaboration** backed with a strong political commitment is the so-called ‘Vienna PV-Offensive’. Launched in May 2021, this programme by the City of Vienna aims to step up electricity production by means of PV from currently 50 MWp to 250 MWp by 2025 to 800 MWp by 2030. A 20-member program team led by the Municipal Department for Energy Planning and the Executive Group for Construction and Technology is in charge of implementing this comprehensive and overarching programme. Several municipal departments i.e. Economic Affairs, Labour and Statistics; Building and Facility Management; Building Inspection; Testing Centre, Inspection and Certification Body; Construction, Energy, Railway and Aviation Law; Real Estate Management as well as city-owned companies i.e. Wiener Wohnen, Wien Energie, Wiener Netze, Wien Holding and Urban Innovation Vienna are involved in different subteams and working packages of the Vienna PV-Offensive. Moreover, the programme lead holds regular update meetings with the political steering group of the programme, which consists of representatives from the Offices of the Executive City Councillors for Housing, Climate and Finance as well as representatives from Vienna Public Utilities. In addition, the programme is accompanied by an advisory board consisting of experts from science and practice.<sup>42</sup> This described set-up of the ‘Vienna PV-Offensive’ with a formal assignment for interdepartmental collaboration as well as clear political objectives enabled among other things the adaptation of administrative processes and laws, the roll-out of specific subsidies as well as the initiation of citizen-oriented support actions.

<sup>41</sup> Stadt Wien (2022): <https://wieneuplus.wien.gv.at/english>.

<sup>42</sup> City of Vienna (2022) <https://photovoltaik.wien.gv.at/>.

## c) Summary

### **Existing challenges:**

- Broad roll-out of implementation programmes at urgent pace needed
- Organizational structures and processes for dissemination of innovations and learnings
- Competence bundling from different thematic backgrounds (leave the silo-thinking)
- Political commitment and clear assignment for knowledge transfer and interdepartmental collaboration

### **Available solutions:**

- Testing of innovative solutions and transfer with ‘district-by-district’ approach (WieNeu+ urban renewal programme, Delft decarbonization teams)
- Mission-oriented interdepartmental collaboration backed with political objectives (Vienna PV Offensive)
- Informal collaboration with focus on synergies of existing assignments of staff level
- Formal assignment of interdepartmental unit backed with resources (Stockholm Royal Seaport, Leuven 2030)

## 2.5 Closing organisational gaps on district level

### a) Existing challenges and PED relevance

Since a municipality/city as well as a borough are clear political units and the next level of legal action is the building site or the building itself, there are only a few steering possibilities at the district level. However, for urban planning and development and in regard of social and functional contexts, **districts** are a **significant scale** and a **connection of local initiatives in the district and government activities** is required. For newly constructed district developments, city administration units that focus on the development of a district (e.g. interdepartmental coordination unit Stockholm) or special vehicles are very often set up by the authority. Examples of the latter are the 3420 Aspern Development AG<sup>43</sup> or various development companies in French cities, such as Lyon Confluence SPL.<sup>44</sup> Also in the operation phase, special vehicles play an important role, especially when it comes to neighbourhood management. The Neighbourhood Management Office in Seestadt Aspern, which is commissioned by the City of Vienna and by the 3420 Aspern development AG, accompanies for example new residents during their arrival, promotes a lively district development, informs about current local developments and supports the active co-design of the community.<sup>45</sup> In addition, current city instruments have a stronger impact on new constructions than on existing buildings (building code, zoning, etc.). Only in a few cases, **organisations for urban transformation in already existing districts are equipped with similar steering possibilities** (e.g. issue local funding – WieNeu+ and WieNeu Vienna and WieNeu+ Vienna, agreements on municipal level – Delft decarbonisation team, commission technical studies – WieNeu Vienna)

Though, for the diverse and complex interrelated tasks that arise from the urban and energy transition, there is a need for a body that keeps track, controls, coordinates and accompanies activities such as road construction, re-design of public spaces and bike lanes, excavation works for district heating grids, drilling of geothermal probes on public or private land, implementing public e-car loading infrastructure and measures like building renovations, greening facades and roofs and PV installations. Furthermore, **local initiatives and networks should be supported** by the body.

Since decarbonisation will be a challenge for cities in the coming years and decades, there is a need for **local coordination and communication** in addition to clear and strict legal requirements to phase out fossil fuels. This requires a body to operationally support the transformation in the existing city.

This **operational unit** should coordinate local actors (local businesses, initiatives of citizens and building owners) and **work closely with urban actors** (departments, municipal utilities, etc.) to translate holistic concepts for the whole city into an implementation plan for the district, regarding local circumstances and conditions (inhabitant and owner structure, zoning, renovation cycles, age of building services, financial possibilities, etc.), taking into account **opportunities for synergies** such as **joint planning and tendering** as well as **construction site management** of several projects.

<sup>43</sup> 3420 Aspern Development AG (2022): [https://www.aspern-seestadt.at/en/about\\_us/wien\\_3420\\_ag](https://www.aspern-seestadt.at/en/about_us/wien_3420_ag).

<sup>44</sup> PED-Atlas (2021) p. 21, p. 29 <https://energy-cities.eu/wp-content/uploads/2021/11/Cities4PEDs-Atlas-Nov.-2021.pdf>.

<sup>45</sup> 3420 Aspern Development AG (2022).

The *cities4PEDs* partner CityMine(d) stated that being present in the district, getting to know the local culture and talking to locals, helps to adjust the agenda.<sup>46</sup> Furthermore, direct physical contact is seen as a possibility to reduce resistance to structural changes by the Viennese Gebietsbetreuung.<sup>47</sup>

Since there are already structures in many cities in place that cover particular aspects, existing structures can be used and expanded and it is not necessary to create new structures for the local urban and energy transition. However, in some cases, creating a new structure facilitated by a third party may bring an unbiased view in traditional urban processes.<sup>48</sup>

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**46** Workshop Deep Dive Stockholm.

**47** Interview Gebietsbetreuung Stadterneuerung GB\* on 13th of January 2022.

**48** Workshop Deep Dive Stockholm.

**49** Energy Cities (2022).



## b. Promising approach: City-wide decarbonisation team

In Delft, an operational unit, a dedicated decarbonisation team, supports the municipal programme for energy transition. It works city-wide, but looks individually at each district, one after another. There is a **4-stage process**, which includes an analysis of each single district to understand the socio-economic structures, the residents and the challenges of the district. In the second phase, goals for the district are set with local actors, such as businesses and inhabitants. In the third step, an exit plan is developed: Technical measures and their costs are weighed, risk analyses are carried out and measures in the city's own sphere of influence and beyond are determined for implementation. In the last step, the execution, necessary agreements on the level of the municipality are made and implementation is started. This **three-year process** until the start of implementation is continuously supported with **communication activities and citizen involvement**. The municipality of Delft expects ten years per district to also implement the respective measures. This process is to be started in 10 to 15 more districts in the next ten years (until 2030). To this end, a city plan prioritizes the districts in terms of time for the energy transition.<sup>49</sup>

A **single team** works on decarbonisation in the respective districts, both in terms of **city-wide strategy and local implementation simultaneously**. Due to the clear task definition, the team has an overview of all ongoing activities in the district and can coordinate urban development projects with energy transition measures. By opening up the planning process at the beginning, local stakeholders actively participate in setting goals and thus know specifically where they can contribute to the process. The **involvement and identification** reduce resistance to decarbonisation measures. It also has to be mentioned that Delft has **100,000 inhabitants**. Thus, the time horizon is larger when looking at each district individually in big cities like Brussels, Stockholm or Vienna.

In Ghent, the local Citizen cooperative 'Energent' encouraged homeowners to participate in bulk orders for building materials for retrofits, which increased the number of retrofits locally and lowered prices for retrofits through bulk ordering.<sup>50</sup> In Vienna, the municipal block renewal initiative "WieNeu" publicly funds block-wide analyses for upgrading buildings and then enters into a dialogue with local owners and issues local funding in the respective block for private owners.<sup>51</sup>

In Vienna, the four local offices run by the Gebietsbetreuung GB\* (area management) are in direct physical contact with inhabitants and take over "caring activities" in those districts.<sup>52</sup> In cooperation with WieNeu+, the urban renewal program for district transformation, local activities in the areas of rehabilitation and energy, public space and social cohesion are initiated and accompanied over a period of three years.<sup>53</sup>

<sup>50</sup> Energent cv (2022): <https://energent.be/>.

<sup>51</sup> Wohnfond Wien (2022): [https://www.wohnfonds.wien.at/wienu\\_blocksanierung](https://www.wohnfonds.wien.at/wienu_blocksanierung).

<sup>52</sup> Technische Stadterneuerung (2022): <https://www.gbstern.at/was-wir-tun/ueberblick/>.

<sup>53</sup> Stadt Wien (2022): <https://wieneuplus.wien.gv.at/>.

## c) Summary

### **Existing challenges:**

- Steering possibilities for transformation at district level (in particular in existing districts)
- Transfer of city-wide concepts into implementation plans at district level
- Local coordination of complex interrelated tasks regarding energy transition (e.g. road construction, building renovations, PV installations)
- Target-group oriented communication of necessary measures for the energy transition

### **Available solutions:**

- Joint planning and tendering as well as construction site management by local citizen cooperative (e.g. Energent)
- Municipal block renewal initiatives in collaboration with local owners (e.g. WieNeu Vienna)
- City-wide decarbonisation team for transformation of districts one after another (e.g. Delft decarbonisation team)
- Building on and expanding existing organizational structures with energy focus for district transformation
- Focus on neighbourhood dynamics and local circumstances (involvement of local actors, customized solutions)

# 3 Conclusion

With this Working Paper we address district developers, people involved in district transformation and people who work in the context of the energy transition.

On the one hand the document provides an overview of different identified city challenges, practitioners are facing when implementing PEDs and on the other hand a listing of instruments that were used in the past for district development. Both overviews have a demonstrative character and do not conclude the number of challenges and instruments.

Instead of giving one-fits-all or recipe-like solutions which already are hard to implement in a specific context, let alone in other local contexts, these overviews should help to grasp the complexity of parallel challenges of district development and the energy transition within cities.

To provide innovative solutions for cities or other institutions, we depicted “promising approaches”, in different local contexts. Probably one won’t be able to just take these solutions and implement them in the own sphere of work since specific framework conditions must be considered. Rather, these promising approaches are intended to encourage people to think of their own suitable approaches.

At this point, reference should also be made regarding the final resource of the Cities4PEDs project, which will be available in December 2022, targeted to the community of practice for districts which are PEDs or have high energy ambitions.

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