



# Act!onHeat workflow guide

**From heating and cooling strategies to action: how public authorities can strategically plan the decarbonisation of the heating and cooling sector and initiate impactful projects**



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## About Act!onHeat

Heating and cooling (H&C) accounts for about half of Europe's total energy needs with 75% still dependent on fossil fuels. Thus, rapid and significant change is needed to reach the EU 2050 goals. Due to the local nature of H&C systems, action has to be taken at local level involving a variety of stakeholders. This has been recognised in recent years and activities have been started like developing best practice policies and open source analysis tools. However, (efficient) H&C planning and project development are still not commonplace in most European municipalities.

### **Act!onHeat will enable and accelerate local Heating & Cooling transitions by:**

- identifying success factors of effective energy plans, turning them into practical workflows;
- developing individual and group support activities to guide municipalities, local planners and stakeholder in applying these workflows;
- facilitating finance and the design of effective heat & cooling projects and policy frameworks



[www.actionheat.eu](http://www.actionheat.eu)





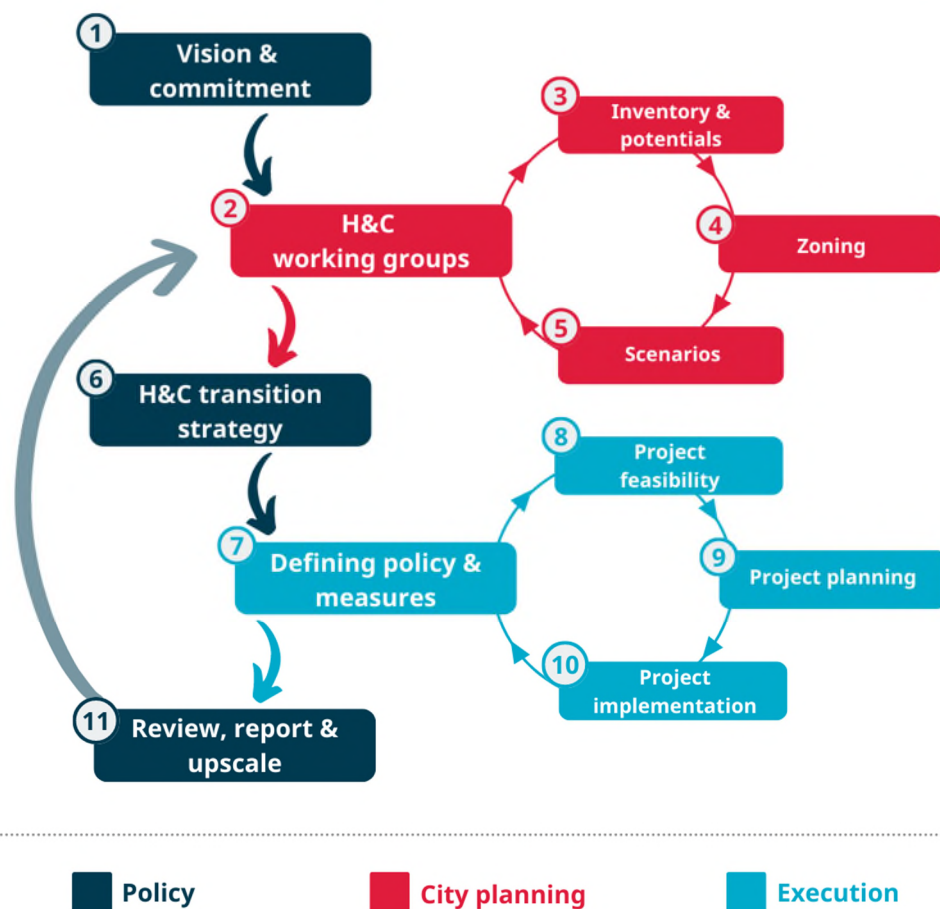
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## Overview

In Act!onHeat, a workflow for strategic heating and cooling (H&C) planning was developed. For this, a moderated workshop was conducted with experts from the field, discussing their experiences and recommendations (do's and don'ts). Findings from the workshop were summarised, structured and transferred into a workflow.

The workflow developed consists of 11 steps addressing urban planning, implementation, and policies. The starting point is the development of a vision (**step 1**), followed by establishing a working group (**step 2**). The working group coordinates the process and acts as an interface with urban planning. **Steps 3 to 5** then comprise an inventory analysis, zoning and scenario development. These are then fed into the formulation of a transition strategy (**step 6**). Here, the municipality defines milestones and objectives. Based on this, strategies and/or measures are drafted (**step 7**). At best, implementation projects emerge directly from the process. These are then analysed for feasibility (**step 8**) and subsequently planned and implemented (**steps 9&10**). The working group carries out coordinating and networking tasks in these steps. The workflow is flanked by regular reviews that identify potential for improvement and thus intervene in an iterative way in the process (**step 11**). The following figure illustrates the process.



**Figure 1: Workflow for strategic heating & cooling planning**

Individual steps of the workflow are explained in more detail below. Furthermore, references to further literature are given. The purpose of these explanations is to provide readers with inspiration and initial ideas on how to implement strategic H&C planning in their municipality. The steps are also visualised on the [actionheat.eu](http://actionheat.eu) website.

## 1 Vision & commitment

The **first step** is for political and technical decision-makers to develop a vision and common objectives on H&C in correspondence to their local environmental targets (e.g. climate, air quality) in line with national and EU targets, economic targets (e.g. circular) and/or social targets (e.g. energy poverty). This is about **setting the direction** together with local actors and stakeholders on: **where do we want to go, what do we want to achieve by when, and so on**. Workshop formats embedded in a transparent, participatory process are suitable for this. The main outcome of this step is a common vision and understanding about the whole process.

## 2 H&C working and stakeholder group

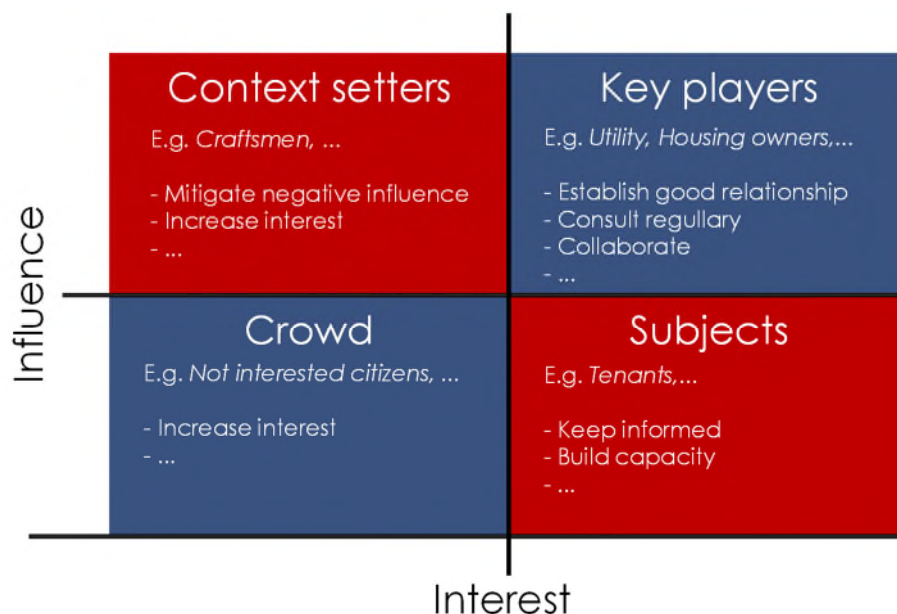


The **second step** is to set up a working group on H&C planning, which should be formally recognised within the local authority and suitably resourced. This can be done, for example, within the scope of responsibility of the urban planning department, as the process can be anchored here as a cross-sectional task. In any case, it must be ensured that i) cooperation with relevant municipal and external units takes place and ii) the group’s competences and authority are broad enough to actively influence the development of H&C within the municipality, e.g. by being able to influence the design of H&C in the development of new building and refurbishment zones. This step consists of two key tasks:

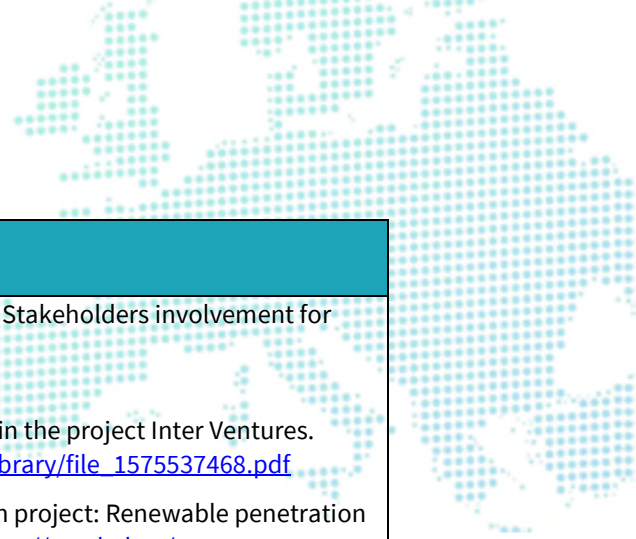
**Defining roles and responsibilities:** Determination of who is responsible for which organisational and operational tasks i.e. who coordinates H&C planning (and engages with policymakers), who provides technical support, data and information, etc. This step does not necessarily have to be completed at this point, as it may be necessary to define new responsibilities, change responsibilities, etc. in the course of the process.

**Engaging stakeholders:** This has two objectives. Firstly, to carry out **stakeholder analysis** by identifying and mapping relevant stakeholders and build on this to establish stakeholder management. Secondly, to form a stakeholder group, which is consulted during the work process to get feedback and agree on possible courses of action.

The core outcomes of step two are thus a **i) working group on H&C planning** and **ii) a stakeholder group for consultation**. As preparation for the formation of the stakeholder group, a stakeholder analysis can be carried out. First, relevant stakeholders are identified. Afterwards they are mapped. For example, according to the categories shown in Figure 2. This in turn leads to certain strategies for the stakeholder analysis. Steps three, four and five of the Workflow are technical steps that should be coordinated by the working group on H&C planning.



**Figure 2: Interest- influence matrix for stakeholder analysis**



## Tools and Literature

Thermos: Capacity Building and Train-the-trainer programme Module 6: Stakeholders involvement for adopting THERMOS. [https://www.thermos-project.eu/fileadmin/user\\_upload/THERMOS\\_Module\\_6.pdf](https://www.thermos-project.eu/fileadmin/user_upload/THERMOS_Module_6.pdf)

Jaansoo (2019): METHODOLOGY FOR STAKEHOLDER ENGAGEMENT within the project Inter Ventures. [www.interregeurope.eu/fileadmin/user\\_upload/tx\\_tevprojects/library/file\\_1575537468.pdf](http://www.interregeurope.eu/fileadmin/user_upload/tx_tevprojects/library/file_1575537468.pdf)

Ilieva, Puranik et al. (2018): Draft D6.1 – Stakeholders, actors and roles. In project: Renewable penetration levered by Efficient Low Voltage Distribution grids (RESOLVD). [https://resolvd.eu/wp-content/uploads/2019/03/D6\\_1\\_FV-rev1.pdf](https://resolvd.eu/wp-content/uploads/2019/03/D6_1_FV-rev1.pdf)

Zimmermann, Maennling (2007). Mainstreaming participation. Multi-stakeholder management: Tools for Stakeholder Analysis: 10 building blocks for designing participatory systems of cooperation. Federal Ministry for Economic Cooperation and Development. Available at: <https://www.fsnnetwork.org/sites/default/files/en-svmp-instrumente-akteuersanalyse.pdf>



### 3 Inventory and potentials

**Step three** is to provide a comprehensive overview for the initial situation: where is H&C consumed and in what quantities, how is it produced, where is the potential for renewable energy, what is the state of consumers (e.g. the renovation status of the buildings), etc.?

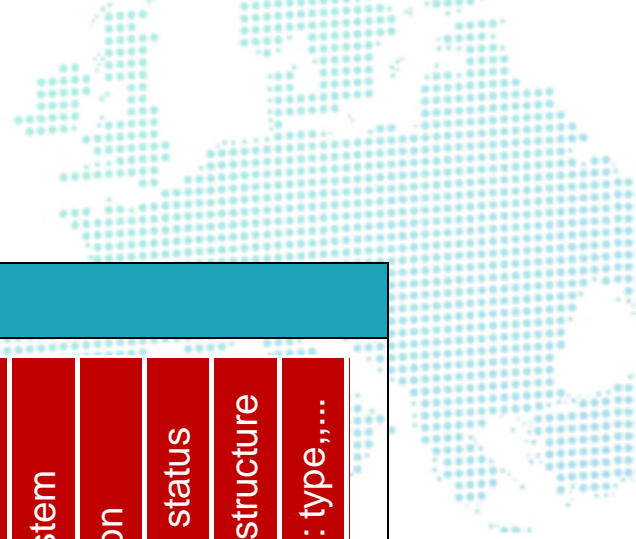
The analysis for the inventory provides an overview of the **existing heat demand**, the **energy sources** used and the **energy infrastructure** (heat grids, gas grids, electricity grids and heat sources).

The analysis provides a baseline from which to compare the potential for the use of **renewable energy systems (RES)**, **waste heat** and energy **efficiency measures (EE)** (i.e. building renovations).

The analysis is carried out in five steps described in the figure below. First, data is collected that is used to create energy balances. Then a mapping of H&C demand and infrastructure is carried out. This is followed by a potential analysis on renewable energies and energy efficiency, for which maps are also used.



**Figure 3: Steps for inventory analysis**



## 1. Data screening and collection

	Building type /use	Construction age	Heated area	Heating system	Consumption	Renovation status	Ownership structure	Companies: type,,,...
<b>Municipal or regional administration</b>								
<i>Geography, spatial (basic) data</i>								
Cadaster information systems	x		x					
3D-Building models								
Aerial images	x	x						
Historical maps	x	x						
<i>Infrastructure, building and housing</i>								
Residential building typologies								
Land-use /Zoning plan	x		x					
<i>Economy and labour</i>								
Business data								x
<i>Politics, population, society</i>								
census data	x	x		x				
<b>Energy companies</b>								
Gas supplier				x	x			
Chimney sweep data				x				
<b>Own data collection</b>								
On-site visit	x	x						
Owner surveys	x	x	x	x	x	x	x	x
<b>Existing databases</b>								
Environmental atlas, Energy atlas,...	...	...						

In step 1, a data framework on heating and cooling in the municipality is compiled. E.g. how much energy is consumed? Which energy sources and technologies are used? What is the energy status of the buildings in the municipalities? etc. Above is an example of a data screening, where different data sources are put in the context of their use in heat planning.



2. Creating energy balances

Sector



- Households
- Commercial
- Industry
- Mobility

Application



- Heating
- Hot Water
- ICT
- etc...

Fuels for Heating



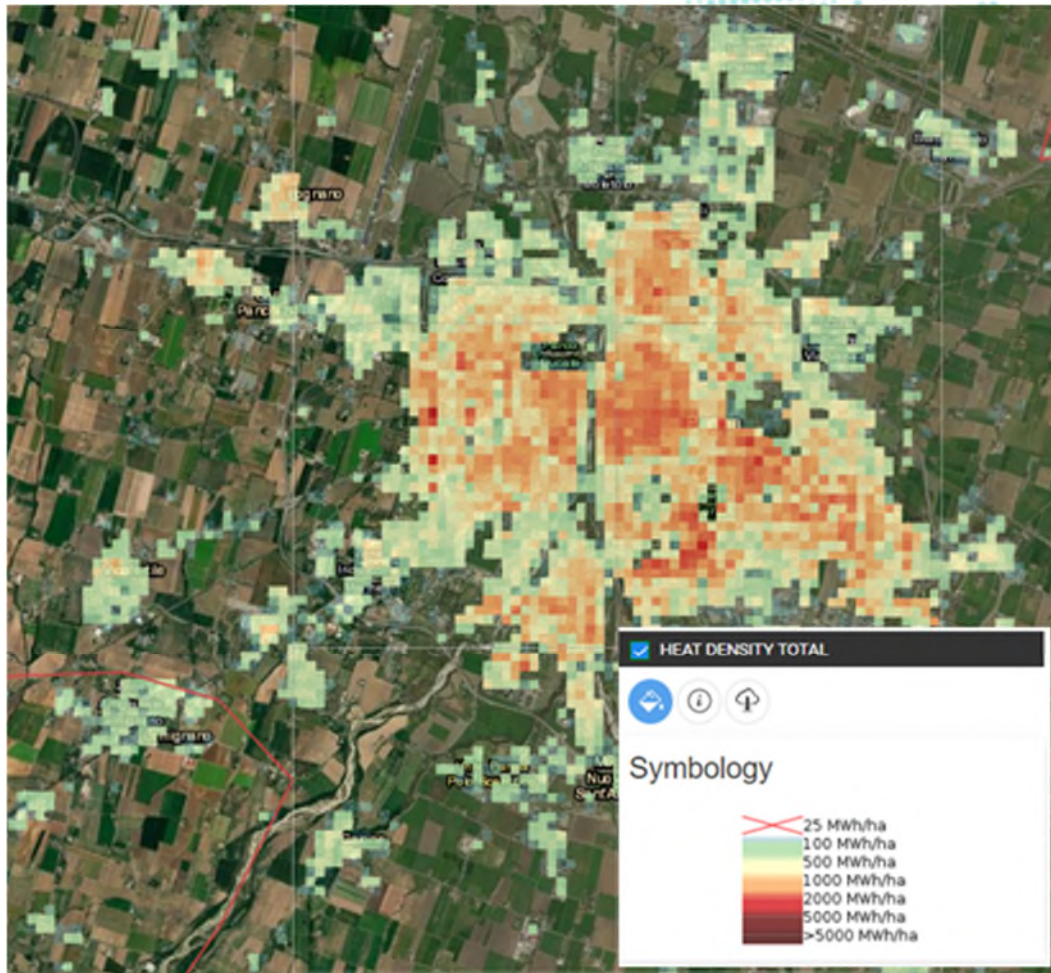
- Natural gas
- District heating
- Heating oil
- etc...

etc.....

In step 2, energy balances are prepared, differentiated according to consumption sectors, energy carriers and applications. These provide an overview of the status quo. Example diagrams are shown above.



### 3. Mapping of H&C demand and infrastructure



In step 3, H&C demand maps are created and the existing infrastructure and heat generators are mapped.

This step is important for planning, i.e. expanding/setting up heat networks.

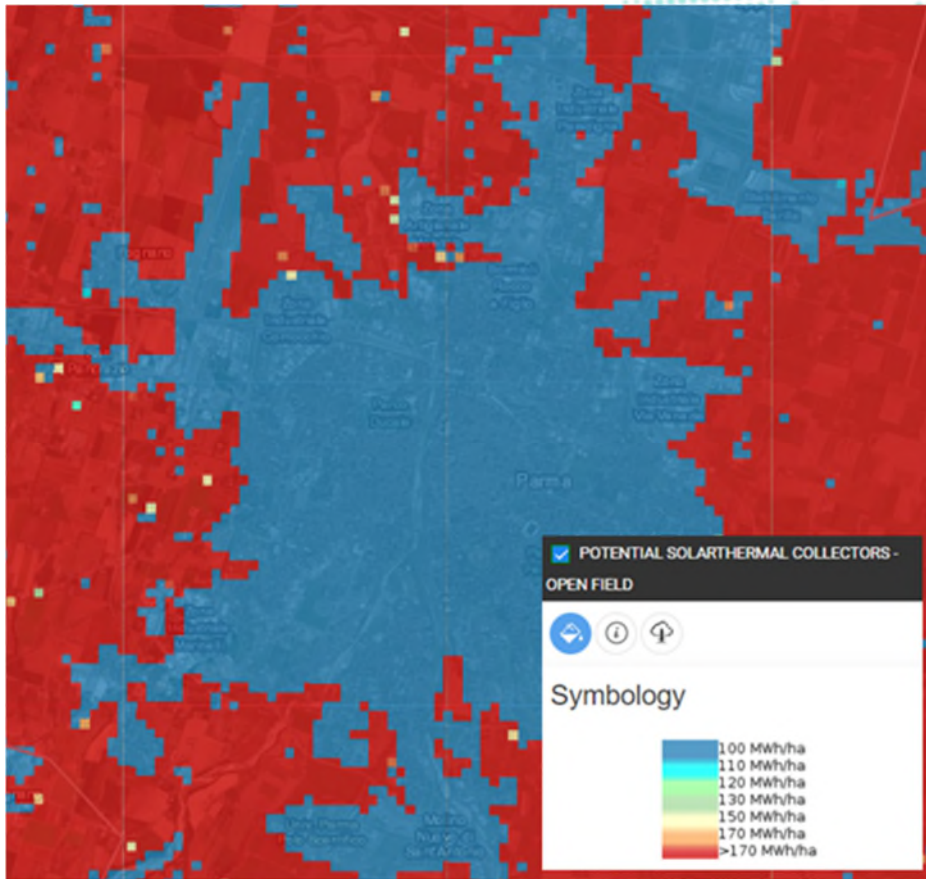
Data management (e.g. file formats) and appropriate visualisation must be planned.

The Hotmaps tool (<https://www.hotmaps.eu/map>) provides open source infrastructure for data storage and visualisation. It can be also implemented on clients' servers.





#### 4. Potential for renewable energy sources (RES)



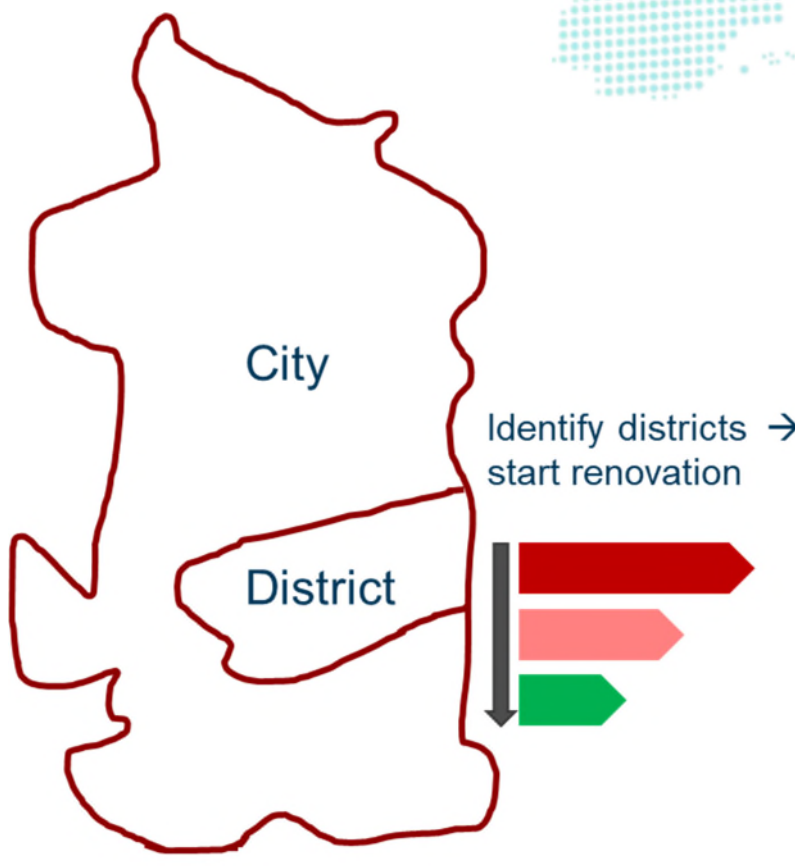
In step 4, the availability of renewable energy for the production of heating and cooling is analysed. E.g. solar thermal and geothermal energy, biomass, excess heat from industry and municipal wastewater.

Information and data from which projects can be directly derived are particularly helpful here. For example, the planning of large scale heat pumps may benefit from knowing which open spaces can be used for solar thermal energy, at which locations geothermal energy is conceivable, or whether waste heat flows or water flows are available.

However, data from public tools such as HotMaps, PETA, etc. can be used as a first point of reference.

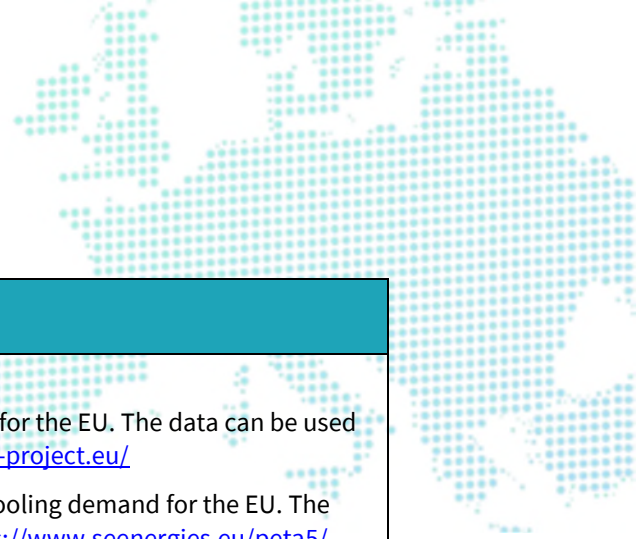


5. Potential for energy efficiency (EE)



In step 5, the potential for reducing the H&C demand within the municipality is analysed. It is particularly important to characterise the energy performance of the buildings and to identify districts where intensive renovation campaigns should be carried out.

A visualisation in GIS is helpful in this context. Further information on the energy performance of buildings (definitions etc.) can be found in the EU Buildings Stock Observatory (BSO).



Tools and literature for inventory & potentials	
Inventory analysis	<p>The EU project Hotmaps collected data on heating and cooling demand for the EU. The data can be used directly or downloaded from the online platform: <a href="https://www.hotmaps-project.eu/">https://www.hotmaps-project.eu/</a></p> <p>The Pan-European Thermal Atlas (Peta) collected data on heating and cooling demand for the EU. The data can be used directly or downloaded from the online platform: <a href="https://www.seenergies.eu/peta5/">https://www.seenergies.eu/peta5/</a></p> <p>Another possibility is to use data from housing statistics (e.g. ZENSUS in Germany). However, these still have to be processed for each individual case and combined with characteristic values for energy performance.</p>
Potential analysis	<p>Initial, rough data and potentials for RES and EE in the municipalities can be determined with the help of the public tools listed below. However, these data are only a starting point. A refinement of the data with the help of public administration data, data collection, etc. is usually necessary.</p> <ul style="list-style-type: none"> <li>• Several RES-maps: <a href="https://www.hotmaps-project.eu/">https://www.hotmaps-project.eu/</a></li> <li>• Waste heat potential: <a href="https://www.waste-heat.eu/">https://www.waste-heat.eu/</a></li> <li>• Photovoltaic Geographical Information System: <a href="https://joint-research-centre.ec.europa.eu/pvgis-photovoltaic-geographical-information-system_en">https://joint-research-centre.ec.europa.eu/pvgis-photovoltaic-geographical-information-system_en</a></li> <li>• Potential for geothermal district heating: <a href="http://geodh.eu/geodh-map/">http://geodh.eu/geodh-map/</a></li> <li>• Energy Performance of buildings: <a href="https://www.bpie.eu/knowledge-hub/">https://www.bpie.eu/knowledge-hub/</a></li> <li>• Potential analysis of different renewable energies: <a href="https://www.hotmaps-project.eu/">https://www.hotmaps-project.eu/</a></li> <li>• Potential analysis of different renewable energies: <a href="https://www.seenergies.eu/peta5/">https://www.seenergies.eu/peta5/</a></li> </ul>

## 4 Zoning

In **step four**, the aim is to define sub-areas and neighbourhoods with special characteristics that are to be supported particularly intensively with measures for a climate-neutral H&C supply. For example, these may include expansion areas for district heating or areas in which particularly intensive renovation is to be carried out. Step four is closely interlinked with step five, in the sense that both steps are iterative. For example, the designation of areas can be the result of a “technical” scenario analysis.

**Zoning: Using urban development methods for planning H&C measures**

Zoning is a method of urban planning in which the urban area is divided into so-called zones. Each of these zones may have its own planning and building regulations, which may differ from those of other zones. For example, size and dimensions of properties and their type of use (residential, commercial, etc.) are specified. In addition, requirements for the construction of buildings may be specified.

Zoning therefore offers opportunities to influence the development of the H&C sector in numerous places. For example, it can be specified that all newly constructed buildings in a certain zone meet certain minimum energy standards.

Moreover, zones that are particularly predestined for district heating can be identified. In addition, areas can be zoned according to the energy status of the buildings in them, e.g. to analyse in which areas renovation campaigns would be particularly effective.

Tools / Literature
<p>How the zoning step can actually be implemented within the framework of municipal H&amp;C planning depends on the local administrative procedures, but especially also on the legal framework. There is therefore no blueprint. Suggestions on how to link spatial planning and energy planning can be found in reports from Horizon 2020 projects.</p>
<p>Ball et al. (2011): Integrated Urban Development Approach Targeting at Energy Efficient Residential Areas. <b>Contains 13 illustrative practical examples.</b> <a href="https://www.deutscher-verband.org/fileadmin/user_upload/documents/Brosch%C3%BCren/Urb.Energy_Integrated_urban_development_WP3_manual.pdf">https://www.deutscher-verband.org/fileadmin/user_upload/documents/Brosch%C3%BCren/Urb.Energy_Integrated_urban_development_WP3_manual.pdf</a></p>
<p>Hemis et al (2017): Integrating energy in urban planning processes – insights from Amsterdam/Zaanstad, Berlin, Paris, Stockholm, Vienna, Warsaw and Zagreb. <a href="https://ec.europa.eu/research/participants/documents/downloadPublic?documentIds=080166e5b3cb48d9&amp;appId=PPGMS">https://ec.europa.eu/research/participants/documents/downloadPublic?documentIds=080166e5b3cb48d9&amp;appId=PPGMS</a></p>

## 5 Scenarios

**Step five** involves developing and narrowing down technical scenarios that can lead to the realisation of a carbon neutral H&C sector. Scenarios may be extreme (best-case/worst-case) or particularly relevant or typical.

The goal is to identify scenarios for which the stakeholders are strongly committed and which have a high chance of success.

For the development of scenarios for H&C planning, the first step is to make projections. On the one hand, on possible developments of future H&C demand; on the other hand, on possible future developments of H&C production (i.e. supply).

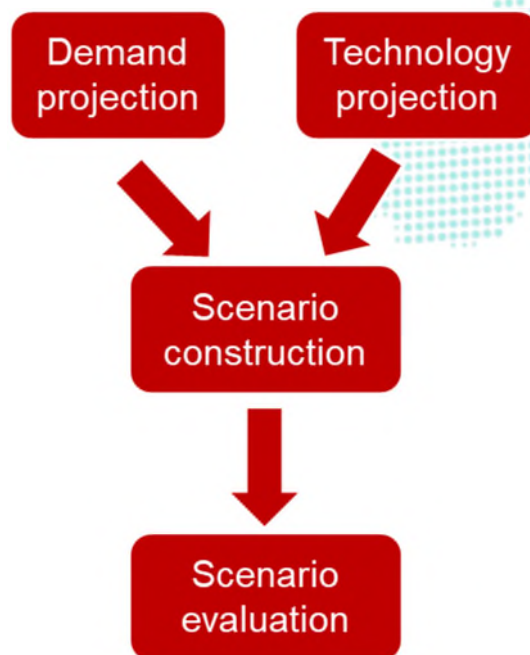
For the construction of scenarios, the projections are then varied and combined with each other in different ways. For example, renovation activity can be assumed to be higher or lower, the connection rate to district heating can be varied, etc.

Usually, target scenarios are developed, i.e. those that achieve the goal of a carbon neutral H&C sector.

The developed scenarios can be analysed and compared using various key indicators. A common key indicator is the cost of heat. However, it is more important to discuss the opportunities and risks of the developed scenarios with the administration, municipal utilities and other stakeholders.

Here, different aspects of the local heat transition strategy can be highlighted and a better understanding of the future challenges can be provided. For example, a SWOT analysis may be used for this aim. After the comparison, a scenario should be agreed on. On this basis, measures or options for action should be developed on how these scenarios can be achieved.





**Figure 4: Scenario construction and analysis**

Tools / Literature on Scenarios
American Planning Association (2021): Scenario Planning. <a href="https://www.planning.org/knowledgebase/scenarioplanning/">https://www.planning.org/knowledgebase/scenarioplanning/</a>
Dieckhof et al. (2016): Consulting with energy scenarios. <a href="https://energiesysteme-zukunft.de/en/topics/energy-scenarios">https://energiesysteme-zukunft.de/en/topics/energy-scenarios</a>
Prohaska et al. (2020): D6.3 Heating and cooling strategies for pilot cities – Frankfurt. Chapter 6. <a href="https://www.hotmaps-project.eu/wp-content/uploads/2020/10/Hotmaps_D.6.3_Frankfurt-HC-Strategies_FINAL_reduced.pdf">https://www.hotmaps-project.eu/wp-content/uploads/2020/10/Hotmaps_D.6.3_Frankfurt-HC-Strategies_FINAL_reduced.pdf</a>

## 6 H&C transition strategy

**Step six** is about agreeing on a **strategy with milestones** comparable to a **roadmap** and supporting the development of **spatial planning policies** to help implement the roadmap, for example through facilitating private development and investment. The scenarios from step five form the basis of this step and will typically involve workshop discussions with stakeholders. The outcome of step six is a strategy in the form of a roadmap with strategic goals (e.g. increase the renovation rate by X% by 2030) set within the framework of the scenarios considered most promising by as many stakeholders as possible.

To develop the transition strategy, **roadmapping** is a suitable solution. Roadmaps provide decision-makers in business and politics with an overview of the interrelationships, conditions and opportunities of a change process over time. Through an intensive examination of future opportunities and risks, the actors in politics and business can specify upcoming development steps and responsibilities. Thus, the roadmap process not

only serves to identify and structure strategies but also to communicate development goals and their framework conditions.

### Roadmapping: Illustrating a complex transition over time

There are different definitions of a roadmap. A roadmap is a graphical representation of change processes over time. What they have in common is (i) a reference to the future (but not a prediction), (ii) a chronological linking of the aspects depicted and (iii) working towards a vision or goal.

Roadmaps usually have several layers. In political-strategic roadmaps, these layers often map the drivers and barriers to the desired transition, as well as measures to steer change towards the goal. A simple exemplary layer design is given in the following figure.

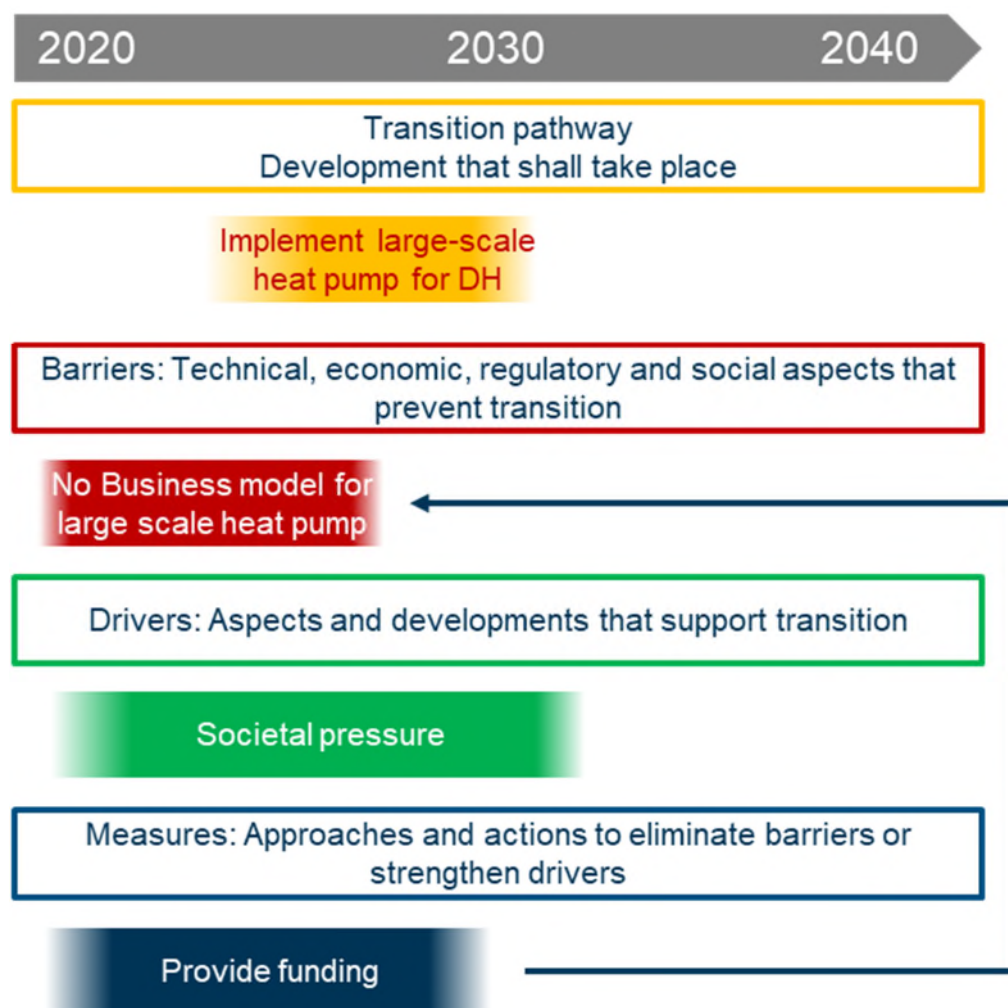
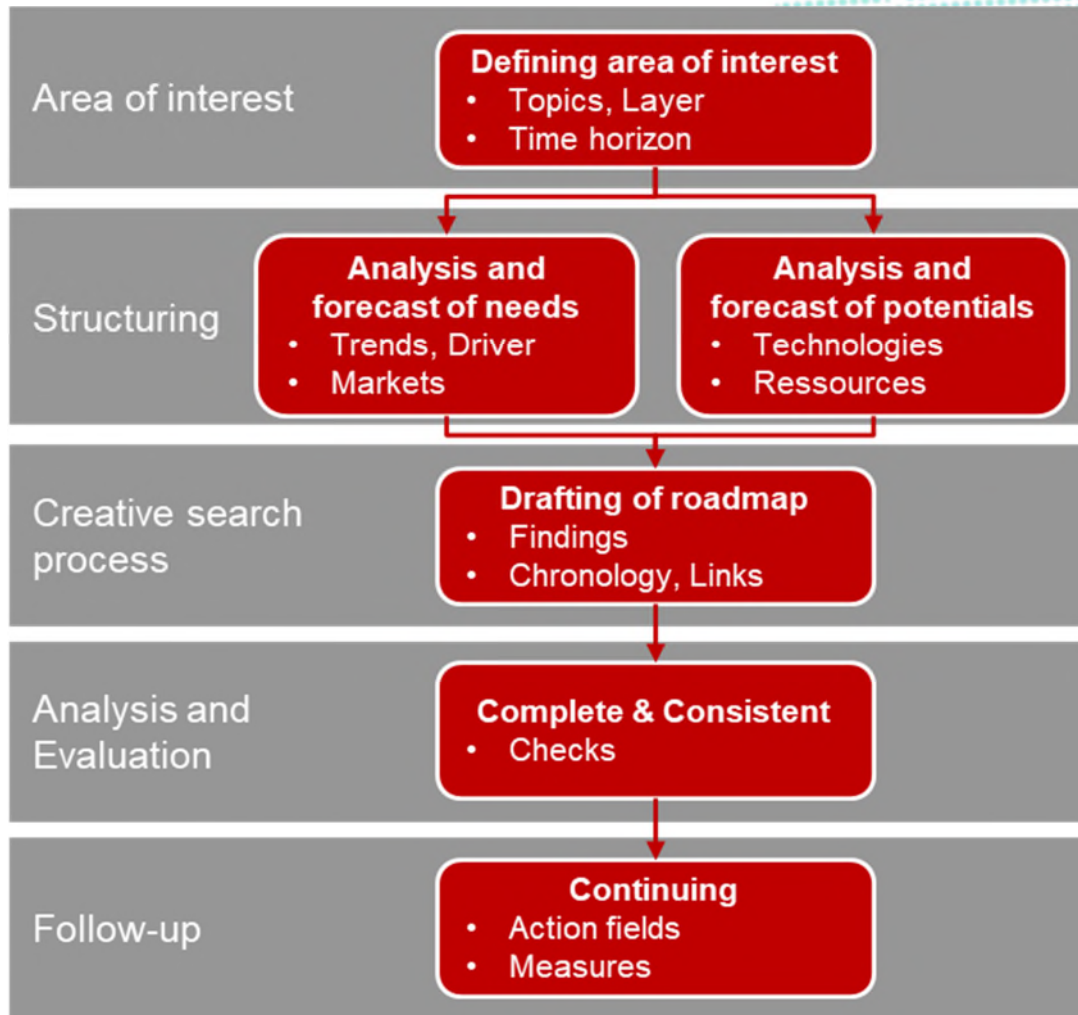


Figure 5: Exemplary roadmapping layers to develop an H&C transition strategy

### Roadmapping: Questions and steps

Roadmapping can be done in five steps. First, the area of interest is defined by determining which topics and time horizons are considered. This is followed by structuring. Here, needs and potential analysis as well as forecasts help. Based on this, the roadmap is drafted in the third step by organising the findings

chronologically and linking them to each other. This is followed by an analysis of completeness and consistency. In the last step, concrete fields of action and measures are derived from the roadmap.



**Figure 6: Roadmapping steps**

Tools / Literature on Scenarios
<p>Rob Phaal: AN INTRODUCTORY GUIDE TO STRATEGIC AND TECHNOLOGY ROADMAPS. Centre for Technology Management, Institute for Manufacturing, University of Cambridge. Internet: <a href="https://1mof951r5i942b5d2k1qlf8j-wpengine.netdna-ssl.com/wp-content/uploads/IfM_Roadmapping_V8.pdf">https://1mof951r5i942b5d2k1qlf8j-wpengine.netdna-ssl.com/wp-content/uploads/IfM_Roadmapping_V8.pdf</a></p> <p>Roadmapping templates and resources. Internet: <a href="https://engage.ifm.eng.cam.ac.uk/roadmapping-templates/">https://engage.ifm.eng.cam.ac.uk/roadmapping-templates/</a></p> <p>Case Studies. Internet: <a href="https://engage.ifm.eng.cam.ac.uk/roadmapping-case-studies/">https://engage.ifm.eng.cam.ac.uk/roadmapping-case-studies/</a></p>



## 7 Defining policy & measures

Step seven aims to underpin the strategy identified in step six with appropriate measures. For example, if the strategic goal is to increase the renovation rate by a certain percentage by 2030, step seven is about finding measures to achieve this. The working group plays a central role on H&C planning in interaction with the stakeholder group. The working group develops proposals and consults the stakeholder group. Part of this step should explicitly identify projects that have the most potential to be successfully deployed and that the municipality can actively influence. For example, the expansion of the district heating network in a particular area or the refurbishment of residential buildings in a particular neighbourhood. Measures may also include influencing and engaging with planning policy teams to explore the evidence base that would be needed to support and formally adopt appropriately-worded policies which will help to achieve the strategic aims defined in Step 6. The results of this step are therefore measures and project proposals that help to achieve the strategic goals.

### Strategic H&C planning: embedding in overarching policies.

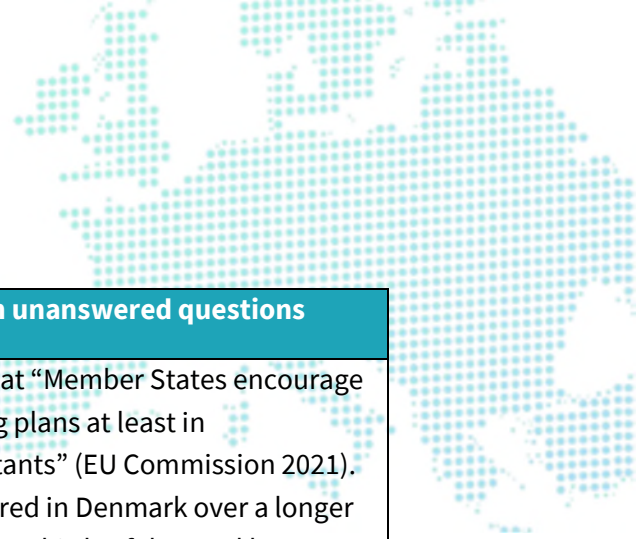
Strategic H&C planning should be embedded in a policy framework. European policies provide the framework at the highest level, in particular directives that have to be transposed into national law by EU Member States (EED, RED, EPBD, etc.). Below that, national, regional and local policies set the framework. In this regard, strategic H&C planning can be understood as a local policy. An essential task of strategic H&C planning is therefore to map the policy framework for the municipality under consideration in a structured manner in order to identify the municipality’s room for manoeuvre. The following table can help with this.

	Project policies	Heat and building policies	Energy system policies
Local policies			
National policies			
European policies			

**Table 1: Exemplary table to structure policy framework for H&C planning**

While mapping the policy framework, it is particularly important to capture the local framework in detail. In other words, what framework and policy options does the municipality have to influence H&C planning? Spatial planning issues are essential here. However, these differ from country to country, region to region and municipality to municipality. Therefore, there is no blueprint of which policies and measures are effective in the context of H&C planning. For example, formal measures (compulsory connection to DH, requirements in zoning plans, etc.) can be very effective, but may have little chance of success depending on the legal situation and the willingness of stakeholders. In contrast, informal measures (information campaigns, action plans, etc.) may be adopted without strong resistance, but may have little impact. The crux of the matter is therefore to find policies and measures that can be legally implemented, are supported by stakeholders and contribute significantly to the climate goals.





**H&C planning: a new policy instrument in many countries with unanswered questions**

In the Ff55 proposal for the revision of the EED, the EC suggests that “Member States encourage regional and local authorities to develop local heating and cooling plans at least in municipalities with a total population of more than 50,000 inhabitants” (EU Commission 2021). However, heat planning has so far only been institutionally anchored in Denmark over a longer period of time. There, in 1976, the goal was formulated to cover two thirds of the total heat consumption through “collective heat supply” by 2002. This was followed in 1979 by the Heat Supply Act, which aims to “promote the best economic use of energy for heating buildings and supplying hot water, and to reduce the country’s dependence on mineral oil” (Sovacool & Martiskainen, 2020 based on Mortensen and Overgaard, 1992). In this context, municipalities were obliged to prepare heat plans in which they set priorities for heat supply in certain areas (zoning) and determine locations for future heat supply units and district heating networks. Since in Denmark municipalities make the final decision on heat planning and development (cf. Danish Energy Agency, 2017) , they have been able to control the development of district heating. Thus, Sovacool & Martiskainen (2020) summarise that from ”1976 to 2011, Denmark blended small-scale decentralised community control with national standards and policies to promote district heating so it reached 80% of household needs.“ Johansen and Werner (2022) conclude that a ” cooperative mind-set, welfare state values and the notions of energy efficiency-, availability-, independency- and sustainability were all pivotal for the evolution of the district heating networks throughout Denmark. Other unique features of the Danish district heating sector include **large-scale collective heat planning, the mandatory connection, the non-profit principle, the same approximate price for customers irrespective of heat density, and the relatively high average price of district heating.**“

Against the background of the Danish example, the question arises which role heat planning should, can or will play in other countries and regions (formal vs. informational significance). Furthermore, which policy framework it is subject to, as this essentially determines which measures can be carried out.

Economidou, M., Todeschi, V., Bertoldi, P., D'Agostino, D., Zangheri, P., & Castellazzi, L. (2020). Review of 50 years of EU energy efficiency policies for buildings. *Energy and Buildings*, 225, 110322.

Johansen, K., & Werner, S. (2022). Something is sustainable in the state of Denmark: A review of the Danish district heating sector. *Renewable and Sustainable Energy Reviews*, 158, 112117.

Kranzl, L., Hummel, M., Müller, A., & Steinbach, J. (2013). Renewable heating: Perspectives and the impact of policy instruments. *Energy Policy*, 59, 44-58.

Sovacool, B. K., & Martiskainen, M. (2020). Hot transformations: Governing rapid and deep household heating transitions in China, Denmark, Finland and the United Kingdom. *Energy Policy*, 139, 111330.

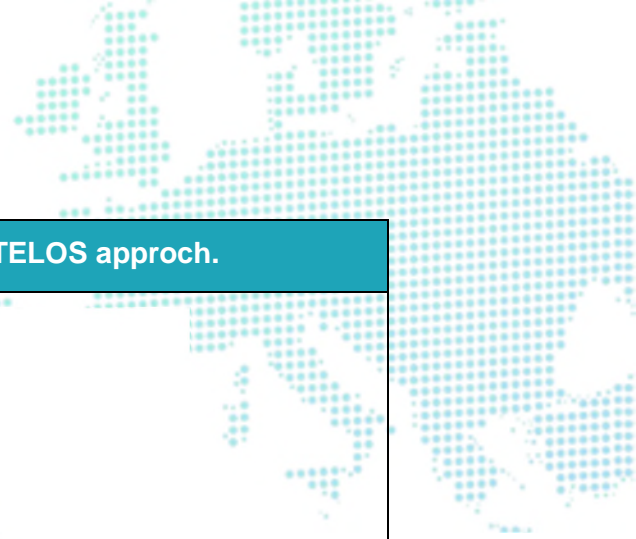
## 8 Project feasibility

The project proposals identified in the previous step are checked for feasibility in **step eight**. Usually, engineering consultancies, technical service providers, etc. are contracted for this. The investigation usually includes a survey of the local conditions and an examination of the technical, economic and legal framework conditions. At this point, the support of tools can be of great help, e.g. by analysing possible district heating expansion areas with THERMOS, or using similar tools to examine the assumptions underlying the H&C arrangements for major development proposals.

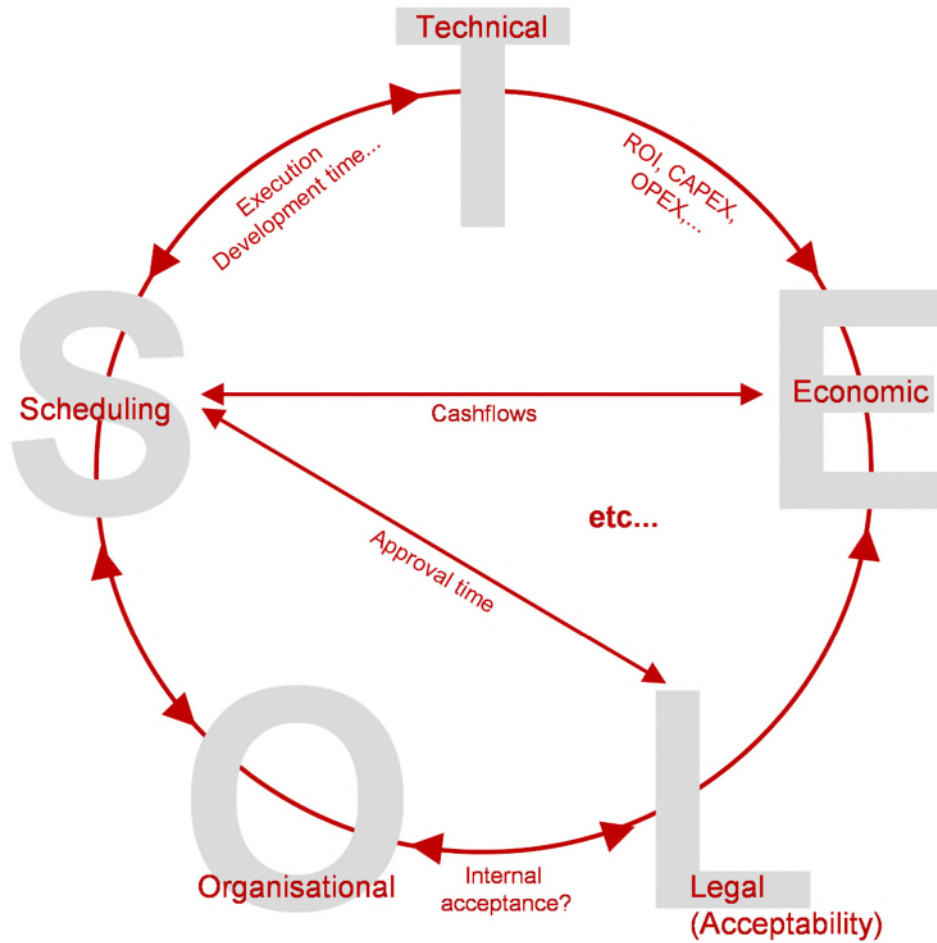
The aim of the feasibility study is to create a decision basis whether a project has the potential to be successful (and therefore justifies further investment), should be redesigned or stopped. Therefore the study must be conducted in an objective and unbiased approach under the participation of all key stakeholders.

### Structuring feasibility studies

The TELOS approach can be used to structure feasibility studies. Here, technical (T), economic (E), legal (L), operational (O) and scheduling (S) aspects are analysed in a structured way. The aim is to obtain a comprehensive picture of the project, also taking into account the risks. The following figure shows a simplified approach to structure questions using TELOS.



**Inspiration for structuring project feasibility studies: the TELOS approach.**



<p><b>Technical:</b> Are resources and the technology needed available and accessible? Are there any technical preferences, constraints etc.? How about technical risks? ...</p>
<p><b>Economic:</b> Can the project meet its financial goals (ROI,...) ? Are there additional sources of funding (e.g. public support schemes)? ...</p>
<p><b>Legal:</b> Are there regulations in place which prevent/support the project’s success? Are the underlying regulations varying over time? Could citizens complain against the project? ...</p>
<p><b>Organisational / Operational:</b> Are the right stakeholders involved in the project and agree with the project goals? Do all stakeholders know what to do and are they aware of their competencies and responsibilities? Are the involved stakeholders capable of dealing with the project or are external/additional experts required? ...</p>
<p><b>Scheduling:</b> Are there any external/internal deadlines for the projects success? Are the stakeholders aware of the possible time constraints? ...</p>
<p>TELOS Approach <a href="https://www.scienceopen.com/hosted-document?doi=10.14293/S2199-1006.1.SOR-.PPT0ZRS.v1">https://www.scienceopen.com/hosted-document?doi=10.14293/S2199-1006.1.SOR-.PPT0ZRS.v1</a></p>



## 9 & 10 Project planning and implementation

### Project planning

Detailed planning of the selected projects follows in **step nine**. So at this point it is already clear that the project is to be carried out. Project planning is thus closely intertwined with implementation and can also be considered together. This step is usually also outsourced to service providers, ideally to those who subsequently take over the turnkey implementation. However, the municipality should take an active facilitating role where possible, for example, wherever it can help to speed up and facilitate the planning process (e.g. official procedures).

### Project implementation

In **step ten** the projects are implemented, and the municipality, usually represented here by spatial planning, climate change or energy teams, will often take on a coordinating and steering role, e.g. by building partnerships between stakeholders and speeding up administrative processes. The result of this step (as supported by the previous three steps) are implemented projects.

### Project management: there is no one size fits all

For planning and implementing projects, there are various concepts in project management literature. Fundamental information, standards, best practice examples and guidelines are published e.g. by the Project Management Institute (PMI). Nevertheless, there are no one-size-fits-all solutions, but it is rather a matter of defining suitable approaches for the respective project and organisational form.

### Agile methods for complex H&C projects

H&C planning projects are usually complex, i.e. they are affected by uncertainties arising from future events that are unclear or difficult to predict. For example, when it is unclear whether citizens will oppose a project in the future or not. Agile management methods can be helpful in such projects. This involves principles of action, such as the Agile Manifesto, which originates from software development, for example. The focus here is on small, manageable development steps with prompt feedback loops from the customer.

#### Inspiration for project management

Literature on project management is available on the website of the Project Management Institute (PMI).  
Internet: <https://www.pmi.org/learning/library#sort=relevancy>

PMI (2017): Agile Practice Guide. Internet: <https://yourdigitalaid.com/wp-content/uploads/2021/02/Agile-Study-Guide.pdf>

Information on agile project management. Internet: <https://www.apm.org.uk/resources/find-a-resource/agile-project-management/>

Informationen on the agile manifesto. Internet: <https://blog.logrocket.com/product-management/12-agile-manifesto-principles-how-to-adopt-them/>





## 11 Review, report and upscale

**Step eleven** takes place in parallel with step seven and the associated steps (8-10). The aim here is to regularly determine whether the measures are working, the funded projects are functioning, etc., and to initiate improvements based on this. If it is foreseeable that the strategic goals cannot be achieved, this step should also help to counteract this.

### The monitoring process

For review and reporting, a monitoring process should be implemented within strategic H&C planning. Typical questions to be answered to define the process are listed below.

#### Objectives

- What is to be monitored?

#### Indicators

- Which indicators are used to measure the achievement of objectives?
- How are the indicators collected and analysed?
- ....

#### Time and format

- What time periods are used for monitoring?
- How will the monitoring be documented?
- ...

#### Responsibilities and consequences

Another important aspect is to define consequences resulting from the monitoring. Who decides whether objectives have been met or not? What are the consequences of not achieving the objectives, and who has the authority to take action to counteract this? For instance, it could be decided that monitoring reports are submitted to the mayor, who then initiates countermeasures in case of non-achievement.

#### Inspiration for monitoring

Trutkowski, C., Odzimek, W., Żarkowski, R. (2022): STRATEGIC MUNICIPAL PLANNING. Council of Europe. Centre of Expertise for Good Governance. Internet: <https://rm.coe.int/smp-strategic-municipal-planning/16807470ea>. *The document provides various ideas for the conception of a strategic heating and cooling planning process within municipalities.*



[www.actionheat.eu](http://www.actionheat.eu)



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