

# Module 4: Implementation of Sustainable Planning - Implementation of Sustainable Planning

## Background

Strategies for fostering the use of renewable energies and efficiency - which are described in Module 3 - have to fill with life through planning and implementation. These aspects will be presented in this Module 4. However, main sources of greenhouse gases in the EU are e.g. **Energy supply** (31%), **Transport** (20%), **Industry** (20%), **Households/Commercial buildings** (16%). These are the sectors which should be in the focus of planners to reduce greenhouse gases. A comprehensive implementation of sustainable energy supply/demand or carbon sinks are needed. This has an impact on the future design of existing and coming spatial- and settlement structures. In many cases is the existing infrastructure old and renovation/modifications are needed anyway. The **transformation of infrastructure** is a key element of a smart future in our Cities. Issues regarding energy efficiency, decentralised renewable energy production/supply are closely connected to spatial planning on national, regional and local level. Key sectors and activity fields for spatial- and town planners to build up future able regions/cities/quartiers are therefore:

**Heat/Cold:** Fostering the efficient production of/and supply with emission low- or free and renewable heat/cold energies. Minimisation of heat/cold supply in settlement structures like living, commercial, trade. Fields of activity: e.g. energy efficient settlement structures and heat- and cold supply, storage

**Power:** Fostering the efficient production of/and supply with emission low- or free and renewable power energies. Fields of activity: e.g. renewable power production, transmission and storage

**Mobility:** Reduction of transport volumes, shifting to environmental friendly mobility forms and creation of traffic light settlement structures. Fields of activity: e.g. cities and regions of short ways (compact city) and improvement of efficient supply

**Efficiency / Retrofitting:** Reduction of the demand of energy (heat, cold, power) for example in offices or households.

**Carbon sinks:** Reduction and avoidance of land use. Fields of activity: e.g. green land, forests and moor (see Module 1)

For planning of a post fossil society town- and spatial planners have to work together with stakeholders of different sectors. This includes for example in municipalities the departments for environment, energy, housing, mobility, green/parks, infrastructure to name a few.

Planners have the possibility to work on different spatial planning levels:

1. Regional

2. City
3. Quartier
4. Plot

For a lot of spatial- or town planners the "**quartier**" level become more and more important. It is a good size for the implementation of efficiency (e.g. retrofiting) and decentralised modern heat/power supply techniques (e.g. combined heat and power plant).

With sensible planning and implementation a decentralised energy production can be build up also in the neighbourhood of settlements or inside of housing areas.

## Specific content

Module 4 is structured in six different sub modules. Content of the six sub modules is a summary, information to finance, technical details, innovation and social issues as well as further information to links etc. An overall planning aspect, the safeguarding of energy and heat supply routes and of locations for production of renewable energies, is not described in a specific sub module because this is relevant for all listed fields of activity! Furthermore the planning to safeguard of carbon sinks is not described here (see Module 1). But you will find detailed information to the following issues (sub modules 4.1-4.6):

- Heat supply (sub module 4.1): including items like biomass, solar heat, cogeneration of heat and power (CHP), grids, geothermal,
- Power supply (sub module 4.2): wind power, photovoltaic, water power, geothermal energy, biomass
- Mobility (sub module 4.3): creation of low-traffic areas, bicycle traffic concepts, local public transport concepts, compact city - city of short distances
- Energy storage (sub module 4.4): thermal energy storage, pump storage, compressed air energy storage, energy to fuel, etc.
- Energy efficiency /Retrofitting (sub module 4.5): demand/energy use management (incl. buildings) as an issue of a pro-active planning approach
- Heritage/Monuments (sub module 4.6): implementation of sustainable energies in historic urban quarters/buildings (heritage-protected)

Good practise example will show how these different techniques for production of renewable energies or to efficiency measures were planned and implemented.

## Main goal

The main goal of the module is to widen the practical knowledge concerning procedures and techniques which are important for the implementation of post-fossil planning. Partners learn real procedures to production, locations, supply routes and grids for sustainable/ renewable energies and energy efficiency in spatial planning at regional, local and urban quarter level.

## Additional information

**Links to visualisation samples of utilising renewable sources:**

1. [Solar Energy](#)
2. [Wind Energy](#)
3. [Hydro Energy](#)
4. [Geothermal Energy](#)
5. [Bio Energy](#)