



Accelerated energy transition through biodiversity-sensitive assessment

Improved decision-making basis for efficient spatial management of innovative ground-mounted photovoltaics

**as part of the INTERREG C Europe funding programme,
'A Greener Europe/Renewable Energies' funding axis**

Sustainable spatial development can only be implemented in accordance with international and EU law if the interests of climate protection and biodiversity are taken into account equally. Particularly in the accelerated expansion of the energy transition, effective legal instruments and methods must be further aligned that provide substantive law execution on the nexus of accelerated energy transition and biodiversity protection, providing planning authorities a legal security basis for assessment-based decisions to be made.

Project fraemwork

Duration: 01.01.2025 - 31.12.2028 (4 years)
Funding volume: Total project volume: € 2.4 million, of which 80% ERDF funding
Project lead: IZES gGmbH (Associated policy authority)

Background

The decision-making authorities in the participating project regions (Germany, Switzerland, Lithuania, Austria, Malta, Ukraine) are facing new methodological challenges in the context of the revised international, European and national legal acts relating to energy and climate in order to implement the acceleration of the energy transition in a legally secure and efficient manner.

The political acceleration roadmaps of the EU, the Member States and Switzerland have a direct impact on the respective procedures for spatial planning, urban land-use planning and authorisation in the regions. For example, the EU Renewable Energies Directive are changing and shortening the existing planning and authorisation procedures for renewable energies with particular reference to the weighting of nature conservation concerns.

According to the latest drafts of the national energy and climate plans of the participating regions, solar energy is expected to play a decisive role in the energy transition. It is expected that the EU will install an average of around 45 GW of solar capacity per year this decade. The expansion targets will also lead to increased land requirements for the implementation of the energy transition in the participating project regions and thus represent an ongoing challenge for the protection of nature and landscape and public acceptance.

The EU strategy for solar energy responds to this by, among other things, massively promoting innovative photovoltaic forms for multiple land use. In addition to optimising the spatial distribution, this multi-functionality can help to mitigate the conflicts between different usage interests or between uses and protection requirements. The prerequisite for this spatial control and multi-functional design of the systems is a detailed spatial assessment that maps the spatial conflict potentials and possible multi-functionalities on an area-specific basis.

Challenge:

To date, the authorities have little or no experience of the ***spatial expansion strategy*** and the integrated ***nature conservation assessment*** of these **innovative PV multiple land use concepts**. In the meantime, the first project authorisation requests for innovative PV have been received at municipal level in the participating project regions, as the innovative technologies are already ready for the market.

Objective:

The BiodlvErSe project supports the relevant authorities responsible for the strategic expansion of solar radiation energy together with the authorities responsible for nature conservation in the regions to achieve greater legal certainty in the implementation of the legal requirements for the accelerated expansion of innovative photovoltaics.

Against this background, the methodological and procedural challenges in administrative practice in relation to innovation photovoltaics are addressed in particular. This includes in particular making multiple land uses on agricultural land, recultivation areas (e.g. moors), water bodies (e.g. offshore, artificial water bodies as drinking water reservoirs, artificial and natural lakes) as well as other biodiversity-sensitive nature conservation areas assessable and realisable. **As a result, a transferable methodology for spatial assessment and region-specific procedural guidelines will be developed and provided by a European competence partnership to enable efficient decision-making processes.** All results will be prepared in such a way that they can be used for digital transfer in the public sector.

Legal Instruments

1. **Expansion strategy for renewable energies in the regions:** With broader regional studies on potential areas, the superordinate planning level could provide municipalities with a qualified decision-making basis for the preparation of urban land-use plans, which would enable a significantly more efficient expansion of PV utilisation. The criteria to be developed in this regard for a corresponding nature conservation spatial assessment of innovative photovoltaic systems also serve the municipalities to prepare further individual spatial assessments adapted to the data bases and values in the municipalities by means of potential studies. Supplementary studies on the spatial relevance of implementation with regard to grid integration are also provided.
2. **Assessment guidelines of the supreme nature conservation authorities:** The installation of photovoltaic systems on open spaces generally represents an impact on nature and the landscape. The assessment of the intensity of the impact varies depending on the type of area, whereby both the performance and functionality of the ecosystem and the landscape can be affected. For certain forms of utilisation, area-integrated PV can also represent an enhancement of the area - whereby the initial state must always be used as a reference for an appropriate assessment of the environmental impact. The impact assessment as well as the avoidance and compensation of the impact must be evaluated as part of the consideration at (higher-level) planning and project approval level. For innovative PV on biodiversity-sensitive areas, criteria for spatial evaluation, potential assessment and individual case approval are therefore to be prepared that can be used in approval procedures for digital transfer in the public sector.

Partnership:

The four-year project duration enables for the first time the exchange of experience for the further development of regional legal instruments between 'learning regions' in Europe to increase the legally secure nature conservation assessment practice at the spatial planning and project approval level. In the context of the political urgency roadmap, the following regions are feeding in initial empirical experience for methodological and procedural capitalisation:

- **Germany, Saarland in particular on Agri-PV**
 - IZES gGmbH (project management + 'Associated Policy Authority Saarland')
 - Associated Policy Authorities: Ministry of Economic Affairs, Innovation, Digital and Energy; Department F: Energy, Industry and Services Policy; Unit F1/Principles of Energy Policy
 - Ministry of the Environment, Climate, Mobility, Agriculture and Consumer Protection, Department D: Nature Conservation, Forestry
- **Latvia, Vidzeme, in particular on peatland PV and recultivation measures for old peat extraction areas**
 - Regional planning agency: Vidzeme Planning Region

- **Switzerland, Canton of Bern in particular on nature conservation biodiversity areas PV and Agri PV**
 - Canton of Bern, Economic Energy and Environment Directorate, Office for Agriculture and Nature
- **Austria, in particular on water PV**
 - n.n.
- **Malta, in particular on waterborne PV (lakes, off-shore, drinking water resources)**
 - Ministry for the Environment, Energy and Regeneration of the Grand Harbour, Malta
- **Ukraine, thematic integration in particular on Agri-PV**
 - Lviv Oblast / Lviv region

Further involvement of associated stakeholders: The monitoring of project activities by associated partners from science, politics and practice (monitoring committee) ensures the integration of current research findings and trends in the nature conservation and energy transition nexus (e.g., professional association RE Germany; National Bureau of Climate Impact Assessment Latvia, Agroscope-CH, University of Lüneburg, Bosch & Partner, Fraunhofer ISE, etc.). The criteria that are to be created for the expansion strategies are to be developed in detail with the regional planning agencies and together with the monitoring committee. The public, as a central actor responsible for implementation and acceptance, should participate in the development of the legal instruments in the regions at an early stage through ‘public discussion and learning transfer tables’ in order to integrate and ensure local values in the utilisation of natural resources. Access to up-to-date environmental information, participation in decision-making processes (procedural justice) and involvement in the further development of legal instruments are particularly in line with the provisions of the UNECE ‘Aarhus Convention’ under international law.