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SEA for an energy land use plan in Germany

Integrated (renewable) energy in the land use plan of Langquaid

Type of impact assessment	Voluntary Strategic Environmental Assessment (SEA)
Type of project/plan	Integrated Energy Land Use Plan
Climate change related issues	Increase in energy demand and subsequent land use conflicts arising from diverse land use claims
Influence of the SEA	Better selection of sites for renewable energy production; higher commitment of local community and politicians

The SEA for the Integrated Energy Land Use Plan of an ambitious German community followed a unique model with extensive public participation. This led to increased acceptance of and commitment to the project and the selected sites for renewable energy production.

Climate change in Langquaid

The Bavarian renewable energy policy sets ambitious targets for communities to move towards renewable energy strategies. The market town of Langquaid, located in lower Ba-

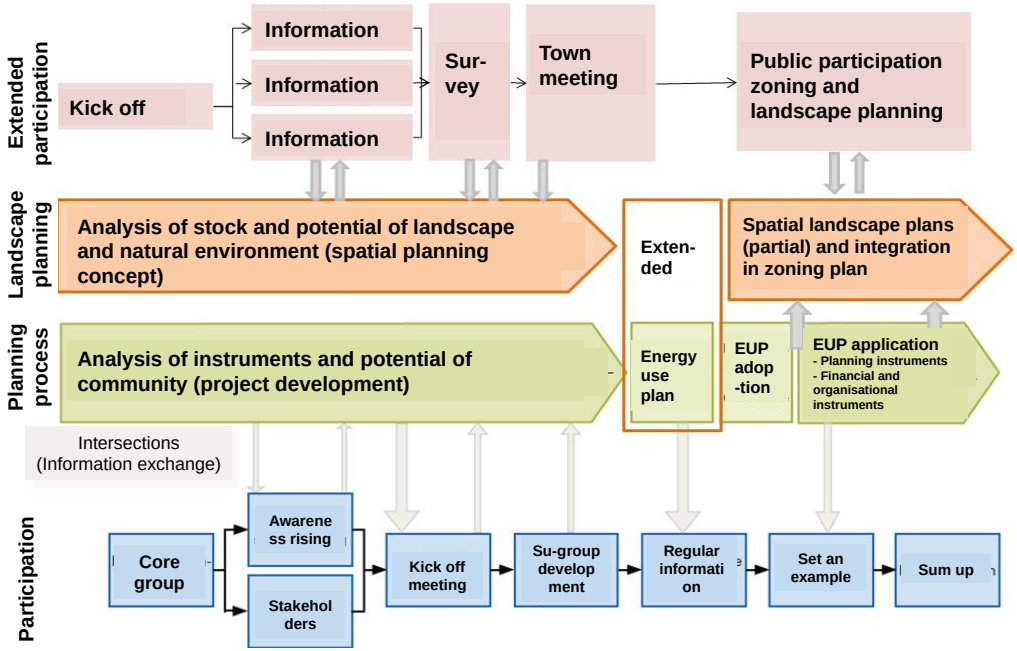
varia and home to 5,350 inhabitants, is the first community to start an integrated model project, combining ecological, social and economic aspects. Currently, half of the domestic energy consumption originates from fossil fuels. Langquaid developed broad, binding environmental principles and guidelines to be applied in all political decisions. In 2012, explicit climate change goals were formulated, based on the Kyoto Protocol, EU 20-20-20 targets, German legislation, and Bavaria standards. The ambitious goals include CO_2 equivalent reduction of 65% by 2020 (compared to 1990), 100% renewable energy by 2030, and annual reporting of achievements. All targets are set 5% higher than national targets.

To achieve these targets, Langquaid increases its efforts in energy saving and alternative energy sources. German legislation requires an SEA for this type of plan. Langquaid wants its strategies to be in line with other values such as nature and wildlife conservation, livelihoods and historic preservation. Therefore, it extended the SEA to a new model, the Integrated Energy Land Use Plan (ELUP). This involves citizens, landscape and spatial development in planning processes and investigates opportunities to deal with challenges through joint planning instruments.

Assessing climate change risks for the ELUP

The SEA follows a unique model (see figure), incorporating local processes into the provincial energy planning model to generate recommendations for locations of renewables. Contrary to existing models, this landscape based approach creates an open process, incorporates all citizens, acts as social mobilizer, and increases public acceptance of energy planning and resulting policies.

An inventory of regional landscapes and conservation areas formed the basis of the process. It documents protected areas and habitats, as well as local features deserving protection, and potential zones for compensatory measures. Based on these areas and additional restricting factors (e.g. planning policies, monument preservation), six potential sites for alternative energy sources (wind turbines and photovoltaic systems (PV)) were selected. These sites were subsequently used in an extensive participatory process with information sessions and a question-



Framework for integrating local planning processes (pink and orange) into the provincial energy planning model (green & blue)

naire. In a choice experiment, citizens played an active role in planning, by steering the type and site selection of alternative energy systems (AES). This helped to identify AES sites compatible with natural und social values, and decreased the risk of future climate change induced land use conflicts.

Climate smart alternatives in the SEA

Of the four potential wind turbine sites, two were rejected during community participation and one was subsequently dismissed by the council for monument protection. The two potential PV sites were both accepted. The resulting sites, which are in coherence with natural, social, and local planning capabilities, were evaluated in the SEA.

The SEA and ELUP have many benefits: (1) participation facilitates the screening process and the selection of AES; (2) the integration of landscape planning improves the envi-

ronmental assessment and development of mitigation measures; (3) extended participation contributes to the discussion of AES and their sites, including local preferences; (4) the process increases acceptance of planning and of the results presented in the SEA; (5) it significantly improves commitment by the local council and regional politicians; (6) the SEA embedded in the ELUP supports the definition of compensation and mitigation measures for the AES. Lastly, the SEA provides a monitoring strategy for the community.

Conclusion: Climate smart design of the plan

The town of Lanquaid developed a model for an integrated energy land use plan, leading to an improved local zoning plan. The quality of the SEA and the acceptance of the overall planning process profited from the ELUP. The early integration of environmental issues into the planning process increases the commitment and engagement of the local population in climate change understanding and adaptation. The objective of generating a citizen oriented energy land use plan and the incorporation of this plan into long-term regional planning was fully achieved.

Characteristics of climate smart(er) plan:

- Three-step approach applied ✓
- Climate smart(er) plan design ✓
- SEA increased commitment for plan ✓

Climate smart(er) because:

- Integration of landscape planning leads to better mitigation measures.
- Selection of locally acceptable AES sites decreases the risk of future climate change induced land use conflicts.
- The process increased awareness and commitment of the population on climate change issues.

This case is part of the publication 'Environmental Assessment for Climate Smart Decision Making: Good practice cases', published by the NCEA in 2017. See www.eia.nl for the other cases.