

## 4.5. EnAHRgie

<b>Project</b>	RRI and Renewable Energy – Conception of sustainable land use and energy supply at the municipal level (EnAHRgie)
<b>Organisation</b>	EA European Academy of Technology and Innovation Assessment GmbH
<b>Research location</b>	Bad Neuenahr-Ahrweiler, Germany
<b>Cooperation partners</b>	Scientific research institutions, local business associations, local financial institutions, local organisations and associations from civil society, local municipalities and cities and energy providers
<b>Team</b>	Immediate research team: three senior researchers, two junior researchers and two community contacts; furthermore nineteen researchers and thirteen local partners participated in the research on a regular basis
<b>Funding sources</b>	Federal Ministry of Education and Research (Innovation Groups “Sustainable Land Management”)
<b>Websites</b>	<a href="http://www.ea-aw.org/research/overview/enahrgie.html">http://www.ea-aw.org/research/overview/enahrgie.html</a> <a href="http://www.enahrgie.de">http://www.enahrgie.de</a> <a href="http://innovationsgruppen-landmanagement.de/en/innovationsgruppen/enahrgie/">http://innovationsgruppen-landmanagement.de/en/innovationsgruppen/enahrgie/</a>

### ORGANISATIONAL BACKGROUND ●●●

The EA European Academy was established as a non-profit corporation in 1996 by the Federal German state of Rhineland-Palatinate and the German Aerospace Center (DLR).

The project “EnAHRgie” is designed to develop methodologies, tools and guidelines enabling municipalities, local economies and civil society groups to launch a transition to a sustainable energy system. It is organised as an innovation group, see the organigram below. The innovation group is suggested by the funding agency and implemented by the research consortium. The approach represents a modification of the EA concept of an expert group for rational technology assessment used in about forty projects. In the case of EnAHRgie, it consists of two layers, an inner layer and an outer layer. The inner layer is a permanent group consisting of the main partners representing different stakeholder groups. The outer layer has a more flexible composition and consists of contacts of the inner group members. Depending on the issues being discussed, the inner layer can change the contacts in the outer layer to get feedback or information on how to proceed in the dialogue on the project.

Both layers of the innovation group are divided into a section of research institutions and a section of societal stakeholders. There are five research institutions involved, represented by about fifteen people and two universities with ten people. The societal stakeholders consist of local energy providers, local social groupings, regional banks, local business associations, municipalities and county representatives. Each of these societal stakeholders has a representative in the core research team (inner layer) representing multiple stakeholders in that stakeholder group. Within the outer groups every actor involved formally has an equal vote.

The innovation group provides input for a decision by developing scenarios, but the innovation group does not take the (legal) decision. The actors involved provide recommendations based on the scenarios, so they can all offer their own perspectives. They gain information and can build relationships and trust through positive engagement. There is no consent-based principle in the social clubs, but an approach based on mutual understanding, problem-fitting through reflexive discussions and looking at different point of view.



## FUNDING ●●●

The funding is provided by the Federal Ministry of Education and Research (Bundesministerium für Bildung und Forschung – BMBF), Innovation groups “Sustainable Land Management”.

## PROBLEM BEING ADDRESSED ●●●

The objective of EnAHRgie is to find common and innovative solutions to major obstacles facing the energy transition to a more sustainable energy system, and to provide tools, methodologies and guidelines to implement these solutions on the local level in Germany and the EU. The innovation group is made up of scientists and practitioners to investigate conflicts and barriers to renewable energy projects from technical, economical, legal, environmental, political, and social perspectives. By combining scientific knowledge with local expertise, the project aims to develop a socially robust, scientifically sound, and highly applicable concept of sustainable energy provision in the county of Ahrweiler as a model region. Based on this, it is then intended to derive more general tools, methodologies, and guidelines which will be tested and implemented in three additional case studies before being implemented throughout Germany and the EU. The project further includes a number of measures to support the extensive dissemination of these tools, methodologies, and guidelines in Germany during the final year of the project.

## RESEARCH DESIGN AND SOLUTION ●●●

The project is designed to involve local and regional stakeholders in the region of Ahrweiler, Germany in elaborating and implementing a concept of sustainable land use focusing on energy supply. The innovation group allows for cooperation between scientists (experts from the fields of sustainable land management, distributed energy systems, governance and participation) and practitioners from administrative bodies, regional politicians and regional energy suppliers.

The project follows a phased model of development. It begins with a definition phase, which is focused on the identification, recruitment and involvement of project partners, and the elaboration of methods and goals. This is followed by a development phase in which the innovation group builds a knowledge base, elaborates on the issues in the Ahrweiler region and finds innovative solutions to these problems. For the launch or test phase, these context-specific solutions are transferred into tools, methodologies and guidelines and continuously improved to implement these solutions on the local level in Germany and the EU. To achieve this, people from the various federal States are involved to show, explain and provide feedback on what is done in the developing phase. Finally, in the dissemination phase, local partners from the model region of Ahrweiler serve as ambassadors for the dissemination of the tools, methodologies and guidelines within their peer groups with concrete supporting measures planned.

The project has five key elements:

1. Innovation group to include relevant practical and scientific expertise and work in a trans-disciplinary way;
2. Development of a concept of innovation to evaluate and enable applicability and robustness. Identification of obstacles and tailoring the innovation to the environment;
3. Equipping the members of the innovation group to put the innovation concept into practice; development of the cognitive capacity needed to find and implement solutions;
4. Data integration and visualisation, a platform to bring in information and engage in discussion to create knowledge in such a way that everyone can use it and contribute;
5. Scientific advisory group to ensure scientific standards and quality and provide recommendations and answers to more general questions.

## GRAND CHALLENGE BEING ADDRESSED ●●●

The focus of the project is on the transition of energy production from major companies to more local production. Today the big four electricity producers own only 5% of the total production and the remainder is divided among many smaller producers, whose ownership is also decentralised. As a result, new organisations are emerging and various technologies for local production are putting pressure on land use. Especially in densely populated areas with high competition for land use, such as tourism, health facilities and spa operation, nature protection, and winegrowing and other food cultivation practices, governments must adopt new roles, e.g. at various governmental levels: municipal, local, regional and national. While formal procedures do exist, they often contradict each other. So this is mainly a social process, not only a political aim to take action on energy but local people and local actions can also find opportunities. The challenge is to include local people in order to develop the most robust, efficient, and sustainable solution while minimising the impact on the local population, economics, nature, and landscape.

## RESPONSIBLE RESEARCH AND INNOVATION ●●●

Stakeholder engagement and inclusion is addressed by the innovation group, which consists of researchers (mainly junior scientists and post-docs) and practitioners (administration, politics, energy suppliers, banks, NGOs), who do the majority of the work together. The group is complemented by a high-level expert advisory group providing targeted support on concrete questions and reflecting on more general issues. Selection of relevant actors for the innovation group takes place through an analysis of the local press, interviews with local experts, and an intensive process where all relevant stakeholders propose representatives from local municipalities, business associations, local banks, civil society clubs, and energy providers, by mutual agreement (see list of partners). The main rationale behind this procedure was:

- to gain widespread support for the project and ensure transparency;
- to include and provide access to relevant knowledge of local experts and networks;
- to create practical knowledge to supplement the (sometimes rather theoretical) scientific expertise;
- to avoid contradictions between major value commitments and interests;
- to build up local capacity for implementation and dissemination into other regions.

Stakeholders were committed because they are able to gain relevant information, share experiences and have a voice. Within the innovation group, the main methodology used was analysis of current potential, conflicts and barriers combined with discussions about evaluation criteria, indicators and scenarios for future energy supply. Anticipation of issues and the impact of possible innovations was covered by the innovation group when workshops were held to identify intangible factors, criteria and indicators of success, and to develop scenarios.

The representatives in the innovation group have the task of absorbing and translating relevant knowledge and information from their sector into the project. They also disseminate relevant results from the discussion in the innovation group to their own target group in the second layer of the innovation group (e.g. from the trade association to local companies, etc.). To ensure high quality and transparency, this process is supported by scientific experts on public participation who provide formats (focus groups, round tables, etc.) and support (e.g. moderation of round table discussions).

Short term visits by practitioners to the research institutes, intensive training courses in innovation methodologies, and an integrated data and visualisation platform provide for mutual knowledge development and a common understanding of relevant concepts, and build capacity for implementation. Using these tools, researchers and local partners work together in the EA Lab – a room in which multiple aspects of options can be visualised interactively on large screens – to co-design, discuss and disseminate different innovation options and scenarios.

The results of the project are communicated and discussed via diverse channels with those outside the project. Local parliaments and officials, business associations, stakeholder forums and public media were informed continuously via a web page, a flyer, newsletters, public workshops and reports in the local press. Various links to other local actors at different stages in the process of energy concept design and a flexible response to new developments through the second layer of the innovation group ensured that feedback from outside the project is considered. The composition of experts from inside and outside the region can change to acquire specific information or feedback. At regular intervals, about once every two months, forums, workshops, focus groups and local parliament hearings are organised and the settings for these are flexible to ensure that the voice of specific stakeholder groups is included. Beyond the immediate Ahrweiler region and its local stakeholders, the results of the research are communicated at scientific conferences and research networks.

## EVALUATION AND DISSEMINATION ●●●

The research is carried out in a relative large research group that relies on prior experience in these research areas. The group is well embedded in the local region and scientific community, with a good knowledge of the literature and conceptual analyses. Findings from the research are published in recognised journals. The project develops methodologies on how to set up a co-design process to analyse and dealing with barriers in the realisation of renewable energy supply on a local level and translates them into applicable tools and guidelines as solutions. The replicability of the tools and methods is relatively good and the research design is interesting for all who seek to set up an integrated sustainable local energy concept. Fourteen selected publications are presented dating from 2007, including four international journal publications, nine book chapters or books and one conference paper. With regard to references, three international references are provided. These tools can enable municipalities, companies, or civil society groups to design responsible concepts for a sustainable energy system and thus significantly advance local energy transitions in Germany.