



Tools for environmental protection: environmental impact assessments and strategic environmental assessments

Roads, business parks, refineries, large-scale incineration plants: constructing infrastructure and industrial sites has a significant impact on the environment. It is the task of the public authorities to assess how these schemes will affect people, flora and fauna in particular, but also soil, water, air quality and the climate.

In order to identify potentially adverse impacts on the environment at an early stage and protect public health, an environmental impact assessment (EIA) or strategic environmental assessment (SEA) is conducted ahead of certain types of projects or construction schemes. So when is it necessary to apply these tools? This is regulated by Germany's Environmental Impact Assessment Act ([*Gesetz über die Umweltverträglichkeitsprüfung – UVPG*](#)).

Environmental impact assessments (EIAs) for licensing procedures

The construction and operation of a hazardous waste incineration plant or the dismantling of a nuclear power plant require an EIA. Local residents, nature conservation organisations and the public authorities are involved in this process. The aim is to achieve transparency, identify potentially negative impacts on people and the environment and ensure that mitigation measures are integrated into project development.

Strategic environmental assessments (SEAs) for infrastructure programmes

An SEA is conducted in federal transport infrastructure planning, regional and area development planning, water resources and waste management, air pollution control and noise protection, for example. It is a systematic process which aims to ensure that environmental aspects are considered in strategic planning. It is therefore applied at an earlier stage, namely during project planning.

Interdisciplinary methods and many years of experience

The Oeko-Institut supports the competent federal and regional-state authorities in conducting environmental impact assessments and strategic environmental assessments. The Oeko-Institut's team of scientists, engineers and lawyers applies interdisciplinary methods which have proved their worth over decades. The main areas of work are:

- conducting environmental impact assessments for the decommissioning and dismantling of nuclear power plants, research reactors, interim storage facilities and other nuclear installations,
- screening of nuclear facilities' environmental impacts,
- strategic environmental assessments of nuclear facilities,
- expert opinions on the transboundary environmental impacts of other countries' nuclear facilities on Germany.

The Oeko-Institut experts

- make a preliminary assessment to determine whether an EIA is needed (screening),
- provide support for the project application conference (scoping),
- make recommendations on the parameters and methodology for the assessment,
- verify that documentation is complete and suitable for public consultation,
- provide support for technical meetings and public consultations,
- review and evaluate possible objections and expert opinions,
- draft a synopsis and a recommendation for assessment by the authorities, generally including proposed conditions and advice on impact mitigation, and
- produce the environmental report as the basis for public participation in the SEA.

The Oeko-Institut has access to a comprehensive professional network and can draw on many years of experience in conducting stakeholder and public consultations. This is particularly useful for controversial projects such as the construction of interim storage facilities for radioactive waste. Legal restrictions may apply to precautionary environmental assessments; in such cases, the Oeko-Institut's researchers make use of any discretionary scope that may be available in order to maximise the protection afforded to people and the environment.

Example: environmental impact assessment of nuclear power plant dismantling

A key challenge arising in connection with the phase-out of nuclear energy is the dismantling of nuclear power plants, which requires the assessment of a wide range of potential environmental impacts. In addition to the dismantling itself, it is often necessary to build and operate various new facilities, mainly for the conditioning and interim storage of radioactive waste. The Oeko-Institut's experts identify the factors which are likely to impact on the environment, such as noise, air pollution, contamination of soil and water or the release of ionising radiation, and

- analyse the factors with potentially adverse environmental impacts,
- characterise their direct and indirect environmental impacts,
- conduct qualitative and quantitative analyses,
- produce recommendations on how these impacts can be avoided or mitigated.

Most nuclear power plants are located along large rivers in order to ensure an adequate supply of cooling water. Although they are generally sited away from major cities, there may be small clusters of housing in their immediate vicinity – perhaps just a few hundred metres away. There may also be floodplain landscapes and nature conservation areas nearby. It can therefore be necessary to appraise the impacts of noise on birds and bats, for example; in many cases, special measures must

be taken to protect them. However, no legal limit values apply to such appraisals; instead, a case-by-case approach is adopted to determine whether serious adverse impacts can be ruled out.

As regards the impacts of radioactive substances, the evaluations by the Oeko-Institut's experts start well below the dose limits set in the German Radiation Protection Ordinance (*Strahlenschutzverordnung*). This approach is intended to fulfil the EIA's precautionary function and reflects the fact that no minimum threshold level can be set for radiation exposure.

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