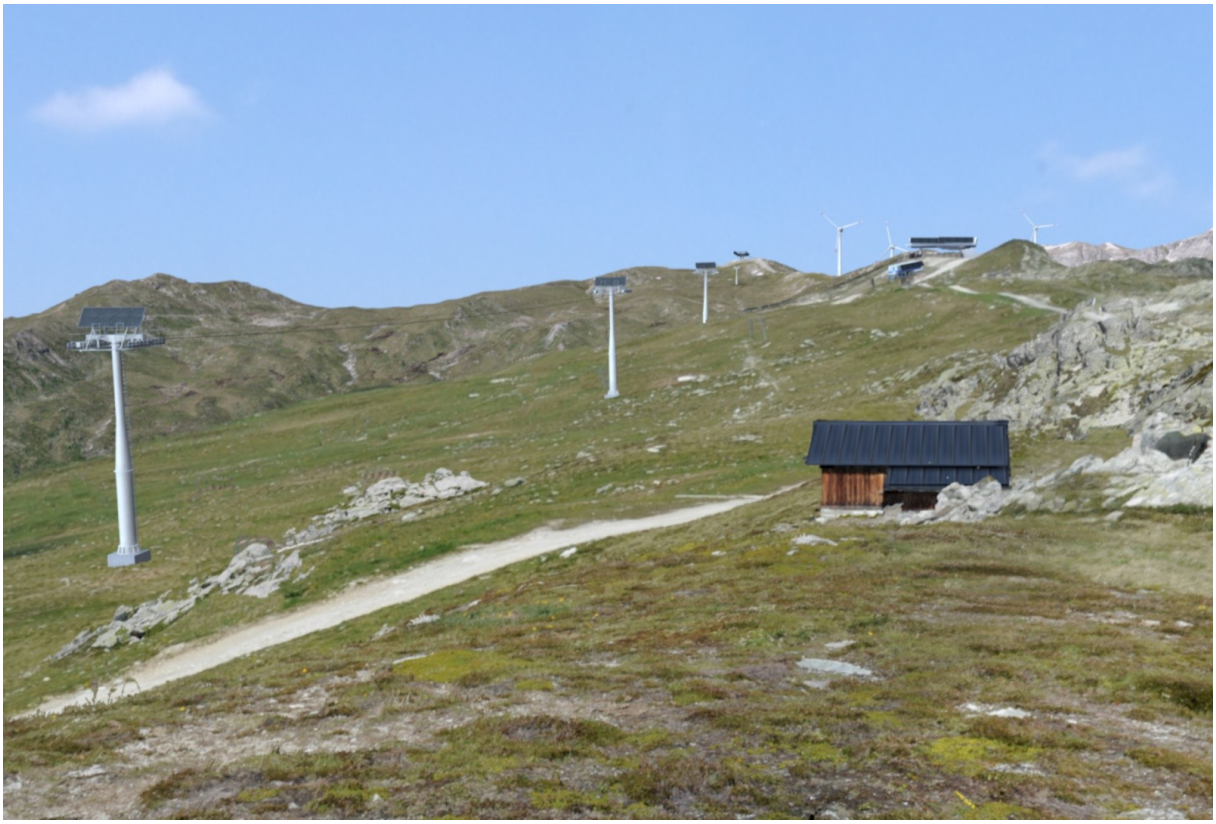
Energy
National Research Programmes 70 and 71

Project

Energyscapes

Recommendations for a landscape strategy with renewable energy systems

It is a dilemma: projects for renewable energy systems frequently fail due to the lack of social acceptance of landscape change. Researchers at ETH in Zurich are currently working on a study to find out in which Swiss landscapes such projects are approved and to what extent.



Renewable energy systems in landscapes that already contain infrastructures are accepted by the Swiss population.
Quelle: Reto Spielhofer und Ulrike Wissen Hayek

At a glance

- In the past, many projects for renewable energy systems were rejected in referendums.
- This is often due to the concerns amongst the local population about changes to the landscape.
- These concerns are not the same everywhere, however. A study shows where acceptance is greater and where changes are relatively undesired.

Not everybody likes to see wind farms with dozens of wind turbines. Large-scale photovoltaic systems in pristine environments also tend to be unpopular. In the past: when resistance amongst the population to renewable energy infrastructures existed, this was often linked to the general perception of the landscape. The benefits of new infrastructure do not always outweigh concerns about changes to the landscape.

The Energy Strategy 2050 aims to combine renewable energy infrastructure that needs to be integrated in the landscape. However, there is no Swiss strategy for landscape development with different types of such infrastructure. Furthermore, there is a lack of knowledge about how the population perceives and accepts the types in the different landscapes of Switzerland.

Adrienne Grêt-Regamey, Head of the ETH Chair of Landscape and Urban System Planning, therefore worked together with researchers to investigate the social preferences for renewable energy systems in various Swiss landscapes.

Preference study

In their project "Energyscape", the researchers show that the acceptance of such infrastructures is heavily dependent on the type of landscape, the combination of energy generation plants and the existing use of a site.

The preferences of the population were recorded systematically with the help of simulations of possible landscape changes. This allowed conclusions to be drawn about the acceptance of renewable energy systems in various Swiss regions.

Energieanlagen im urbanen Raum akzeptiert

Je unberührter eine Landschaft ist, desto grösser ist im Allgemeinen die Ablehnung von Energieinfrastrukturen. Im siedlungsgeprägten Flachland und auch in Alpenlandschaften mit touristischer Infrastruktur wie Skiliften sind Infrastrukturen der Solar- und Windenergie eher akzeptiert. Im Jura, den Voralpen und den weit entfernten Alpen sind weder Strommasten noch Windturbinen oder Solaranlagen gern gesehen. In Bergregionen, die urbanisiert sind oder touristisch genutzt werden, stossen solche Massnahmen auf mehr Akzeptanz. In stark urbanisierten Gegenden sind erneuerbare Energieanlagen am besten akzeptiert.

Dabei wirken sich vor allem grosse Mengen dieser Infrastrukturen negativ auf die Landschaftswahrnehmung aus, wie die Studie weiter zeigt. Interessant: Je höher die Anzahl sichtbarer Windturbinen, Photovoltaikanlagen oder Strommasten, desto stärker reagierten die Probanden körperlich auf das Bild.

Solar energy has it easier

One of the research results achieved so far is the following insight: the more pristine a landscape is, the greater the general rejection of energy infrastructure. Solar and wind energy infrastructure is more likely to be accepted in the lowlands by settlements and also in Alpine landscapes with tourist infrastructure such as ski lifts.

The study also shows that large quantities of these infrastructures in particular have an overall negative impact on the perception of the landscape. Furthermore, in the lowlands as well as in the hill and mountain areas, a combination of a small number of wind and solar energy plants is preferable to a scenario with a large number of such energy infrastructures.

An exception is the simple use of solar energy on roofs and façades. With this technology, the population also views a stronger expansion positively from a landscape perspective.

Recommendations for planners

In collaboration with energy and landscape experts, the researchers will formulate recommendations for Switzerland's various landscape regions.

Grêt-Regamey is hoping that the study findings will help planners to take possible obstacles and resistance, which is often generated by landscape concerns, into consideration from an early stage. This should enable socially acceptable landscape development to be encouraged with renewable energy sources.

Produkte aus diesem Projekt

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