Green electricity: What makes a quality product?

“Green electricity” is a somewhat open-ended term. There are major discrepancies between the concept of “green electricity”, as viewed from an ecological perspective, and the product that is actually sold by electricity suppliers as “green power”. Customers wishing to switch to another supplier should therefore start by comparing electricity products.

It goes without saying that green electricity should be generated entirely from renewable energy sources. The main issue of relevance, however, is whether the supplier is actively engaged in promoting, or is focused strategically on supporting, the energy transition, rather than simply keeping a note in its records of individual customers who are committed to green power and allocating “100% green electricity” to them.

Quality labelling: Recognising additional environment benefit

So how can a green electricity product contribute to the expansion of electricity generation from renewables? The key issue is to ensure that new renewable energy plants are built to supply green power. They should be additional to the plants which are being built anyway under the Renewable Energy Sources Act (EEG) and other government funding schemes. Over the medium term, only these additional renewable energies in the European electricity mix will squeeze conventional power plants – nuclear, coal- or gas-fired – out of the market.

However, a green electricity product can also contribute to the energy transition if the supplier utilises innovative methods to integrate the rising shares of renewable energies more effectively into the supply system. Examples are projects that support the rollout of storage-based solutions or help to achieve a better balance between electricity consumption and power fluctuations from wind or solar. E-mobility projects also fall into this category.

Initiatives such as these make a major contribution to reducing emissions of carbon dioxide (CO2), a greenhouse gas, and hence to protecting the climate in Germany. A green electricity product that benefits the energy transition in this way qualifies as sustainable and merits labelling as eco-friendly.

However, some supposedly “green” electricity products come from old power plants – obsolete hydropower plants, for example – which were written off years ago. In this case, no additional environmental benefit is created. What happens, instead, is that existing capacities are simply redistributed, so consumers purchasing these products do not change Europe’s power generation structures over the medium term.

What is “good” electricity? Guidance on choosing a power supplier

Quality labels are an important guide for consumers navigating their way through the complexities of the green electricity market. ok-power is a particularly good example. This label applies stringent criteria as a basis for comparing electricity products. The label is awarded by EnergieVision e.V., an association set up by the Oeko-Institut and Hamburg Institut Research gGmbH. Certification helps to create more transparency and trust in the green electricity market.

The consumer website EcoTopTen, which is run by the Oeko-Institut, also regularly compares the products offered by green electricity suppliers on the basis of stringent criteria and lists the green electricity tariffs available from various providers. Both these websites exclusively recommend green electricity products that offer an additional environmental benefit.

Sources of power: Guarantees of origin as a basis for reliable electricity labelling

A number of European directives regulate the labelling of power from renewable sources (RES electricity). These directives have been transposed into various items of legislation now in force in Germany. On behalf of the German Federal Ministry for Economic Affairs and Energy (BMWi), the Oeko-Institut has produced recommendations to progress electricity labelling in Germany and facilitate the disclosure of the RES volumes funded under the Renewable Energy Sources Act (EEG).

The aim is to increase the transparency, reliability and practicality of electricity labelling, mainly for the benefit of electricity consumers. The Oeko-Institut’s researchers recommend, for example, that suppliers continue to provide a breakdown for domestic consumers – who pay the major share of the costs of power generation under the Renewable Energy Sources Act – showing the volumes of EEG power in the energy mix for their specific electricity product. This ensures that consumers have reliable information about the volumes of RES electricity they are paying for.

However, with the disclosed share of EEG electricity supplied to domestic customers in 2019 already amounting to 52.9 per cent, this methodology makes it more difficult to differentiate between the various electricity products. As a consequence, only around half of the sources in the energy mix are accurately disclosed in electricity labelling.

How does the supplier produce or procure its electricity?

According to the recommendations, more transparent disclosure of the various electricity suppliers’ sources can be achieved with mandatory exclusion of the electricity volumes paid for by consumers under the Renewable Energy Sources Act from the overall fuel mix of suppliers, which they are also required to disclose. This overall supply company fuel mix should only show the breakdown of electricity sourced from the company’s own power production facilities or procured from certain upstream suppliers (including the power exchange) based on its individual operational decisions.

In Germany, details of the accounting methodology used for electricity labelling are set out in guidelines issued by the German Association of Energy and Water Industries (BDEW). However, use of this methodology is not mandatory. Furthermore, there is insufficient involvement of the power exchange. Both these factors increase the volume of electricity of unknown origin. The Oeko-Institut’s researchers therefore recommend that the accounting methodology described in the BDEW guidelines be treated as mandatory; they also recommend appropriate involvement of the power exchange and transparent disclosure of electricity of unknown origin as part of the procedure.

The final report also includes recommendations on disclosing the countries from which renewables-based electricity is sourced and on appropriate graphic representation and monitoring.

Energy-saving is key

No matter which electricity product consumers choose, energy-saving is the safest and most effective form of climate protection. Every kilowatt-hour of electricity not consumed reduces the amount of climate-damaging emissions into the atmosphere. There is scope for energy-saving everywhere; for example, you can buy devices which shut down equipment left in standby mode, or if you are shopping for new appliances, it's best to go for the most energy-efficient option.

Consumers who opt for certified green electricity to cover their energy needs remaining after taking energy-saving action make a major contribution to reducing their environmental footprint. The Oeko-Institut provides guidance and comparisons on the EcoTopTen website.

Further information

Ok-power – the green energy label: What is good green electricity? (In German)

Contact

Dominik Seebach
Deputy Head of Energy & Climate Division (Freiburg)

Oeko-Institut e.V., Büro Freiburg
Phone: +49 761 45295-227
Mail: d.seebach@oeko.de

Cristof Timpe
Head of Energy & Climate Division (Freiburg/Darmstadt)

Oeko-Institut e.V., Office Freiburg/Darmstadt
Phone: +49 761 45295-225
Mail: c.timpe@oeko.de

Oeko-Institut is a leading independent European research and consultancy institute working for a sustainable future. Founded in 1977, the institute develops principles and strategies for realising the vision of sustainable development globally, nationally and locally. Oeko-Institut is represented at three locations in Germany – Freiburg, Darmstadt and Berlin.