Which criteria should determine how green power is purchased to significantly advance the energy transition?

WWF intends to encourage acceleration of the energy transition with a focus on the procurement of green power, recommending that certain principles of quality are applied to purchasing electricity. They are part of the power procurement guidelines for bulk consumers.

These recommendations are designed to foster the expansion of renewable energies and augment existing subsidy systems, with a focus on wind power and photovoltaics. Hydropower and biomass will play a subordinate role in the future. Due to the negative impacts they have on the environment, they should not be expanded and the use of these forms of energy should be reduced. Conversely, the potential for geothermal energy should be exploited wherever this is technically possible.

WWF describes the procurement of electricity based on these principles as:
next generation green power.

The core elements of *next generation green power:*

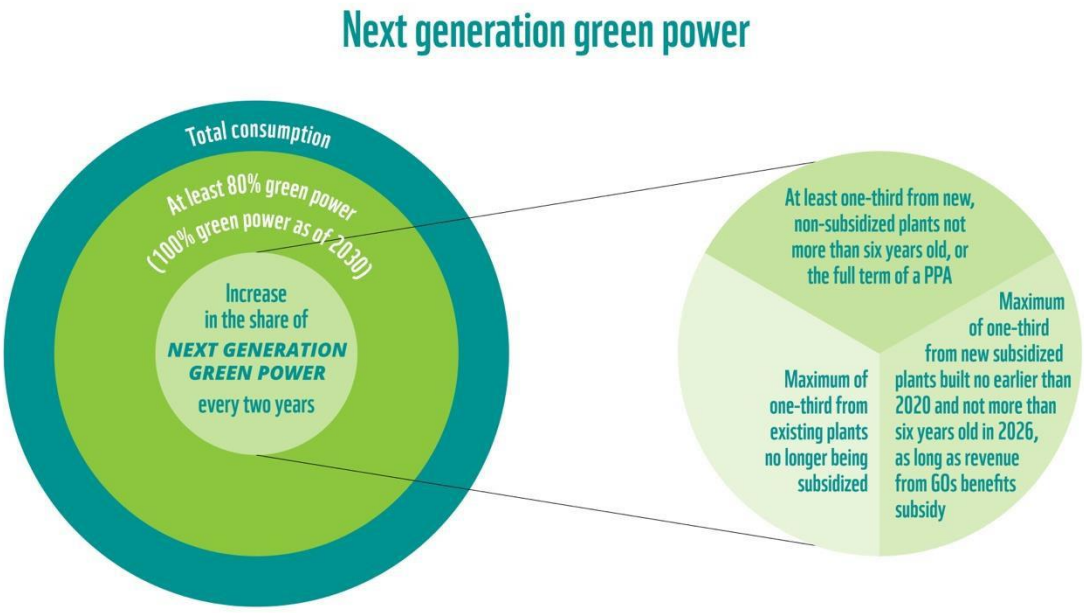
In line with WWF's recommendations, the share of green power in the total electricity consumption of a business or institution must increase to:

no less than 80% by 2025 and 100% by 2030.

- The highest possible share of *next generation green power* should come from **photovoltaic and/or wind power** plants, with this share increasing every two years and supplemented wherever possible with electricity from geothermal facilities (hereafter referred to as *"the share of next generation"*).

- The share of *next generation green power* is supplied:

    - to at least one-third (33%) from new but **non-subsidised** plants that have begun operations no more than six years earlier. Long-term green power purchase agreements (PPA) with new plants (PPA_{new}) are recognised as new plants for the entire term of the purchase agreement (such contracts typically run for 10, 12 or 15 years, for example).
    - to at most one-third (33%) **from plants** subsidised by the state AND which have not begun operating before 2020 and will not have been operating for more than six years as of 2026. The revenue they generate from **guarantees of origin (GOs)** should benefit those bodies financing the subsidies, for example through the reallocation of this revenue to taxpayers or consumers of electricity (in accordance with RED II, the EU Renewable Energy Directive, although only very small volumes are currently expected in this category).
    - to at most one-third (33%) from **existing plants where state subsidisation has reached its end and there are no plans for follow-up subsidies**.

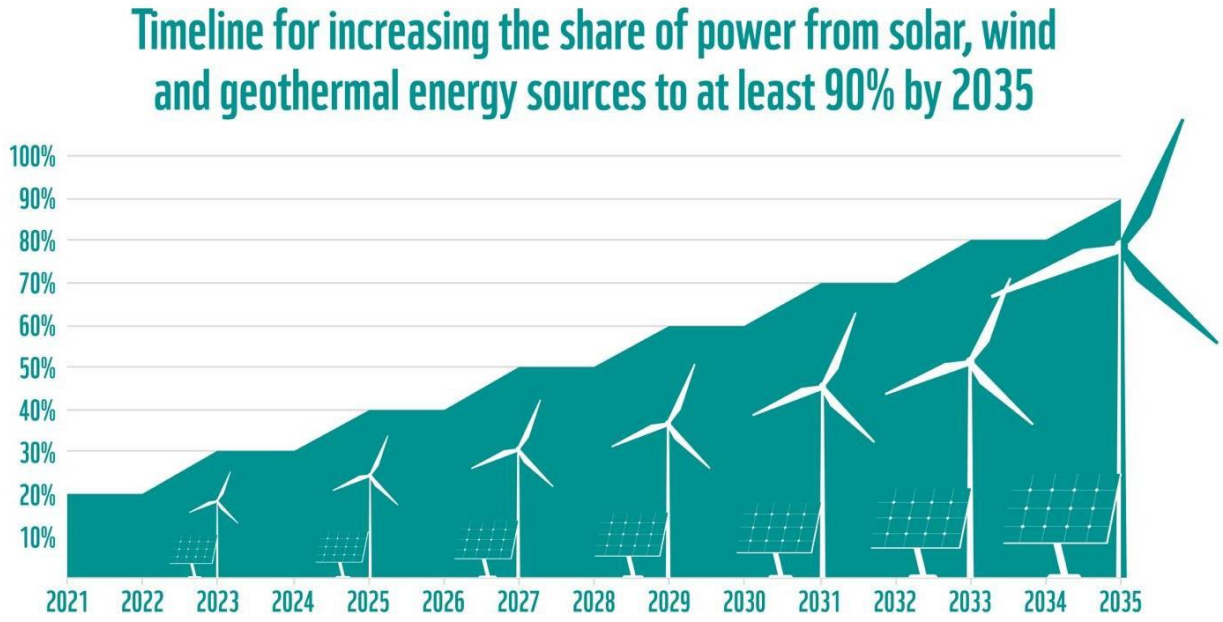


Explanations and details

Sources of energy:

WWF regards the use of **onshore wind energy, offshore wind energy, photovoltaics, concentrated solar power (CSP) and deep geothermal energy** as especially favorable to the energy transition. We clearly differentiate these forms of renewable energy from hydropower and biomass. Hydropower plants in Europe will have to meet the requirements of the EU Water Framework Directive as of 2027, but most of them will not do so in the foreseeable future. WWF considers the new construction of hydropower plants irresponsible, due to the variety of negative impacts these plants have on the environment. The construction of any hydropower plant is seriously disruptive to its natural surroundings. However, we do believe that the expansion of wind power and photovoltaics can be designed to be compatible with nature. With this in mind, we assume that hydropower will not make up an increasingly larger share of the power mix. Assuming as well that electricity consumption will increase (due to e-mobility and the use of heat pumps, for example), hydropower's share in the mix will actually decrease if its production in Europe does not expand. We therefore envisage that hydropower will make up at most 10% of *next generation green power* as of 2036.

WWF sees biomass having very limited potential as a sustainable energy source. Using it must be based strictly on a biomass management hierarchy, and biomass waste products should be used predominantly for industrial heating purposes. This waste must also meet strict environmental standards.[1]



[1] The top priority for cultivated biomass must be to use it as food/ fodder or as a raw material. If biomass waste is used for generating energy, this must not take a toll on the function of forests as carbon sinks. Biomass energy facilities must therefore use only waste materials from agriculture or biogenic waste collected from municipalities, the restaurant sector and the food processing industry. The cultivation of biomass must comply with standards for nature conservation, the expansion of organic farming, and food security that excludes the use of genetically modified organisms (GMOs). Biomass should not be imported as a source of energy.

Achieving quotas:

As of 2021, at least **20%** of green power procurement must include *next generation green power* generated by wind, solar, or geothermal energy. A bulk consumer adopting WWF's recommendations in 2023, for example, must then begin purchasing at least 30% of its electricity from wind, solar or geothermal power plants, and so on.

The share of *next generation green power* increases every second year by at least **10%**, until it reaches at least 90%. A bulk consumer should be sourcing at least 50% of its green power supply from wind, solar and geothermal energy from the seventh year on, and at least 80% after 14 years.

Since power production and consumption can fluctuate and deviate from projections, it should be possible to compensate supply gaps in one year with supply surplus in the following year.

"Non-subsidised" plants are those already existing plants that have reached the end of their state subsidisation term and are not making use of follow-up subsidisation.

Timeline of quotas for procuring *next generation green power*:

2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
20%	20%	30%	30%	40%	40%	50%	50%	60%	60%	70%	70%	80%	80%	90%

Latitude and planning security for green PPA_{new}

The successive increase of quotas in the procurement of *next generation green power* provides flexibility for purchasing electricity as well as for planning security with regard to power purchase agreements (PPAs) with new plants.

Intermittent power generation taken into consideration

WWF's recommendations also allow for values to be averaged over two to three years, meaning that if a quota is not met in one year, the gap can be filled or exceeded in the following year. This takes into account the intermittent production of wind and solar power.

Keeping track of changes in the market

WWF reserves the right to adjust quotas at a later time in compliance with regulatory changes (such as the EU's Green Deal) and with respect to planning and investment security for stakeholders if relevant storage capacities become available, for example, or if adhering to the recommended principles seems to be unrealistic.

Handling guarantees of origin (GOs) from new subsidised plants

WWF is aware of the sensitive debate on whether subsidised plants should or should not be allowed to generate additional income from the sale of guarantees of origin (GOs). However, WWF is against letting operators and owners of subsidised plants earn this additional revenue.

Such income, on top of the subsidy itself, would be acceptable only if it were either returned to the subsidising body, thus relieving pressure on the funder's budget, or if it increased the overall budget available for subsidies. The guarantee of origin can be marketed only once, and the sale of a GO would transfer its ownership to the recipient.

WWF also wants to shift the momentum of the energy transition exclusively towards **new plants** and its recommendations concern the purchase of power from subsidised plants built no earlier than 2020. A new subsidised plant should not be more than six years old in 2026.

In Germany, the sale of guarantees of origin (GOs) from plants subsidised by the national Renewable Energies Act (EEG) is currently not allowed due to the ban on double marketing. But this could change, especially if any higher financing costs of the EEG are covered by taxpayers, i.e. the national budget, and no longer passed on to consumers of electricity. WWF will continue to observe changes in the framework conditions and adapt its recommendations should this become necessary.

Handling GOs from new non-subsidised plants

This category is the most valuable one for the energy transition. Plants relying on long-term PPAs and financed without supplemental state subsidisation can set up the financial flexibility they need, which encourages the development of many potential sites not yet able to produce power at current market prices. The basic prerequisite here is that these plants are additionally credited to the nation's expansion targets. This is a demand that WWF will clearly and forcefully communicate to policy-makers.

Non-subsidised plants will be recognised for more than six years if they have been (co-) financed from the very start by a PPA with bulk consumers. A consumer committed to buying power from a newly built plant, either directly or through a third-party supplier for 10 or 15 years, for example, can have this counted as a new plant for the full term of the power purchase agreement.

Handling GOs from plants that are no longer subsidised

Plants that are no longer subsidised (such as post-EEG plants) also make an important contribution to the energy transition because they supply cheap renewable power. Their economic viability should certainly be maintained. Short-term green $PPAs_{old}$, with running times of three years, for example, are good for this purpose. For them to be recognised as consistent with WWF's recommendations, it is important that such plants are not claiming follow-up subsidisation.

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