

Interview-Questions about wind power

Informations about you

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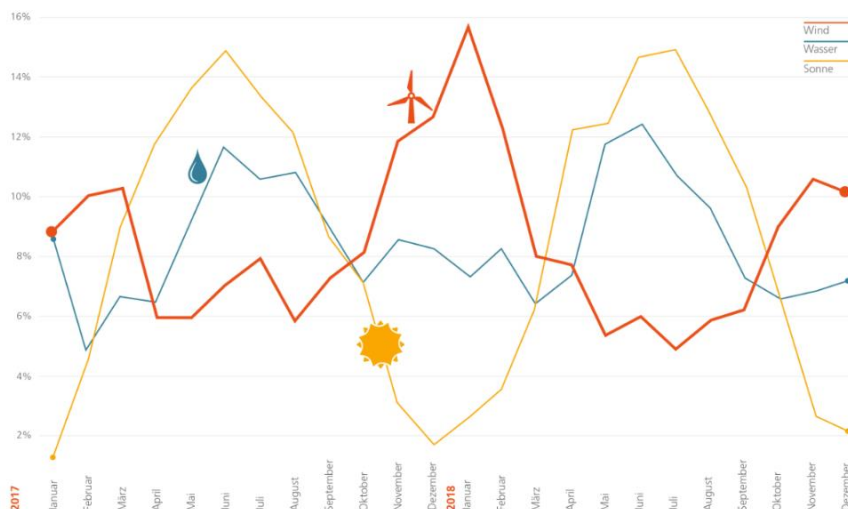
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Do you think it is a good idea to use wind power in Switzerland? Why?

Yes, very much so! Wind energy is not only one of the cleanest ways to produce electric energy but also gives us an opportunity to produce a big part of the very much needed winter energy. The graph below visualizes very well when each renewable Energy source produces the most of its energy and while both solar and water produce less energy in winter, wind energy produces most of its output during this season. In numbers, wind energy produces 2/3 of its energy in winter.

Stromproduktionsprofile Wasser-, Wind- und Solarkraft
Schweiz 2017-2018 (% der Jahresproduktion)



<https://www.bfe.admin.ch/bfe/de/home/versorgung/erneuerbare-energien/windenergie.exturl.html/aHR0cHM6Ly9wdWJkYi5iZmUuYWWRtaW4uY2gvZGUvcHVibGljYX/Rpb24vZG93bmxvYWQvODAzNw==.html>

What do you think, how much energy can we gain from wind power?

The Goal of the official energy strategy of the Swiss government is to produce 4.3 TWh of electric energy through wind energy by 2050. This would be about 8% of the current energy consumption and we would only need to build 1000 turbines for that.

In my personal view this is not a very ambitious goal since some estimates calculated a wind energy potential in Switzerland of almost 30 TWh. So, I think if we are really interested in an energy transition, we should easily be able to have a yearly energy yield of 6-8 TWh if not 10 TWh. ([source](#))

What do you think, how expensive is a wind turbine?

The Cost of a wind turbine is probably heavily influenced by the place and size of the Turbine. Even though I never closely looked into the pricing in Switzerland I would expect a turbine to cost between 1 and 5 Mio. CHF.

How does a wind turbine work?

There are two main concepts for wind turbines. The best known and most established System is a horizontal axis wind turbine with three rotor blades. To produce electrical energy this is also the most efficient design.

Other designs could be a horizontal axis turbine with more or less than three blades or a vertical axis wind turbine. Even if some of these Systems bring different benefits, they are less suitable to produce electric energy at scale.

Independent of the design of the Turbine the concept is always the same. The turbine takes kinetic energy out of the wind flow and transposes it as rotation energy to a generator to produce electric energy. This then results in a slower wind speed behind the wind turbine than in front of the turbine. Due to this change in wind speed, there is a physical limit to the efficiency of 59.6% for wind turbines.

What are the advantages of using wind power?

As already written in the first question, wind turbines produce most of their energy in winter. Exactly at that time we consume the most energy and other renewables produce less electric energy. But besides that, there are more advantages:

- It is with about 17 CO₂-eq/kWh besides water power the cleanest source of energy ([source](#))
- With wind turbines the electric energy can be produced where it's need. This way we are less depended on energy import.
- At the end of live the turbine can be completely dismantled without leaving long term damage on the building site

What are the disadvantages of using wind power?

There are some important topics we need to have an eye on.

- Even if 80-90% of the turbine can be recycled, it is important, that in the long term even more of the Turbine can be Recycled to make sure we have a circular economy
- The bird problem is largely researched by now and a lot of solutions have been found. But there are still some unsolved challenges. These need to be researched.
- A lot of people are still against wind energy. There is a big need to educate society about the need of wind energy in our energy production

Would Switzerland face any challenges with wind turbines?

The main challenge in Switzerland concerning wind Energy is probably a social challenge. A lot of people are not used to see wind turbines and look at it as a distraction in the landscape. For this reason or for others there is still a big movement to stop wind energy projects. This way a lot of projects get delayed.

In general, what is your opinion about using wind power?

The usage of wind energy is a crucial part of our energy production if we want to create a fully renewable energy grid. So, I think it is very important, that we start to incorporate wind energy into our energy production.