

**NIMBY is a well-known phenomenon: Not in My Backyard. The majority of the Dutch are in favor of sustainable developments. However, as soon as plans are made to build windmills in the area, local residents often feel a strong aversion to the plans.**

Yet there is a great need for sustainable energy. Wind energy technology is highly developed and has potential to play a vital part in the goal of reaching a net zero society. Wind energy also has a rich history. Hints of the first windmill trace back to the 7th century. If we take a look at the Dutch countryside, it is estimated that there are roughly 1170 traditional windmills. They can also be found in countries as Belgium, France, Spain and Portugal. A big difference with the traditional windmills and the highly developed energy generators, is the appreciation of the public. A traditional windmill is often seen as a great addition to the environment, which is the opposite of the new windturbines.



The idea of this Acceleration is to combine the appreciation for the traditional windmill with the efficiency of the new windturbines. In other words: Converting classic windmills in the Netherlands into an energy source. In this way, the external features and the historical heritage are preserved, but at the same time it provides sustainable energy.

The yield of a windmill is partly determined by the length of the blades. The blades of classic windmills are very long. This benefits the yield. A fictitious calculation brings us to the following: The yield of 1 traditional windmill is estimated to be 10,000 kWh. The costs for the conversion are estimated at 11,000 euros. This would mean that converting a windmill has a payback period of 10.5 years. In addition, material is saved because the frame of the windmill is already present.

Taking the above into account, it is expected that 600 windmills can be converted. This would mean that  $600 * 10,000 \text{ kWh} = 60 \text{ Gwh}$  are generated annually by the conversion of the classic windmills. This is sufficient to provide 1800 average households with sustainable electricity.

### **Considerations**

Some of the classic windmills are national heritage and have historical value. The question is how different local authorities and residents react to the idea of making adjustments to the traditional windmills. For some it will simply not be possible because they are monumental buildings. For monumental buildings, strict regulations apply to any form of adjustments.