

By Flemming Stender, Ambassador of Denmark to Latvia

Wind works

The first windmills in Europe dates back around 1.000 years. In Denmark, windmills have been used since the 13th century, and in the 19th century, thousands of wind mills existed. Some of them have been preserved until today, and are still visible across the Danish landscape. The most famous windmill "Dybbøl mølle" in the southern part of Denmark is a national and historic symbol.

In the early part of the 20th century, it became common for farms to have a small windmill. They were used for pumping up water, or powering machinery. At the same time, the first experiments to produce electricity from windmills started. Before Denmark discovered its large oil and gas resources, it was not yet clear that the increasing demand for energy would be covered by fossil energy sources. And hydro power did not exist as Denmark is a rather flat country. So instead, attempts started to use a resource that we have in abundance – the wind.

The first experimental wind mills in the mid-fifties gave inspiration for the Danish wind industry a few decades later. From these early windmills, Danish pioneers developed the design with three wings that we see across the world today. The aim was to produce electricity for the common electricity grid rather than for an individual agricultural farm.

When the international oil and energy crisis hit Denmark and the rest of the world in the early nineteen seventies, the interest for wind energy was renewed. Opposition towards nuclear energy was accompanied by an interest for renewable energy resources.

Today, windmills have become a symbol of Denmark, and a part of our history and culture. When you arrive to Copenhagen, the spinning wind turbines by the harbor is the first sight to welcome you. Denmark has more than 6.000 windmills, both onshore and offshore. The first offshore wind farm was established already thirty years ago. Today, fourteen offshore wind farms exists, and a dozen more are under development. But the total number of wind turbines onshore and offshore have in fact been more or less stable for the past decade, while the production of electricity has doubled. Because with the technological development, wind turbines are becoming more and more effective. Wind power is already today a cheap and very competitive form of energy compared to fossil energy sources. According to the International Renewable Energy Agency, Denmark has the world's lowest costs of electricity from offshore wind energy.

During several decades, the wind industry has developed into one of Denmark's significant industries with a range of globally leading companies. More than 30.000 people are directly employed in the Danish wind industry, but close to 100.000 jobs in total are linked to the wind sector. The industry has a total turnover of approx. €20 bn. annually.

The share of wind and solar power in Danish electricity has doubled over the past ten years. 2020 was another record year for Danish green electricity production. A little more than half of the electricity production came from wind and solar energy. With wind energy producing the bulk, 46%, and solar 4%. At the same time, CO₂ emissions from electricity production is lower than ever before, emitting only a seventh of what they did thirty years ago. Our ambition is to generate all electricity from renewable energy sources by 2030, or perhaps even before, and reaching 55 percent of total energy needs from renewable energy sources.

Last month, the Danish government with broad parliamentary support reached agreement on the financing of the constructing of an offshore energy island in the North Sea by 2030, the first of two energy islands. An energy islands is an artificial island created out in the sea to connect and distribute power from surrounding wind farms. The island will have a capacity of 3GW, and is expected to cover an area of around eighteen football fields. It will be the biggest construction project in Denmark's history. In total, the two energy islands will produce enough electricity to

power 5 million households. It will also be an important step towards reaching Denmark's ambitious climate action objective to reduce carbon emissions by 70 per cent by 2030 and will contribute to the transition to a greener economy in Denmark and Europe as a whole.

The EU has set ambitious climate objectives in order to reach climate-neutrality by 2050 in line with the Paris agreement, and member states are accelerating their energy and climate transition towards this goal. Renewable energy plays an important role and wind energy has a large potential. The current installed wind energy capacity in Europe could be increased at least by twenty times by 2050.

There is also a large potential for wind energy in the Baltic Sea region, and the governments in the region have recently agreed to strengthen cooperation on offshore wind development. By working together, and inspiring each other, we can achieve more.

On 29th April 2021, the Danish embassy in Latvia is co-hosting the hybrid wind energy conference "Wind Works – Powering Latvia's Energy future" together with the Latvian Wind Energy Association. The conference will bring together experienced international energy experts, stakeholders and policy makers to discuss the future of wind energy in Latvia with inspiration from Denmark's transition to wind energy over many decades. Participation for free. Registration at www.windworks.lv