



THE BALTIC SEA  
**Energy Security  
Summit**

# Baltic Sea Energy Security Summit

30 AUGUST 2022

The Heads of State and Government in the Baltic Sea region have been invited to Marienborg for a regional Summit on 30 August 2022. The climate crisis and the consequences of Russia's invasion of Ukraine set the backdrop for the Summit. The war in Ukraine has illustrated the need to reinforce our energy security and supply and emphasized that security, energy and climate policy are closely related. The Summit will address how the Baltic Sea region can develop a sustainable, affordable and stable energy supply free from Russian fossil fuels.

Denmark hosts the Summit where Heads of State and Government from Estonia, Finland, Latvia, Lithuania, Poland, and the President of the European Commission will discuss how to accelerate the phase out of Russian energy through strengthened regional cooperation. A strengthened regional cooperation on renewable energy can supply the EU with more green energy while strengthening the Union's security of supply while contributing to EU climate neutrality. The Summit also confirms the EU's important and regulatory role in the deployment of renewable energy across Europe.

The Energy Ministers of the Baltic Sea region together with national Transmission System Operators (TSOs) and key industry leaders will participate in the Summit to provide input and identify challenges on how to speed up the deployment of renewable energy, offshore wind in particular, as well as further integration of energy infrastructure in the region. And how to solve them.

## **Declarations**

During the Summit, the member states will sign two declarations. *The Summit Declaration* (which will be signed by Denmark, Estonia, Finland, Germany, Latvia, Lithuania, Poland, and Sweden) sets the overall vision to how the countries will strengthen national and European independence from Russian energy and boost the green transition through closer cooperation on energy policy and deployment of renewable energy. Therefore, the declaration sets a combined ambition for offshore wind in the Baltic Sea region of at least 19.6 GW by 2030, equivalent to seven times the current capacity.

Denmark is the country with the highest ambition for offshore wind in the Baltic Sea with 6.3 GW, while Poland delivers the second most with 5.9 GW, making Poland the country that supplies the most new offshore wind in the Baltic Sea by 2030, as the country has no offshore wind capacity today. In the Summit Declaration, the signing parties recognise the substantial potential for offshore wind power in the Baltic Sea basin, reaching up to 93 GW<sup>1</sup>. The ambitions are part of the European Commission's offshore wind strategy, which has a target of expansion with 300 GW of offshore wind by 2050 in order to reach EU climate neutrality.

The *Declaration of Energy Ministers* goes further into detail on how the vision can be implemented. This includes, among other things, getting the Baltic countries' electricity grid more closely connected with the continental European network and joint cross-border hybrid projects, such as Energiø Bornholm. The energy ministers will also strive to strengthen political cooperation on energy security and deployment of renewable energy. This will take place within the existing framework of the Baltic Energy Market Interconnection Plan (BEMIP), which purpose is to create an open and integrated regional electricity and gas market between the EU countries in the Baltic Sea region. The BEMIP members are Denmark, Germany, Estonia, Latvia, Lithuania, Poland, Finland and Sweden as well as the European Commission, while Norway participates as an observer.

### **Concrete collaborative projects**

Denmark and Germany have prior to the Summit entered into a political agreement on a cable connection from Energiø Bornholm to Germany. This means that electricity can be sent from the energy island directly to the German electricity grid and onwards to the rest of Europe. The agreement introduces a new model for a joint project cooperation, where costs and benefits associated with the energy island are distributed equally between the parties, and where decisions are made jointly with regard to future connections to other countries. This means that both parties contribute to the infrastructure costs, while also benefitting from the supply of green electricity.

During the Summit, a Letter of Intent will also be signed, which extends the government-to-government cooperation on the development of offshore wind between Denmark and Estonia, Latvia and Lithuania. Since 2021, Denmark has had short-term government-to-government cooperation with Estonia, Latvia and Lithuania on regulatory framework conditions for the expansion of offshore wind. The cooperation was set to expire by the end of 2022, but in connection with the Baltic Sea Energy Security Summit, funding has been allocated from the Danish side to enable longer-term cooperation between the parties (2023-2025). There has been a great appetite for cooperation from the Baltic countries, all three of which are in the early phases in the development of offshore wind. Therefore, there has also been great support for strengthening and extending the collaboration.

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<sup>1</sup> European Commission, Directorate-General for Energy, *Study on Baltic Offshore Wind Energy Cooperation under BEMIP: Final Report*, Publications Office, 2019, <https://data.europa.eu/doi/10.2833/864823>



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# Integration of renewable energy, interconnectors and security of electricity supply

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Denmark is one of the countries in the world with the most stable supply of power, even though Denmark has a very high degree of renewable energy from wind in the system. This is partly due to the fact that Denmark is one of the countries in Europe with the strongest electricity connections to neighboring countries, and foreign connections will become increasingly important in the coming years to ensure balance in the electricity supply. The European electricity transmission network connects the countries' electricity systems. This means that – in addition to trading electricity on the connections via interconnected electricity markets – we can help each other in times of shortage<sup>1</sup>.

A highly interconnected electricity transmission network is therefore an important part of security of supply when converting to green energy. This is partly due to the fact that the electricity system can make better use of the differences in weather systems nationally and between different countries when solar and wind capacity are spread over larger geographical areas.

In addition to security of supply, a single European electricity market contributes to increased competition and thus generally to cheaper prices. A coherent electricity market also helps the countries in the region to benefit from any surplus production of renewable energy, so that we make the most out of the resources from renewable energy in the region.

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<sup>1</sup> For more information on security of supply, see <https://ens.dk/ansvarsomraader/varme/analyser-om-elforsyningssikkerhed-og-omstilling-af-varmesektoren>

### Security of electricity supply and integration of renewable energy

In 2019, more than half of Denmark's total electricity consumption came from renewable energy – for the first time ever – such as wind and solar energy<sup>2</sup>. The integration of the large amounts of fluctuating renewable energy into the energy system has not had a significant impact on the security of electricity supply in Denmark<sup>3</sup>.

The Danish energy system combines many different energy sources and makes it possible to integrate renewable energy such as offshore wind and solar energy. This means that there is still power in our outlets, even if the wind does not blow and the sun does not shine. The stable supply is also due to the fact that Denmark has strong electricity connections to its neighboring countries. Danish experience shows that a high share of renewable energy and security of supply can go hand in hand.

A stable electricity supply in Denmark is ensured through a combination of domestic electricity generating plants – including power plants, combined heat and power plants, wind power and photovoltaics – as well as production capacity imported from abroad through foreign connections from an interconnected European electricity trading market<sup>4</sup>. A large part of our electricity grid is also underground, which makes the grid more robust against such things as storms.

### Danish energy cooperation with the countries around the Baltic Sea

Denmark is part of the regional energy policy cooperation, *Baltic Energy Market Interconnection Plan* (BEMIP), which aims to create an open and integrated regional electricity and gas market between the EU countries in the Baltic Sea region. The BEMIP members are Denmark, Germany, Estonia, Latvia, Lithuania, Poland, Finland, Sweden, and the European Commission. Norway participates as an observer. For historical reasons, the electricity grids of the Baltic states remain synchronised with the Russian and Belorussian electricity grids. Helping the Baltic states out of their dependence on Russian energy is an important focus area for BEMIP cooperation. Enhanced cooperation will increase energy security for the Baltic countries and give the other countries in the region the opportunity to import renewable energy produced in Estonia, Latvia and Lithuania.

In addition, Denmark has a number of collaborations with other countries in the Baltic Sea including Sweden with three electricity connections between Jutland-Sweden, Bornholm-Sweden and Zealand-Sweden. To Germany, there is an electricity connection via Jutland as well as from the offshore wind farm, Kriegers Flak, which was inaugurated in 2021. Furthermore, Denmark and Germany have prior to the Baltic Sea Energy Security Summit 30 August 2022 entered into a political agreement on a cable connection from Energø Bornholm to Germany. This means that electricity can be sent from the energy island directly to the German electricity grid and onwards to the rest of Europe. Denmark also has a connection to the Netherlands, and a connection to the UK will soon be established. Finally, there are plans to connect Denmark and Belgium via an energy island in the North Sea.

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<sup>2</sup> The production of electricity based on all renewable energy accounted for 68% of the domestic electricity supply in 2020. Wind power accounted for 47%. Biomass accounted for 15.1% and solar energy, hydropower and biogas the remaining 5.9%. See <https://ens.dk/sites/ens.dk/files/Statistik/energistatistik2020.pdf> for more information on energy statistics.

<sup>3</sup> Today, there are no power disruptions in Denmark due to the fact that there is not enough electricity production and capacity in the foreign connections to cover the electricity consumption. Danish Energy Agency, Climate Agreement Analysis 1, Main report: Security of electricity supply towards and beyond 2030, January 2022.

<sup>4</sup> For more information on security of supply, see <https://ens.dk/ansvarsomraader/varme/analyser-om-elforsyningssikkerhed-og-omstilling-af-varmesektoren>

### Security of electricity supply in the coming years

It is expected that Denmark will use approx. 70 percent more electricity within the next decade<sup>5</sup> for such things as electricity supply, transportation, heating, Power-to-X systems and data centers. At the same time, electricity production is expected to come to a significantly lesser extent from power plants, where production can be adjusted up and down to meet demand. This means that in the coming years, the Danish electricity system will gradually transport larger amounts of electricity and be able to handle larger fluctuations in production and consumption in order for us to have a stable electricity system in the future.

At a time when we need more electricity and more renewable energy, it is crucial that we in Europe cooperate on further integration of our electricity systems so that we can both convert to green energy and ensure security of supply.

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<sup>5</sup> Danish Energy Agency *Analysis Assumptions for Energinet 2021*. The assumptions indicate a likely development process for the Danish electricity and gas system.





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# Bornholm's strategic position as a green pioneer island in the Baltic Sea

30 AUGUST 2022

## **Bornholm's central position in the Baltic Sea and expansion of renewable energy**

With its central location in the Baltic Sea, Bornholm is of great importance to energy and security politics, which has only been reinforced after Russia's invasion of Ukraine and Putin's use of energy as a weapon.

In 2020, a broad majority in the Danish Parliament decided to establish two energy islands in Denmark, including one near Bornholm with a capacity of 2 GW. With the follow-up agreement, *Bornholm Energy Island Agreement 2022*, it was agreed that Bornholm Energy Island will expand by an additional 1 GW, which has been decided in connection with the Budget Agreement for 2022, for a total of 3 GW for the location of offshore wind from 15-45 km from the coast.

The energy island will function as a large green power plant at sea. It will be Denmark's largest energy project to date when completed and will be able to supply power to both Denmark and Germany. From Bornholm's location in the Baltic Sea, the power from the offshore wind turbines is first collected in an onshore plant and then sent to Germany and Denmark. Bornholm Energy Island can supply 4.5 million European households with their annual power consumption when completed. In comparison, there are currently just under 2.8 million households throughout Denmark. It may be possible at a later stage to connect Bornholm Energy Island to other countries around the Baltic Sea, such as Sweden or Poland.

### **Bornholm as a pioneering green island**

Bornholm already has a long history as a green pioneering island with ambitions to be powered by renewable energy and be a fossil-free island by 2040. In 2020, Bornholm was also named the EU's most sustainable island in the energy field.

Bornholm began phasing out coal and oil early on and has instead established renewable energy sources such as solar cells, wind turbines, biomass and made investments in district heating. This has resulted in efficient energy consumption and a sharp reduction of 40 percent of Bornholm's CO<sub>2</sub> emissions since 2013.

Based on the government's regional growth teams, a broad public-private consortium on Bornholm (one of eight local business "lighthouses" throughout Denmark) will contribute to Bornholm becoming even greener. This will strengthen Denmark's international position as a development, testing and demonstration country of green energy. In February 2022, Erhvervsfyrtårnet (entrepreneuring lighthouse) on Bornholm received DKK 27.2 million in support from the Danish Business Promotion Board.

As part of this entrepreneuring project on Bornholm, a national center for green energy was established on the island. The center will form the framework for the activities of the project and be the driving force behind Bornholm becoming a hub for the development, testing and demonstration of green energy. This will be done, among other things, through close collaboration between private companies, knowledge institutions, utilities etc.





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# Offshore Wind and the Green Shift in the Baltic Sea Region

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## **Offshore Wind and the Green Shift in the Baltic Sea Region**

There is almost 2.8 GW of offshore wind capacity waiting in the Baltic Sea region today, despite the fact that the area (with its 377 000 km<sup>2</sup> and good conditions for offshore wind production) has the potential for much more expansion. Most of the offshore wind capacity is installed in Danish and German waters, while the other Baltic Sea countries have limited or no offshore wind capacity. The 2022 EU Offshore Wind Strategy estimates that there is potential for capacity of up to 93 GW offshore wind in the Baltic Sea Region<sup>1</sup>. The assessment underlines that the Baltic Sea region is advantageous for offshore wind due to the shallow water depths and good wind conditions that exist in several places in the region.

Cooperation on offshore wind projects and the associated energy infrastructure can bring significant economic and security of supply benefits. Green power can flow freely across national borders, but it will flow most to where the demand is greatest. This can increase the value of the power, and lead to Danish offshore wind power contributing to a better, greener security of supply outside Denmark's borders. The Danish-German collaboration on Kriegers Flak I, located in the Baltic Sea, is the world's first example of a so-called *hybrid project*, which combines offshore wind production in the form of two offshore wind farms in Danish and German waters, which are connected to each other and on to both countries, thus creating an interconnector. The Bornholm Energy Island, which will have connections to both Germany and Denmark, is a further example of this on an even larger scale and could potentially be connected to additional countries in the region.

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<sup>1</sup> European Commission, Directorate-General for Energy, *Study on Baltic Offshore Wind Energy Cooperation under BEMIP* : Final Report, Publications Office, 2019, <https://data.europa.eu/doi/10.2833/864823>

### Offshore wind in the Danish part of the Baltic Sea

Almost 1.5 GW is currently being harvested in the Danish part of the Baltic Sea region. In addition, it is expected that the realisation of Bornholm Energy Island will increase the installed offshore wind capacity by at least 3 GW, and that Park II of the *Energy Agreement 2018* (Hesselø) will increase capacity by 1 GW. Furthermore, with the *Climate Agreement on Green Power and Heat 2022*, it was agreed to initiate feasibility studies of attractive marine areas for future tenders of more offshore wind. Preliminary studies were initiated for a new area at Kriegers Flak in the Baltic Sea with room for at least 1 GW, which is currently expected to be tendered as part of the political decisions to significantly increase offshore wind capacity in Denmark by 2030. The expected offshore wind capacity for the Danish part of the Baltic Sea region is thus 6.3 GW by the end of 2030. In total, the offshore wind farms will generate enough power to cover the annual electricity consumption of around 9.4 million European households. A potential expansion of offshore wind capacity exists in the area through applications submitted under the market-driven Open Door Scheme. The potential for this is significant, but also uncertain and is therefore not included in the figures provided here for expected offshore wind capacity in the area.

The Baltic Sea Region, with its wind resources, also has the potential to become a driving force in the production of green fuels. For example, the Power-to-X project Green Fuels for Denmark at Avedøre Holme will produce green fuels as early as 2023. On Bornholm, the possibilities of turning the island into a green transport hub are being investigated by producing Power-to-X fuels under the auspices of the future energy island in the Baltic Sea.

