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[Renewable Energy \(Wind, Solar & Tide power\) Will Be Distributed Through A Super-grid in Europe](#)

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Europe is looking ahead for the first step to make the European super-grid a reality. The prime focus is to make a smart electricity grid dedicated to distribute renewable power in North Sea.

The project is already pinpointing on connecting turbines from north coast of Scotland to wave power generated from Belgian and Danish waves, Solar energy from the abundance of solar panels as well as hydro-electric dams in Norway's fjords. Nine countries are grouping together forming this huge step in the North Sea for Clean Energy.

Sweden, Belgium, Luxembourg, Denmark, Germany, France, United Kingdom, the Netherlands and Ireland are planning to work together to make this a feasible project. Work is expected to launch within the decade. It will attribute to conquest the European 2020 goal of providing 20% of its energy from alternative sources of energy.

The network will cost around, 30 billion Euros and will have cables of thousands of kilometers placed undersea. This will make renewable energy finally a sustainable source of energy. The most fundamental setback of renewable energy has always been the unpredictability of weather. However, having energy

generated from various regions in the European region through different sources will assure that energy will constantly be supplied. This will make it a sustainable and reliable energy source.

The super-grid will assure that energy is constant. Wind will always blow, if it isn't in France, it will be in the United Kingdom. Moreover, similar to the sun and waves renewable energy will balance their supply through different climates in various regions.



Furthermore, going to Norway could add up an astronomical battery of 30GW. There are many hydroelectric power stations in Norway, which could store the clean energy in case of low demand. It could act as a battery in the super-grid network.

It is rare fact that many countries are already exploiting renewable energy at large scale, such as in the United Kingdom. Yet, Lord Hunt, Energy and Climate Change Minister in UK, considers that collective actions are vital in leveraging progress to further levels as they produce windfall gains.

Currently in Europe, offshore wind projects that are work-in-progress will produce 100GW, which accounts for 10 percent of the Europeans total demand. It is as much energy produced as 100 large coal-fired plant produces. The rise in wind energy will require additional focus on the European grid. Certainly, this topic is going to be addressed when the countries sum together.

Compared to contemporary sources of energy, renewable energy is widely decentralized. For instance, solar energy can be integrated into buildings, and this is another challenge that the North Sea super-grid must accommodate.

The hydro plants in Norway have a capacity of 30 large-scale coal-fired power stations. The surplus of power produced can be used to pump-up water in to the uphill creating a reservoir that can generate electricity whenever the demand increases again.

The benefit of offshore grids such as the super-grid allows trading of energy across borders. This will definitely make EU more competitive in energy management.

Even the European Commission has been evaluating potential grids in the North Sea. The plans are to be available in this year (2010). EU said that with the absence of the nine-country grid plan the project wouldn't become a feasible reality.

The exact cost of the project is still uncertain. Based on studies carried out by Greenpeace in 2008, the cost of comparable projects for project in the 2025 was around 15 to 20 billion Euros. The whole project will give rise to more than 6000 Km of cables through-out the region. Moreover, EWEA conducted a study in 2009, and concluded that to integrate the 100 GW wind farm projects in progress the bill would increase to around 30 billion Euros.

Discussion is going to be undertaken this month. Legal, environmental, technical and planning aspects of the super-grid project will then be addressed. According to Hunt, the main objective is to establish a common vision.

The countries that are participating in this visionary action will be part of a team shaping the future. The super-grid project has both political and institutional support. The institute for energy (IE), is positively encouraging this collaborative step towards renewable energy. Moreover, Gordon Brown as well as Nicolas Sarkozy say that connecting with southern Europe's renewable energy as well as other regions in the continent is optimizing the use of alternative sources of energy.

However, according to IE, if only 0.3 percent of the sun rays heating the desert of the Middle East and Sahara would be captured it would be enough to meet the whole Europeans' demand for energy.

High voltage direct current cables will be used to transmit the energy in the super-grid. Eventually these cables are much more expensive than conventional cables in use. However, they are more effective as they maintain a higher concentration of energy transmission over long distances.

According to Hunt, the super-grid is a challenge today and previously a dream. Moreover, the 2020 target of supplying 20% energy from renewable sources is just the tip of the iceberg as the aim for 2050 is a total decarbonised electricity production system.

The North Sea super-grid can in the future extend to a much larger project such as the "[Desertec Industry Initiative](#)" (DII). It is a project of providing 15 percent of Europe's electricity demand from the Mediterranean and deserts. This proposal for the project was published in November 2009, and has already many large companies backing it up.

The DII project is a \$400 billion worth project focusing on concentrated solar powers (CSP). The technology has been around in the United State and in Spain for decades. The "[uniqueness of this project is not the technology but the scale](#)". It is, if launched the biggest project ever proposed.

Source: [Guardian](#)

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