

Energy, climate and environment

Denmark is committed to combating the energy and environmental challenges of the modern world. A governmental focus on these challenges has been a strong fundament for the development of Danish companies specialised in energy and environmental technologies that have become absolutely world leading.

Energy

From the 1960s till present, Denmark has converted a 90% dependency on oil towards gas and renewable energy sources including wind, biomass and waste. National policies intended to promote alternative energy sources created the needed momentum to initiate this switch. Today Denmark has a self-sufficient energy supply and renewable energy provides nearly 30% of Danish electricity, including almost 20% from wind energy.

Concerns about the global climate and high oil prices have also inspired the Thai government to switch part of the country's energy production to gas and renewable energy sources. Within these areas Danish companies maintain a unique position and can contribute with expertise and high quality technology, especially concerning wind power, biomass and waste incineration. The Royal Danish Embassy in Bangkok manages a number of Partnership Facility Programs intended to develop partnerships between Danish and Thai companies with a substantial environmental impact as well as a strong commercial potential.

A large share of Denmark's achievements within renewable energy has come from wind power. The Danish wind turbine industry has grown into a global multi-billion dollar industry employing more than 21,000 people in Denmark alone. Wind energy is increasingly competitive vis-à-vis traditional energy technologies. Wind turbines have grown bigger and ever more efficient with new turbines producing up to 5 MW each. Increasing oil and CO₂-allowance prices are expected to make renewable technologies even more competitive, and the amount of renewable energy in the Danish electricity supply is expected to reach 80% by 2025. These advances in turbine technology increasingly make wind farming durable in areas with a low average wind speed. This has made parts of Thailand's vast coastline, especially in the south, potentially attractive locations for future Thai wind farming projects.

The total number of wind turbines in Denmark is currently approximately 5,300 with a total capacity of 3,100 MW, of which more than 400 MW are produced offshore. Horns Rev Offshore Wind Farm, which is located 14 km off Denmark's western shore, is one of the world's largest wind farms, providing electricity equivalent to 150,000 households using 4,000 MW per year. Therefore, Denmark has a leading position in both on- and offshore wind-power generation and technology, making Danish wind turbine companies attractive partners in future Thai wind farm projects.

Besides wind energy, the burning of biomass and waste in combined heat and power plants has contributed significantly to Denmark's production of renewable energy. As a result of increased economic activity, Denmark has experienced an increase in waste in recent years, especially from the construction and service sectors. Of the total amount of waste, 65% is recycled, while

a large portion of the remaining 35% is incinerated. An efficient incineration process ensures, that the energy potential in waste is exploited to produce electricity and heat. To prevent air pollution and acid rain, the waste products from the incineration are collected and used in for example building materials and road construction, while the poisonous materials in fly ash are carefully stored. Biomass, in the form of for example agricultural waste products, is also used increasingly in heat and electricity production. Because of this experience Denmark possesses leading technologies within biomass and is a world leader in efficiently producing energy from waste.

Climate and Environment

In 2007, it was fully acknowledged that the change in the global climate and its relation to the burning of fossil fuel is one of the main challenges of the world today. In December, world leaders meet on Bali, Indonesia and agreed on a road map leading up to the United Nations conference on climate change (COP15), which Denmark is proudly hosting. At this conference, the parties will negotiate the successor to the existing Kyoto Protocol, which expires in 2012. Denmark is firmly committed to fighting global climate change and is determined to ensure that the outcome of COP15 presents a sustainable path for the future of the world. In this respect Denmark has a special obligation to help develop means that guarantee significant reductions, and at the same time continue global social and economic development.

Danish experience shows that economic growth can be successfully de-coupled from an increase in energy consumption. For decades, the GDP in Denmark has increased steadily, while the energy consumption has been stable and the CO₂ emissions have declined. The importance of combined heat and power production, renewable energy and increased efficiency in energy consumption are the driving factors behind these achievements.

Denmark is working closely with its partners in the EU to meet the targets set in the Kyoto Protocol. An important means in this regard is the EU Emissions Trading Scheme (EU ETS). The scheme came into operation in 2005 and allows European companies to trade CO₂-allowances amongst each other. An important part of the scheme, which has great relevance for Thailand, is the so-called Clean Development Mechanism (CDM). CDM is a market based means of transferring environmental energy technologies from developed to developing countries and ensure the most cost-effective reduction of green house gases.

The Trade Council of Denmark (TCD) has great expertise in consulting Danish companies on investments in CDM-projects in Thailand and has an extensive network among Danish buyers and Thai project developers. This is not least due to the close affiliation with DANIDA that has been working with CDM in Thailand since 2003.

Danish Wind Industry Association: www.windpower.org
www.hornsrev.dk

Danish Energy Authorities: www.ens.dk

Danish Ministry for Climate and Energy: www.kemin.dk

Danish Ministry of the Environment: www.mim.dk

United Nations Conference on Climate Change, Copenhagen 2009: www.cop15.dk