



Climate action kit

Case study



Denmark

Helping Denmark achieve their model for clean energy

As the fight against climate change intensifies across the globe, carbon neutrality has become one of the focal points of policy making around the world and notably in the EU.

Danish model and wind energy generation systems

Wind energy met an estimated 48% of Denmark's electricity demand in 2020 and accounted for 58,6% of the country's total energy generation.

Over the years, the country has become a living testing ground for new technologies related to wind energy and other renewable energy systems. Policy makers are aiming for the country to be totally reliant on renewable energy by 2050.

The Danish model is based on three main pillars: energy efficiency, renewable energy and system integration and development, including electrification. Wind energy systems are at the heart of Denmark's renewable energy transformation. This transformation would not have been as smooth nor as fast without relying on key IEC International Standards.

Several IEC technical committees develop International Standards for renewable energy systems. Among them, [IEC TC 88](#) prepares standards for wind energy generation systems. These consensus-based International Standards are widely adopted around the world to ensure wind turbines and systems meet the required specifications for safety, efficiency and sustainability. Denmark has been a key contributor to the standardization of wind energy systems over many years.

The [IEC 61400](#) series of standards, issued by IEC TC 88, has grown alongside the requirements of the wind turbine and wind systems market, over the last 20 years.

Danish experts, alongside specialists from other countries, have given their input to these standards which have been revised to meet various requirements over the years and helped establish wind energy generation systems in many other countries around the world. The Secretary of TC 88, Christine Weibøl Bertelsen, a Danish expert, explains: "We work with Danish regulators, give input, and our standards are being used as a basis for regulation both in Denmark, in Europe and around the world. It is very rewarding." These standards help ensure that wind energy generation systems are safe, efficient and, increasingly, reusable and recyclable.

In the IEC, International Standards are developed from the start with the involvement of all interested members. Each of these IEC member countries sends technical experts to work at the international level in the IEC to develop state-of-the art, globally relevant International Standards. These experts also ensure that national needs of regulators and policy makers, industry, research laboratories, testing and certification institutes, etc. are taken into account in the final standard. This ensures that standards can be adopted or adapted nationally; one of the reasons why around 80% of national standards are identical or very similar to IEC International Standards.

IEC International Standards are referred to in regulations and used by manufacturers to build technical devices and systems to broadly agreed safety, efficiency and performance criteria. This way, IEC International Standards open the door to international trade in sustainable technologies.

