



US/DK: Renewed commitment provides green export opportunities

Strong bilateral ties and a renewed commitment to combat climate change

The US and Denmark have a strong trade relationship and a common interest in combating climate change. With renewed commitment from the Biden administration to tackle climate change, the US aims to achieve a 50% GHG reduction from 2005 levels in 2030. In addition, the US aims for net zero emissions by 2050.

Second largest GHG emitter with a long way to net zero

Currently, the United States is the second most polluting nation in the world, and historically it has been the world's largest emitter of GHG. Additionally, the green transition in the US is less broad-based than in Denmark. It will therefore be necessary for the US to quickly accelerate efforts in mitigating climate change to achieve the set goals. However, as part of the recently approved Inflation Reduction Act, 368 billion USD will be devoted to climate investments.

Partnerships on climate change and energy technology

Denmark and the US have already signed several collaboration agreements on climate change mitigation. The agreements focus on co-operation on offshore wind power, energy efficiency, energy systems, knowledge exchanges within CCS, green hydrogen, and Power-to-X.

The US is Denmark's biggest export market and one of the biggest importers of Danish energy technology

The US is Denmark's biggest export market. In recent years, the US has been the third largest export market for Danish energy technology with an average annual export of 6.2 bill. DKK (approx. 1 bill. USD). The US is hereby already a major importer of Danish energy technology, and it is likely to become even bigger in the future. Danish firms also have a high level of engagement in the US, making investments and manufacturing locally.

The US commitment to climate change mitigation

Biden administration commits to climate goals

Both Denmark and the US are committed to the Paris Climate Agreement. Shortly after his inauguration, Joe Biden signed an executive order on tackling climate change. Hereby, the Biden administration renewed the US commitment to the Paris Climate agreement which was withdrawn during the previous presidency.

New Inflation Reduction Act – largest climate change-related investment by the US ever

In August 2022, the Inflation Reduction Act was approved by Congress. The bill allocates 368 bill. USD to climate change mitigation, which is the biggest commitment to climate change goals by the US government to date. According to the US government, this will reduce emissions by 40% in 2030, which is 10% short of Biden's aim of a 50% reduction in 2030.

With a focus on domestic production, major investments are being made

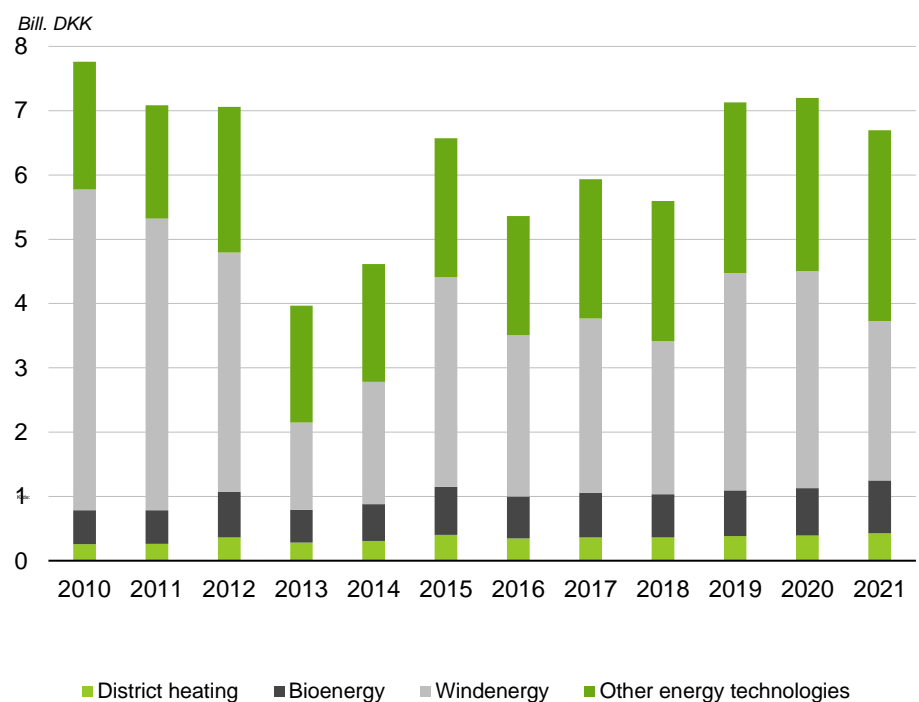
Most notable for Danish interests, the Inflation Reduction Act will result in 120.000 wind turbines, 950 million solar panels, large-scale electrification, and energy efficiency through heat pumps and other home appliances. Under the bill, production and supply chains will primarily be located in the US.

Stable export of Danish energy technology in the past 10 years with an average annual export of 6,24 bill. DKK

Danish energy technology export to the US

Export of Danish energy technology over the past 10 years has remained relatively stable around 6 bill. DKK (1 bill. USD) on average. In recent years, the export has increased slightly reaching 6,7 bill. DKK in 2021 with wind technology accounting for 2,5 and other energy technology for 3,0 bill. DKK.

Figure 1: DK energy technology exports to the US



Note: Other technologies denotes technologies for energy production, energy storage, and various components.

Source: Eurostat and calculations by the Danish Energy Industries Federation

Exports of energy-saving products account for the largest share of exports, followed by exports of energy production technology

The biggest export group of Danish energy technology is energy saving products with 44%. In 2021, various components¹ ranked second, and technology for energy production ranked third. A significant decline was recorded in 2021 for technology for energy production, which was the second largest export group in 2019 and 2020.

¹ Various components includes many different products that are part the production of energy technologies. Only a share of the total export of these products are related to energy technology. The share is calculated using weights. Examples of such products are bolts and nuts.

Table 1: The largest product groups in Danish energy technology exports to the US, 2019-2021

Product	2019	2020	2021
Technology for energy production	34%	34%	22%
Distribution of energy	2%	4%	4%
Energy storage	1%	1%	1%
Energy saving products	37%	37%	44%
Various components	27%	25%	28%

Source: Eurostat and calculations by The Danish Energy Industries Federation.

Existing and future opportunities for Danish-American energy partnerships

On-going collaboration on climate change-related technology between Denmark and the US since 2017

In 2017, a Danish-US partnership between energy authorities was initiated to cooperate on offshore wind power, energy efficiency, district energy and more recently to facilitate knowledge exchange within CCS, green hydrogen and PtX. Continuing the collaboration, a Memorandum of Understanding focused on clean energy research, science, and technology was signed in 2021. The MoU is centered around green transport fuels, wind energy, energy efficiency, energy systems (including transmission and distribution), and digital and quantum technologies.

Opportunity for expanding exports within wind energy, energy efficiency, and energy systems technologies

With the renewed commitment to climate change mitigation in the Inflation Reduction Act, Danish firms are in a strong position to benefit, especially within wind energy, energy efficiency, and energy systems. Here, Denmark has world-leading expertise and can play a key role in facilitating the climate change goals and subsequent infrastructure overhaul, which will take place in the US in the coming years and decades.

Entry barriers for Danish companies in the US due to local content requirements. Yet, increasing number of Danish subsidiaries and further incentive to do so following the Inflation Reduction Act

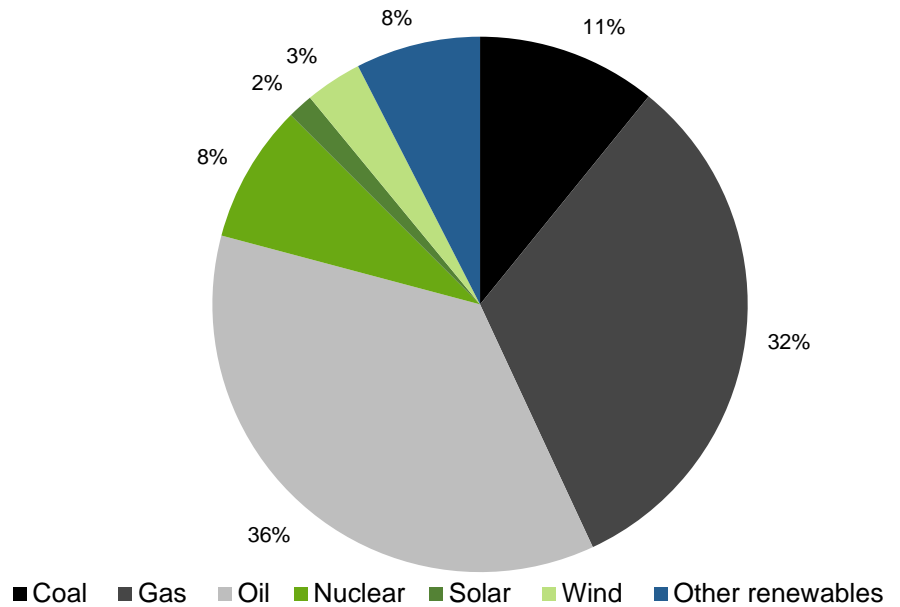
However, there are entry barriers to the US market. Increasingly, local content requirements have been put in place in the US. This requires non-US firms to manufacture goods inside US borders and to use local outlets to sell to the American market. Therefore, entering the US market is becoming increasingly difficult for SMEs that lack the capital and capacity to set up whole production and supply chain facilities in the US. Nevertheless, a substantial increase in Danish subsidiaries in the US employing more locals has been observed over the past decade. For sufficiently large companies, entering the American market should therefore still be a consideration especially given the large investments in domestic production that will follow the Inflation Reduction Act.

High dependency on fossil fuels with gas and oil dominating the energy mix

US energy consumption and GHG emissions

Currently, the US is still highly dependent on fossil fuels with a 79% share of the total energy mix. Renewables account for 13% of the energy mix and nuclear for 8%.

Figure 2: US energy mix, 2021



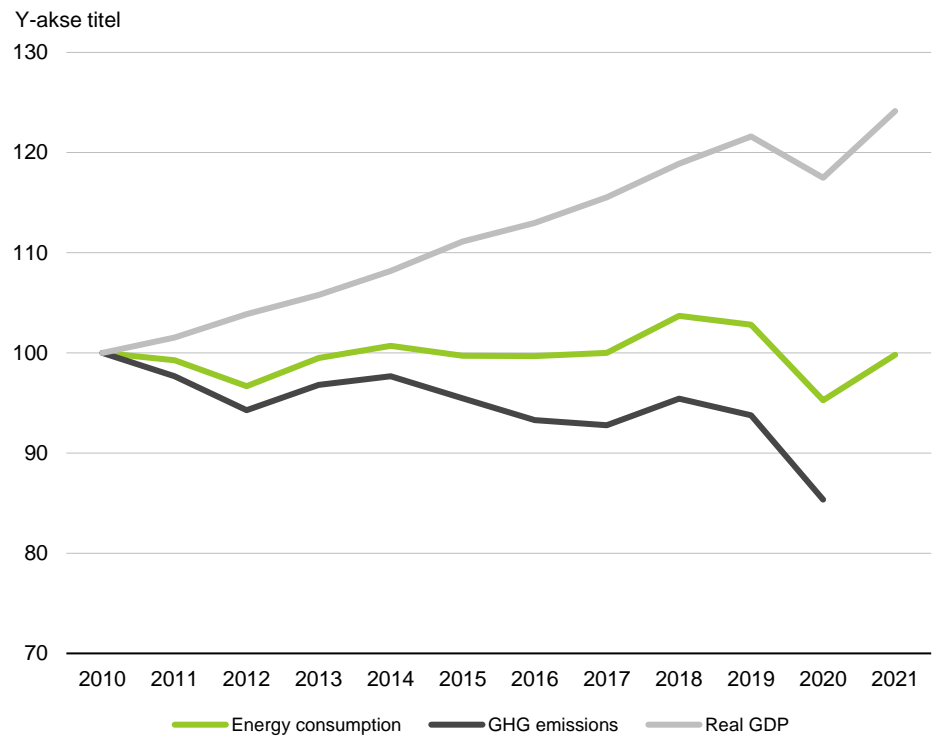
Source: U.S. Energy Information Administration

Relative decoupling of GDP growth with GHG emissions and a reduced energy intensity in the last decade

During the period 2010-2020, GHG emissions fell by 14.6%, while energy consumption remained constant. However, it should be noted that GHG emissions fell by 8% from 2019-2020 alone due to Covid-19. Since then, there has been a rebound in energy consumption and GHG emissions. Nevertheless, the US has achieved a slight reduction in GHG over the last decade. In the same timeframe, GDP grew by 24%². The US has therefore reached a relative decoupling of GDP from GHG emissions and a reduced energy intensity.

² Inflation adjusted GDP growth. Source: U.S. Bureau of Economic Analysis

Figure 3: US energy consumption and GHG emissions

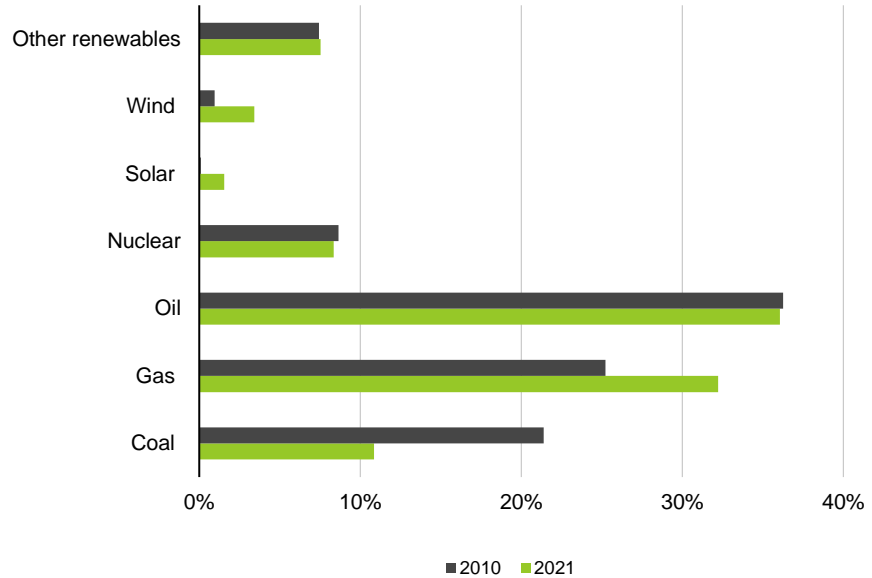


Source: Energy consumption data from the U.S. Energy Information Administration, GHG emissions data from the U.S. Environmental Protection Agency, and GDP data from the F.E.D

Increase in share of renewables and decrease in share of coal over the last 10 years

The share of renewable energies in the total energy mix has increased by 47% over the last 10 years with wind energy consumption increasing by 260% and solar by 1500%. While the share of renewable energies has seen a significant percentage increase, the total share of renewables is still relatively low. Among the most significant over the last decade is the reduction of coal consumption and share by approximately 50 percent. To compensate for this reduction, however, there has been a significant increase in the consumption of gas.

Figure 4: Share of energy consumption by energy source, 2010 and 2021



Source: U.S. Energy Information Administration and calculations made by The Danish Energy Industries Foundation

DI assists companies

With offices in New York City and Washington D.C, DI USA provides a single point entry for all export-related activities between Denmark and the US. DI USA supports the visibility and commercialization of Danish cleantech solutions in the US. With many years of experience as a strategic sparring partner our local presence, large network and outreach work, DI USA assist Danish companies in exploring new markets and establishing and operating their business in the United States.

Reach out to Louis Funder, US General Manager at LFK@DI.DK or follow DI USA on LinkedIn if you are interested in the latest news from the US.

Would you like to learn more and take part?

If your company is interested in hearing more about the opportunities in the energy sector in the US, link up to our market network, contact DI Energy and follow our relevant events at www.energi.di.dk.