



Learning from Global Leaders in Climate Mitigation

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Many regard the Nordic countries as pioneers in reducing carbon emissions and see them as countries dedicated to working to reach the Paris Climate agreement goals. Five of the Nordic countries – Norway, Sweden, Denmark, Iceland, and Finland – have set ambitious emission reduction targets, all aiming to reduce carbon emissions by at least 75% by 2050, with Norway, Sweden, and Denmark aiming for a 100% reduction by 2030, 2045, and 2050 respectively (from a 1990 baseline).

Most of these countries have achieved a steady decline in total carbon emissions the past two decades. In 2016, Denmark had reduced carbon emissions by nearly 30% and Sweden by more than 20%.

These reductions are mainly a result of a relatively decarbonized electric supply depending on various sources of renewable energy. Each country has strived to make the most of locally accessible resources and has advanced technology within wind power, solar power, hydropower, geothermal energy (energy generated and stored in the Earth), and forest biomass. Further, the development of low-carbon transportation systems, improved energy efficiency in buildings, and industrial use of carbon capture and storage have been successful measures in reducing carbon emissions.

Norway has the highest number of EVs in the world, with battery electric and plug-in hybrid vehicles reaching a 50% market share in 2018. Denmark has developed an advanced labeling scheme of buildings and Copenhagen is a leader in using green infrastructure as stormwater management. Sweden is aiming to become carbon negative, capturing more carbon from the atmosphere than is emitted after 2045, and industrial symbiosis programs have become increasingly popular across Europe, bringing companies together in innovative ways to exchange resources in terms of material, water, and energy.

The environmental regulations in the Nordic countries have gained widespread social acceptance, as a majority of Nordic citizens are well aware of climate change and its impact. For example, 95% of the Swedish population believes that climate change will affect the country in the future.

Besides reducing greenhouse gas (GHG) emissions, the Nordic countries managed to decouple economic growth and GHG emissions, with the Nordic economy growing 20% while they reduced emissions by 18% between 2000 and 2014. The transition to renewable energy sources didn't solely happen because of environmental consciousness, but because of an economic incentive as well. This is a development attractive to the rest of the world, allowing the Nordic countries to serve as useful case studies.



- ▲ Norway leads the world in electric vehicle adoption with approximately 60% of all new vehicle sales being electric. *Elbiler* means "electric vehicles" in Norwegian and *Norsk elbilforening* means "Norwegian EV Policy and Market".

However, while the Nordic Countries are considered leaders on transitioning to renewable energy, carbon emissions per capita are relatively high by global standards in all of the Nordic countries. This can be a result of cold and long winters, long transportation distances in sparsely populated areas, the prevalence of high-energy industries, and high income standards leading to high material consumption. While these emissions need to be reduced, they are still significantly lower than in North America.

There is much we can learn from these global leaders; this CAP is a start to that education.