Economic incentives

We need international energy policies

To strengthen the effectiveness of economic policies that aim to steer the transition to an environmentally friendly energy system, economic incentive mechanisms must be coordinated across borders.

These policies must be designed to appeal to all affected parties, including the general public.

"The transition progress is influenced by political matters, both in Norway and the rest of Europe," says Gunnar S. Eskeland, professor of environmental economics at the Norwegian School of Economics in Bergen, NHH.

If we don't need more power, then we don't need support for wind farms, says Professor Eskeland.

Any differences between countries tend to reflect the diverse challenges faced by policy makers.

Norway's efforts to decarbonise transport is an example of how economic policy can be applied to reach specific political objectives.

By employing a tax and benefits regime that favours electric and other CO2-lean vehicles, the government has successfully induced both buyers and sellers to deliver societal benefits, such as reduced greenhouse gas emissions and improved air quality in cities.

This has contributed to broad support for the policies.

Electrification of transport was attractive to Norway due to the country's abundance of hydropower.

Most other European countries, meanwhile, have had to focus their efforts on reducing emissions from electricity generation itself, targeting job creation and economic growth.

The transition from fossil fuels to renewables is likely to provide both in the long run, so there is a mutual need to increase European cooperation in the long-term.

"Europe appears to be more focused on national interests when investing in generation capacity and designing the energy system,"

observes Asgeir Tomasgard, professor at the Department of Industrial Economics and Technology Management at NTNU, The Norwegian University of Science and Technology in Trondheim.

This is reflected by different investment incentives and different policy in each country.

Common purpose

In spite of these differences, the final objective is both clear and shared. Both Norway and the rest of Europe are striving to reduce total greenhouse gas emissions.

"Europe appears to be more focused on national interests when investing in generation capacity and designing the energy system"
~ Professor Asgeir Tomasgard, NTNU.

CenSES has been looking at how Norway's room for maneuvering is influenced by what is happening in Europe.

The research has identified both potential risks and opportunities, with an eye on cost-effective solutions.

These range from tax and incentive policies at the consumer level, such as Norway's support for plug-in cars, to overarching policies that shape where energy generation capacity and distribution networks are built, organised and financed.

An environmentally friendly pan-European power generation system can become a cost-effective solution. Economic policies that help kick-start renewables can bring about balance.

Europe's energy and climate policy encourages growth in the share of renewables in the power system, targeting 20% of all power generation by 2020.

Economic instruments, such as the quota system for CO2 emissions, are gradually playing a greater role, as the price has started to climb out of recession-dominated low-price territory.

That price is an important engine as we drive towards the emission reduction objective.

Norway's and Sweden's green certificates is an example of a more targeted policy instrument: it works but it is also expensive.

The certificate system means that all electricity users pay for supporting new renewables per kilowatt hour they use.

The funds are used to support producers of new renewable energy, who then have two revenue streams.

This makes them better able to compete with existing energy generators.

"It's an interesting policy measure, in that it combines a subsidy with a tax," observes Tomasgard says Tomasgard, who is also director of CenSES.

"And it has worked to meet its objective: to increase the renewable share in the energy system, both in Norway and in Europe."

The challenge so far has been to facilitate the energy transition at a time when non-subsidised renewable sources have been struggling to compete with electricity generated in coal or gas fired power stations.

As renewables become competitive without subsidies, we may see the price of certificates falling to zero. If this happens, then the system has introduced more risk to investors than a feed-in tariff would have done, while it has probably been less costly for the consumers.

Eskeland believes it has been a good system to date, but he also points out that "most people will agree that if we don't need more power, then we don't need support for wind farms, which is where most of the subsidies have ended up".

In the coming years, with increasing intermittent renewable genetration, Europe needs joint efforts to develop large scale solutions, such as offshore wind parks and CCS infrastructure.

For instance, mainland Europe can benefit from Norway's surplus electricity generation capacity, both current and potential, thereby reducing the need to develop such capacity themselves.

Such an energy generation system can include more offshore wind farms off the coast of Norway, where there is a lot of wind that provides more stable generation than many other European sources.

Combined with flexible provision from Norwegian hydropower reservoirs when there is little sun or wind, this approach can help Germany, France and other European countries speed up the transition to solar and wind.

But this will require governments to agree, and it will require large scale public and private investment.

Governments will need to establish a framework for cooperation if aiming for such large-scale investments in offshore wind, in carbon capture and storage, and in transmission capacity between countries that will ensure the energy generated is used efficiently.

Our recommendations:

- Identify how coordinated energy policies and cooperation across Europe can help fascilitate large-scale investments in offshore wind farms, carbon capture and storage, and transmission, thereby providing an environmentally friendly energy system. and convey long term signals to investors during the transition.
- Rely less on subsidies and allow the market to drive new capacity, technology, use and exchange, within an ever-tighter quota regime for CO_2 and as quota prices rise.
- Make credible arrangements to facilitate diversification, risk sharing and innovation, enabling the renewable transition in each country to be facilitated by transmission and exchange.

CenSES

Centre for Sustainable Energy Studies

Med støtte fra:

FME Forskningssenter for miljøvennlig energi

Norges forskningsråd

EnerView

Download our exciting podcast about environmentally friendly energy research from iTunes and other podcast hosts.

CenSES er et tverrfaglig nasjonalt forskningssenter for miljøvennlig energi (FME Samfunn).

Senterets forskning skal bidra til å styrke forståelsen av de økonomiske, politiske, sosiale og kulturelle sidene ved utvikling og innføring av ny fornybar energi og miljøteknologi i samfunnet. CenSES skal bidra til et solid faktagrunnlag for offentlige og private beslutningstakere i grenseflaten mellom klima-, energi- og industripolitikk.

Last ned vår podkast EnerSikt fra der du laster ned podkaster.

CenSES is an interdisciplinary national centre for sustainable energy studies (FME Society).

Our goal is to strengthen the knowledge of economic, political, social and cultural aspects of the development and implementation of renewable energy and environmental technology. The centre's research aims to provide a solid fact-based foundation for public and private decision-makers in the interface between climate, energy and industrial policy.

Please listen to our podcast EnerView via iTunes or other podcast hosts.