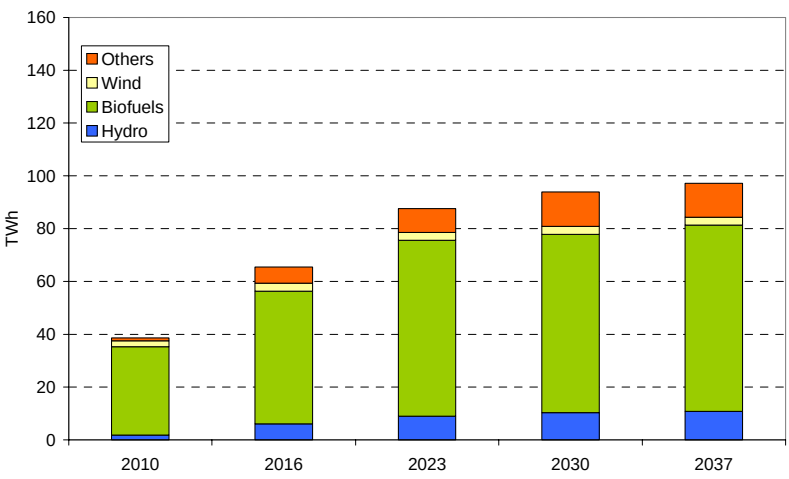
Winners and losers among the renewable energy alternatives

Less biofuels when EU´s three 20% goals are applied

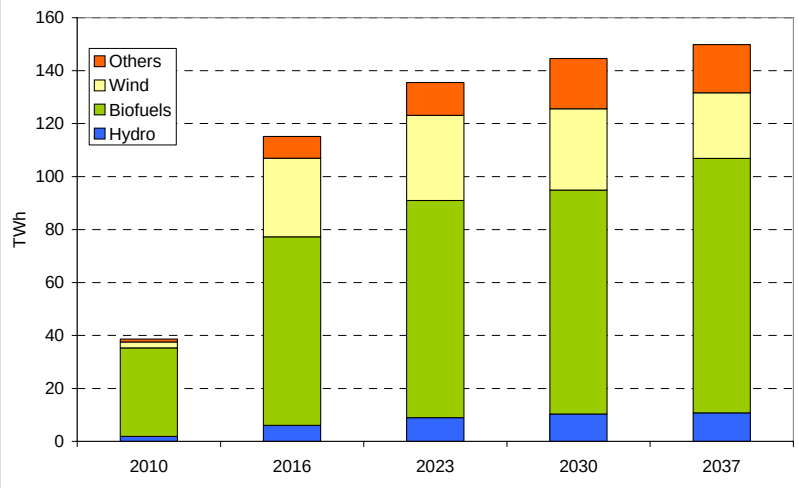
EU´s 20 % goals regarding increased use of renewable energy, reduced use of energy and reduced emissions of greenhouse gases stimulate, as expected, the use of renewable energy in the Nordic countries. Model calculations from the NEP project show that the use of wind power and heat pumps increase significantly, while the use of biofuels grows slower than in a situation where only the present policy instruments are used.

Reference case

EU´s three goals of at least 20 % renewables in the energy mix, reduction of the use of primary energy by 20 % through efficiency measures and reduction of greenhouse gas emissions by 20 % to the year 2020 will obviously have an impact on the use of renewable energy in the Nordic countries. The effects of different combinations of the goals have been analysed within the NEP project through model calculations. The starting point has been a calculation of how the use of different renewable energy sources develops when merely the present policy instruments are used. The calculation shows that the use of biofuels increases rapidly, while the expansion of wind power is limited. “Other” (includes heat pumps, industrial waste heat and solar heating) increases slightly.



***Reference case**: Increase in the use of renewable energy in the Nordic countries, compared to 2005, without any new EU goal.*



***EU goal of 20 % increased use of renewables:** Increase in the use of renewable energy in the Nordic countries, compared to 2005, when EU´s goal of increased use of renewable energy is applied*

20% increased use of renewables

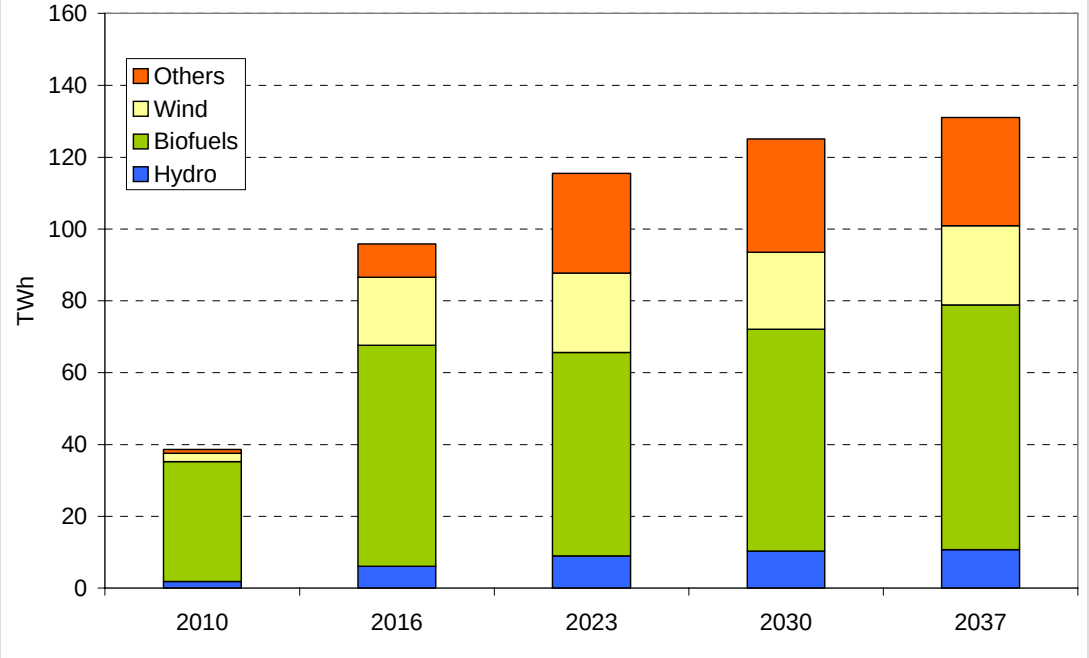
In the next calculation, the EU goal of 20 % increased use of renewables has been added. This has been described in the model as a common Nordic effort, based in the specified national goals. As expected, the use of renewable energy increases significantly. This case shows a much greater use of wind power than when only the present policy instruments are used. The use of biofuels and heat pumps also increases. (In the EU directive proposal, heat pumps are defined as renewable energy.)

Less biofuels when all three 20 % goals are applied!

The use of heat pumps is stimulated

All three EU 20% goals

When all three EU goals are applied simultaneously the use of renewable energy reaches lower levels than when only the goal of increased use of renewable energy is applied. This is largely a result of the reduced general use of energy through efficiency measures. However, the combination of goals also influences the mix of different renewable alternatives. Model calculations from the NEP project show that the use of heat pumps is stimulated, while the use of biofuels decreases compared to the other calculated cases.



***All three EU 20% goals**: Increase in the use of renewable energy in the Nordic countries, compared to 2005, when all three EU´s goals of renewable energy, greenhouse gas reduction and energy efficiency are applied together*

Note: The EU goal of 20% increased use of renewables has been treated in these model runs, not as an overall goal, but as distributed goals on a Nordic level for the electricity sector, the heating sector and for industry respectively.