

Is the Netherlands a climate-neutral energy system?

We explore two scenarios for a near climate-neutral energy system in the Netherlands. With the OPERA model we determine their technology, sector and cost implications. The electricity share in primary energy increases from 19% today to 41-71% in 2050. Hydrogen becomes another important energy carrier, notably in transport and industry.

What are the new sources of energy in the Netherlands?

New sources are expected to include geothermal energy, surface waters, and data centers. In the Netherlands, 78% of enterprises have invested in reducing carbon emissions and mitigating the impact of weather disasters as of 2023. Six out of ten (60%) plan to invest in these areas during the next three years.

Are there future energy systems in the Netherlands?

They can also show which energy system developments may be more likely than others, and which ones remain most uncertain. Dutch scenario studies published in recent years indicate a wide variety of possible future energy systems for the Netherlands, but the determinants of these scenarios remain often unclear.

Does the Netherlands have an energy transition?

In this context, the Netherlands has also set in motion an energy transition to fulfil its European and international obligations. According to the Dutch Climate Act, the Netherlands must have an energy system by 2050 with greenhouse gas emissions that are 95% lower than in 1990. How and with what technologies can that goal be achieved?

How can a Dutch energy system be decarbonised?

Electrification is one of the main options to decarbonise the Dutch energy system: its contribution to total primary energy supply increases from 19% today to 41-71% in 2050, depending on the scenario. By then electricity production will come almost completely from renewable energy sources, particularly wind turbines and solar panels.

How much energy does the Netherlands produce in 2022?

In 2022, the Netherlands produced roughly the same amount of energy as in 2021 (118 billion kWh). Renewable energy production rose by 20 percent, and fossil fuel production decreased by 11 percent. Renewable sources accounted for 40 percent of the total electricity production, marking an increase from the previous year when it stood at 33 percent.

This paper presents two different scenarios for the energy system of the Netherlands that achieve the Dutch government's national target of near net-zero greenhouse gas emissions in 2050. Using the system optimisation model OPERA, the authors have analysed the technology, sector and cost implications of the assumptions underlying these scenarios.

Energy in the Netherlands describes energy and electricity production, consumption and import in the Netherlands. Electricity sector in the Netherlands is the main article of electricity in the Netherlands. In 2020 the Netherlands was reliant on fossil fuel for energy needs, especially natural gas, however the plan is to bring renewable power up to 70% of the el...

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The specific extent of biomass consumption varies by sector, but it plays a significant role in the transition to a more sustainable energy supply in the Netherlands. Biomass is the third-largest source of renewable electricity in the Netherlands, following wind and solar energy.

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Energie Beheer Nederland (EBN) is energising the transition. We are contributing to a reliable and affordable energy supply today and to a sustainable energy system for the future. We invest our knowledge, skills and financial resources to help build a sustainable energy system faster, together with our partners.

In the Netherlands, intensive work is being done on a sustainable, reliable and affordable energy landscape, which is essential for our society. We use renewable and carbon-free sources to power society. This could include solar, wind, hydropower, geothermal energy and biomass.

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Among other things, the country will need to switch to alternative energy sources for transport and heating. Work on this must start now. The Netherlands also wants to achieve zero carbon (CO₂) emissions by 2050. So Dutch central government is taking steps to boost sustainable energy production and find smarter ways of using and saving energy.

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