

# ESG Economist

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## Chance of meeting energy efficiency targets is very low

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- **The revised Energy Efficiency Directive (EED) aims to accelerate the pace of energy efficiency improvement in the EU towards 2030**
- **To realise this, the EED has set the Netherlands an energy saving target of a maximum of 1,609 petajoules of final energy consumption in 2030, which is a decrease of 7% of 2023 levels**
- **Final energy consumption in the Netherlands has decreased by an average of 2.2% per year in the post-Paris period (2017-2023)**
- **Despite these efficiency improvements and the seemingly positive trend towards 2030, the Netherlands Environmental Assessment Agency (PBL) predicts that the goal will not be met**
- **According to PBL, energy demand will increase sharply in 2025 due to the recovery in production in industry and greenhouse horticulture, but also due to increased energy demand from households**
- **After 2025, stated and proposed policy measures will have mixed impact on energy consumption, but on balance, a downward trend is projected towards 2035**
- **Based on PBL estimates, the EED target for 2030 will not be reached in the Netherlands until 2038**

The more energy-efficient companies are, the less energy is wasted and the more is saved. In more concrete terms, this means that with lower energy consumption, at least the same amount of output will have to be realised. Amongst many companies in sectors, energy efficiency has been embraced more often over recent years, mainly due to the relatively high and volatile energy prices. Lower energy consumption reduces operational costs and has a favourable effect on margins. But at the same time, energy efficiency improvements also reduce greenhouse gas emissions and make countries less dependent on energy imports. Energy efficiency is also seen as the low-hanging fruit. Every company – and every household – is able to start working on this tomorrow, so to speak. These are often relatively simple interventions at a low cost.

For these reasons, energy saving is high on the European agenda. The EU's *Energy Efficiency Directive* (EED, 2023) has set energy-saving targets for each member state. Countries that fall under the EED must ensure a reduction in final and primary energy consumption of at least 11.7% in 2030 compared to the 2020 level (reference scenario). In this analysis, we will examine final energy consumption within the EU-27 and take a closer look at the trends. Based on the trend in final energy consumption, it is possible to partially map energy savings and energy efficiency. We will also highlight developments within climate sectors and which important measures have been or can be taken. For the Netherlands specifically, we will take a closer look at sector trends and finally we investigate the feasibility of the EU energy saving target for the Netherlands.

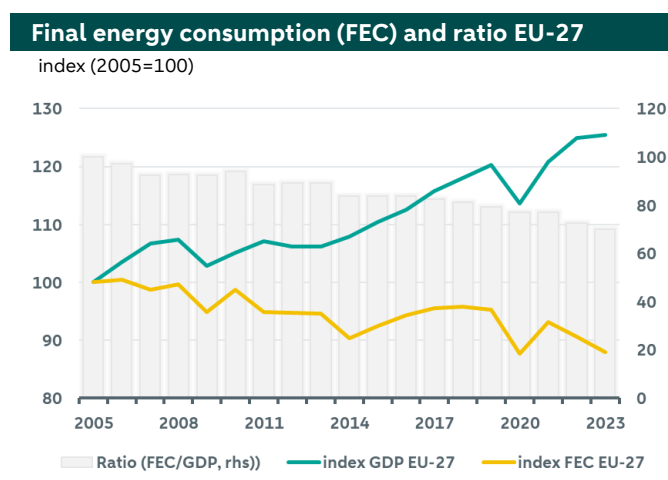
### Final energy consumption EU-27

Final energy consumption refers to energy consumption after which no usable energy source remains. It is the energy that is supplied to end users (such as industrial and agricultural companies, but also households, for example). Achieving greater energy efficiency is linked to final energy consumption. This is because the goal of energy efficiency is to realise more products and/or services (the output) per unit of energy consumed (the input) by end users. According to the *International Energy Agency* (IEA), energy efficiency is one of the important measures for reducing the demand for

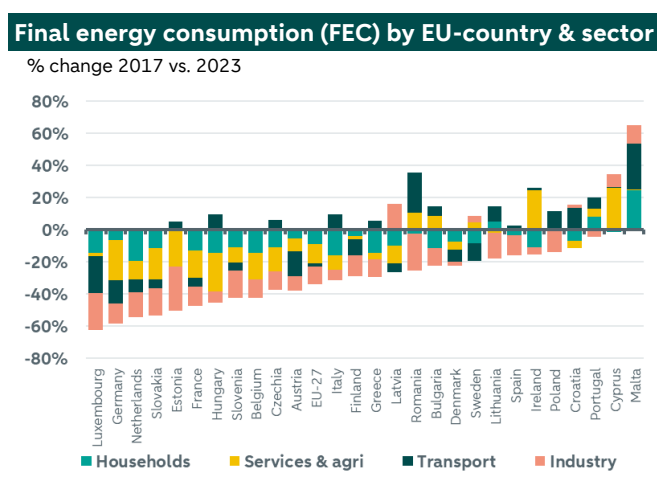
energy, together with closely related measures such as electrification, behavioural change of end users (especially households), digitisation and material efficiency.

To ensure that the EU target for 2030 of reducing greenhouse gas emissions by at least 55% (compared to 1990) can be met, the European Commission (EC) revised the *Energy Efficiency Directive* (EED) in 2023. This revised directive significantly increases the EU's ambition in the area of energy efficiency. Energy efficiency has now become a fundamental principle of EU energy policy and has been given legal status. In this way, energy efficiency will be considered in all important policy and investment decisions going forward, thereby fulfilling the *Global Pledge* from COP28 in Dubai (2023). During COP28, some 120 countries promised not only to triple their renewable capacity by 2030, but also to double the pace of energy efficiency improvements from 2% per year to 4%.

However, the EU-27 is not yet on course to meet the pledge. Over the period 2017-2023 (which is the period to which the principles of the Paris Agreement relate) final energy consumption (FEC) has decreased by an average of 1% per year. For the ratio of final energy consumption versus added value (FEC/GDP, also known as energy intensity), the annual reduction rate is slightly higher at 2.5%. The trends in FEC and GDP make it clear that in the ratio, the increase in GDP has contributed more to the decrease in the ratio than the decrease in FEC. The price effect also has an influence here and this partly distorts the picture. Despite this noise, we can conclude that energy efficiency has improved over the years. But above all, it is clear that much remains to be done in Europe to keep the *Global Pledge's* goals in sight.



Source: EUROSTAT, ABN AMRO Group Economics



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It is therefore inevitable that the emphasis on energy efficiency will increase in the EU in the coming years. This will apply in particular to the major energy-consuming sectors, such as transport, the built environment and energy-intensive industry in all member states. However, the ICT sector is also receiving more attention in this perspective due to the strong growth in the number of data centres in recent years.

In most EU member states, final energy consumption decreased in the post-Paris period (2017-2023). Luxembourg is leading the way, with a 19% decrease in final energy consumption in those years. At the other end of the spectrum is Malta, where final energy consumption has increased by 20% in the past six years. The Netherlands is doing well in this respect and is in the top three countries with the strongest reduction in final energy consumption. Consumption fell by 14% in the past six years, which corresponds to an annual reduction rate of 2.2%. When compared to GDP, the picture is even more positive, with the Netherlands having an average annual energy efficiency improvement of 4.2%.

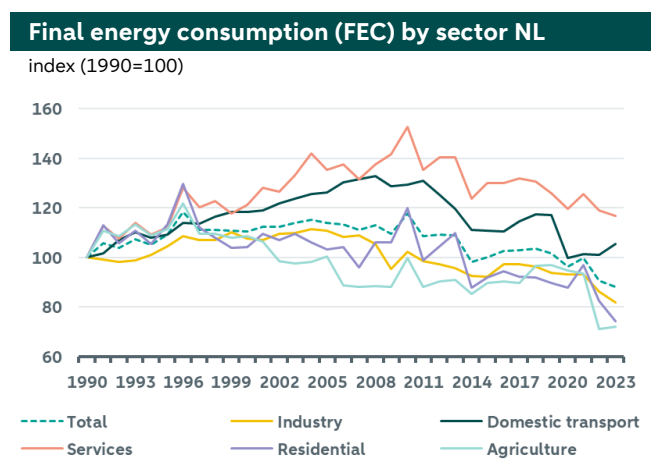
The Netherlands also stands out positively with the decrease in final energy consumption in the residential sector. In this sector, final energy consumption decreased by 20% in the period 2017-2023, which is the strongest decrease of all EU member states. Italy follows the Netherlands here with a gap of 4%-points. In the services and agriculture sector, Germany is the frontrunner (-25%) and in the transport sector, this is Luxembourg (-23%). In industry, it is notable that it is mainly the small countries that have seen a sharp drop in their final energy consumption in the period 2017-2023, while the large industrialised countries (such as Germany, France and Italy) seriously lagging behind in this respect.

### Trend in final energy consumption Netherlands

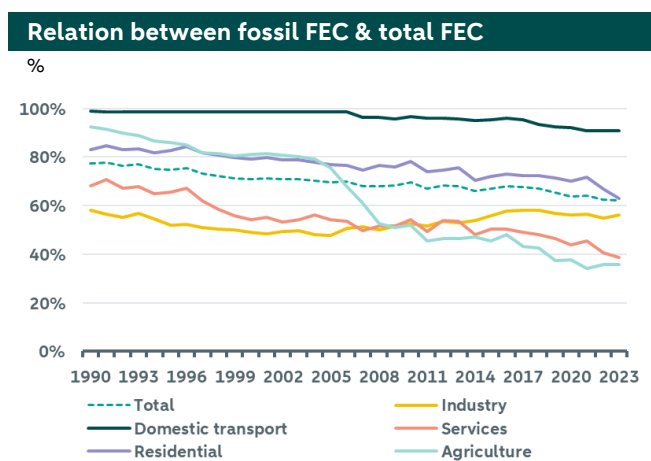
In the Netherlands, most energy is consumed by industry (i.e. including the mineral extraction and construction sectors, but excluding the energy sector). Industry accounts for 31% of total final energy consumption. This is followed by

domestic transport with a share of 25% and households with 20%. Services and agriculture complete the picture with a share of 15% and 8% respectively.

All sectors contributed to a decrease in final energy consumption in the post-Paris period. Some sectors more than others. The decrease was strongest in agriculture and the residential sector. In both sectors, energy consumption has fallen by 20% in the past six years. This is followed by industry with a decrease of 16% and the service sector with 11%. Domestic transport has seen the weakest decline, with only 8% since 2017. The position of sectors relative to their 1990 levels gives a slightly different picture. Domestic transport in 2023 is only just above its 1990 level, which is mainly due to the corona pandemic. Final energy consumption has increased slightly in the past three years. Consumption in the service sector remains relatively high, despite the fact that energy consumption has been on a downward trend since the financial crisis of 2008-2009. The picture is more positive in the other sectors. Final energy consumption is below the national average in industry, the residential sector and agriculture. However, here too it is clear that the shock of the corona pandemic and the subsequent energy crisis have had a major impact, particularly in agriculture and housing.



Source: CBS, ABN AMRO Group Economics



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Energy efficiency can be achieved in various ways. Consider simple interventions such as installing LED lighting or saving energy by not heating unused rooms. But it can also go further than this, requiring more effort and more investment. In this perspective *product redesign* is a possibility (less packaging material, less raw material consumption), or the use of residual heat (for other internal processes or for other companies), but also digitisation of processes (process efficiency through monitoring & sensing). However, it also turns out that replacing fossil fuel-based technologies with renewable energy and electrification technologies can sometimes be two to four times more efficient. In some sectors, significant progress has already been made in this regard, while in other sectors, this transition is still proceeding relatively slowly.

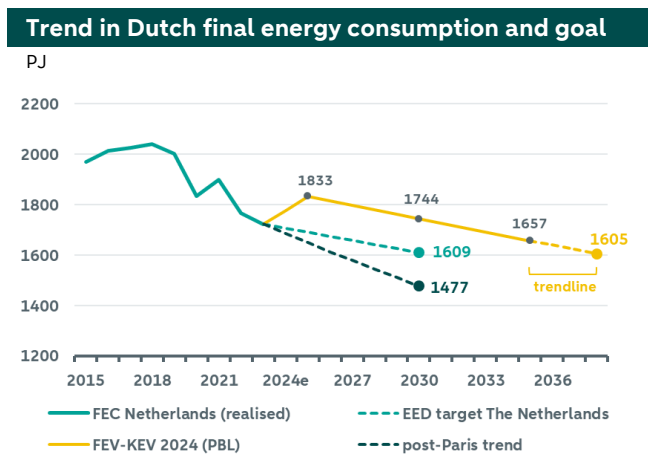
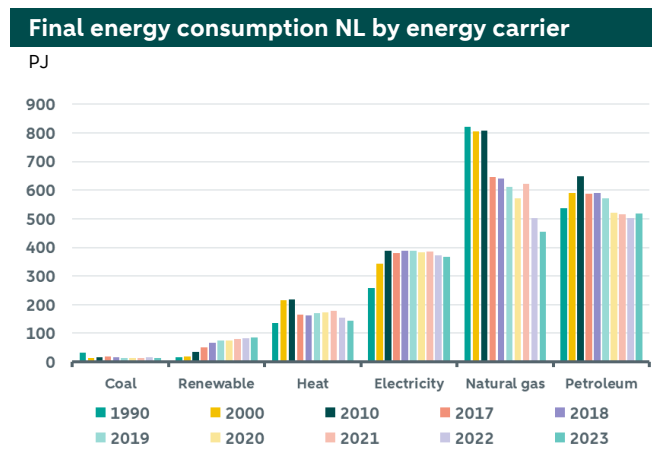
The ratio of final energy consumption based on fossil fuels versus total final energy consumption (see figure on the right above) shows that the replacement of fossil fuels is proceeding the slowest in domestic transport. The electrification of transport has often been labelled a growth market, but the pace is still relatively slow. In agriculture, this transition has progressed the fastest of all sectors. This is mainly because gas consumption has been greatly reduced over the years through the use of combined heat and power (CHP) instead of traditional gas-fired boilers. The use of CHP increased from 2006 onwards. Although CHP is also powered by natural gas (for electricity and heating), the process is much more efficient. In industry, the ratio of fossil energy consumption to total energy consumption has not improved much since 1990 and has even slowly increased again since the mid-2000s. In other sectors, the downward trend over the past 33 years is slightly more positive.

### Goal final energy consumption Netherlands

Gas will remain the primary energy carrier in the Netherlands for the time being, followed by petroleum. This means that the fossil part still has a significant share in the total footprint. As can be seen in the figure on the left below, the share of renewable energy is still relatively small, but this segment does have the strongest growth rate in the post-Paris period. Between 2017 and 2023, renewable energy increased by 65%, while consumption of all other energy carriers decreased in the same period. With a decline of 30%, the consumption of natural gas decreased the most.

Final energy consumption must be reduced in the coming years. This is defined in the EU's *Energy Efficiency Directive* (EED). Based on this EED, the Netherlands has set an energy saving target of an upper limit of 1,609 petajoules in 2030. This is depicted in the right-hand figure below by the green dotted line. There are two other lines, each with another

trajectory. The yellow line is based on calculations by the *Netherlands Environmental Assessment Agency* (PBL) and the dark green line is based on historical trends in the post-Paris period (realised policy).



Despite the efficiency improvements in the post-Paris period and the seemingly positive trend that is resulting from this towards the 2030 goals (see dark green dotted line), this path is unlikely to last according to PBL. Far from it, in fact. The chances of the Netherlands reaching its EED target for 2030 are in fact small (only 5 to 10%, PBL). The PBL expects that during 2025 production in industry and greenhouse horticulture will increase again, and with it energy consumption. And assuming lower gas prices, the PBL expects also that households will start heating their homes more again. In the period after 2025, stated and proposed policy measures will either reduce or increase energy consumption, but on balance, this will result in a downward trend towards 2035. In the mobility sector, for example, the increase in the speed limit to 130 kilometres per hour and the reintroduction of red diesel will lead to higher energy consumption. On the other hand, policy measures in industry and the built environment can help reduce energy consumption. These include customised agreements in industry, extra subsidy budgets for retrofitting insulation and standards for the phasing out of homes with poor energy labels.

The PBL estimates in the KEV 2024 on final energy consumption extend to 2035. If we extend the trend line to after 2035, the EED target will not be reached until 2038. More than eight years later than initially intended. Under the EED, the EC will increase the pressure on countries to achieve the targets. If the Netherlands does indeed end up on the trend of the yellow line, the EC will at least issue a warning and initially ask the Netherlands to further flesh out its energy saving policy in the coming years. If that does not happen and the Netherlands fails to act accordingly, other sanctions such as fines and legal action may follow. There is therefore a good chance that the pressure will be further increased in the coming years to improve energy efficiency in the Netherlands.

## To conclude

Implementing energy-efficient measures is relatively cheap, has a favourable effect on margins (or household wallets), makes the EU less dependent on energy imports and also has a positive effect on the climate. So it's a win-win situation. That is why it is an important focus area in the EU's climate strategy. However, for both the EU and the Netherlands, there is still no prospect of achieving the set energy efficiency targets. In the Netherlands, it is mainly the domestic transport and service sectors where the reduction of final energy consumption is still relatively slow. But there is also much efficiency to be gained in industry. Ultimately, electrification is an important driver for accelerating efficiency improvements. Electrified technologies, for example, are many times more efficient than fossil fuel-based technologies. It is unfortunate, however, that the problems in the electricity sector only seem to be piling up and there is no solution in the short term. This only increases the pressure on the EU to improve energy efficiency.

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