

Opinion | 22 September 2026

ENERGY

Europe's Pitch Book: Energy goals all point in the same direction

Europe needs to reduce carbon emissions, geopolitical vulnerabilities and the cost of energy. It may sound daunting, and the road ahead will be long, but the encouraging news is that these goals are becoming increasingly aligned, and the winners are becoming easier to spot



Europe faces a fundamental constraint: an over-reliance on imported fossil fuels. This creates three challenges: relatively high energy costs, climate change, and geopolitical vulnerability. Recent events have highlighted how closely these issues are linked. Two wars have exposed the risks through price volatility and supply insecurity. The stakes are high. But there is also a lot that can be done. Let me break it down into five levers that Europe is already pulling, with a particular interest, as always, in the areas where I believe progress is being made.

1 Use less energy

The obvious way to solve an over-reliance on imported fossil fuels is to reduce energy demand. In a very unscientific poll I conducted, everyone overestimated how much energy Europe uses today compared with 20 years ago. In reality, total primary [energy demand](#) in the European

Union has fallen by 20% over 20 years. The decline has been especially rapid since the war in Ukraine. The aim is to reduce total energy demand by a further 30 to 40% by 2050, despite continued economic growth, implying a pace of decline broadly in line with that of the past two decades.

In my small poll, people assumed that climate change would lead to higher energy consumption as summers in Europe become hotter. However, climate change [is expected to reduce total energy demand](#). Cooling demand is expected to go up significantly, but lower heating demand in parts of northern Europe should more than compensate for that.

Despite the progress, the pace of demand reduction remains too slow to meet Europe's targets. The solutions are clear: better insulation of buildings, more energy-efficient appliances and industrial processes, and greater adoption of electric vehicles and heat pumps, which are significantly more efficient than fossil fuel-based alternatives.

Higher fossil fuel prices, partly driven by the war in Iran, together with supportive policies, provide a strong business case to save energy and should help push Europe further in this direction.

2 Switch to electrons

To wean itself off fossil fuels, Europe will need to use electricity for a much larger share of its energy needs. The aim is to double the share of electricity in final energy consumption, from [23% to 46%](#) between 2025 and 2040. This will largely be achieved through the adoption of electric vehicles, heat pumps, electric boilers and electrolyzers.

The bad news is that this is progressing more slowly than planned. The good news is that it is rapidly becoming a lot cheaper. Estimates indicate that [three quarters of final energy demand](#) can now be electrified at a lower lifetime cost than fossil fuel alternatives (the exceptions being steel, planes, ships, cement and chemicals).

While an upfront investment is required, households can eventually benefit from electrification. The European Commission estimates that heat pumps can [lower an average household heating bill by 60%](#). For consumers, electric vehicles are, [on average, 33% cheaper](#) to drive than gasoline-fuelled cars, partially because they use less energy per kilometre. The total effect is estimated to be significant, [saving households more than €2000](#) per year.

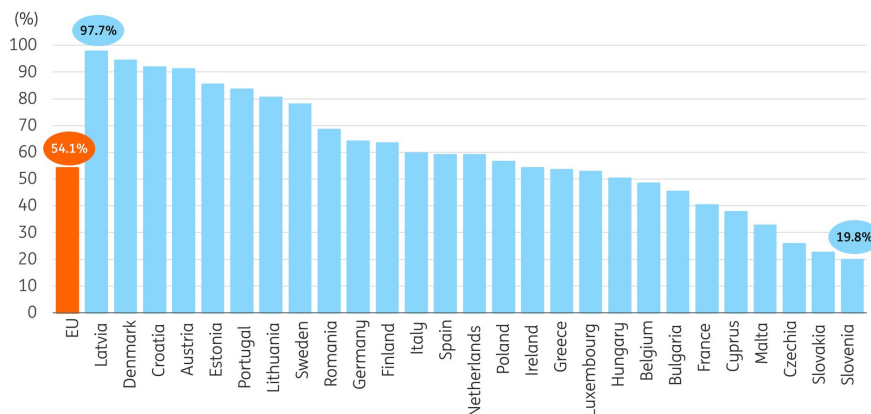
3 Produce more renewables

Europe is ramping up solar and wind energy and, to a lesser extent hydro, nuclear and ocean energy. Installed wind and solar capacity is increasing at a rapid pace, by [more than 50% from 2021 to 2024](#), for example. In 2025, [wind and solar overtook fossil power](#) to become the largest source of power generation.

Growth has been strong in countries like Germany, the Netherlands and Spain, but also in less obvious places such as Bulgaria, Hungary and Greece. Some regions now barely use any fossil fuels for electricity generation, notably the Baltics and the Nordics. The cost benefits of the countries that are the least dependent on fossil fuels are clear: in the Nordics, wholesale power prices are [often lower than in the US](#).

More than half of electricity generation from renewable sources

Share of energy from renewable sources in net electricity generation, Q2 2026



Source: Eurostat

Europe [is expected to continue to add](#) domestic power at a rapid pace. Combined with lower usage over time, Europe could [halve fossil fuel imports](#) by 2040 compared to 2023. The European Commission [underlines](#) that front-loading decarbonisation could even bring fossil fuel imports down by as much as 80% by that date. While progress is fast, it is [not fast enough to meet the ambitious targets](#). Faster permitting for new projects is one of the key levers that the European Commission will use, while rapidly declining costs for wind and solar power (63 and 89% [cheaper than in 2010](#)) and more expensive oil and gas will also help.

4 Balance demand and supply

Of course, renewable generation depends on weather conditions, and as such, electricity supply varies more over time and across regions. This requires balancing supply and demand to avoid wasting energy. There are three ways to do this: storing surplus electricity, making demand more flexible, and strengthening and interconnecting power grids across the continent.

- The ramp-up of storage has been rapid. Battery sales [increased tenfold in five years](#).
- Flexible demand will become easier over time, as smart meters, electric vehicles and dynamic pricing encourage and enable consumers and businesses to shift part of their electricity use to periods of abundant supply.

- In terms of cross-border interconnections, Europe is well positioned because renewable output varies across regions. Strong winds in the North Sea, sunny conditions in Spain and hydropower availability in the Nordics and the Alps rarely peak at the same time (this summer being a notable exception). Europe already has one of the world's largest integrated electricity markets, significantly larger than that of the US, allowing countries to benefit from their diverse supply and demand profiles.

But here, the truly daunting complexity of the energy transition comes into view. Policies that encourage electrification, storage, demand flexibility and grid expansion do not always point in the same direction, while the costs and benefits are often distributed unevenly across countries.

Higher network charges help recoup grid investments, but make electricity less competitive relative to gas. An interconnector may benefit Europe as a whole, but an individual country may see its electricity prices increase.

Compromising on [additional policies](#) will be a struggle, but with net savings already available and [technological options](#) continuing to expand, agreeing on these policies should become easier over time.

5 Diversify the remaining need

For the remaining fossil fuel imports, Europe is focused on reducing its dependence on Russia. This has been helped by cutting gas usage [by about 15%](#) as well as a shift towards imports from Norway, and LNG from the United States. To facilitate this, Europe expanded its LNG import capacity by almost 50% between 2021 and 2025. By 2027, Europe aims to end imports of Russian gas altogether, making it less vulnerable to this particular chokepoint. Europe also has significant [potential](#) to swap LNG for domestically produced biogas.

Dependence on China for cleantech solutions is a legitimate concern, but differs fundamentally from dependence on imported fossil fuels. Europe needs to buy oil and gas every single day, whereas imported solar panels, batteries and wind turbines become domestic energy-producing assets once installed. And Europe could build a strong cleantech recycling industry, which would help to limit this dependency.

Putting the price tag into perspective

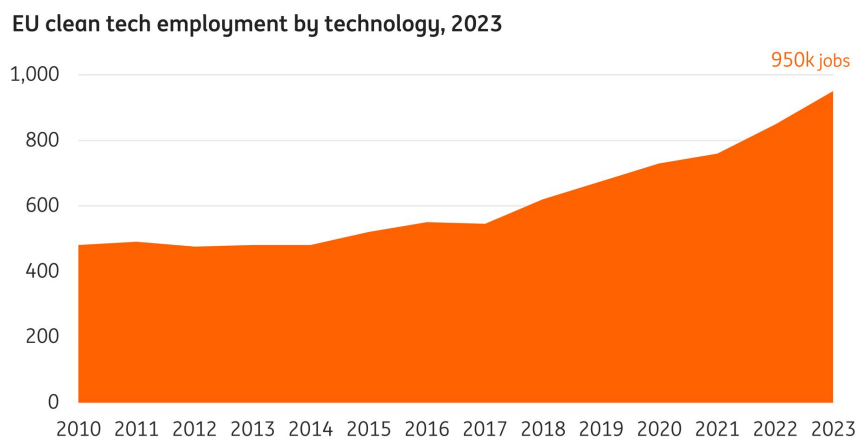
[The numbers associated](#) with the energy transition are often daunting. Investments reached €330 billion in 2025 (some 1.6% of GDP) but estimates suggest that an annual investment of €695 billion (3.5% of GDP) will be needed to meet Europe's targets. However, these investments should come down over time as the clean energy system expands. At the same time, they will significantly reduce Europe's recurring fossil fuel bill, which still amounted to €396bn in 2025, when energy prices were much lower than they are today.

A growing sector

These investments bring me to an underappreciated success story of the energy transition. While Europe imports a significant amount of cleantech goods (€90bn, mainly batteries and solar), it exports a similar amount (€82bn, mainly EVs). The net trade deficit is only €8bn – less than 3% of the trade deficit in fossil fuels. Imports from China attract a lot of attention, but in reality, most of the €330bn that Europe invests accrues to European corporates, workers and governments through tax revenues.

Within cleantech, Europe is relatively strong in areas like electricity grid components and offshore wind technologies. Extensive supply chains exist in Denmark, Germany and Spain. The cleantech sector (wind, solar, hydro and batteries) is growing fast and is estimated to employ about one million workers, [double the number from a decade ago](#).

Employment in EU clean tech has doubled in a decade



Source: Bruegel based on Prognos

Is it a problem that others are faster?

While Europe is moving in the right direction, the increase in electricity generation is happening [more quickly elsewhere](#). That matters for relative costs, but how big a problem is it for Europe?

Most energy is consumed in areas that face limited international competition, such as heating, local transport and many services. Europe has lived with relatively higher energy prices for decades, and households and businesses have adapted through smaller cars, shorter driving distances, more compact homes and greater energy efficiency. If energy costs decline more quickly elsewhere but also fall for European households, this is unlikely to lead to problems here.

For some tradables, higher energy costs are clearly an issue. This is particularly true for fertilisers, steel, aluminium and refining, as well as for shipping and aviation. As in 2022, sectors exposed to international competition [will come under pressure](#). It also brings a clear direction: Europe is likely to see less production of energy-intensive commodities, while companies will need to invest further in energy efficiency.

Many will focus on specialised, higher-value products of greater strategic importance. From a resilience perspective, governments will aim to diversify sources of bulk imports while supporting parts of these industries to maintain a minimum level of domestic production for strategic reasons.

This adjustment will be painful for the companies, workers and regions involved, but its macroeconomic scale should be kept in perspective. Total energy-intensive manufacturing industries account for about [2% of EU GDP](#) and a lower share of total employment.

Meanwhile, the global focus on renewables accelerates innovation to lower their cost, which will benefit households via cheaper imports and can help mitigate climate change (although, to be clear, this is not sufficient and requires more demand curtailing policies). In many respects, Europe benefits from the success of others.

Fast change, a clear direction and winners

The honest conclusions are in line with the 'glass half full' approach: Europe has achieved more than the public debate often acknowledges, but less than its ambitions require.

The direction of travel is nevertheless increasingly clear. Europe's key objectives of lowering emissions, reducing vulnerabilities, and cutting costs all point in the same direction: use less energy, electrify as much as possible, expand renewable generation and balance the market. This makes corporate investment decisions easier. The speed and exact measures may be uncertain but a reversal, [like that seen in the US](#), appears unlikely.

Within Europe, regions with abundant renewable power, strong grids and flexible energy systems will become more attractive for new energy-intensive activities. Households can benefit from lower costs over time and the cleantech sector has already grown significantly. The focus on economic losers is warranted, but there are real economic winners, too.

The journey may be long and challenging, but the direction is hard to argue with: energy that is cheaper, cleaner and more secure. Along the way, there's plenty of evidence that things are moving in the right direction for those who prefer to see the glass as half full.

Author

Marieke Blom

Chief Economist and Global Head of Research

marieke.blom@ing.com

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