

## A New Beginning for Our Global Energy System Leaving The Year of Peak Emissions Behind Us as The Energy Transition Truly Begins

2024 will go down in history as the year that emissions reached their peak.

That is according to DNV's latest Energy Transition Outlook (ETO) report, which found that CO<sub>2</sub> emissions from the combustion of coal, oil and gas are now declining.

While this is undoubtedly positive news, we must progress with tempered optimism.

Data from the ETO revealed that energy-related emissions are now entering a prolonged, but slow, period of decline and are set to decrease almost 50% by mid-century. However, this will still fall short of requirements set out by the Paris Agreement, and DNV's forecasts predict the climate will warm to 2.2°C by the end of the century. In other words, the mission is not yet complete.

DNV's New Power Systems report highlights the rapid changes we expect to see in our power systems, which is driven by a projected doubling in global electricity demand within the next 25 years.



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A surge in demand of this size necessitates a significant expansion to the power grid, including a doubling of the global transmission and distribution grid length, or equivalent rise in grid capacity, which is expected to expand 2.5 times between now and 2050. By increasing investments into digitalisation and the use of artificial intelligence, we could support this

and bring about new efficiencies in energy production and transmission.

Across this same 25-year time frame, electricity will be decarbonised by 90%, with 70% of the supply coming from solar and wind.

In particular, the uptake of solar photovoltaic (PV) technologies has been crucial in reducing the need for coal power. The installation and use of PV panels has grown exponentially, increasing by 80% to 400GW in 2024 alone.

Electric vehicles (EVs) are also scaling in use. Sales of EVs soared by 50% last year and are expected to achieve a 25% share of new passenger vehicle purchases by the end of 2025, before reaching 50% by 2031.

Each of these developments, which are joined by advancements in hydrogen and carbon capture and storage, among other renewable sources, mark milestones in our journey to achieve net zero. But if real, lasting change is to be implemented, we cannot lose sight of the bigger picture.

### Overcoming Barriers to Net Zero

DNV's research concluded that there are political and budgetary hurdles slowing down our collective efforts to decarbonise, highlighting a clash between geopolitical priorities and emissions reduction ambitions, which tend to fall below energy costs and national security in the pecking order.

This results in policies enabling the deployment and scaling of renewables technologies being too far down the agenda, in both the political and corporate spheres, to make a substantial impact



on the speed of the energy transition's downwards trajectory.

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Consumers and businesses can also help to drive this change, with electrification meaning that they both gain far more out of the energy they receive. By making their voices heard, the public can hold a great deal of influence over new investments, policies and regulations.

Looking at the expected success of our energy transition efforts can evoke mixed feelings. Projections estimate that 12% of the world's electricity supply is expected to still come from fossil fuels by 2050, which makes for a stark role reversal with renewable sources but still indicates that we will fall short of net zero ambitions.

With the peak point of emissions now very likely to be in our rear-view mirror, we can be sure that progress is indeed being made. However, while it is an exciting prospect to be stepping into a year where we can say that the energy transition is now finally underway, we cannot rest on our laurels if we are to see it through to completion. The time to act is now.

### About DNV

DNV is an independent assurance and risk management provider, operating in more than 100 countries. Through its broad experience and deep expertise DNV advances safety and sustainable performance, sets industry standards, and inspires and invents solutions.

Whether assessing a new ship design, qualifying technology for a floating wind farm, analysing sensor data from a gas pipeline or certifying a food company's supply chain, DNV enables its customers and their stakeholders to manage

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Driven by its purpose, to safeguard life, property, and the environment, DNV helps its customers seize opportunities and tackle the risks arising from global transformations. DNV is a trusted voice for many of the world's most successful and forward-thinking companies.

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