



The energy transition in Europe

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WEO is IEA's annual flagship publication, peer-reviewed by 200+ experts and widely used by policy-makers & other stakeholders. Core WEO team is composed of around 40 modellers & analysts; modelling team is organised by sector (demand) and fuel (supply)

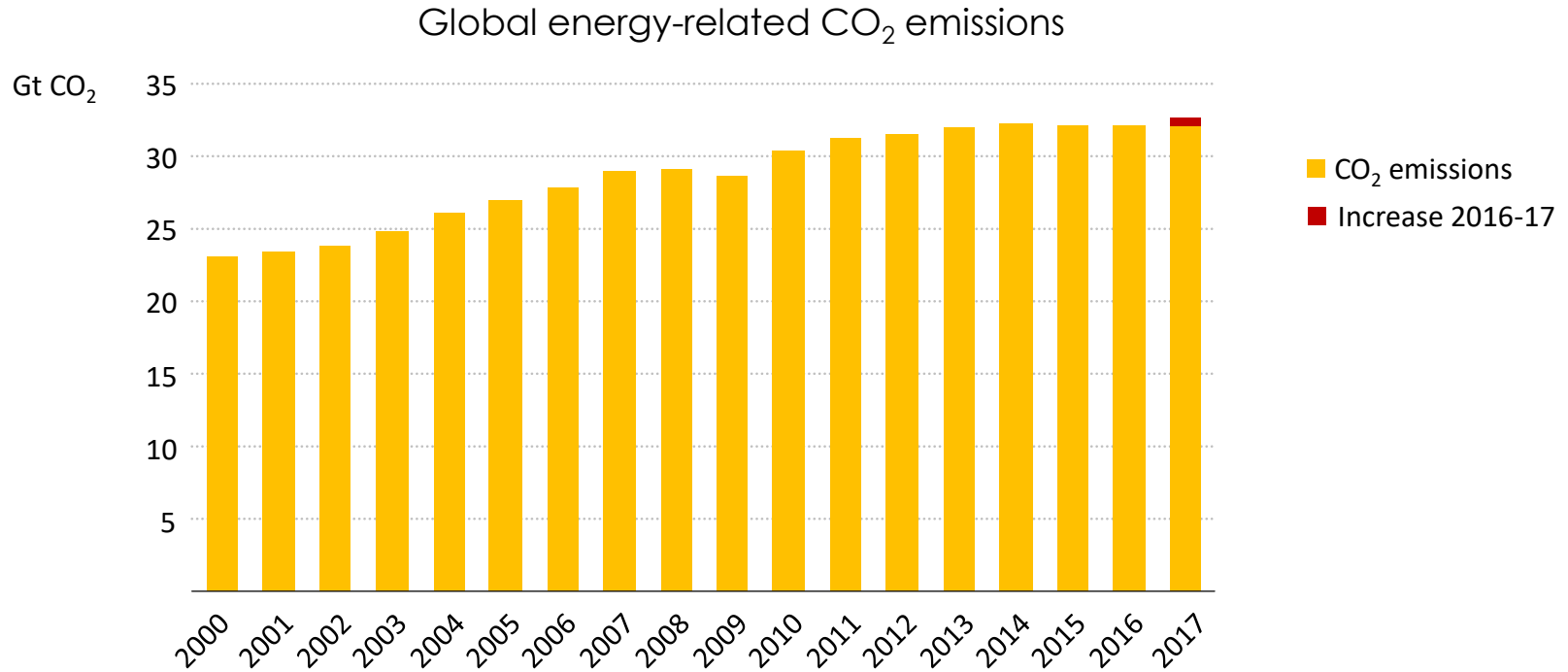
WEO analysis aims at gathering insights into long-term energy sector trends using scenario analysis, with an emphasis on the impacts of policies:

- *Benchmarking future expectations: where do existing and announced policies take us ("New Policies Scenario")? This includes the NDCs from COP21.*
- *Normative scenarios: what is required from the energy sector to achieve the energy-related Sustainable Development Goals ("Sustainable Development Scenario")?*

The intention is not to predict the future, but to understand what difference policies could make to that future

The WEO has an evolving focus from oil security & OECD countries, to all fuels, all regions, to environmental and social consequences of energy use

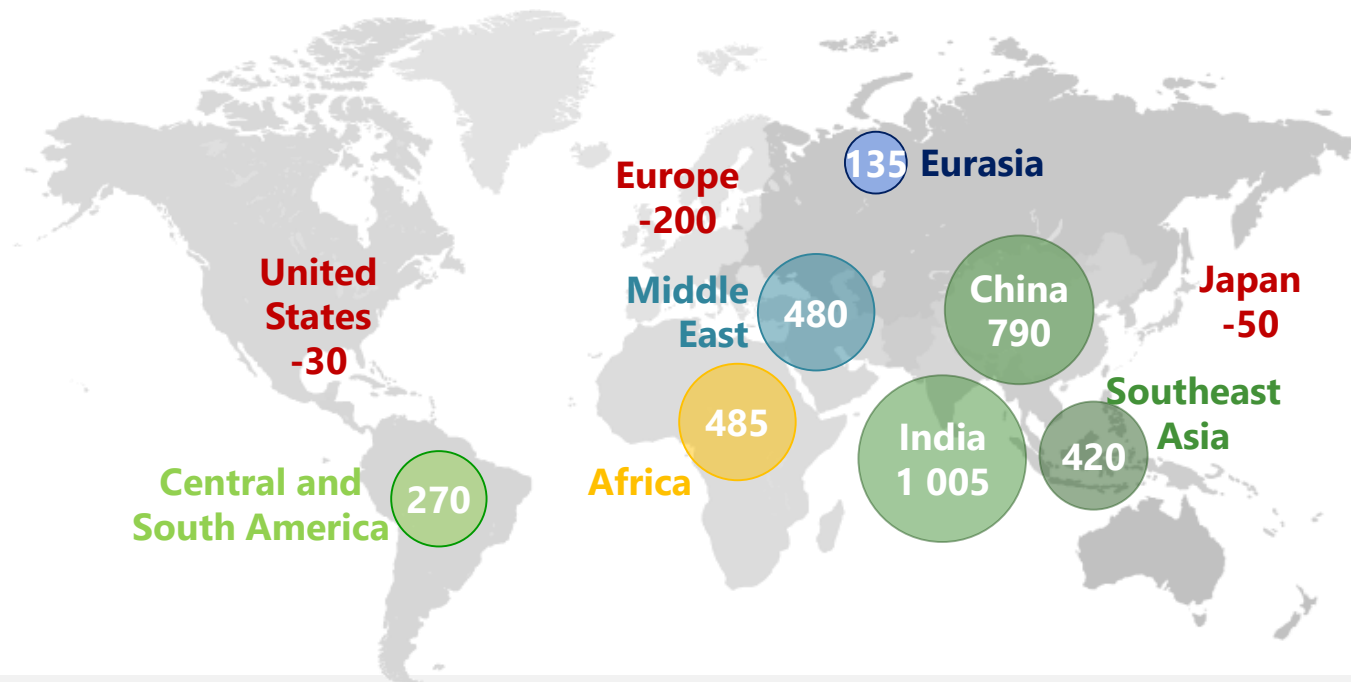
After three years of plateau, global emissions increase again



IEA estimates show that global energy-related CO₂ emissions reached a historic high in 2017, telling us that current efforts to combat climate change are far from sufficient

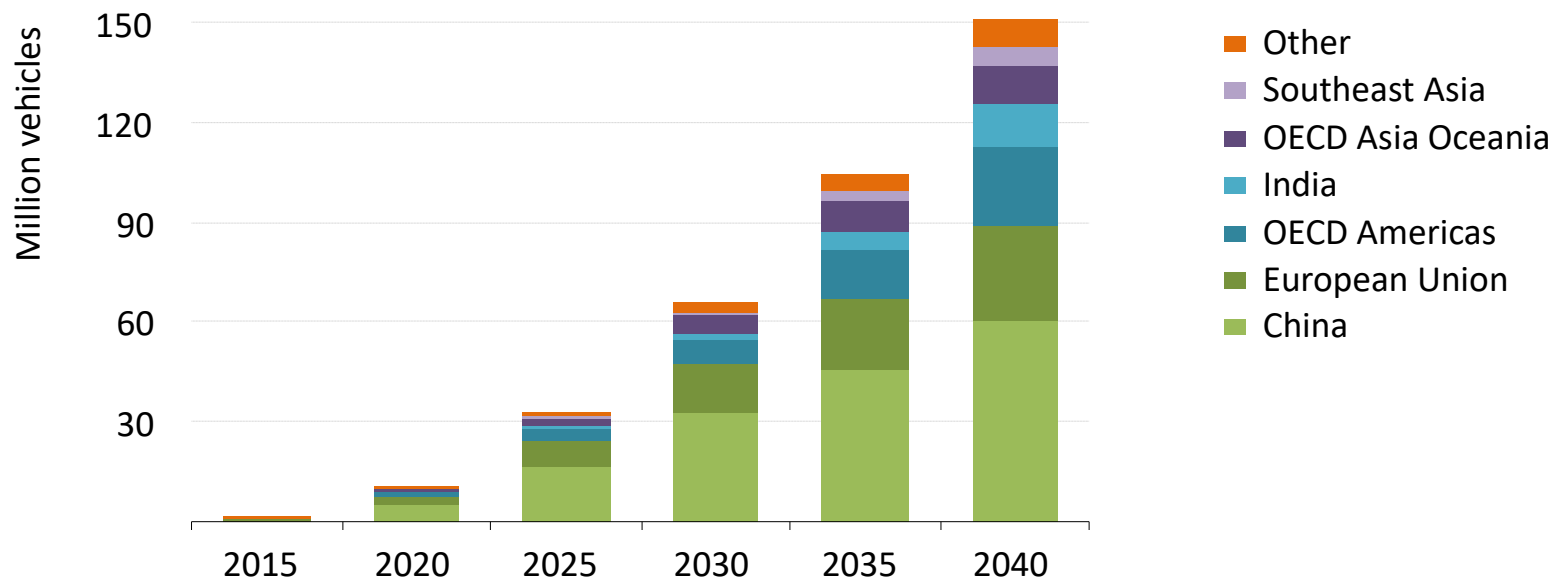
The EU's drive for more efficiency contributes to negative demand growth

Change in energy demand, 2016-40 (Mtoe)



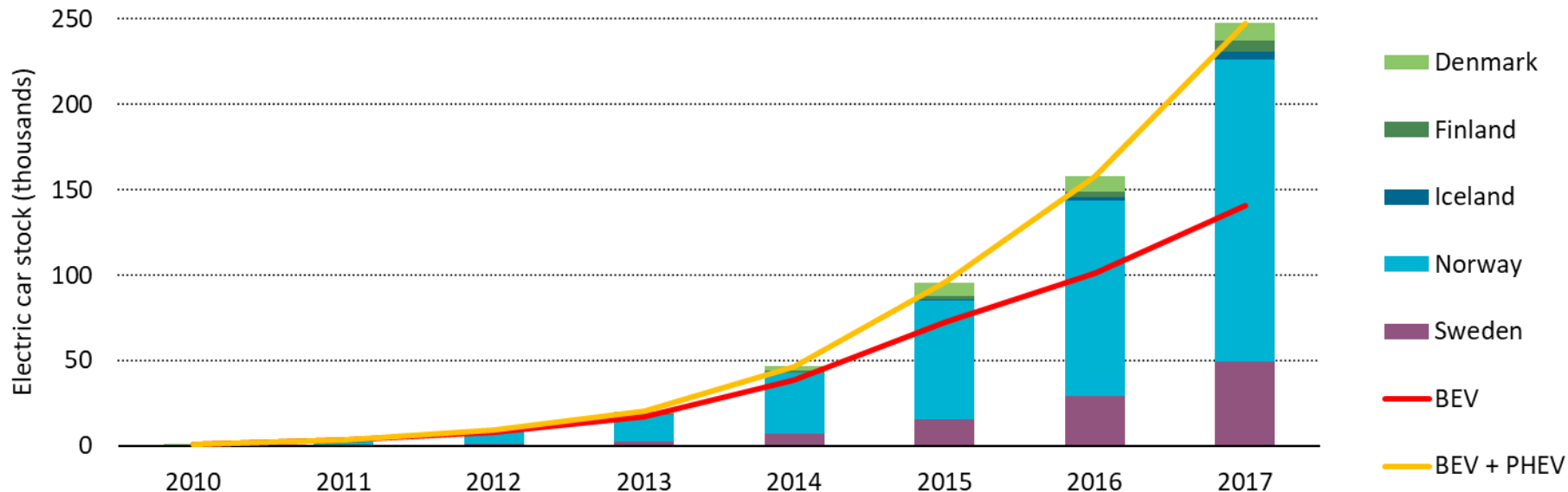
Energy demand growth is concentrated in developing regions, while the maturity of the EU market and its drive for greater efficiency puts it at the forefront of demand reduction

Electric vehicles in circulation in the New Policies Scenario



Falling battery costs are supporting the rapid expansion of electric car sales, led by China, Europe and the United States

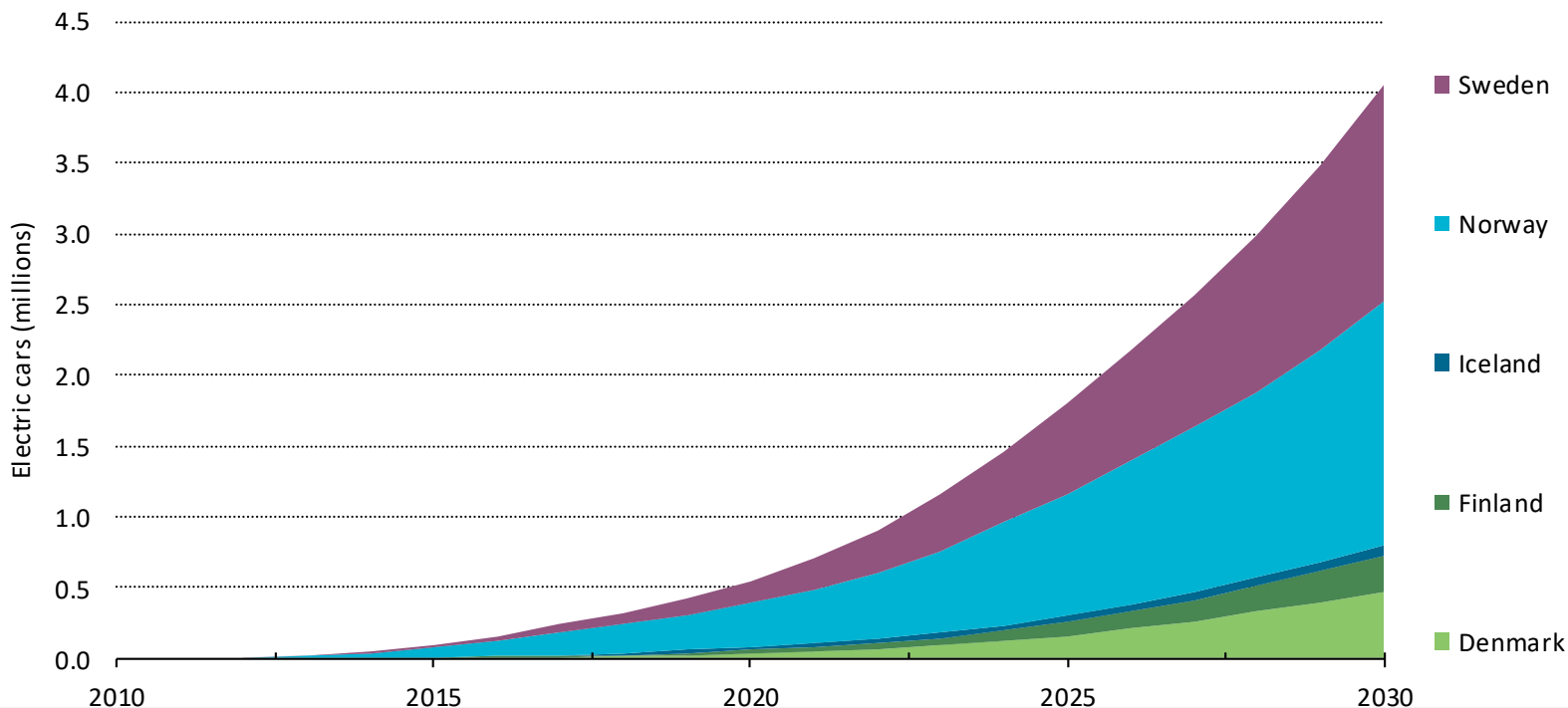
Nordic electric car fleet



The Nordic electric car fleet reached almost 250 000 units in circulation last year. More than 70% of the electric cars circulating in the Nordic region are located in Norway.

Nordic electric car stock could reach 4 million by 2030

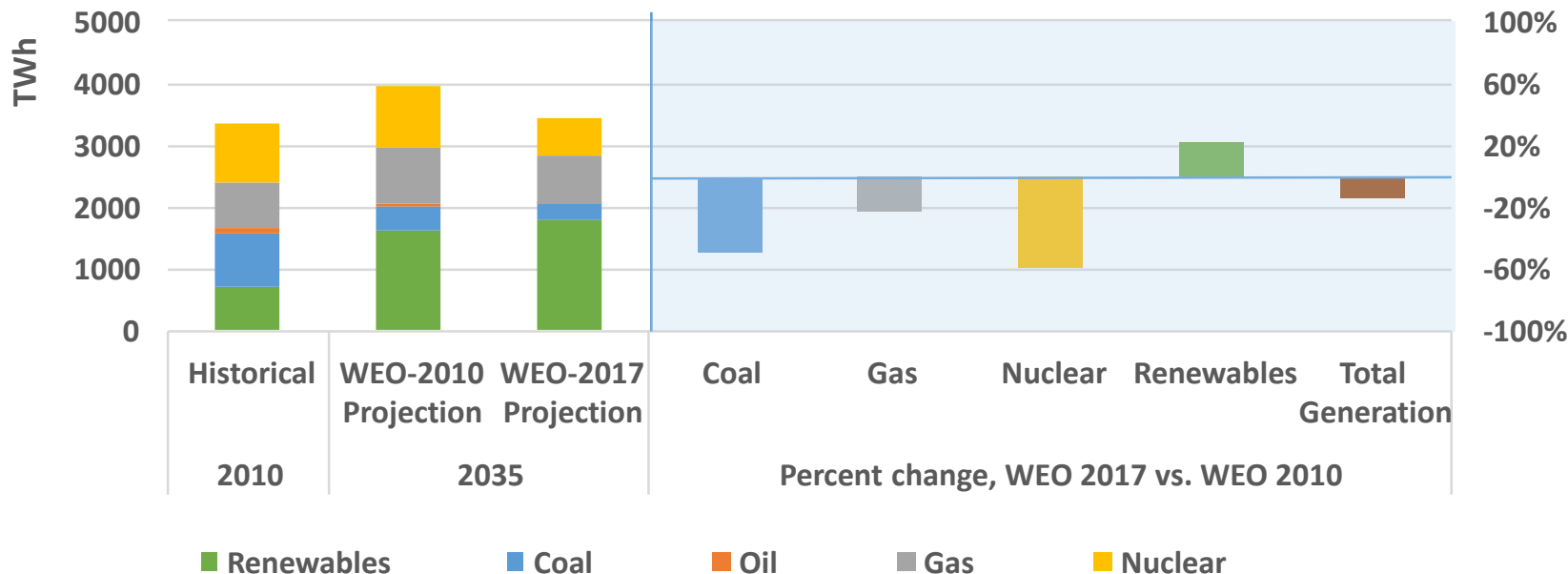
Deployment scenario of electric cars in the Nordic region towards 2030



Current market size, announced policies and climate ambitions in the five Nordic countries suggest that the EV stock could reach 4 million units by 2030.

Gradual evolution of EU/MS policies have changed WEO power outlook

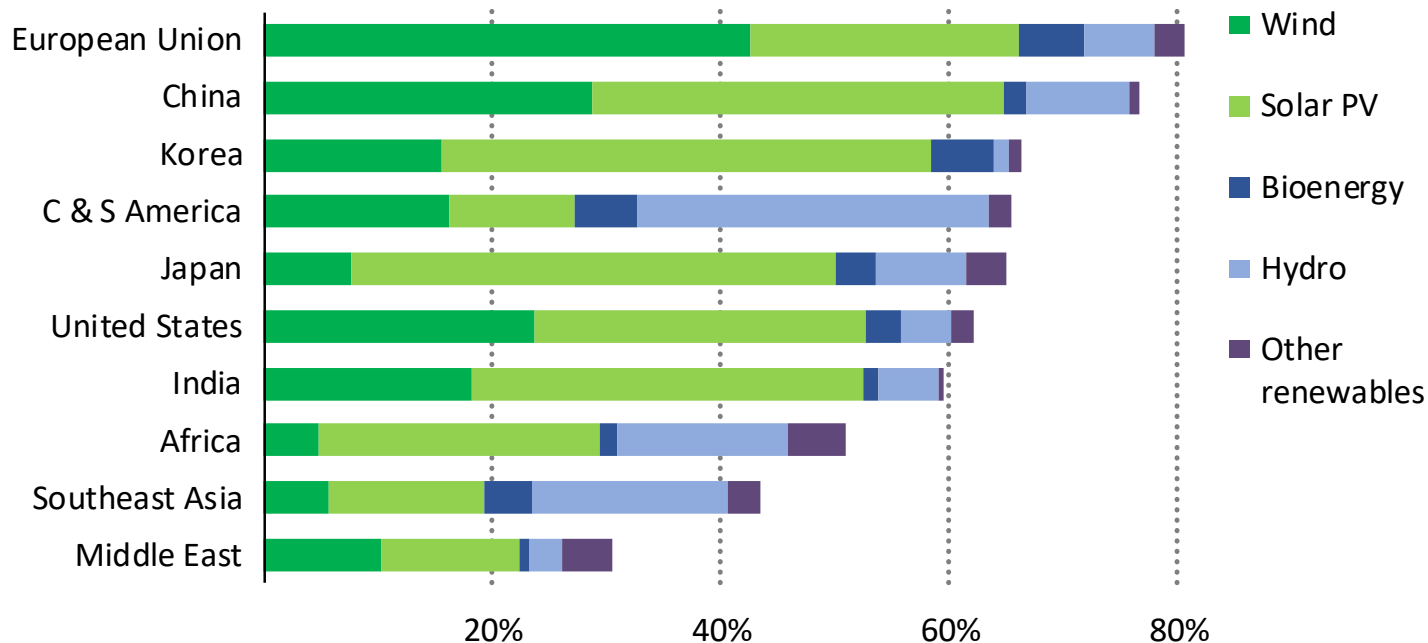
WEO projections for EU power generation in 2035 (WEO 2010 vs. 2017)



Prospects for coal and nuclear electricity have significantly diminished, while efficiency and renewable ambitions have bolstered the potential for a greater share of renewables in a smaller EU power mix

The EU leads the way in shares of renewables in capacity additions

Share of renewables in total capacity additions by region in the New Policies Scenario, 2017-2040



The expansion of renewables in the EU (over 1,500 TWh) far outpaces electricity supply growth to 2040, replacing lost output from retirements and displacing output from existing power plants

- After 3 years of remaining flat, **global energy-related CO₂ emissions grew** in 2017 – in part due to less emphasis being placed on energy efficiency
- The European Union remains at the **forefront** of global decarbonisation efforts, and the latest policy packages reflect its continued leadership ambitions
- **Renewable electricity** will make up almost half of the EU's power generation mix by 2030, a significant contribution to the overall target of a 32% share in renewable energy.
- However, the next frontier of decarbonisation – **heat and transport** – are challenging, and the energy transition must remain supported with well-designed policy incentives and support schemes.
- Like the EU and Nordic-Baltic energy cooperation, the IEA is committed to **close cooperation & dialogue** to ensure a future of reliable, affordable and clean energy