

Nexus between Transport and Renewable Energy

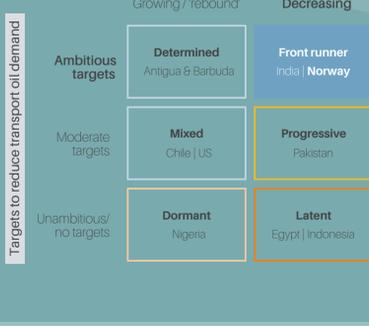


Norway

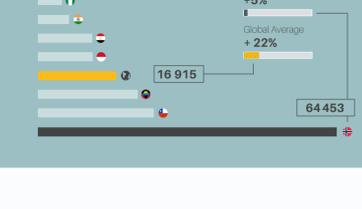
Norway has established a solid framework to decarbonise its transport sector, supported by a power generation industry that is nearly 100% renewable. Additional focus on freight transport decarbonisation is needed to achieve ambitious long-term mitigation targets. However, Norway's continued oil and gas exploration and exportation remain at odds with its climate action plans.

Country Typology Framework

This framework is the basis for an analysis of fossil fuel subsidy reform and renewable energy scale up in the transport sector, which can reduce carbon emissions and generate tax revenues for sustainable development.



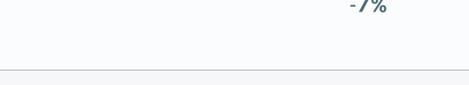
GDP per capita 2019



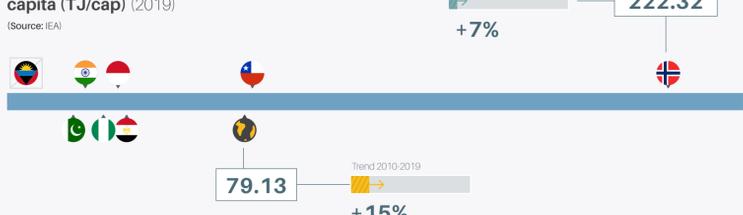
Population 2019



Fossil Fuel Energy



Share of power generation in total fossil fuel CO₂ emissions



In 2000, to prevent increased consumption of heating oil due to newly introduced higher tax rates on electricity, a base tax on mineral oil was introduced. Most uses of mineral oil where electricity was no alternative, were exempted from the tax. The standard rate of the tax on mineral oil has been increasing over time and it now exceeds the standard rate of the electricity tax, but a range of exceptions remain.

(Sources: OECD)



2015-2017 Norway provided substantial budget transfers to its coal mining industry. Production support for oil and gas is minimal and has remained relatively constant over the last decade.

(Source: OECD)



Subsidies for petrol and diesel were eliminated in 2014.

(Sources: OECD, ISD)

Norway has allocated over two thirds of its recovery budget in green investments, with a large share going to CCS and renewable energy, with smaller budgets allocated for clean energy R&D and investments in public transport, rail and shipping.

(Source: GRC)

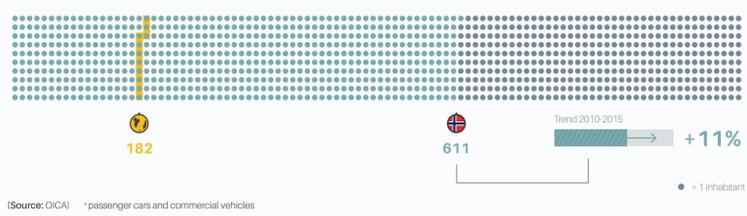
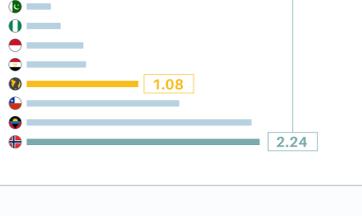
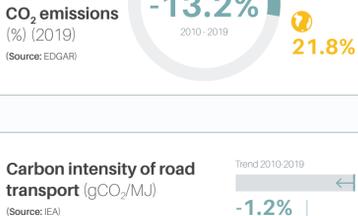
Renewable Energy



Renewable electricity is already almost completely renewable.

*Primary energy refers to all energy used in a country before transformation and encompasses all uses, including all non-electricity use of energy.

Transport

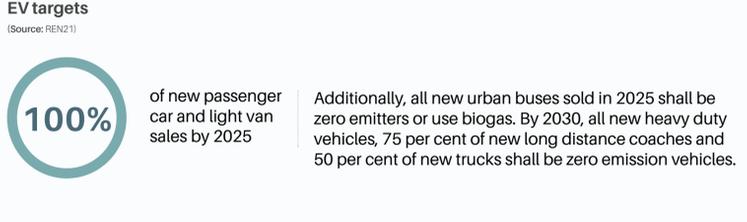


VEHICLE ELECTRIFICATION

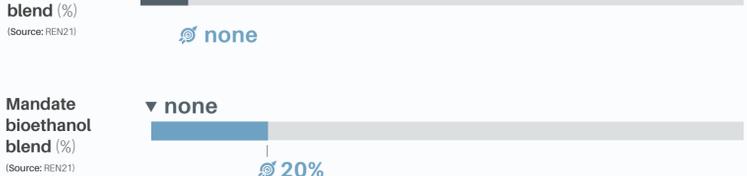
	Total number in use (2019)	Growth (2018-2019)	Number sold (2019)	Growth (2018-2019)
Electric Cars	328 783	32%	79 669	9.5%
Electric 2-wheelers	—	—	152 000	—
Electric 3-wheelers	—	—	630 000	—
Electric Buses	302	319%	230	461%

In Norway, battery-electric cars have been exempt from registration tax since 1990 and from value added tax since 2001. Such taxes in Norway can be up to half or as much as the full initial (pre-tax) vehicle purchase price.

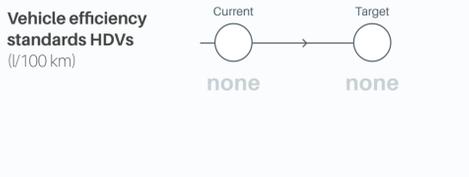
EV targets



BIOFUELS



VEHICLE EFFICIENCY



Other transport targets

Reduce transport emissions 40% below 2005 levels by 2030

Threats and Opportunities

ENERGY

Norway continues oil and gas exploration (unlike neighbouring Denmark), and its extraction plans up to 2030 have been revised upwards (UNEP PG). Norway's fossil fuel production is largely for export, and thus does not appear in national emission inventories but creates significant impacts for importing nations. Increasing global climate action creates a risk of stranded investments in extraction infrastructure.

TRANSPORT

Norway has numerous policies in place to reduce GHG emissions from passenger transport; however, it has few corresponding policies for freight transport, apart from some related to shipping. Without further action in this area, transport will hinder progress toward the target to reduce overall emissions 80-95% by 2050 (UNFCCC).

Electric and plug-in hybrid vehicles accounted for nearly 70% of car sales in Norway during the first half of 2020 (TCC-GSR). With its electricity generation almost completely renewable, continued transport electrification will significantly reduce domestic GHG emissions.

Norway's significant wind and biomass potential (IRENA) could be used to produce hydrogen and synthetic fuels to further decarbonise transport sub-sectors that cannot be easily electrified (e.g. aviation, shipping, long-haul trucking).

Norway's extensive EV policy support measures put it on a path towards achieving ambitious transport electrification targets. These measures - which include zero-emission vehicle zones, EV purchasing incentives, charging infrastructure investments, EV-friendly building codes, reduced EV parking charges, and charging infrastructure investments - can serve as a blueprint for peer countries. (TCC-GSR).

With strong support policies for electric ferries and short-haul flights, Norway is poised to become a knowledge leader for these technologies, which have significant global market potential (Tech Xplore).