Emission of co2 from cars

Smart Bridge-Remote Summer Internship Program

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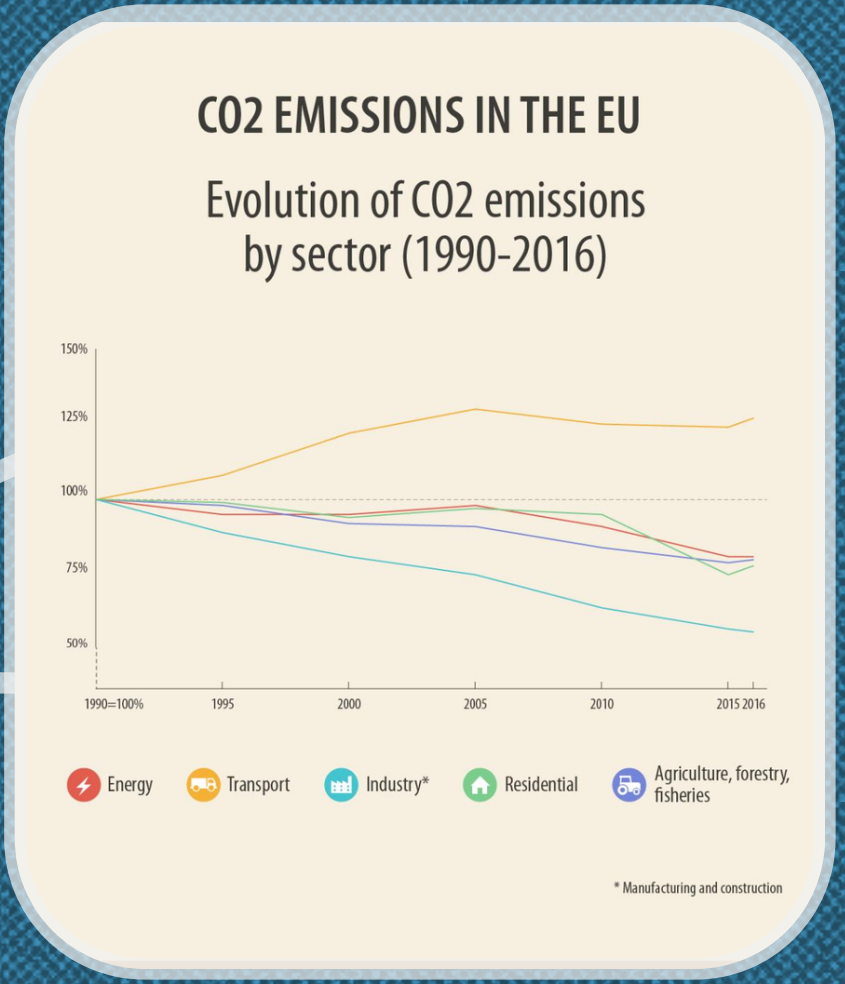
Introduction

Global warming endangers our health, jeopardizes our national security, and threatens other basic human needs. Some impacts—such as record high temperatures, rising seas, and severe flooding and droughts—are already increasingly common.

Our personal vehicles are a major cause of global warming. Collectively, cars and trucks account for nearly one-fifth of all US emissions, emitting around 24 pounds of carbon dioxide and other global-warming gases for every gallon of gas. About five pounds comes from the extraction, production, and delivery of the fuel, while the great bulk of heat-trapping emissions—more than 19 pounds per gallon—comes right out of a car's tailpipe.

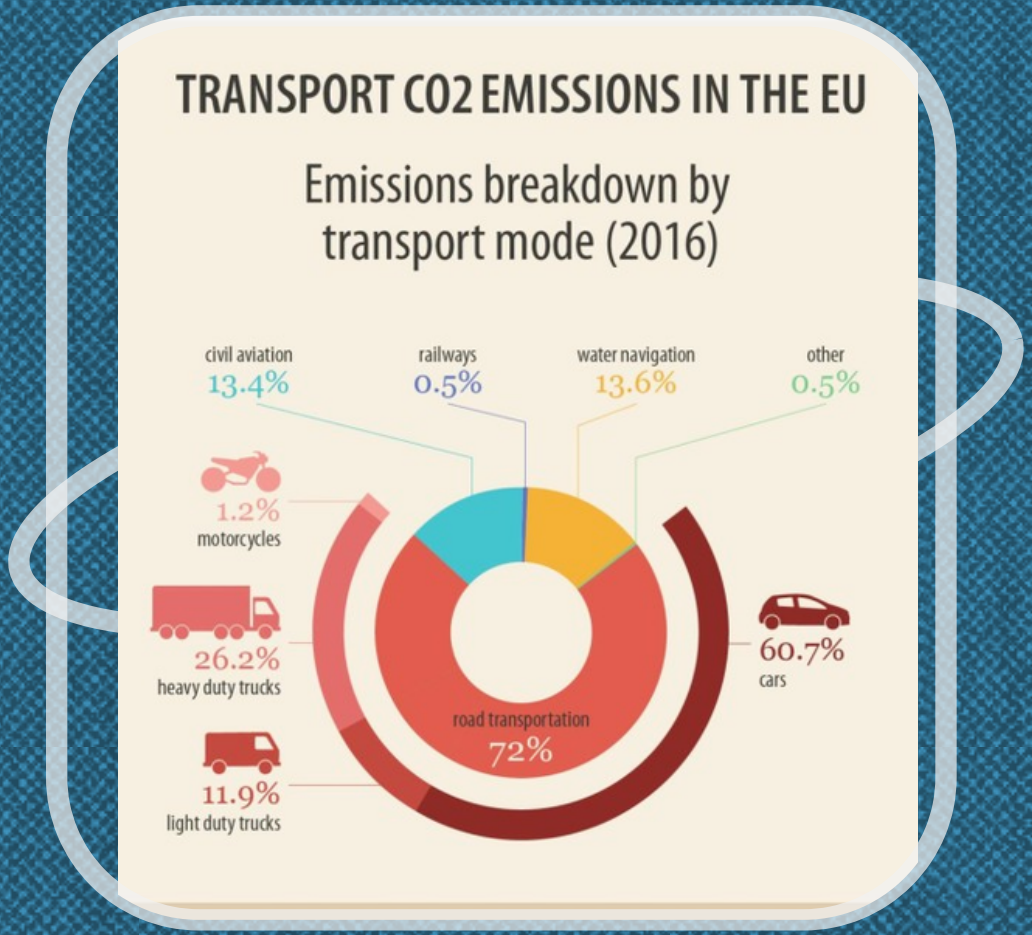
Ever wondered how much CO2 is emitted by cars or whether electric vehicles really are a cleaner alternative?

Transport is responsible for nearly 30% of the EU's total CO2 emissions, of which 72 % comes from road transportation. As part of efforts to reduce CO2 emissions, the EU has set a goal of reducing emissions from transport by 60% by 2050 compared to 1990 levels.

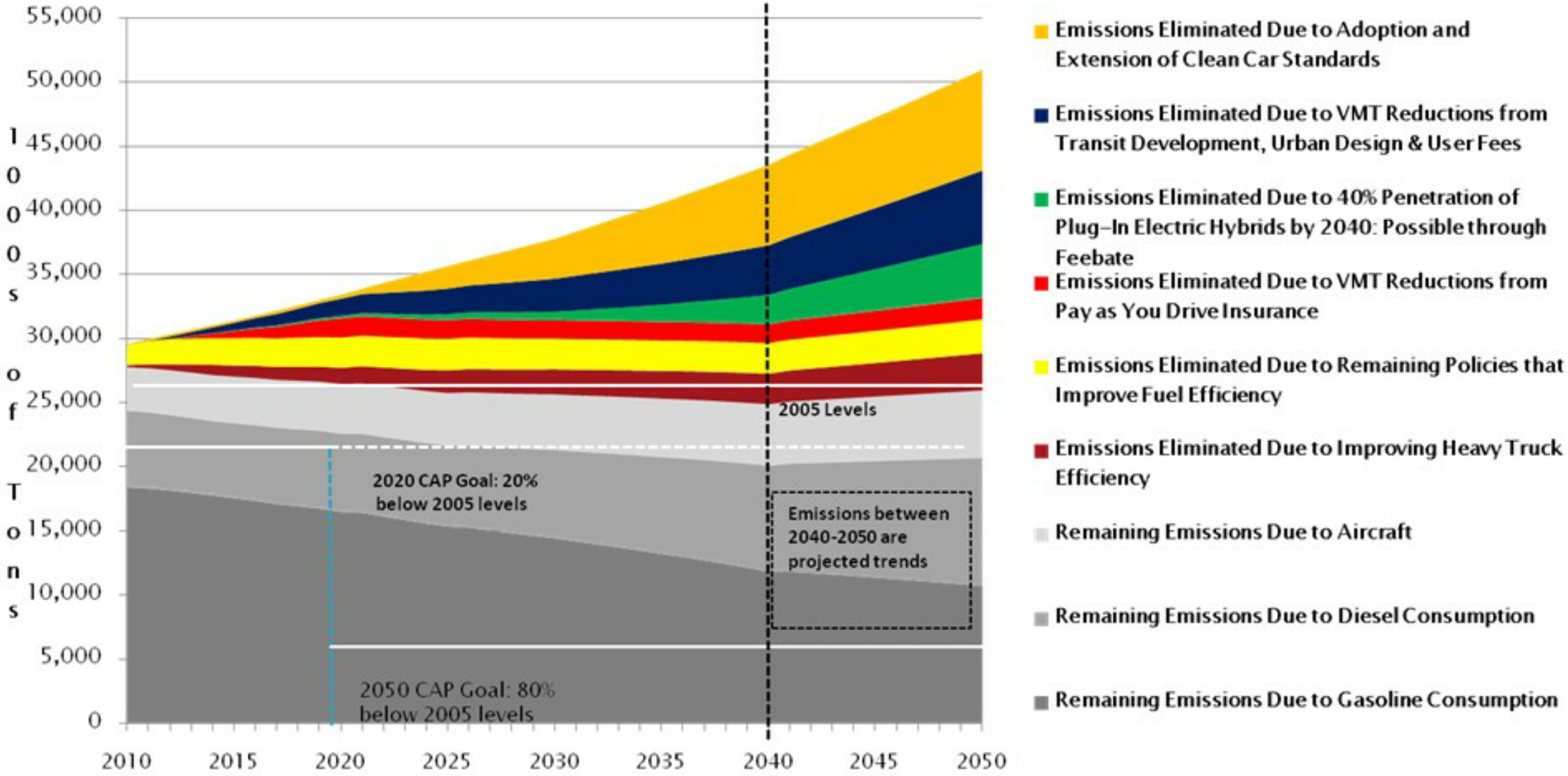


Cars major polluters

CO_2 emissions from passenger transport vary significantly depending on the transport mode. Passenger cars are a major polluter, accounting for 60.7% of total CO_2 emissions from road transport.However, modern cars could be among the cleanest modes of transport if shared, rather being driven alone.With an average of 1.7 people per car in Europe, other modes of transport, such as buses, are currently a cleaner alternative.



CO_2 Emissions from the Transportation Sector



Problem

Transport emissions in the EU

TRANSPORT IS THE BIGGEST CONTRIBUTOR TO EU GHG EMISSIONS, GENERATING 27% OF EMISSIONS. CARS AND VANS CONTRIBUTE AROUND HALF OF THESE.

The latest data from the EEA12 shows that in 2016 transport sector GHG emissions (including international maritime and aviation emissions, 'bunkers') in the EU was 1,205Mt CO2 equivalent – the largest sector at 27% of total EU emissions.

Passenger cars alone account for 41% of these transport emissions, or 11% of the total(including bunkers).

Transport is currently highly dependent on oil, of which 93% is imported, with Russia the main source.

13 GHG emissions are produced by the combustion of these fossil derived, petroleum-based products, which include petrol, diesel fuel, kerosene and fuel oils. Of the total final consumption of petroleum products in the EU, the transport sector consumed 66% or 345Mtoe.14

Demand for oil is continuing to increase

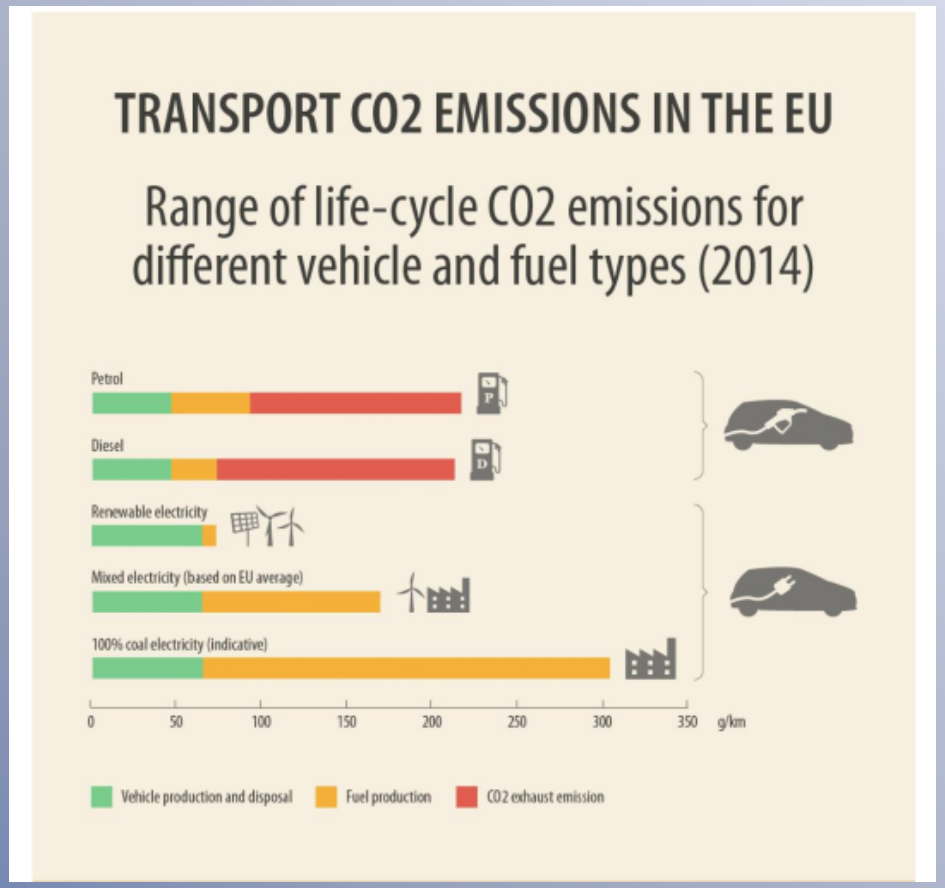
- Significantly reducing CO2 emissions from transport will not be easy, as the rate of emission reductions has slowed. Other sectors have cut emissions since 1990, but as more people become more mobile, CO2 emissions from transport are increasing.
- Efforts to improve the fuel efficiency of new cars are also slowing. After a steady decline, newly registered cars emitted on average 0.4 grammes of CO2 per kilometre more in 2017 than the year before.
- Unfortunately, oil-related emissions may rise in the coming years as the oil industry extracts and refines "unconventional" oils, such as tar sands and tight oil. Using less oil—and avoiding unnecessary emission from the oil we do use—is the real solution.

Solutions are here

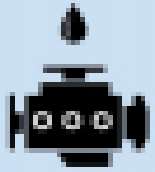
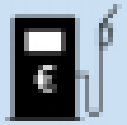
- Fuel-efficient vehicles use less gas to travel the same distance as their less efficient counterparts. When we burn less fuel, we generate fewer emissions. When emissions go down, the pace of global warming slows.

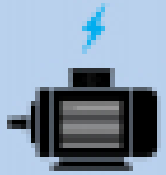
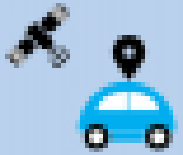
- Cleaner fuels produce fewer emissions when they're burned. Some fuels—such as those made from cellulosic biofuels—can reduce emissions by 80 percent compared to gasoline. And better regulations would help prevent the gasoline we do use from getting any dirtier.

- Electric cars and trucks use electricity as fuel, producing fewer emissions than their conventional counterparts. When the electricity comes from renewable sources, all-electric vehicles produce zero emissions to drive.



Personal mobility must be transformed in many ways

	Car dominated	Large & heavy	Engine powered by oil	Largely owned	Taxes on fuel	Driven & dumb
2015						

	Co-modal	Rightsized -smaller & lighter	Electric motors	Mainly accessed	Charges on use	Connected & driveless
2040				zipcar		

Conclusion

Much has changed in automobile technology to decrease the input of greenhouse gases into our environment and new technologies are being created and improved upon constantly. Which path is the best to pursue? The use of battery powered cars should be limited. Although electric cars greatly limit the emissions at the tailpipe, until a better battery is developed, or cheaper way to use different batteries is developed, the potential harm outweighs the benefits. In time Electric vehicles could be a great option, but as for now a continued increase in fuel efficiency as well as alternative biofuels made from waste or repurposed, abandoned agricultural lands are the best for the environment and reducing greenhouse gas emissions quickly and in a environmentally friendly manor.

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