

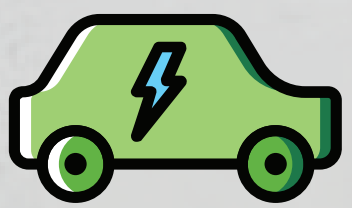
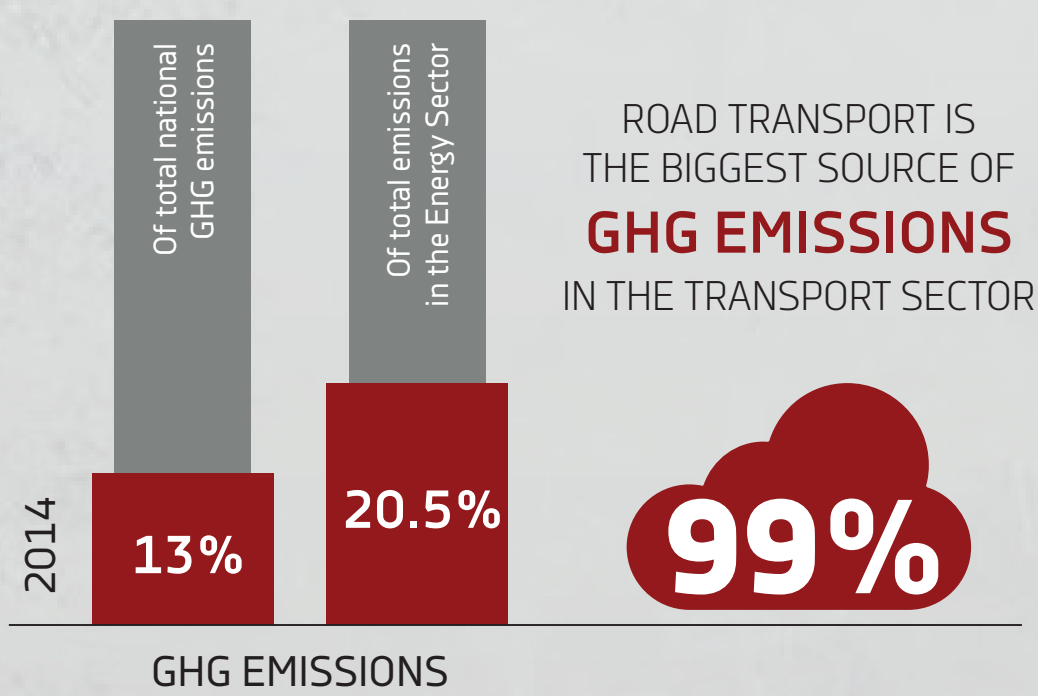
A STUDY OF THE TRANSPORT SECTOR IN THE REPUBLIC OF MACEDONIA ANALYSIS OF KEY POLICIES AND MEASURES

TRANSPORT

FASTEST GROWING CATEGORY IN THE ENERGY SECTOR

Source: Macedonian Greenhouse Gas Inventory

16.4% INCREASE between 2012-2014

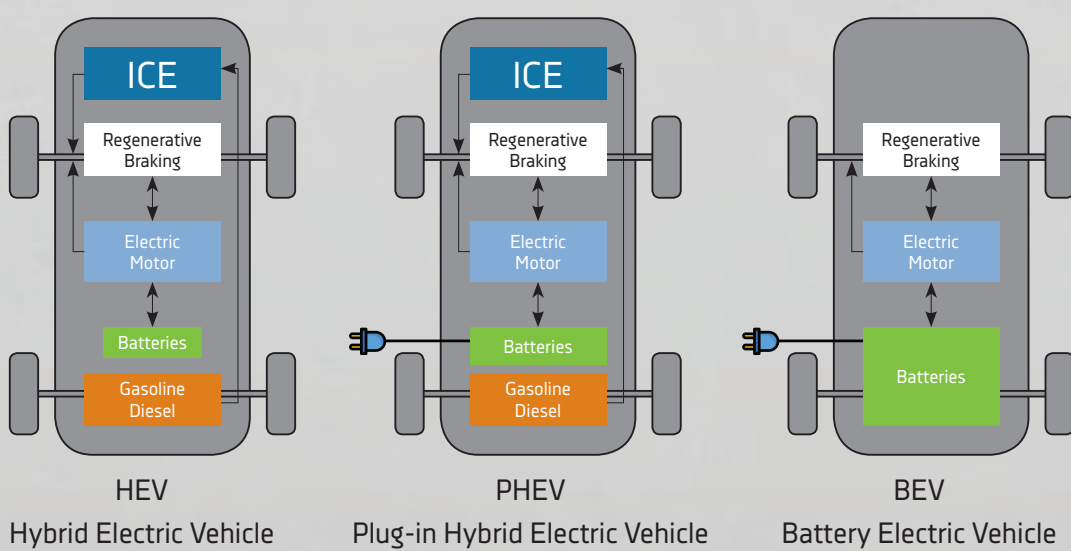


Electric vehicles could contribute to a radical reduction of local pollution, greater integration of renewable energy sources and improving traffic safety.



But how can electric vehicles be justified in a country where coal is mostly used for energy production?

THE ELECTRIC POWERTRAIN



The first hybrid* vehicle in Macedonia was sold in **2006**. It took 10 years for the market to grow. In 2016, citizens **3 times more hybrid vehicles** than in 2015.

*Hybrid vehicles are identified as a form of transition technology, i.e. a predecessor to electric vehicles.

BASIC FACTS MACEDONIA

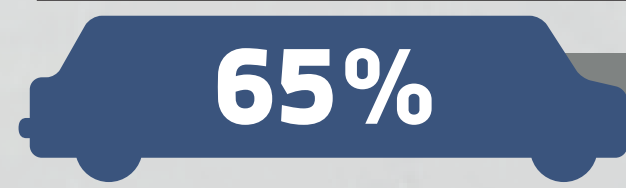
FUELS USED BY PASSENGER VEHICLES



51% PETROL
46% DIESEL

Macedonia has the **fifth-lowest** price of diesel fuel in Europe and the **eighth-lowest** price of petrol.

22.5% INCREASE in the number of passenger cars between 2012-2014



65%

of vehicles have been manufactured before 2002

Purchasing hybrid/electric cars is not popular among Macedonian citizens despite the fact that hybrid-powered cars are excise tax exempted.

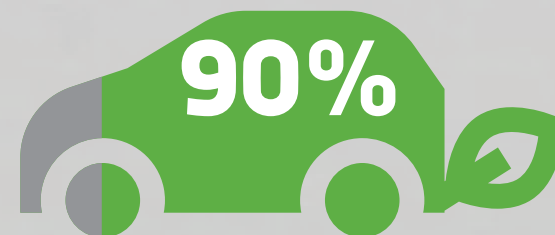
BASIC FACTS WORLD

0.2% of total number of passenger cars in circulation today are **ELECTRIC CARS**

2005 **2000**

2016 **2 MILLION**

The number of electric vehicles [2005-2016]



90%

of **SOLD** hybrid models are **Toyota and Lexus****

** This positive trend continues in 2017.

THE PRICE OF DOING NOTHING

EXPECTED LEVELS OF **GHG EMISSIONS**

56% INCREASE of total GHG emissions **MOSTLY** because of increased production of electricity from coal and gas

2012 **11,295** Gg CO₂-eq

2035 **17,580** Gg CO₂-eq

GHG EMISSIONS FROM TRANSPORT



POSSIBLE SOLUTIONS FOR PASSENGER VEHICLES:

- increasing the proportion of low-carbon cars
- accelerating the phasing out of high-carbon cars
- increasing the share of hybrid and electric cars

IT'S NOT ABOUT FASHION IT'S ABOUT REAL ECONOMICS

CURRENT **ENVIRONMENT-RELATED TAXES** ON PASSENGER VEHICLES IN MACEDONIA:

WHEN **IMPORTING** A VEHICLE

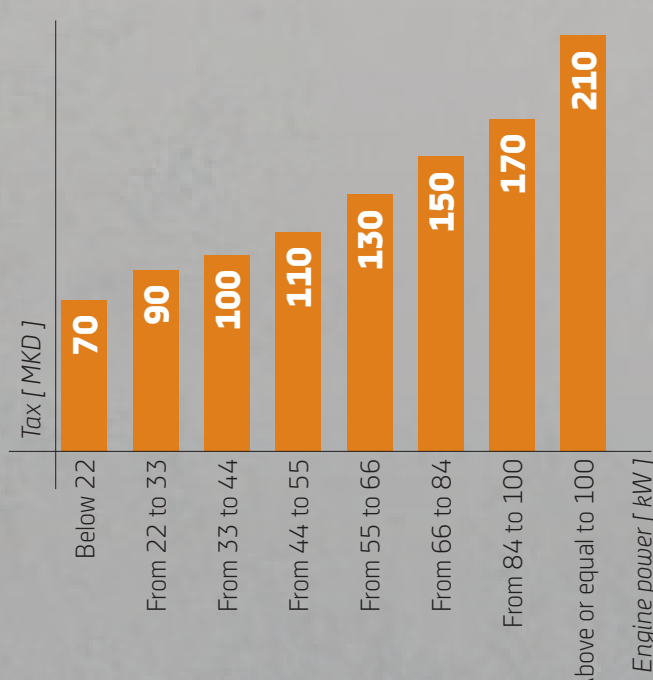
- Customs duty of **5%**
- Excise tax** calculated according to the value of the vehicle
- Environmental tax** - imposed only on used passenger motor vehicles
- VAT of **18%**

WHEN **REGISTERING** A VEHICLE

WHEN **PUMPING FUEL**

PETROL: **0.08 MKD/LITER**

DIESEL: **0.03 MKD/LITER**

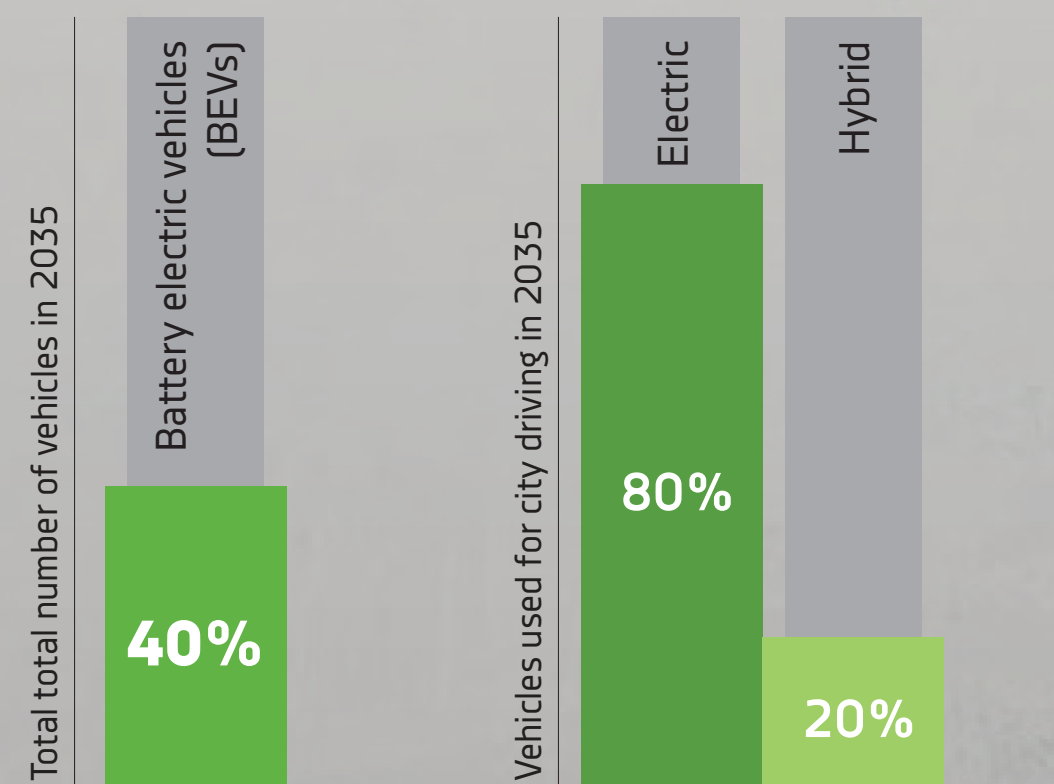
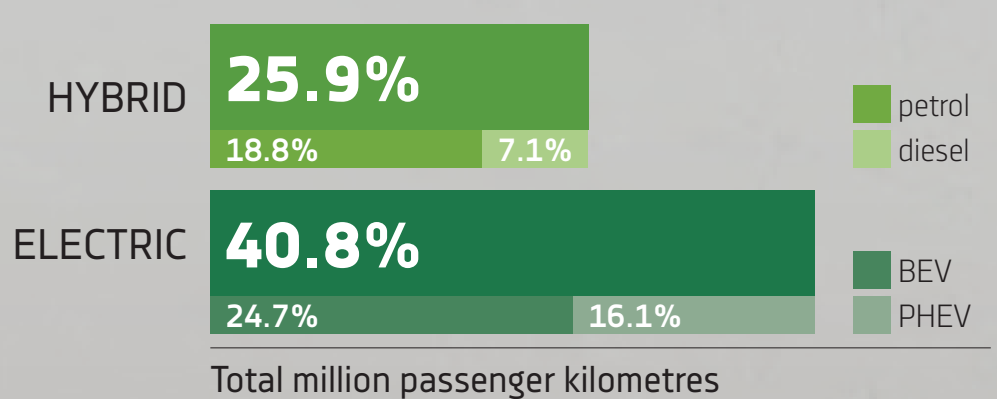


GREEN AND SMART

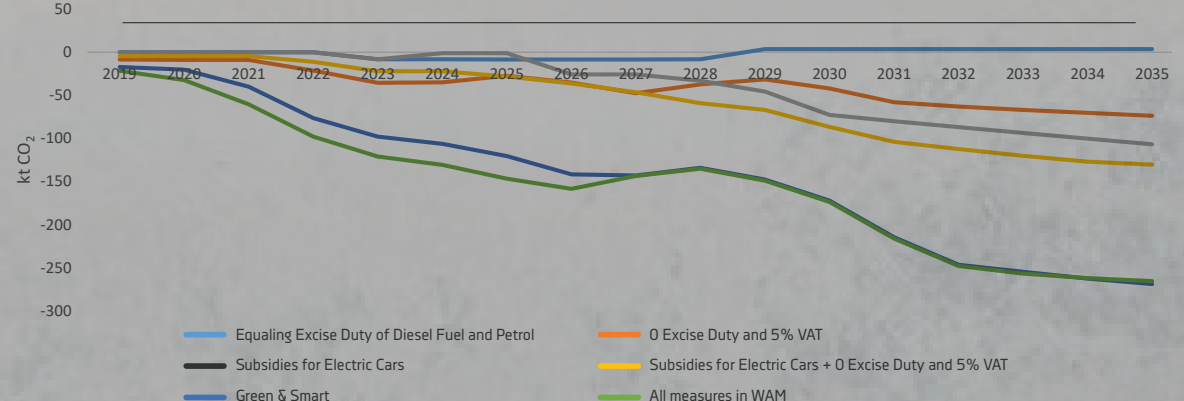
PROPOSALS FOR INTRODUCING A **CO₂ TAX**

- The environmental tax on the import of used vehicles should be applied to new vehicles and made dependent on CO₂ emissions.
- The environmental tax on vehicle registration could be made dependent on CO₂ emissions rather than solely on engine power.
- The environmental tax on fuels should be raised and made equal for petrol and diesel.
- Hybrid vehicles and electric vehicles should be excise tax exempted.
- VAT on hybrid and electric vehicles should be reduced from 18% to 5%.
- Excise duty on diesel and petrol should be equal.

RESULTS OF IMPLEMENTING THE TAX IN THE **YEAR 2035**



35% REDUCTION of GHG emissions in the category of passenger vehicles in relation to the Reference Scenario



THE PROPOSAL

ENVIRONMENTAL TAX ON VEHICLE REGISTRATION

Change the methodology for calculating the existing environmental tax on vehicle registration to depend directly on the declared price of vehicles in terms of CO₂ emissions, taking social aspects into consideration.

The environmental tax on registration would cost vehicle-owners the following:

- Battery Electric Vehicle (BEV): **0 MKD**
- Plug-in hybrid electric vehicles : a maximum of **81 MKD**
- Hybrid vehicles: a maximum of **250 MKD**
- An average diesel or petrol vehicle: **700 MKD**

ENVIRONMENTAL TAX ON FUELS

Gradual increase of the current tax, reaching MKD 2/l by 2035, including for liquid petroleum gas.

A person driving 10,000km a year in a car that consumes 10 liters/100km annually spends MKD 80 for environmental purposes according to the current methodology. With the proposed change, these expenditures would rise from MKD 300 in 2019 to MKD 2,000 by 2035.

ENVIRONMENTAL TAX ON IMPORT

Payment of an environmental tax on import, not only for used but also for new vehicles, depending on the vehicle's declared CO₂ emissions.

When importing a vehicle using petrol and consuming 10l/100km, the environmental tax will amount to approximately 19,300 MKD. By contrast, when importing a hybrid vehicle the tax amounts to a maximum of 2,000 MKD: a maximum of 650 MKD for PHEV, and 0 MKD for BEV.

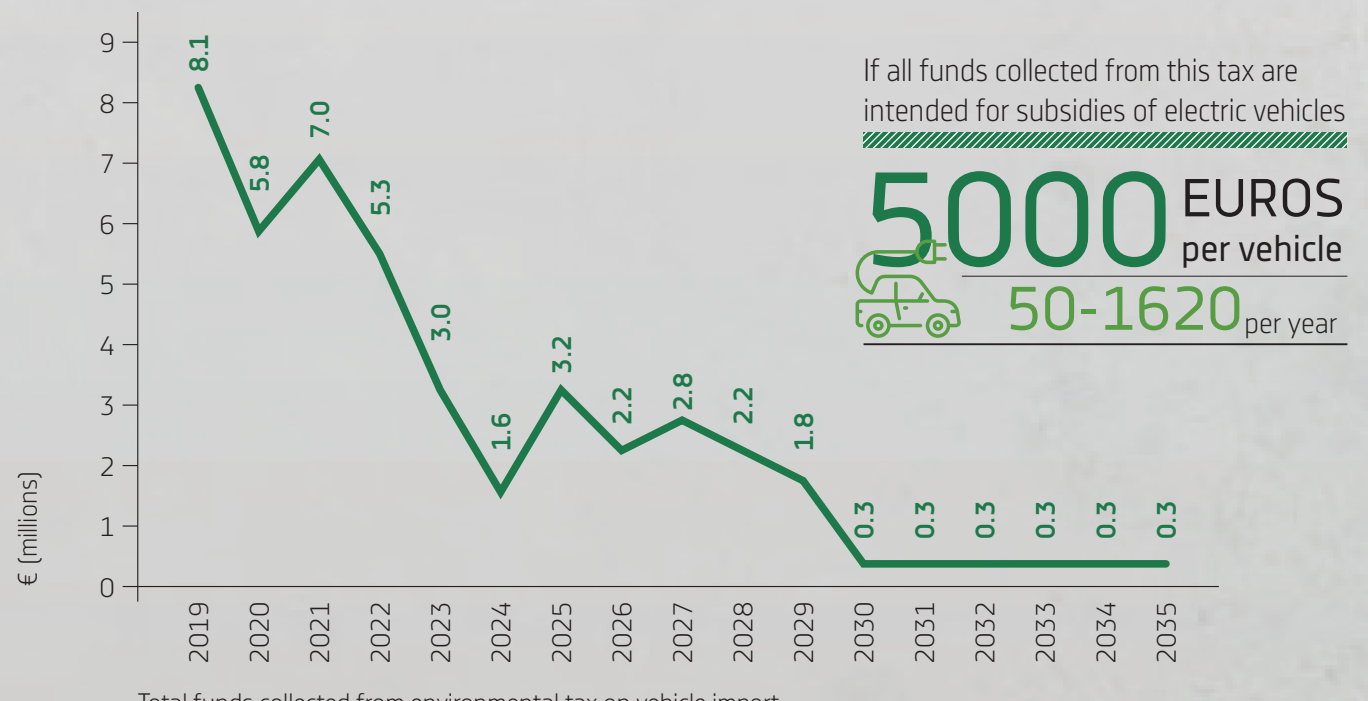
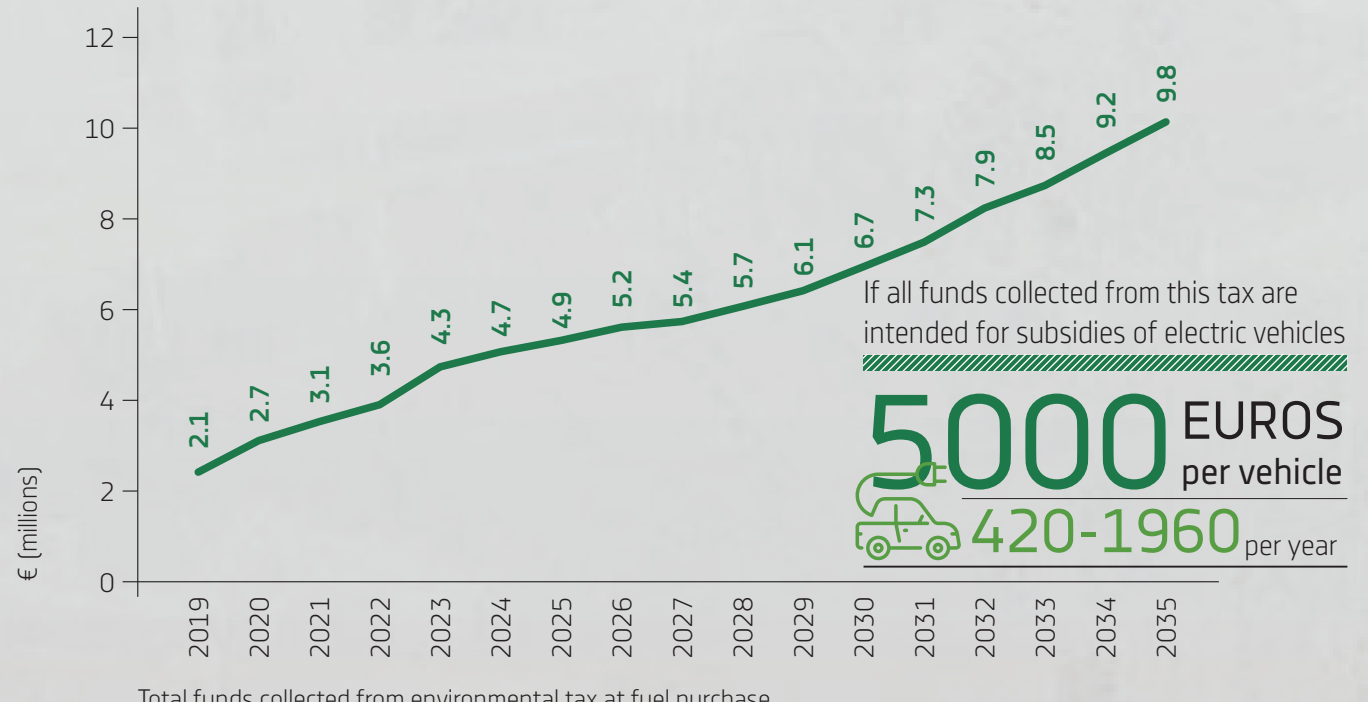
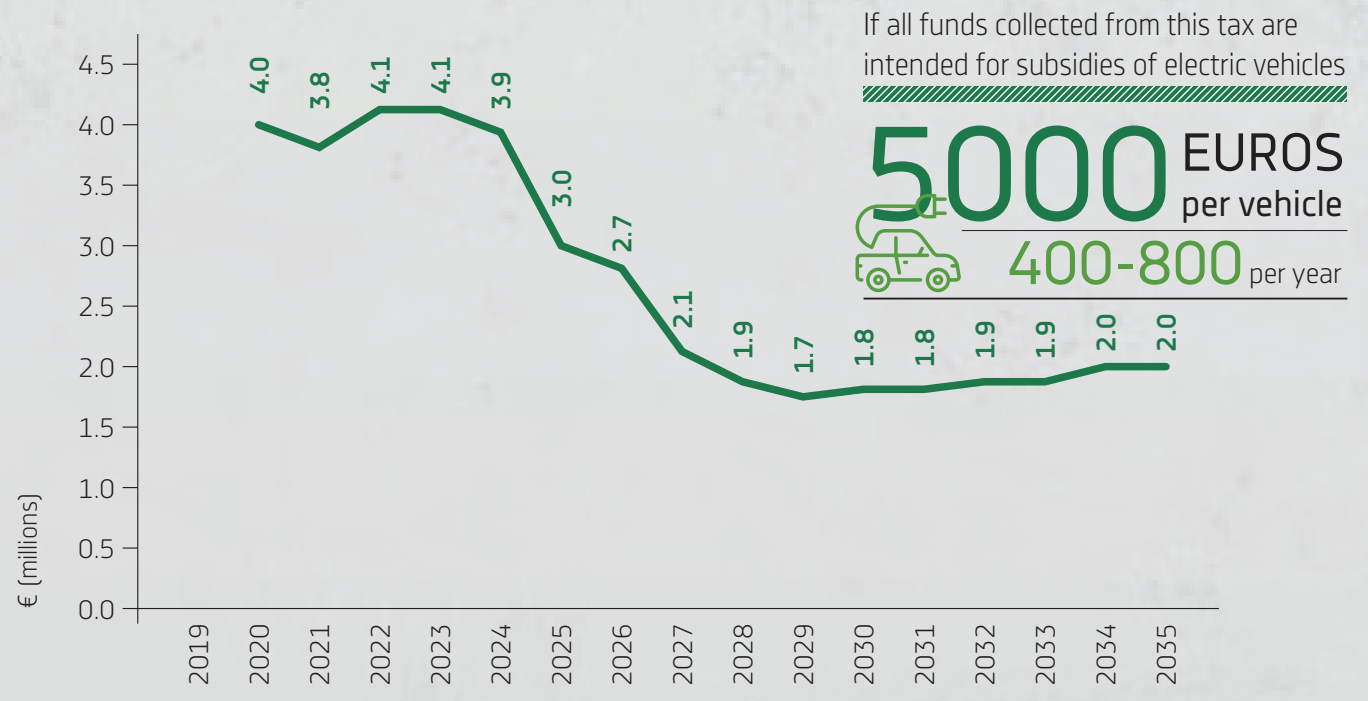
EQUALLING EXCISE DUTY ON DIESEL AND PETROL

Equalling the excise duties on diesel and petrol gradually up to the year 2025, when it should be equal for all oil products.

REDUCING EXCISE DUTY AND VAT ON VEHICLE IMPORT

Reducing VAT from 18% to 5% for hybrid and electric vehicles.

THE ECONOMICS



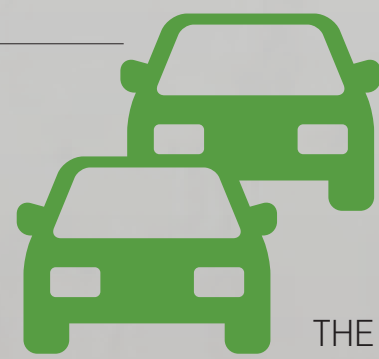
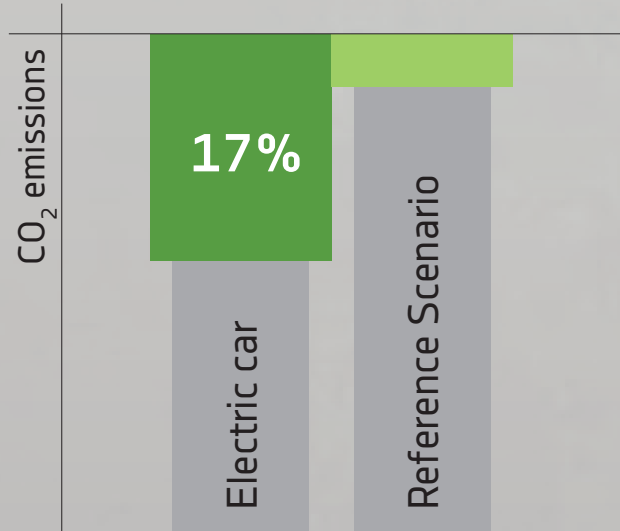
The purchase of used diesel vehicles will no longer be profitable. New diesel vehicles and petrol vehicles will be purchased.

Not sufficient for electric cars to be competitive in the market.

SUBSIDIES FOR ELECTRIC CARS

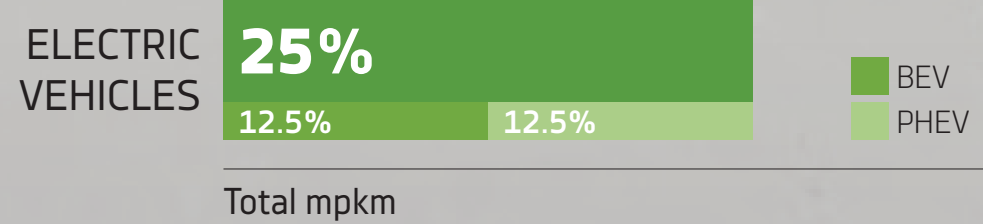
Direct subsidizing, combined with a reduction in excise duty and VAT from 18% to 5% on import and additional direct subsidizing.

CO₂ EMISSIONS IN THE YEAR 2035



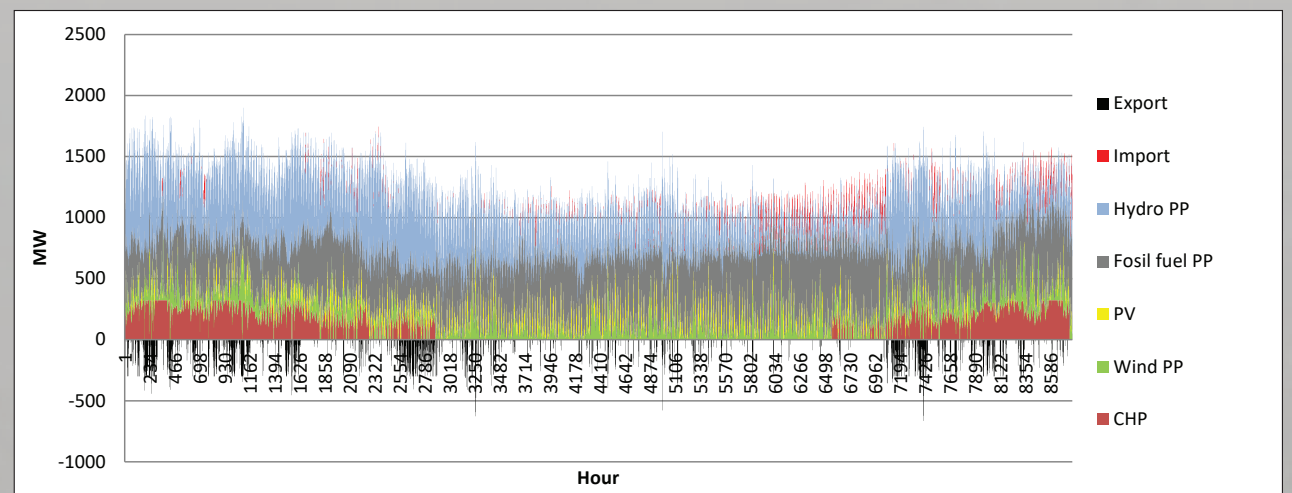
3000 mpkm served by new diesel vehicles in the Reference Scenario will be replaced by electric vehicles in 2035.

THE SHARE OF ELECTRIC VEHICLES IN THE YEAR 2035

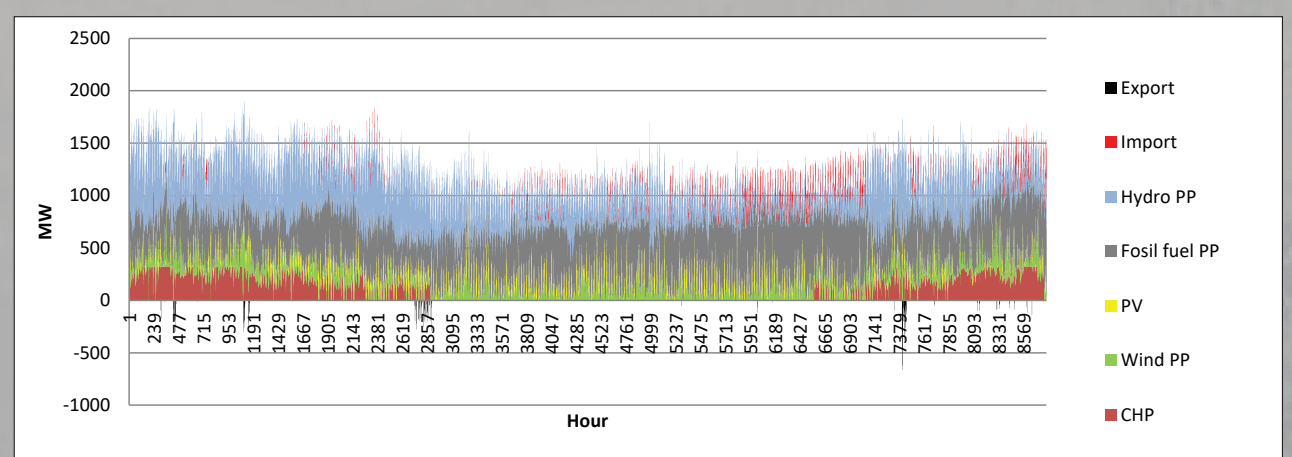


ADDITIONAL BENEFITS

Electric vehicles can increase the penetration of renewable energy sources. Vehicles are parked **80-95** percent of the time, and if continually plugged in the grid, they can be used for smart charging.



Production, import and export of electricity without electric cars (critical export 24% hours per year)



Production, import and export of electricity with electric cars (critical export 2% hours per year)