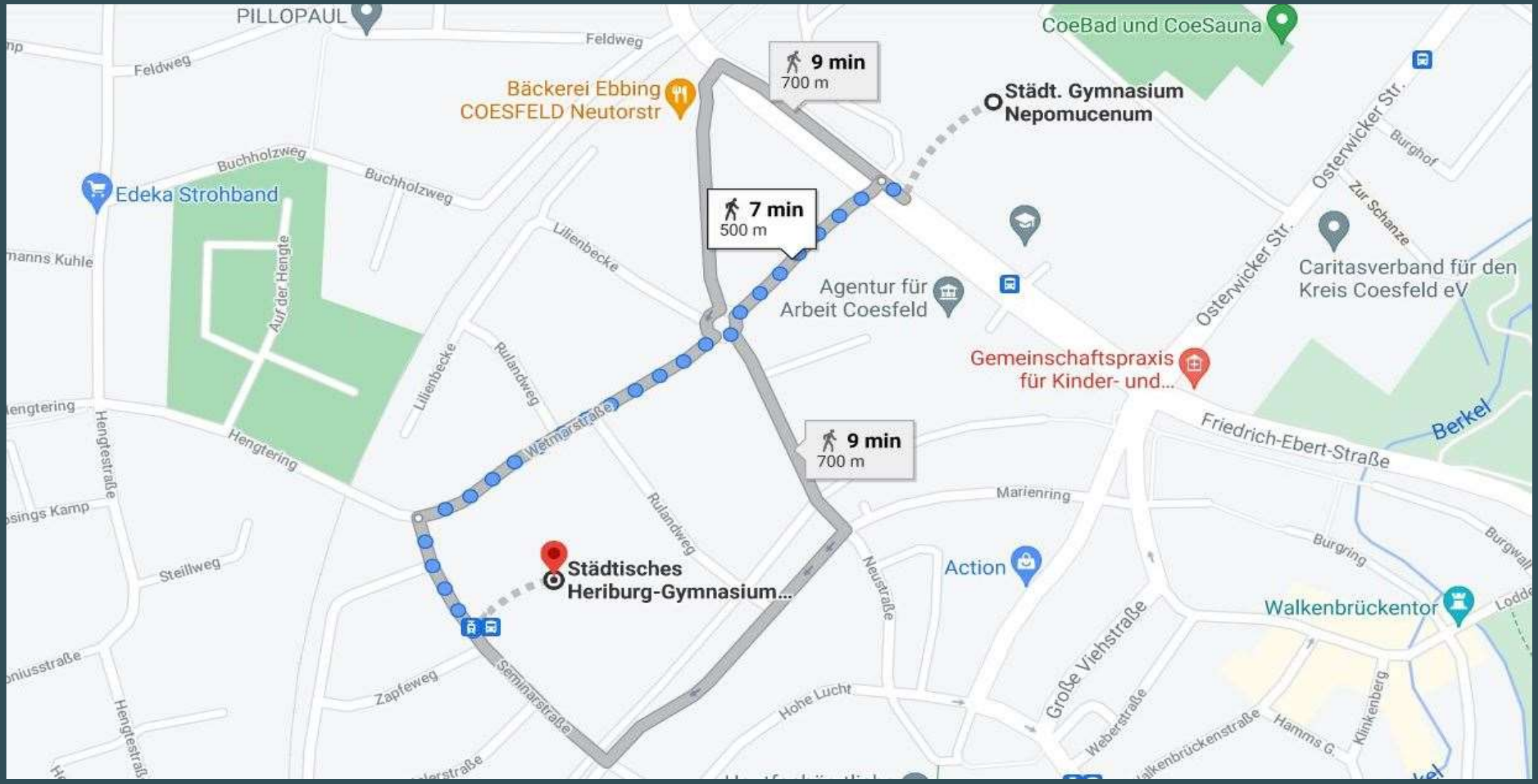
CIRO
H_2eriburg scooter

A revolutionary vehicle for the way from our school to a fellow school

Content

- Our problem
- Why is it necessary to act now?
- The process of electrolysis
- the storage of hydrogen in metal hydrids
- usage in the fuel cell
- How does the scooter work
- The problems at the process of building

The problem (distance)



The problematic distance: Heriburg – Nepomucenum

- Students travel from school to school (exchange lessons)
- No time for food, friends or preparing
- Exhausting with school-backpacks

H_2 Scooter in general

- Works with electrolysis
- Rentable for students
- Helps to stop climate crisis

Usage of the scooter

- No exhausting traveling
- Time for a break
- Compatible with almost every landscape

e3
e6 e4
e7

Why is it called “Climate crisis“?

- “Climate crisis” is describing global warming and consequences
- “Climate crisis” more aggressive “climate change”

Diapositiva 7

e3	eiler; 29/04/2021
e6	https://cdn.pixabay.com/photo/2017/04/23/19/17/climate-change-2254711__340.jpg eiler; 29/04/2021
e4	eiler; 29/04/2021
e7	eiler; 29/04/2021

The climate changes

Natural Greenhouse effect

Man-Made Greenhouse effect

Wildfires

glaciers melting

e1
e2

The impact on Coesfeld

The problems in Coesfeld:

- 2018, 2020, 2014 were the hottest years
- Heat bad for harvest

Summer 2018

“Normal summer”

Photos taken in the same garden

Diapositiva 10

e1 The three slides presentation by Thomas Seilnacht and Christine Uphues
eiler; 29/04/2021

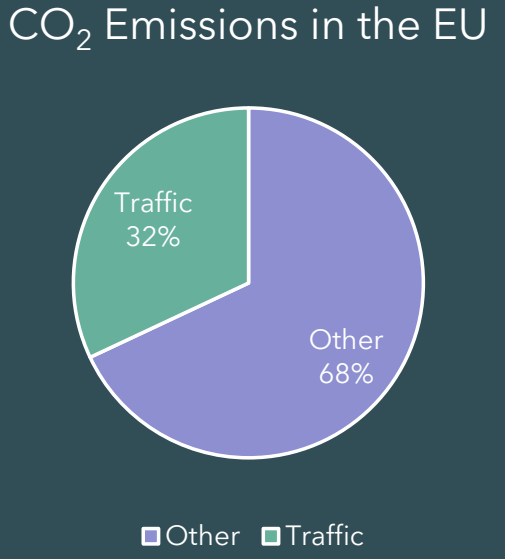
e2 Hottest year in Germany https://de.statista.com/statistik/daten/studie/164050/umfrage/waermste-jahre-in-deutschland-nach-durchschnittstemperatur/#:~:text=Das%20bislang%20w%C3%A4rmste%20Jahr%20in,von%2010%2C5%20Grad %20Celsius.
eiler; 29/04/2021

Problems in Coesfeld

Hurricane „Sabine“ in February 2020

Why do we need a traffic turnaround?

- Traffic has very high CO_2 emissions so it`s very bad for the climate
- We use fossil fuels which are limited



Which alternatives are there?

- Electricity, the most popular alternative
- Hydrogen, not common
  but very good for the future

Which alternatives are the best?

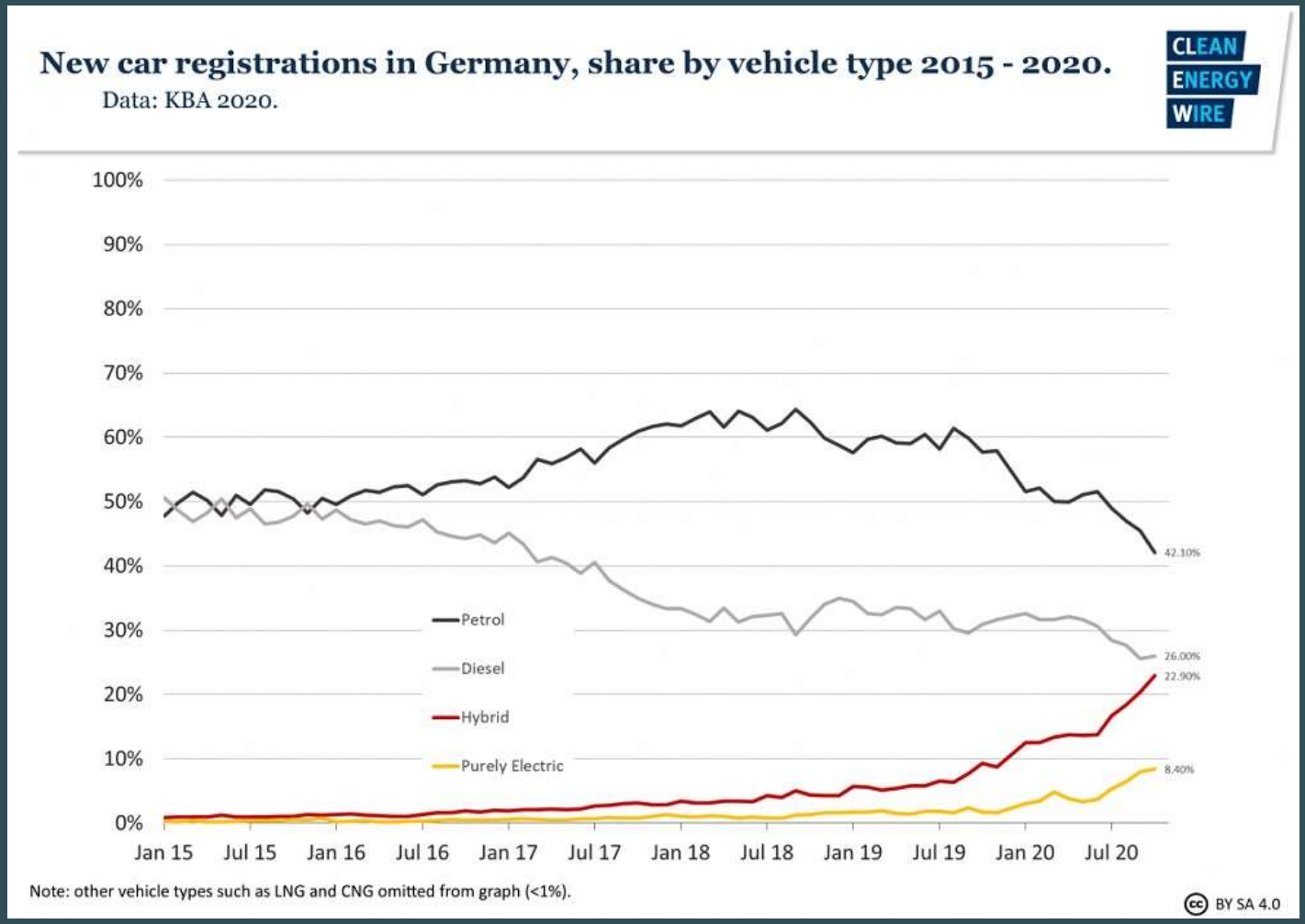
Hydrogen

Positive	Negative
-short time to charge	-very expensive
-Hydrogen is easy to produce	-only a few filling stations
-easy to dispose	

Electricity

Positive	Negative
-not expensive	-Batteries are hard to produce and dispose
-many charging columns	-takes long to charge
-are more quiet	-electricity is often produced non-renewable
-lower fuel costs	

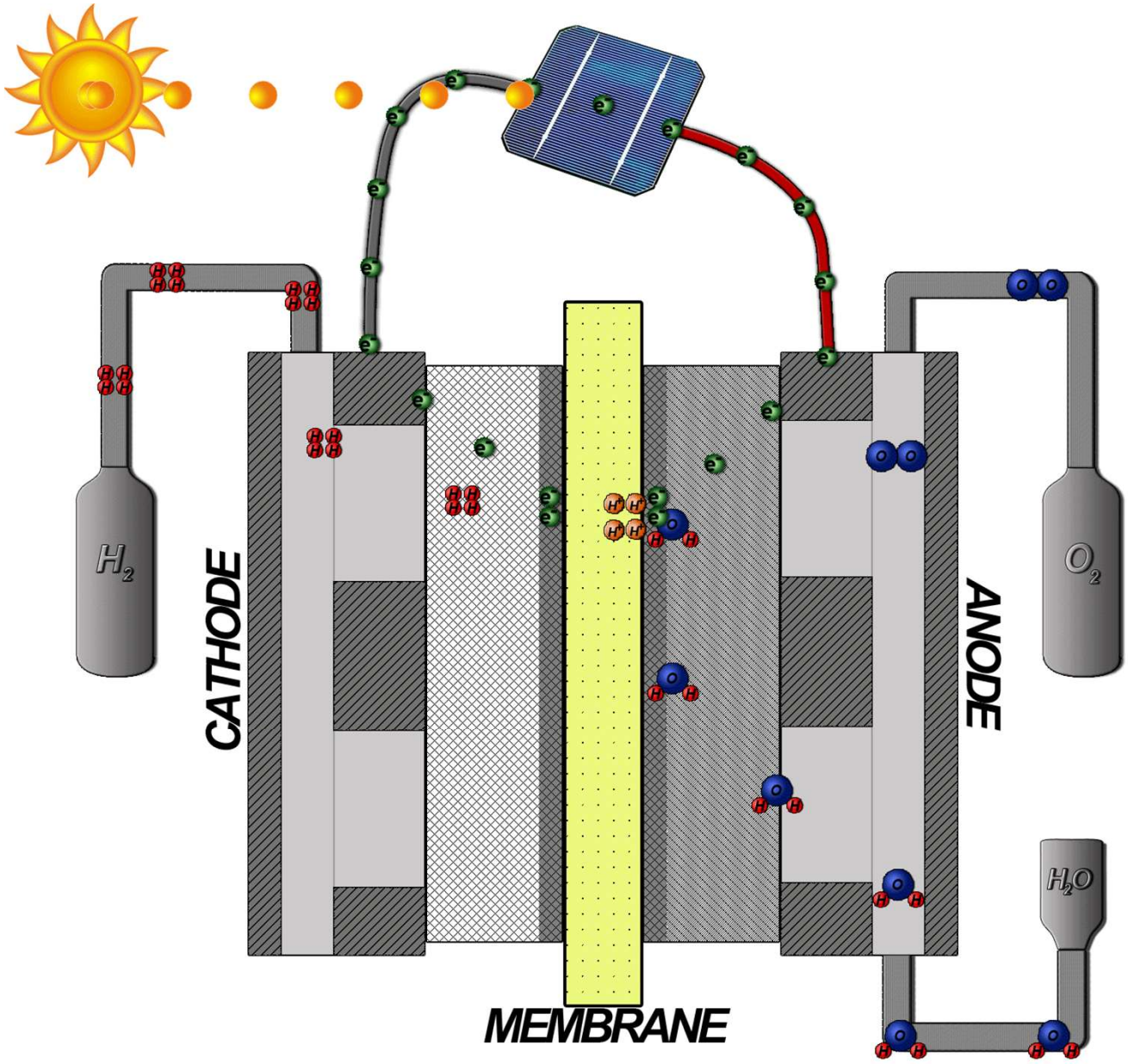
How far are we?

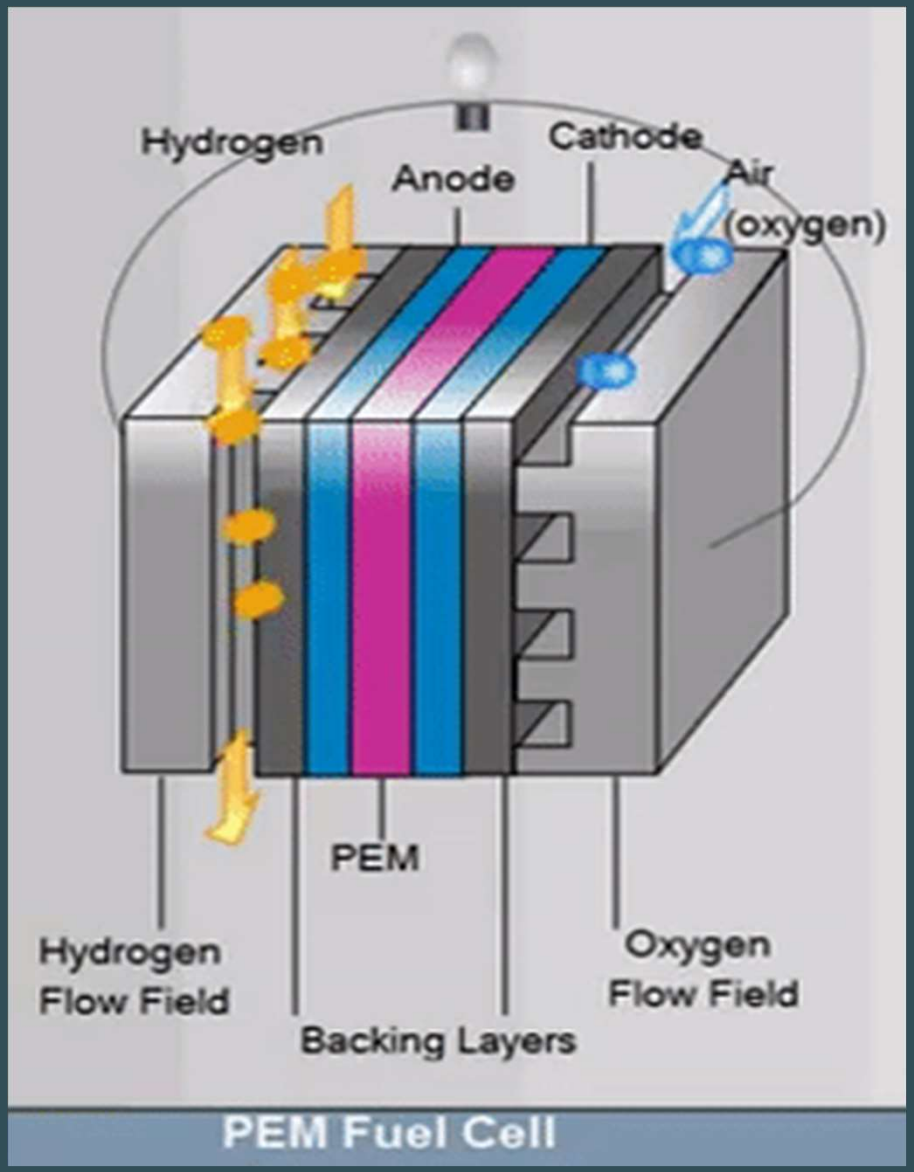


Number of
fuel cell cars
in Germany
in 2020:
507
just
0,001% of all cars

Our H_2eriburg-Scooter could raise awareness for hydrogen!

Electrolysis




Hydrogen
Anode
Cathode
Air
(oxygen)
PEM
Hydrogen
Flow Field
Backing Layers
Oxygen
Flow Field
PEM Fuel Cell

The storage of hydrogen

- Stored in a metal hydrid tank
- Filled into scooter through a hose
- Scooter has a little metal hydrid tank

The H_2scooter

How was it built

The problems we had to overcome

How the scooter is filled with hydrogen

How is the scooter filled

The scooter is filled at a station

On top of the station is a PV system which produces electricity

Under the roof is a PEM cell in an electrolyzer

The problems at the process of building

Problem 1.

The creation of the busstop

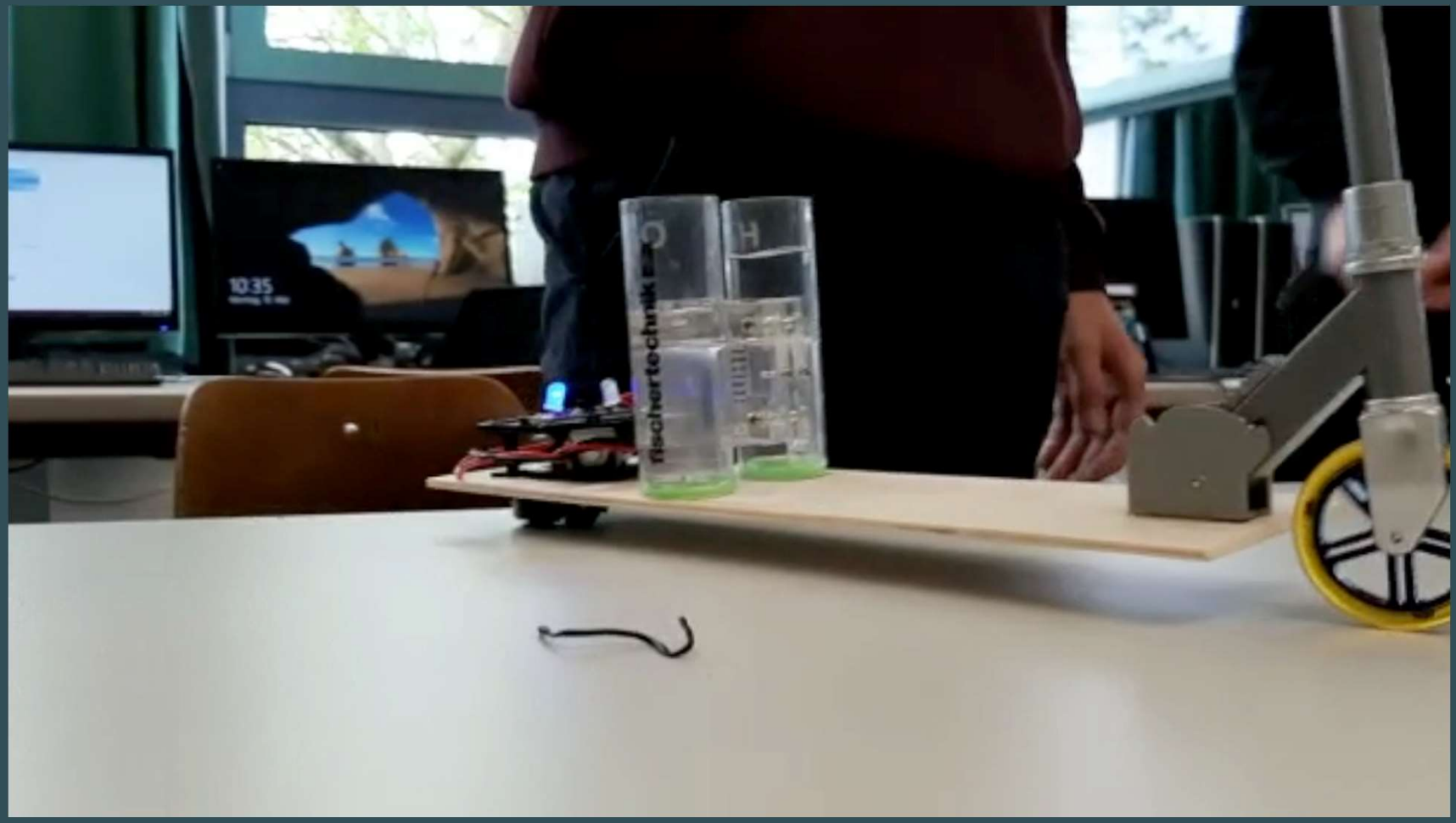
Problem 2.

The process of building the scooter

Problem 3.

The placement of the motor on the scooter

A clip where you can see how the scooter works



Thanks for listening!

Do you have any questions?