P1 Racing Fuels

Presentation

Parlamentkreis

Berlin, 21. Juni, 2022

WRC+ TV

Interview with Martin Popilka and Dan Vrtiska, about P1 and CNF'

https://vimeo.com/721456972

P1 has successfully validated a 100% sustainable fuel and produced with partners as part of MVP

Formulation & R&D

- Close collaboration with automotive OEMS on testing fuels in engines
- Implementation of learnings into formulation phase
- Laboratory testing of fuels and new approaches
- Extensive expertise in fuel formulations and engine compatibility
- In-house AI and data team to predict formulations and accelerate R&D

MVP Synthetic Fuel Production

- In-house expertise for optimization of production process (ETG & MTG)
- Partnerships with engineering companies to build plants
- Partnerships with key suppliers for plant
- Partnership with Aramco and expertise from their research

Commercialization

- Commercialized formulations produced in MVP plant
- Supply contracts with major World Championships
- Further opportunities booked

The core of P1

P1's Vision

We believe in a future where sustainable mobility and sheer driving pleasure coincide.

P1's Mission

We formulate **advanced carbon-neutral fuels** for internal combustion engines to win races today and the everyday commute tomorrow.

P1's Strategy

We develop sustainable fuels for the most demanding applications in the highest levels of racing globally, to stress them and enable their future utilization in road vehicles.

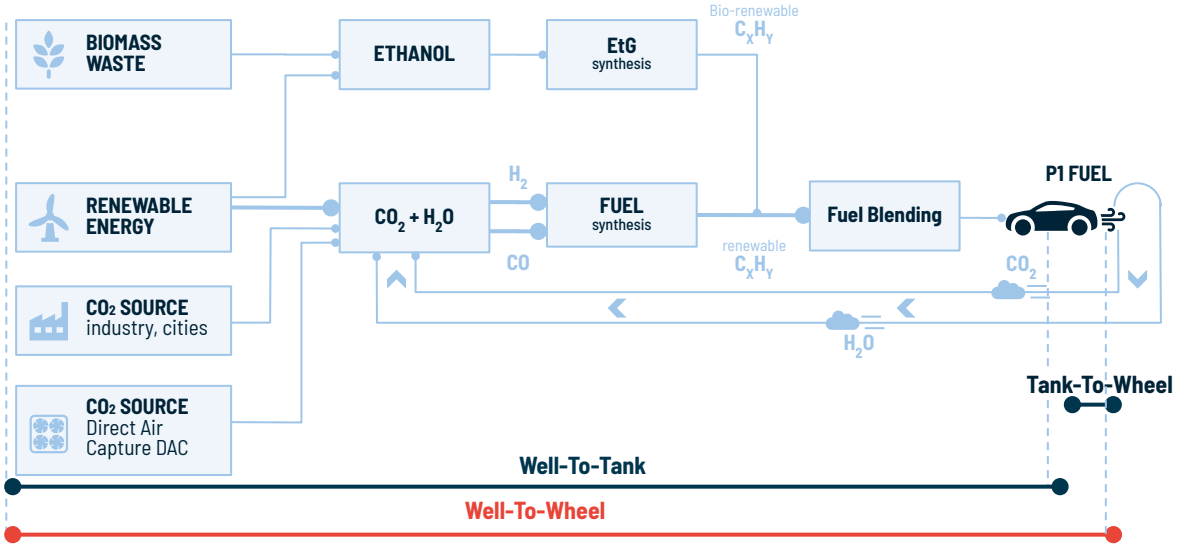
Carbon Neutral Fuels are drop-in fuels that are not derived from fossil fuels and do not emit new CO2

Well-To-Tank

CO2 used as feedstock for the production of Carbon Neutral fuels leading to no new carbon dioxide emissions and up to 90% CO2 reduction in ICE with fossil fuel.

Tank-To-Wheel

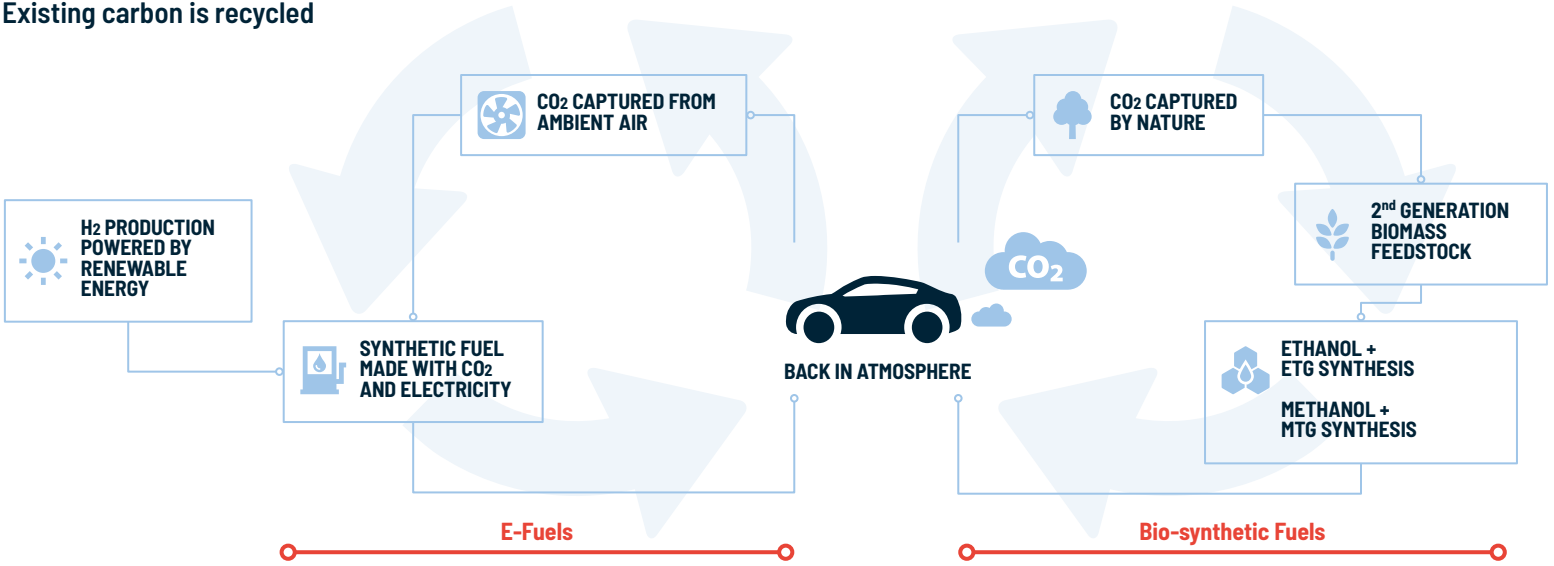
CO_2 footprint can be reduced with optimised, cleaner combustion, and higher engine efficiency.
Fuel formulation is fundamental.



Bio-synthetic fuels and E-fuels

No new CO_2 is released into the atmosphere, since P1 sources it directly from the air or from biomass which in turn extracts it from the environment.

Fossil carbon is kept in the ground
Existing carbon is recycled



Motorsports' Fundamental Role in the Mass Transition to CNF

2020

FIA World Touring Car Championship
Target: 15% fossil-free
P1 Official Fuel Supplier with Eco15 Pro Fuel

2022

FIA World Rally Championship
Target: 100% fossil-free
P1 Official Fuel Supplier with FossilFree100 WRC Fuel

2023

FIA Karting World Championship
Target: 100% fossil-free
P1 Official Fuel supplier with Eco 100 RS Fuel

SRO GT Series
Minimum target: 70% fossil-free

2026

FIA Formula 1
Target: 100% fossil-free

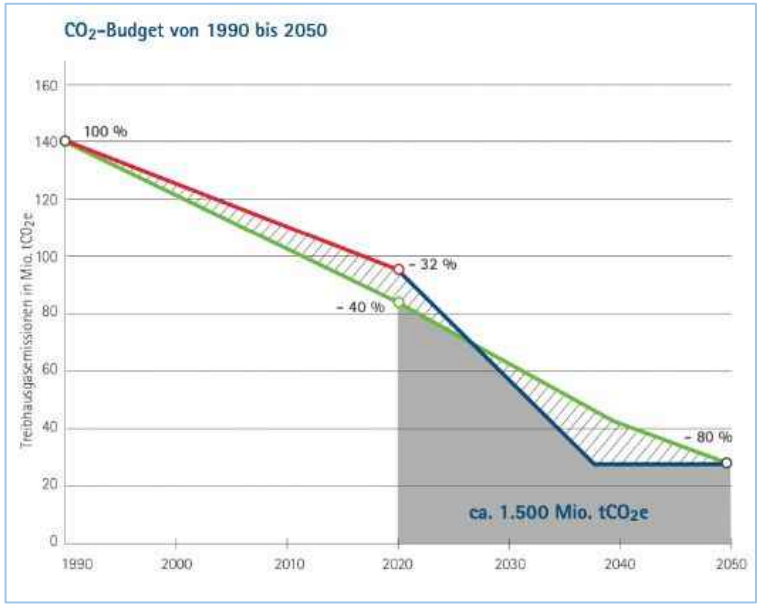
2035

Road cars

Various P1 road worthy fuels already being tested with automotive manufacturers

World is chasing ambitious climate targets to save the environment

CO_2 emissions of the passenger car fleet in Germany over the entire life cycle



- In 2020, the passenger car fleet in Germany **missed the linear CO_2 reduction target of 40% (target or actual trajectory)**
- This overshoot of the CO_2 budget must be compensated for in order to achieve the climate targets (mandatory trajectory)
- **CNF are therefore required in addition to e-vehicles and plug-in hybrids**

How it should be
Reduction of CO_2 emissions by -40 % (linear progression) by 2020

How it actually is
Reduction of CO_2 emissions by -32 % by 2020

What needs to be done
The previous CO_2 overshoot must be additionally compensated. The CO_2 reduction of 80 % would have to be achieved already in 2038. By 2050, a CO_2 budget totaling approx. 1,500 million t CO_2 is still available

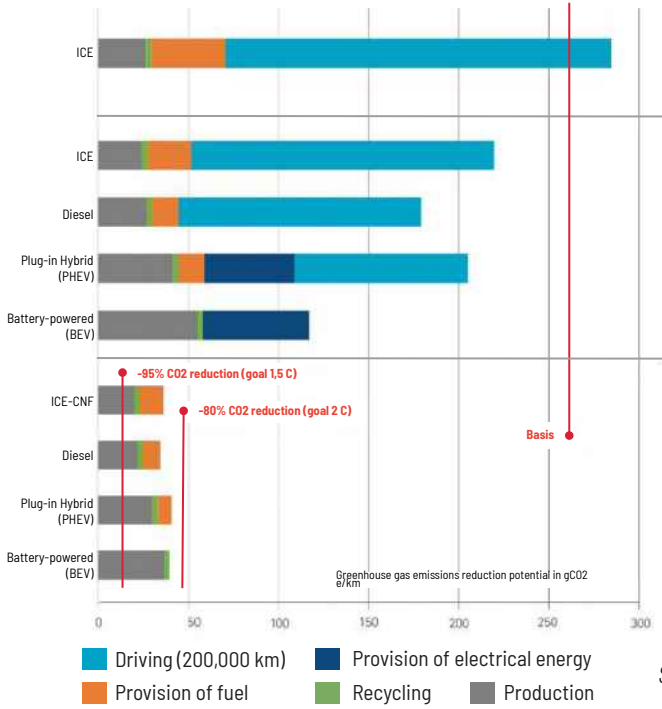
Other EU countries are also **failing to meet their reductions targets**

GHG target course | GHG actual course (approximated) | GHG target trajectory | CO_2 Overshoot or compensation CO_2 budget 2020-2050

Source: IAV GmbH

The Internal Combustion Engine (ICE) with CNF has similar life cycle emissions as Battery Electric Vehicle (BEV)

CO2-balance of ICE cars (200.000 km) in 1990, today and future prediction



1990

- High emissions in driving operation and for fuel supply. Energy mix for production and recycling common at the time

Today

- Lower-CO_2 vehicle technology, E10 fuels, process technologies and energy supply E-mobility **(BEV): emissions during energy sourcing are not taken into account.** Energy grid in EU only 20% renewable making BEV not a zero emission vehicle
- Diesel/gasoline engines without energy-intensive production of high-voltage components

Future scenario (ICE with P1 Carbon Neutral Fuel)

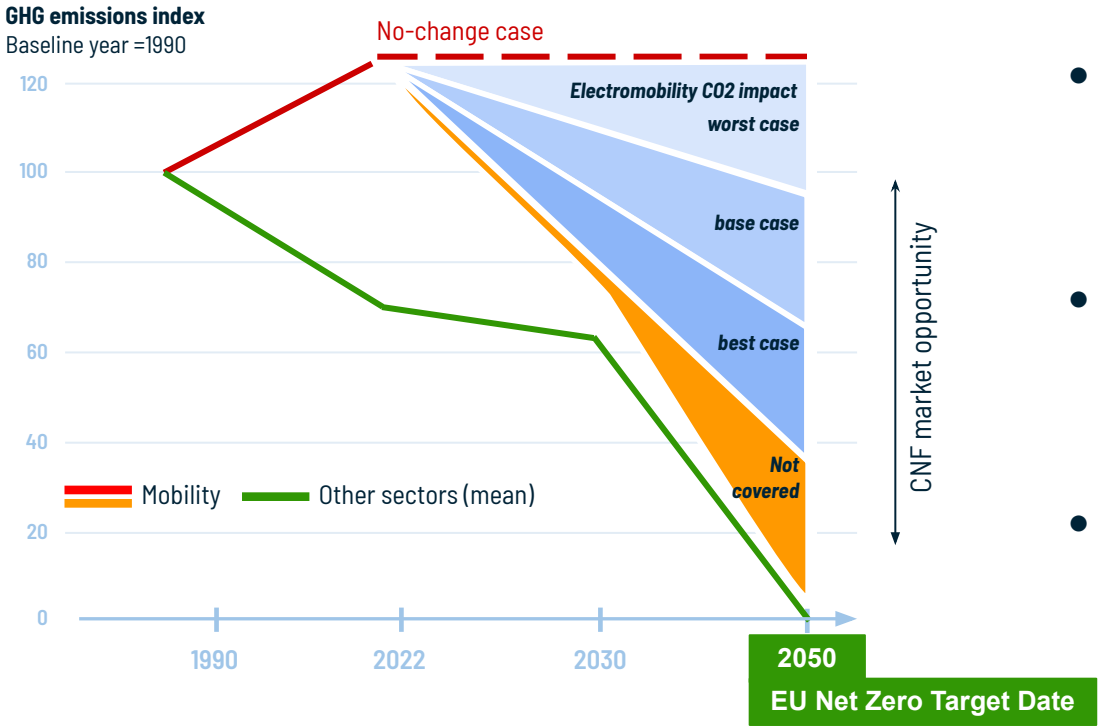
- Driving operation: electricity and CNF based on CO_2-neutral energy (100% renewable energy grid)
- **90% reduction of emissions for ICE** due to utilization of CNF
- Production: CO_2-neutral electrical energy
- Advantage of CNF: no energy-intensive production of high-voltage components.

Long-term climate targets are achievable with all the drive concepts considered across all sectors

A technology agnostic approach is required (not only electrification)

Source: IAV

The mobility sector has not decreased emissions since 1990



- Unlike other sectors, mobility has not decreased CO_2 emissions since 1990, making it the most important sector to decarbonize.
- 1.6 billion internal combustion engine cars on the roads today require carbon neutral fuels to allow societies to reach NetZero.
- We will NOT reach net zero without **carbon neutral fuels** (CNFs).

Source: Eurostat, Greenhouse gas emissions by source sector, baseline year 1990 = 100,
EV impact projections: 1) Buchal et al., worst case: 200g/km 2) Hoekstra et al., base case: 95g/km 3) Renewable Future, best case: 10g/km

Synthetic fuels enable ICE decarbonization

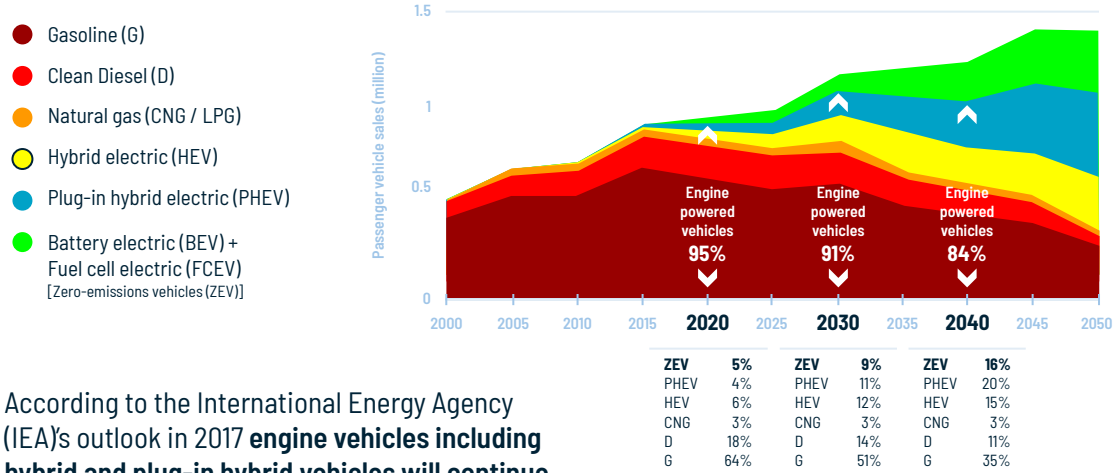
ICE Vehicles

(as a proportion of passenger vehicle sales)

Synthetic fuels **can make engine vehicles carbon-neutral**, including those already on the road.

Technology adoption scenario by IEA

(for achieving a 2 ºC average temperature rise)



	2020		2030		2040
ZEV	5%	ZEV	9%	ZEV	16%
PHEV	4%	PHEV	11%	PHEV	20%
HEV	6%	HEV	12%	HEV	15%
CNG	3%	CNG	3%	CNG	3%
D	18%	D	14%	D	11%
G	64%	G	51%	G	35%

According to the International Energy Agency (IEA)'s outlook in 2017 **engine vehicles including hybrid and plug-in hybrid vehicles will continue to exist** even with the global electrification trend.

Source: "Synthetic Fuel Research Council Interim Report" by the Ministry of Economy, Trade and Industry of Japan

P1's mission is to **replace fossil fuels with carbon neutral fuels** and thus eliminate up to 6 gigatons of **CO_2** emissions annually, which is **up to 20% of the global CO_2 footprint** (@ 2,7 trillion liters of gasoline fuel).

We are on track by leading the decarbonization effort of global racing series and preparing the groundwork for mass adoption.

Accelerate to Net-Zero with P1!

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