



Some Analytical Remarks on the Hydrogen Strategy of the Czech Republic

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Hydrogen Strategies Elsewhere

Within the EU, we can find inspiration e.g. in Germany or the Netherlands

	Czech Republic	Germany	Netherlands
population	10.6 m	83 m	17.3 m
H ₂ production	'Low-emission hydrogen' (green & blue) 2030: 57 100 t 2040: 200 000 t	Green hydrogen 2030: 5 GW/ cca. 400 000 t (depending on electrolysis efficiency and load) 2035-40: 10 GW	Green hydrogen 2025: 0,5 GW 2030: 3-4 GW (no indication of the load they expect)
hard-to-abate	2030: 60.000 light vehicles 2.900 heavy vehicles 50 HRS also: chemical and residential sector		2025: 15.000 light vehicles 3.000 heavy vehicles 50 HRS 2030: 300.000 vehicles
length	87 pages, extremely detailed (e.g. the number of alumni)	28 pages	14 pages



Questions for the Czech strategy (I)

What is the ultimate goal?

1. **maximum GHG reduction** – starting point must be the most carbon-intensive hard-to-abate sectors, BUT Ministry: economic efficiency (p. 12), aviation and ships left out (p. 23) etc.
2. **‘while maintaining the levels of production and export of the Czech industry’** – starting point must be the needs of the industries, BUT in the strategy, the demand for fuel and feedstock in the industries is overlooked or underestimated

Perhaps the main Q:

How to reach the climate goals and yet avoid the Danish biomass scenario? What would it take to save biomass?



Questions for the Czech strategy (II)

**Hydrogen as a luxury /
hydrogen as an essential?**

**Mass production of hydrogen
technologies:** “a small window for
entering the market” – what will the
Government foster care look like?
Starting only in 2026-2030?

Hydrogen pipelines: planning and
contracting 2026-2030, red light until
2038? (p. 20). Affirmation of the urgency:
“Hydrogen usage in the industries is
conditioned by early construction of
hydrogen distribution network and its
connection with hydrogen pipelines
abroad” => new contracts and new rules
a question of public interest?



H₂ tech prototypes ready for mass production

Company	Hydrogen Technologies
LEANCAT	platinum-free catalyst, forklifts
Škoda Electric & Proton Power System	buses
Linde Material Handling	forklifts
DEVINN	mobile FCs 'H2Base' & HRS (installations, R&D)
CYLINDERS HOLDING	high-pressure cylinders
ÚJV Řež	PEM electrolyser and hydrogen tank, PEM FC, TriHyBus, PowerBox – hydrogen backup generator
HYUNDAI	light vehicles
Chart Ferox	cryogenic tanks
Solar Global	electrolyser
further local potential: e.g. jet engines	



	Energy needs in PJ (J.10 ¹⁵)	= H ₂ needs (kton p.a. , 120 MJ/kg, FC efficiency 60 %)	= OR biomethane needs (kton p.a., heating value 50 MJ/kg)	H ₂ in 2040 estimate by MPO (kton p.a.)	Balance in 2040 if exclusively H ₂ (kton)	Biomethane in 2030 estimate by EFG (kton p.a.)
Steel (coke, natural gas)	123.8	1031.6	2477.3	214.3	-1450.28	70
Metallurgy (natural gas)						
Glass, cement and other non-metal sectors (natural gas)						
Cellulose (natural gas)						
Chemicals (coal, natural gas)						
Diesel in hard-to-abate transport	114.5	632.98	2192			



Recommendations

1. Reach maximum sustainable biofuel levels and treat hydrogen as an essential for the rest (implies some massive imports)

2. Focus on H₂ high tech (South Korean example)

3. Ensure sufficient import capacity **on regulatory level** by liberating the European hydrogen market
 - safety standards for the production, storage and transport
 - *proofs of origin* for green/low-emission hydrogen
 - support the adoption of EU-wide standards and the emergence of global trade

4. Ensure sufficient import capacity **on technical level**:
 - ensure fast construction of the hydrogen pipelines, their link to Germany or to the producers of low-emission hydrogen in CEE Neighborhood (Ukraine)
 - availability of IPCEI





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Thank you for your attention.

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