

CZECH-AUSTRIAN SPRING AND SUMMER SCHOOL
BIOFUELS: POLICIES, FEEDSTOCKS,
COSTS

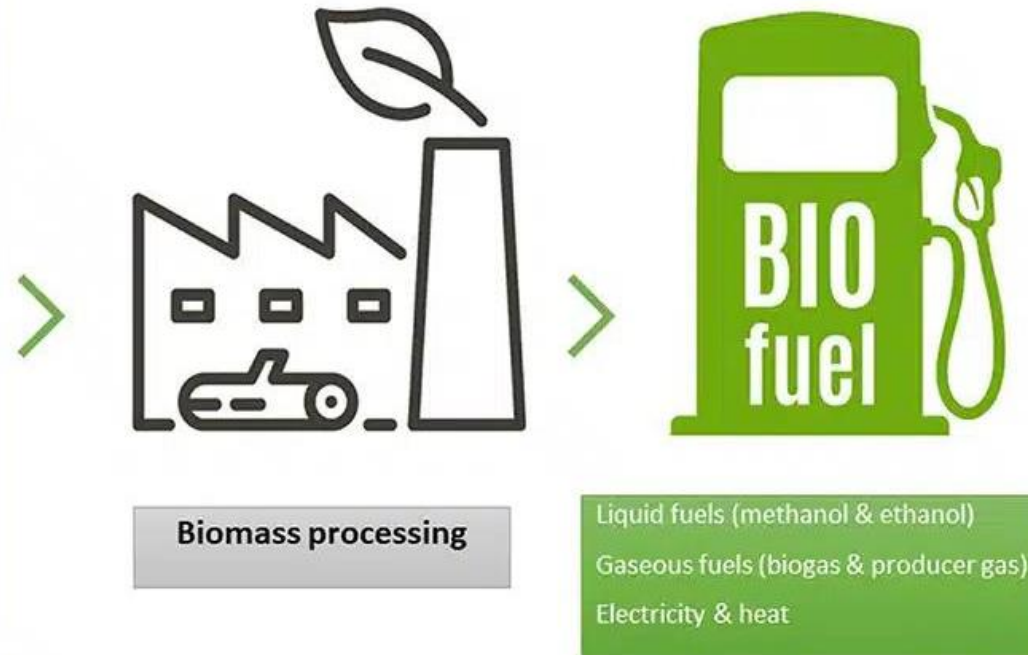
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15.06.23

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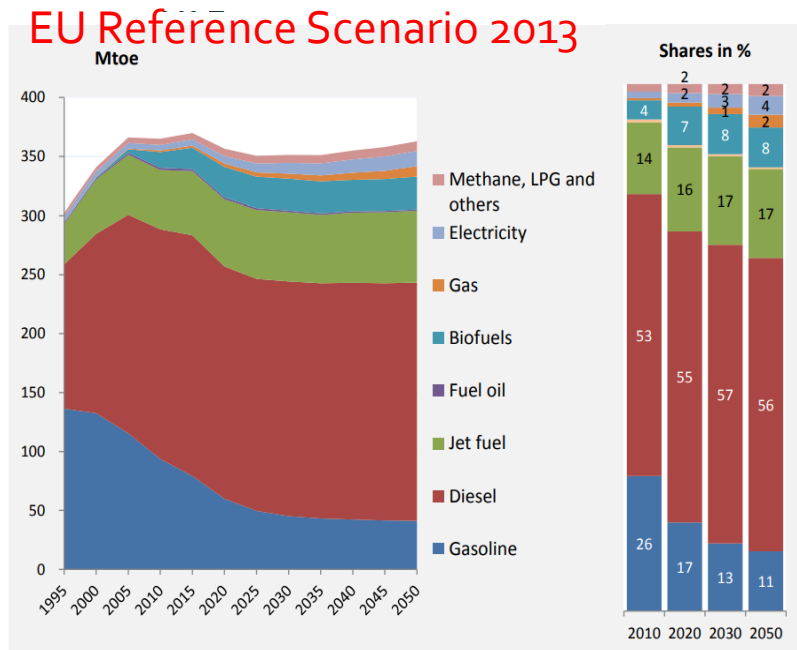
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Introduction

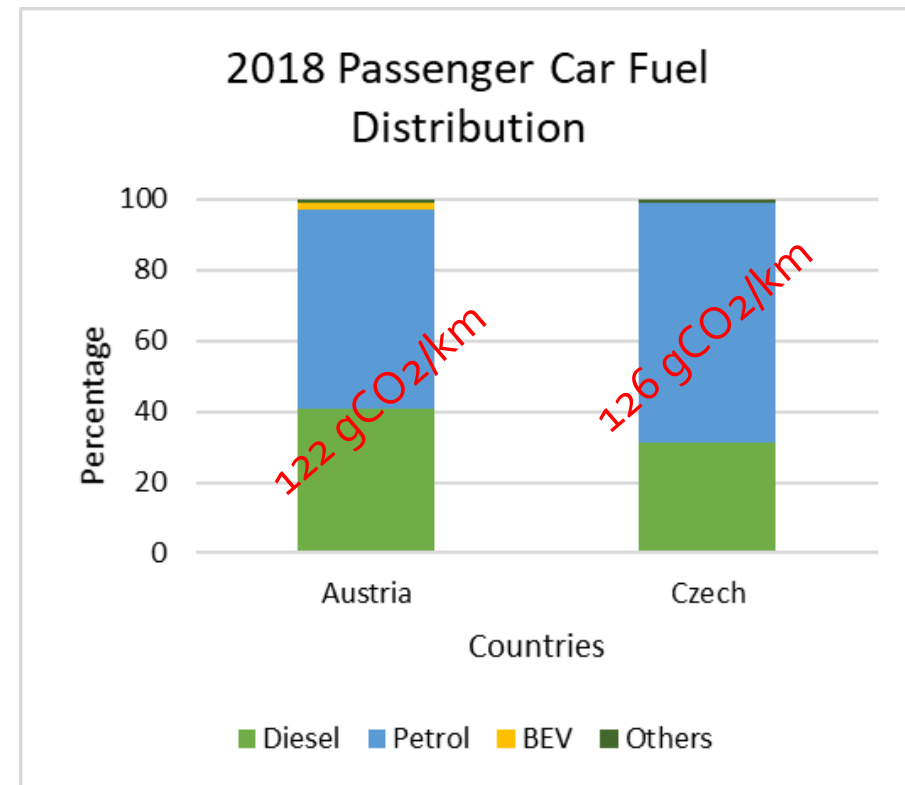


Source: [1]

Biofuels in Transport

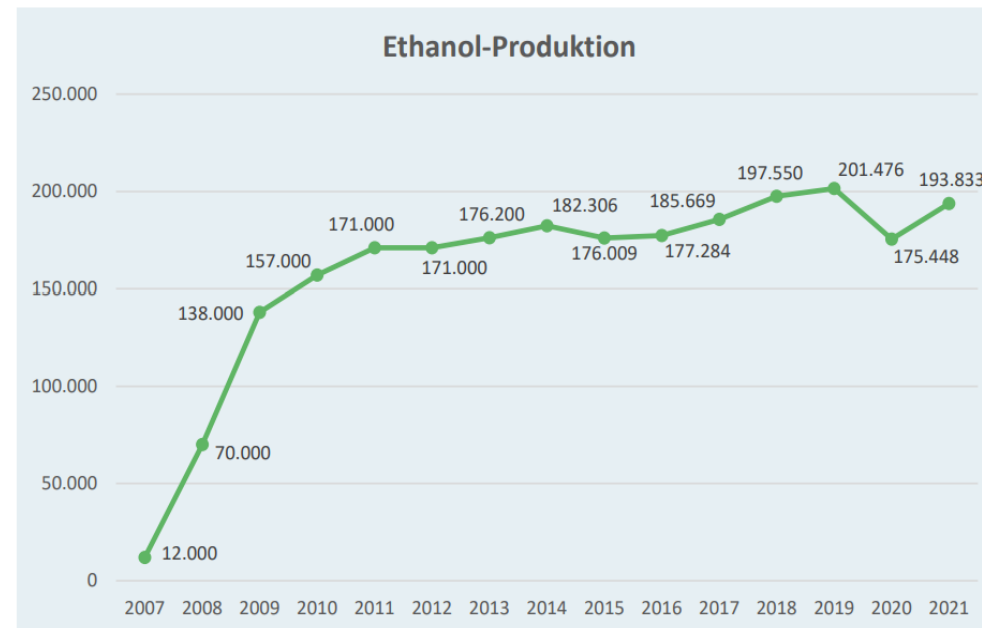
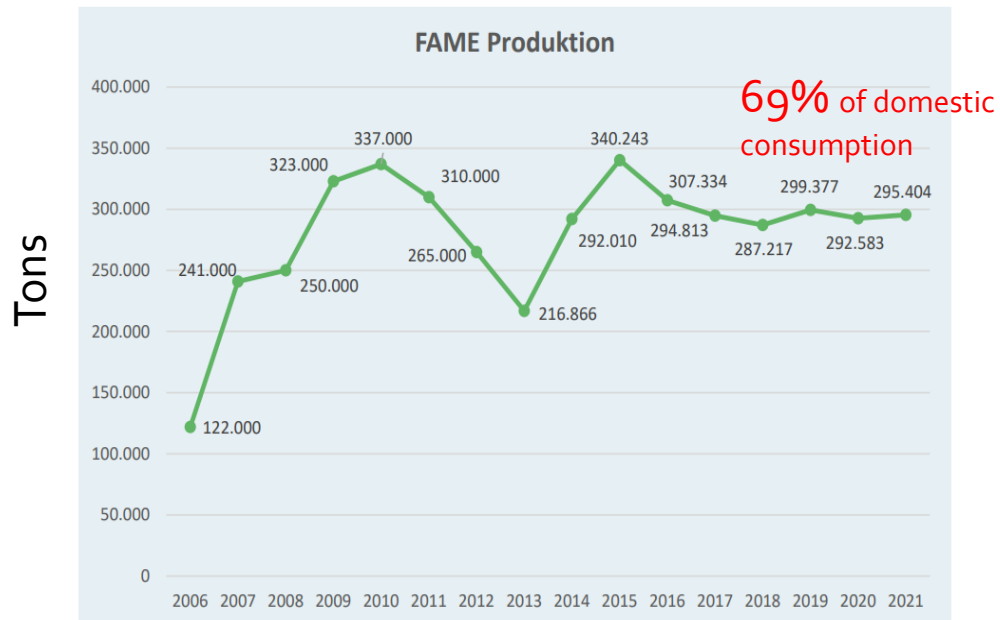


- Dominance of fossil-based carbon-emitting sources
- 20% of greenhouse gas emissions in the EU



Biofuels in Austria

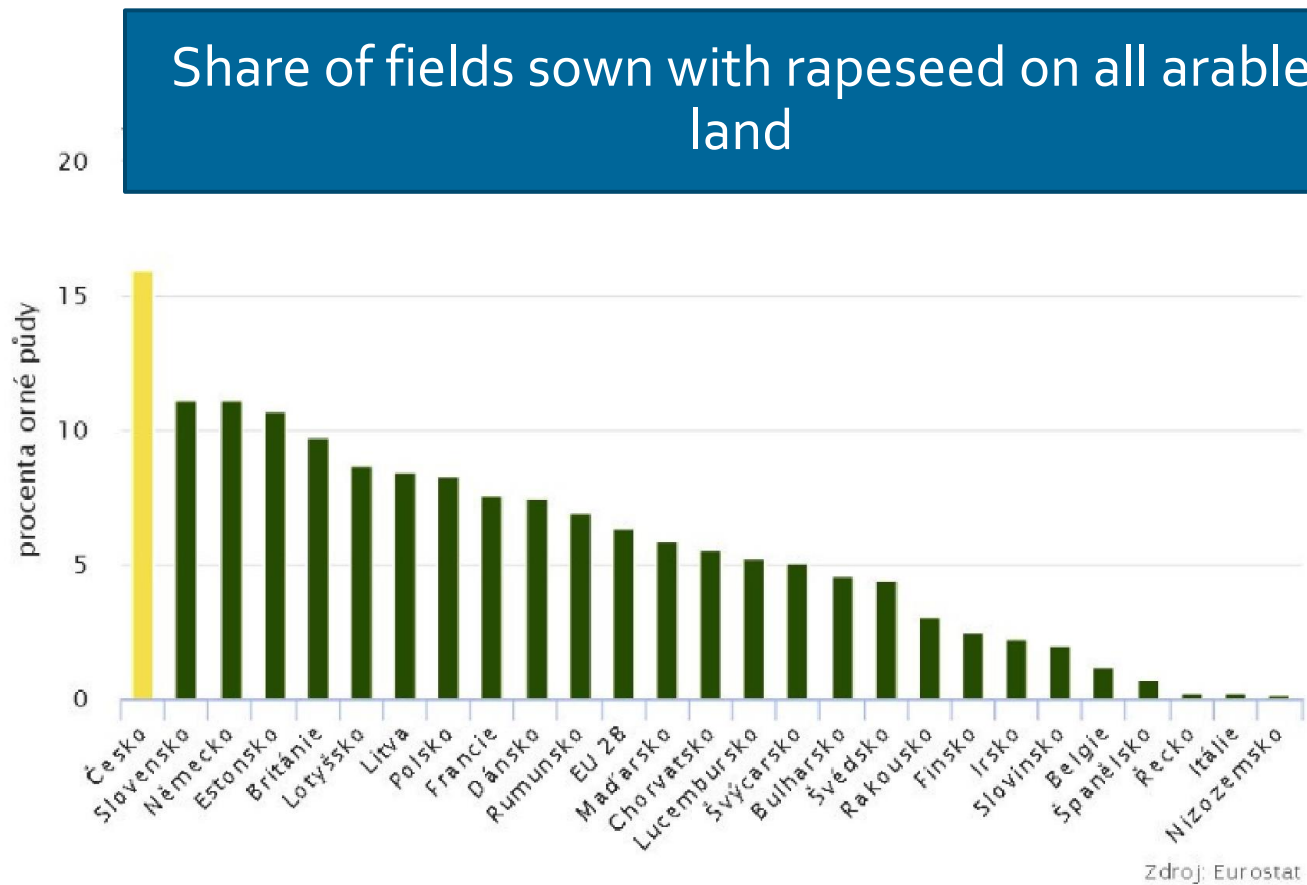
- 10% of the biodiesel production feedstock and almost all bioethanol production feedstock sources within the country
- Huge potential for forest residue to be used for biofuel production
- Incentives for the production of 2G biofuels
- 1.37 million tons CO₂ emission savings from biofuel use in the transport sector in 2021



Source: [3]

Biofuels in the Czech Republic

- 6% of biofuel blend into fuel

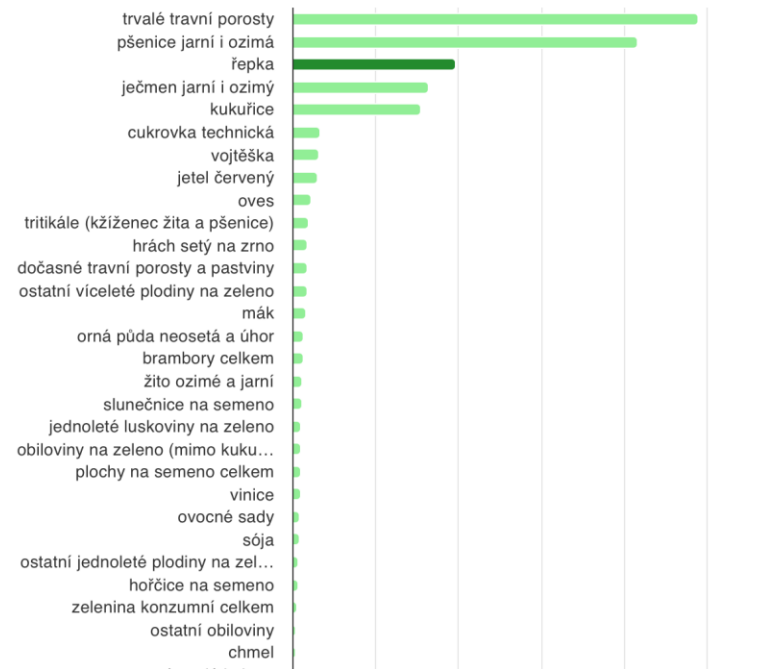


Source: [4]

Biofuels in the Czech Republic

Areas of crops on agricultural land

Osevní plochy plodin na obhospodařované zemědělské půdě

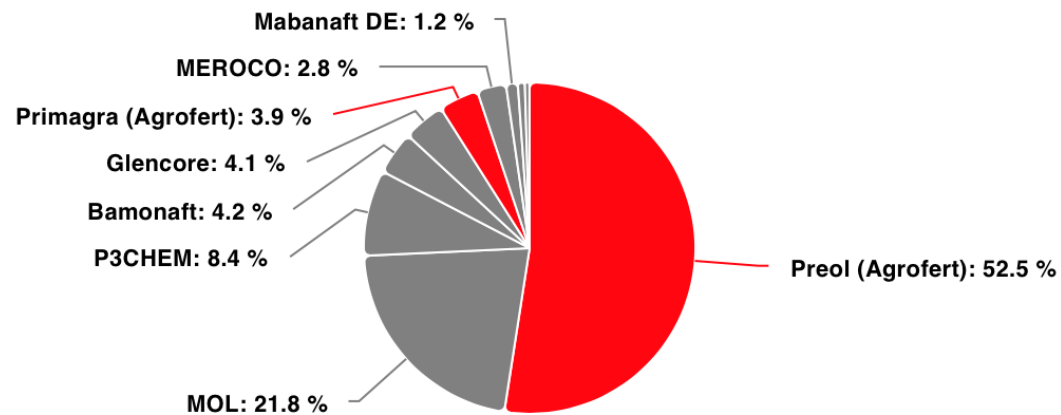


Source: [5]

Biofuels in the Czech Republic



A share in the supply of methyl ester of rapeseed oil to the state enterprise ČEPRO in 2017

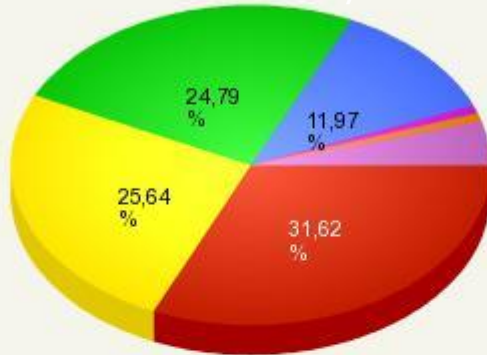


Zdroj: ČEPRO

Source: [5]

Biofuels in the Czech Republic

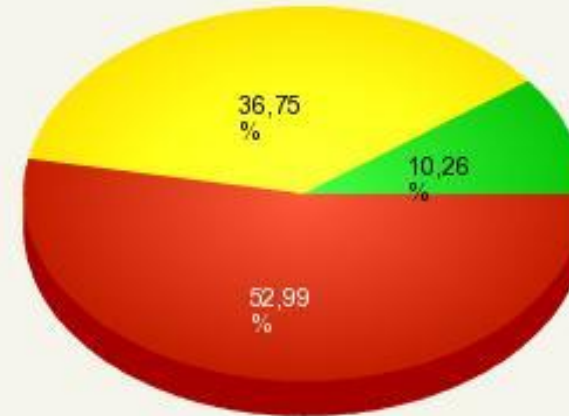
What are the biggest benefits of biofuels for society?



- Podílejí se na snižování skleníkového efektu a na ochraně životního prostředí: 37 (31,62 %)
- Snižují závislost na dovážené ropě: 30 (25,64 %)
- Biopaliva nejsou vůbec přínosná: 29 (24,79 %)
- Ekonomická úspora: 14 (11,97 %)
- pro společnost nejsou úsporná, ale pro jedince ano (nižší daň): 1 (0,85 %)
- nejenže nejsou přínos, jsou škodlivá, hlavně ekonomicky vinou dotací a možná jsou škodlivá i technicky, čili ekologicky: 1 (0,85 %)
- Ostatní odpovědi: 5 (4 %)

zdroj: <https://biopaliva-druh-alternativnic.vypinto.cz>

Can you imagine refueling your car with biofuels?



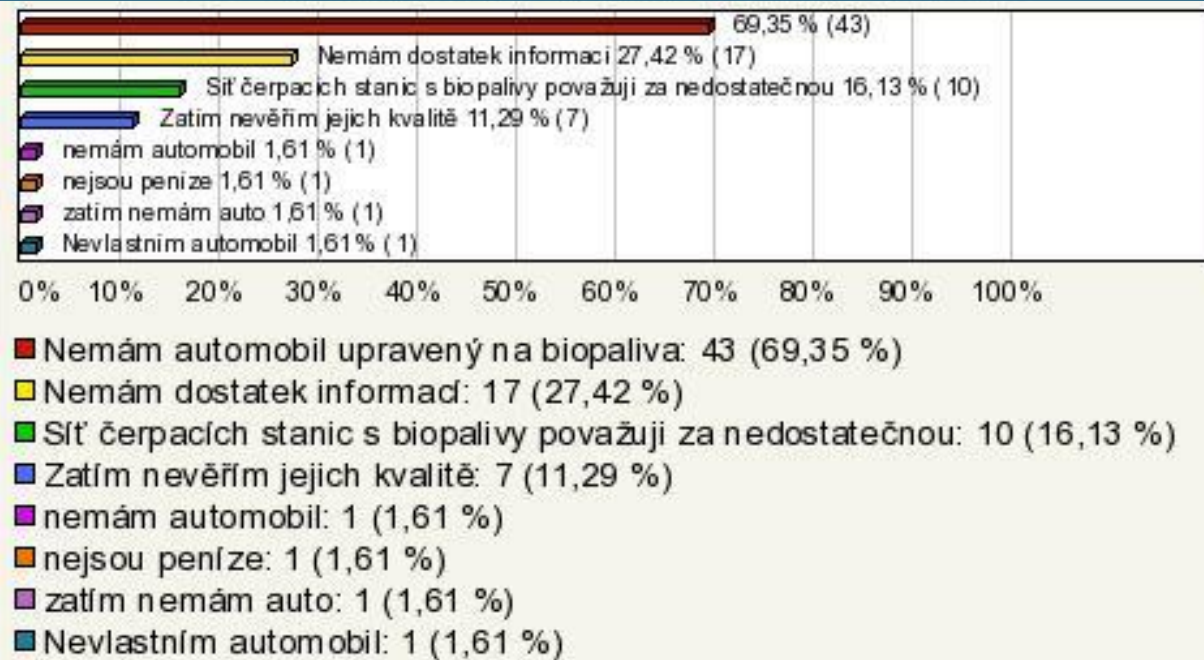
- Ano: 62 (52,99 %)
- Ne: 43 (36,75 %)
- Biopaliva již využívám, nebo jsem je někdy v minulosti vyzkoušel(a): 12 (10,26 %)

zdroj: <https://biopaliva-druh-alternativnic.vypinto.cz>

Source: [5]

Biofuels in the Czech Republic

Why haven't you started refueling biofuels yet?

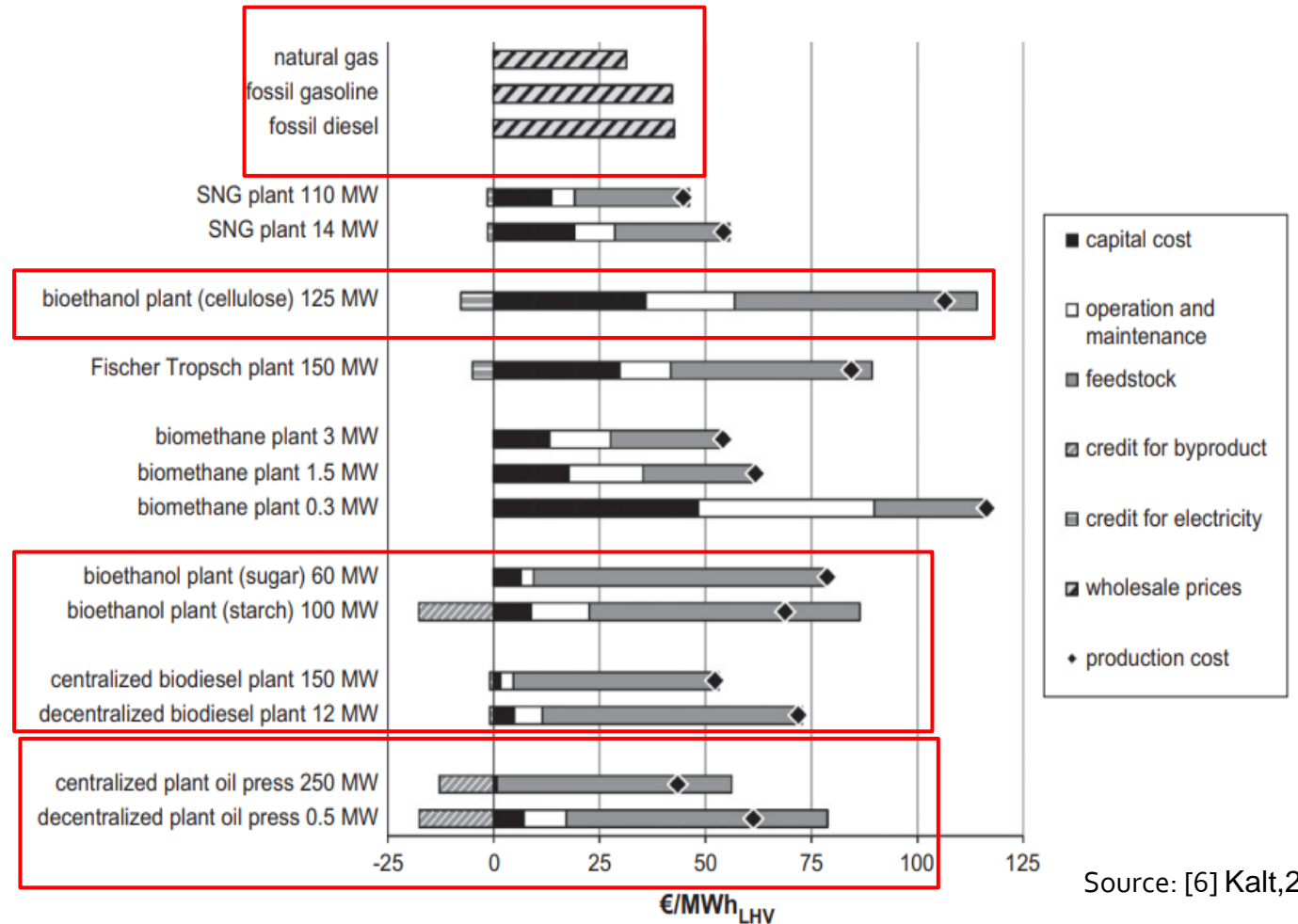


zdroj: <https://biopaliva-druh-alternativnic.vyplnto.cz>

Source: [5]

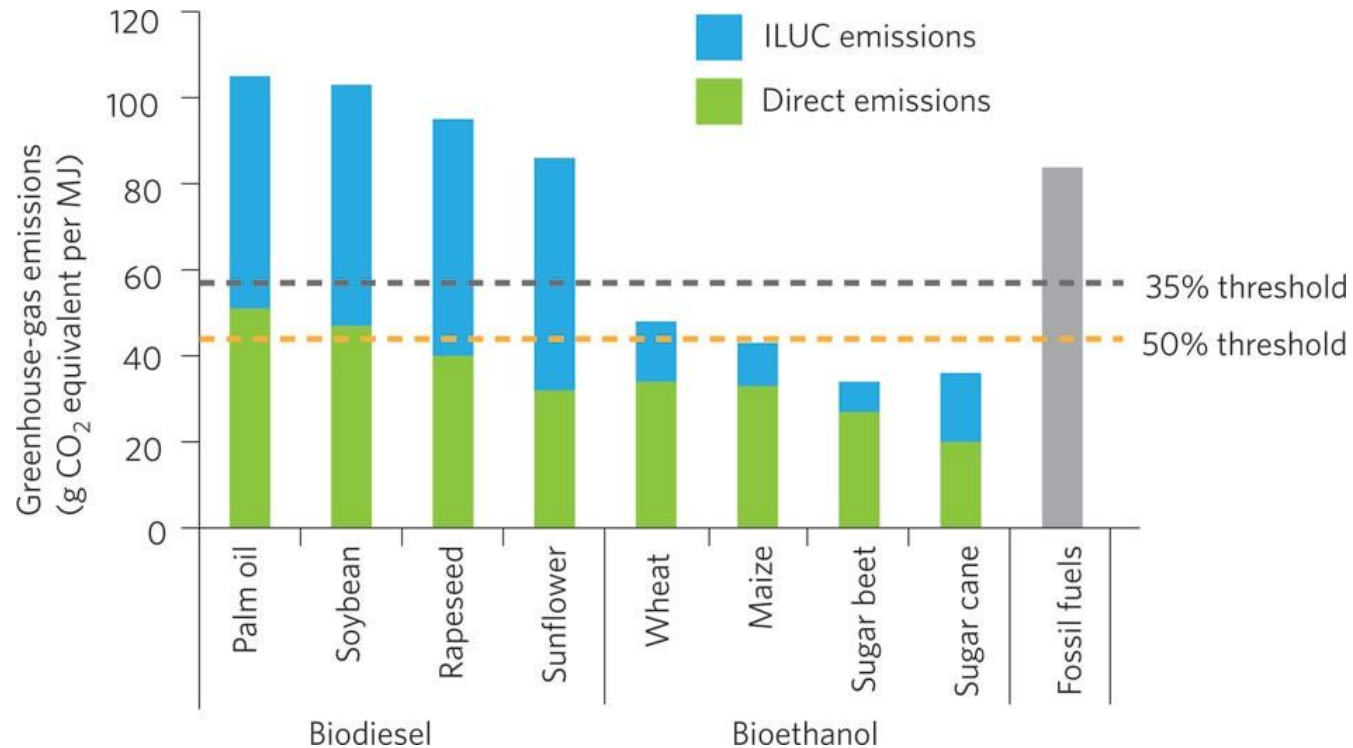
Economics of Biofuel Production

- Large-scale plants in the range costs of 50-80 €/MWh
- High feedstock costs in 1G biofuels
- 2G biofuels less sensitive to feedstock prices (comparatively)
- 2G biofuels production costs are expected to reduce with improved technological learning



Source: [6] Kalt, 2011

Environmental Performance



- The average greenhouse gas intensity of all biofuels produced in Austria range from 14.7 to 36 g CO₂/MJ.
- In AT palm oil-based biofuels no longer counted towards national targets since July 1, 2021

Sources: [7]

Conclusion

- Both AT and CZ: steady growth of production has been observed in the last 10-20 years
- CZ rapeseed is a commonly used source for biodiesel production, AT has availability but relatively lower
- AT has availability of other sources of sustainable production of feedstock for bioethanol production
- Sustainable feedstock availability- AT: 2 million tones per year, CZ: 2.5 million tones per year (estimates by 2025)
- Both countries have a large potential for biofuel production from forest residues
- AT and CZ account for 5% of the EU bioethanol production
- Incentives in place for production and application
- Blending requirements have been implemented

Thank you.

References

- [2] European Environment Agency. and European Topic Centre for Air Pollution and Climate Change Mitigation., *Monitoring CO2 emissions from passenger cars and vans in 2018*. LU: Publications Office, 2020. Accessed: Mar. 10, 2023. [Online]. Available: <https://data.europa.eu/doi/10.2800/19757>
- [3] S. Elisabeth, “Erneuerbare Kraftstoffe und Energieträger im Verkehrssektor in Österreich 2022,” 2022.
- [4] <https://www.forum24.cz/je-repka-ekologicke-prokleti-nebo-je-to-uzasne-uzitecna-rostlina/>
- [5] <https://www.vyplnto.cz/realizovane-pruzkumy/biopaliva-druh-alternativnic/>
- [6] G. Kalt and L. Kranzl, “Assessing the economic efficiency of bioenergy technologies in climate mitigation and fossil fuel replacement in Austria using a techno-economic approach,” *Applied Energy*, vol. 88, no. 11, pp. 3665–3684, Nov. 2011, doi: 10.1016/j.apenergy.2011.03.014.
- [7] <https://www.nature.com/articles/nclimate1265>