



Country update

Sweden

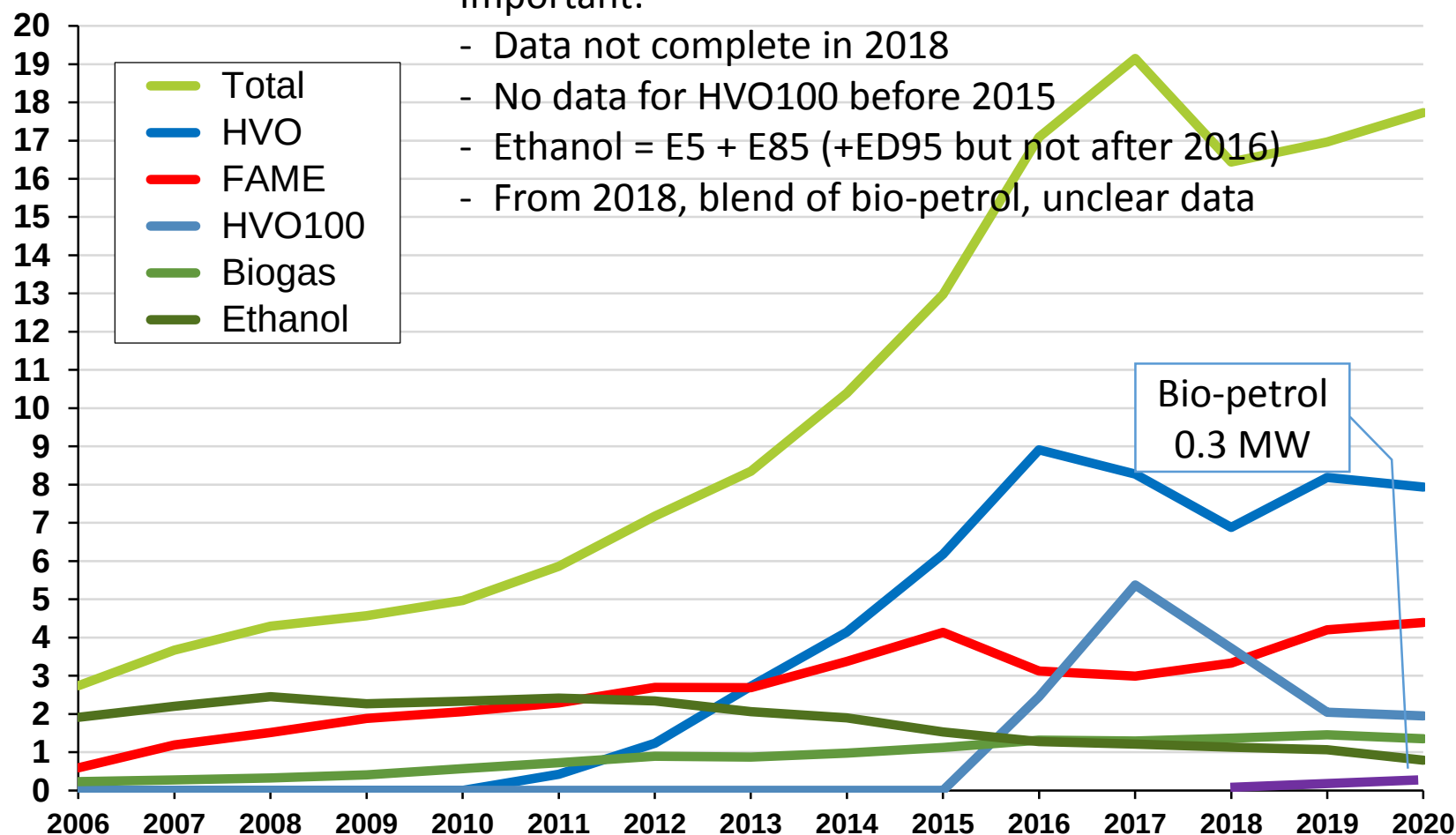
Tomas Ekbom, SVEBIO

Stockholm, 21 April 2021

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Consumption of biofuels for road transport

TWh



Swedish road transport fuels 2020

TWh/yr

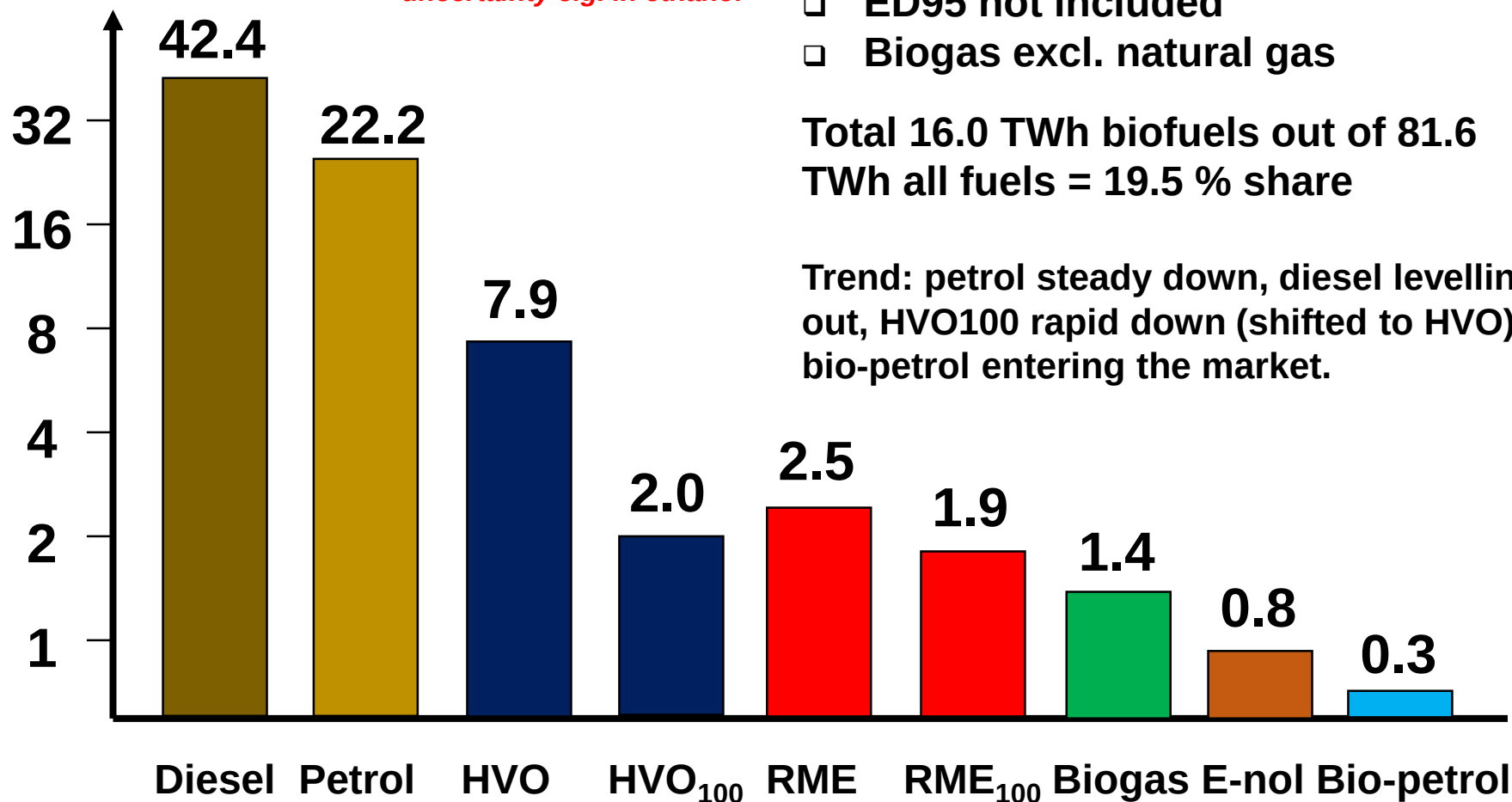
Log. scale

Prel. statistics, large uncertainty e.g. in ethanol

- Ethanol = E5 + E85
- ED95 not included
- Biogas excl. natural gas

Total 16.0 TWh biofuels out of 81.6 TWh all fuels = 19.5 % share

Trend: petrol steady down, diesel levelling out, HVO100 rapid down (shifted to HVO), bio-petrol entering the market.



Ref. Statistics Sweden, Deliveries of transport fuels for vehicles, 2021.

Several, significant biofuels policy changes

- Reduction mandate quotas given until 2030 with change for 2021 on 1 Aug, possibly E10 introduction

Year	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Petrol	4,20%	6%	7.8%	10.1%	12.5%	15.5%	19%	22%	24%	26%	28%
Diesel	21%	26%	30.5%	35%	40%	45%	50%	54%	58%	62%	66%

- Prolongation of tax exemption of neat liquid biofuels until 31 Dec 2021 but no information on thereafter
- Prolongation of tax exemption of bio-CNG until 31 Dec 2029, current share of bio is above 95% in all CNG
- From 1 July, changed sustainability criteria with increased GHG emissions demand, biofuels not allowed from land of high biodiversity and carbon storage - palm oil will not be approved for HVO
- From 1 Oct environmental declaration of fuels on pump stations, making a world's first, showing consumer information for the fuels sold
- From 1 July reduction quota mandate on all aviation is imposed, starting with 1% and ending with 27 % by 2030, with target of 100% by 2045
- State investigation to evaluate year for possible ban on sales of fossil fuels and sales of fossil-combustion vehicles

Promising develop. in some biofuel plants

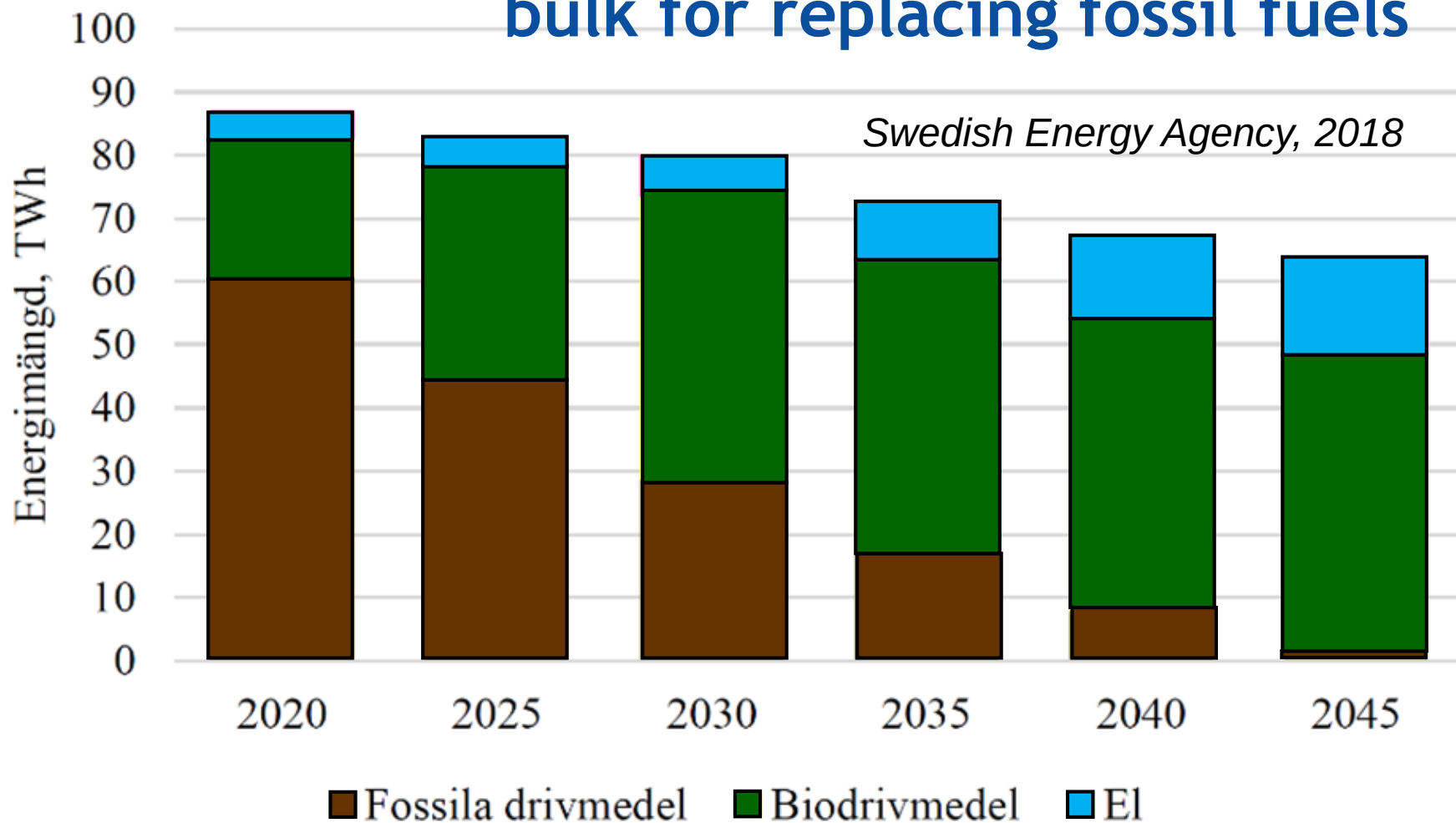
Plants in operation

- ❖ SEKAB in Örnsköldsvik
23 000 m3 ethanol
- ❖ SunPine in Piteå
150 000 m3 Raw Tall Diesel (RTD)
- ❖ Agroetanol in Norrköping
230 000 m3 ethanol
- ❖ Adesso in Stenungsund
148 000 ton RME
- ❖ Preemraff Gothenburg
320 000 ton HVO-products
- ❖ Ecobräsle in Karlshamn
55 000 ton RME
- ❖ NEOT @ St1 in Gothenburg
5000 m3 ethanol
- ❖ E.ON in Stockholm
6 million Nm3 bio-CNG

Plants in development

- ❖ Södra in Mönsterås
5000 ton biomethanol in 2020
- ❖ St1 Refinery in Gothenburg
200 000 ton HVO biofuels 2022
- ❖ Pyrocell in Gävle
26 400 ton pyrocruide 2021
- ❖ SCA in Östrand
100 000 ton biofuels 2021
- ❖ RenFuel Lignolproduktion
>200 000 ton crude bioliquids 2022
- ❖ Preem Gothenburg w Diamond Green
2 million m3 biofuels 2024
- ❖ St1 Refinery in Gothenburg
200 000 ton HVO biofuels 2024
- ❖ SCA in Östrand
200 000 ton biofuels 2024
- ❖ Liquid Wind in Örnsköldsvik
50 000 ton e-methanol 2024

Scenario for biofuels show big need as the bulk for replacing fossil fuels



Svebio study proposes policy addons

- "Contract for Difference": state auctions for production volumes.
- Targeted reduction quota: selected materials from Annex IX A in Renewable Energy Directive.
- Reduction quota boosting for aviation
- Reduction quota for sea transport, starting with some 4%
- Elevated reduction mandate: increasing to 80-90%
- Energy content taxation and tax exemption continuation





ADVANCED BIOFUELS

21-23 September 2021, Stockholm, Sweden

Intense media debate on forests

Climate Minister under pressure in Parliament from forest media review



Sveaskog winner of Swedish Greenwash prize 2020



Preem – winner of Swedish Greenwash prize 2019



World's consumption of oil broke the record, 100 million barrel/day 12 October 2018



Sasol Chemical Complex, SA
75 miljoner ton CO₂ per år



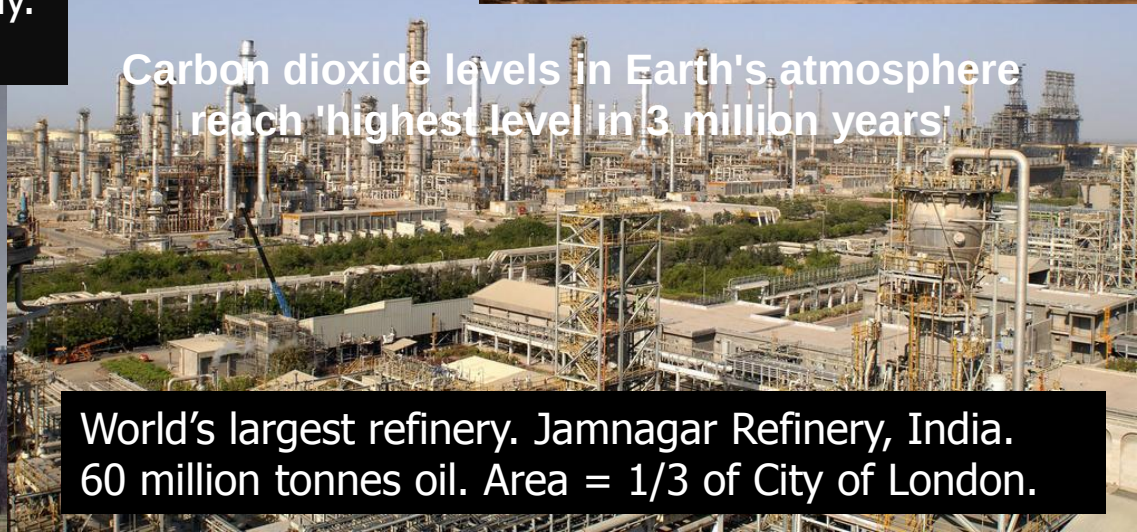
Norway invests 166 billion NOK
(\$15 billion) in 2021 on oil & gas



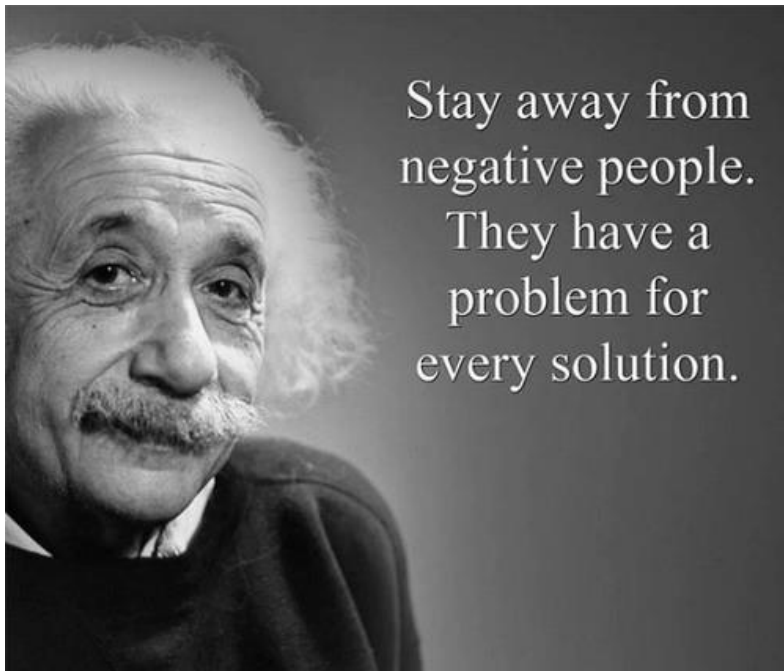
Jämschwalde: 3000 MW_e plant in Germany.
Emissions: 24 million ton CO₂ per year.



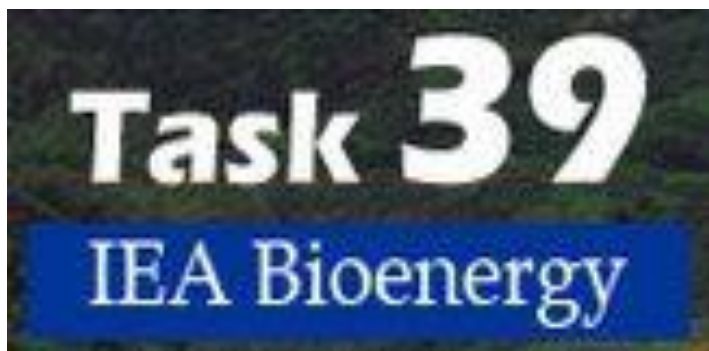
Carbon dioxide levels in Earth's atmosphere
reach 'highest level in 3 million years'



World's largest refinery. Jamnagar Refinery, India.
60 million tonnes oil. Area = 1/3 of City of London.



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negative people.
They have a
problem for
every solution.



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