Biogas PowerON 2022 19 october 2022

Denmark as market leaders for biogas

Kasper Gadbert, Market analyst Biogas Danmark

+45 60 16 90 22

kagd@biogas.dk

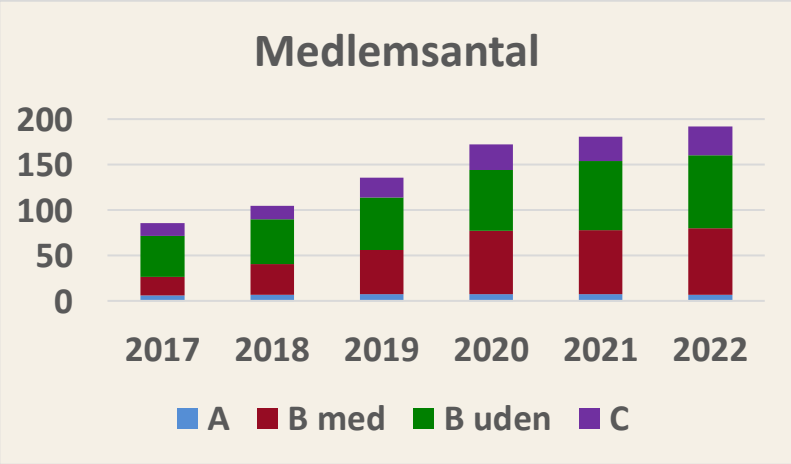
Biogas Danmark

Danish Biogas Association

The organisationen for all stakeholders in biogas

Mission

- Promote production and use
- Promote cirkular economy
- Capacity building
- Networking and knowledge sharing



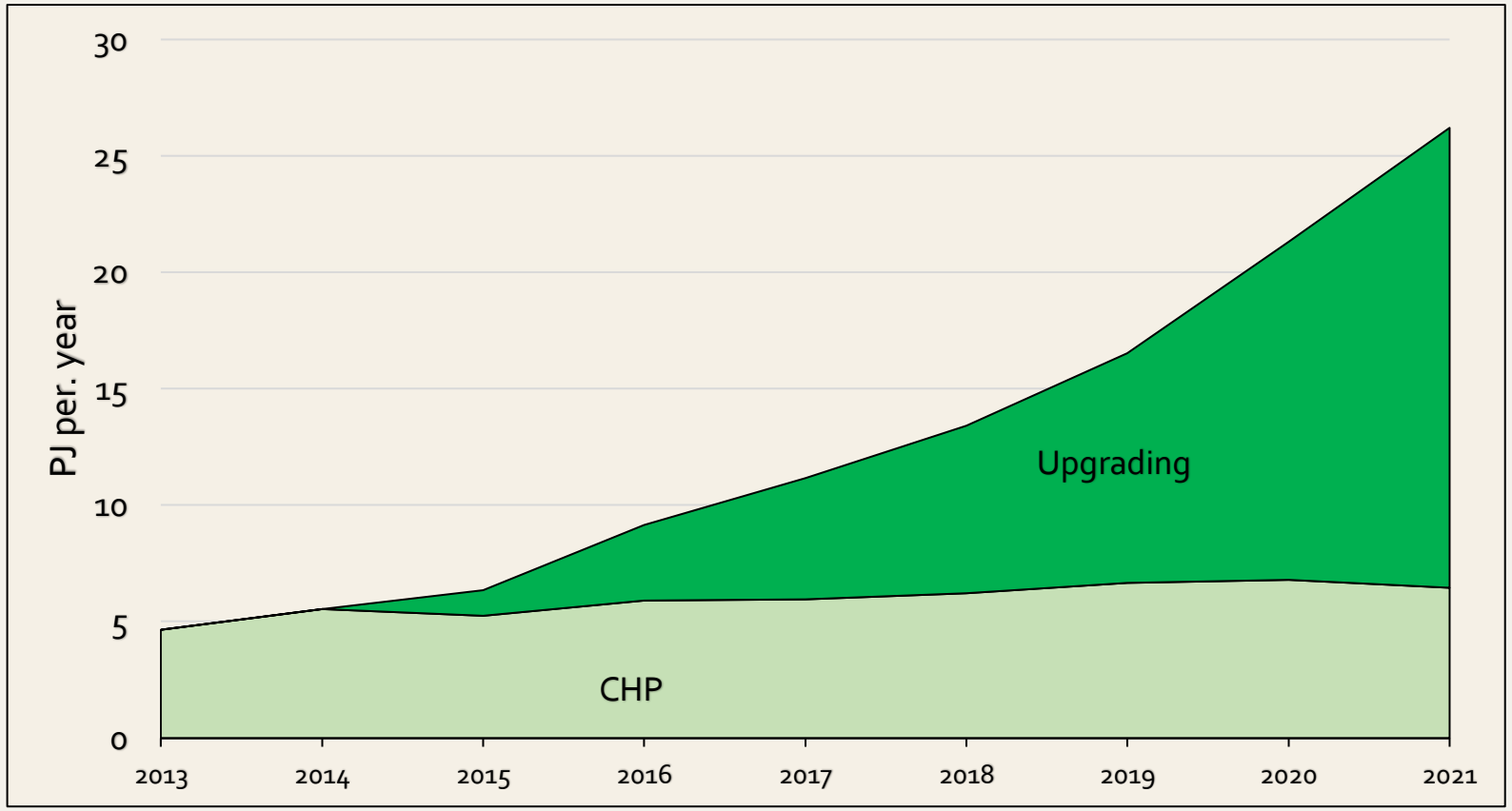
Biogas Danmark

Members

- Producers and users of biogas
- Biomass suppliers and users
- Technology and equipment suppliers
- Consultants and knowledge institutions
- Energy, waste and agriculture sectors
- Approximately 195 members

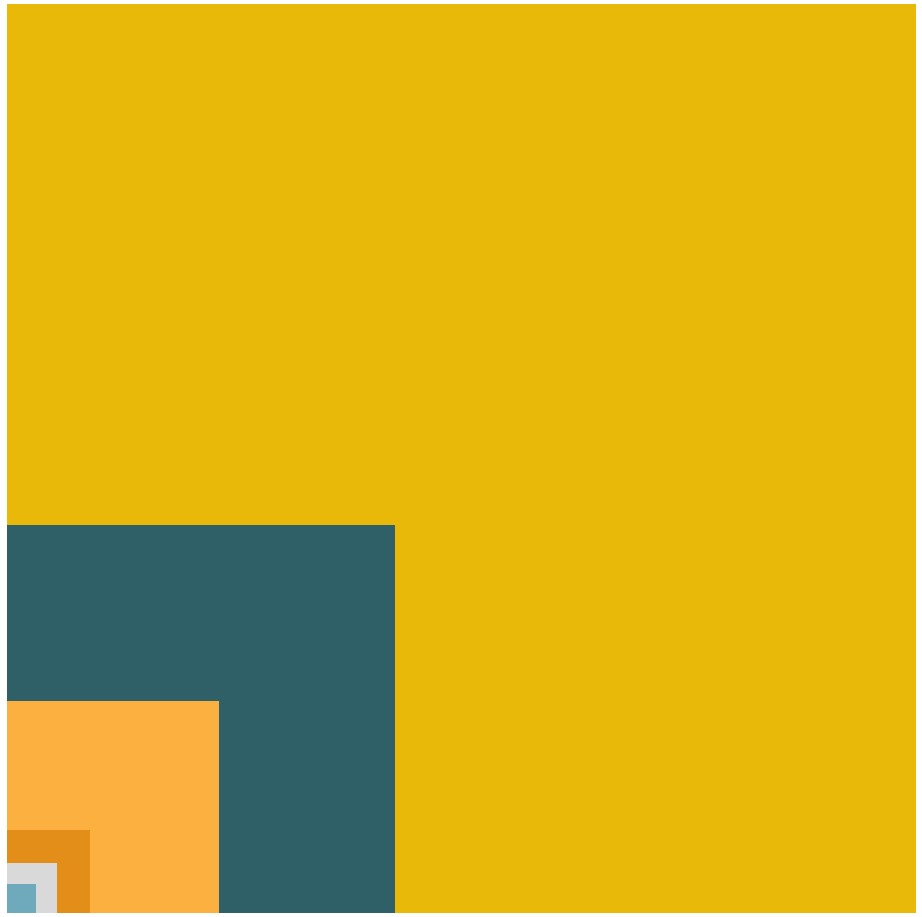
Danish biogas production

Fast turnaround from CHP to upgrading



Biogas Danmark

Lagerstørrelse vist med figur areal

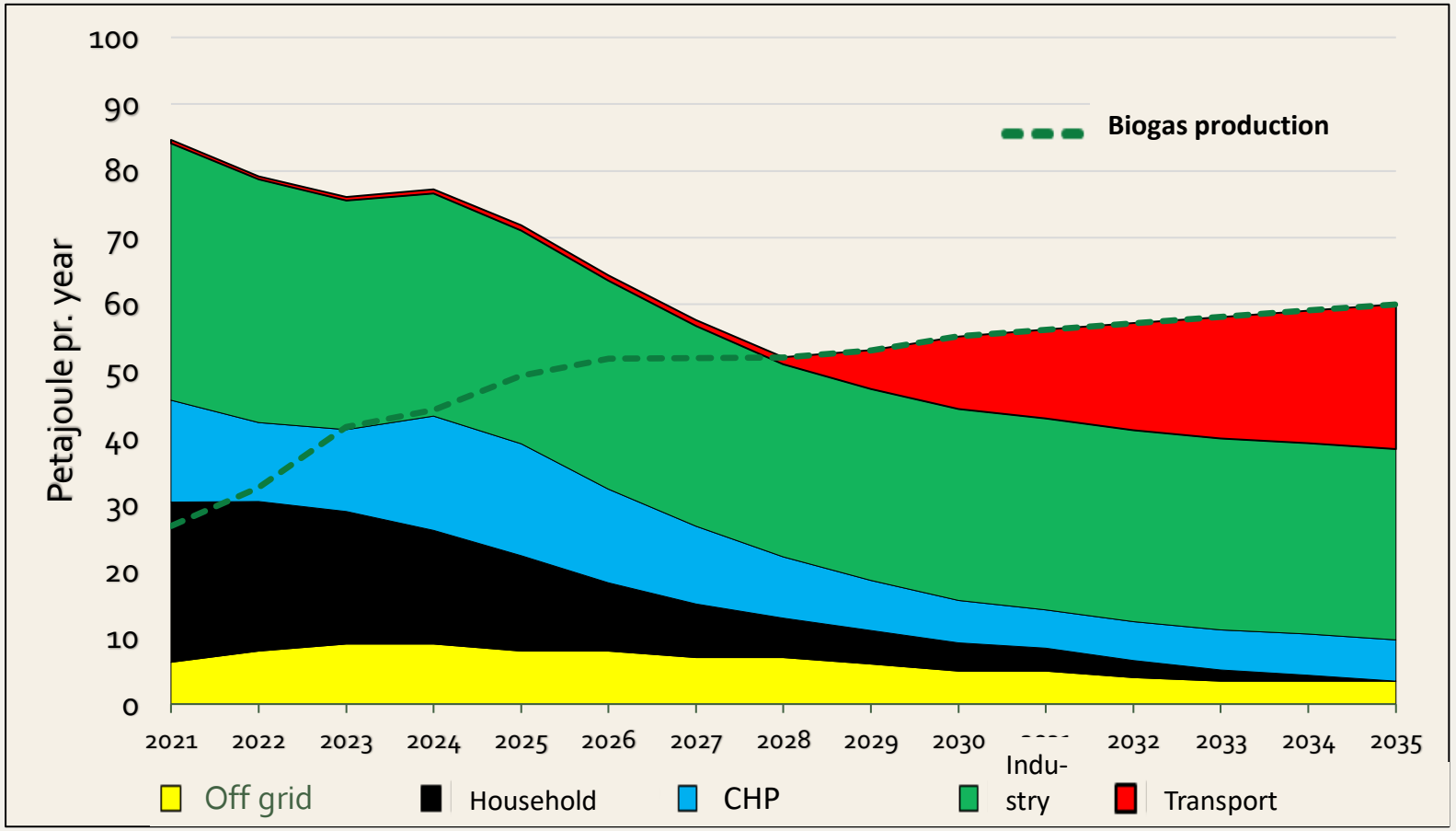


- Gas storage
- International power grid
- District heating (enlaged)
- District heating
- Individual heat pumps
- El. and plugin hybrid cars (2035)

Biogas Danmark

Biogas cover gas consumption from 2027

From 2030 households may only use green gas. In 2035 no gas



Biogas Danmark

Danish Biogas Model

Sustainable agriculture and security of supply of renewable gas based on residues

Livestock manure
Liquid slurry/Deep litter
Organic catch crops

Organic residues
Agriculture, households, industry, servicesector

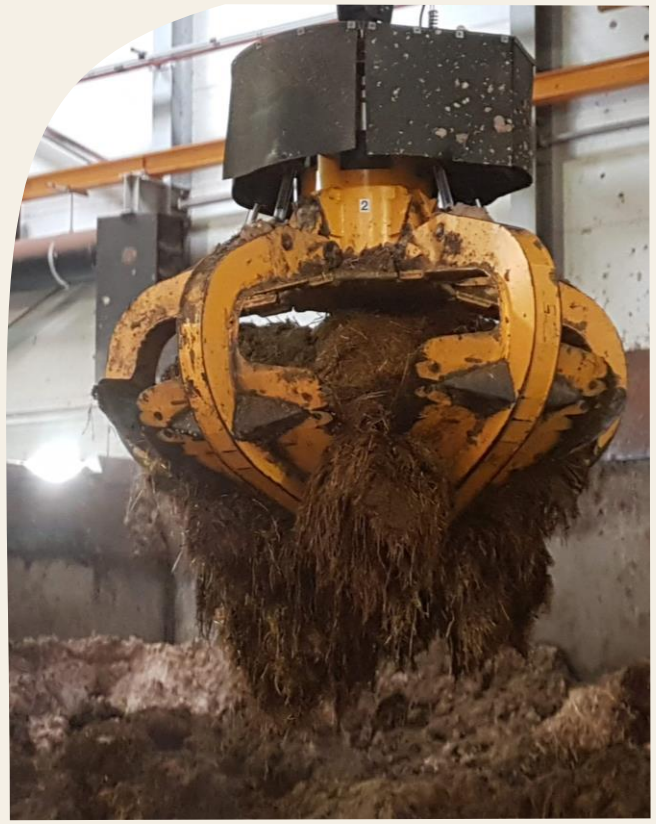
Improved fertilizer & recirculation
Recirculation; N, P , K and carbon
Nutrient supply

Renewable energy
Stabilise power and heat systems
Sectors that can’t be electrified

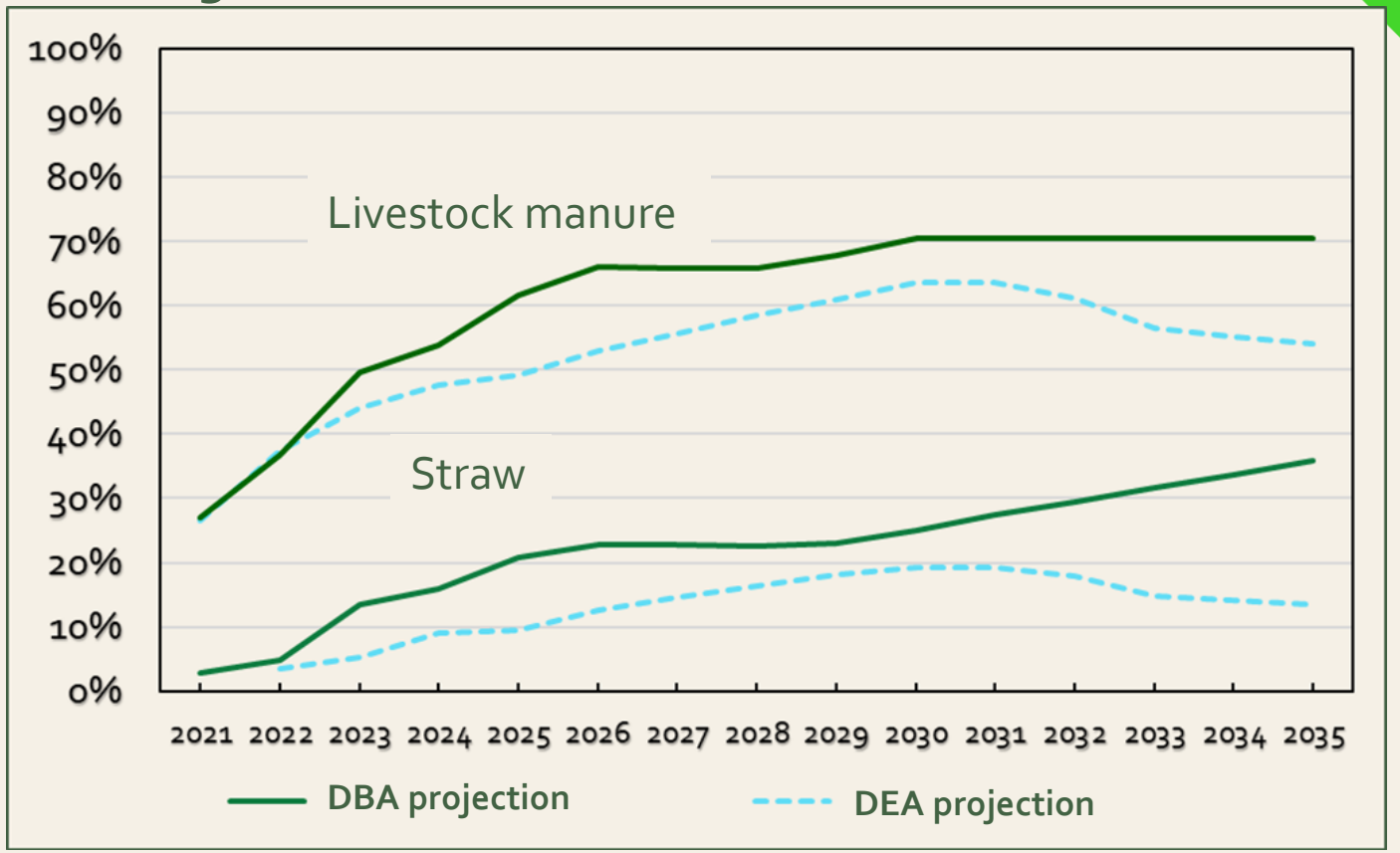
Biogas Danmark

Future development

Utilisation of the potential in manure and straw



Percentage of manure and straw*

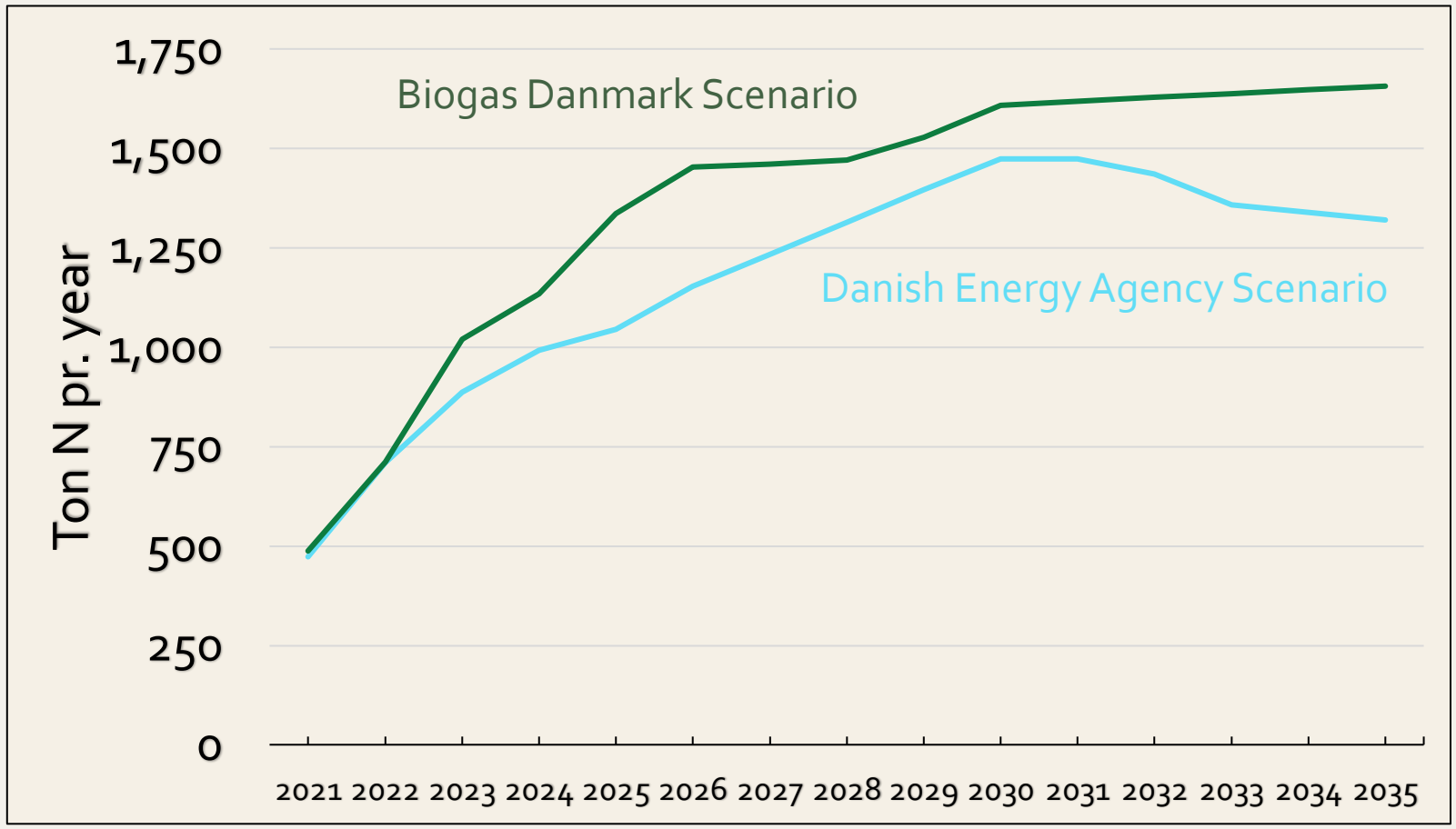


Biogas Danmark

*Biogas Danmark based on DEA projection (52 PJ) and DBA recommandation (60 PJ)

Reduced leaching of nitrates

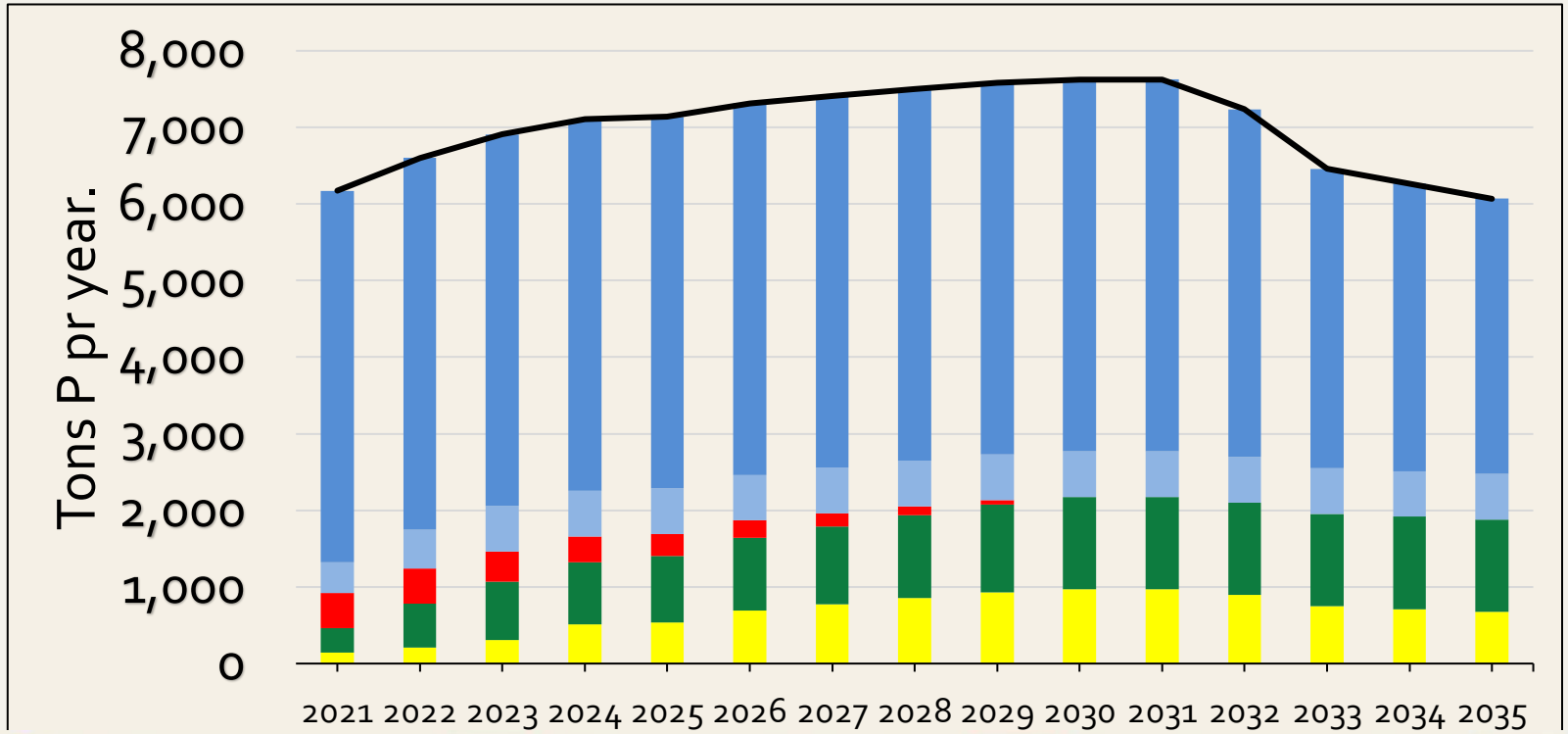
Making food production more sustainable



Biogas Danmark

Circular economy

Re-circulation and re-use of phosphorous – a severely scarce resource

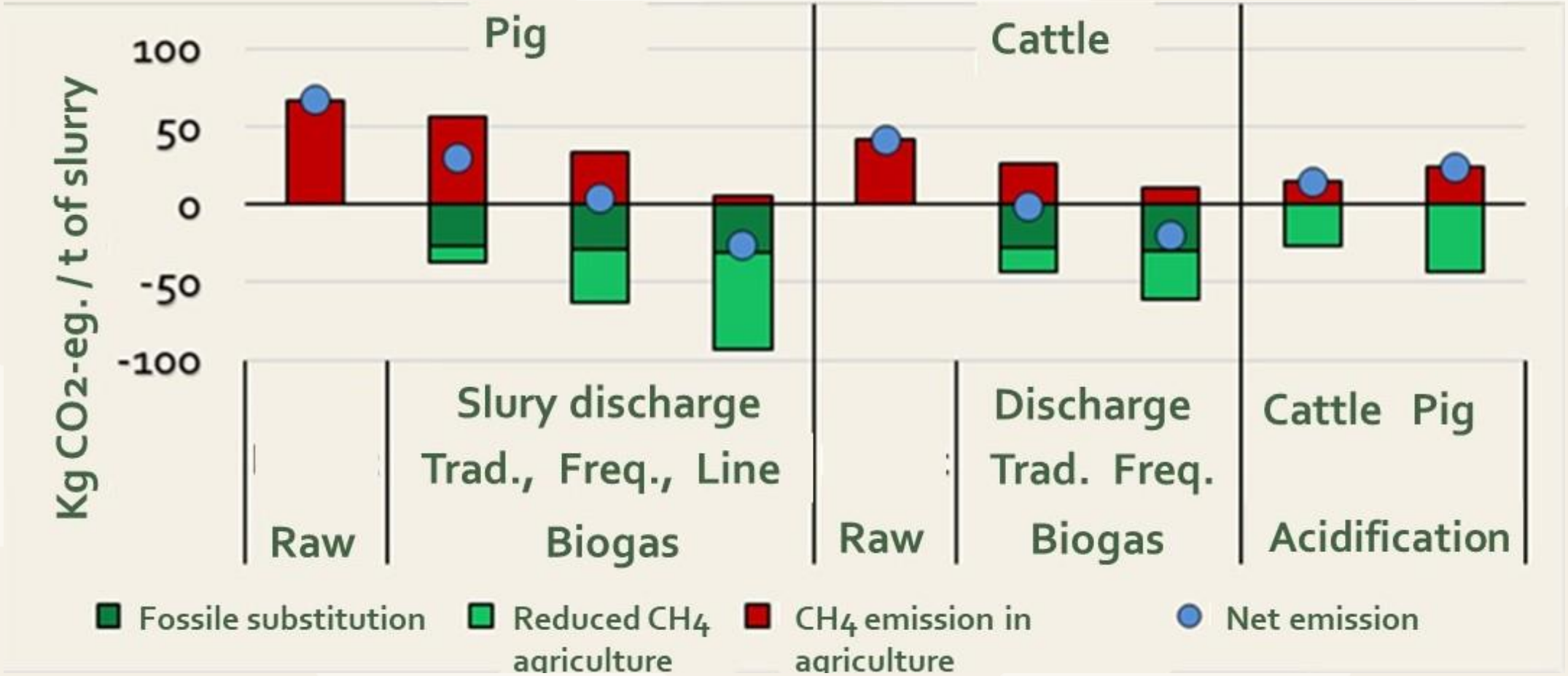


Biogas Danmark

In the current situation with high gas prices and 40 per cent of chemical fertilizer capacity is closed, recirculation of nitrogen is more important than ever

Climate change

Biogas has a double effect to prevent climate change



Biogas Danmark

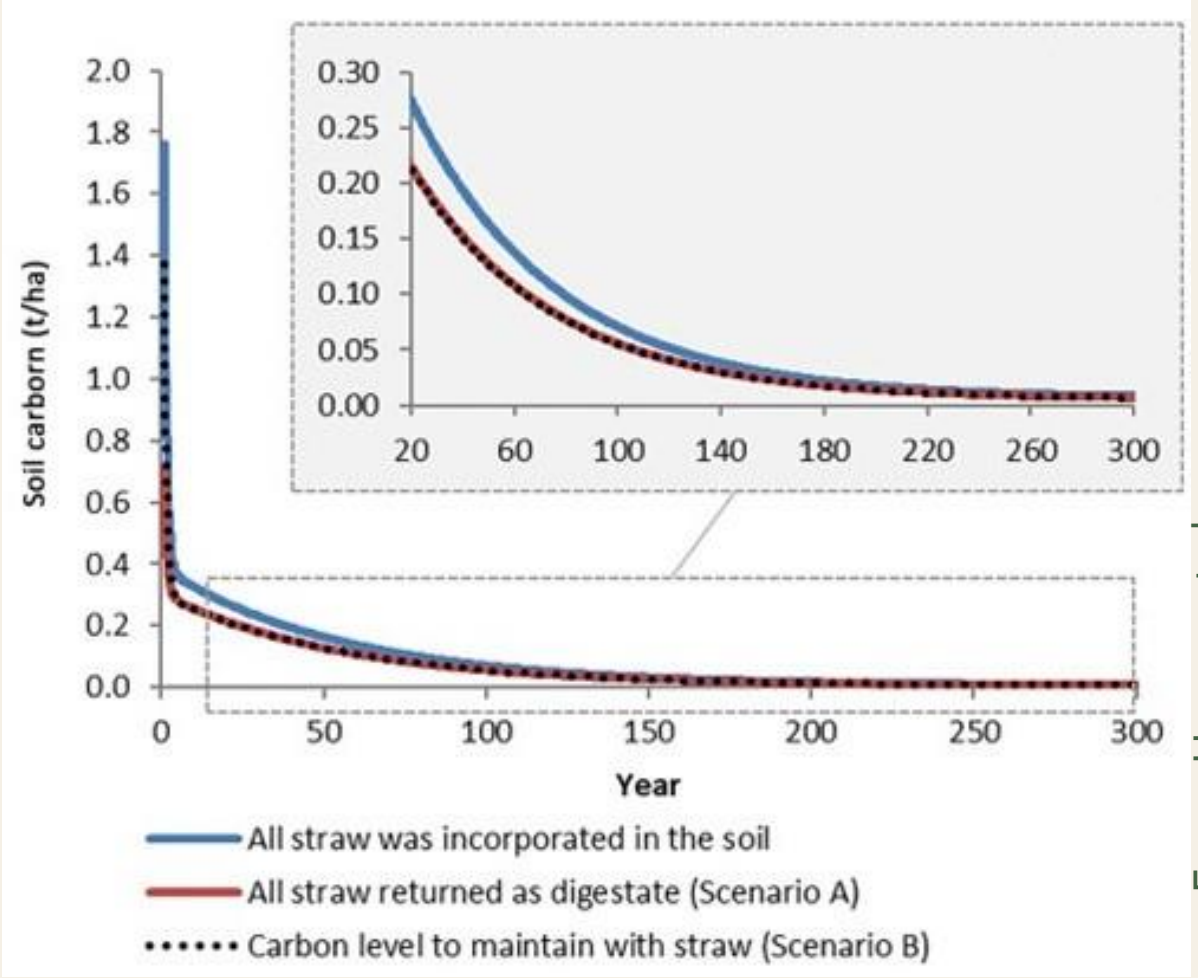
Soil carbon sequestration

Climate and soil quality

Same long term carbon in soil

- Straw in biogas plants give the same long term carbon incorporation as direct incorporation into the soil

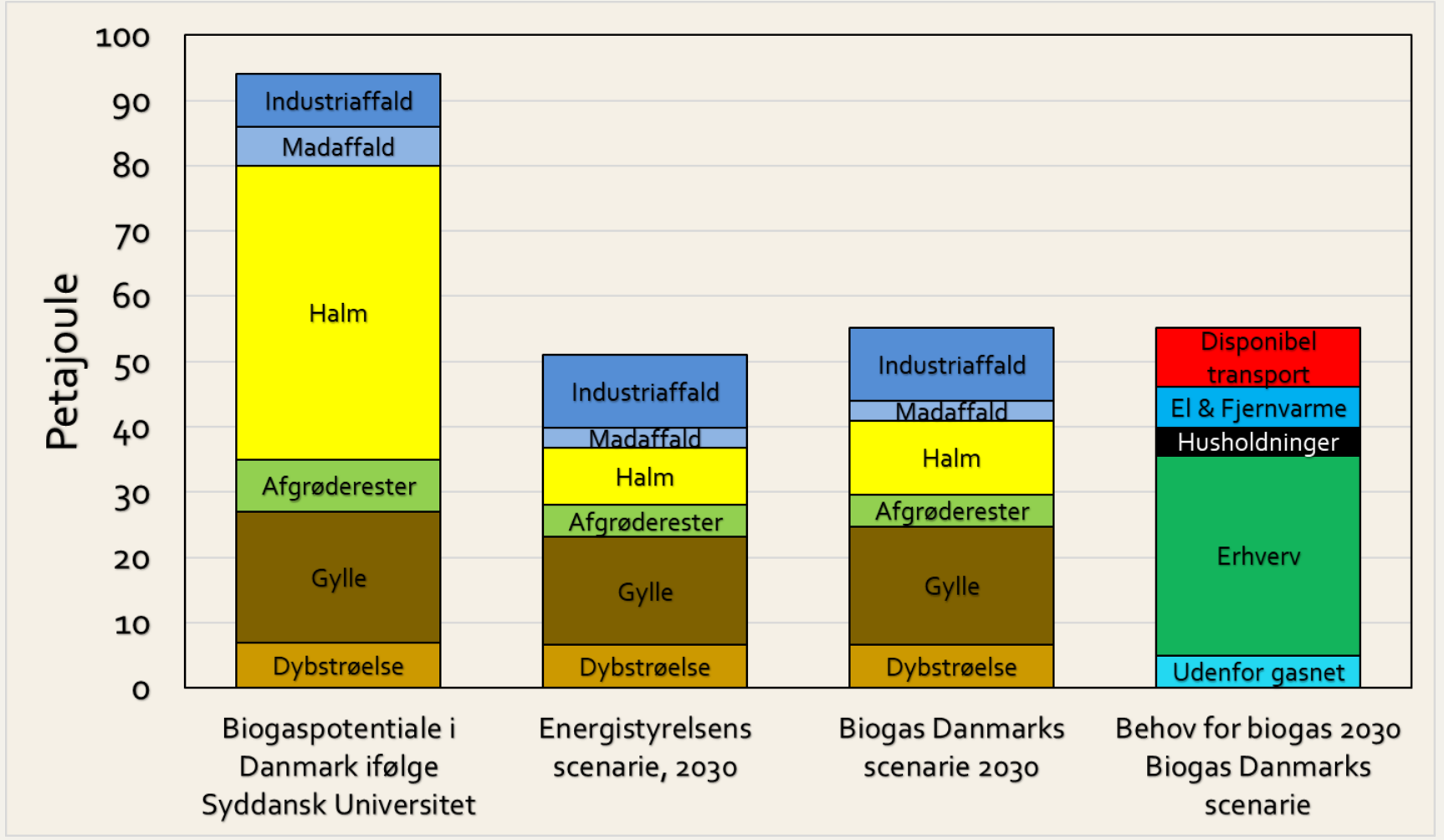
- Only 26 per cent of the straw utilised in biogas plants can be utilised in combustion plants if the soil quality is considered

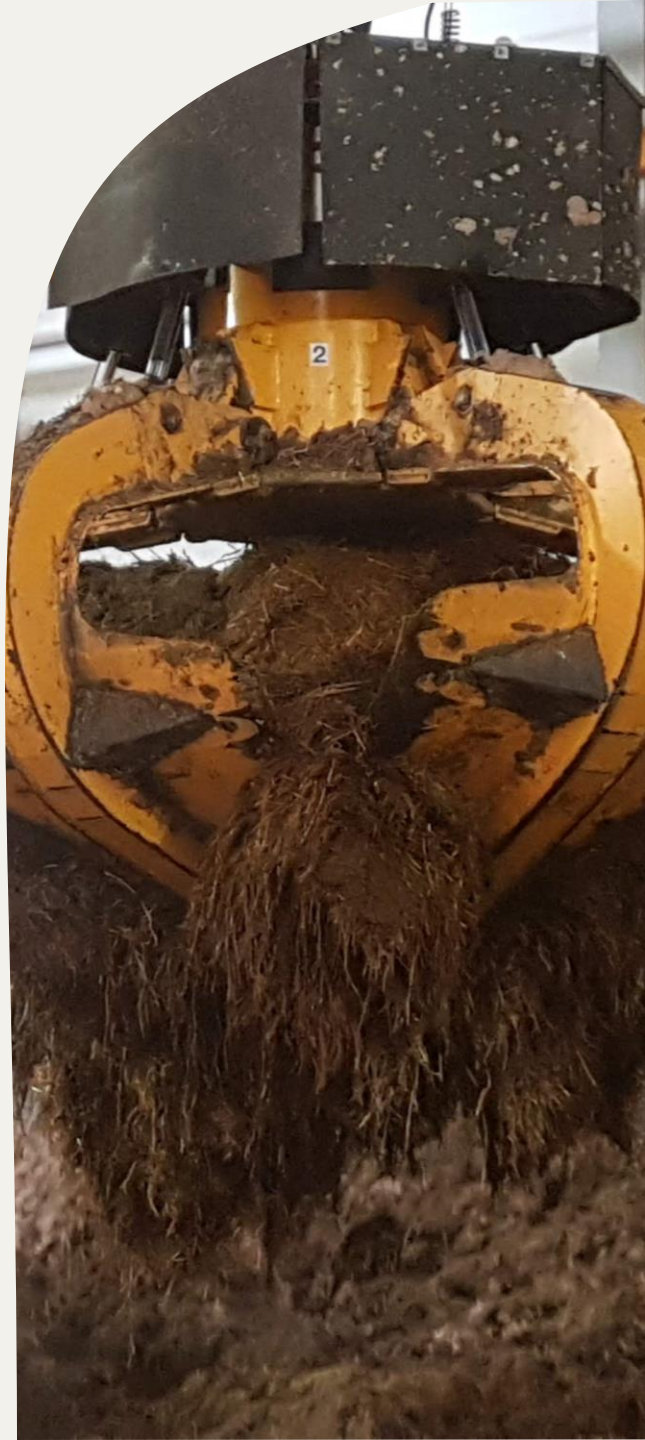


From: Hansen et al. 2020

Biogas Danmark

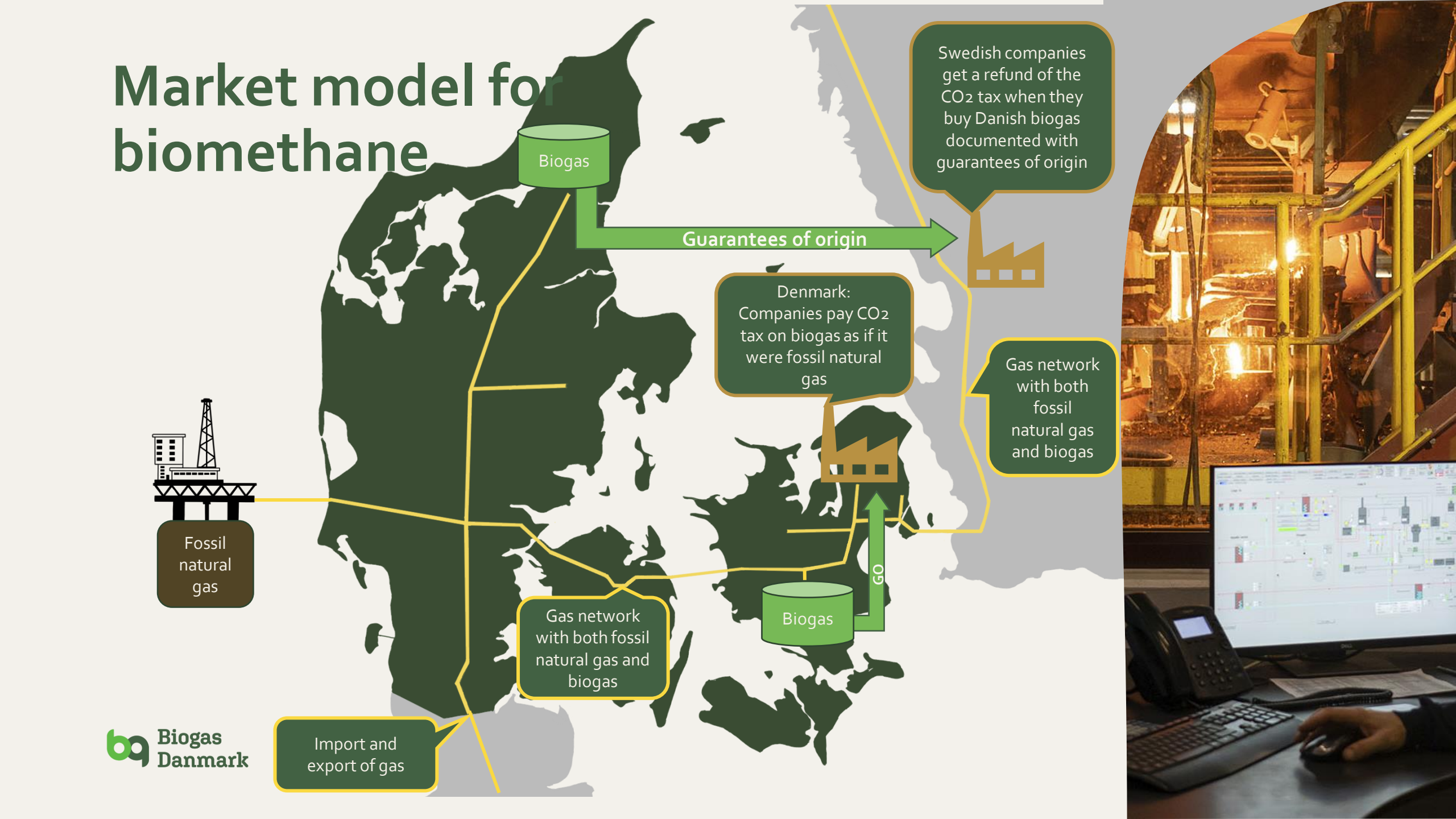
Biogas potential and biomass needs





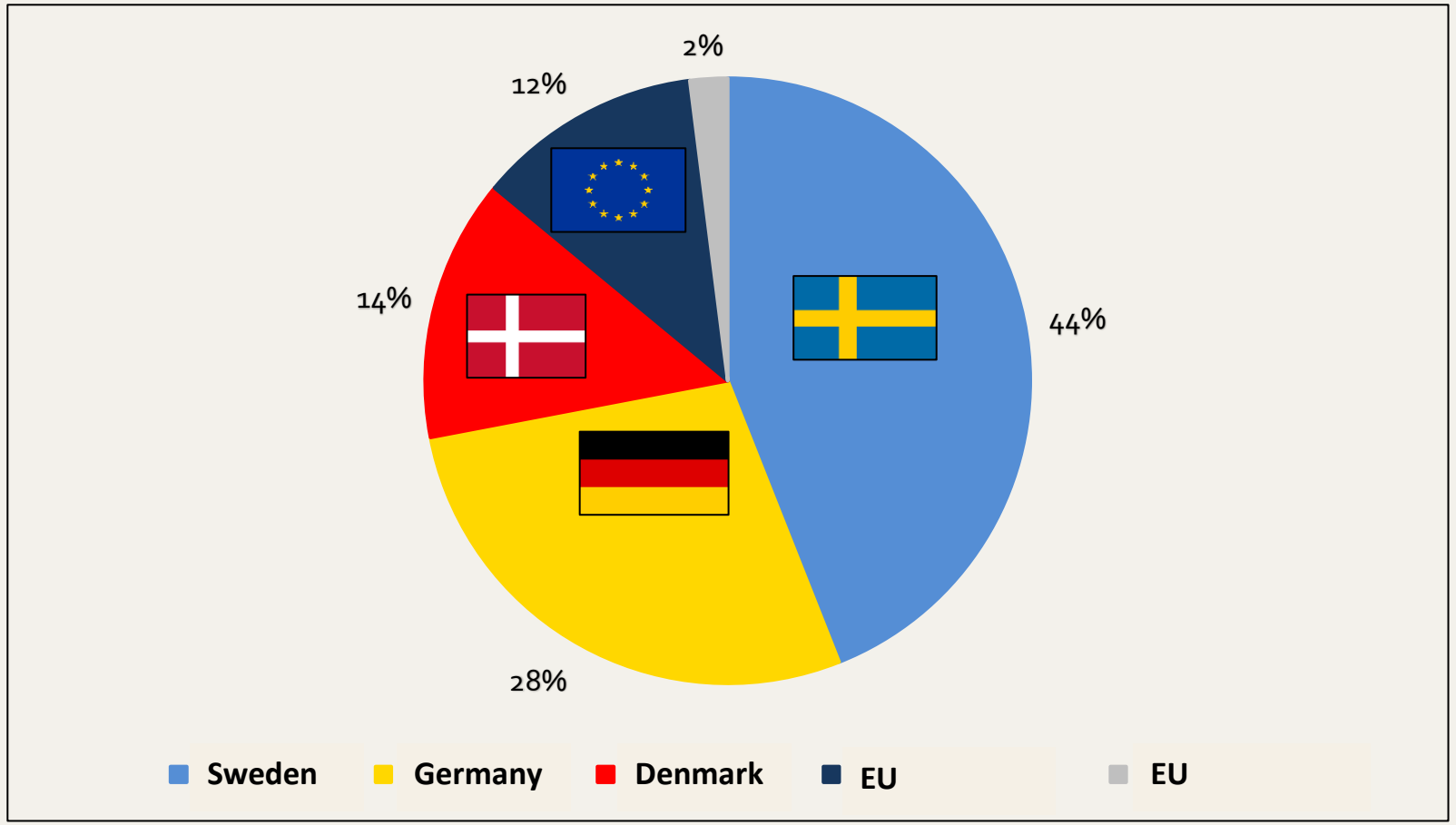
Biogas Danmark

Market model for biomethane



Biogas Danmark

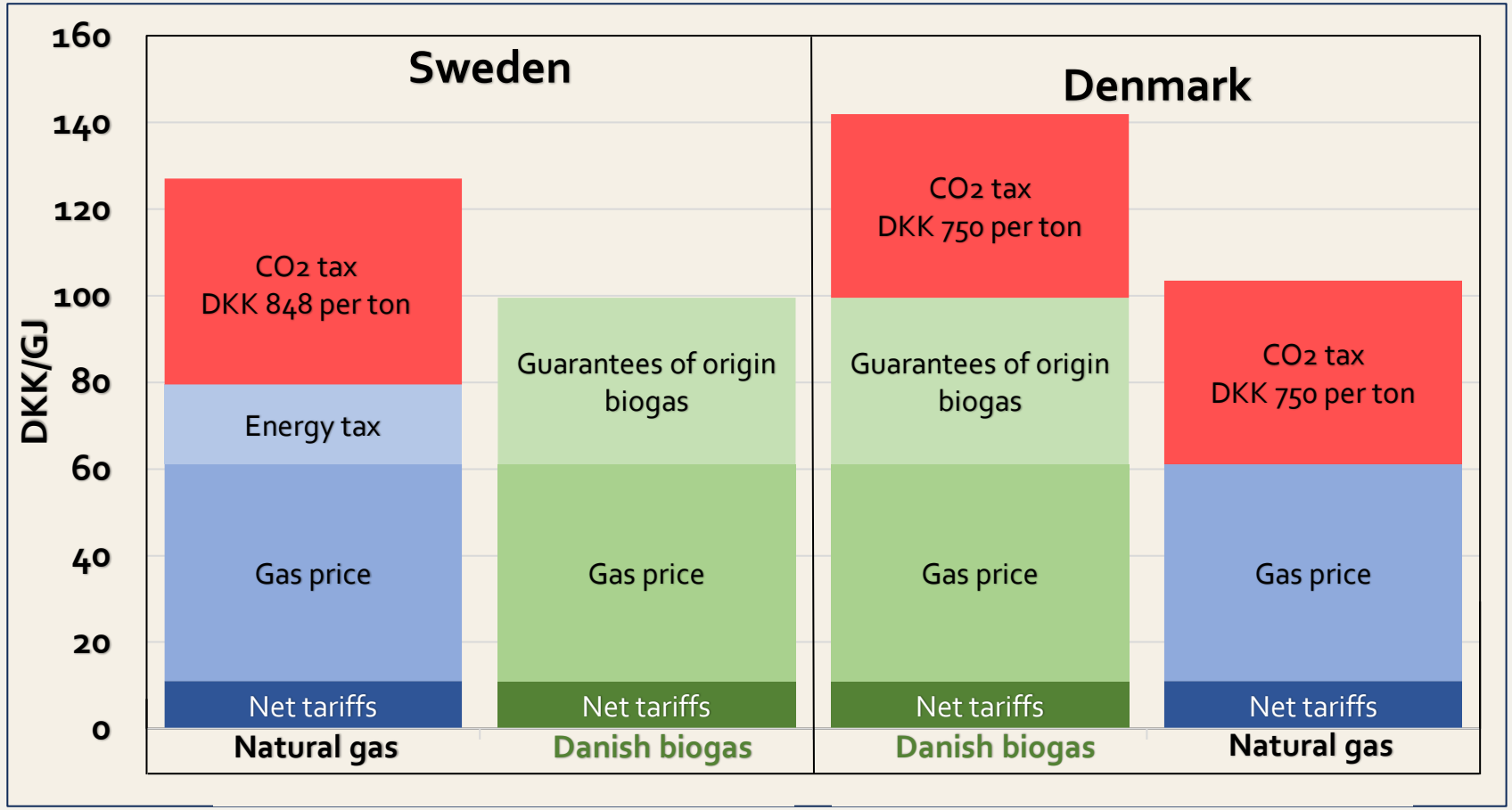
Export of Danish biogas 2021

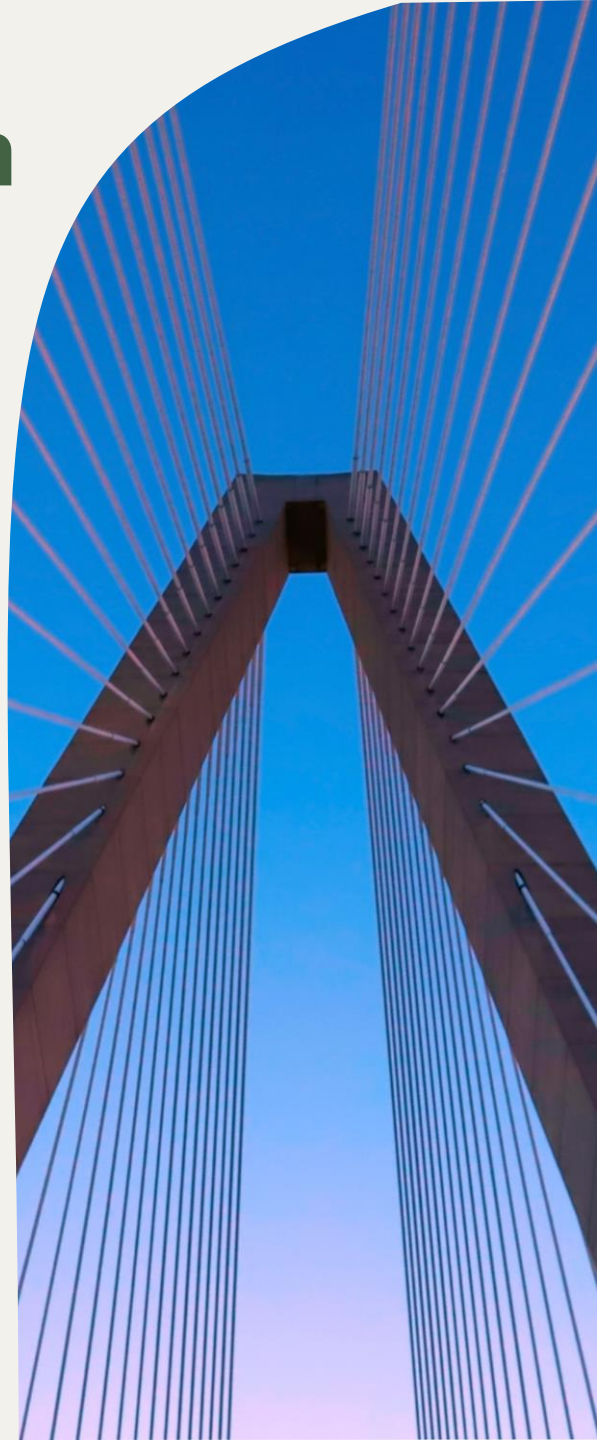


Biogas Danmark

Tax differences - Denmark and Sweden

CO2 tax on **DANSK** biogas in Denmark, but not in Sweden - 2030

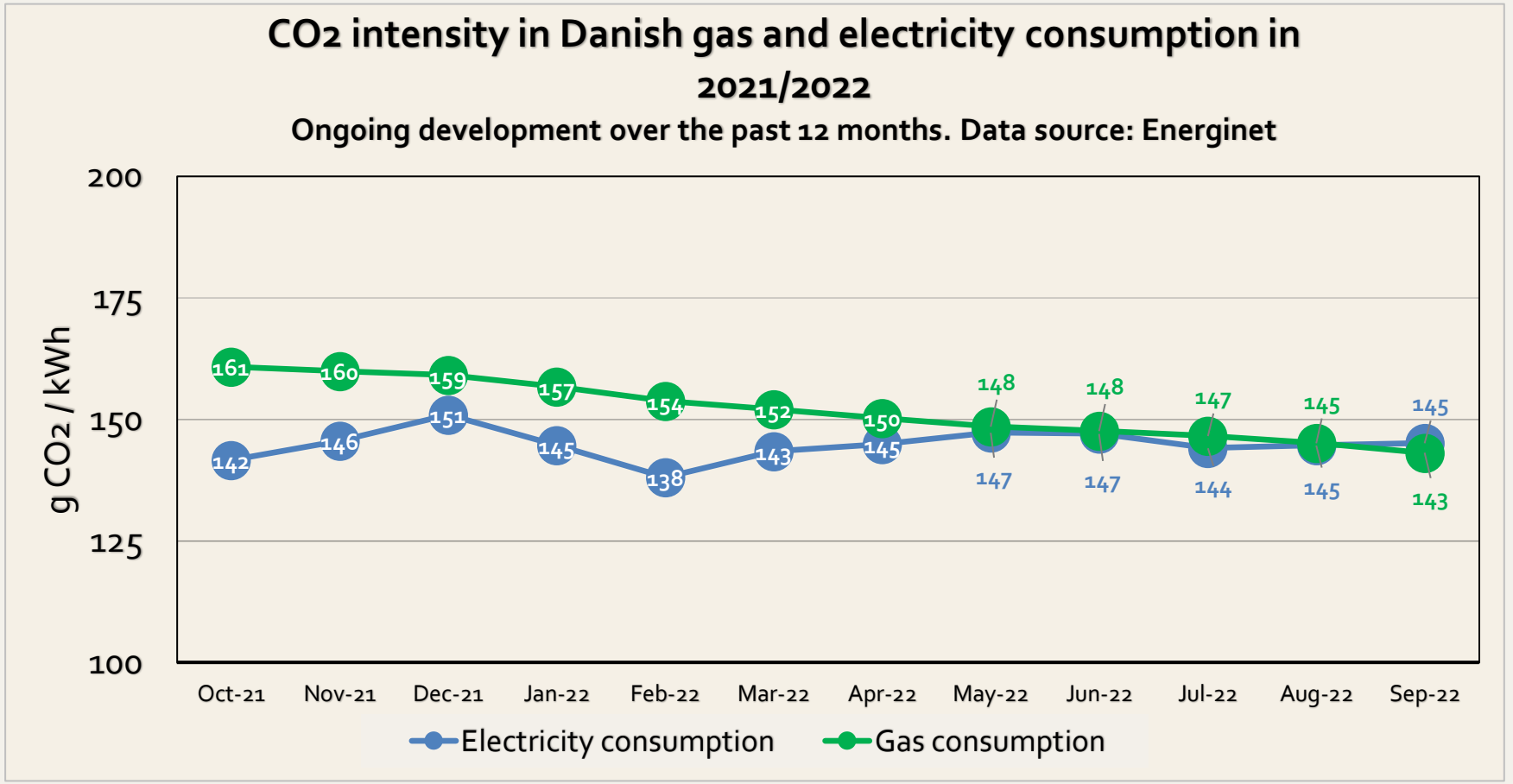




Biogas Danmark

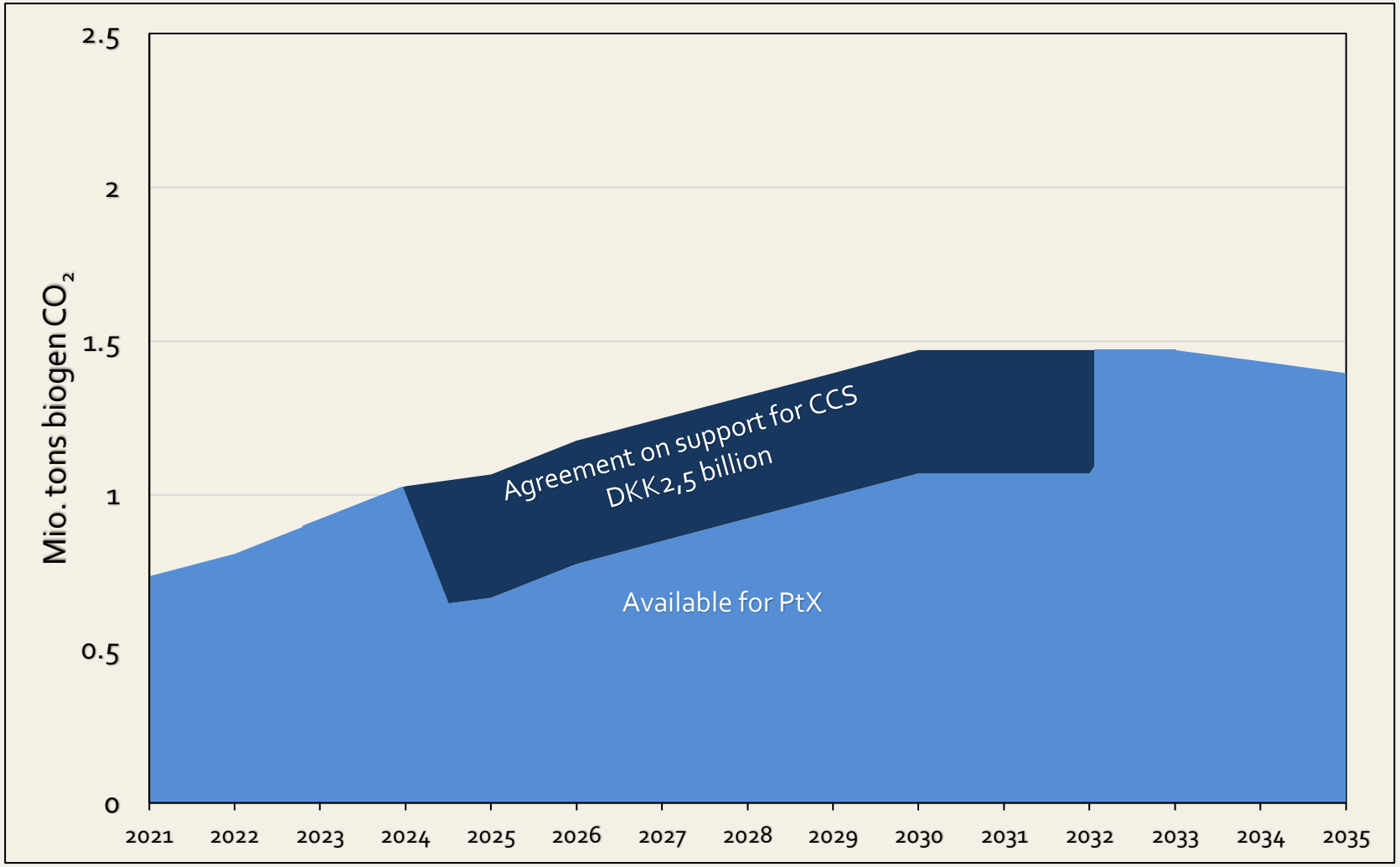
The climate footprint of gas and electricity consumption in Denmark

Climate footprint calculated as an average over the previous 12 months.



Biogas Danmark

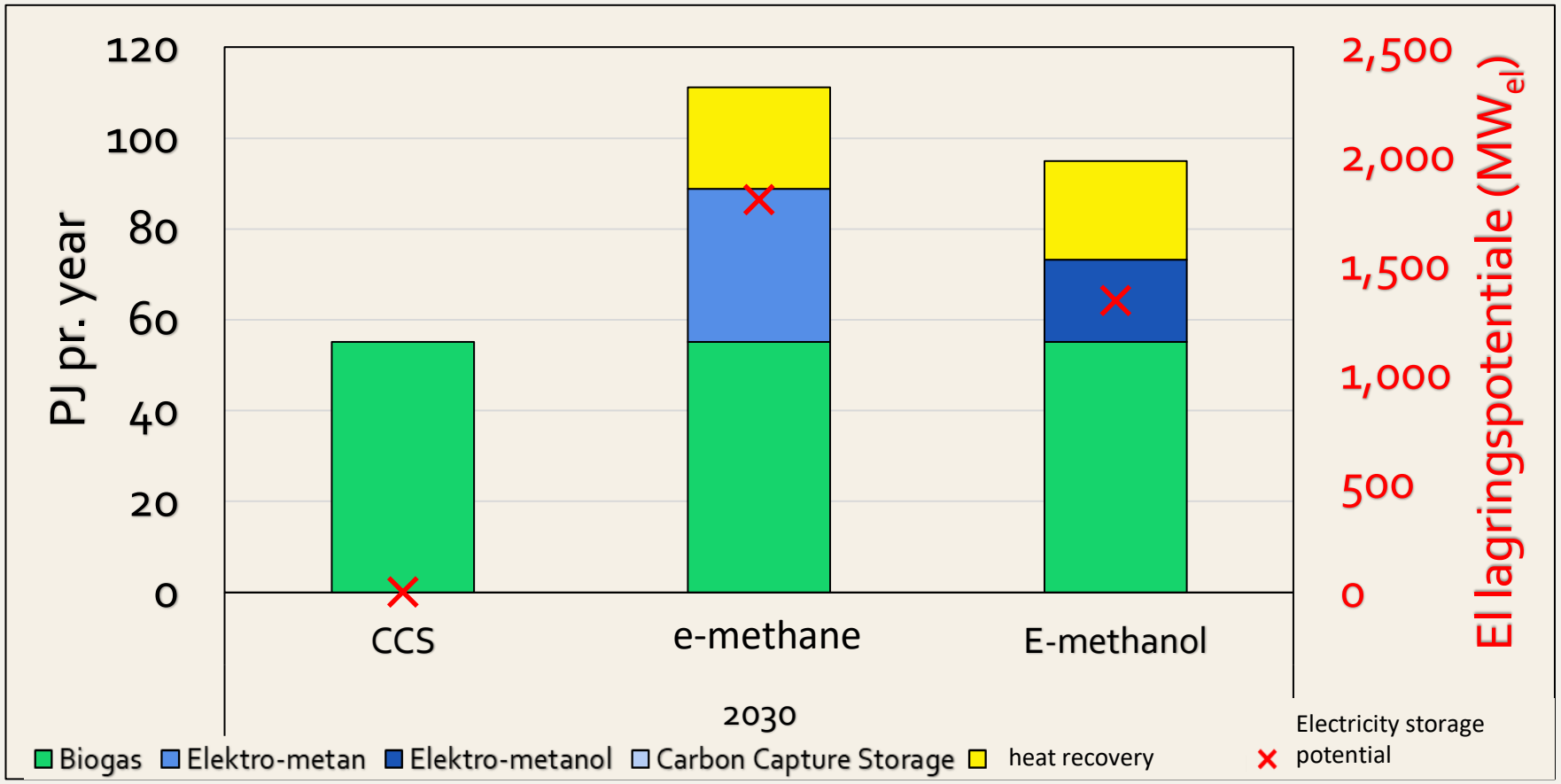
Bio-CO2 potential and CCS subsidies



Biogas Danmark

PtX or CCS with captured CO2?

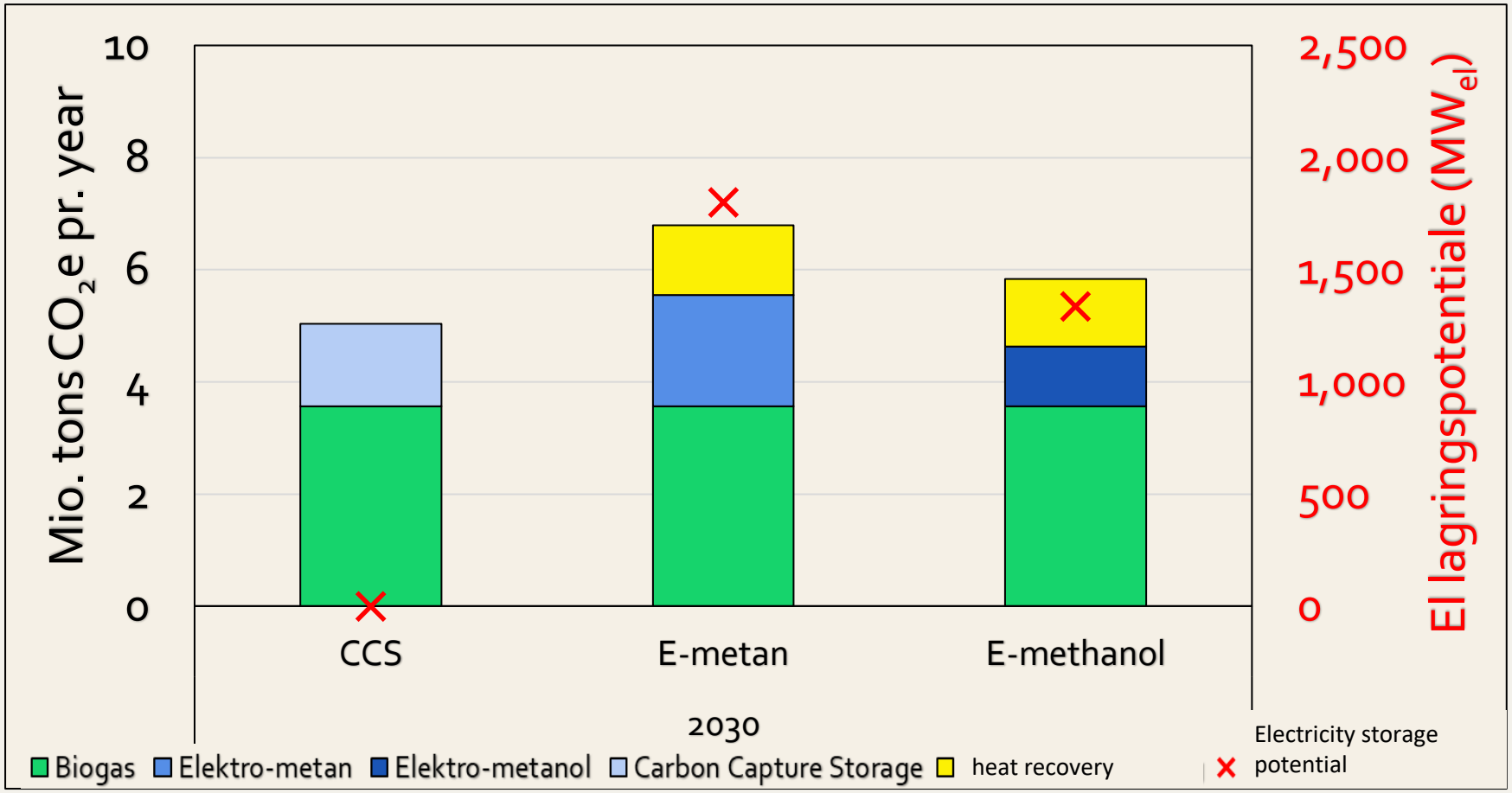
Electricity – storage potential with CO2 from biogas plants



Biogas Danmark

PtX or CCS with captured CO2?

The climate potential can be supplemented with CO2 from the plants in 2030



Biogas Danmark

Thanks for your attention. Questions ?

Kasper Gadbert, Market analyst, Biogas Danmark, kagd@biogas.dk

www.biogas.dk

Biogas Outlook 2022 her:

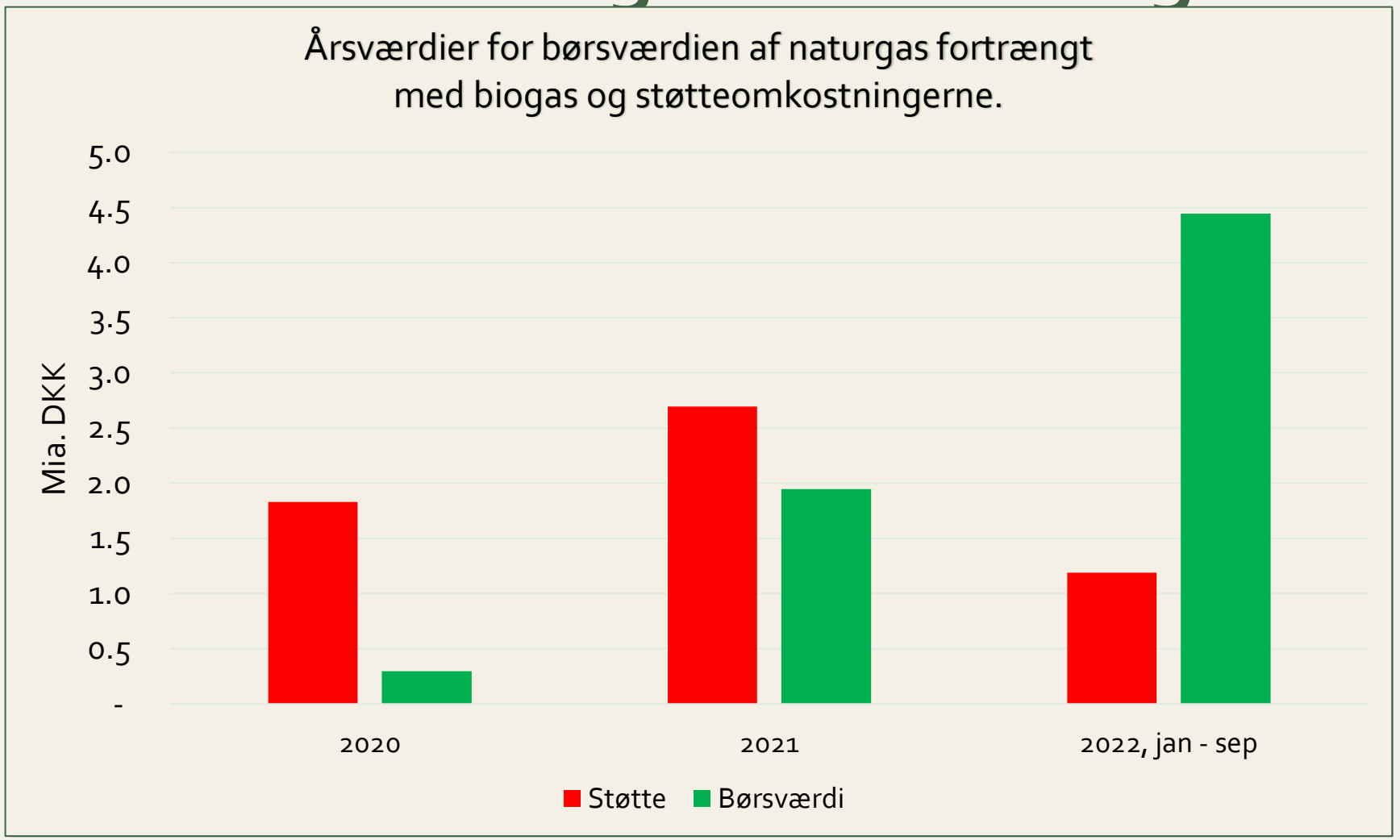
https://www.biogas.dk/biogasoutlook2022/

Biogas Danmark

Gasprisen

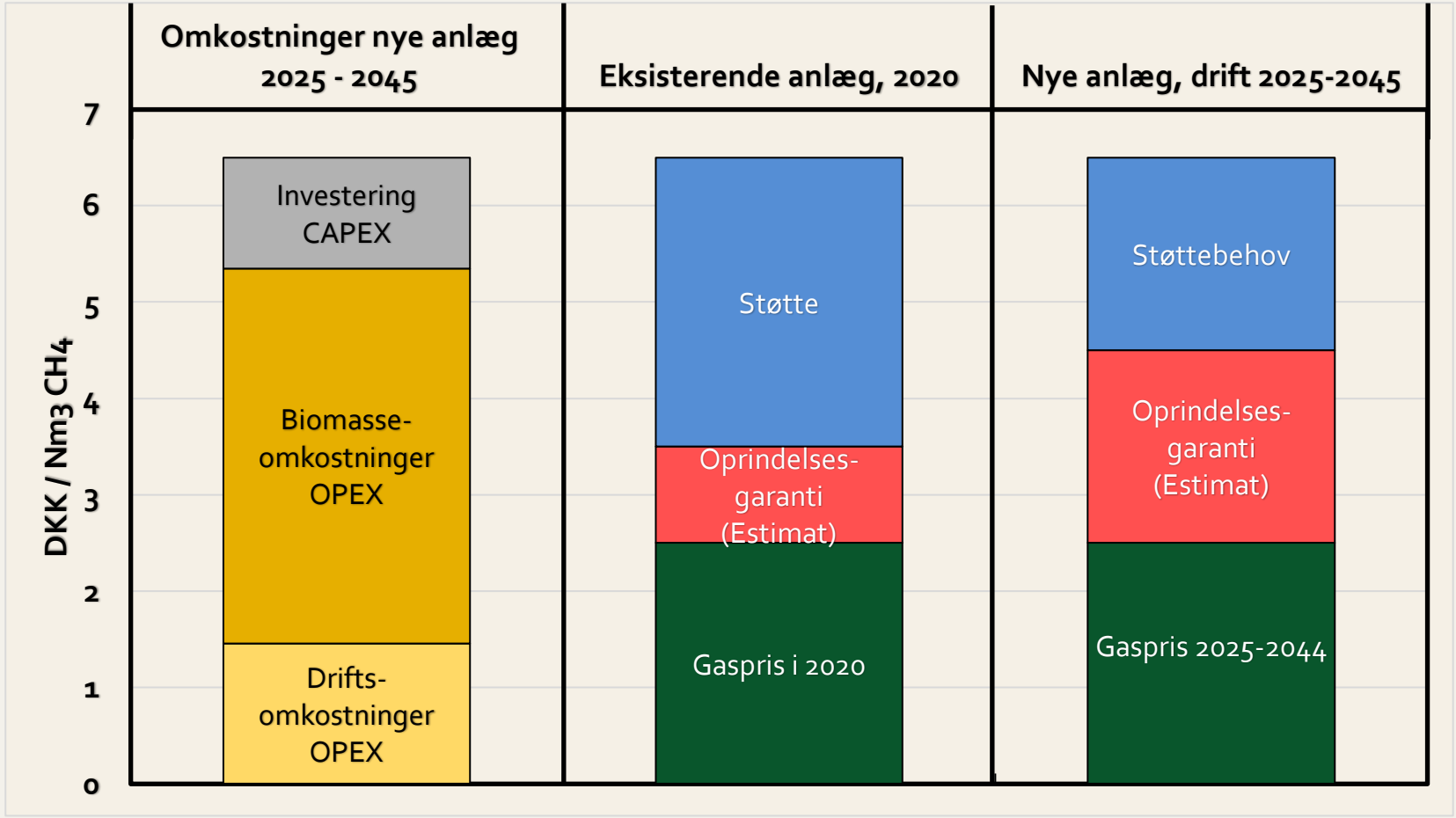
Natural Gas EU Dutch TTF (EUR/MWh) 165.50 -3.66 (-2.16%)
NS1 lukker på ubestemt tid
NS1 lukkes grundet renovering
3 marts: NS2 konkurs
21 december
6 oktober 2021
25 februar 2022: Krigen starter
Hul på NS1 og NS2
350
300
250
200
165.50
150
100
50
Apr
Jul
Oct
2022
Apr
Jul
Oct
1D 1W 1M 6M 1Y 5Y 10Y All

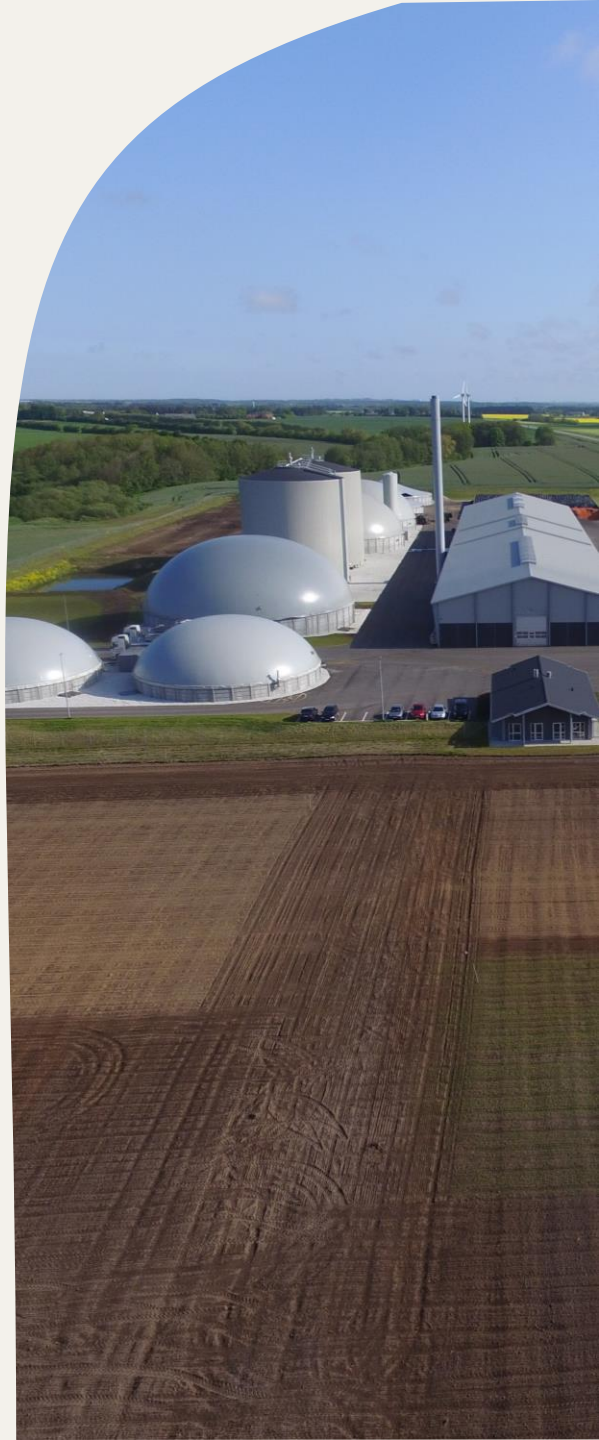
Børsværdi af biogas leveret via gasnettet



Biogas Danmark

Markedsdrevet støttebehov

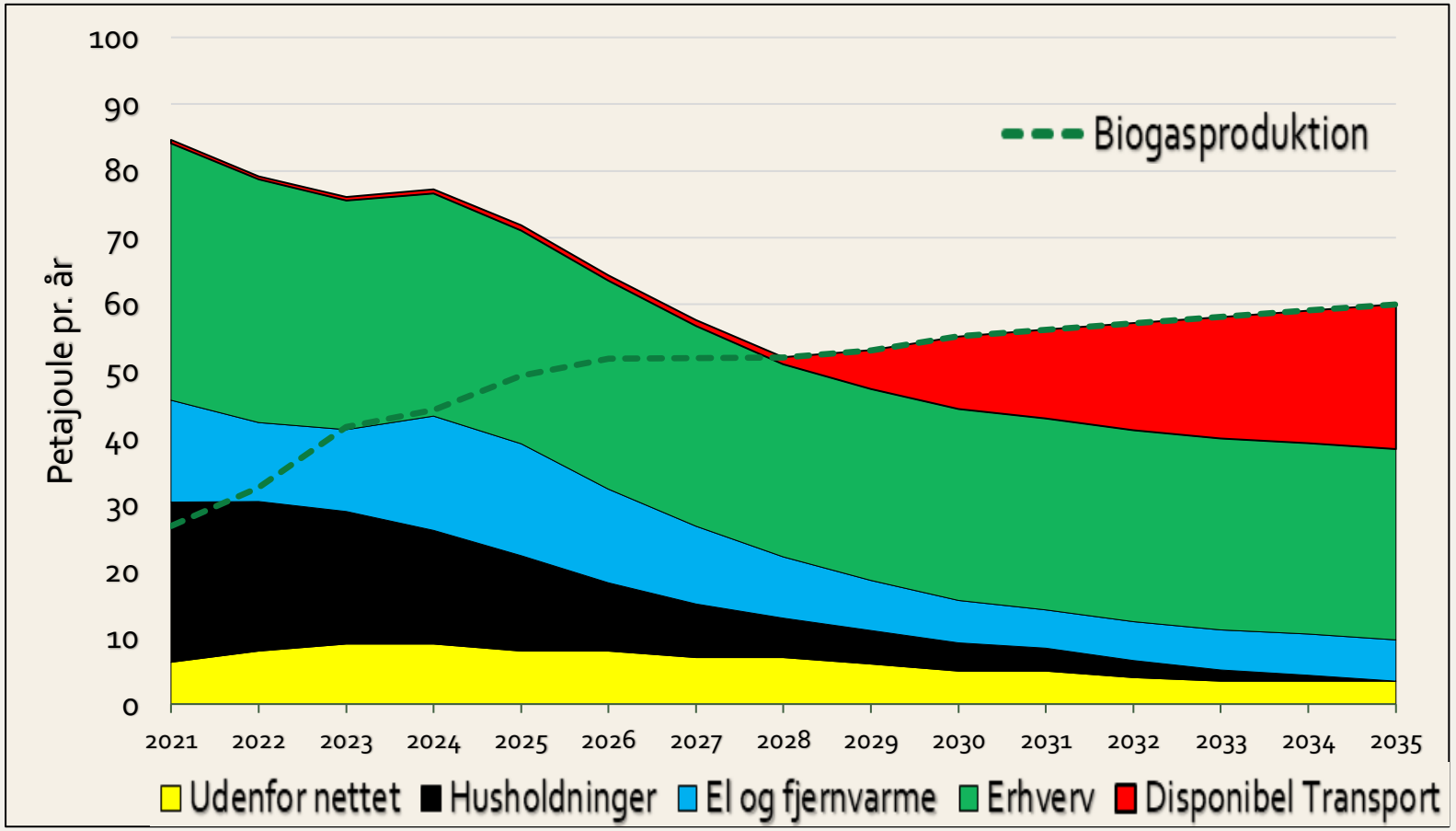




Biogas Danmark

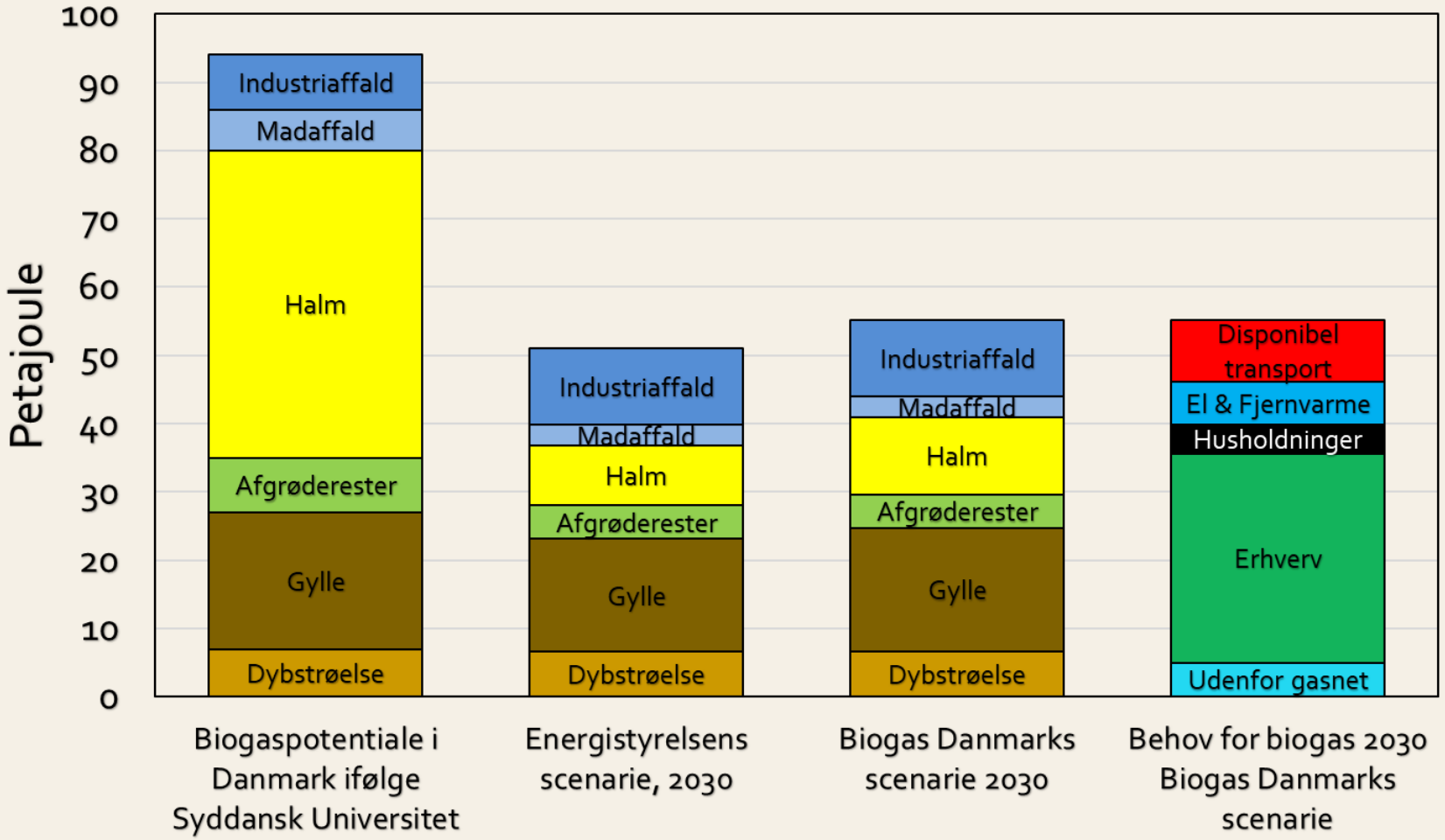
Kan dække gasforbruget fra 2027

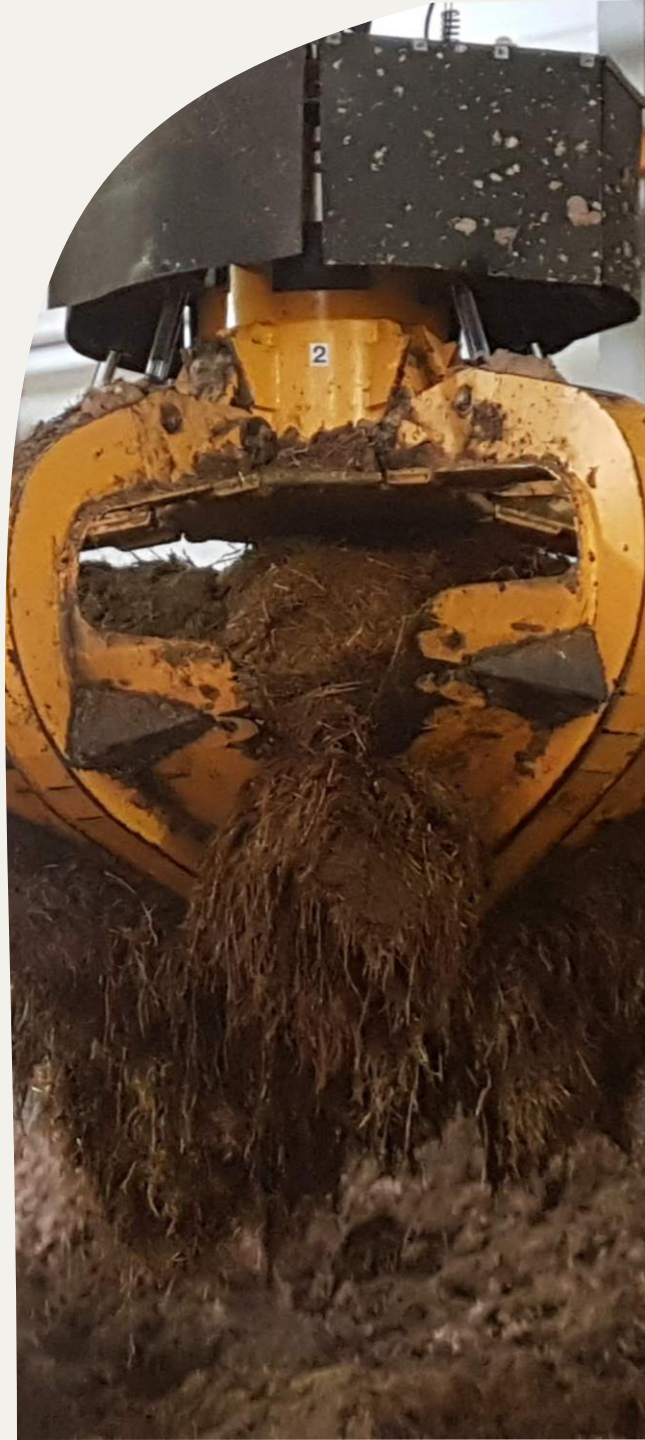
Fra 2030 må husstande kun anvende grøn gas I 2035 ingen gas



Biogas Danmark

Biogas potentiale og behov

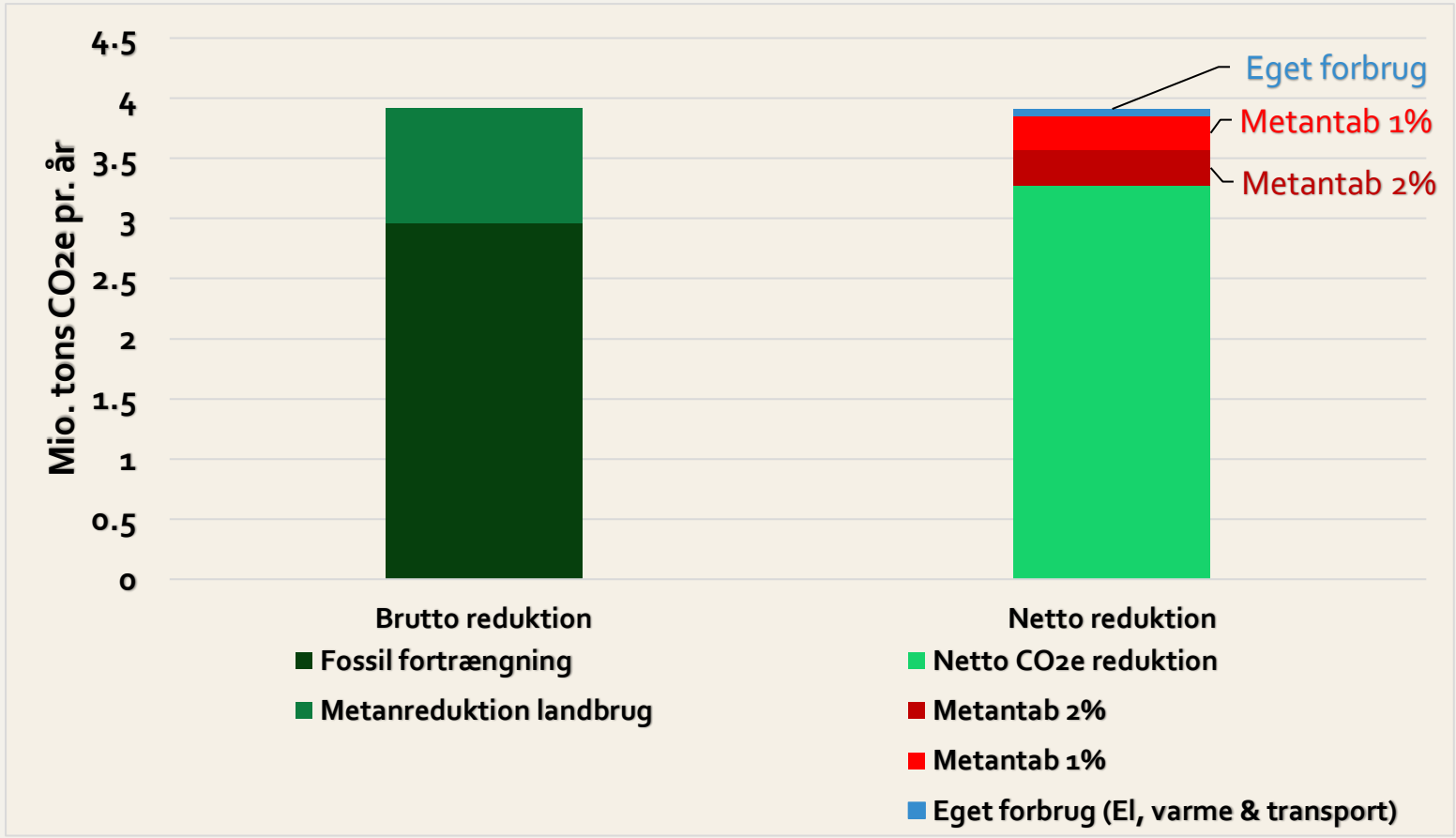




Biogas Danmark

Netto klima effekt ved biogas

Netto Klimaeffekt på 3,5 mio. ton om året fra 2030



Biogas Danmark

STEPUP-Network 19 october 2022

Tak for opmærksomheden.
Spørgsmål ?

Kasper Gadbert, Markedsanalytiker Biogas Danmark, kagd@bopgas.dk

Læs mere: www.biogas.dk

Hent Biogas Outlook 2022 her:

https://www.biogas.dk/biogasoutlook2022/

Biogas Danmark