

FESTFORELÆSNING

# ER VI PÅ VEJ IND I BIOALDEREN?

HENRIK WENZEL



# Nations Unies

## Conférence sur les Changements Climatiques 2015

COP21/CMP11

### Paris France



4 gange mere, end vi behøver

>100 % af areal blot til vores biler

Dækker max 10 %

Import ubegrænset (?)



Alm. el-forbrug



Individuel varme



Fjernvarme - små net



Fjernvarme - store net



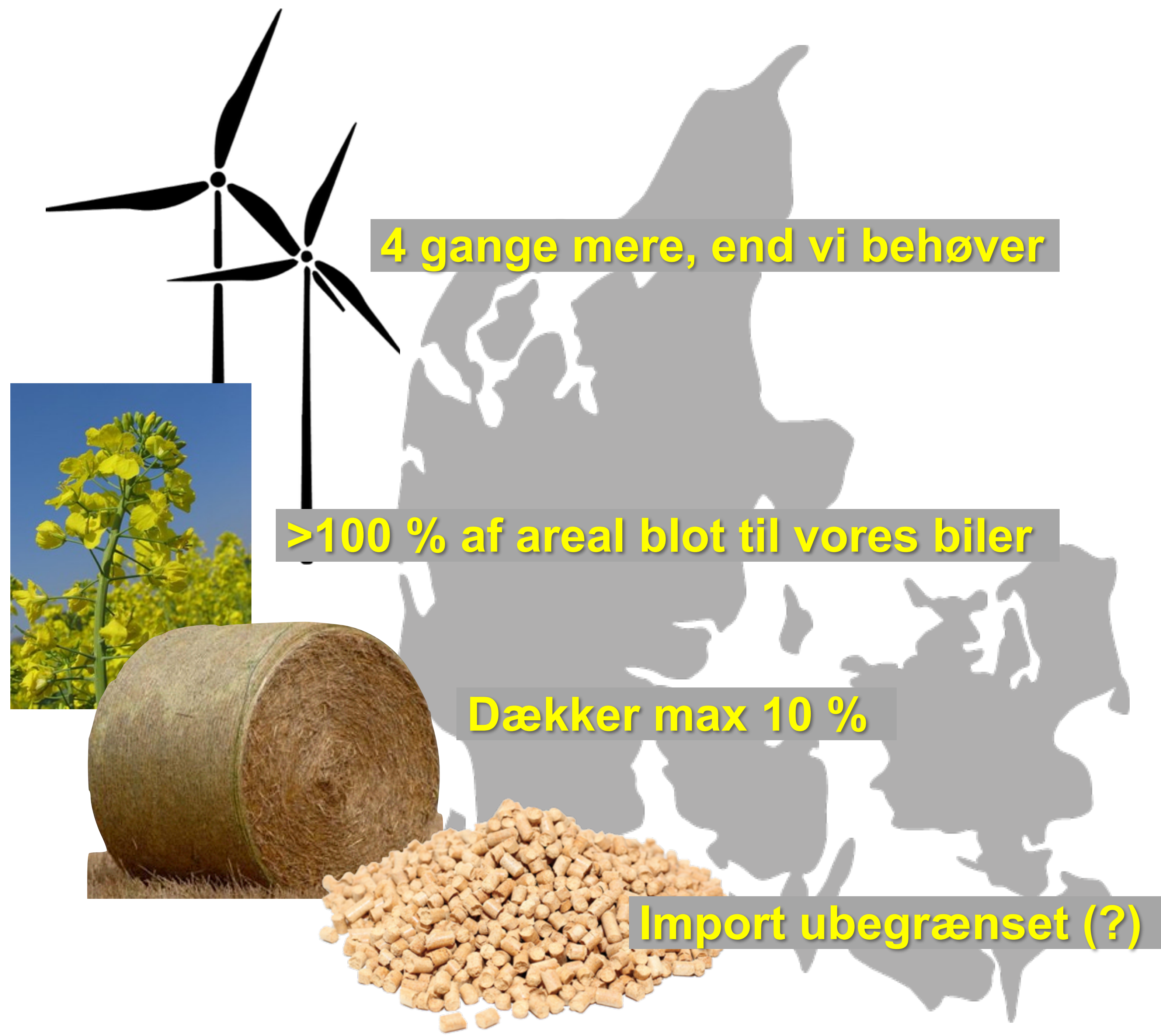
Procesvarme

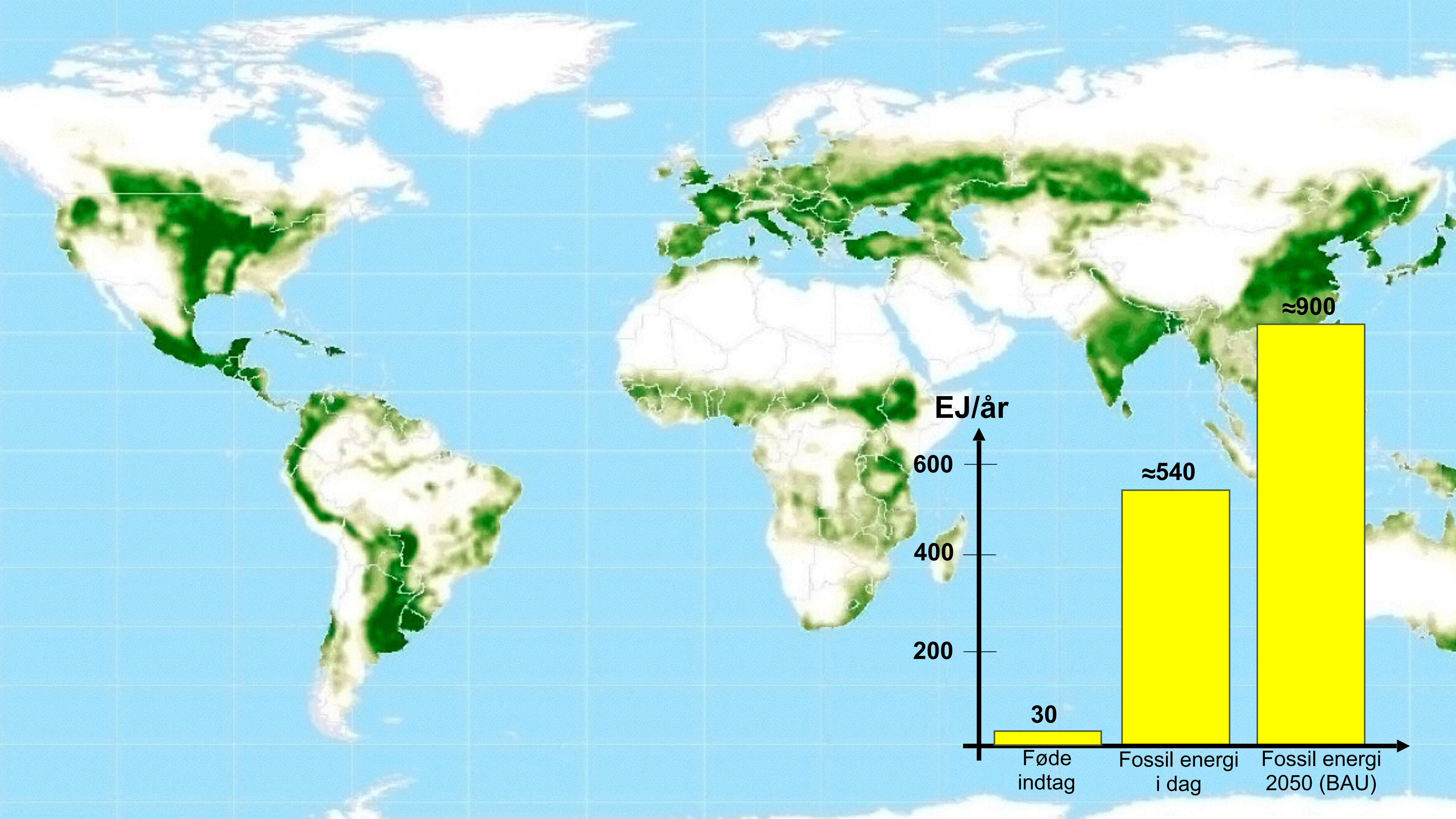


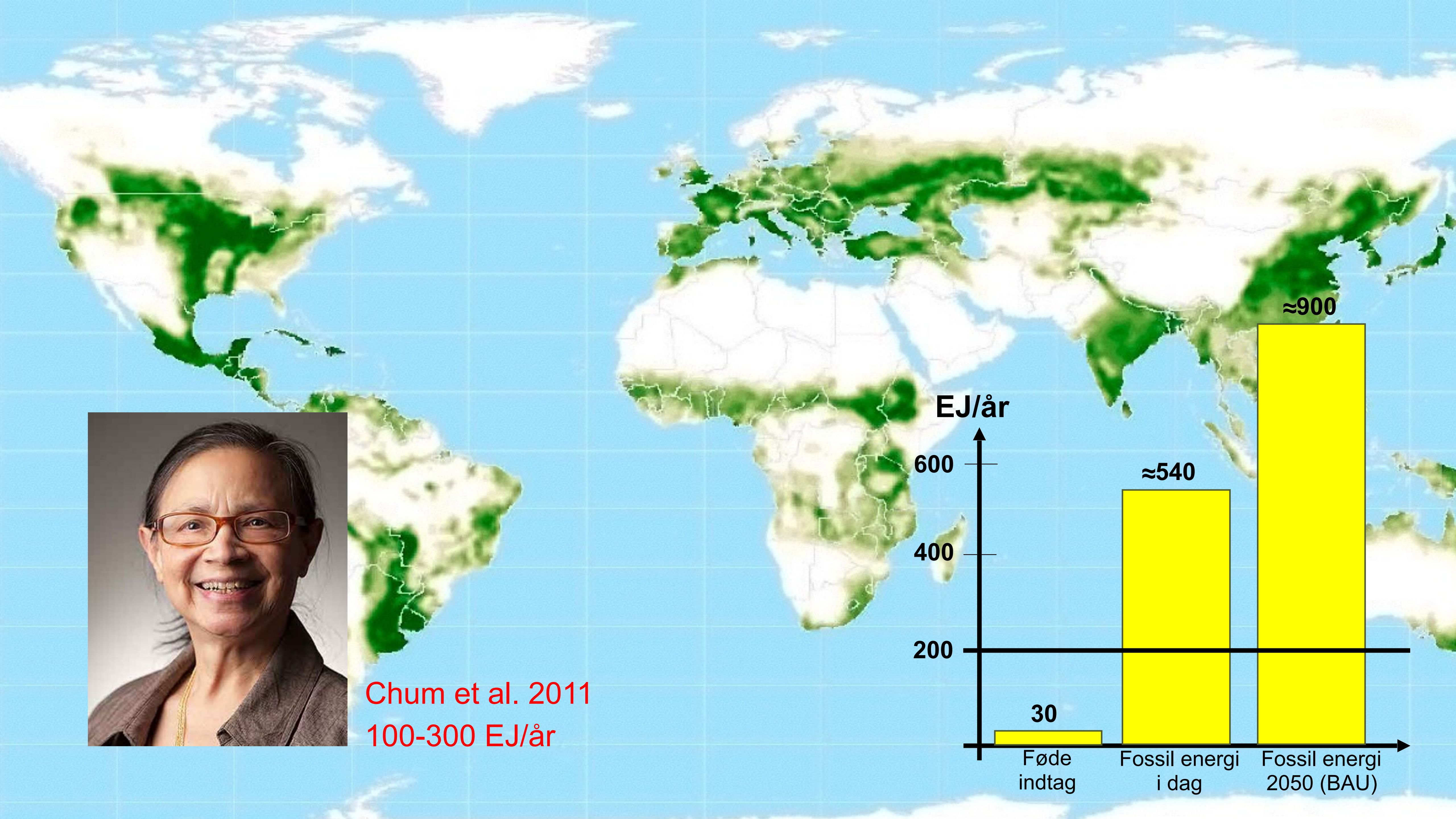
Let transport



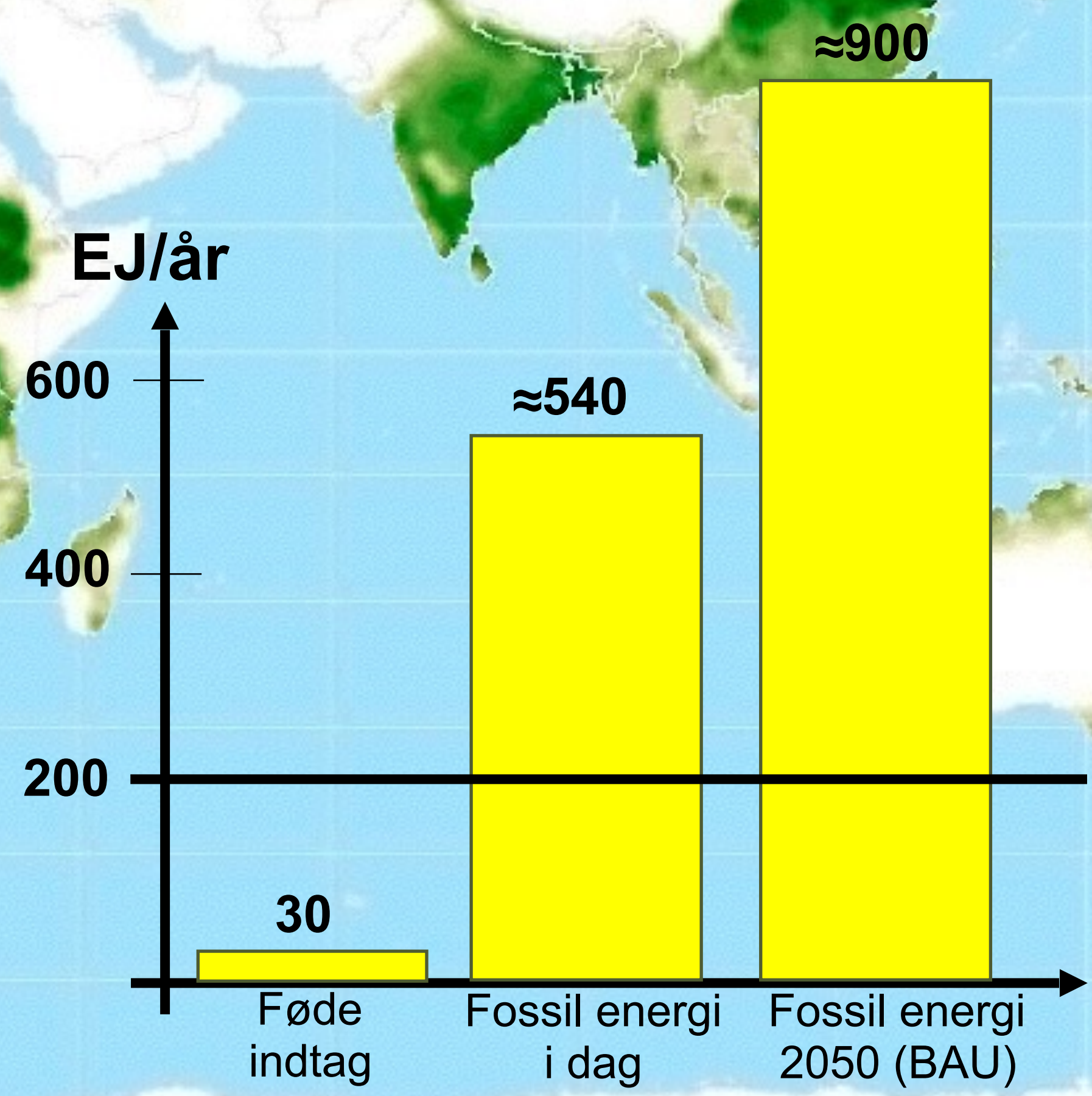
Tung, lang transport

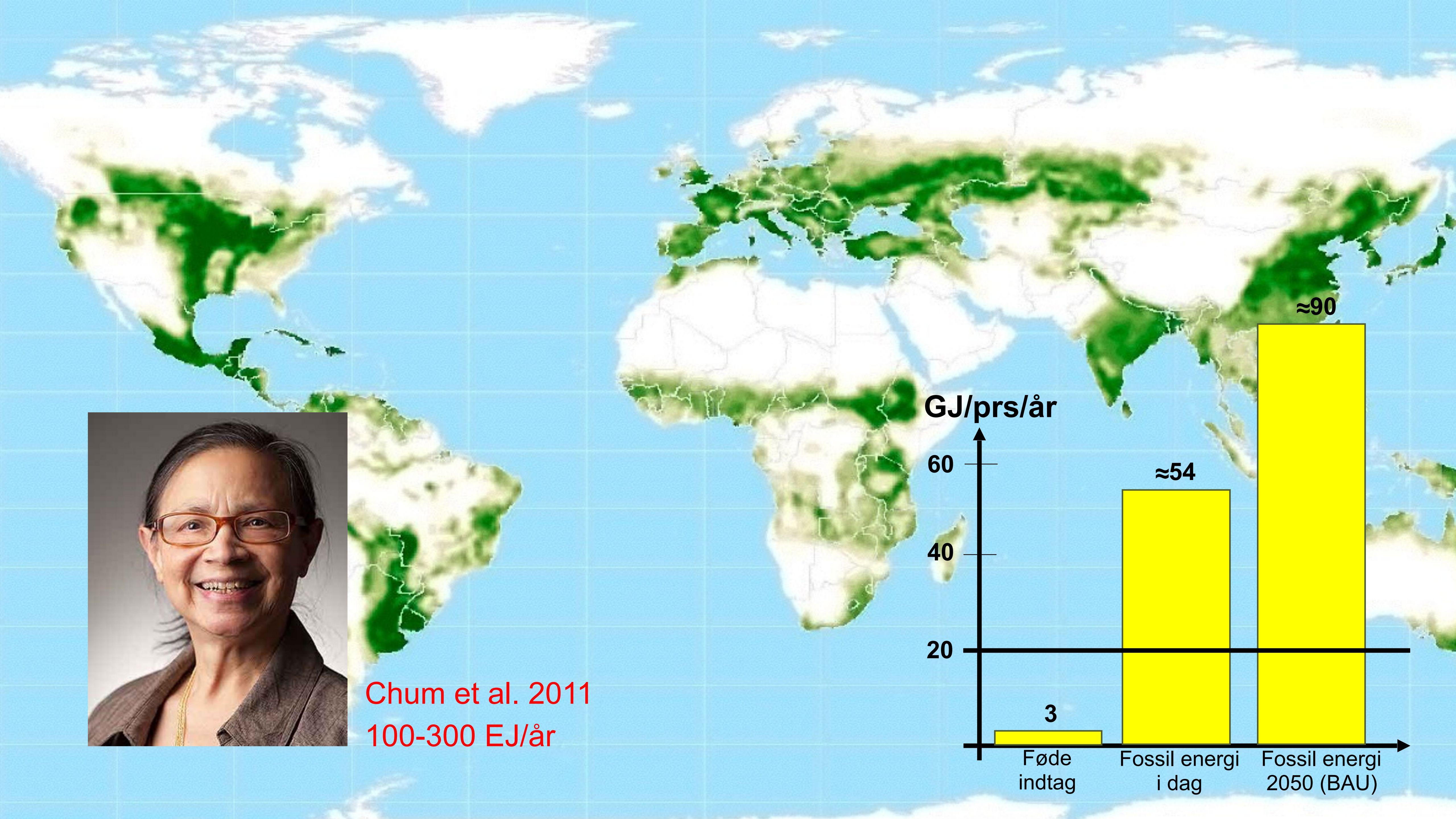






Chum et al. 2011  
100-300 EJ/år





GJ/prs/år

60

40

20

≈54

≈90

3

Føde  
indtag

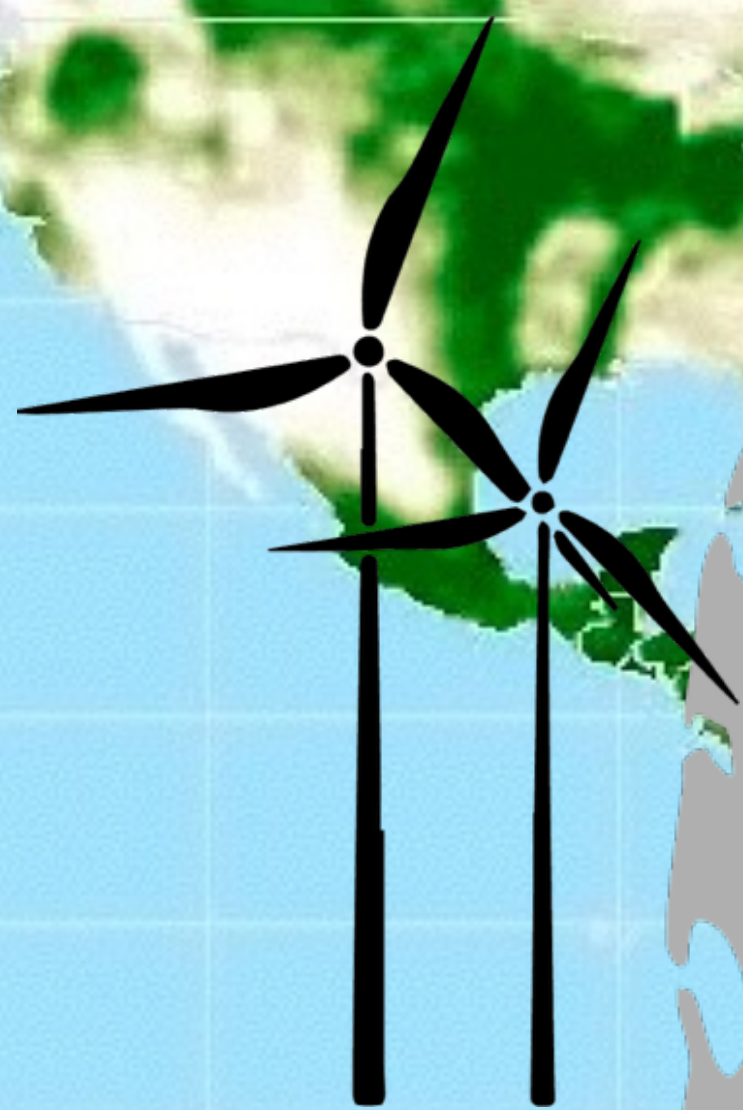
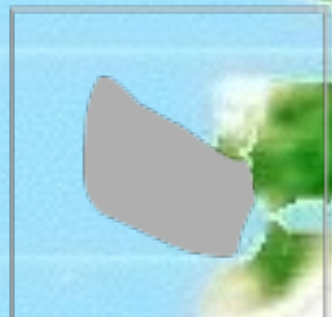
Fossil energi  
i dag

Fossil energi  
2050 (BAU)

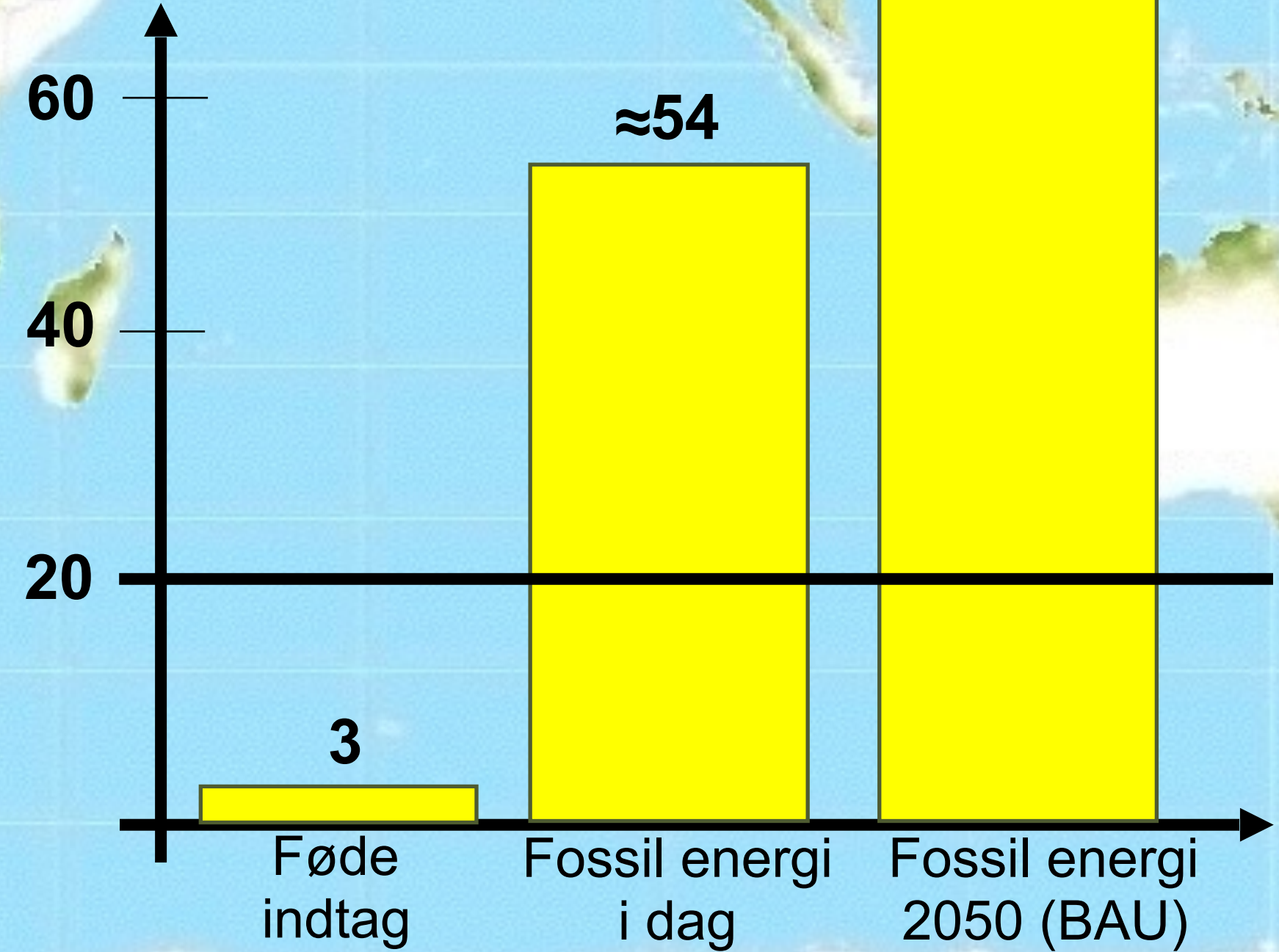


Chum et al. 2011  
100-300 EJ/år

120 GJ/prs/år – bioenergi-strategien i dag



GJ/prs/år



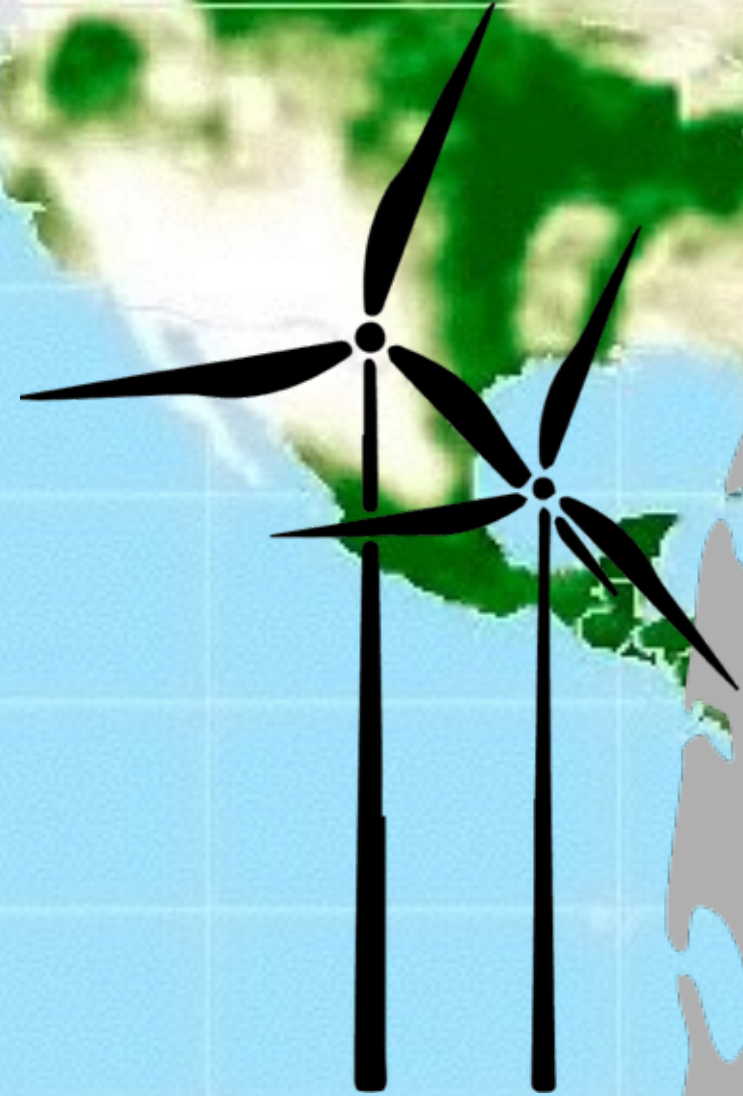
120 GJ/prs/år – bioenergi-strategien i dag



El-varme

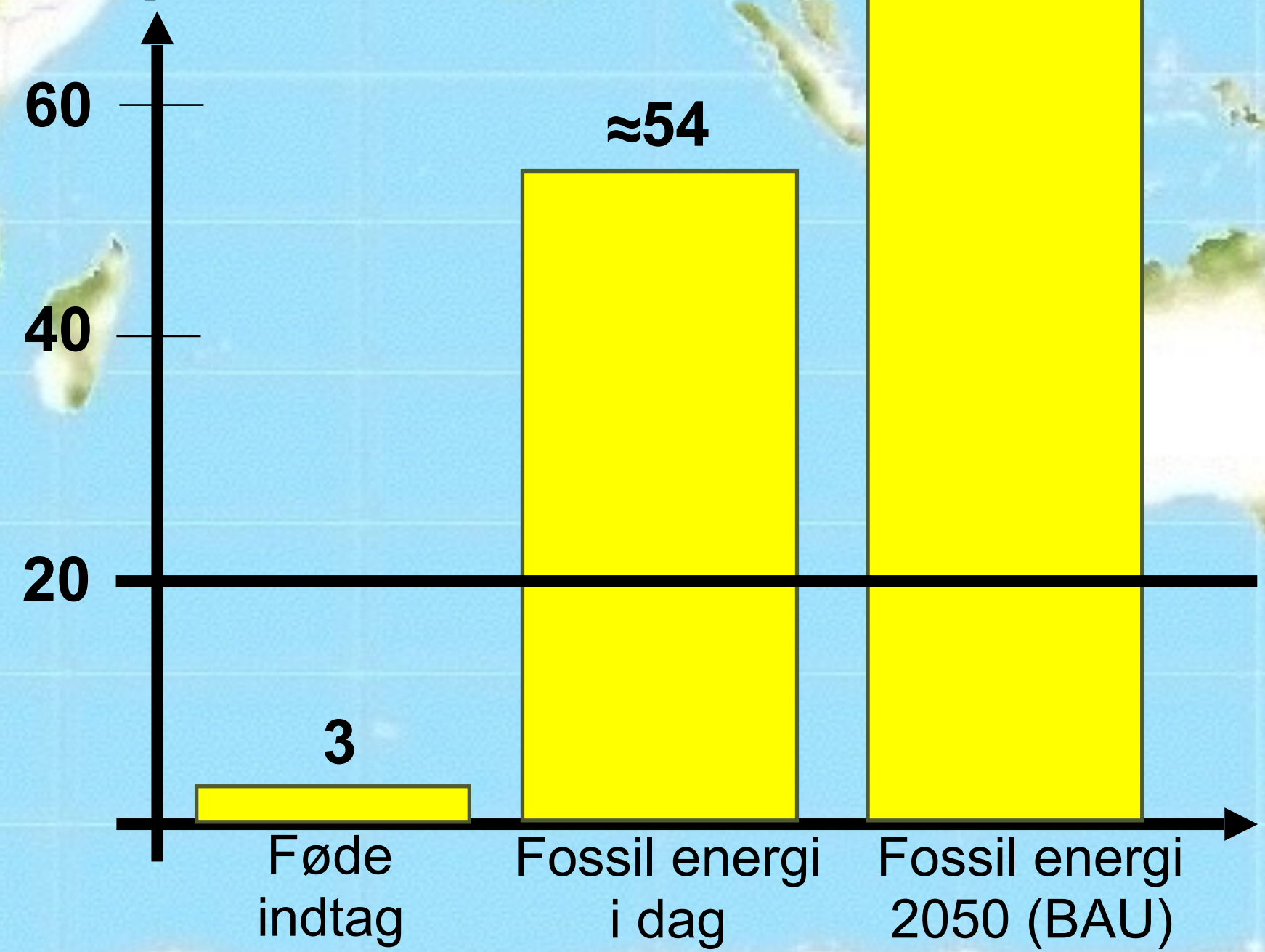


El-biler



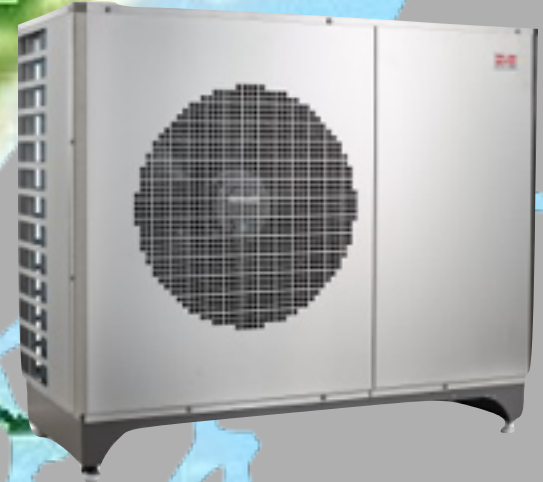
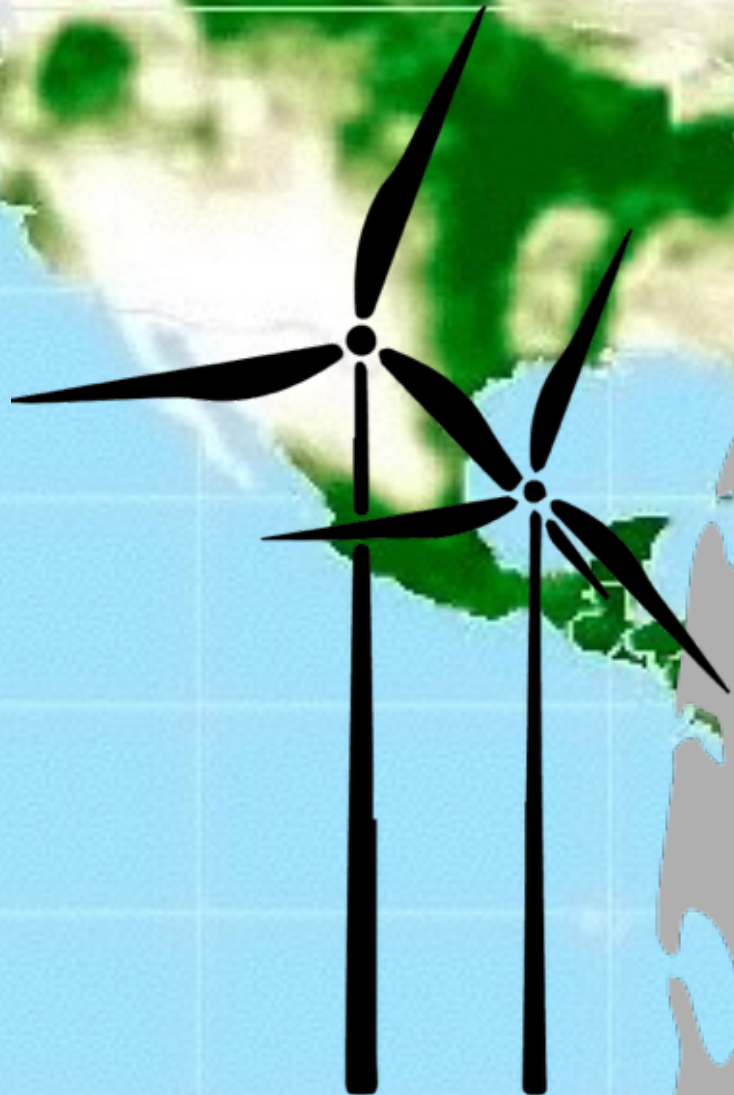
80 GJ/prs/år – elektrificering

GJ/prs/år





120 GJ/prs/år – bioenergi-strategien i dag



80 GJ/prs/år – elektrificering

GJ/prs/år

60

40

20

3

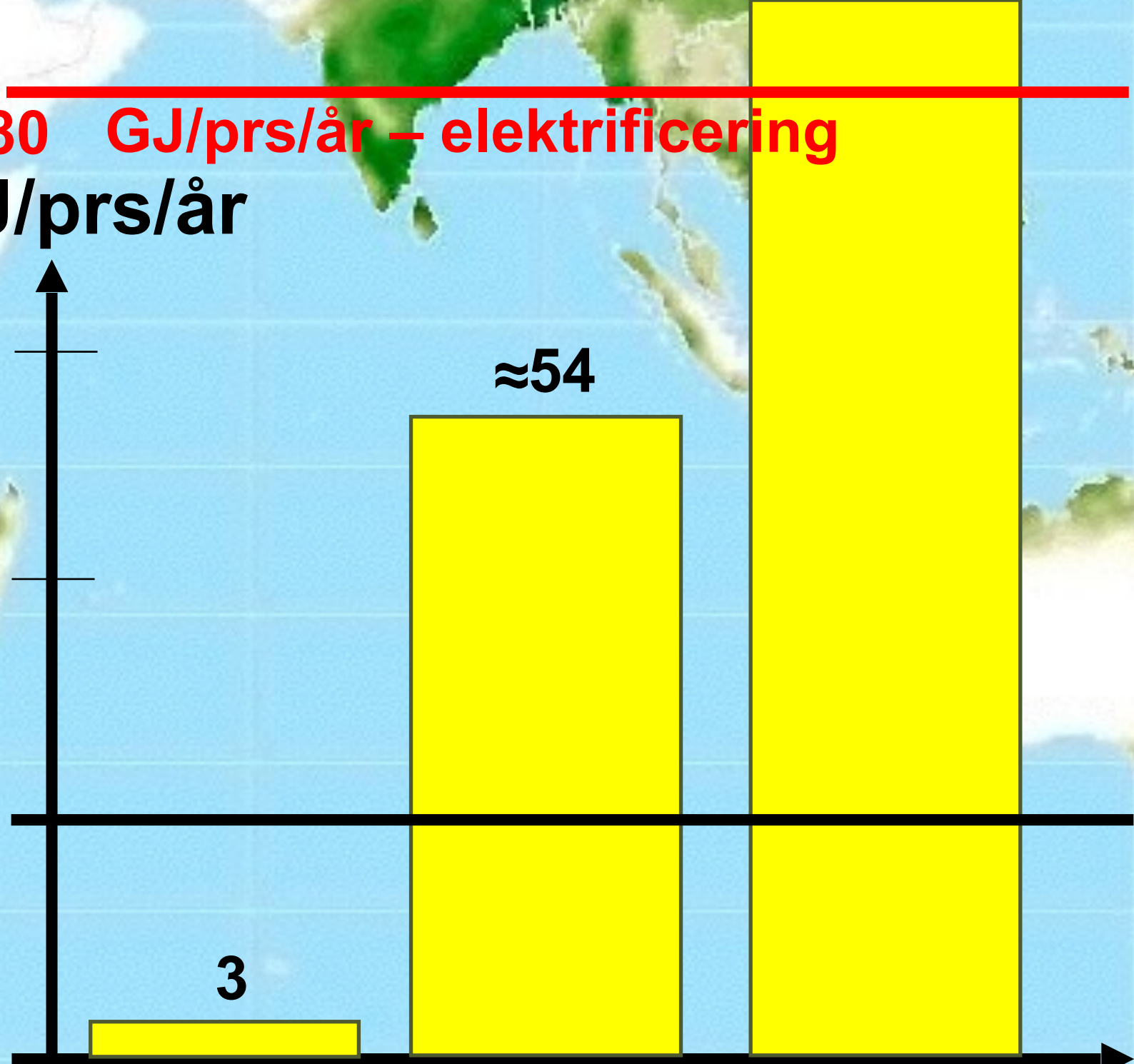
≈54

≈90

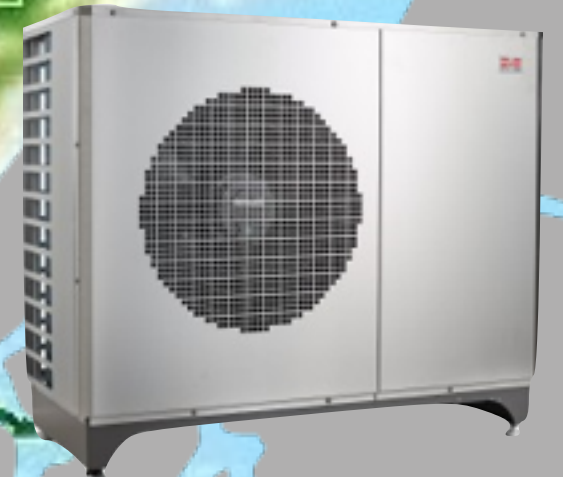
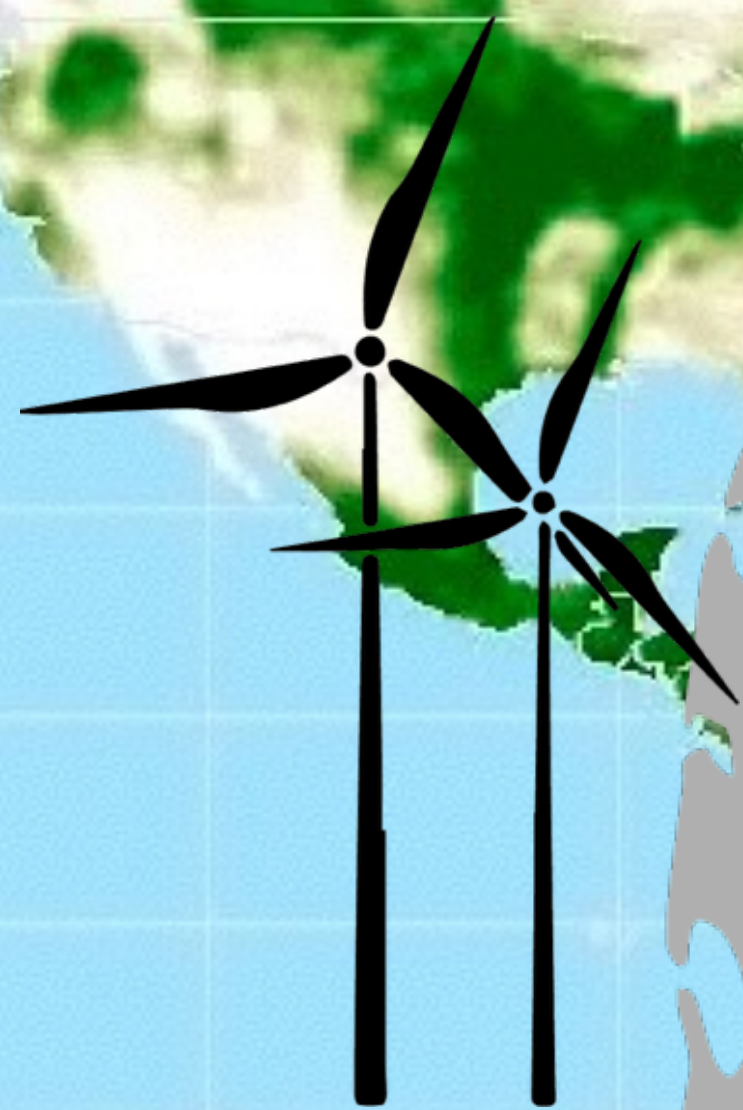
Føde indtag

Fossil energi i dag

Fossil energi 2050 (BAU)



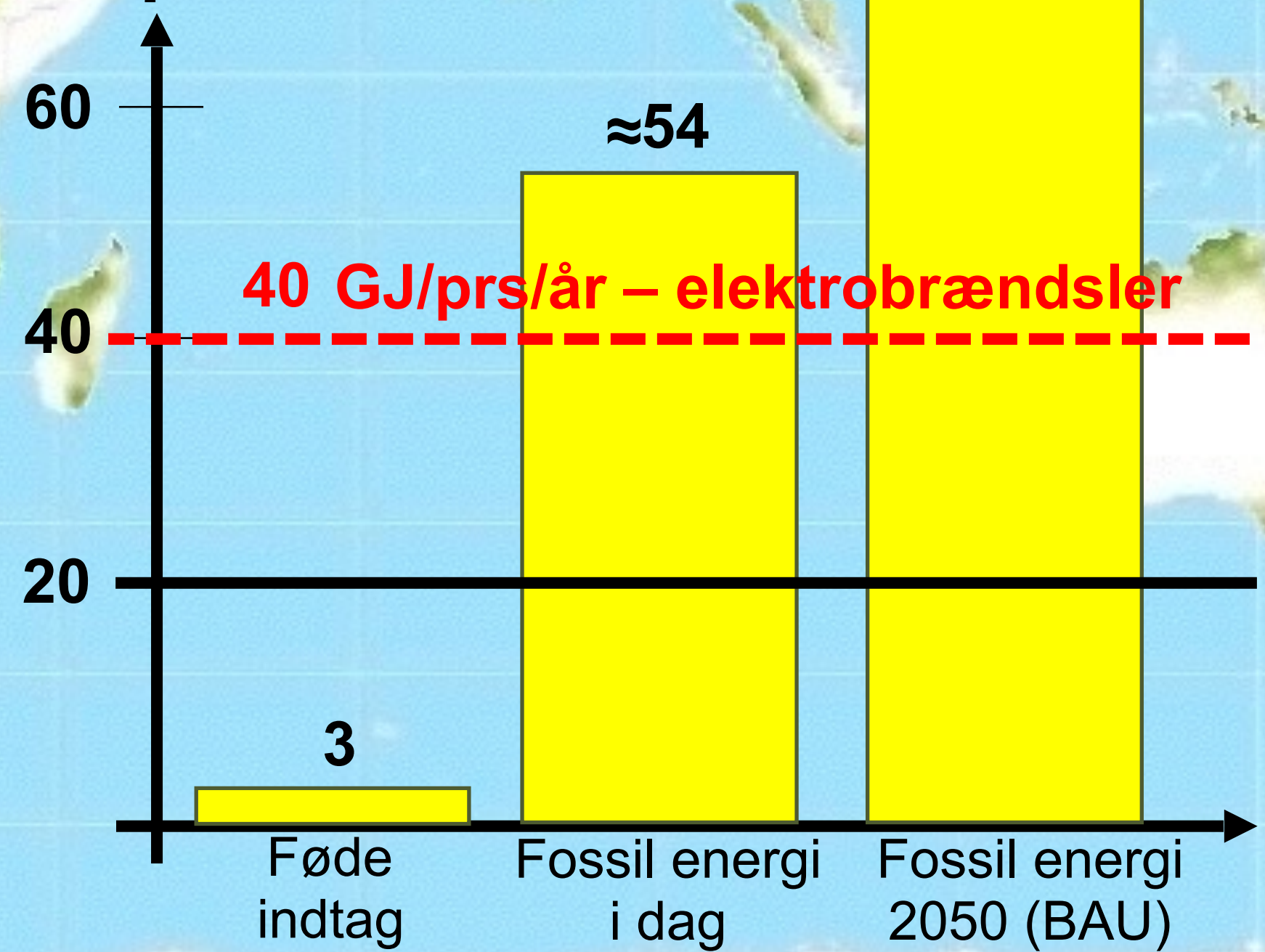
120 GJ/prs/år – bioenergi-strategien i dag



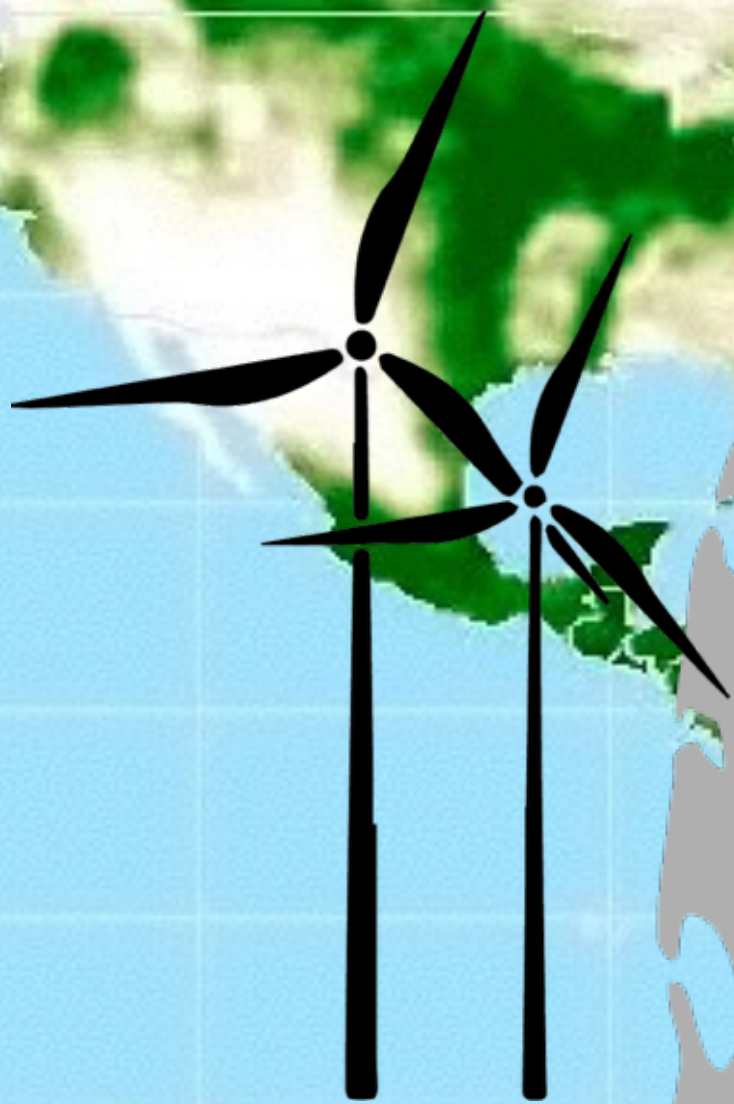
+ H<sub>2</sub>

80 GJ/prs/år – elektrificering

GJ/prs/år



120 GJ/prs/år – bioenergi-strategien i dag



**CO<sub>2</sub> + H<sub>2</sub>**

80 GJ/prs/år – elektrificering

GJ/prs/år

60

40

20

40 GJ/prs/år – elektrobrændsler

0 GJ/prs/år – kun elektrobrændsler

3

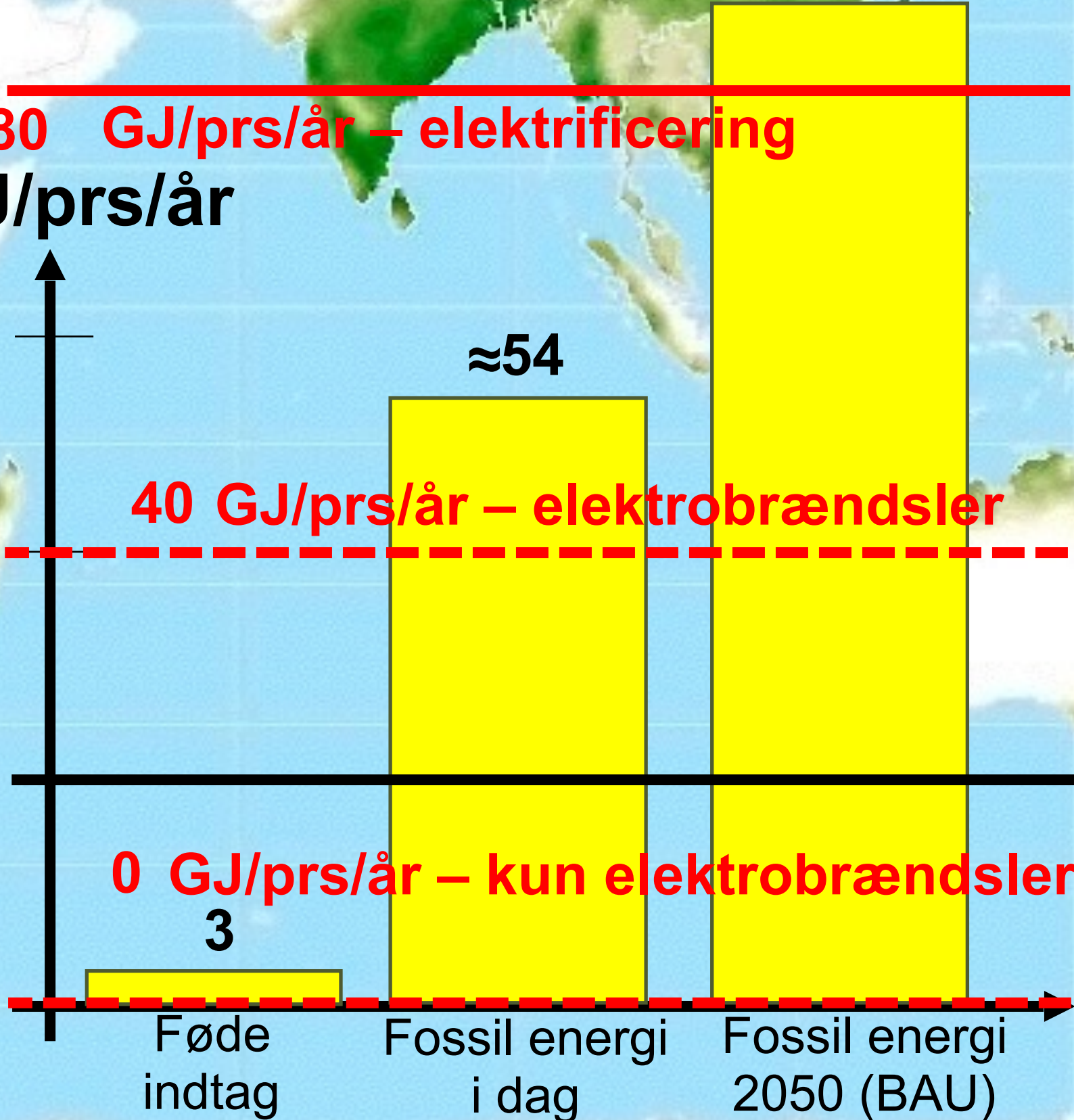
≈54

≈90

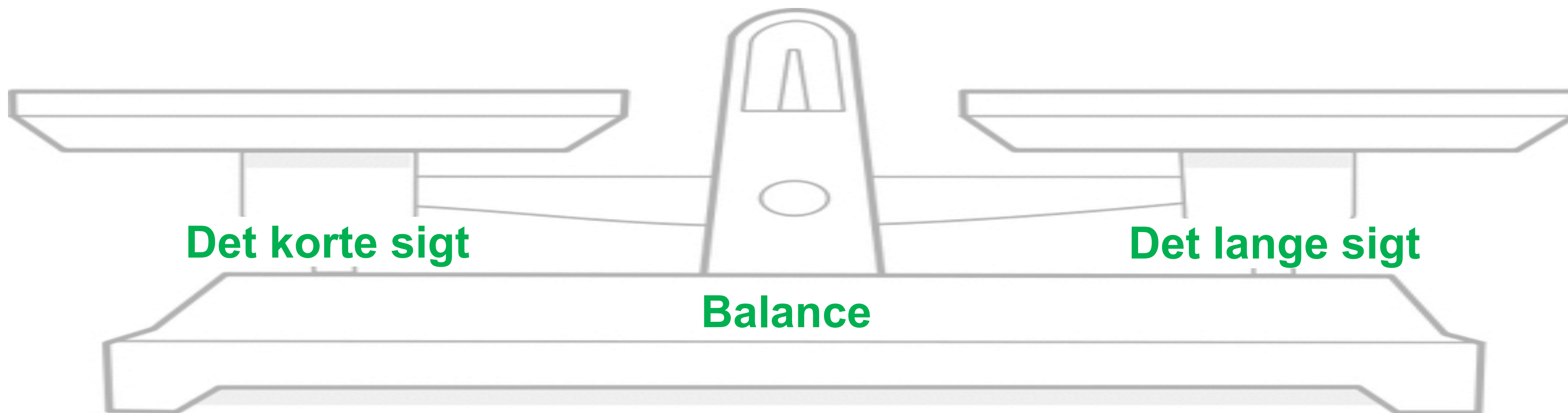
Føde indtag

Fossil energi i dag

Fossil energi 2050 (BAU)



# At række efter månen?



# At række efter månen?



0,7 % af BNP

**DANIDA**

0,7 % af BNP

2 % af BNP



Det korte sigt



0,5 % af BNP

Det lange sigt

Balance

**FREE POWER**

**- the millennium gift to mankind**