

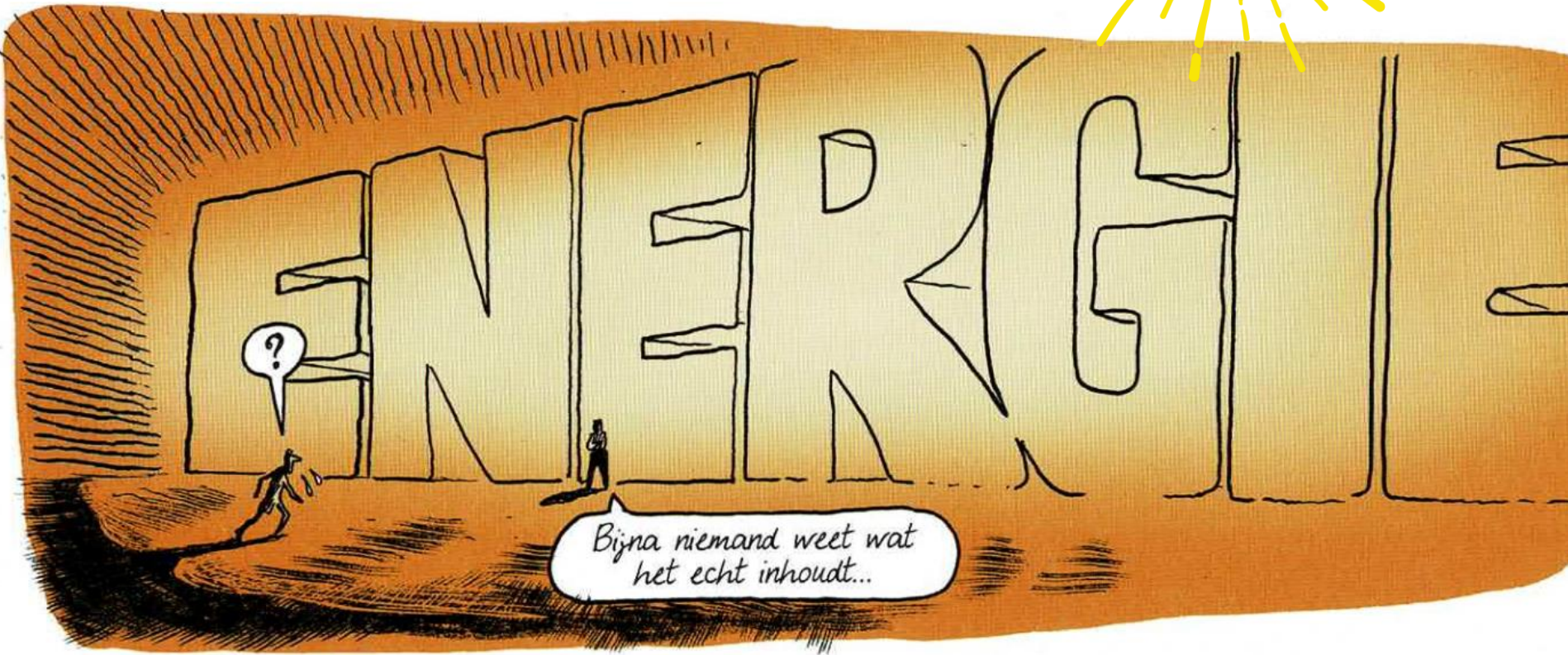
Energietransitie: een knipooeg naar de toekomst

15 november 2022

1996

f50

BORING
STUFF



Global Primary Energy Consumption by Source 1800-2020

mix in 2020.

180K Terrawatt-hours (TWh)

160K

140K

120K

100K

80K

60K

40K

20K

0K

1800

1850

1900

1950

2000



before 1800

Prior to the Industrial Revolution, humans mainly relied on biomass for heat and muscles for kinetic energy.



1859

The first commercial oil well was drilled in Titusville, Pennsylvania, U.S.



1930

Coal usage increased with the growth of steam power and coal-fired power plants.



1960

Oil demand surged as gasoline vehicles took off, accounting for 40% of global energy consumption by 1970.



Renewables

Nuclear

Gas

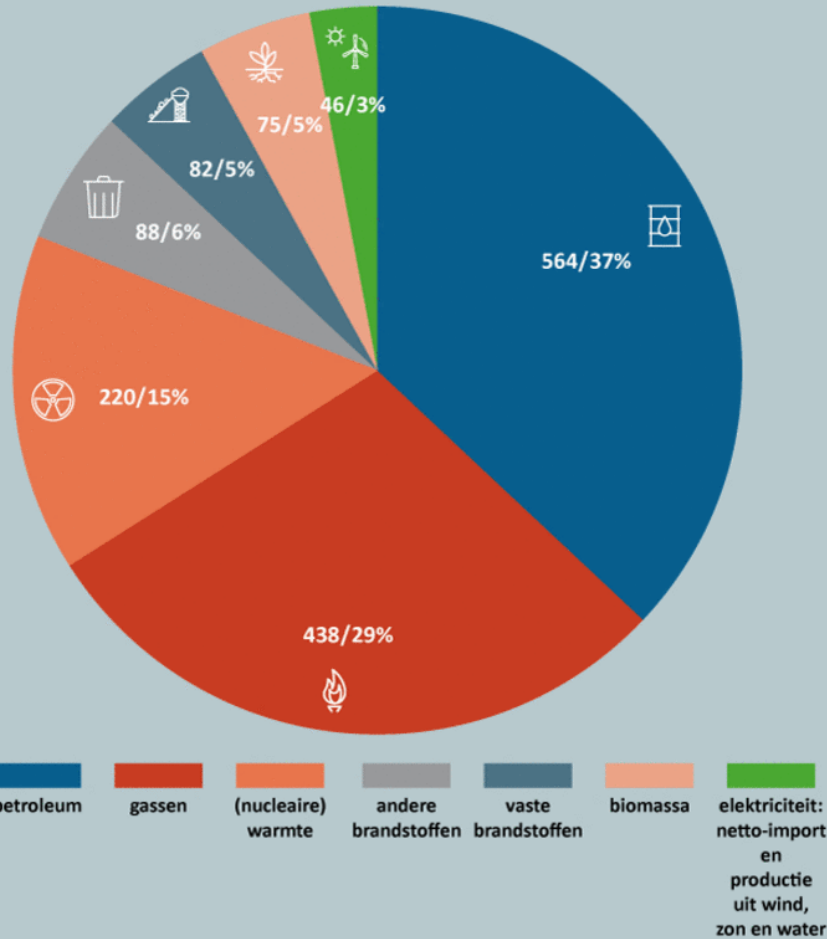
Oil

Coal

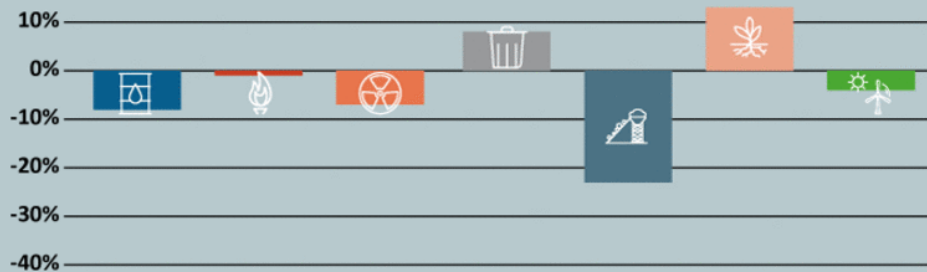
Traditional Biomass

f50

Energiedragers 2020 (in PJ/in %)

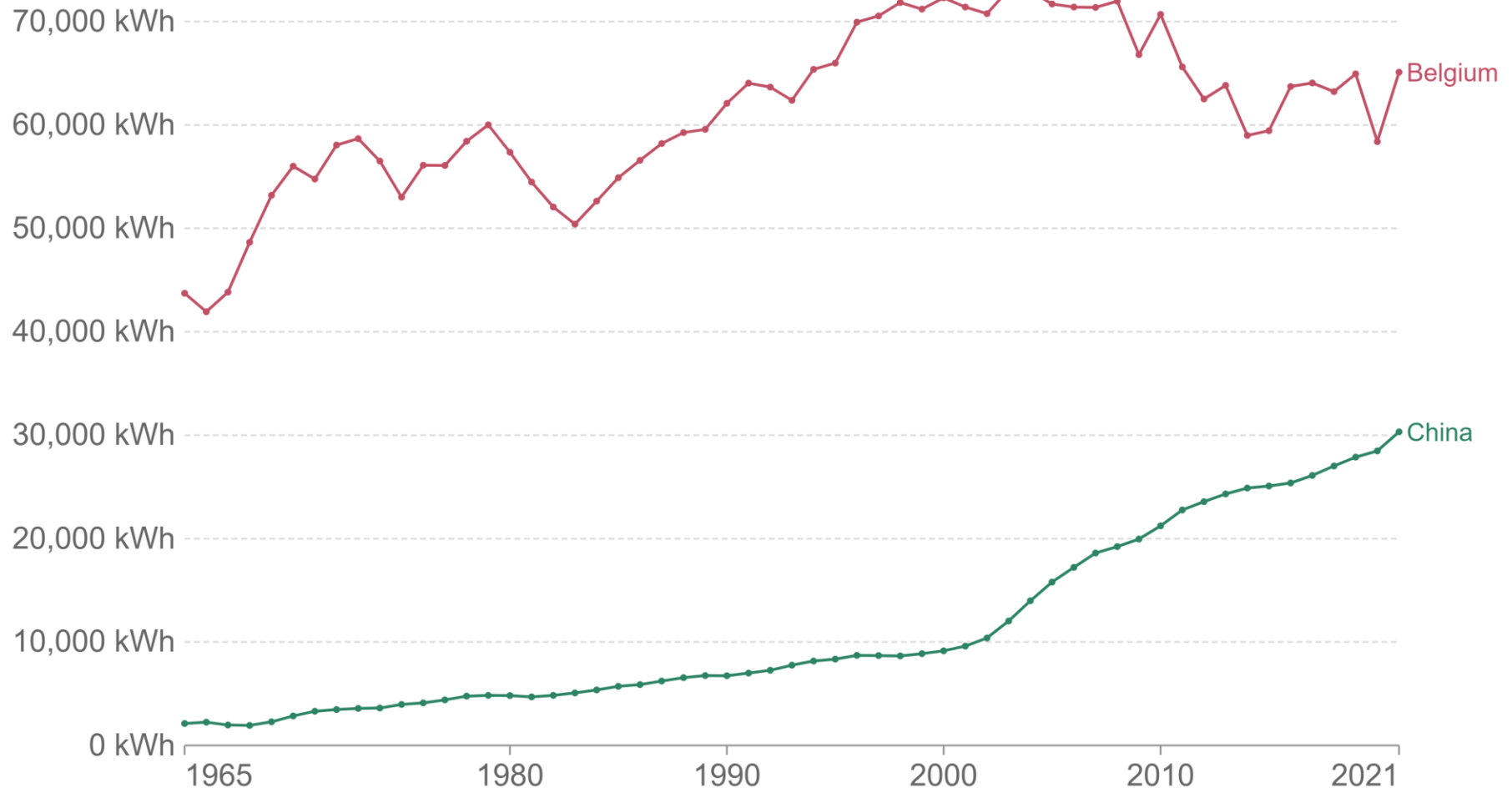


Evolutie energiedragers in 2020 t.o.v. 2019



Energy use per person

Energy use not only includes electricity, but also other areas of consumption including transport, heating and cooking.

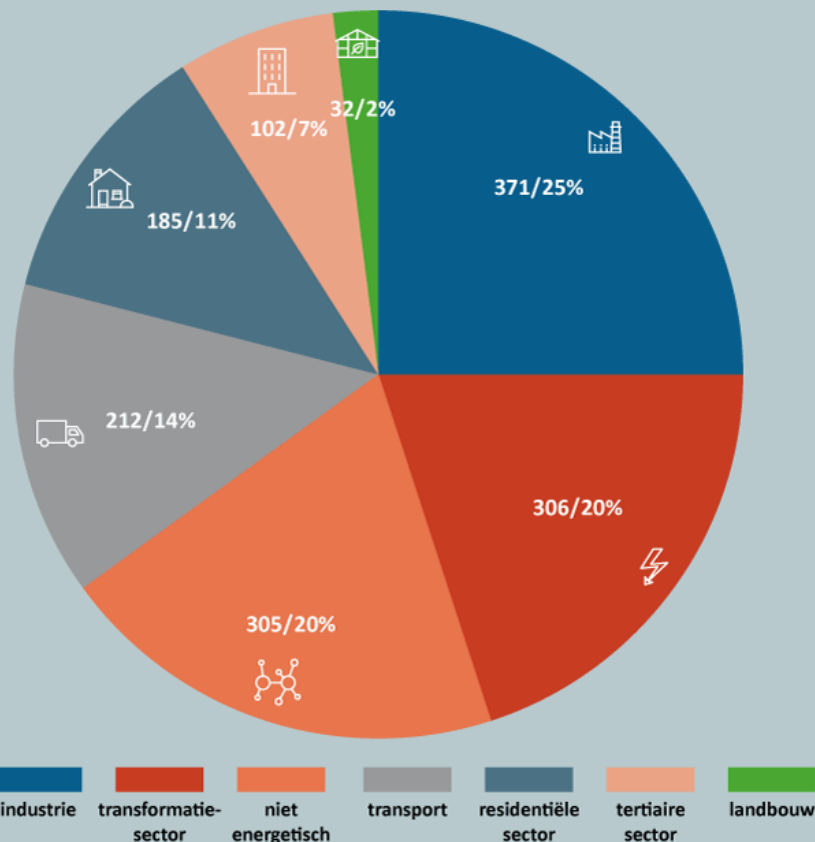


Source: Our World in Data based on BP & Shift Data Portal

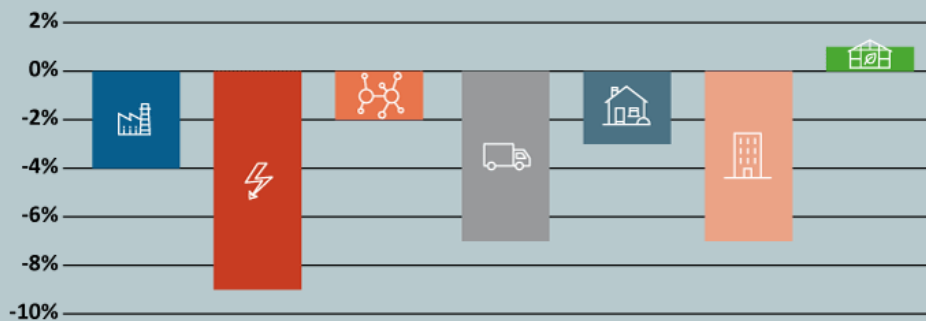
OurWorldInData.org/energy • CC BY

Note: Energy refers to primary energy – the energy input before the transformation to forms of energy for end-use (such as electricity or petrol for transport).

Energiegebruikers 2020 (in PJ/in %)



Evolutie energiegebruikers in 2020 t.o.v. 2019



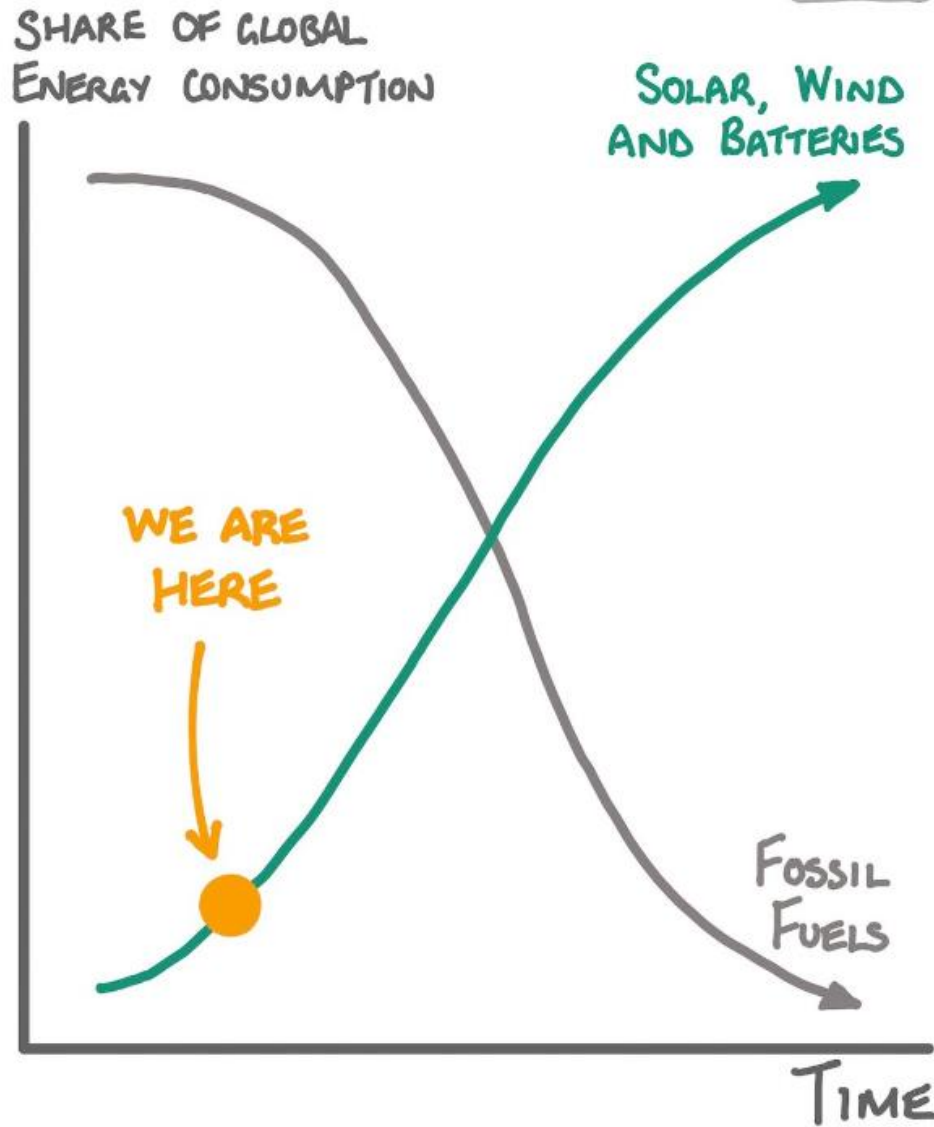
Wat is de energietransitie?

De **energietransitie** is het **lopende** proces van vervanging van **fossiele** brandstoffen door **koolstofarme** energiebronnen. Meer in het algemeen is een energietransitie een ingrijpende **structurele verandering** in een **energiesysteem** wat betreft **aanbod** en **verbruik**.

THE CLEAN ENERGY TRANSITION

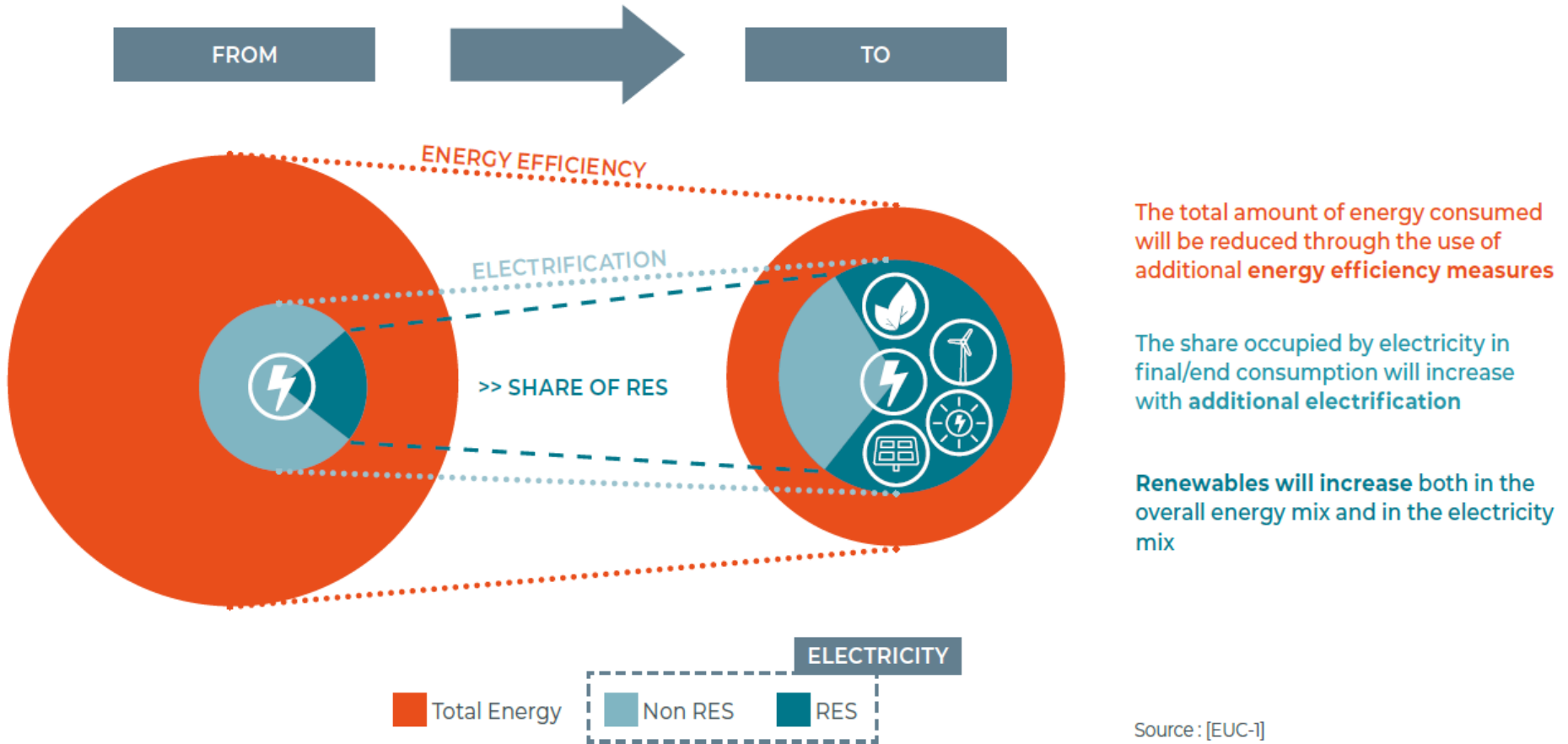
f50

@tsungxu



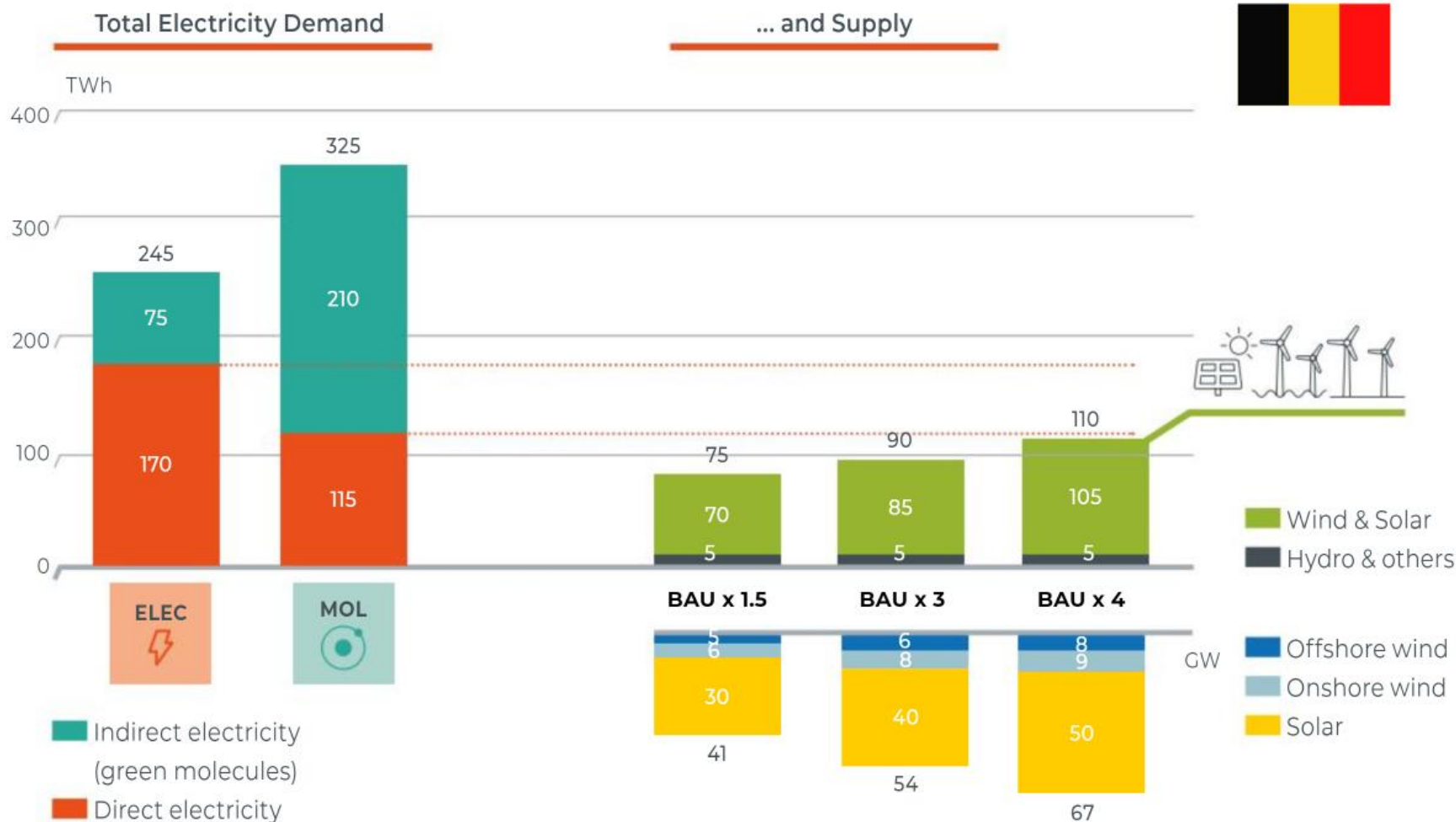
Very simplified view of the shift to clean energy technologies.

[FIGURE 2-1] — TRENDS IN THE ENERGY SECTOR NEEDED TO ACHIEVE THE AMBITION OF A NET-ZERO SOCIETY

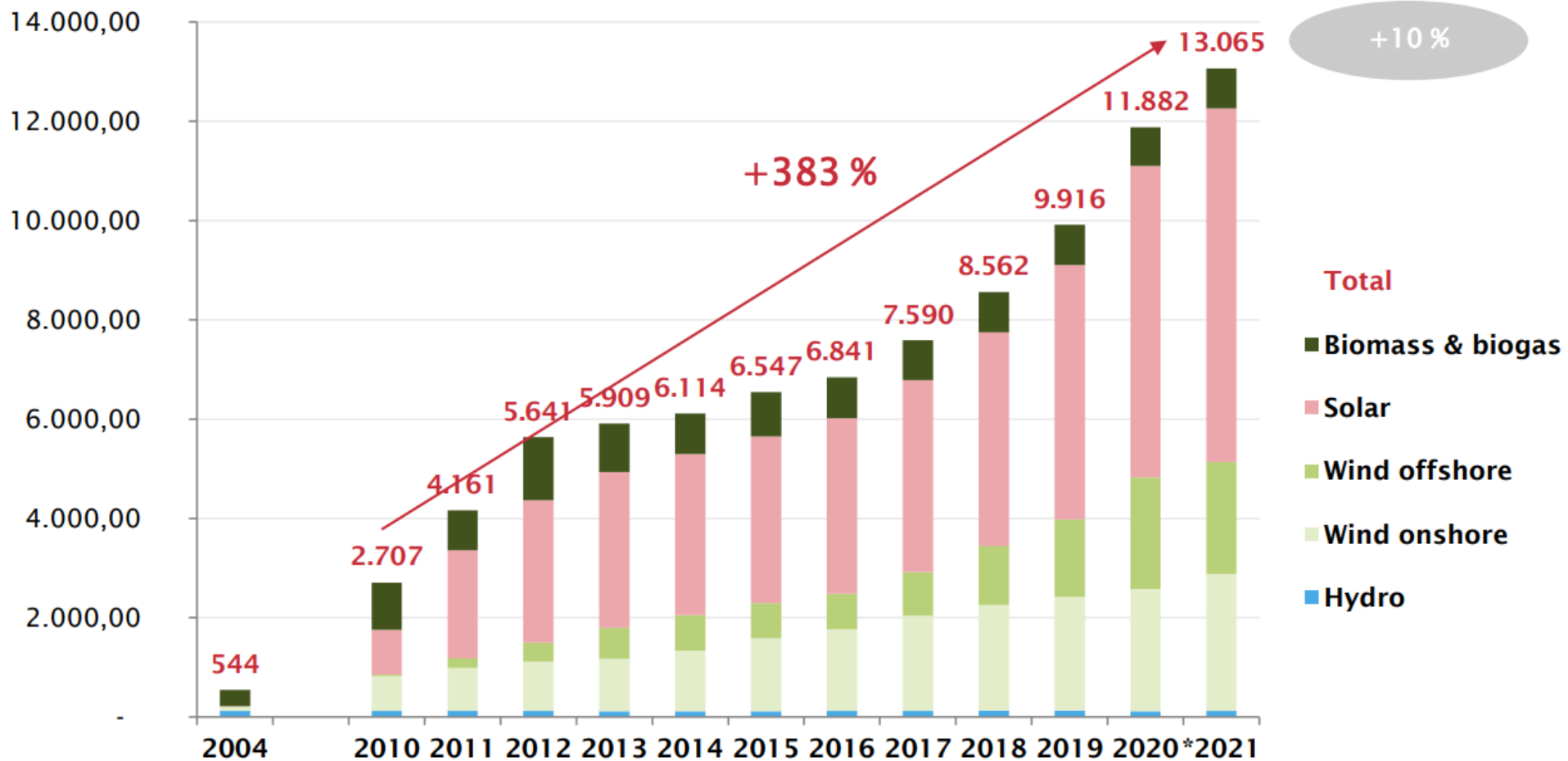


Elektrificatie

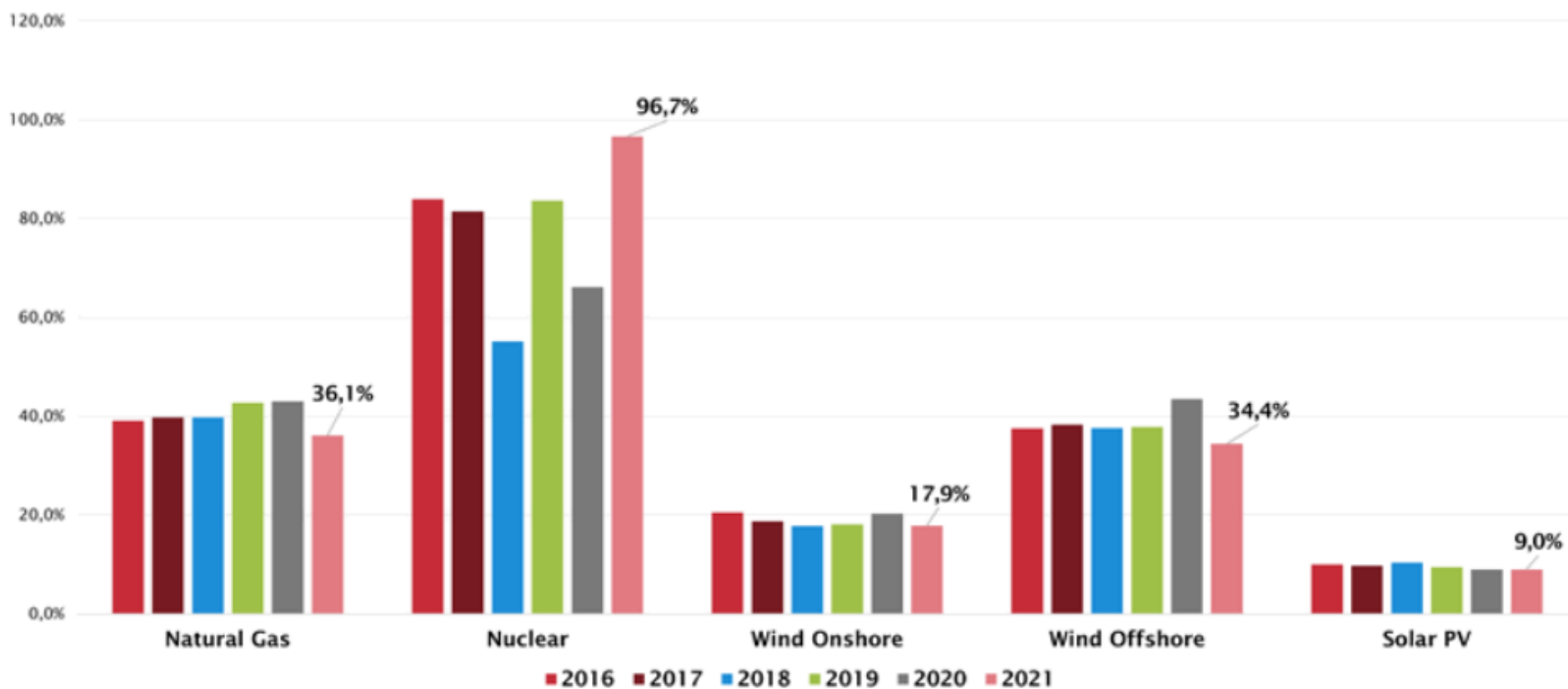
FIGURE 10: COMPARISON BETWEEN THE TOTAL ELECTRICITY DEMAND AND THE ELECTRICITY SUPPLY FOR BOTH TRANSFORMATION PATHWAYS AND ALL THREE SUPPLY SCENARIOS FOR BELGIUM IN 20250



Installed renewables capacity in Belgium (MW)



Load factor: percentage of total number of hours per year when production assets are in operation in Belgium (equivalent full load hours capacity)



It's very likely that renewables will not cover all EU energy demand

7,000 -
8,000 TWh

Total EU energy
demand in 2050

1,000 -
2,500 TWh

Remaining imports to
cover EU demand in
2050

Decarbonise first the huge current fossil-fuel hydrogen demand

H₂

7-10 Mt =
280-400TWh

Current hydrogen
demand in EU



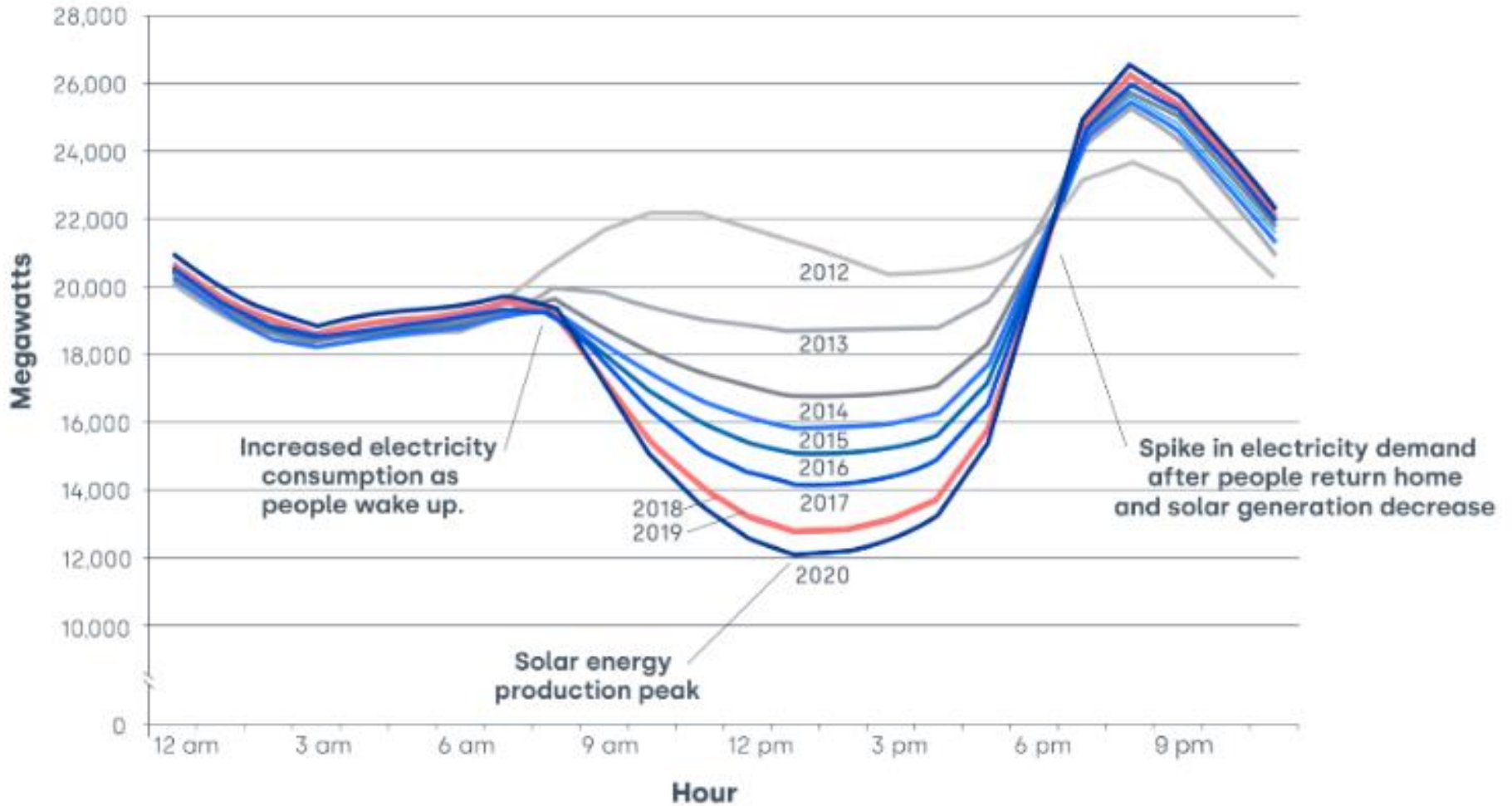
40 GW =
112-280TWh

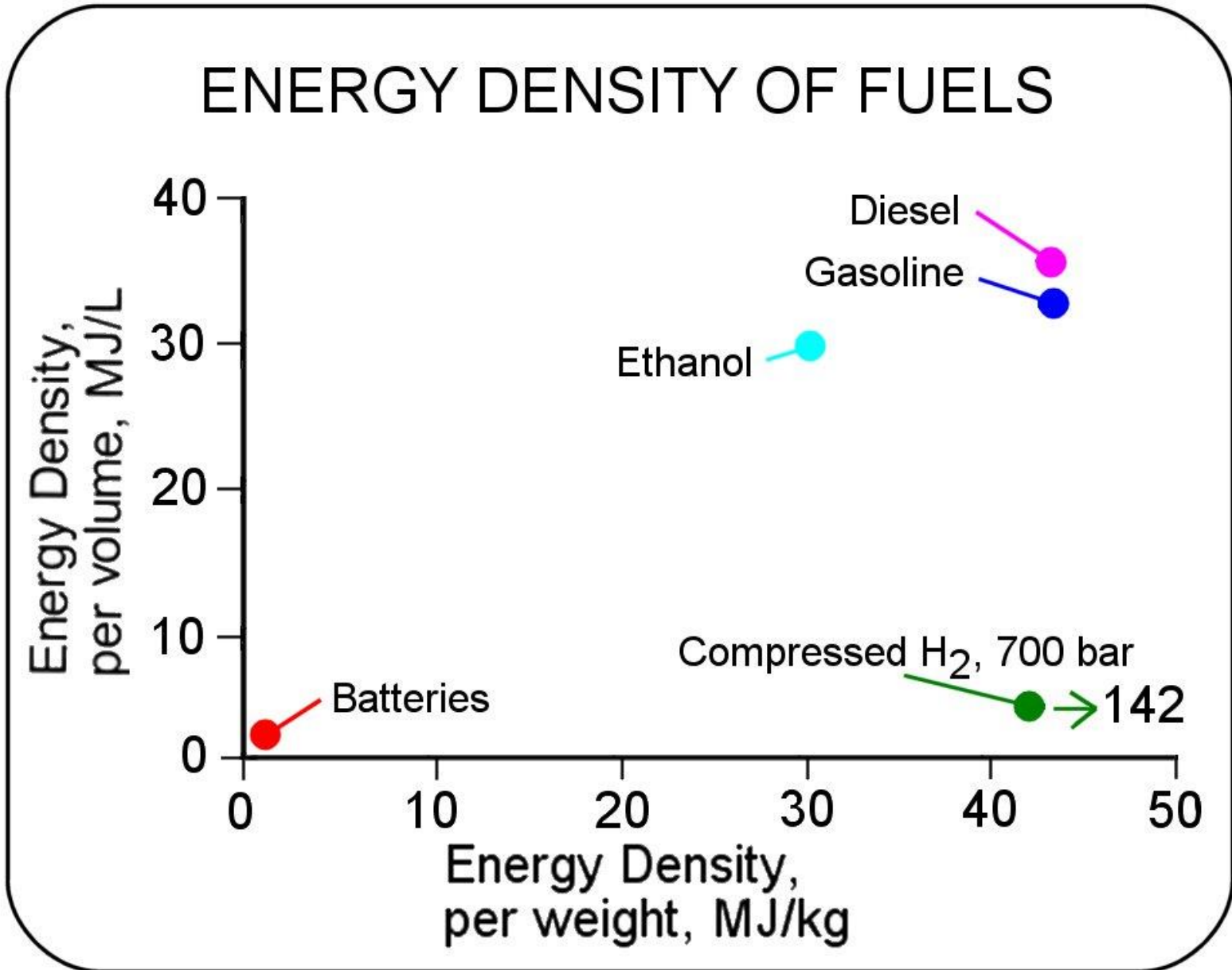
Estimated green
hydrogen production
in EU by 2030



Infrastructuur

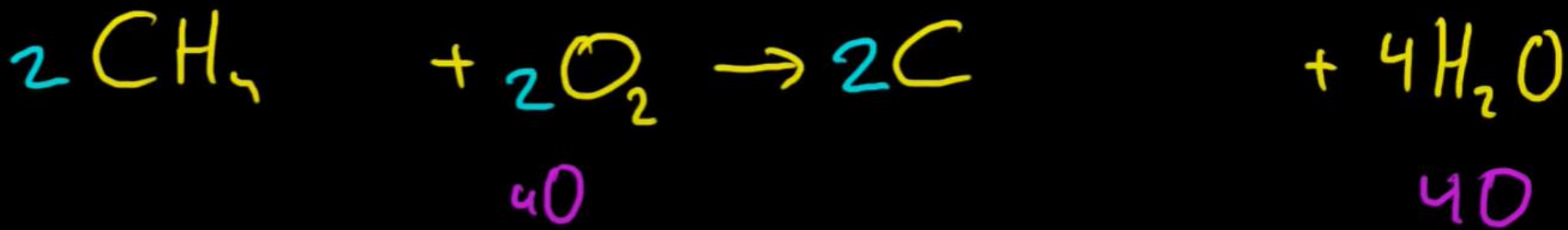
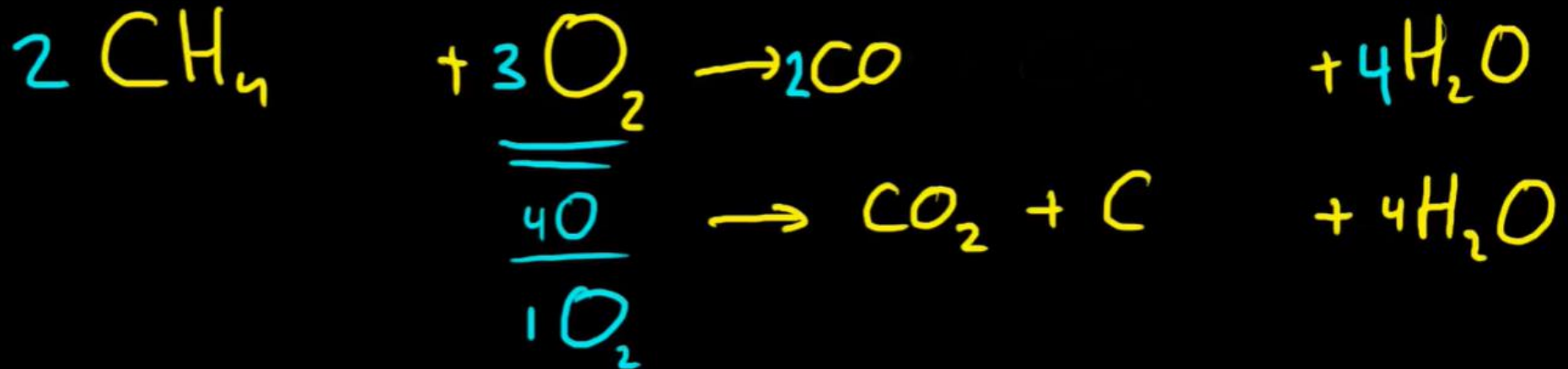
Duck curve (Net load - March 31)





WAIT BUT WHY

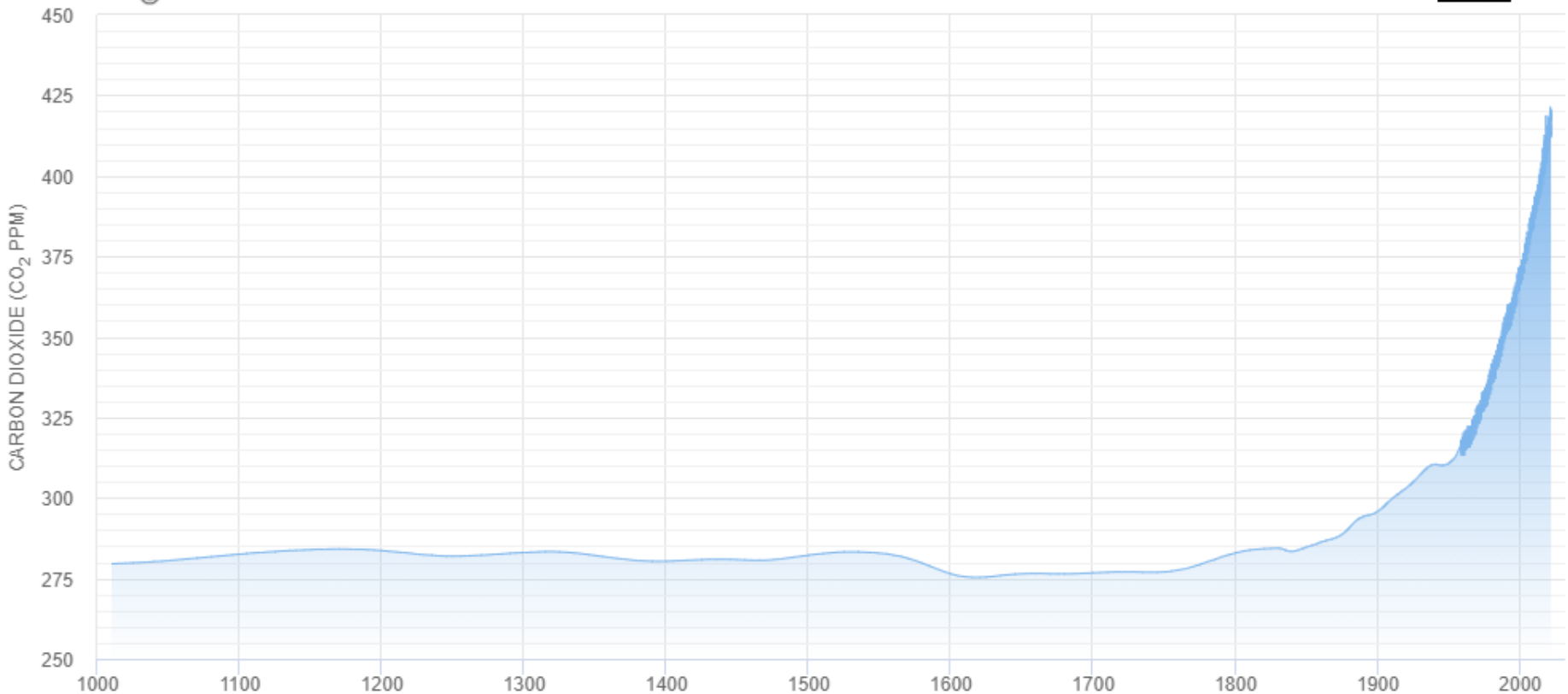
The text "WAIT BUT WHY" is written in large, bold, orange, rounded letters. Five stick figures are positioned on top of the letters: one on 'W' holding a parachute, one on 'A', one on 'I' pointing to the right, one on 'B', and one on 'Y'.





GLOBAL CO₂ LEVELS

Click and drag in the plot area to zoom in



THE
LONDON, EDINBURGH, AND DUBLIN
PHILOSOPHICAL MAGAZINE
AND
JOURNAL OF SCIENCE.

[FIFTH SERIES.]

APRIL 1896.

XXXI. *On the Influence of Carbonic Acid in the Air upon the Temperature of the Ground.* By Prof. SVANTE ARRHENIUS*.

I. *Introduction: Observations of Langley on Atmospheric Absorption.*

A GREAT deal has been written on the influence of the absorption of the atmosphere upon the climate. Tyndall † in particular has pointed out the enormous importance of this question. To him it was chiefly the diurnal

The 'World3' Model

'The Limits to Growth' (2nd ed.)
pages 110-111

Figure 26 THE WORLD MODEL

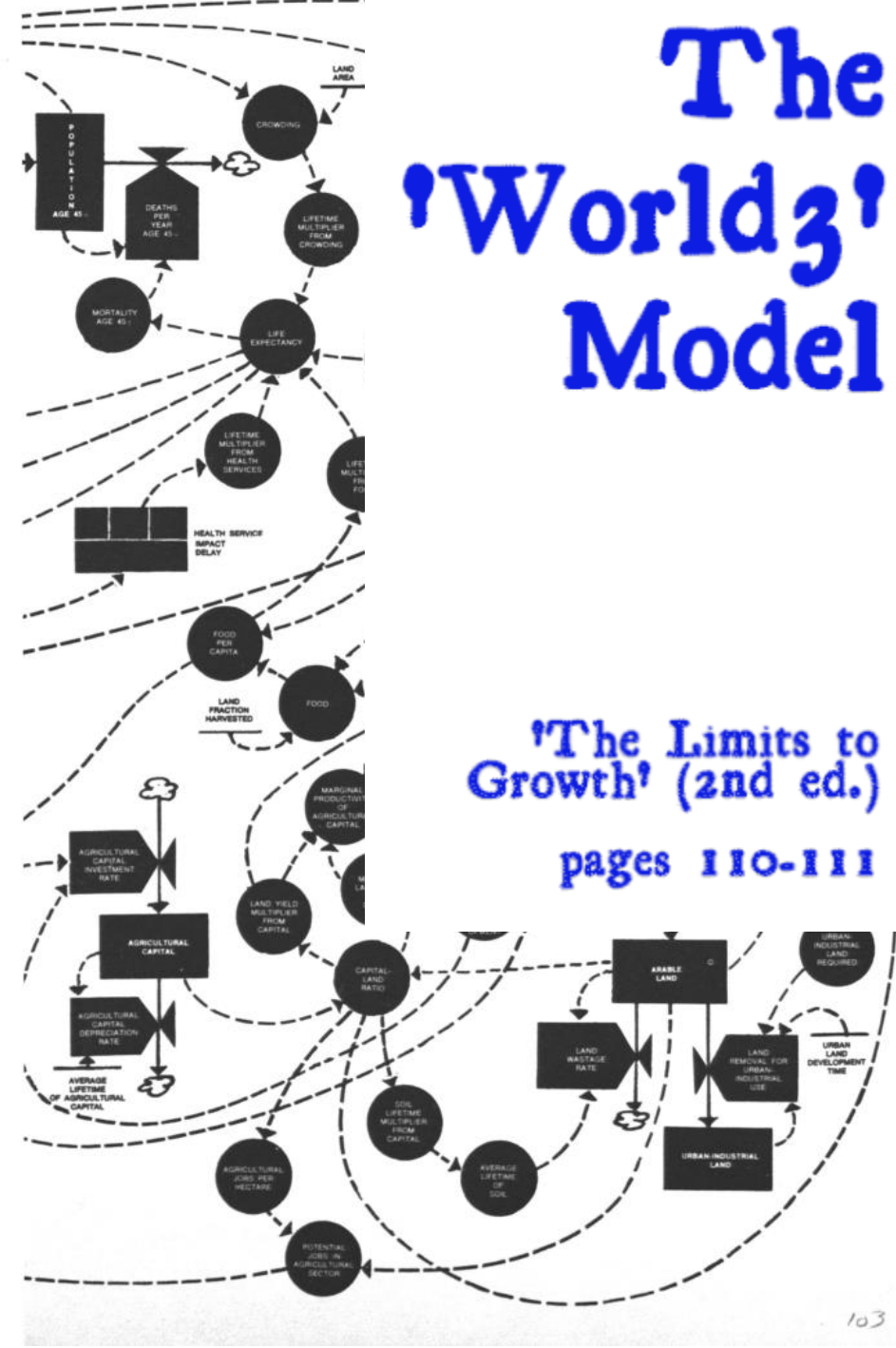
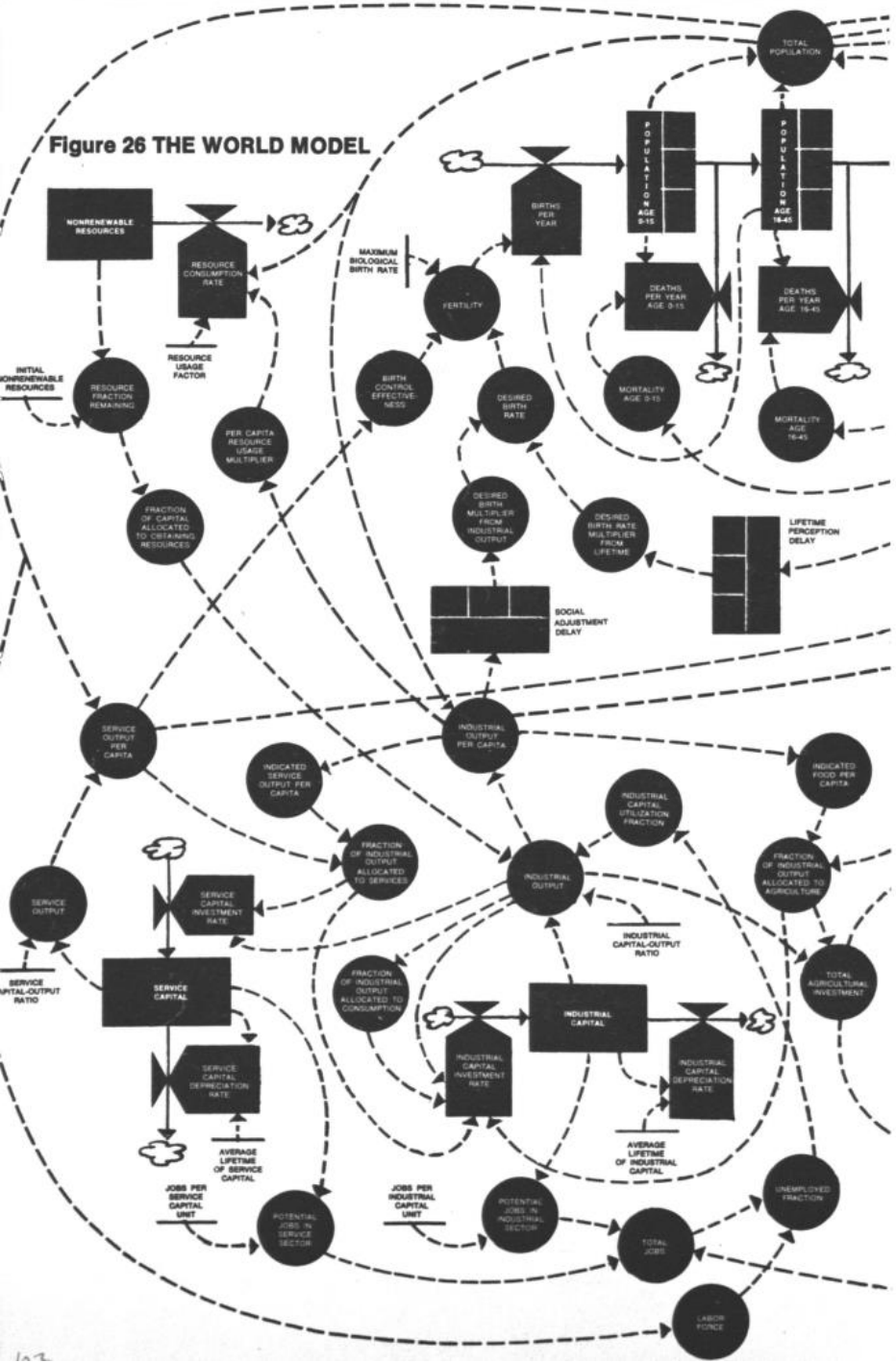
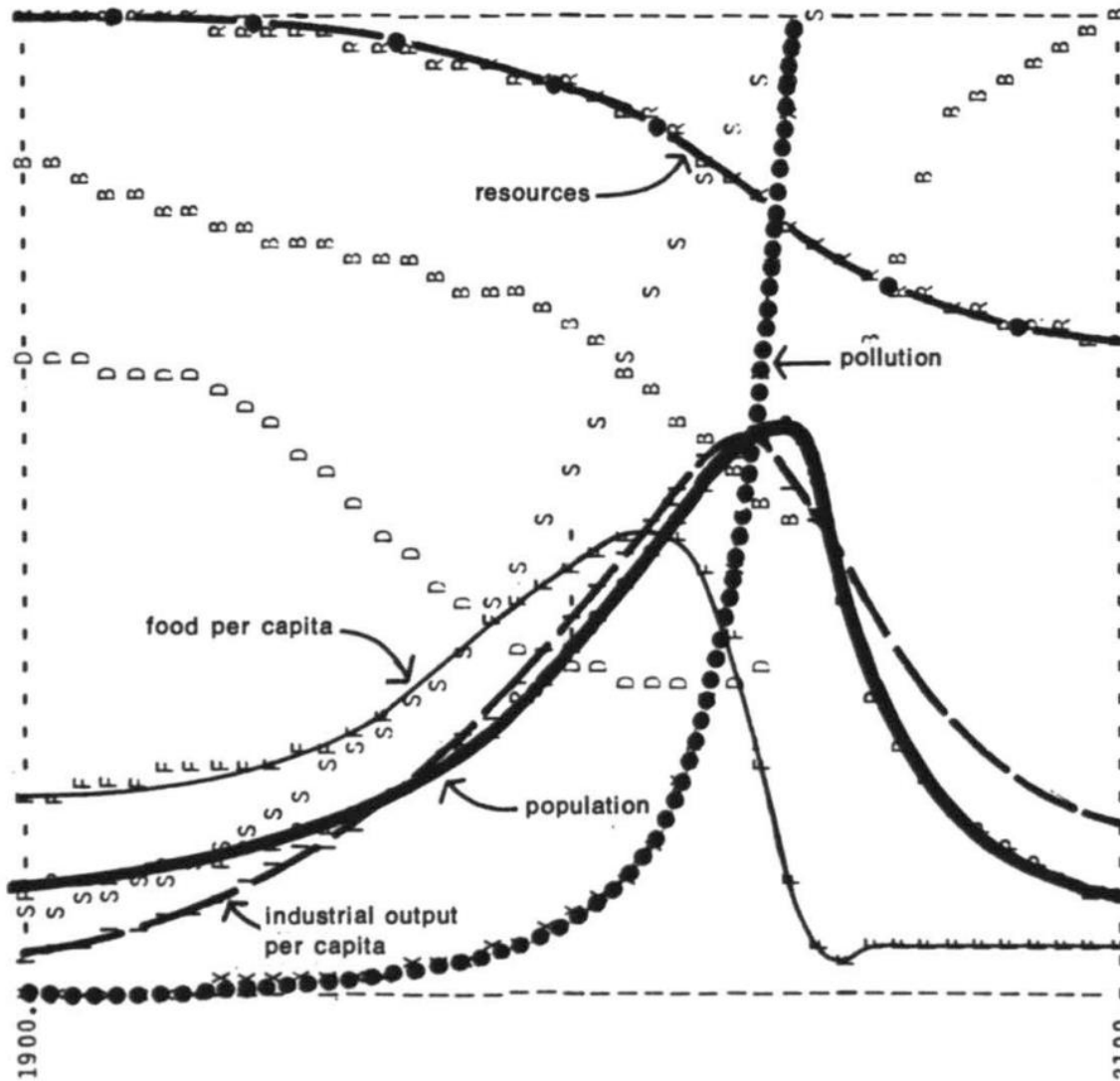
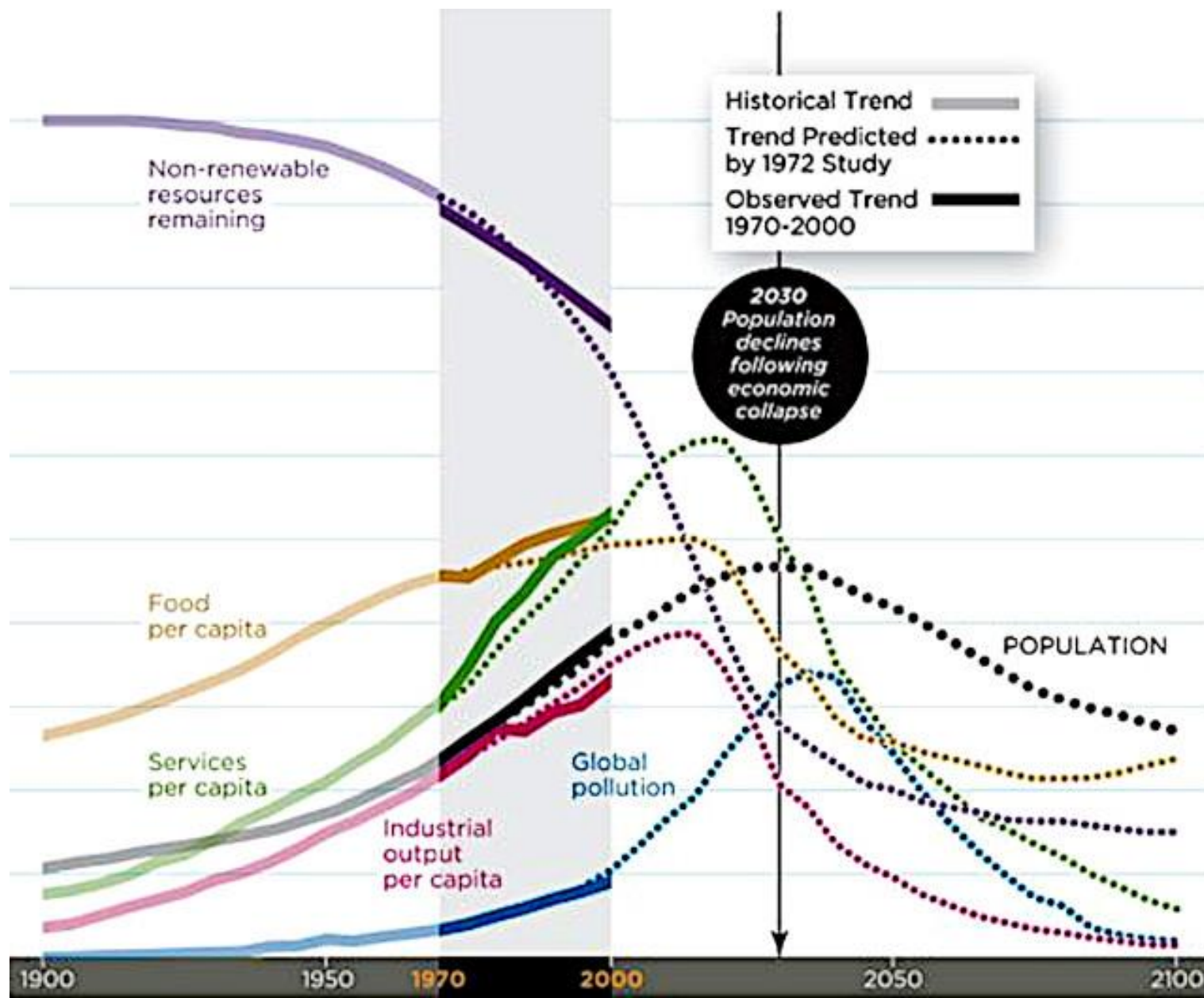


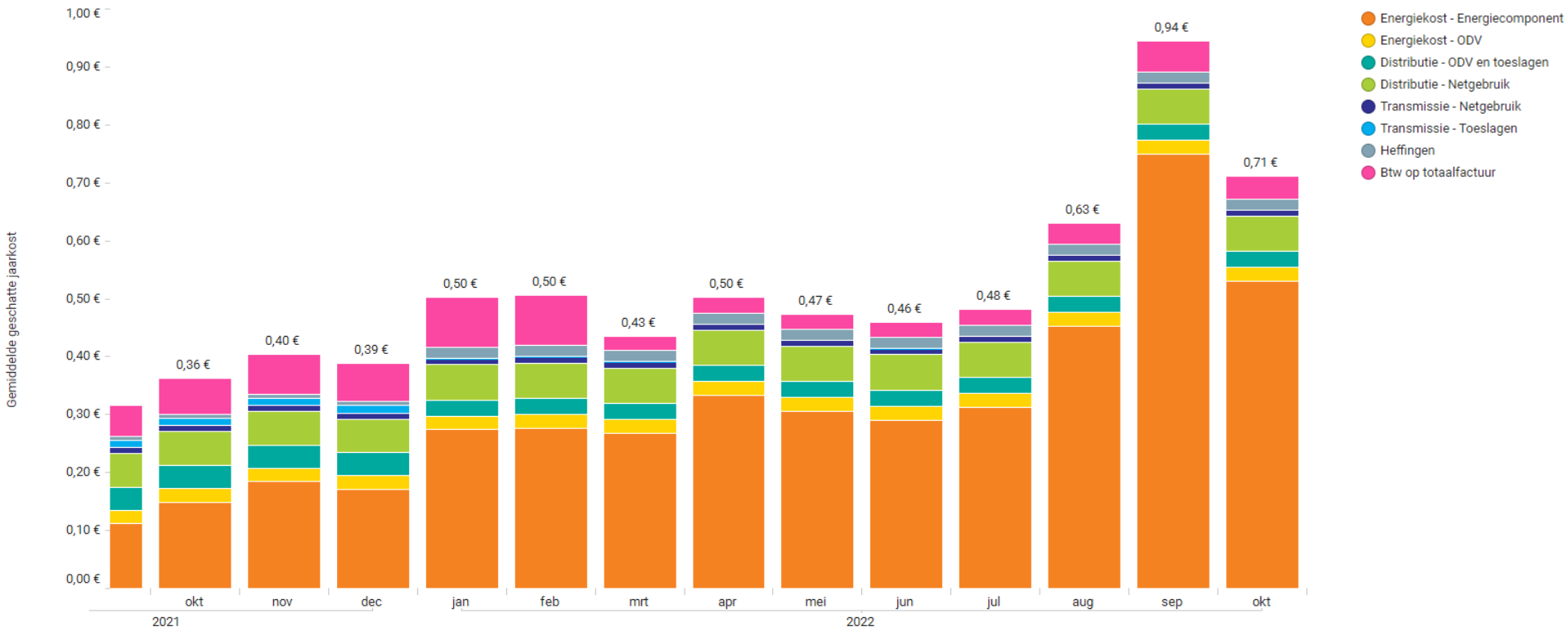
Figure 37 WORLD MODEL WITH "UNLIMITED" RESOURCES



Achtergrond

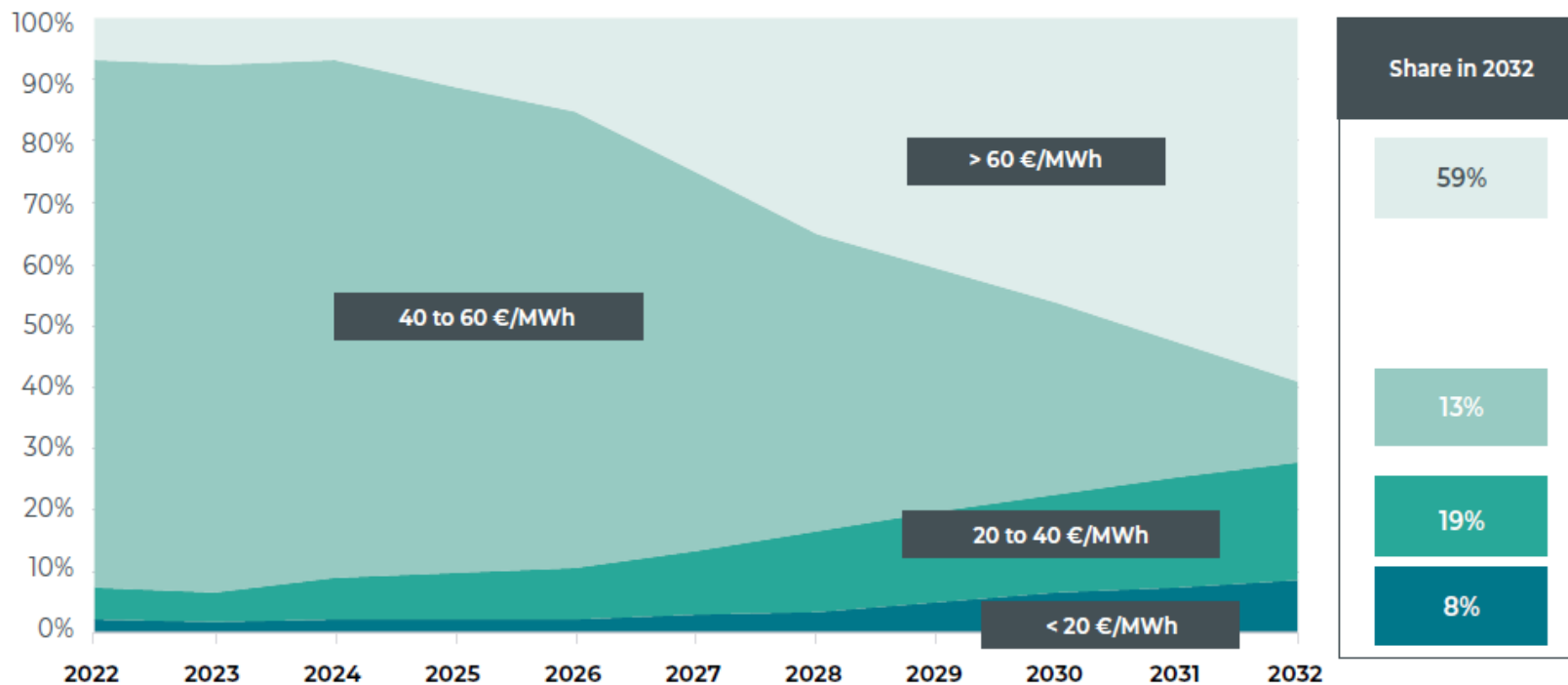


Achtergrond



https://dashboard.vreg.be/report/DMR_Prijzen_elektriciteit.html

[FIGURE 5-69] — EXPECTED DISTRIBUTION OF ELECTRICITY PRICES IN BELGIUM ('EFFICIENT GAS' SCENARIO)



Day



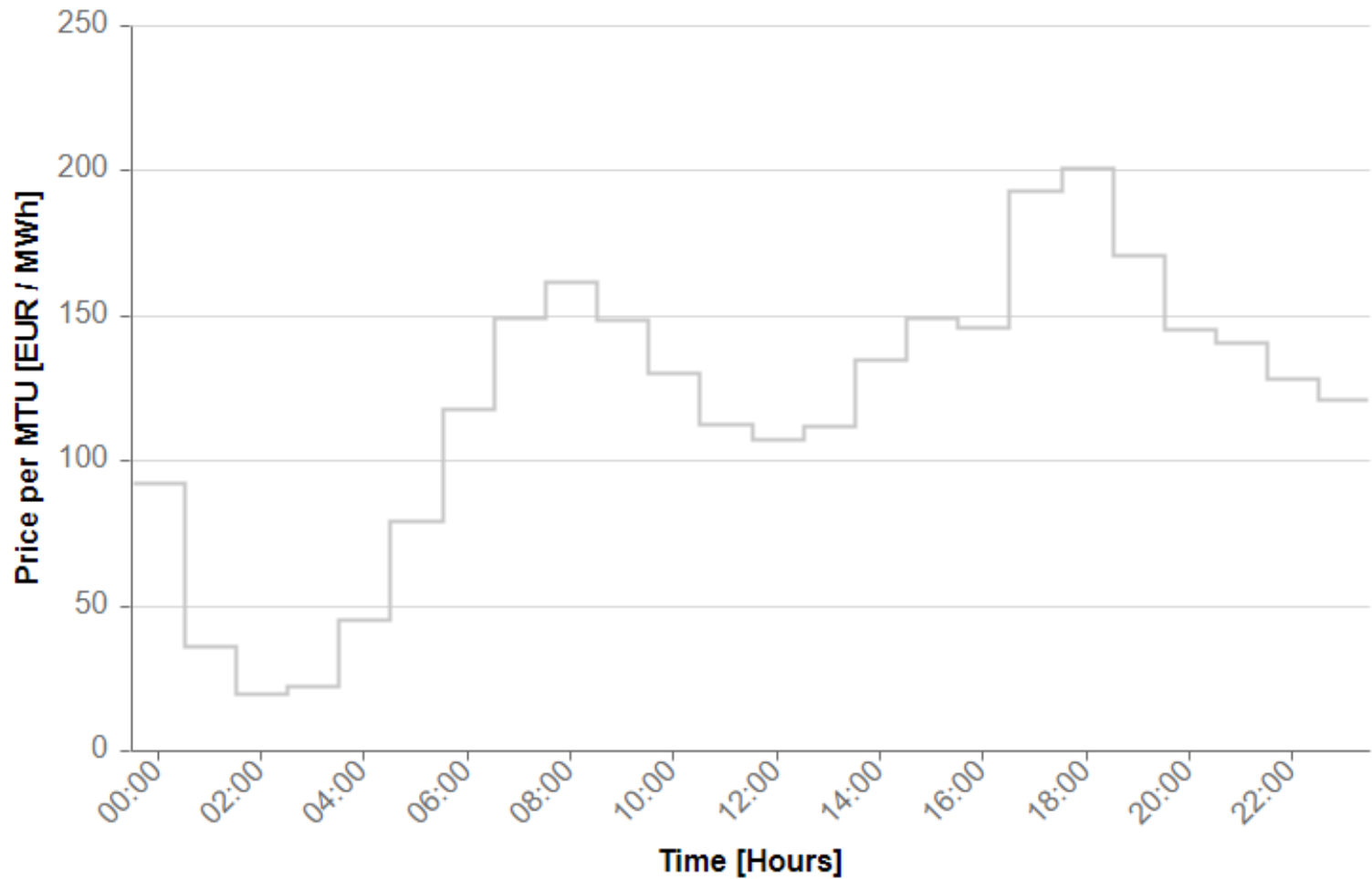
09.11.2022

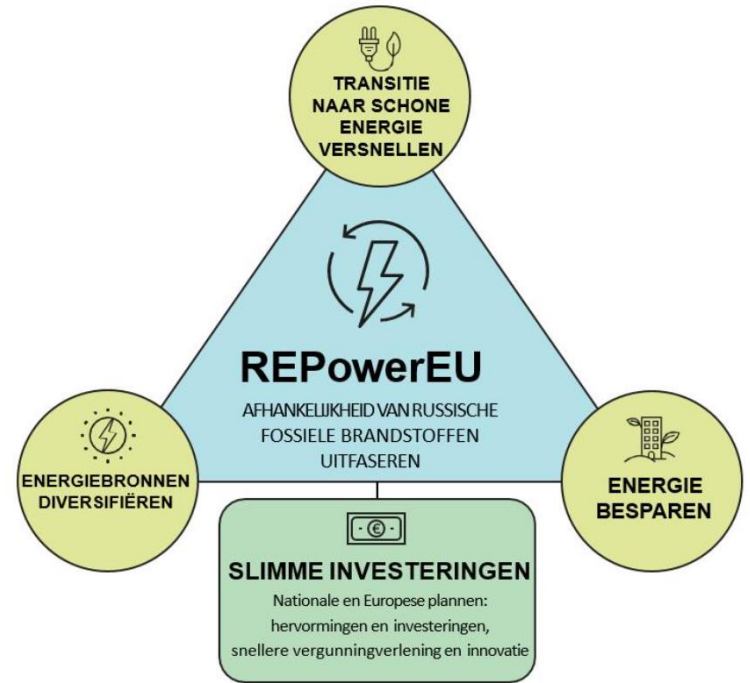
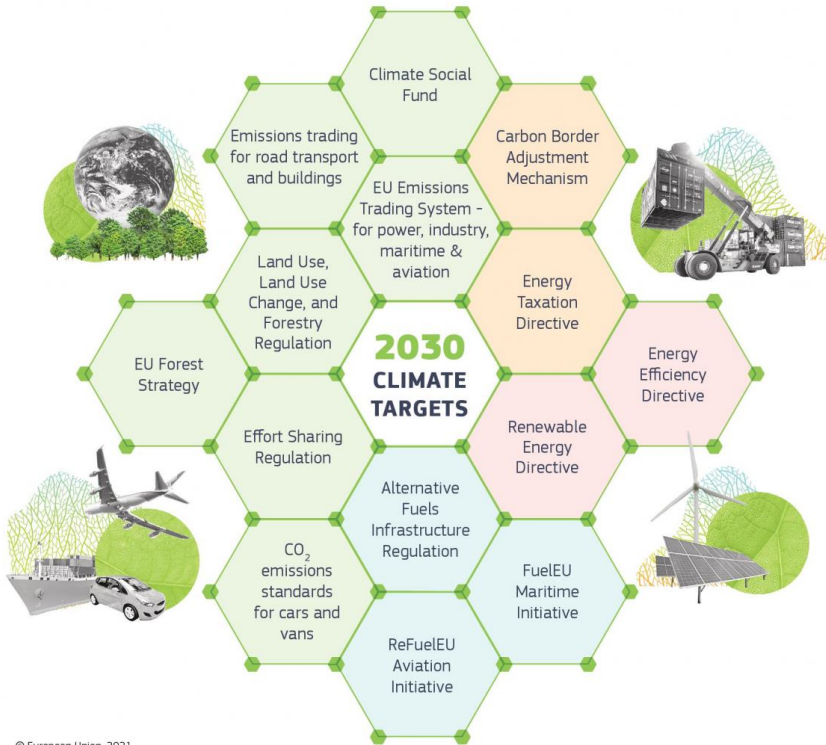


CET (UTC+1) / CEST (UTC+2)



Day-ahead prices





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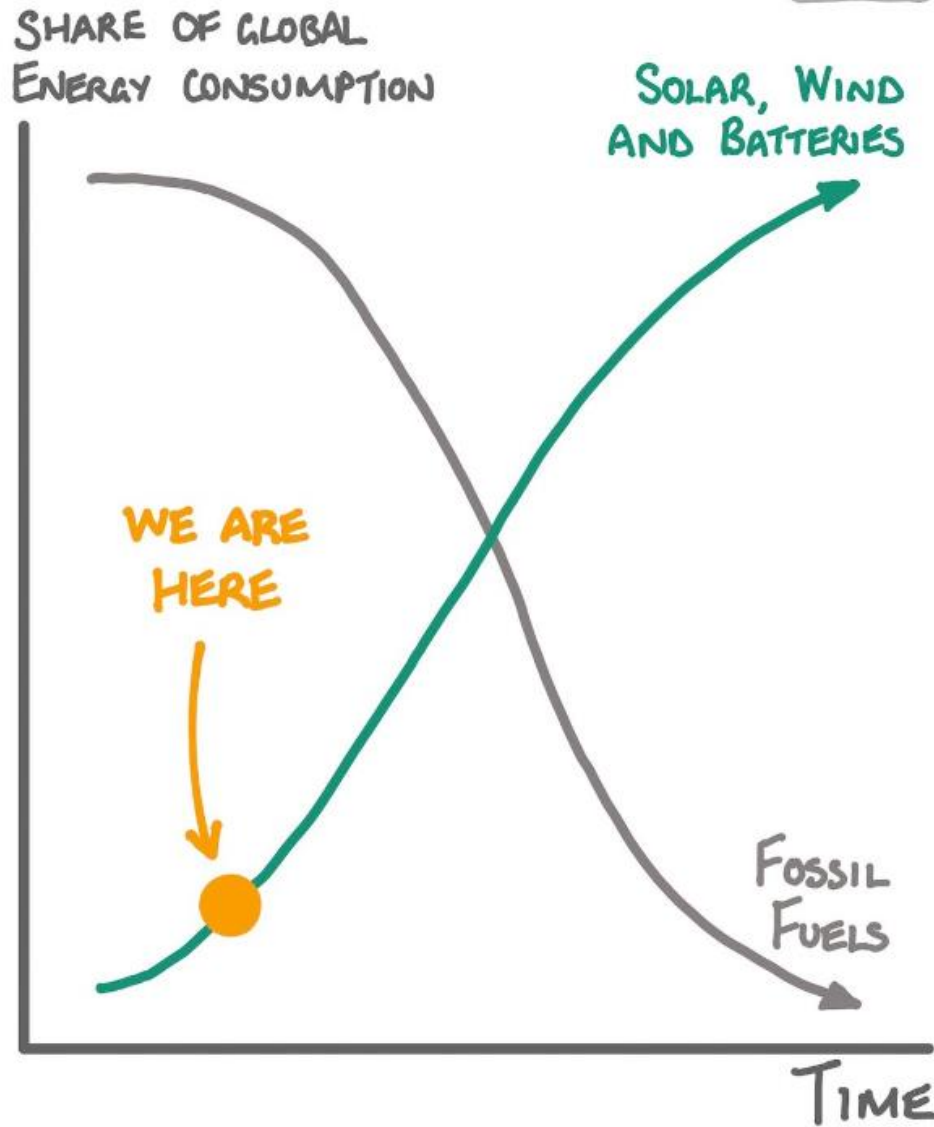
Nieuwe groepsvrijstellingsverordening + taxonomie

- Extending the possibilities for Member States to provide support for various types of “green” projects
- Introducing new ‘green’ conditions that need to be fulfilled for large energy-intensive businesses
- Catering for the increased role of storage for the integration of renewable energy in the electricity system
- Facilitating investments in green hydrogen
- Incentivising ambitious building renovation projects
- Clarifying and streamlining the rules on risk finance aid
- Widening the scope of aid for start-ups to include aid in the form of transfer of intellectual property rights (IPR)
- Simplifying the conditions for granting research, development and innovation aid without prior notification and approval
- Aligning the conditions the new Regional Aid Guidelines

THE CLEAN ENERGY TRANSITION

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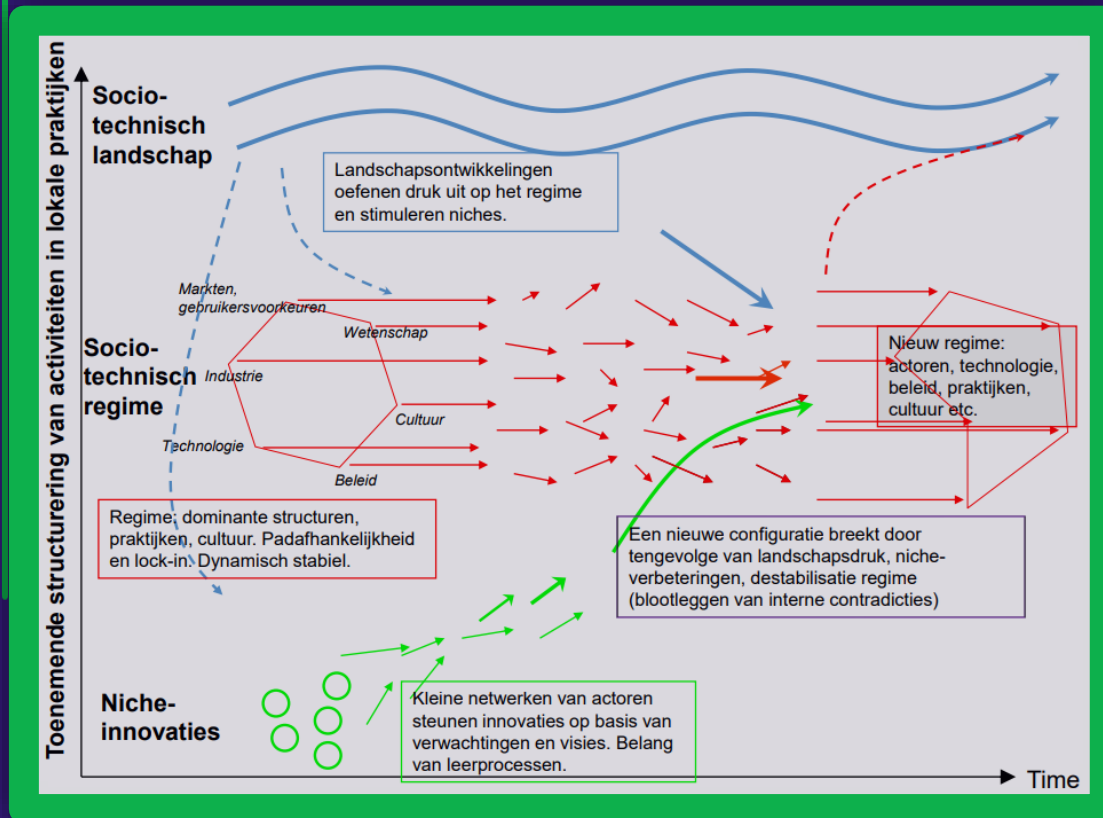
@tsungxu



Very simplified view of the shift to clean energy technologies.



Om verduurzaming te bereiken is energietransitie noodzakelijk. Om bij te dragen aan de realisatie daarvan, zet Flux50 in op inspireren, verbinden en ondernemen.



Inspiratie

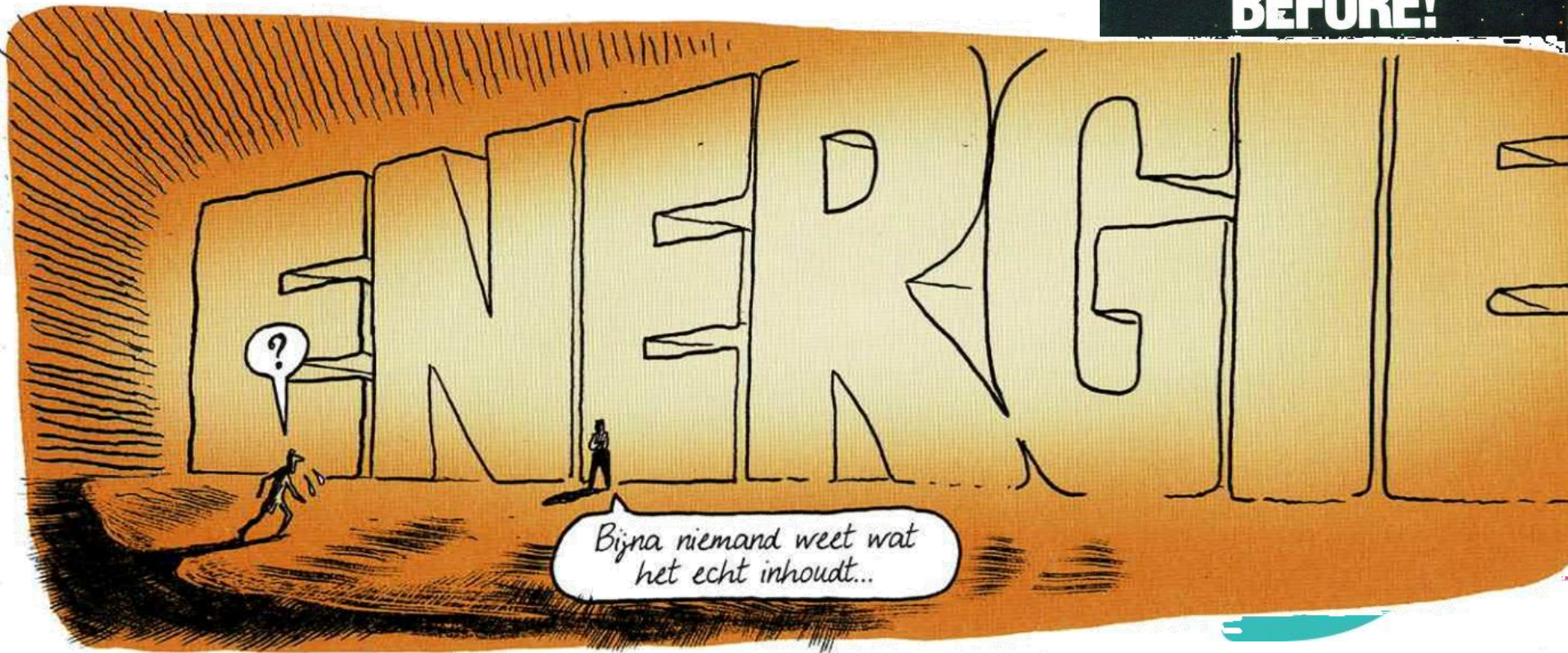
Verbinden

Versnellen

2050: ?



**BOLDLY GO
WHERE NO MAN
HAS GONE
BEFORE!**





CONTACT

Flux50

Frederik Loeckx

Koningsstraat 146

B-1000 Brussel

Frederik.loeckx@flux50.com

Twitter: @flux_50