



TRICKY TRADE-OFFS

EU PLANS FOR ENERGY & EMISSIONS

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European Green Deal

World's First Climate Neutral Continent!

Key Drivers: Policy, Integration, Innovation

Designing a set of
deeply transformative
policies



Clean Energy Transition

Decarbonize EU's energy system (75% emissions)

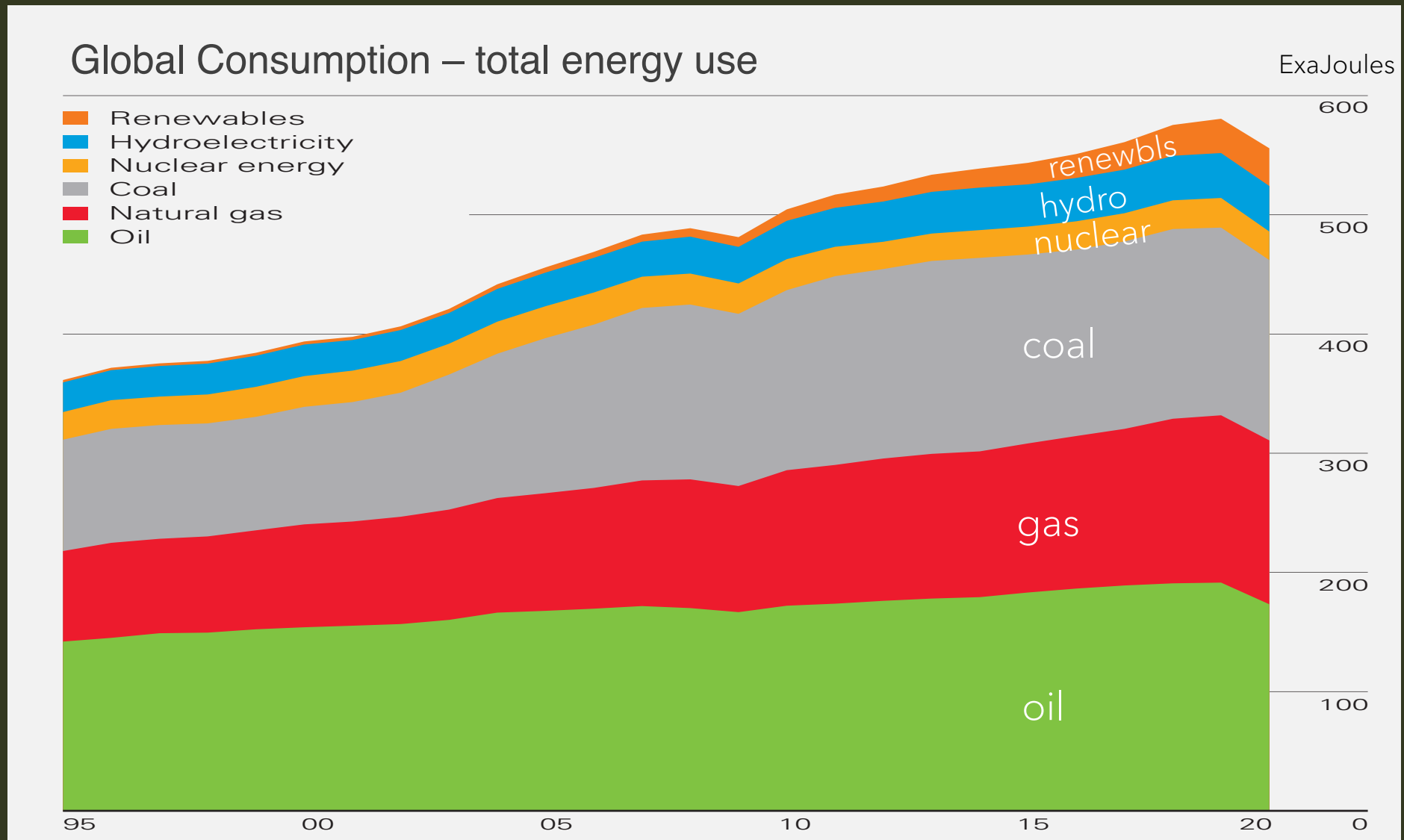
Invest in H₂, Renewables, EVs, Batteries

Prioritize:

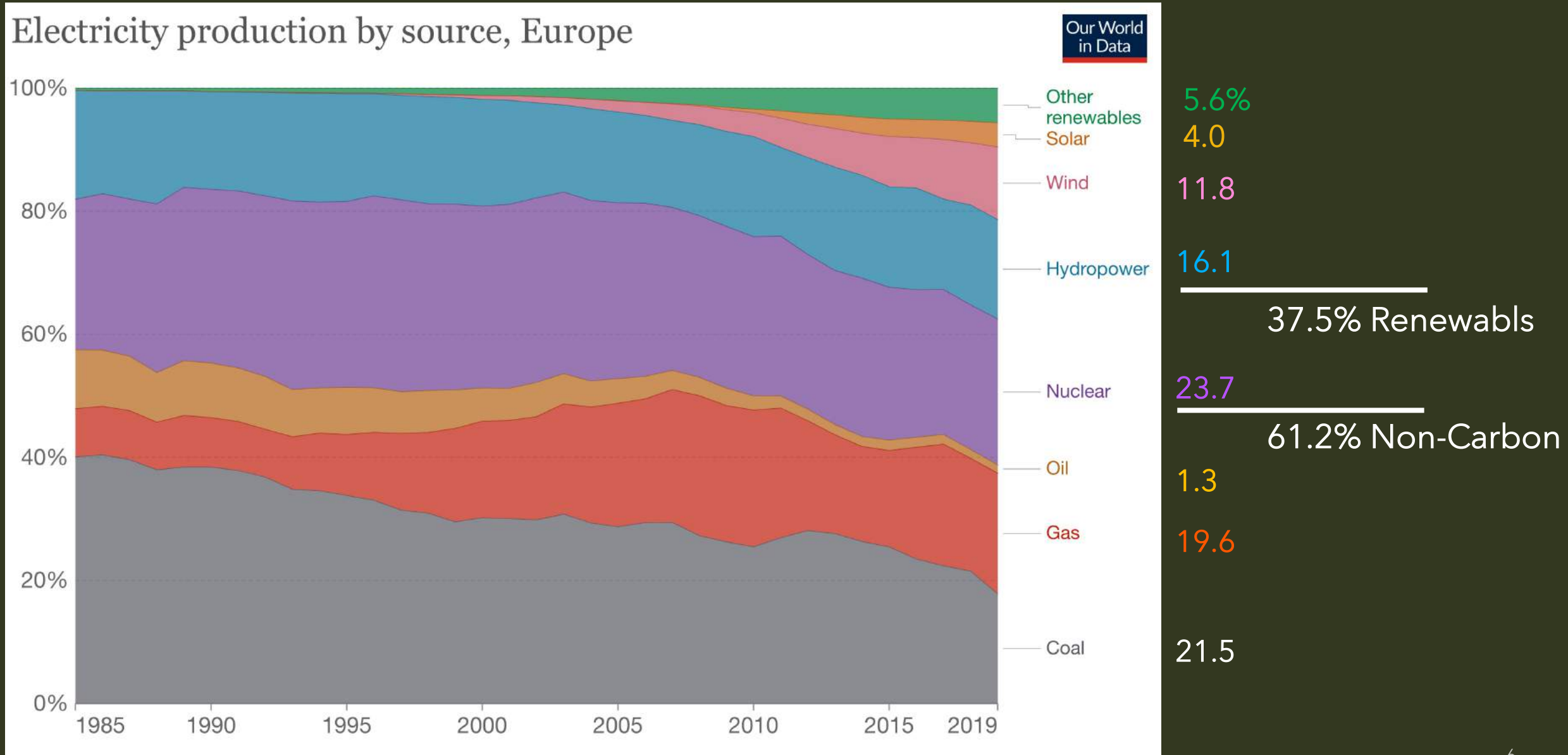
- Power sector, renewables
- Energy efficiency
- Integrated, interconnected, digitised market

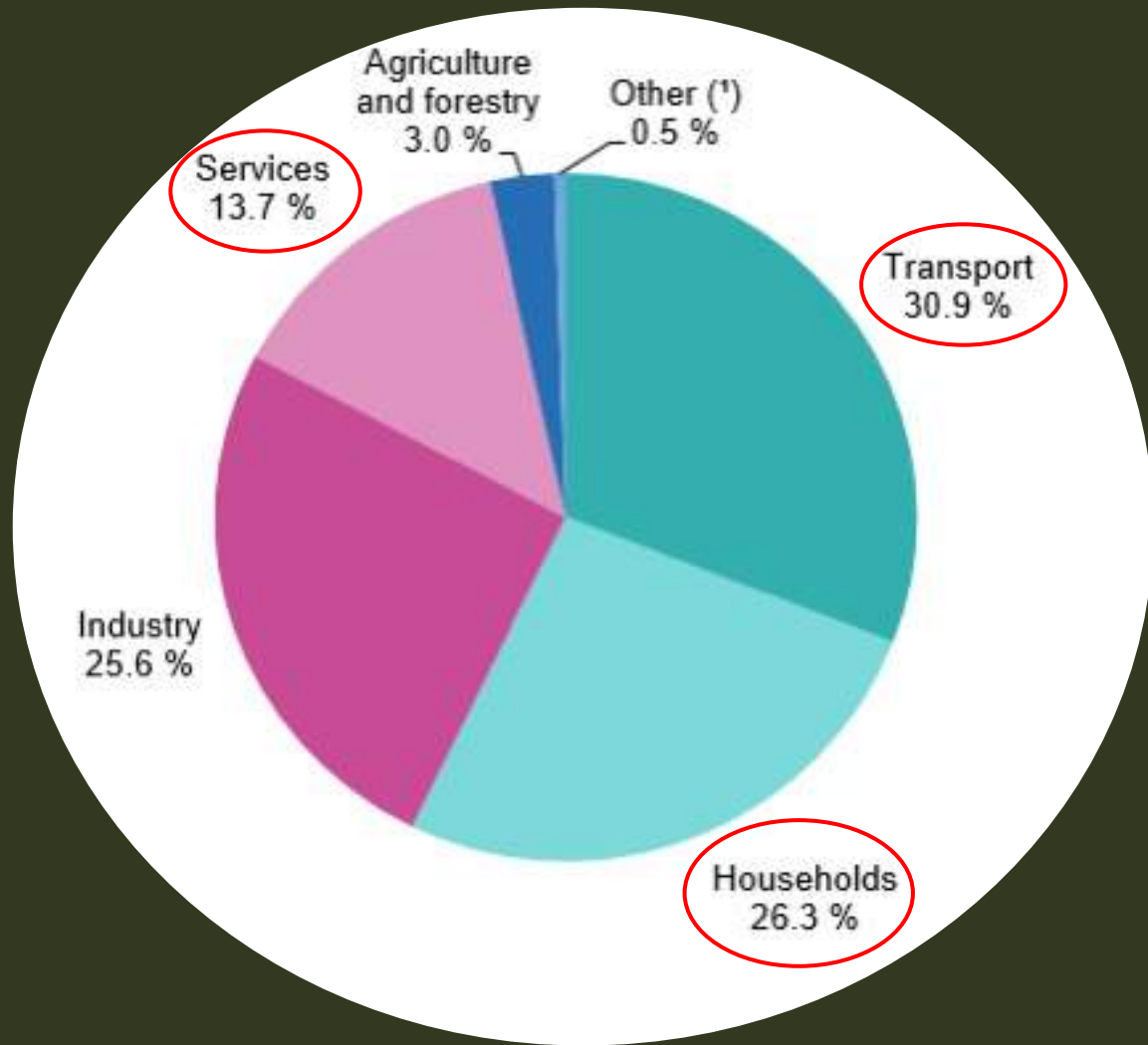
2030 Target: 55% less GHG from 1990 levels
"Fit for 55"

What does the World use Today?



What does the EU use (electricity)?



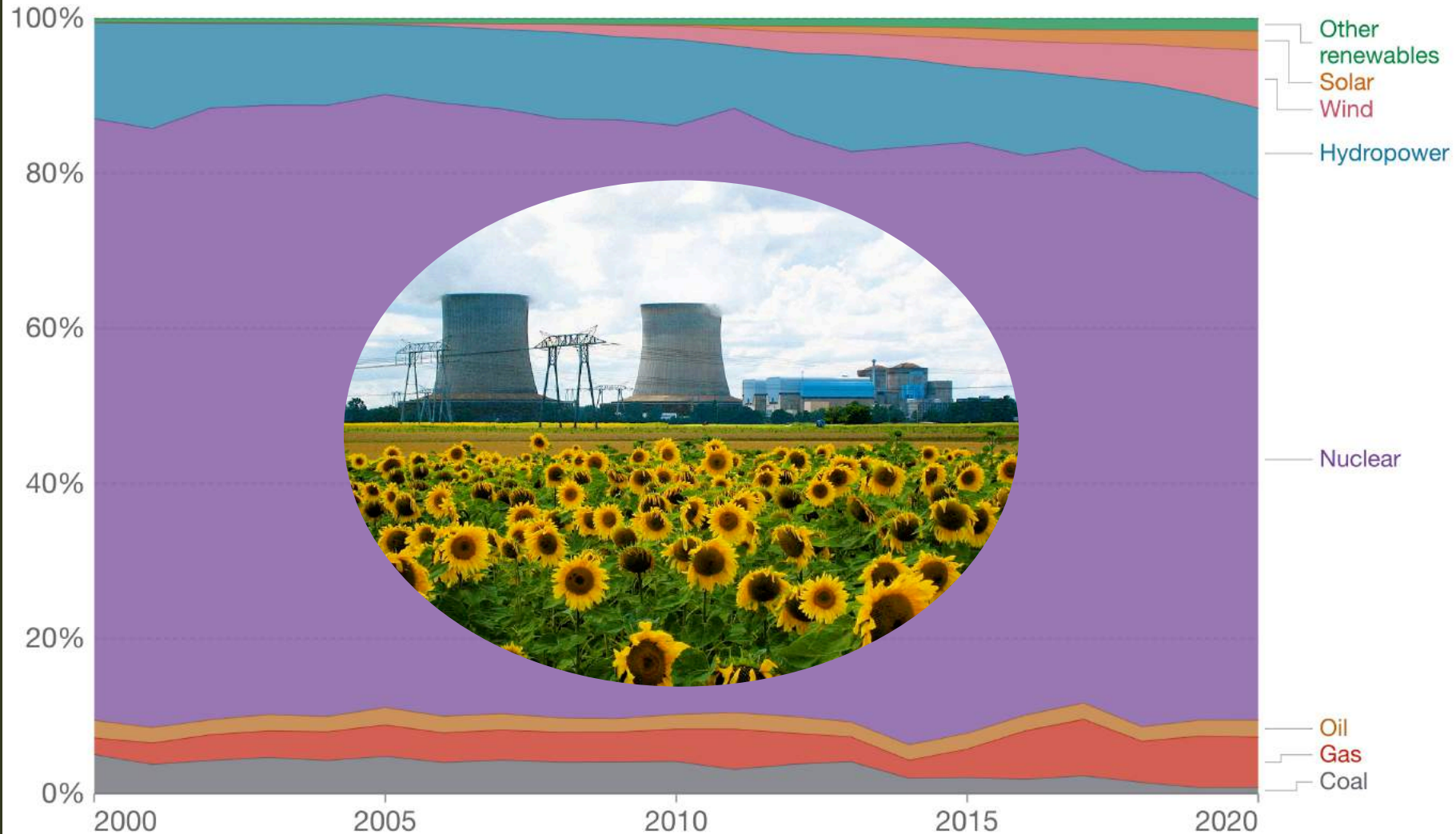


What is it used for?

Consumption By Sector

Electricity production by source, France

Our World
in Data



1.6%

2.2

6.0

10.1

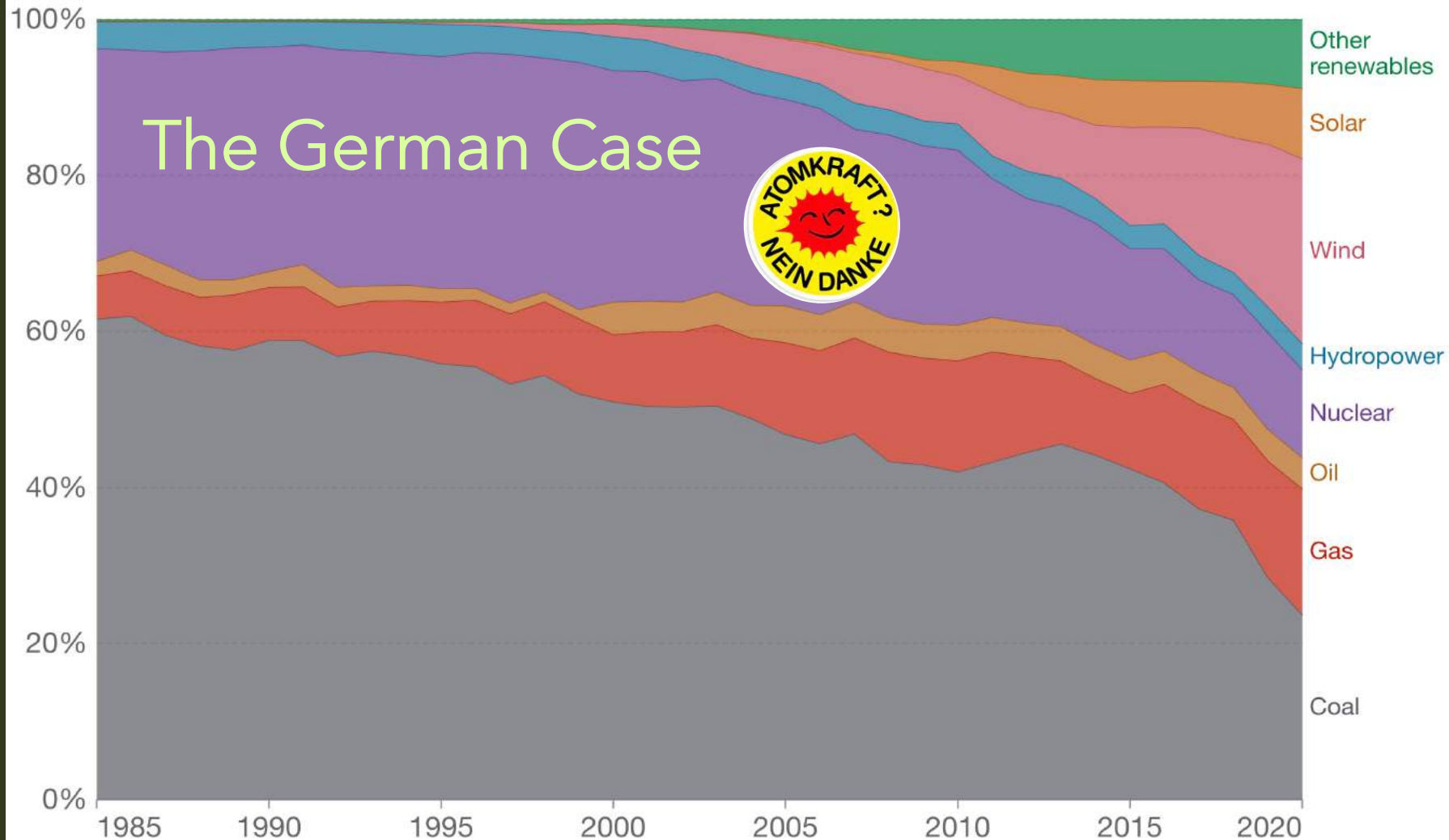
70.6

90.5% Non-Carbon

6.7

Electricity production by source, Germany

Our World
in Data



8.4%

8.0

40.6% Renewables

20.9

3.3

12.4

53.0% Non-C

4.0

15.0

28.4



Green

No coal, or commitment to phase-out coal



Blue

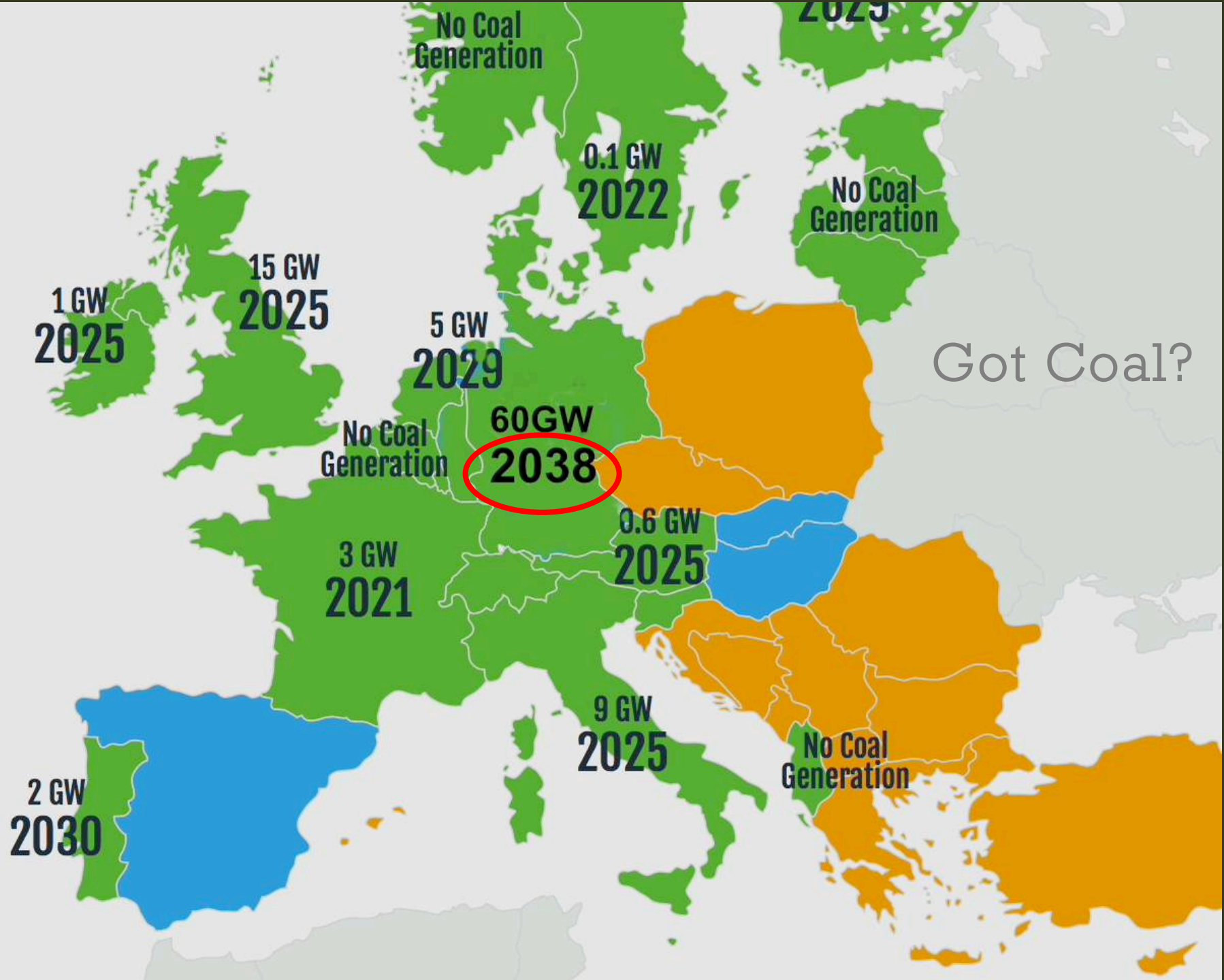
Phase-out being actively discussed



Orange

Phase-out yet to be decided

GW is the gigawatts coal capacity currently operational





Last lump of coal
from German
black coal mine,
Prosper-Haniel,
Dec. 21, 2018.

Lignite takes over

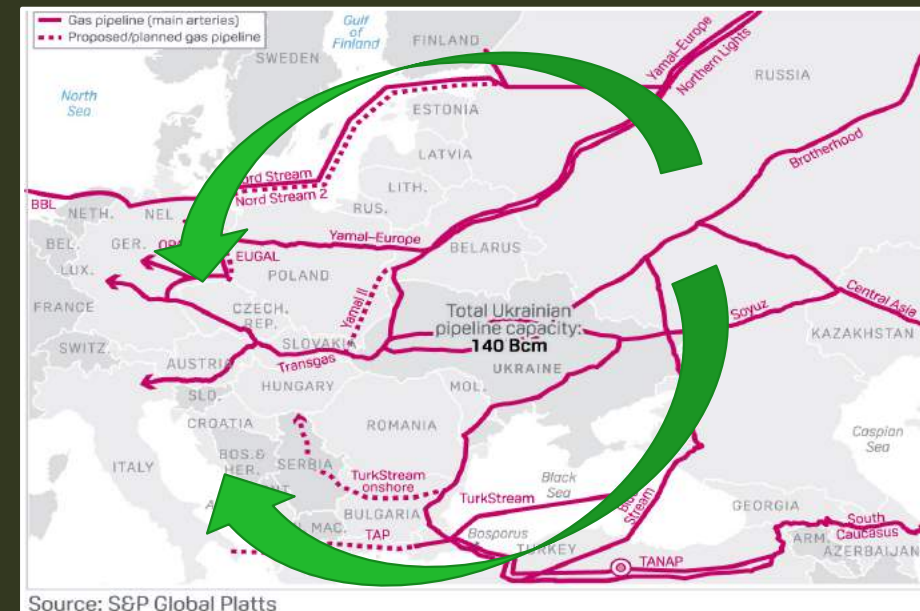


Nordstream 2



ist Kompliziert...

- Nuclear to close 2022
- How to replace lost power?
- Coal/Mining Unions powerful
- Need to control emissions
- Gas half the emissions of coal





The Finland Case



FORESTS: "OUR LARGEST
NATURAL RESOURCE"



Electricity in Finland

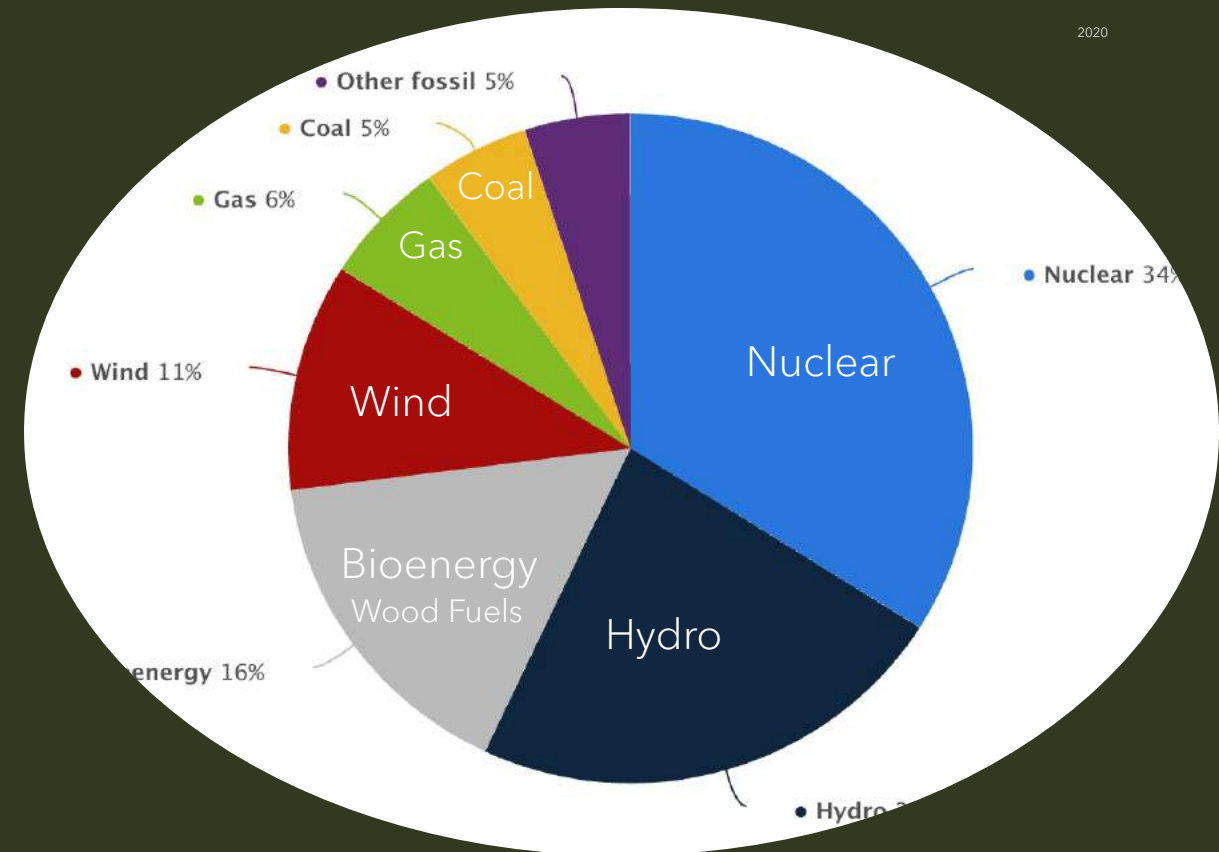
Non-carbon = 84% of Total

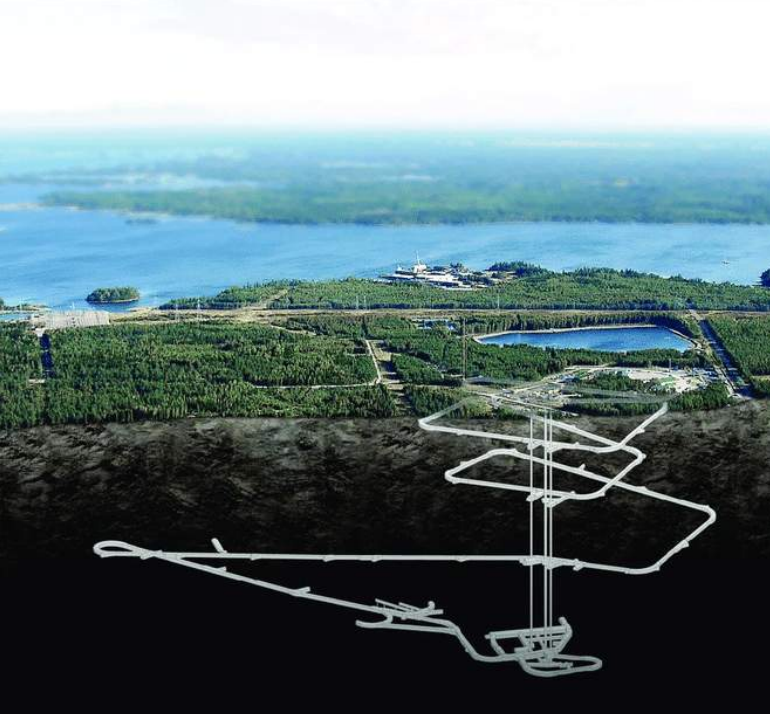
Wood-based fuels & Nuclear

Plans to be:

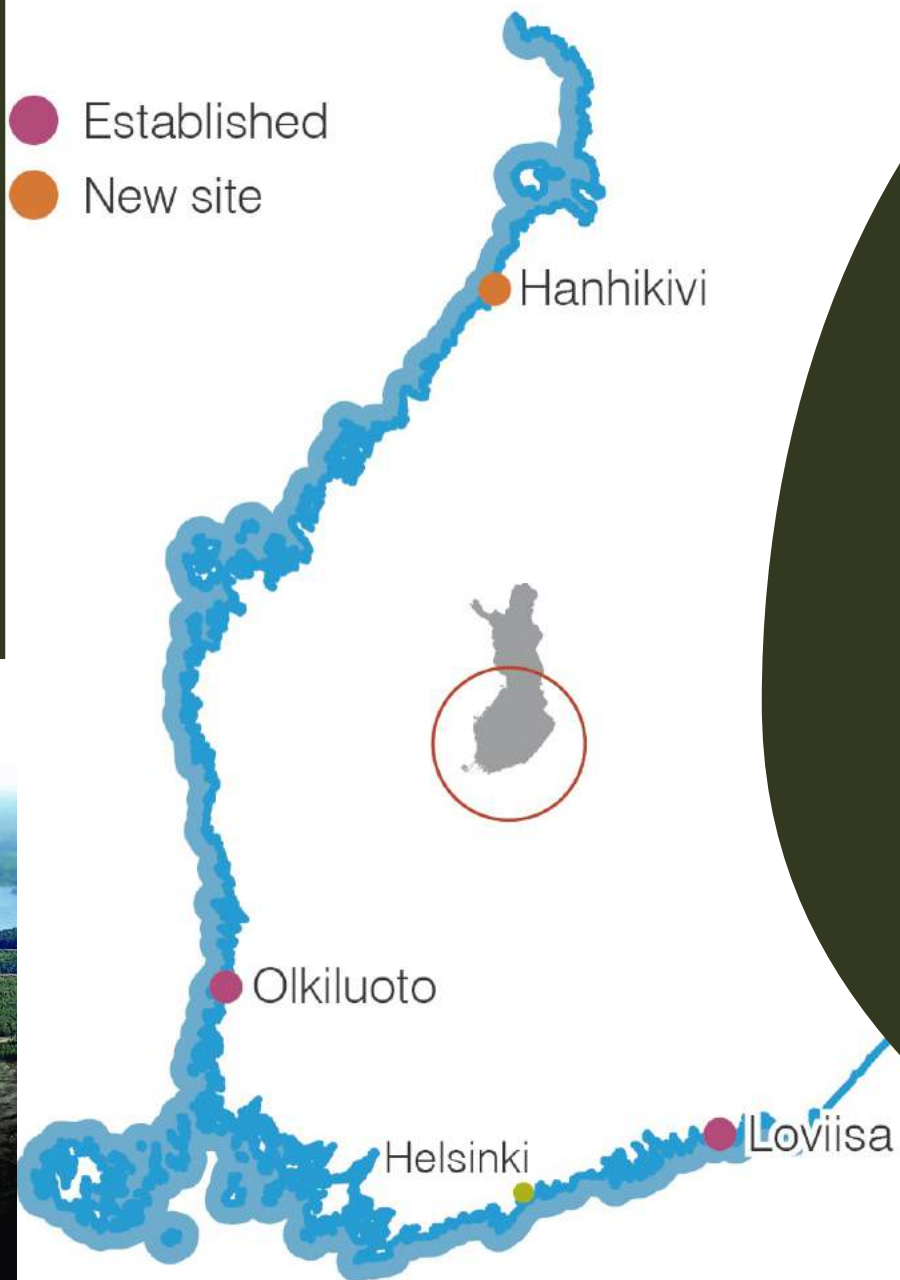
1st fossil-free in EU

Carbon-neutral by 2035





- Established
- New site



Finland will be first
country to open a
nuclear waste
repository, in 2023

Source: World Nuclear Association

GREEN DEAL COMPLEXITIES TO CONSIDER

- Conflict with Nat'l Energy Policies

What counts as "green"?

Countries have different needs, resour., politics

- Import Dependence

Energy Tech (solar, nuclear?)

Critical Raw Materials (e.g. China)

- Geopolitics – Russia, M. East, US?

- Realism vs Ideology





HE CAN'T HELP



THANK YOU
FOR
LISTENING!

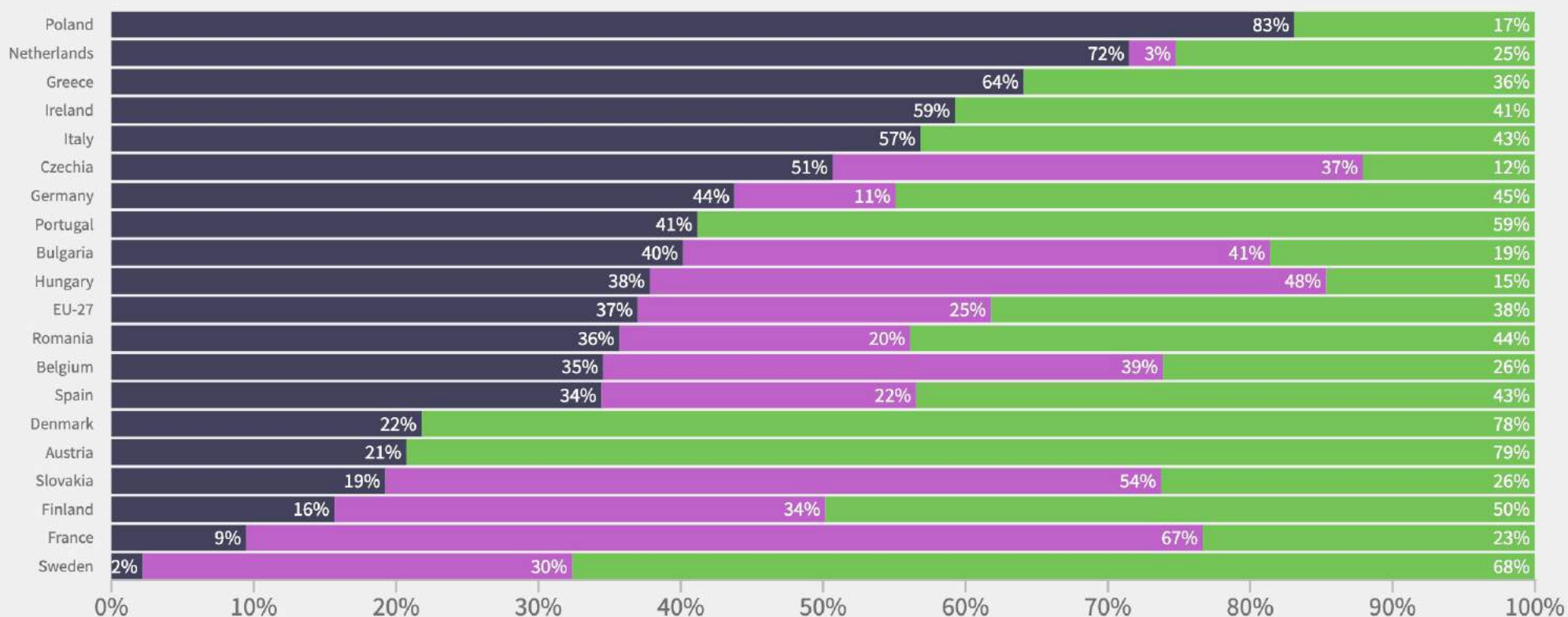
QUESTIONS?

Extra Slide – EU electricity sources

Electricity Generation

EMBER

Fossil Nuclear Renewables



Europe's Power Sector in 2020, published by Ember and Agora Energiewende on 25th January 2021.
The 19 countries displayed account for > 97% of EU-27 electricity consumption.