



THE JUST ENERGY TRANSITION & GLOBAL TRADE

WTO COMMITTEE ON TRADE AND ENVIRONMENT 23.04.2024

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OVERVIEW



INTRODUCTION



EMERGING ISSUES



THE JUST ENERGY TRANSITION



LAW, POLICY, & REGULATION



THE JUST TRANSITION & TRADE



CONCLUSION



100 000–10 000 **HUNTER-GATHERER SOCIETIES**

Energy: Domestication of fire,
cooked meat - increase in brain size.
Communication: Spoken language
Society: Organised tribes



10 000–1700 **THE AGRICULTURAL SOCIETIES**

Energy: Domestication of
plants and animals
Communication: Written language
Society: Chiefdoms, kingdoms,
city-states, empires, early
nation-states



1700–2000 **THE INDUSTRIAL SOCIETIES**

Energy: Fossil fuels, steam engine,
combustion engine, electricity, nuclear
Communication: Printed texts, radio
and television, mass media, internet
Society: Democracy, the welfare state,
information society, globalisation



2000– **A FOURTH INDUSTRIAL REVOLUTION? A GLOBAL BRAIN?**

Energy: Renewables, smart grids
Communication: Internet of
everything, artificial intelligence
Society: Peer-to-peer society of
networked citizens, automation
of both material and immaterial
production

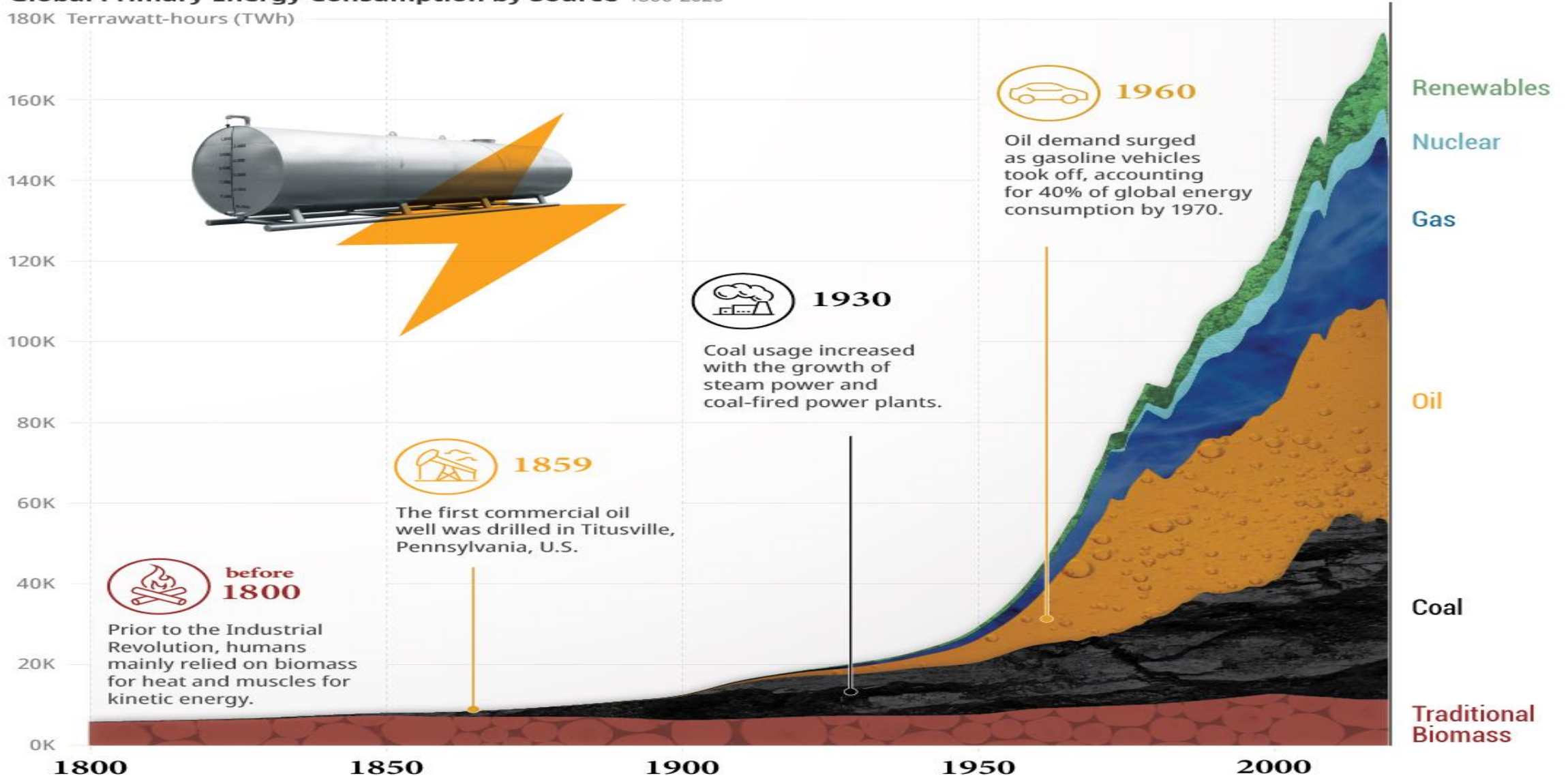


The economic and technological advances over the last 200 years have transformed how we produce and consume energy.

Here's how the global energy mix has evolved since 1800.

Global Primary Energy Consumption by Source 1800-2020

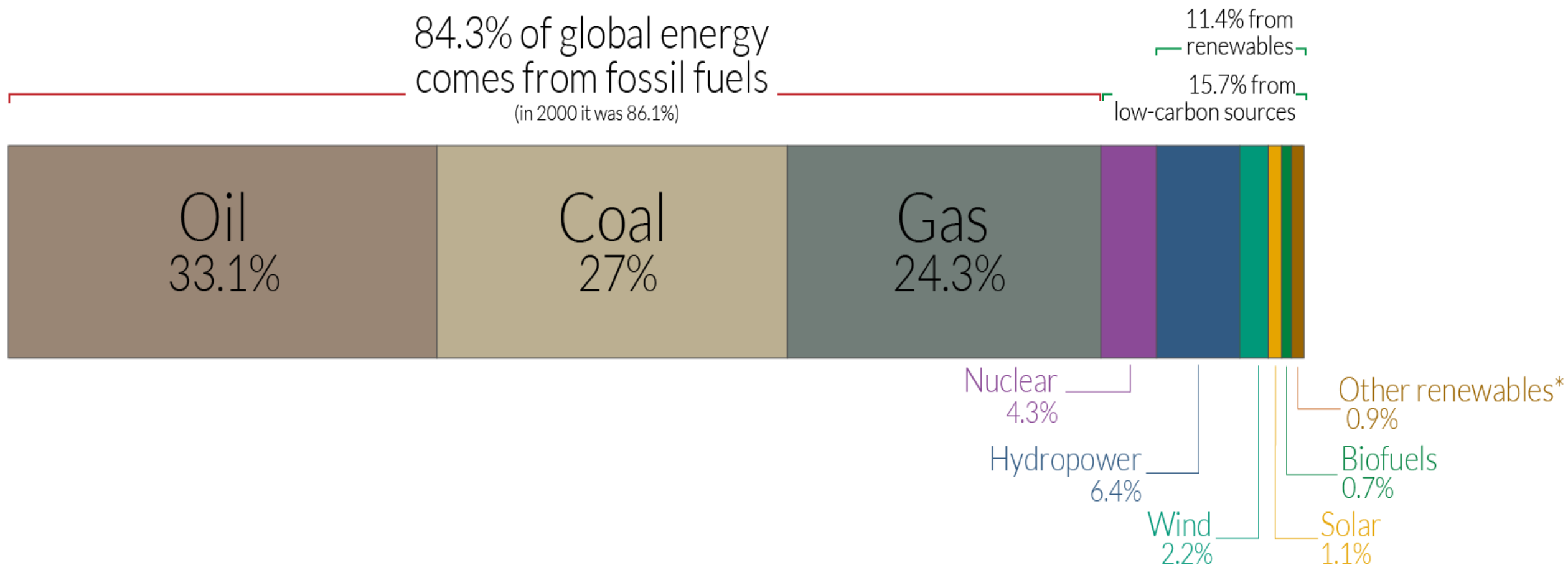
180K Terrawatt-hours (TWh)



Source: Vaclav Smil (2017), BP Statistical Review of World Energy via Our World in Data

Global primary energy consumption by source

The breakdown of primary energy is shown based on the 'substitution' method which takes account of inefficiencies in energy production from fossil fuels. This is based on global energy for 2019.



*'Other renewables' includes geothermal, biomass, wave and tidal. It does not include traditional biomass which can be a key energy source in lower income settings.

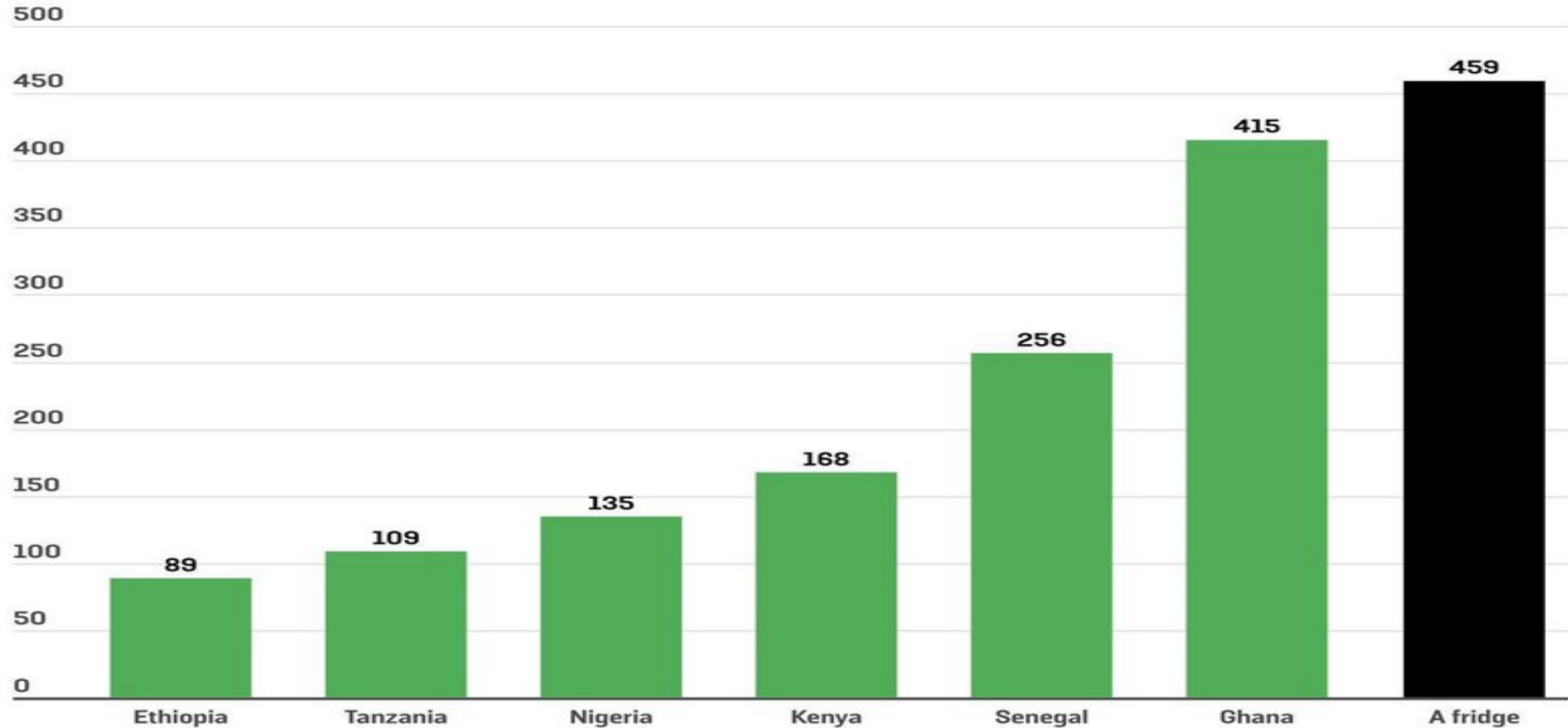
OurWorldinData.org – Research and data to make progress against the world's largest problems.

Source: Our World in Data based on BP Statistical Review of World Energy (2020).

Licensed under [CC-BY](https://creativecommons.org/licenses/by/4.0/) by the author Hannah Ritchie.

Energy Use Per Person in Africa vs. a Typical American Refrigerator

Annual kilowatt-hours of electricity consumed per capita, 2017

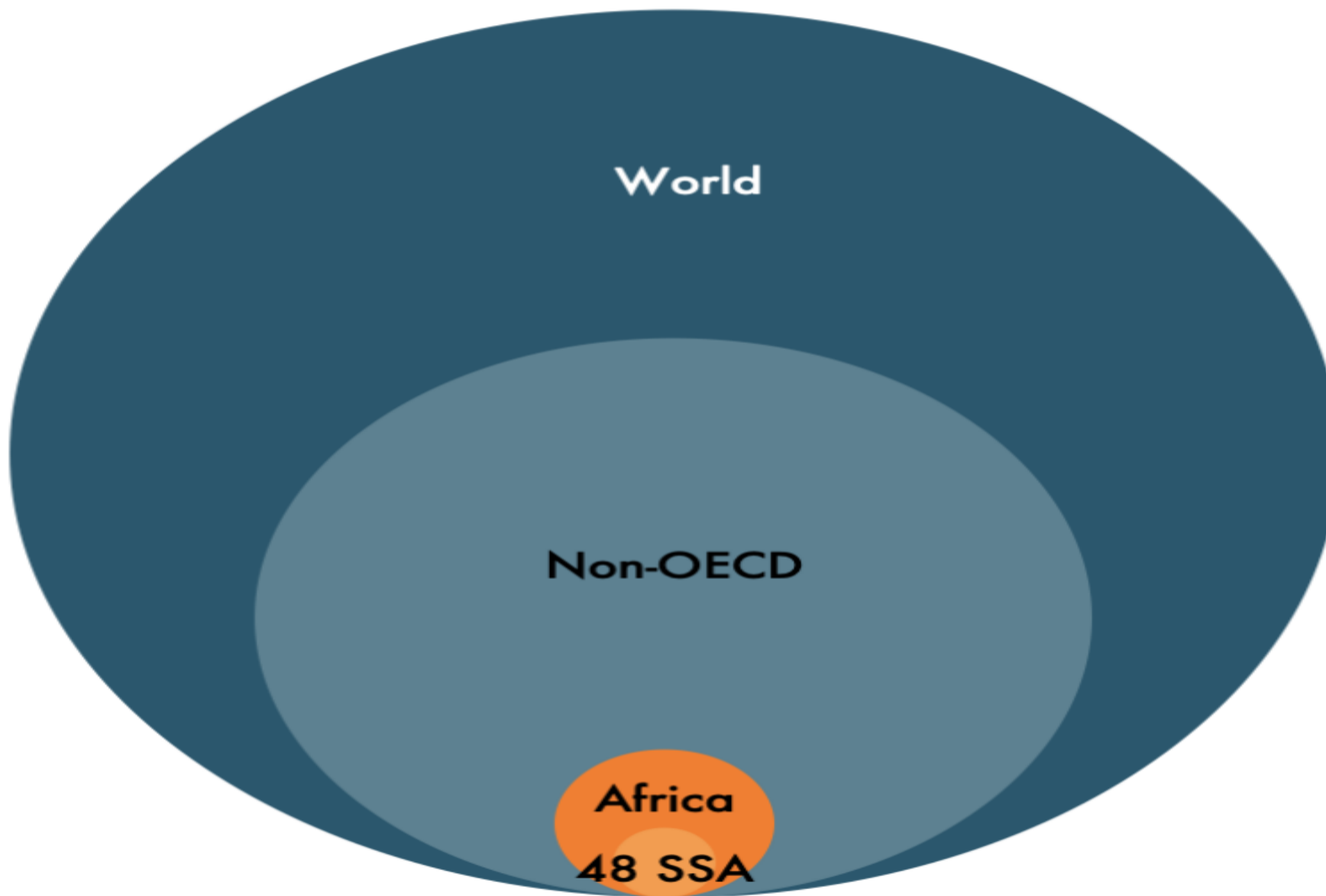


SOURCE: INTERNATIONAL ENERGY AGENCY AND ENERGY FOR GROWTH HUB





Cumulative CO2 Emissions

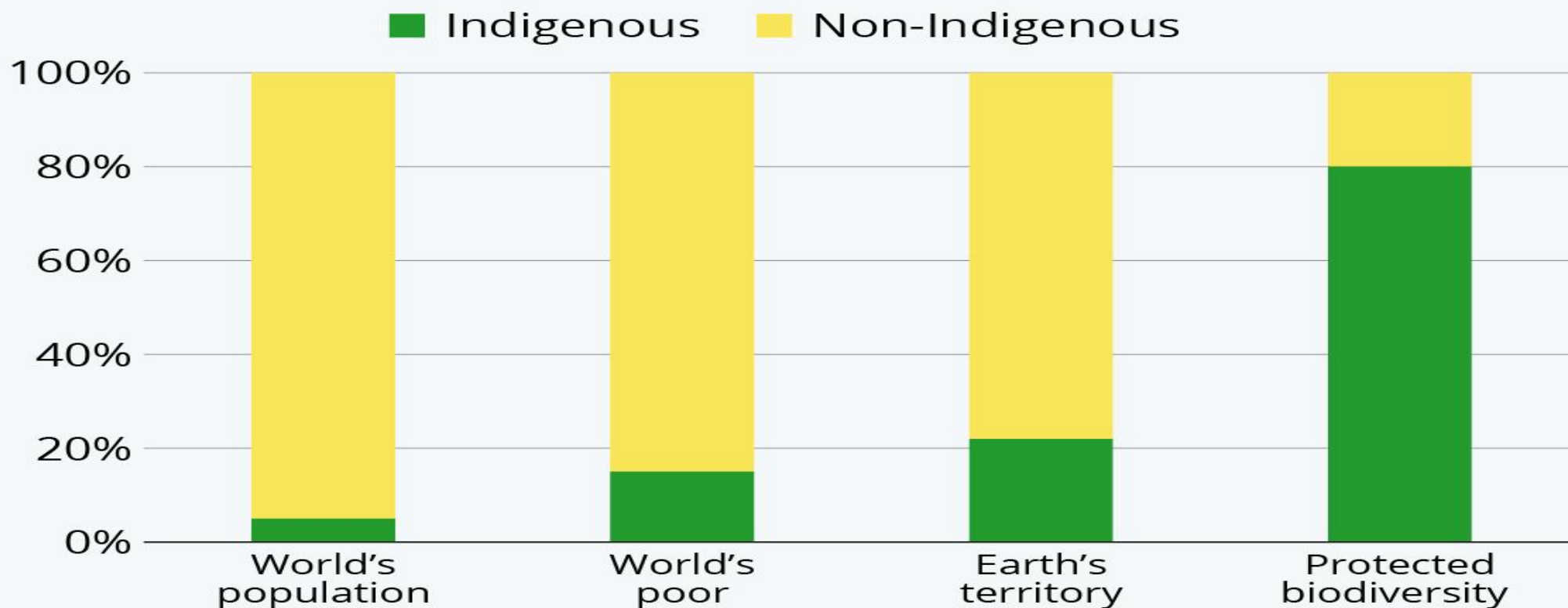


Non-OCED/Africa/48 SSA – 40%/2%/0.6%

Source: Cumulative emissions data from Our World in Data, 2017.

Indigenous Communities Protect 80% Of All Biodiversity

Share of indigenous and non-indigenous communities by various categories



Source: World Bank via Australia: State of the Environment 2021

THE JUST ENERGY TRANSITION

UNDERPINNED BY ENERGY JUSTICE

- ‘Energy justice’ identifies:
 - a. when and where injustices occur in energy systems; and
 - b. How best law and policy can respond
- It is both normative and prescriptive (identifies and suggests solutions)
- Three (Five) Tenets:
 - i. Distributional
 - ii. Procedural,
 - iii. Recognition
 - iv. and restorative
 - v. + cosmopolitan

EMERGING ELECTRO WORLD

The transition to electro-economy is likely to benefit battery manufacturing hubs like China, Europe and the US

Poland, Germany and Austria are emerging as the **battery manufacturing hubs** of the world. This will create a ready market for **Finland** and other mineral-rich European countries.

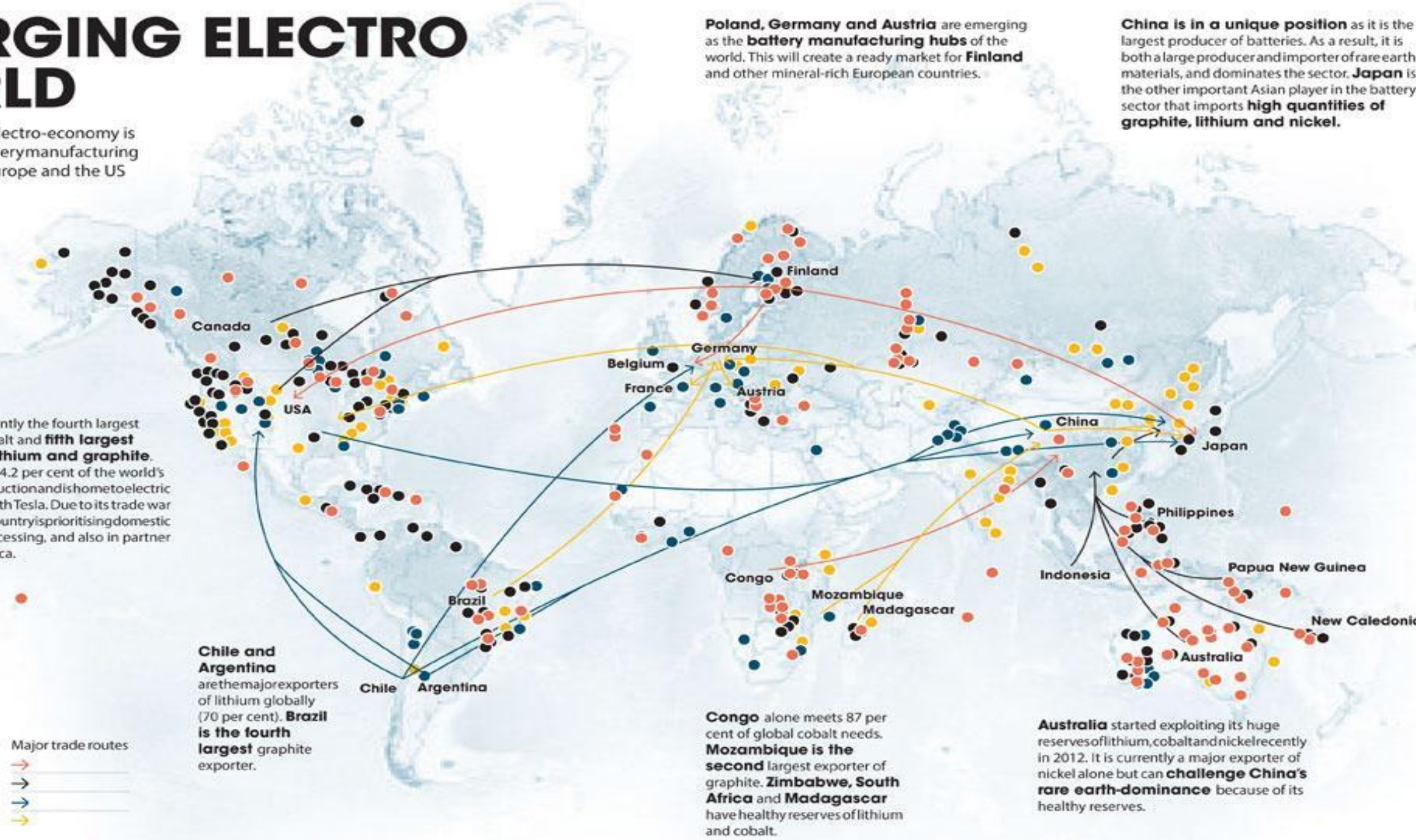
China is in a unique position as it is the largest producer of batteries. As a result, it is both a large producer and importer of rare earth materials, and dominates the sector. **Japan** is the other important Asian player in the battery sector that imports **high quantities of graphite, lithium and nickel**.

The US is currently the fourth largest importer of cobalt and **fifth largest importer of lithium and graphite**. It accounts for 14.2 per cent of the world's battery cell production and is home to electric vehicle behemoth Tesla. Due to its trade war with China, the country is prioritising domestic mining and processing, and also in partner countries in Africa.

Chile and Argentina are the major exporters of lithium globally (70 per cent). **Brazil is the fourth largest graphite exporter**.

Congo alone meets 87 per cent of global cobalt needs. **Mozambique is the second largest exporter of graphite**. **Zimbabwe, South Africa and Madagascar** have healthy reserves of lithium and cobalt.

Australia started exploiting its huge reserves of lithium, cobalt and nickel recently in 2012. It is currently a major exporter of nickel alone but can **challenge China's rare earth dominance** because of its healthy reserves.



THE JUST ENERGY TRANSITION & TRADE

Trade-related climate measures by WTO Members

- CBAM,
- Eco-labelling,
- Environmental Goods and Services (EGS) Agreements

Energy is one of the greatest drivers in trade

- Energy as a goods & service pricing determinant,
- carbon intensity & emissions (20-30% attributed to trade),
- Security & human rights concerns (direct correlation with international disputes/arbitration)

Trade and investment can lead to deep decarbonisation of industry/ Net Zero

- Captive renewables for manufacturing and potential H2
- Hydrogen co-generation for both electricity and heat in heavy industry (steel, cement...)
- Complementary e.g. EU CBAM Combined Nomenclature (CN) codes include hard to abate sectors (Cement, Iron and Steel, Aluminium, Fertilisers, Elec, Hydrogen)

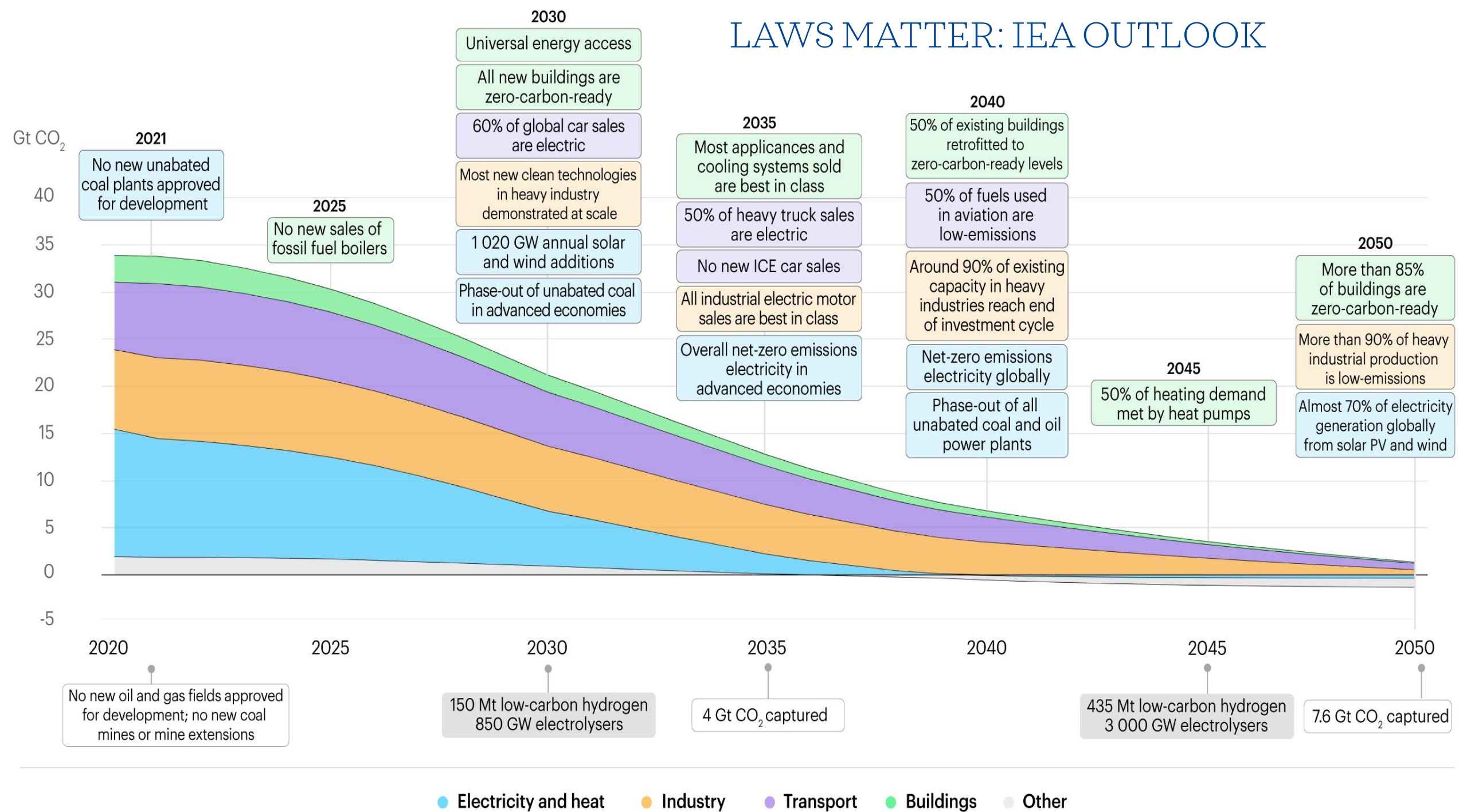
One transition leads to the other (interdependent energy -trade transition Intersectionality)

- Resource perspective: fossil fuels to renewables (coupled
- Shift of focus in both trade and energy from products to people and services
- Geographically: energy & production closer to resources => import substitution H2 & fertiliser

JUST TRANSITIONS?



LAWS MATTER: IEA OUTLOOK





AMBITION:

Mismatched global goals
(decarbonisation & equity aims)

-vs-

resources needed to achieve them.



BREAKDOWN:

Disaggregated (inter)national
policy

-vs-

Nationalist local planning &
instruments.



COLLABORATION:

Public, private, third sector actors

-vs-

Intersectionality of sustainable
trade, energy, finance, &
governance,

