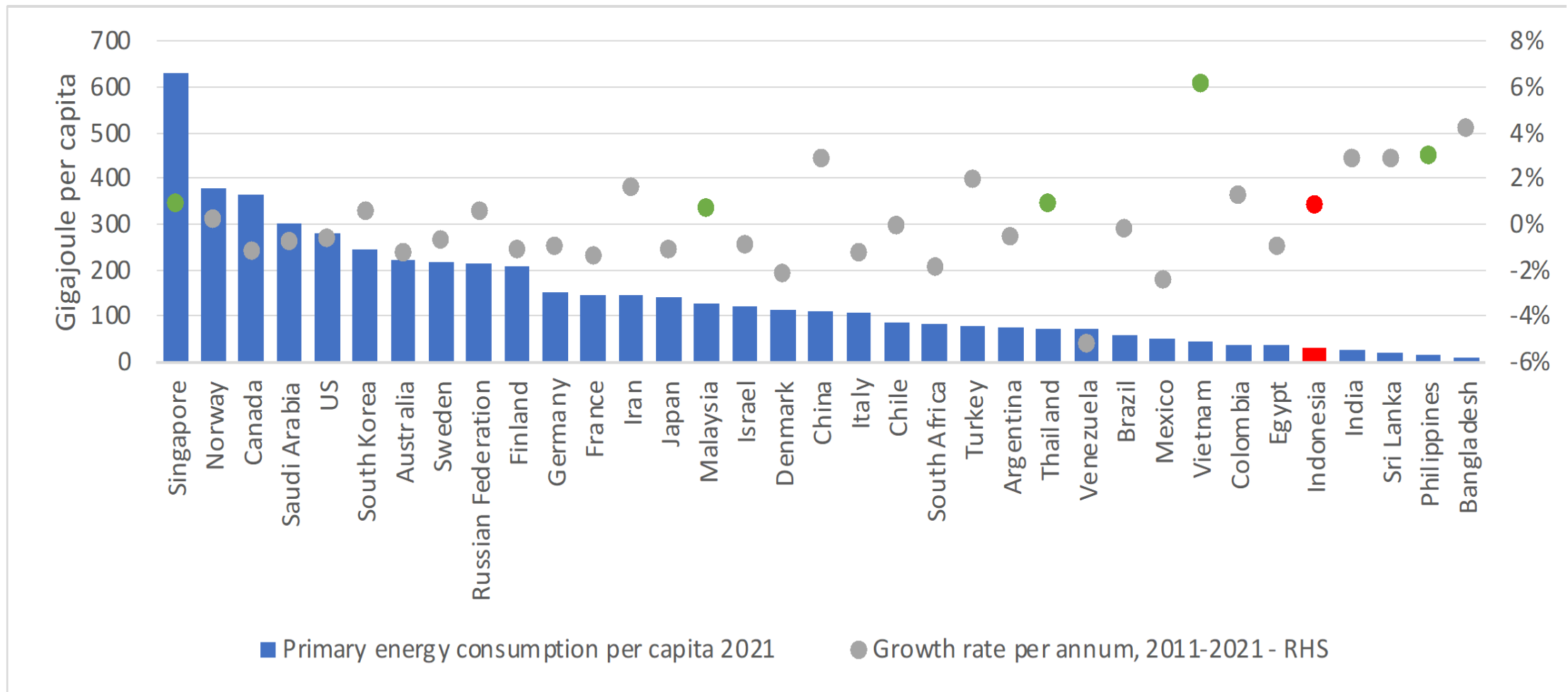


ACCELERATING THE ENERGY TRANSITION

Faisal Basri | September 13, 2023



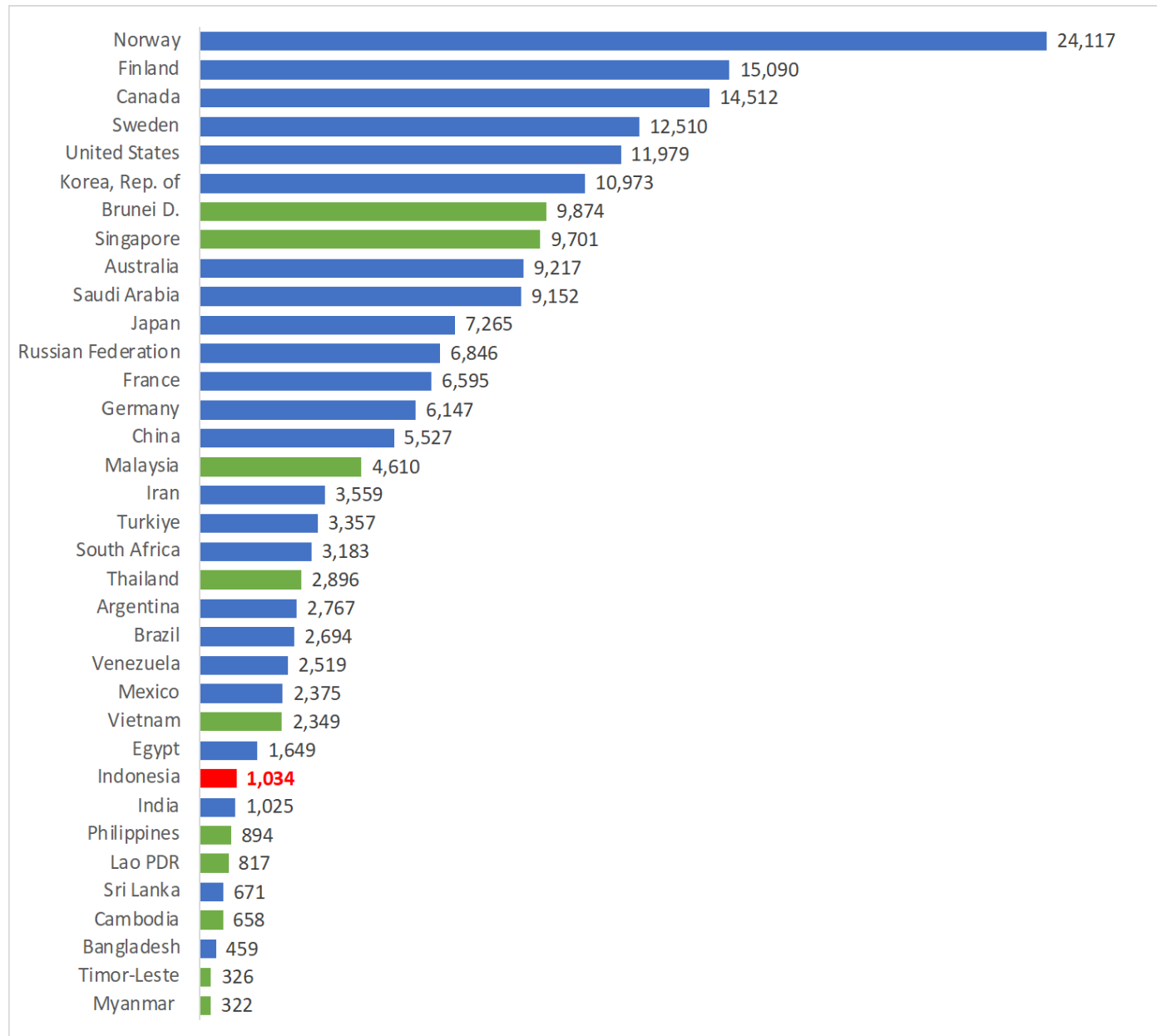
Primary energy consumption per capita, 2021



Source: BP Statistical Review of World Energy.

PRIMARY_ENERGY_CONSUMPTION_PER_CAPITA_2021-230314

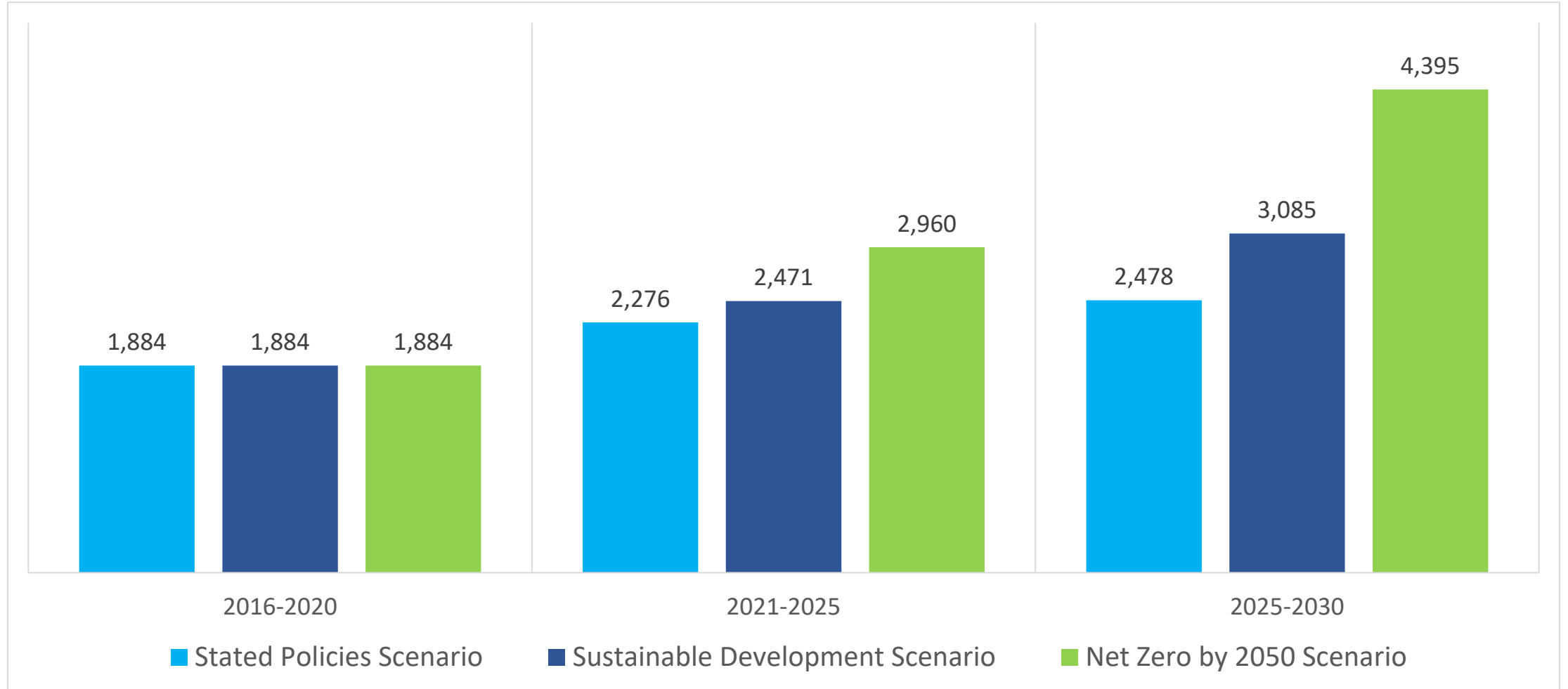
Electricity consumption per capita, 2021 (kWh)



Source: [countryeconomy.com-https://countryeconomy.com/energy-and-environment/electricity-consumption](https://countryeconomy.com/energy-and-environment/electricity-consumption)

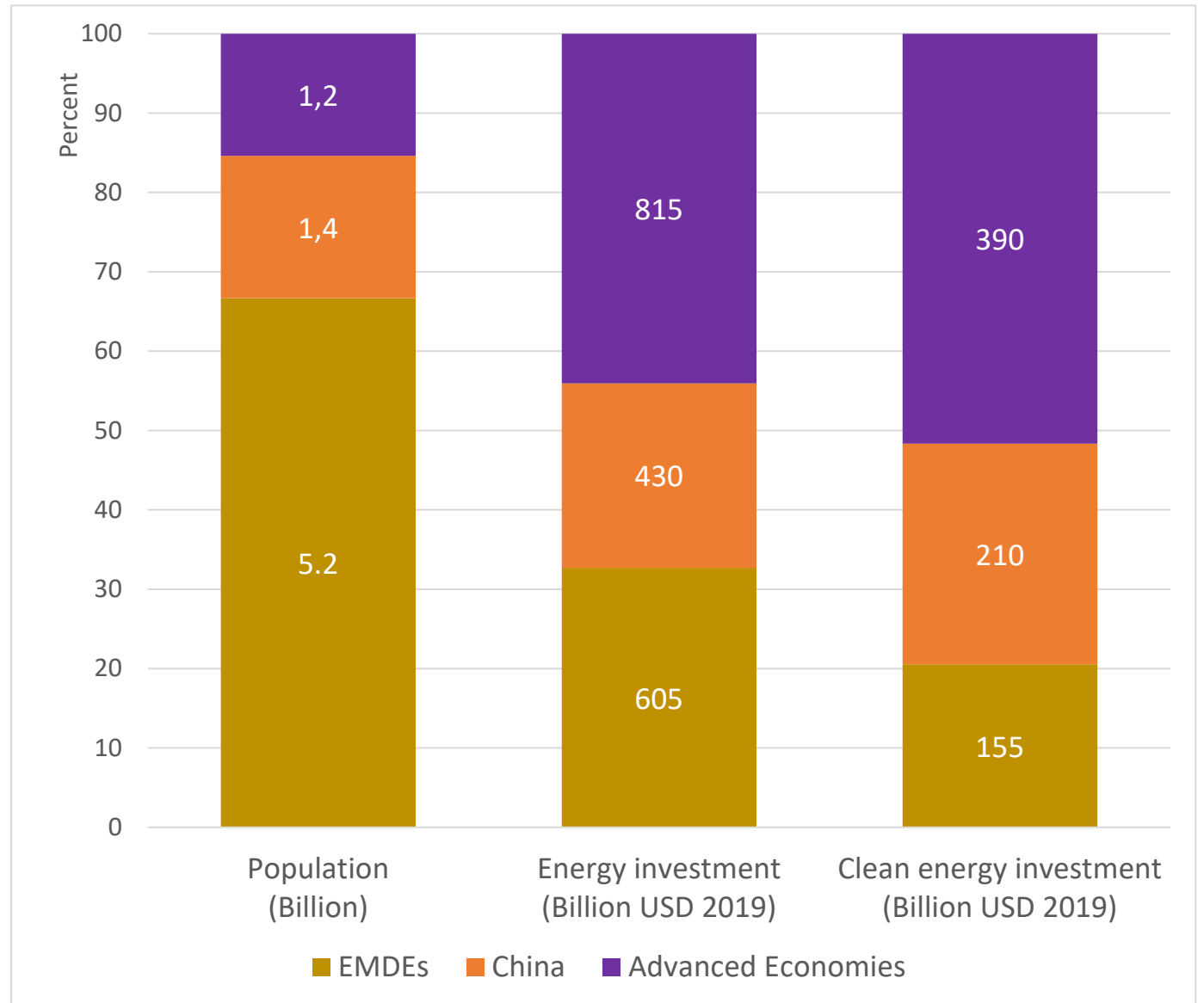
Total investment by scenario

billion USD (2019)



Source: International Energy Agency (IEA), 25 June 2021.

Key indicators for EMDEs in 2021



Source: International Energy Agency (IEA), Financing Clean Energy Transitions in Emerging and Developing Economies, June 2021.

Financing clean energy transitions in Emerging and Developing Economies

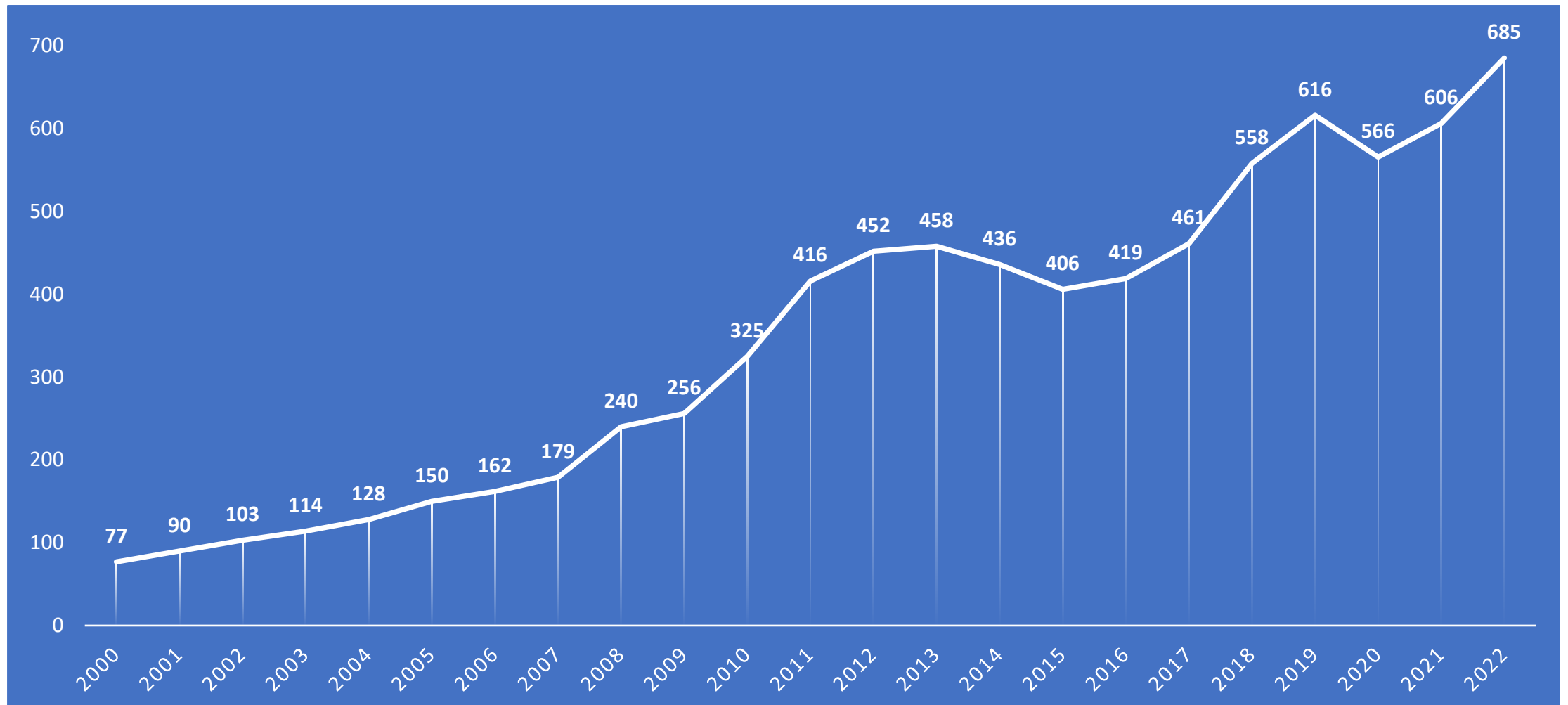
"There is no shortage of money worldwide, but it is not finding its way to where it is most needed. Governments need to give international public finance institutions a strong strategic mandate to finance clean energy transitions in the developing world."

DR Fatih Birol
Executive Director
International Energy Agency

Funding opportunities

- WIPO (World Intellectual Property Organization)
Green partners
 - ADB
 - South-South Global Assets and Technology Exchange (SS-Gate)
 - EcoMachines Ventures Incubator
 - Korea Technology Finance Corporation (KOTEC)
- Other
 - Climate Funds Update
 - Adaption Funding Interface
 - Private Sector Initiative
 - The Global Environment Facility (FEF)
 - ImpactAssets50
- And much more

Indonesia: coal production (million ton)

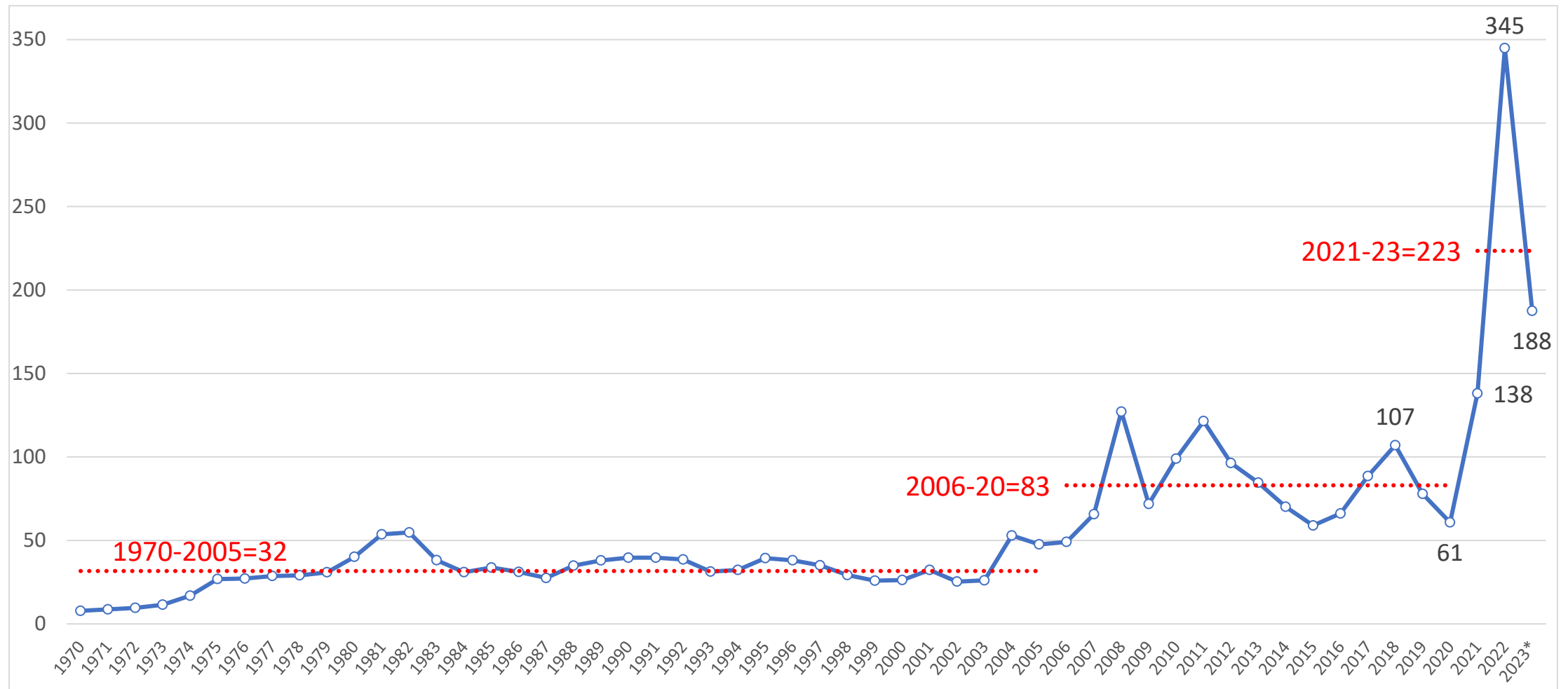


Sources: BPS-Statistics Indonesia for 2000-2020; and Ministry of Energy and Mineral Resources, MODI (Minerba One Data Indonesia) for 2021-2022.

COAL_PRODUCTION-221122

Price of Australian coal

(US\$ per ton)



*Average Januari-August.

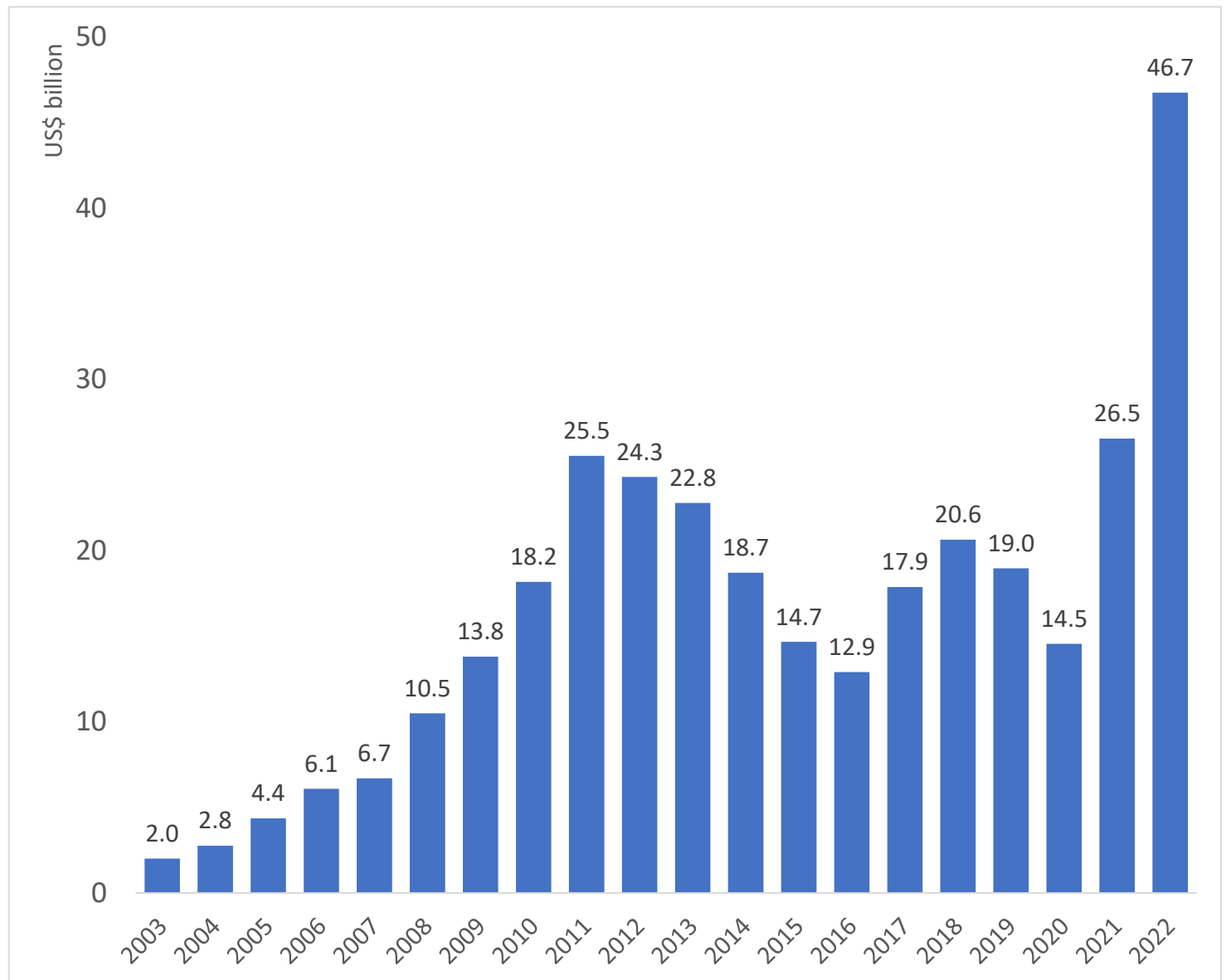
Source: World Bank.

Main export products based on 2-digit HS code

Code	Product label	Value			Share		
		2020	2021	2022	2020	2021	2022
TOTAL	All products	163.3	231.6	292.0	100.0%	100.0%	100.0%
27	Mineral fuels, mineral oils and products of their distillation; bituminous substances; mineral ...	25.6	45.1	71.0	15.7%	19.5%	24.3%
15	Animal, vegetable or microbial fats and oils and their cleavage products; prepared edible fats; ...	20.7	32.9	35.2	12.7%	14.2%	12.1%
72	Iron and steel	10.8	20.9	27.8	6.6%	9.0%	9.5%
85	Electrical machinery and equipment and parts thereof; sound recorders and reproducers, television ...	9.2	11.8	14.6	5.7%	5.1%	5.0%
87	Vehicles other than railway or tramway rolling stock, and parts and accessories thereof	6.6	8.6	11.0	4.0%	3.7%	3.8%
26	Ores, slag and ash	3.2	6.4	10.3	2.0%	2.7%	3.5%
38	Miscellaneous chemical products	3.8	6.9	8.5	2.3%	3.0%	2.9%
64	Footwear, gaiters and the like; parts of such articles	4.8	6.2	7.7	2.9%	2.7%	2.7%
84	Nuclear reactors, boilers, machinery and mechanical appliances; parts thereof	5.2	6.3	7.0	3.2%	2.7%	2.4%
40	Rubber and articles thereof	5.6	7.1	6.4	3.4%	3.1%	2.2%
71	Natural or cultured pearls, precious or semi-precious stones, precious metals, metals clad ...	8.2	5.4	6.3	5.0%	2.3%	2.2%
75	Nickel and articles thereof	0.8	1.3	6.0	0.5%	0.6%	2.0%
73	Articles of iron or steel	1.2	1.6	1.8	0.7%	0.7%	0.6%
	TOP-5	73.0	119.3	159.6	44.7%	51.5%	54.6%
	Top-12	104.7	158.9	211.8	64.1%	68.6%	72.5%
	Nickel smelters	12.8	23.8	35.6	7.9%	10.3%	12.2%

Source: International Trade Centre, Trade Statistics.

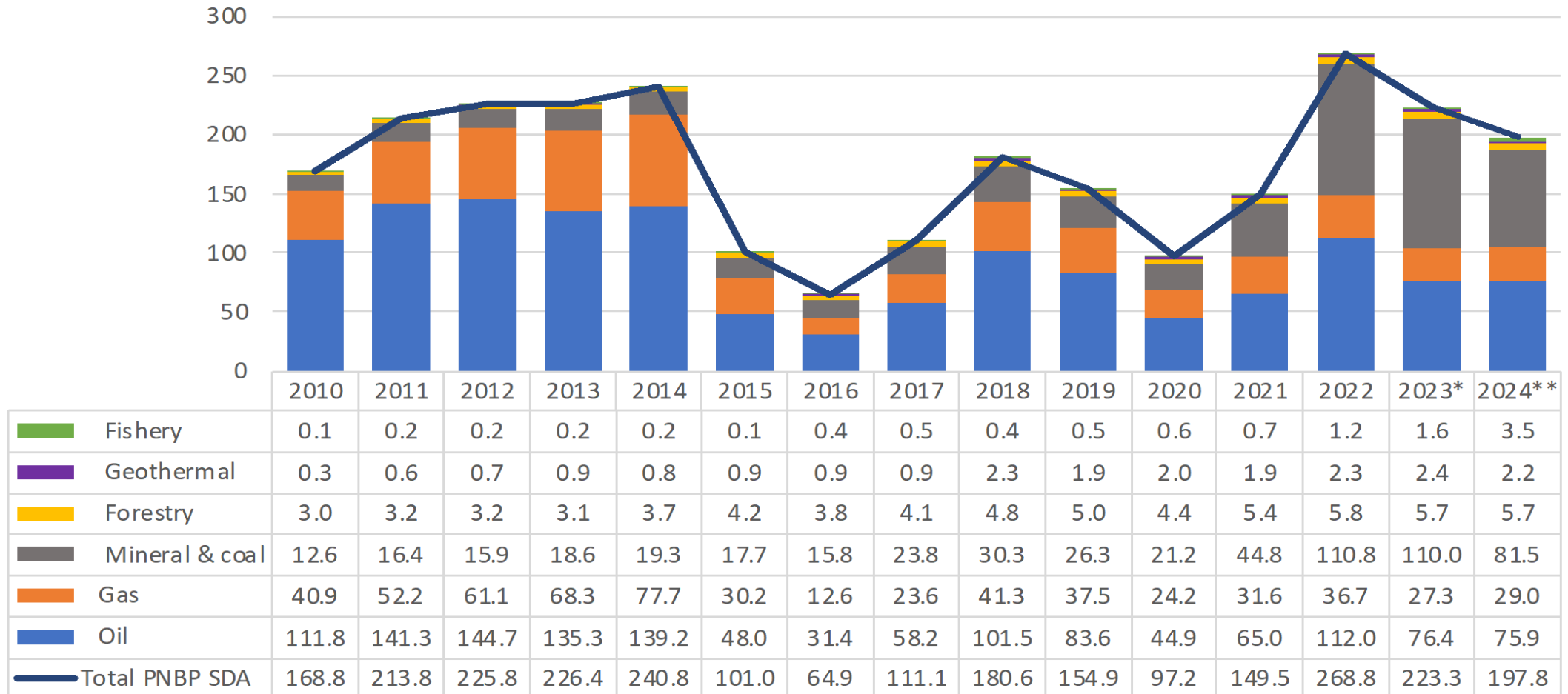
Coal export value (HS 2701)



Source: International Trade Centre, Trade Statistics.

COAL_PRODUCTION_EXPORTS-230912

Penerimaan negara bukan pajak (PNBP) dari sumber daya alam (SDA), Rp triliun



*Outlook. **RAPBN

Sumber: Kementerian Keuangan.

APBN-PNBP_SDA-230911

Commodity price forecasts

	Unit	2020	2021	2022	2023f	2024f
Energy						
Crude oil, Brent	US\$/bbl	42.3	70.4	99.8	84	86
Coal, Australia	US\$/mt	60.8	138.1	344.9	200.0	155.0
Natural gas, Europe	US\$/mmbtu	3.2	16.1	40.3	19.0	17.0
Natural gas, U. S.	US\$/mmbtu	2.0	3.9	6.4	2.7	3.7
Liquefied natural gas, Japan	US\$/mmbtu	8.3	10.8	18.4	18.0	16.0
Agriculture						
Palm oil	US\$/mt	752	1,131	1,276	980	1,020
Soybeans meal	US\$/mt	394	481	548	590	570
Soybeans oil	US\$/mt	838	1,385	1,667	1,120	1,105
Coffee, Arabica	US\$/kg	3.32	4.51	5.63	4.80	4.60
Coffee, Robusta	US\$/kg	1.52	1.98	2.29	2.30	2.25
Rice, Thailand, 5%	US\$/mt	497	458	437	510	490
Wheat, U. S., HRW	\$/mt	232	315	430	355	335
Metals and Minerals						
Nickel	US\$/mt	13,787	18,465	25,834	22,000	20,000
Tin	US\$/mt	17,125	32,384	31,335	24,000	24,500
Copper	US\$/mt	6,174	9,317	8,822	8,500	8,000
Aluminium	US\$/mt	1,704	2,473	2,705	2,400	2,450
Precious Metals						
Gold	US\$/toz	1,770	1,800	1,801	1,900	1,750
Silver	US\$/toz	20.5	25.2	21.8	23.0	22.0
Platinum	US\$/toz	883	1,091	962	1,000	1,050

f = forecast

COMMODITY_PRICES-221109

Source: World Bank, *Commodity Markets Outlook*, April 2023.

ESG Index 2020

Country Name	Rank	Score	Risk Evaluation
Finland	2	10.13	Very Low
Denmark	4	11.94	Very Low
United Kingdom	21	18.13	Low
Singapore	38	31.71	Low
Mexico	60	42.98	Medium
Brazil	62	43.16	Medium
Brunei Darussalam	71	44.71	Medium

Country Name	Rank	Score	Risk Evaluation
South Aafrica	85	48.38	Medium
Turkey	102	51.64	Medium
Egypt, Arab Rep.	111	57.07	Medium
Philippines	117	59.36	High
Indonesia	123	60.77	High
India	146	69.05	High
Ethiopia	160	72.49	Very High

Notes: With a global coverage of 176 countries and territories the ESG (Environmental, Social & Governance) Index is dedicated to measuring risks related to the environment, human rights and health & safety based on 44 variables. Country results are presented on a 0-100 scale, where 0 corresponds to the lowest risk and 100 corresponds to the highest risk.

Source: Global Risk Profile — <https://risk-indexes.com/esg-index/>

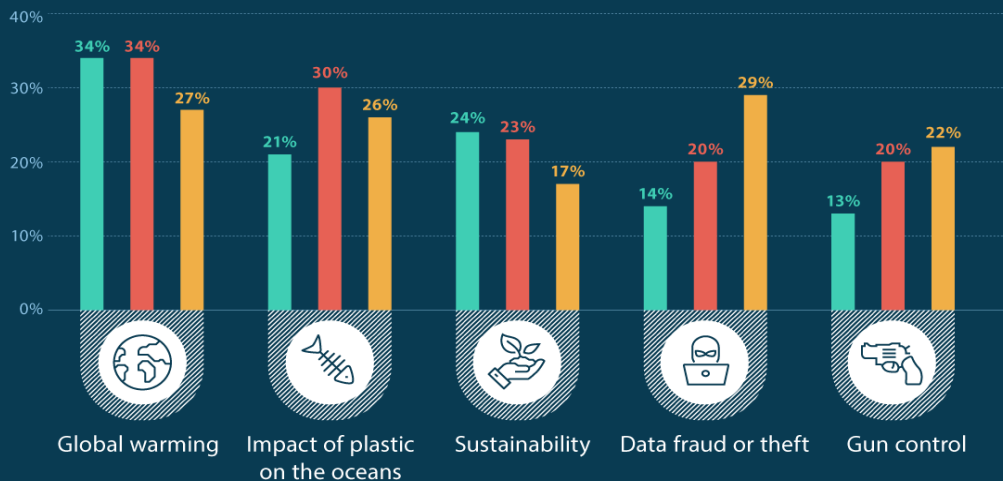
What issues do values-driven investors care about?

VISUAL CAPITALIST DATASTREAM

The Top Issues Value-Driven Investors Care About, By Age Group

Values-driven investors try to align their investment portfolios with their personal beliefs. But their top concerns look a bit different, depending on their age group.

Issues investors want addressed by their portfolios Ages 25-39 40-54 55+



Unsurprisingly, younger investors care more about long-term issues such as global warming and the impact of plastic in oceans, since they'll be around to deal with the consequences.

More immediate concerns like data fraud are a top concern for those 55+.

Source: New York Life Investments, 2019



Age Group

Issues Investors Want Included in Their Portfolio

25-39 years old

40-54 years old

55+ years old

Global warming/climate change	34%	34%	27%
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Impact of plastic on the oceans	21%	30%	26%
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Sustainability	24%	23%	17%
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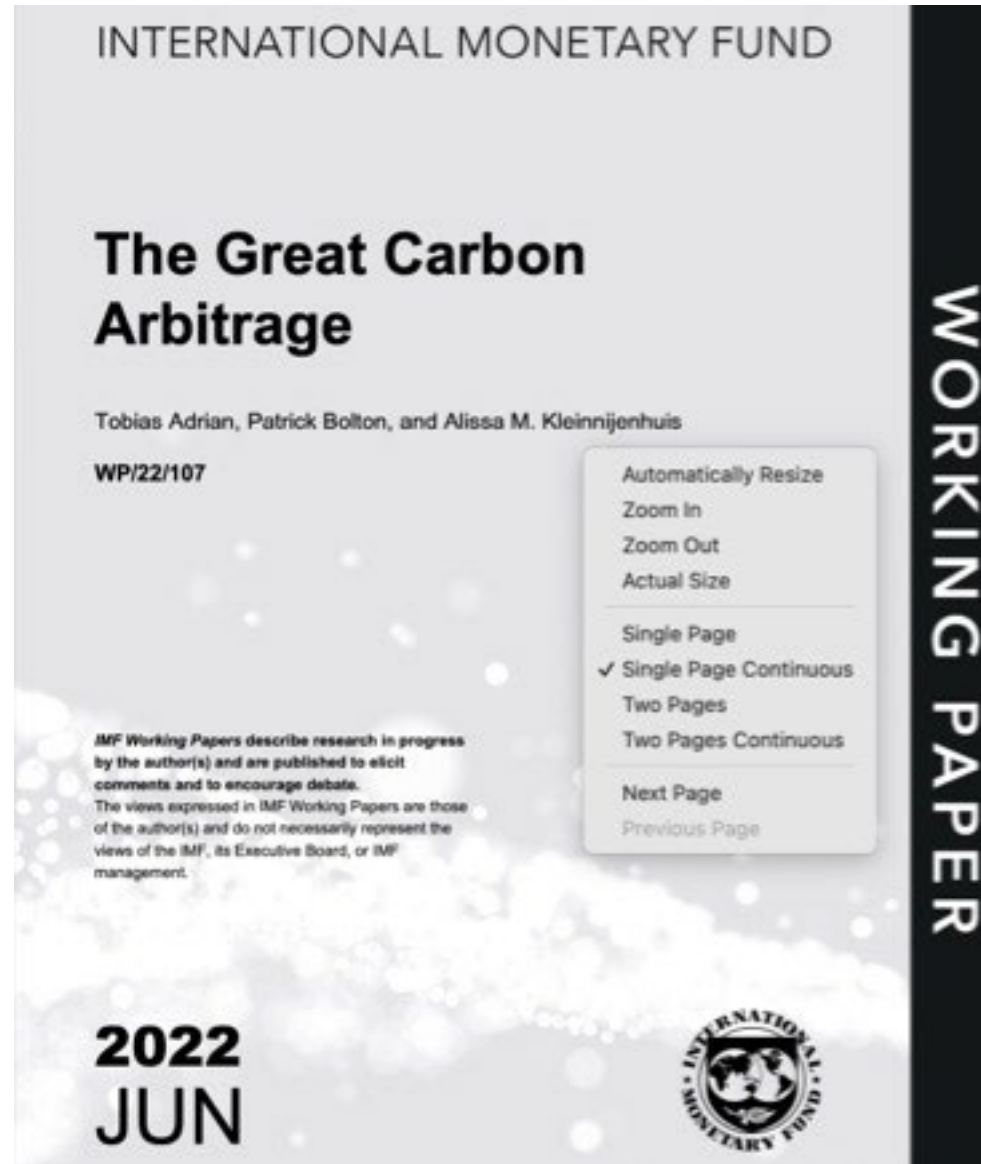
Data fraud or theft	14%	20%	29%
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Gun control	13%	20%	22%
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Source: Principles for Responsible Investment (UNPRI or PRI)

Environmental, Social & Governance (ESG) Investment Principles

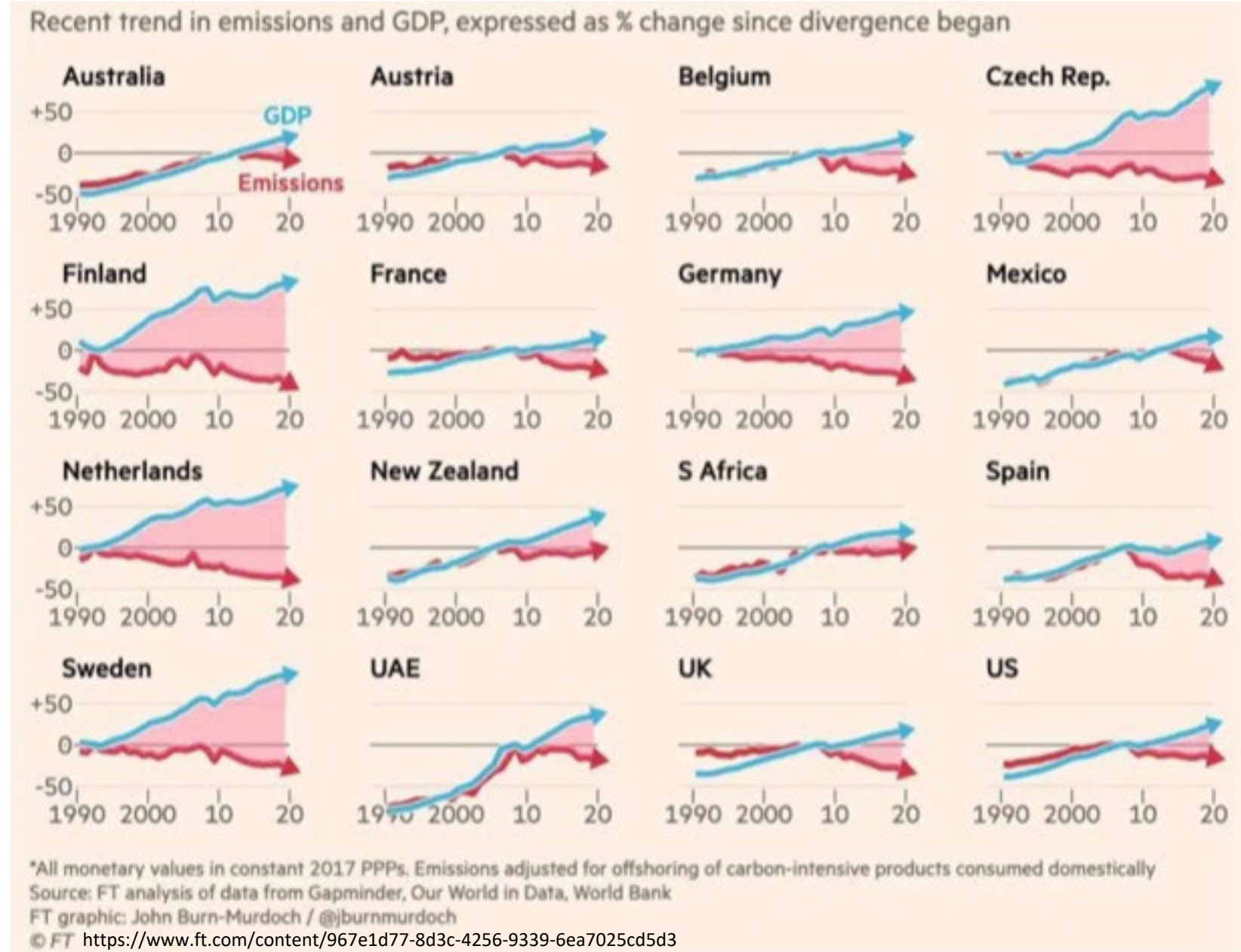
The expected benefits are large by phasing out coal



Summary:

We measure the gains from phasing out coal as the social cost of carbon times the quantity of avoided emissions. By comparing the present value of the benefits from avoided emissions against the present value of costs of ending coal plus the costs of replacing it with renewable energy, our baseline estimate is that the world can realize a net gain of 77.89 trillion USD. This represents around 1.2% of current world GDP every year until 2100. The net benefits from ending coal are so large that renewed efforts, carbon pricing, and other financing policies we discuss, should be pursued.

Dozens of countries are now seeing a steady decline in CO2 emissions alongside economic growth





Thank you



Email:

faisal.basri@gmail.com



Twitter: @FaisalBasri



Blog: faisalbasri.com