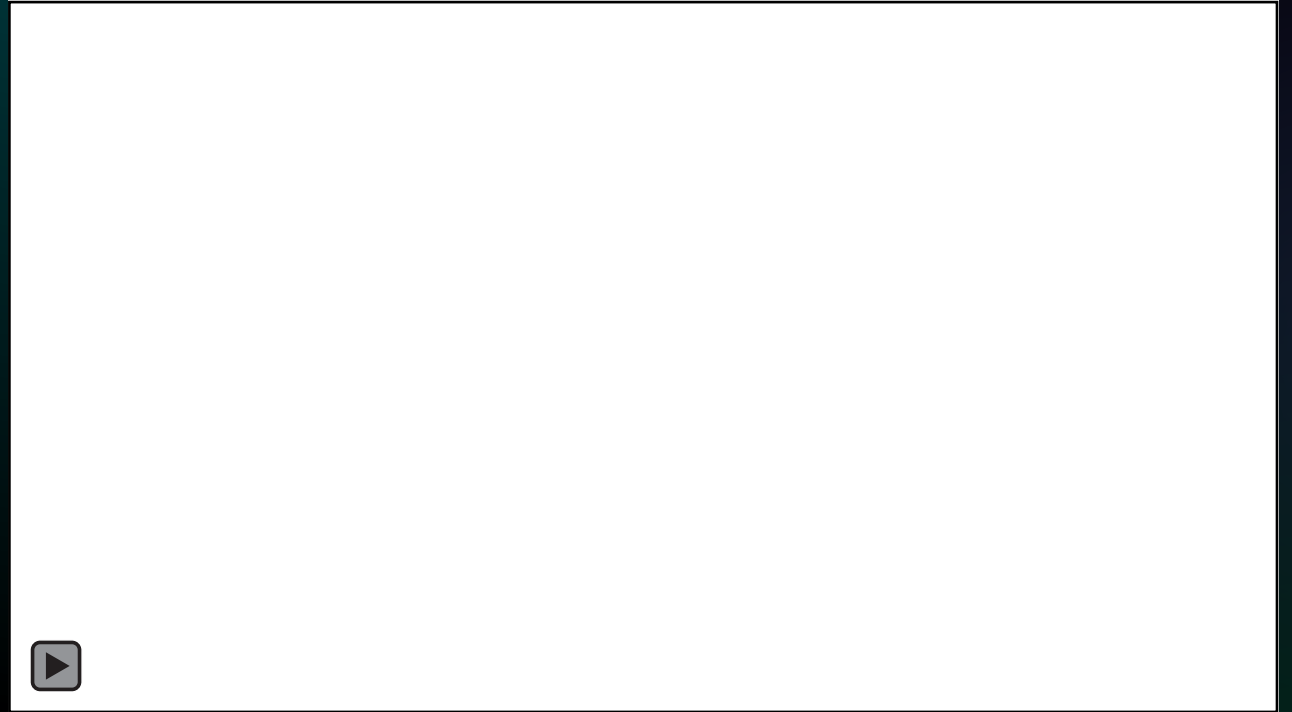



The Future of Coal and Energy Transition



Faisal Basri | August 26, 2021

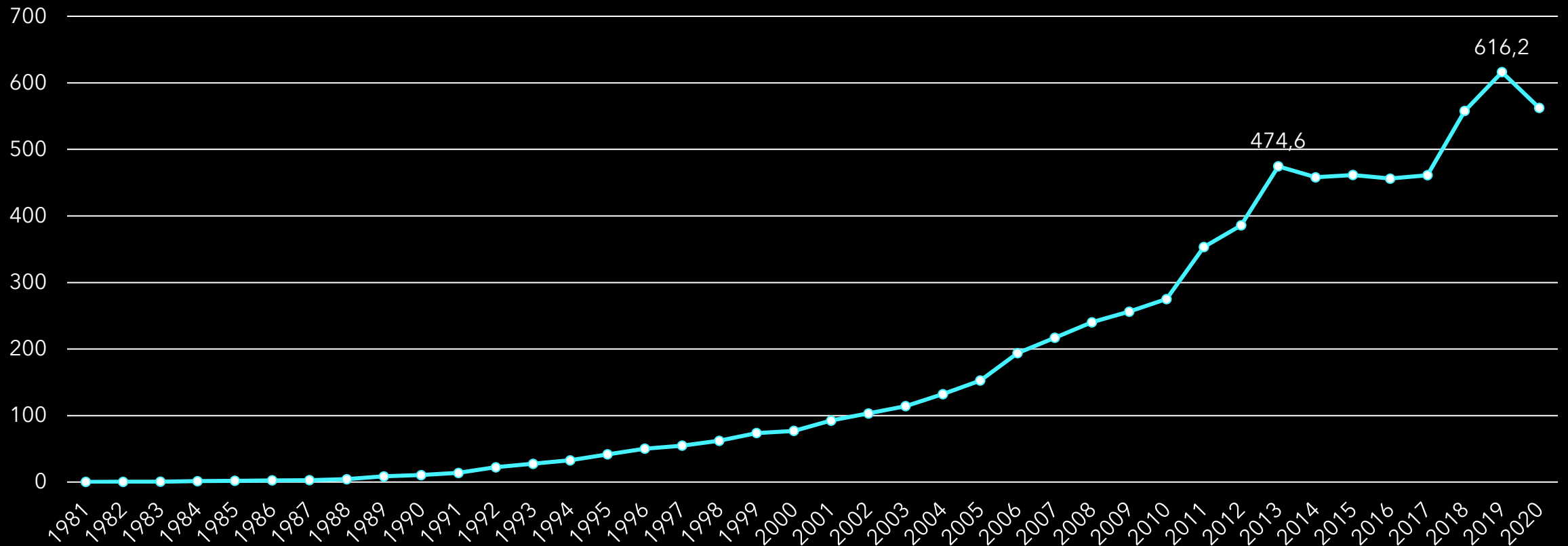
A large, powerful ocean wave is crashing, creating a massive plume of white water and mist. A faint rainbow is visible in the mist on the right side of the image. The water is a deep blue-green color.

*"Every crisis, every storm,
every shock is an
opportunity to do something
new in a different way."*

Indonesia: coal production

Growth rate per annum 2009-2019: 9.2%

Million tonnes



Source: BP's Statistical Review of World Energy 2021.

Coal reserves: Top-5 and Indonesia, 2020

	Anthracite and bituminous (million. tonnes)	Sub-bituminous and lignite (million tonnes)	Total (million. tonnes)	Share of total (percent)	R/P ratio (year)
United States	218,938	30,003	248,941	23.2	>500
Russian Federation	71,719	90,447	162,166	15.1	407
Australia	73,719	76,508	150,227	14.0	315
China	135,069	8,128	143,197	13.3	37
India	105,979	5,073	111,052	10.3	147
Total top-5	605,424	210,159	815,583	75.9	n.a.
Indonesia	23,141	11,728	34,869	3.2	62

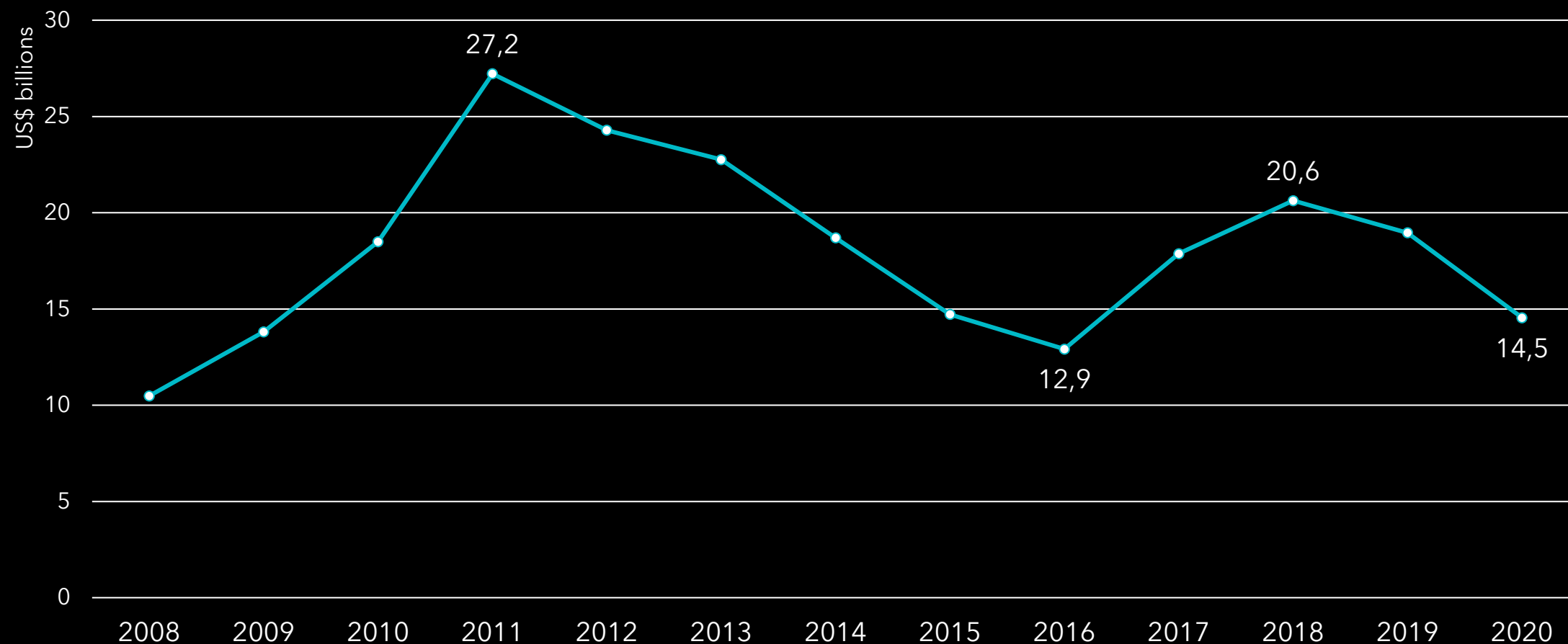
Source: BP's Statistical Review of World Energy 2021.

Coal : share to the world, percent, 2020

	Reserves	Production	Export volume	Import volume
United States	23.2	6.3	5.1	0.4
Russian Federation	15.1	5.2	17.8	n.a.
Australia	14.0	6.2	29.1	n.a.
China	13.3	50.4	0.6	20.8
India	10.3	9.8	0.0	13.3
Indonesia	3.2	7.3	26.8	0.0
Germany	3.3	1.4	0.0	n.a.
Ukraine	3.2	0.3	0.0	n.a.
Poland	2.6	1.3	0.0	n.a.
Kazakhstan	2.4	1.5	0.0	n.a.

Source: BP's Statistical Review of World Energy 2021.

Indonesia: coal export value, 2008-2020



Source: BPS-Statistics Indonesia.

“New” energy is also included in the National Strategic Project (PSN)

Gasifikasi Batu Bara di Tanjung Enim (193)

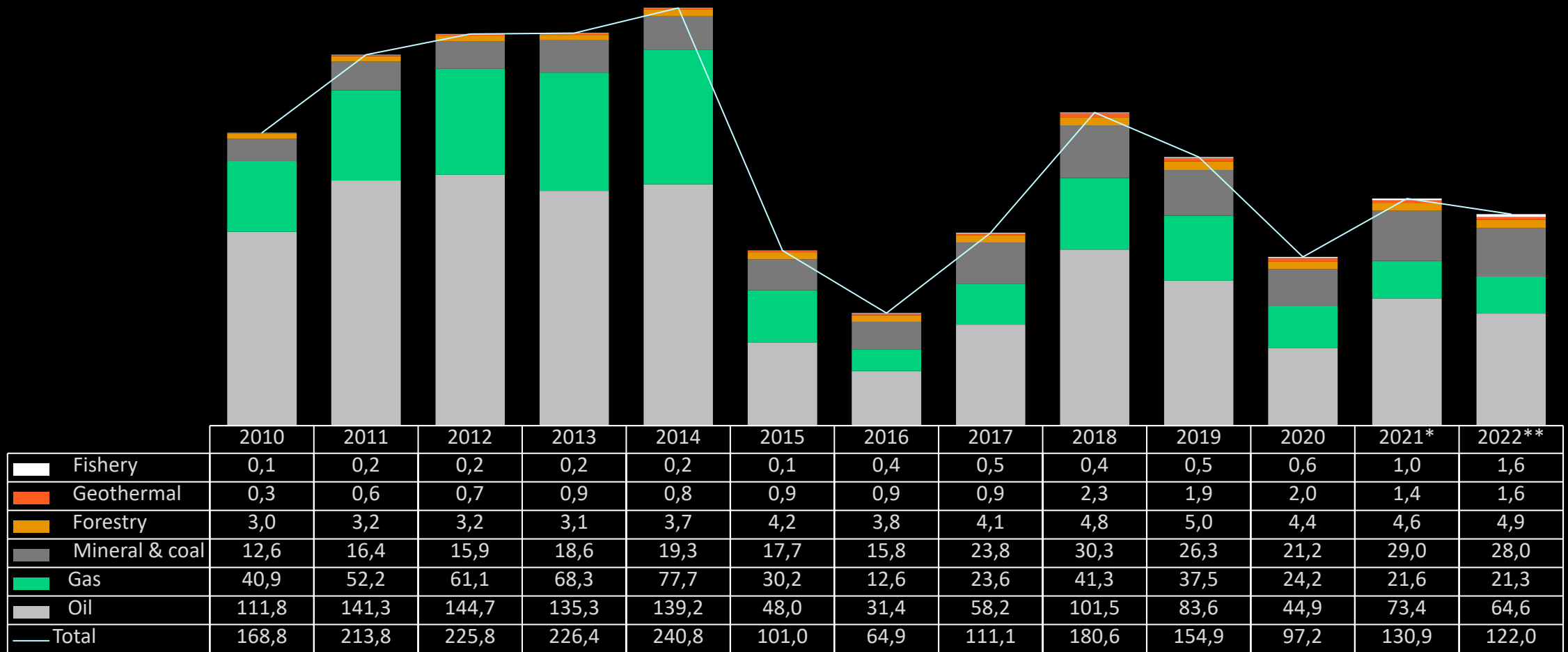
Pembangunan Fasilitas Coal to Methanol di Kutai Timur (194)

Pembangunan Bahan Bakar Hijau (Green Diesel Bio Refinery Revamping RU IV Cilacap, RU III Plaju Green Refinery, Hidrogenasi CPO PT. Pusri Palembang, Katalis Merah Putih Pupuk Kujang (195)

Pengembangan Teknologi Produksi IVO dan Bensin Sawit dengan Katalis Merah Putih yang Terintegrasi dengan Kebun Rakyat (199)

Non-tax revenues from natural resources

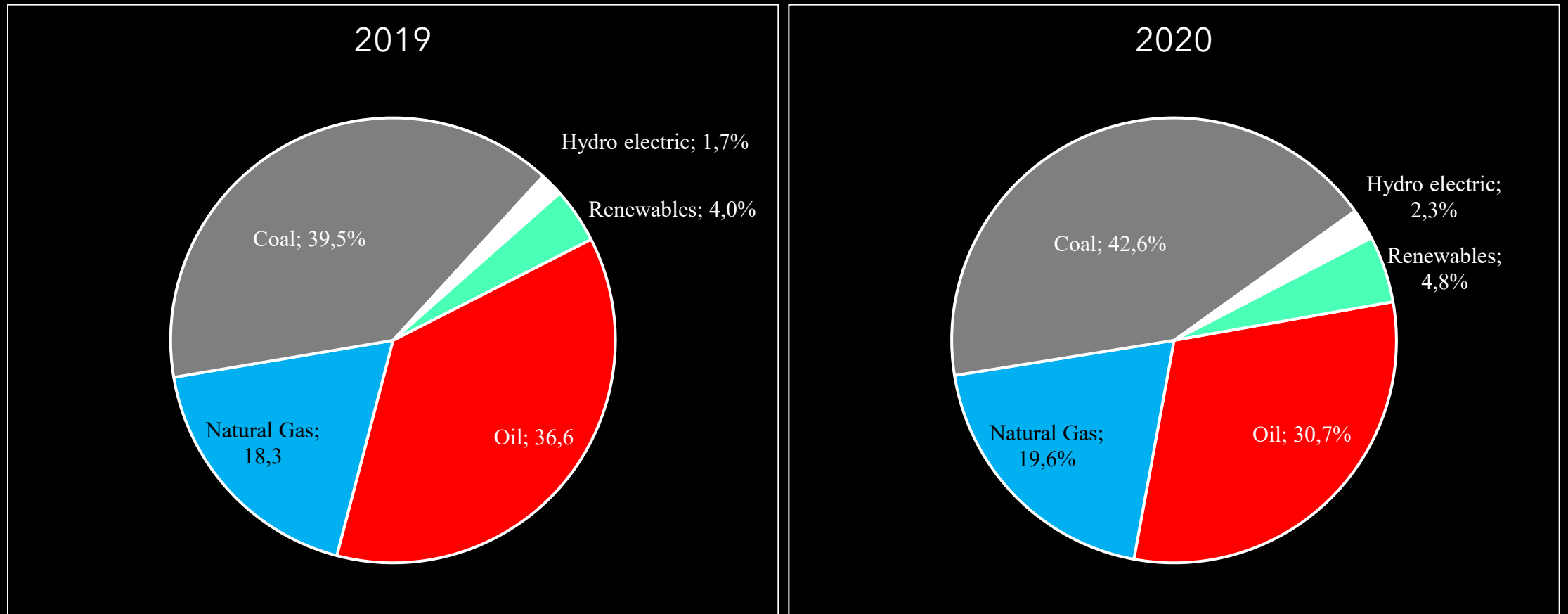
(Rp trillions)



* Outlook. ** Budget draft (RAPBN).

Source: Ministry of Finance.

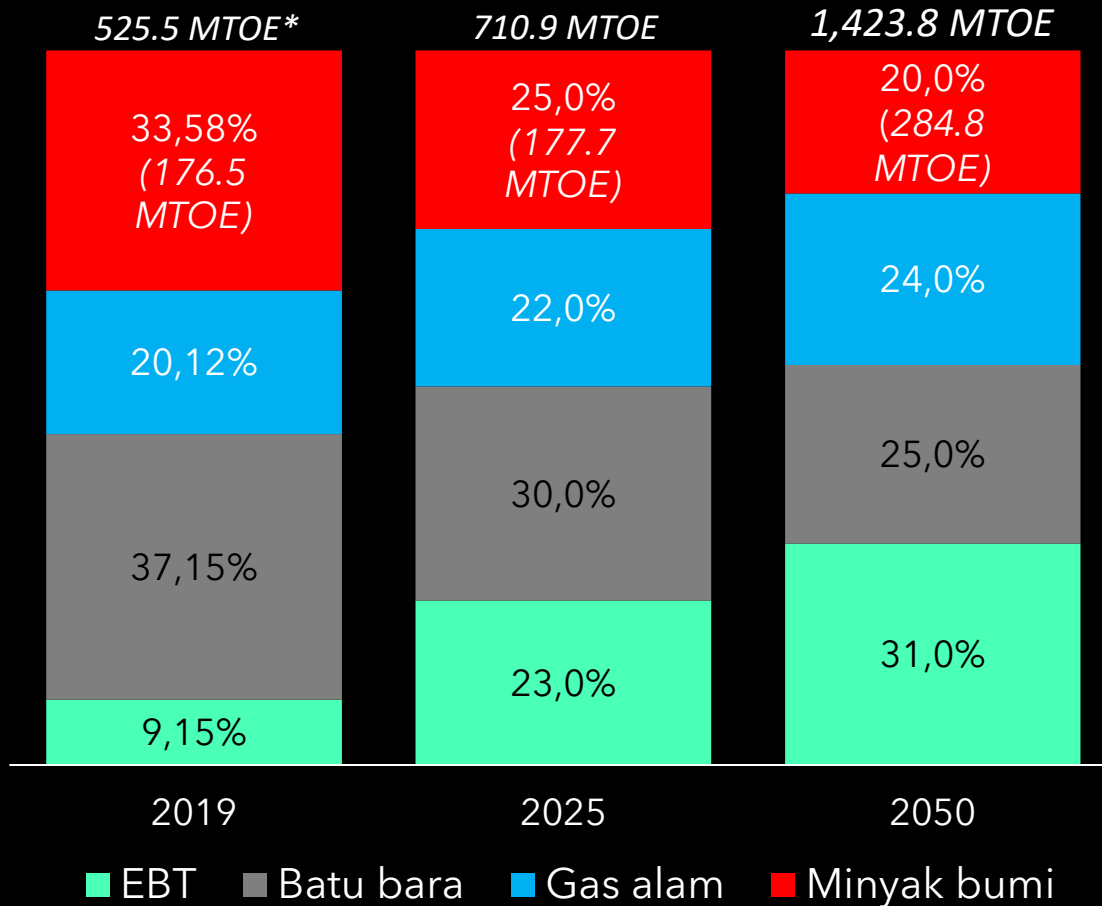
Energy consumption by fuel, 2019 and 2020



Source: BP Statistical Review of World Energy.

Energy mix: primary energy consumption by fuel

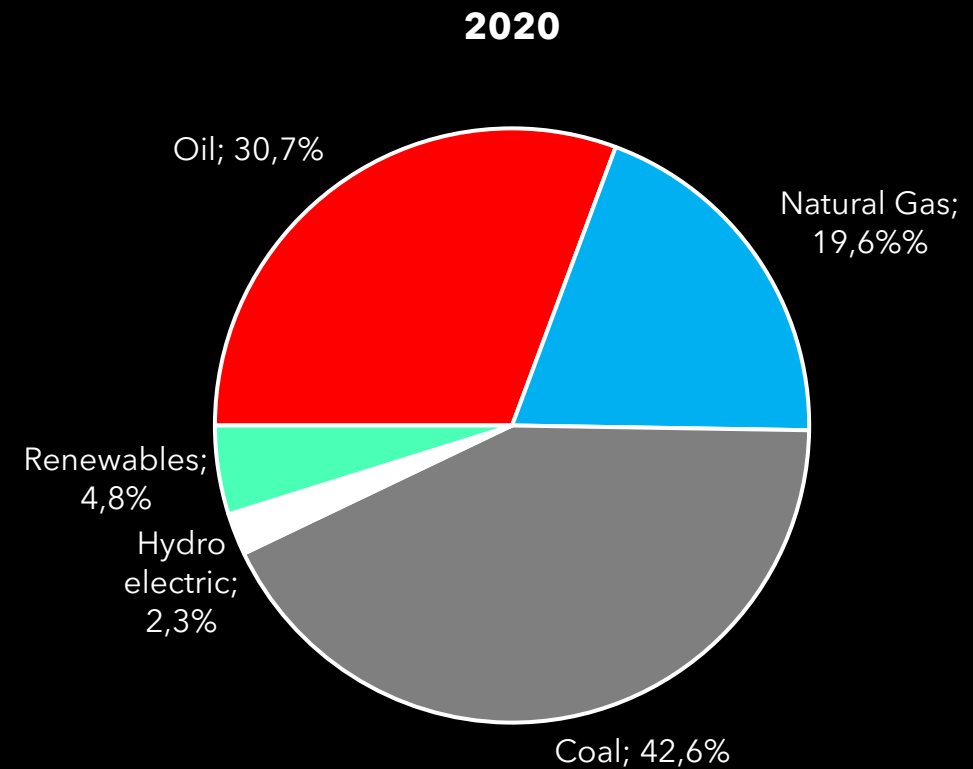
Versi Rencana Umum Energi Nasional



* Realisasi.

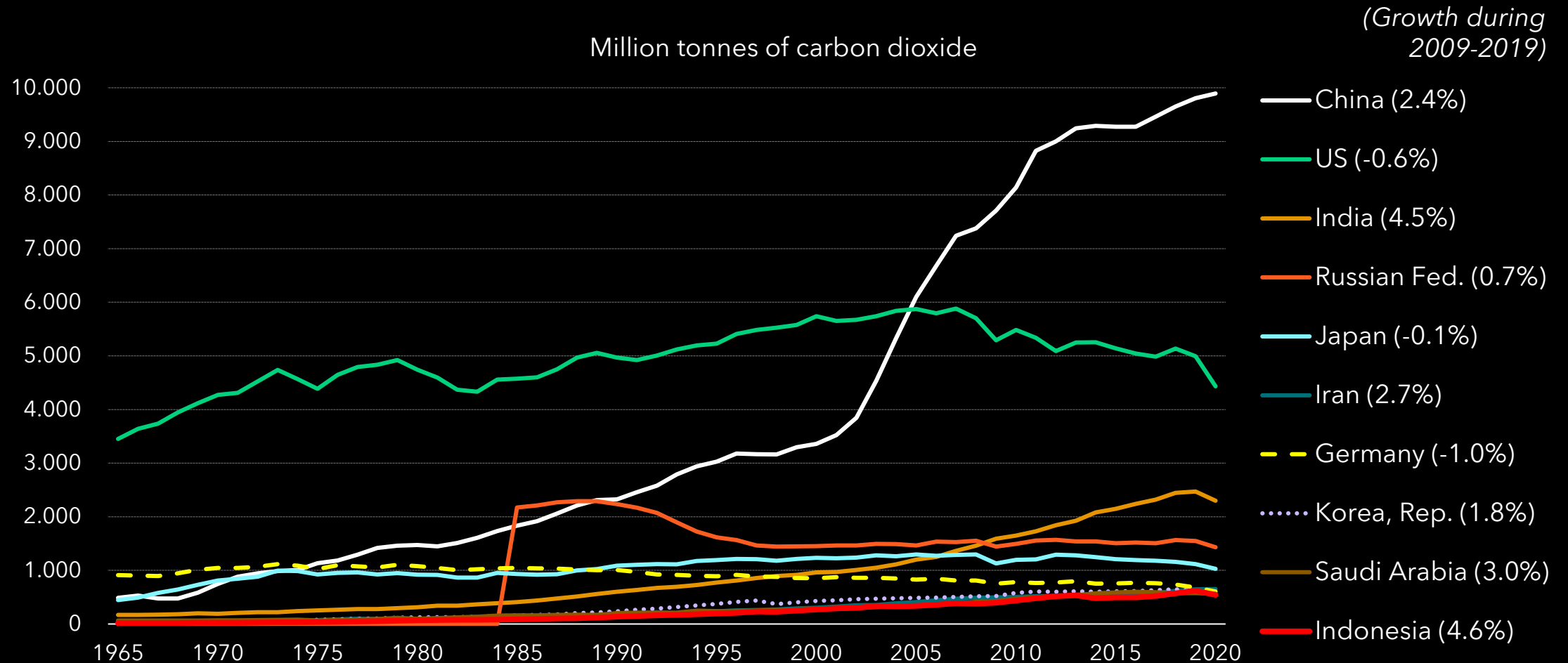
Sumber: Kementerian ESDM

BP Statistical Review of World Energy version



Source: BP Statistical Review of World Energy.

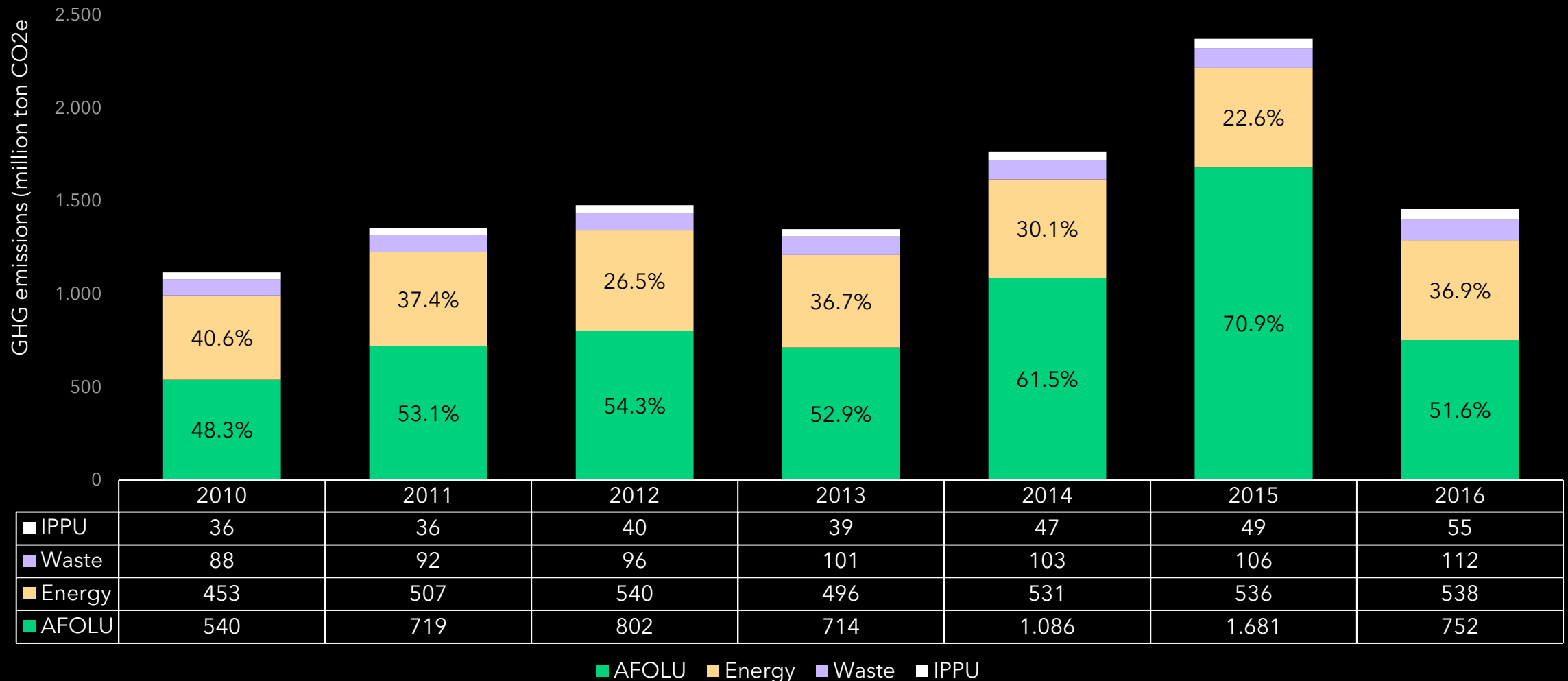
Carbon dioxide emissions



Notes: The carbon emissions reflect only those through consumption of oil, gas and coal for combustion related activities, and are based on 'Default CO2 Emissions Factors for Combustion' listed by the IPCC in its Guidelines for National Greenhouse Gas Inventories (2006). This does not allow for any carbon that is sequestered, for other sources of carbon emissions, or for emissions of other greenhouse gases. The data is therefore not comparable to official national emissions data. Growth rates are adjusted for leap years.

Source: BP Statistical Review of World Energy, 70th edition, 2021.

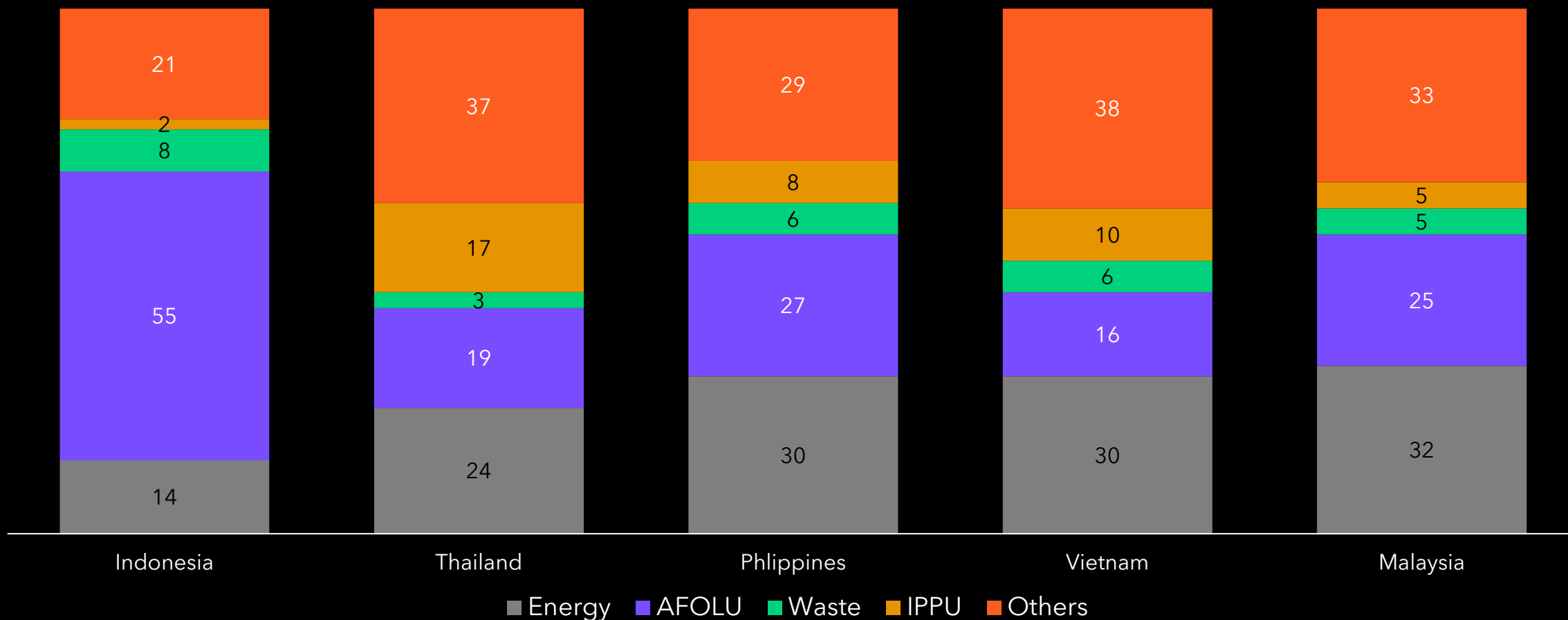
National GHG emissions by sector



Notes: IPPU: Industrial Process and Product Use; AFOLU: Agriculture, Forest land, and Other Land Use.

Source: Indonesia Second Biennial Update Report, December 2018.

GHG emissions by sector in ASEAN-5, 2018



Financing for climate change

Financing needs (Rp trillions)

No	Sector	Average per Year	Cumulative (2020-2030)
1	Energy	318.18	3500
2	IPPU	0.08	0.92
3	AFOLU	8.85	97.32
4	Waste (with RDF)	16.21	178.29
5	Waste (with WtE)	16.49	181.4
	Total (with RDF)	343.32	3776.53
	Total (with WtE)	343.60	3779.64

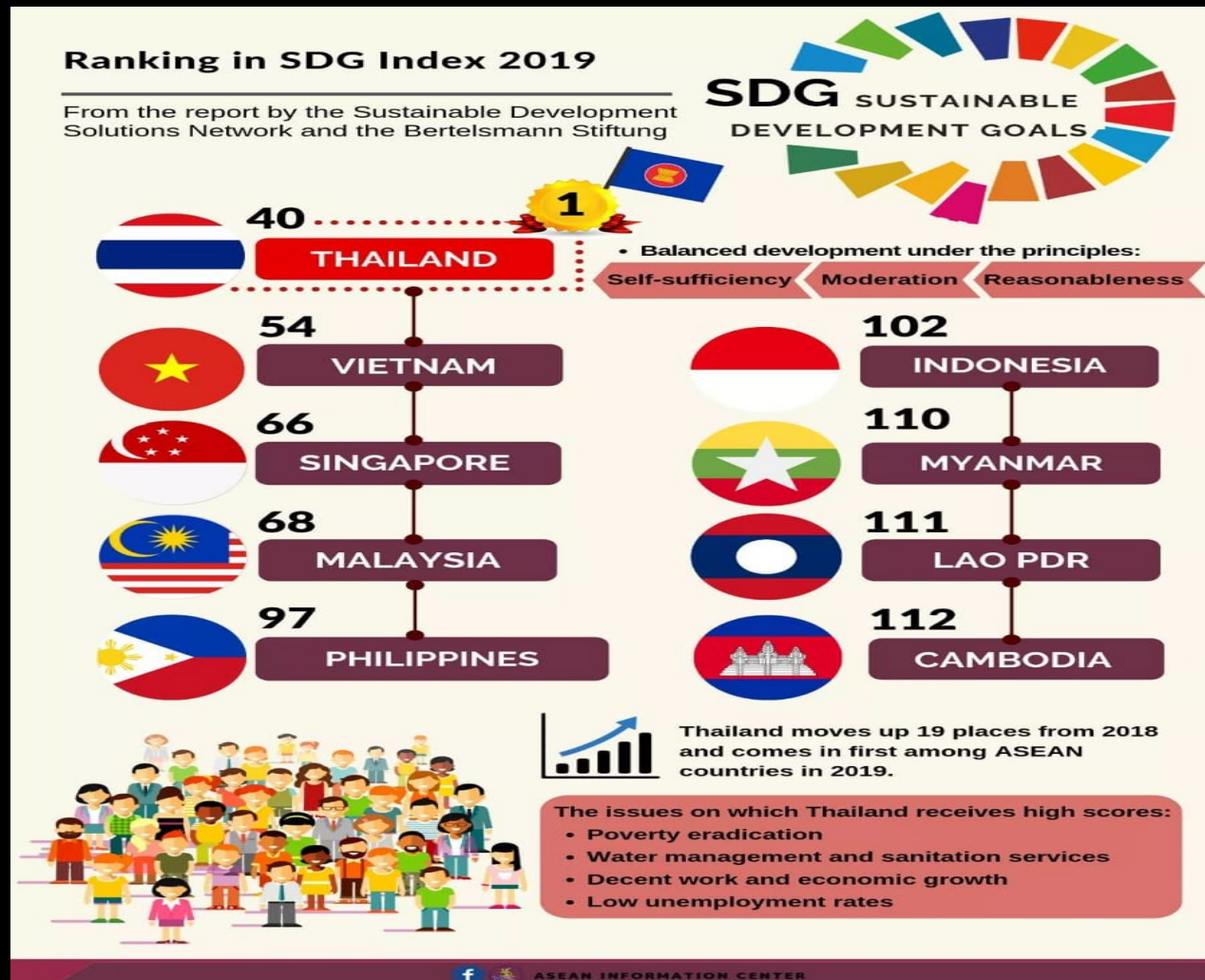
Source: Ministry of Environment and Forestry, 2019.

Allocation of budget for climate change (Rp trillions)

Year	2018	2019	2020
Budget	132.47	97.66	77.81
Actual	126.04	83.54	

Source: Ministry of Finance, 2020.

Indonesia lags behind in achieving SDGs targets



■ Major challenges remain:
2, 3, 6, 9, 10, 15, 16, 17

■ Challenges remain: 4, 12, 13

■ Significant challenges remain:
1, 5, 7, 8, 11, 14

■ SDG achievement: -

Source: 2019 Sustainable Development Report.

ESG Index 2020

Country Name	Rank	Score	Risk Evaluation
Switzerland	1	9.85	Very Low
Finland	2	10.13	Very Low
Luxembourg	3	11.55	Very Low
Denmark	4	11.94	Very Low
Sweden	5	12.15	Very Low
United Kingdom	21	18.13	Low
Korea, Rep	27	23.84	Low
Singapore	38	31.71	Low
Argentina	44	34.32	Low
Mexico	60	42.98	Medium
Malaysia	61	43.03	Medium
Brazil	62	43.16	Medium
Tunisia	68	44.11	Medium
Brunei Darussalam	71	44.71	Medium

Country Name	Rank	Score	Risk Evaluation
Russian Federation	72	45.54	Medium
South Aafrica	85	48.38	Medium
Thailand	95	50.75	Medium
Turkey	102	51.64	Medium
China	103	53.07	Medium
Egypt, Arab Rep.	111	57.07	Medium
Iran, Islamic Rep.	113	57.32	Medium
Philippines	117	59.36	High
Vietnam	119	59.63	High
Indonesia	123	60.77	High
Bangladesh	145	69.05	High
India	146	69.05	High
Pakistan	157	71.72	High
Ethiopia	160	72.49	Very High
Chad	176	80.63	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/>

Exports are dominated by primary commodities

Exports (Value, US\$ billions)	2018	2019	2020	Average 2018-2020	Share
Coal	20.6	19.0	14.5	18.0	10.6
Crude palm oil	17.9	15.6	18.4	17.3	10.2
Iron & steel*	6.5	7.9	11.3	8.5	5.0
Natural gas	10.4	8.3	5.5	8.0	4.7
Base precious metal	3.5	4.6	6.7	4.9	2.9
Crumb rubber	3.8	3.4	2.9	3.4	2.0
Crude oil	5.2	1.7	1.4	2.8	1.6
Lignite	3.3	2.8	1.9	2.7	1.6
Copper ore	4.2	1.3	2.4	2.6	1.5
Petroleum product	1.6	1.8	1.5	1.6	1.0
Coffee	0.8	0.9	0.8	0.8	0.5
	77.8	67.2	67.3	70.8	41.6
Total exports	180.0	167.7	163.3	170.3	100.0

* Most of them consist of NPI and ferrous nickel, which are still at a low level of processing.

Source: Schroders, October 2020.

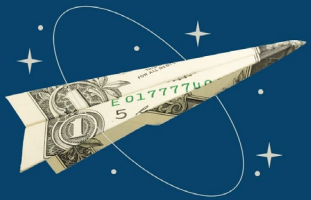
THE
ENTREPRENEURIAL
STATE

'A BRILLIANT BOOK'
MARTIN WOLF, FINANCIAL TIMES

DEBUNKING
PUBLIC VS PRIVATE

PRIVATE

MARIANA
MAZZUCATO



MISSION
ECONOMY

MAKING and TAKING in the
GLOBAL ECONOMY

THE
VALUE
of
EVERY-
THING

MARIANA
MAZZUCATO

Value creation vs value extraction

“By 'value creation' I mean the ways in which different types of resources (human, physical and intangible) are established and interact to produce new goods and services. By 'value extraction' I mean activities focused on moving around existing resources and outputs, and gaining disproportionately from the ensuing trade.” (Mazzucato, 2018: 6).

Four areas of the energy transition



Clean energy generation



Transmission & distribution

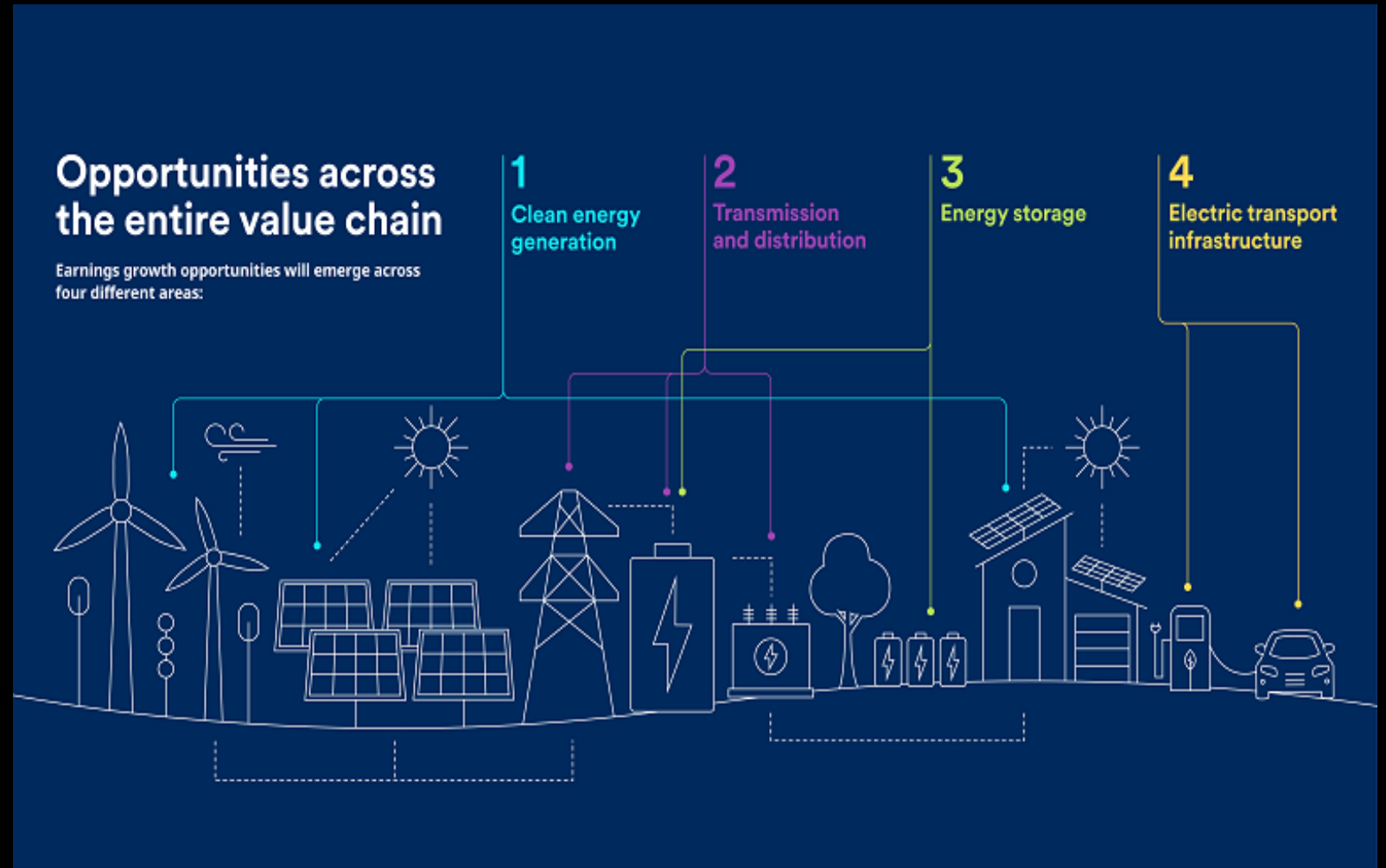


Energy storage



Electric transport infrastructure

Clean energy value chain



Source: Schroders, October 2020.

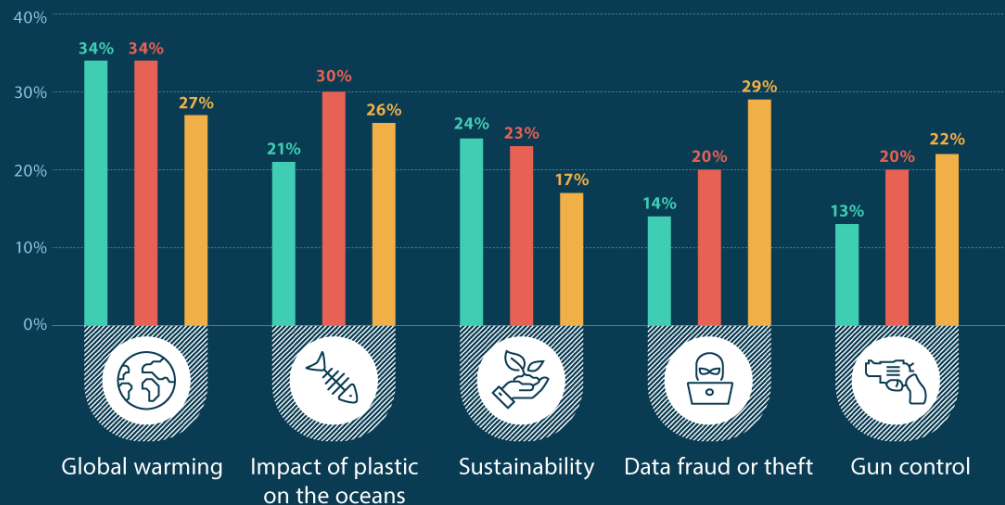
What issues do values-driven investors care about?

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%
Sustainability	24%	23%	17%
Gun control	13%	20%	22%

Principles for Responsible Investment (UNPRI or PRI)
Environmental, Social & Governance (ESG) Investment
Principles

A photograph of two elephants standing in a river, facing each other. In the background, a waterfall cascades down a rocky cliff, surrounded by lush green trees. The scene is bathed in a warm, golden light, suggesting a sunrise or sunset. The image is partially obscured by a dark green gradient on the right side.

Thank you

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- Blog: faisalbasri.com