Abstract geometric lines in the top left corner, consisting of several overlapping, irregular polygons and lines in a light beige color.

Carbon Pricing and Climate Policy: Stage-Setting

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for the **International Green Build Conference 2023**

Petaling Jaya, Malaysia

August 2023



‘CLIMATE CHANGE IN SIX GRAPHS’

DROWNING IN COMPLEXITIES

A multifaceted challenge, easy to lose the forest for the trees

NO ONE SIZE FITS ALL SOLUTIONS

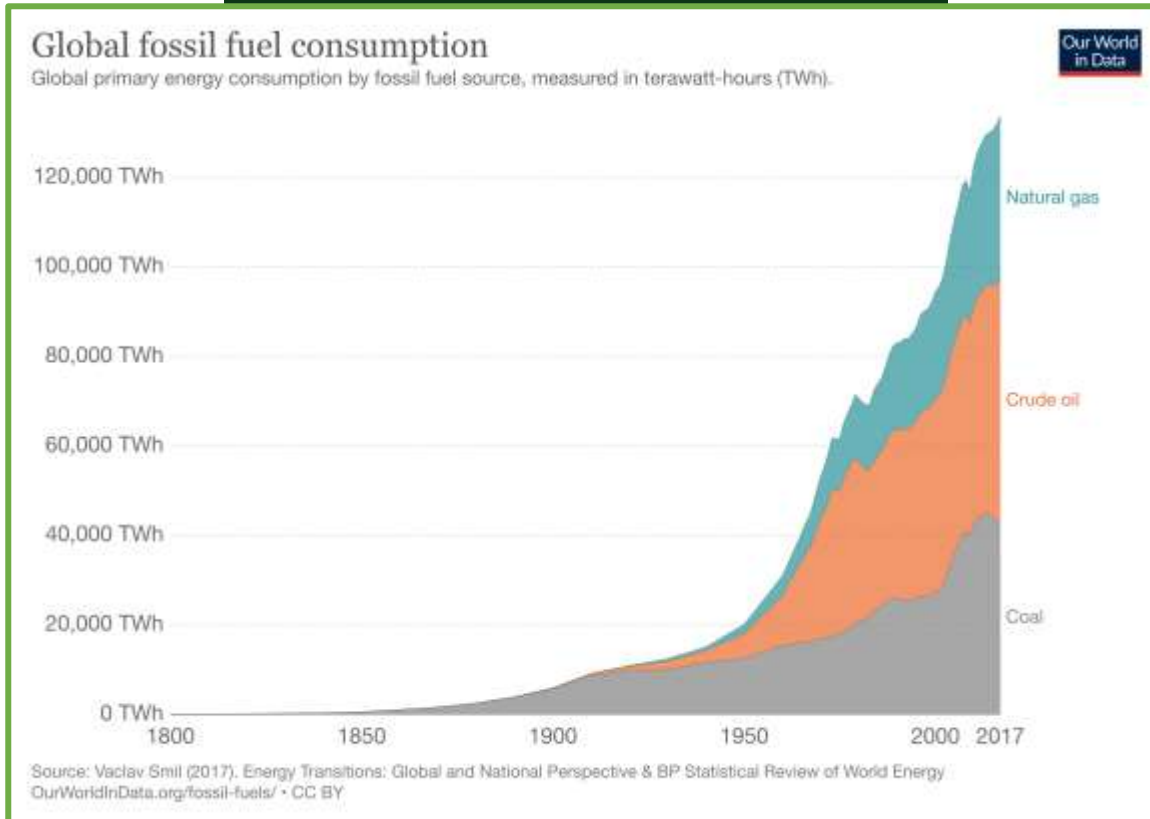
Addressing the various challenges requires a broad, all of society response

NECESSITATES A MINDSET SHIFT

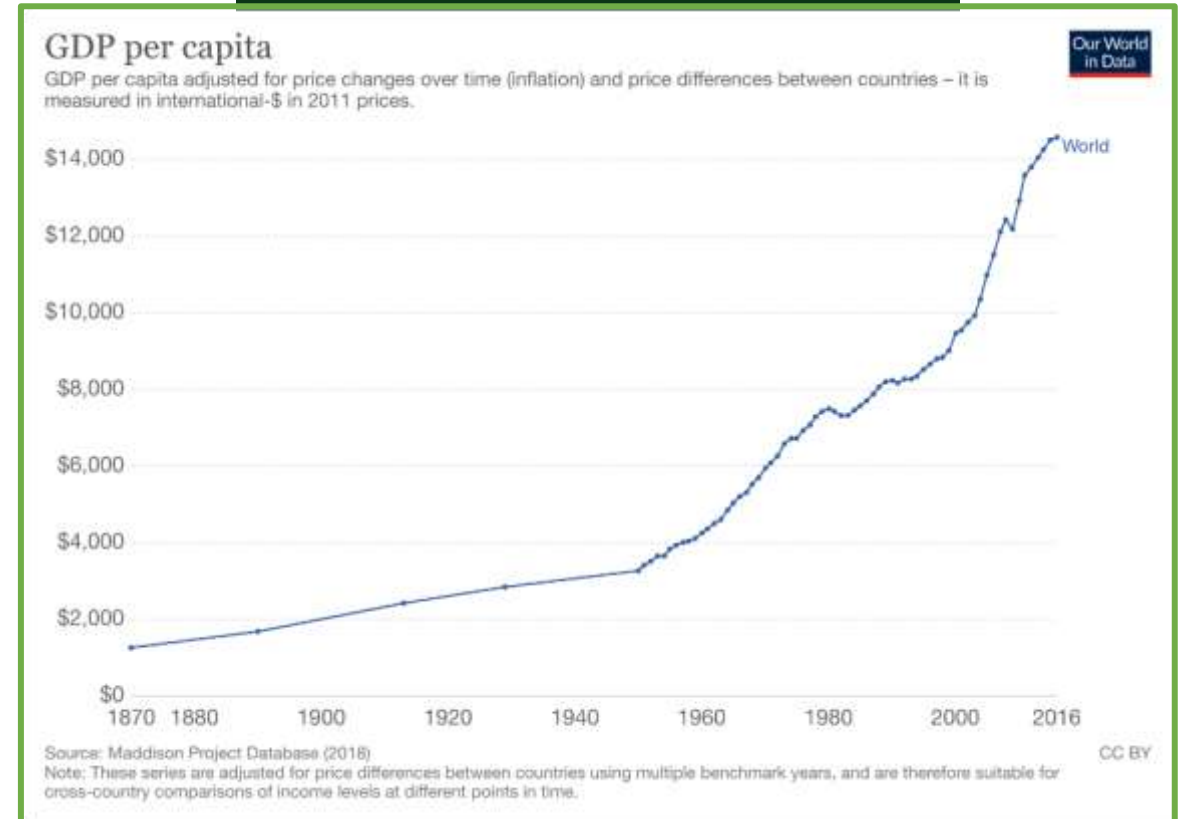
Not only fossil fuels and resource exploitation, but of capitalism, discounting, economic growth, etc.

A PRIMER ON GLOBAL CLIMATE CHANGE

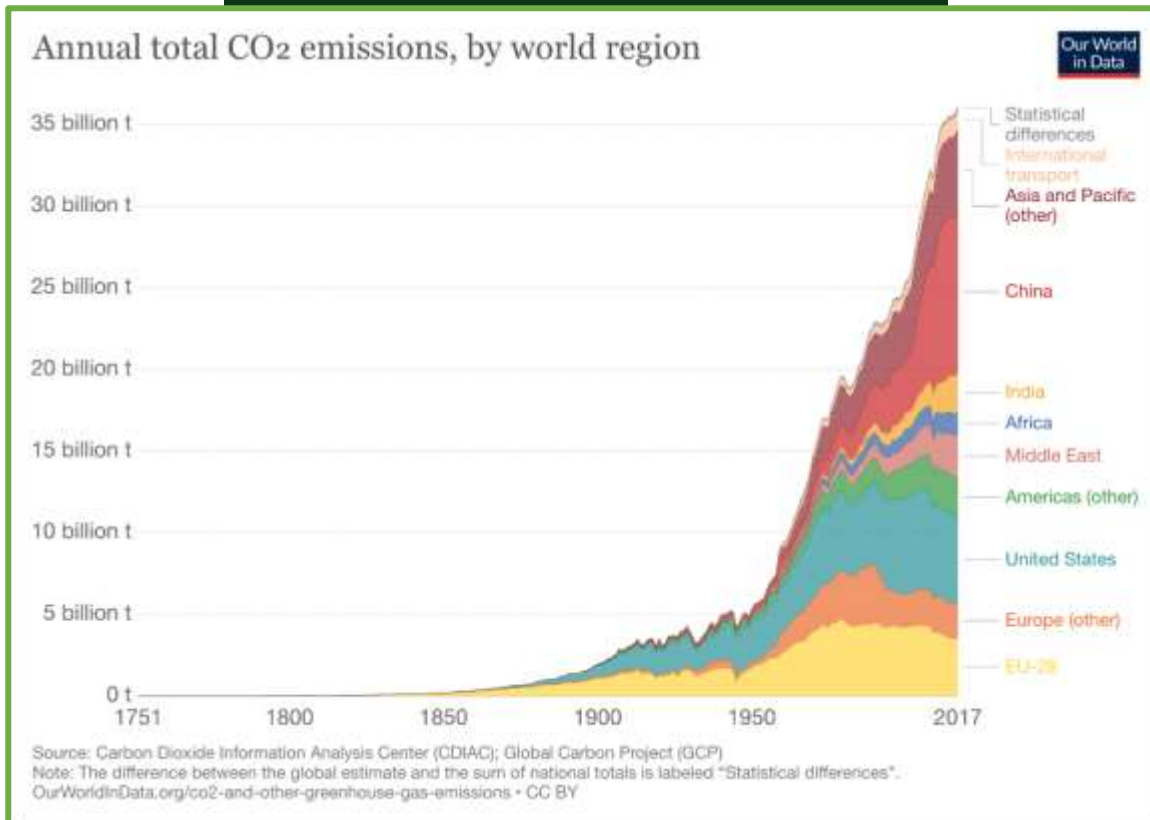
Industrial Revolution
caused enormous growth in
use of fossil fuels



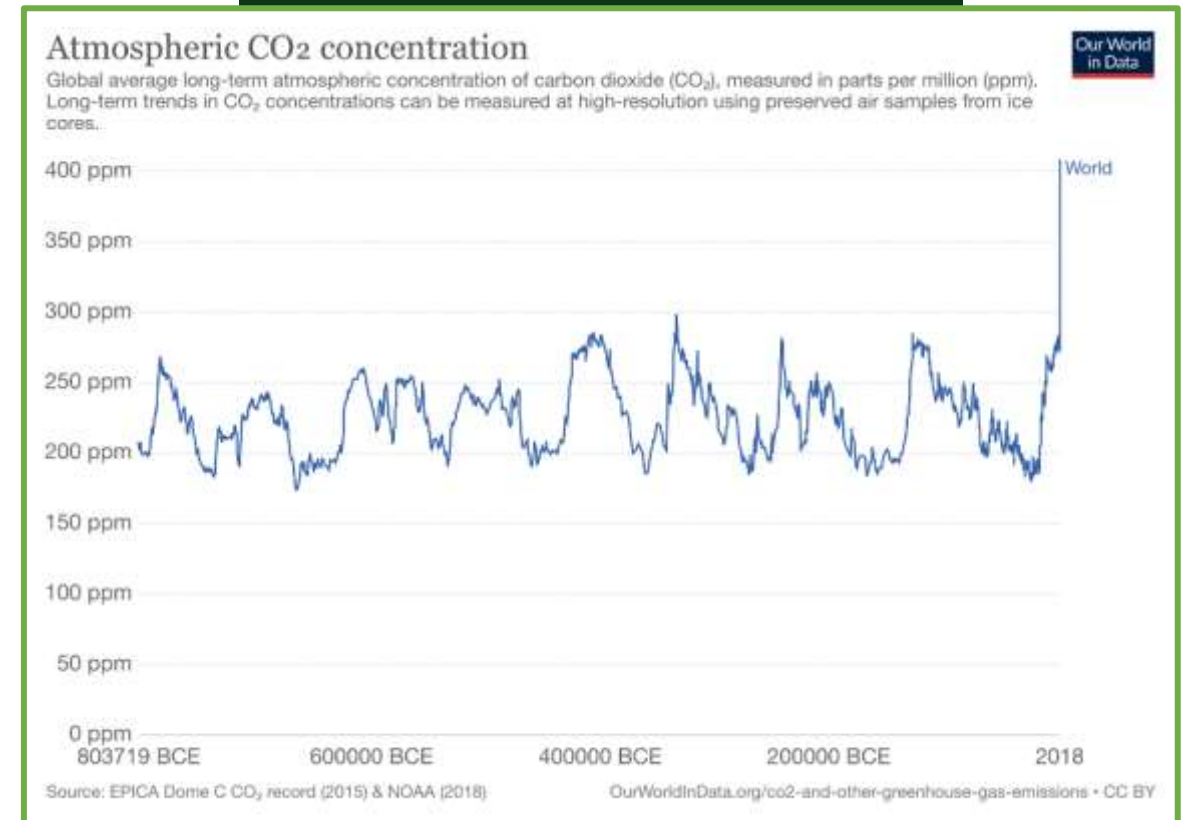
Fossil fuels enabled
unparalleled global
economic growth



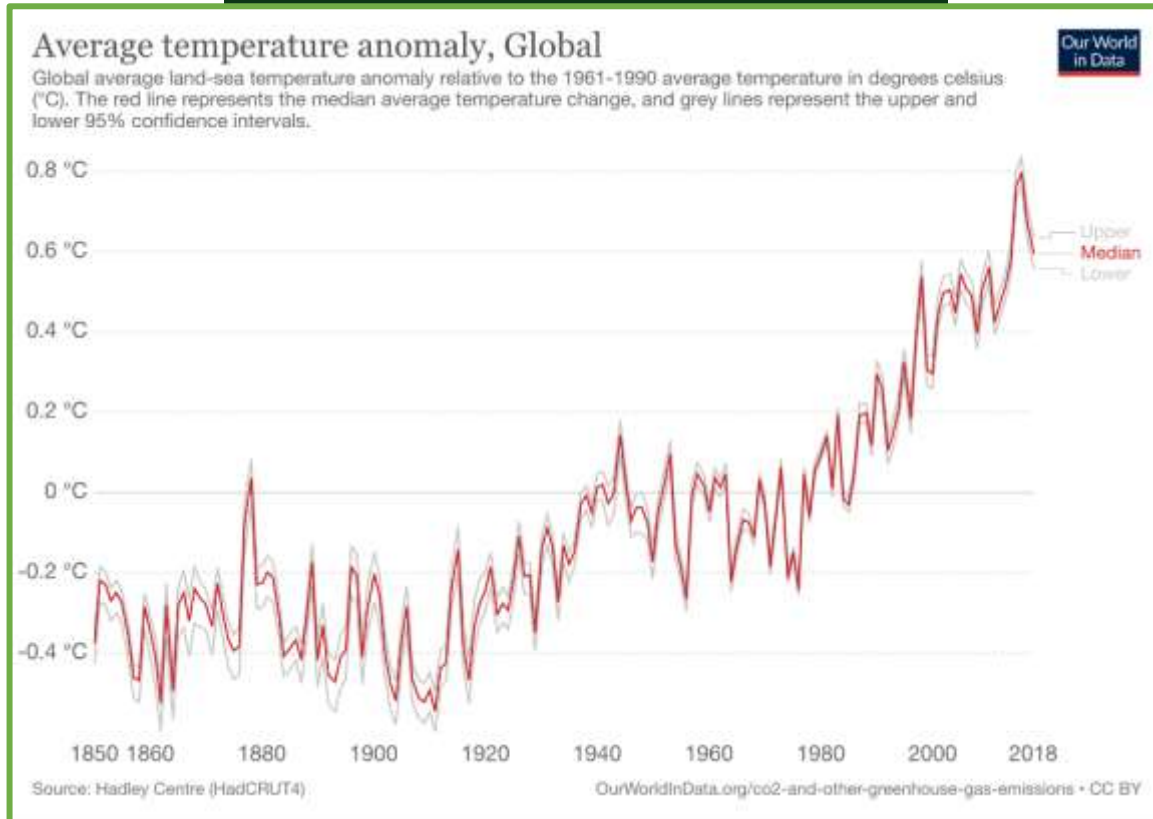
But at a cost: an
unparalleled increase in
GHG emissions



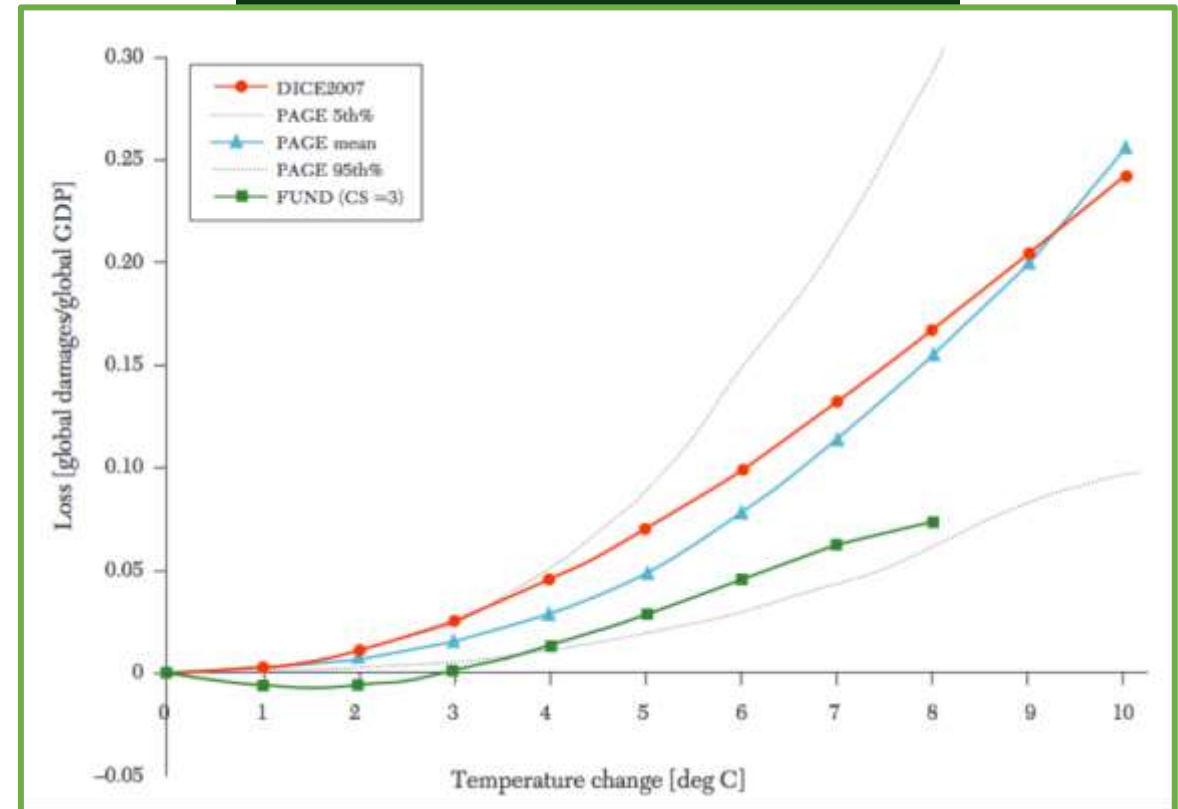
Rising GHG emissions are
causing record high levels
of atmospheric CO₂



Increasing atmospheric
CO₂ causes surface
temperatures to rise

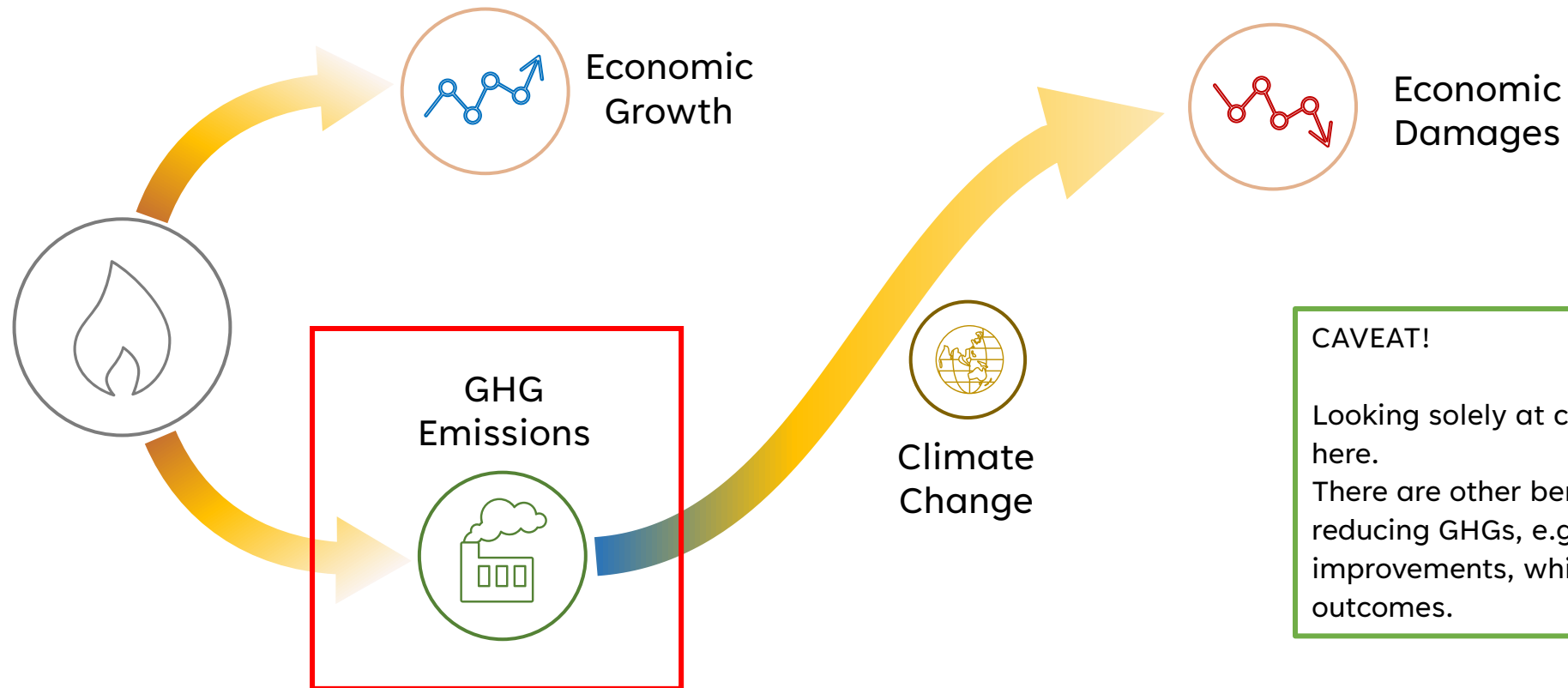


Rising temperatures cause
physical impacts and
economic damages



CLIMATE CHANGE: SIMPLIFIED

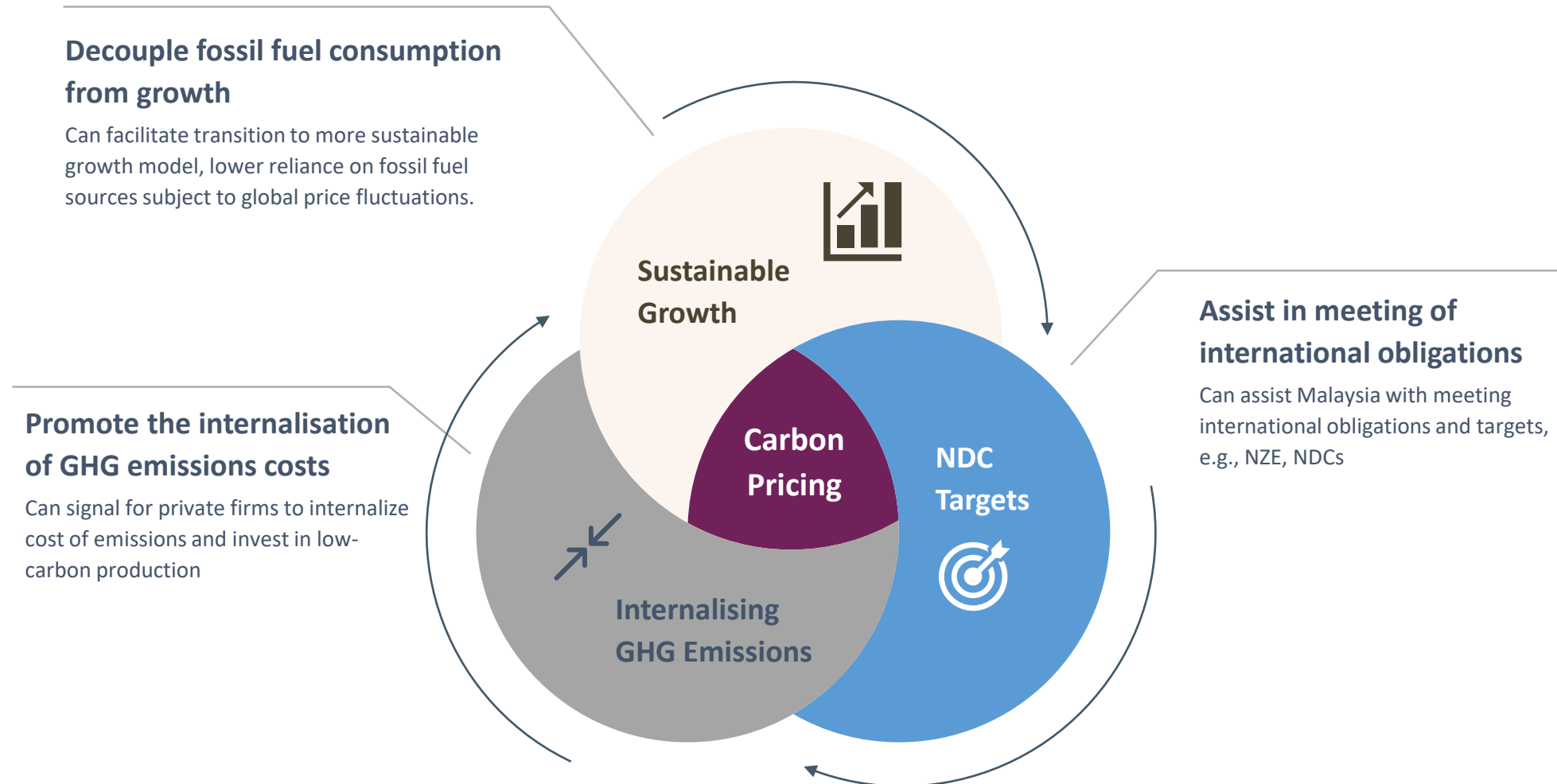
- GHGs the heart of the issue
- Incentives need to reflect that, across sectors, economic activities
- We can do that directly, indirectly



CAVEAT!

Looking solely at climate change here.
There are other benefits from reducing GHGs, e.g., air quality improvements, which better health outcomes.

HOW CARBON PRICING AIDS MITIGATION



ECONOMICS OF CLIMATE CHANGE: 'A SERIES OF MARKET FAILURES'

market failure	examples	relationship	potential responses
Negative Externality	<ol style="list-style-type: none"> 1. GHG emissions; 2. Broader pollution 	<i>Causes rise in atmospheric concentration of carbon</i>	Carbon pricing; environmental charges; fuel taxes
Incomplete Information	<ol style="list-style-type: none"> 1. Lack of economic valuations; 2. Carbon/climate footprinting; 3. Underinvestment in R&D, technology 	<i>Undervalues natural capital conservation, low-carbon activities</i>	EFTs; Labelling; PES; R&D
Public Goods	<ol style="list-style-type: none"> 1. Global atmosphere; 2. Clean air, water; 3. Natural capital 	<i>Increasing carbon concentration exacerbates temperature rise, associated impacts</i>	Carbon pricing; environmental fees
Suboptimal Resource Allocation	<ol style="list-style-type: none"> 1. Underinvestment in R&D, technology; 2. Environmentally-harmful subsidies; 3. Underinvestment in low-carbon tech; 4. Mispricing of resources; 5. Discounting the future 	<i>Slows low-carbon transition; Encourages unsustainable practices</i>	Carbon pricing; Fossil fuel subsidy rationalization; Low-carbon funding (e.g. subsidies) or access to funding (e.g. loans); Research funding; Environmental fees

Market Failures & ‘Climate Economic Instruments’



Ultimately, climate policies aim to stimulate behavioral changes toward the achievement of desired outcomes



Mitigation: Achieve emissions reductions at lowest-cost

Adaptation: Enhance resilience to impacts of climate change

Co-benefits: Implications for M&A; biodiversity, conservation, others.



CEIs can achieve this, primarily by influencing **monetary incentives**, e.g., by altering prices/costs; addressing finance gaps/constraints; ensuring returns



Not all CEIs achieve economic equally:

- ‘First-best’ instruments: directly correct for market failures, in doing so address misaligned incentives.
 - Examples: CPIs, PES, R&D funding
- ‘Second-best’ instruments: May partly correct for market failures by assisting in achievement of more ‘narrow’ objectives
 - Examples: Low-interest loans/financing, Tech/industry-based fiscal incentives

A series of thin, light brown lines forming various overlapping triangles and polygons, creating a geometric pattern on the left side of the slide.

MALAYSIA HAS BEEN ENHANCING ITS CLIMATE COMMITMENTS

2015

Submits first INDC to UNFCCC

2016

Ratifies Paris Agreement and updates NDC

2021

Updates and enhances NDC:

- reduce the GHG emissions intensity of GDP by 45% by 2030*
- increases coverage to 7 gases from 3

Launches 12MP, announcing:

- intention to assess feasibility of implementing carbon pricing instruments (CPIs), expand EFTs and PES
- target to achieve carbon neutrality as early as 2050

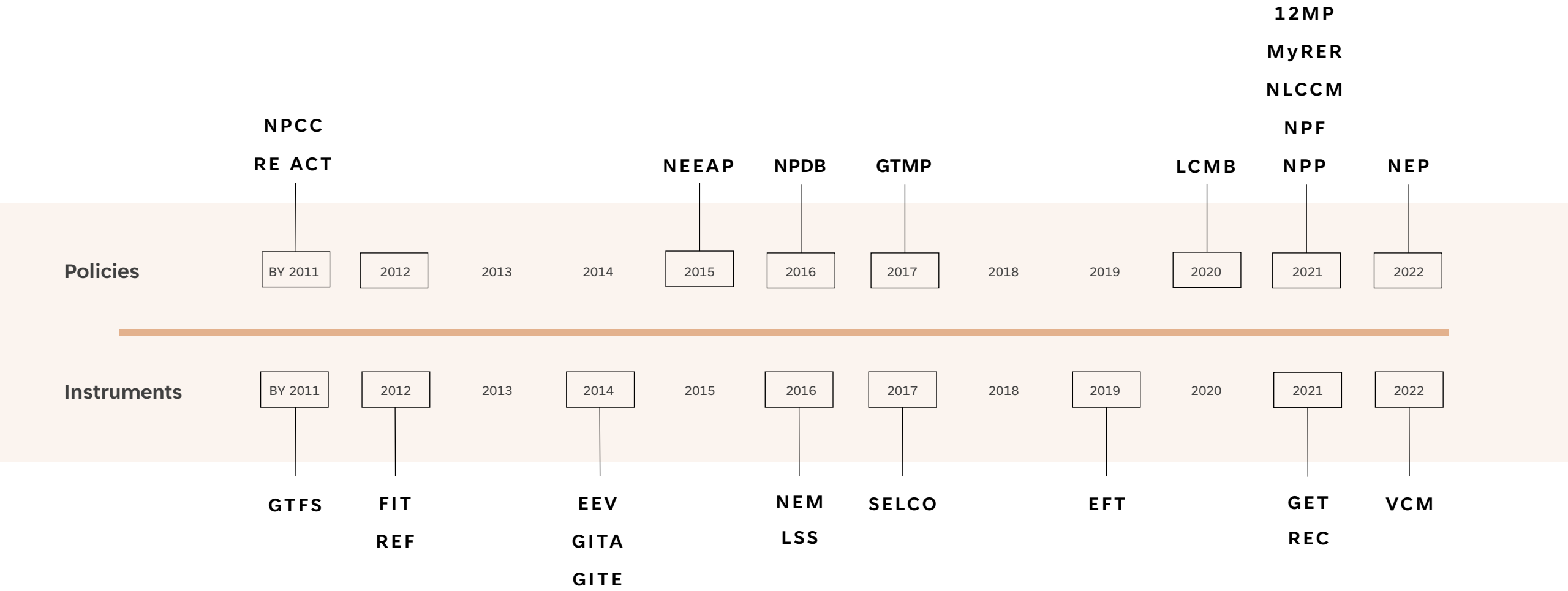
Launches Green Electricity Tariff and Renewable Energy Credits

COP26: Signs No New Coal Power Compact; Global Methane Pledge; Leaders' Declaration on Forests and Land Use

2022

Launches Voluntary Carbon Market (VCM)

MALAYSIA'S HISTORY OF LOW-CARBON POLICIES AND INSTRUMENTS



DETAILED NDC

- **Reduce** GHG emissions intensity of GDP by 45% by 2030, relative to 2005
- **Covers** energy, IPPU, waste, agriculture, LULUCF
- **Includes** CO₂, CH₄, N₂O, HFCs, PFCs, SF₆, NF₃
- **Represents** 10% increase in GHG reduction target relative to 2016 NDC

SUPPORTING POLICIES AND TARGETS

- **LT-LEDS, NDC Roadmap** in development expected 2023/2024.
- **NETR** partly launched 2023
- **RE Installed Capacity:** 31% by 2025, 40% by 2035 (MyRER), 70% by 2050
- **RE Supply:** 17% by 2040 (NEP)
- **Coal Installed Capacity:** 18.6% in 2040, from 31.4% in 2018 (NEP)
- **EE Savings:** 11% (industrial & commercial); 10% (residential) by 2040 (NEP)

ADAPTATION

- **Emphasis on** water resources management; coastal resources; agriculture and food security; urban and infrastructure resilience; public health; biodiversity and forestry
- **National Adaptation Plan** in development

ARTICLE 6

- **Does not** intend to use voluntary cooperation mechanisms under Article 6 to achieve NDCs
- **National Carbon Policy** in development, should expand on plans for broader crediting ecosystem

MALAYSIA'S EVOLVING CLIMATE RESPONSE

Carbon Pricing: Foraying into ‘first-best’ mitigation instruments

Instrument	Classification and Type of Economic Instrument	Year Introduced	Lead Agencies
Transport Fuel Subsidies (Petrol, Diesel)	N/A Fiscal	1983	MOF
Green Technology Financing Scheme (GTFS) 1, 2, 3	Second-best Financial	2010	NRECC, MGTC, MOF
Feed-in Tariff (FiT)	Second-best Financial; Technology-specific Support	2011	EC, NRECC, SEDA
Green Income Tax Allowance (GITA)	Second-best Financial	2014	MGTC, MOF, MIDA
Green Investment Tax Exemption (GITE)			
Energy Efficient Vehicles (EEV)			MITI, MOT
Time-of-Use Tariffs (TOUT, ETOUT)	Second-best Charge System	2016	EC, NRECC, TNB
Net Energy Metering (NEM) 1, 2, 3	Second-best Financial; Technology-specific Support		EC, NRECC, SEDA
Large-Scale Solar (LSS) 1, 2, 3, 4			EC, NRECC
Green Electricity Tariff (GET)	Second-best Financial	2021	EC, NRECC, TNB
Carbon Pricing Instruments (CPIs – VCM, DETS, CT)	First-best Fiscal (tax) or Market Creation (trading scheme)	202x	MOE, NRECC, MOF, Bursa

See ISIS Malaysia (2022), Economic Instruments for Climate Policymaking in Malaysia

- 7 ‘financial’ instruments
 - Technology-support through FiT, LSS, NEM
 - Financial enablers through GTFS, GITA/GITE, EEV
- 1 fiscal instrument (for now)
 - Fossil fuel subsidies contrary to climate objectives
- All existing instruments ‘second-best’
 - None *directly*/explicitly address externality costs of emissions
 - CPIs signal potentially increased aspiration, change of pace

A wider instrument framework is needed to support adaptation

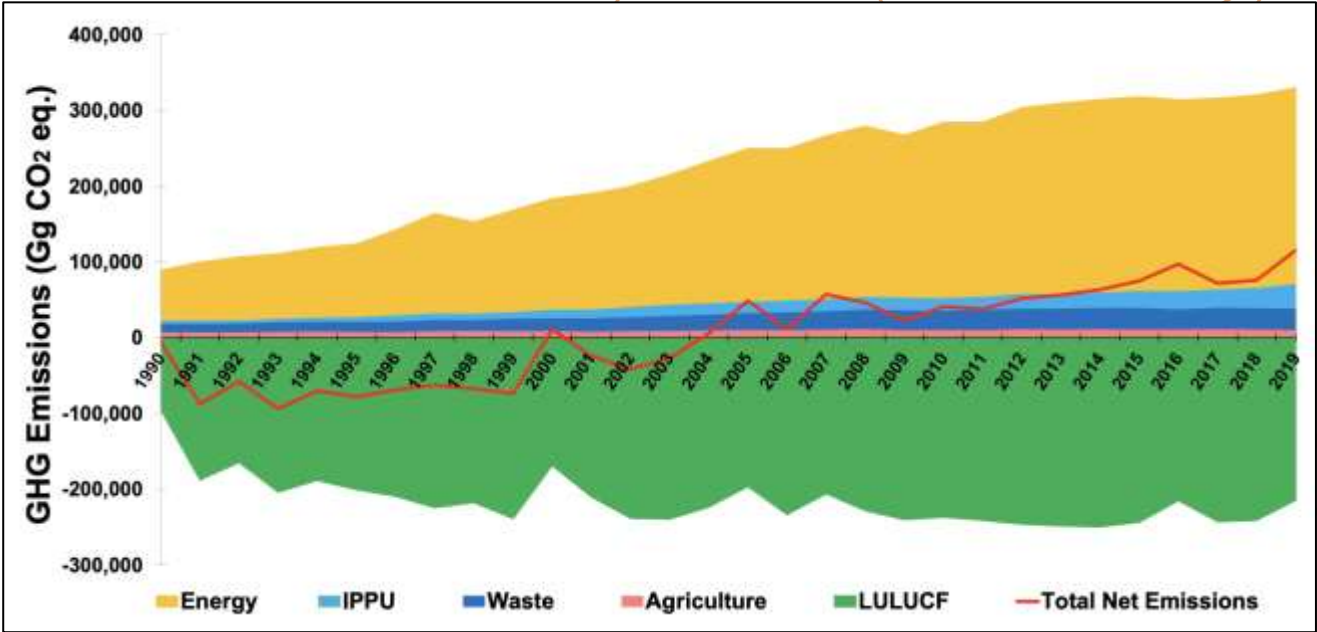
Instrument	Classification and Type of Economic Instrument	Year Introduced	Lead Agencies
National Disaster Relief Trust Fund	Aid/Relief	2006	NADMA
Paddy Crop Disaster Fund		2018	MAFS
Agro-Food Project Redevelopment Programme		2021	MAFS
Bantuan Banjir Keluarga Malaysia (Flood Aid)			BNM, MOF
Emergency Waqf Fund			Kenanga, Yayasan Wakaf Malaysia, MATCH Foundation
Natural Resource and Conservation Financing Instruments (EFTs, PES, and others)	First-best Fiscal	202x	MOE, NRECC, MOF, State Governments

See ISIS Malaysia (2022), Economic Instruments for Climate Policymaking in Malaysia

- Support towards adaptation predominantly aid-based
- Lack of economic instruments designed to support adaptation
- No proactive measures to counter climate impacts or conserve natural capital
 - Most ‘instruments’ are post disaster recovery aid or relief
- As with mitigation *potential* for shift towards first-best policy
- National Adaptation Plan in development
 - Should consolidate long-term plans, establish research and technology funding platforms,

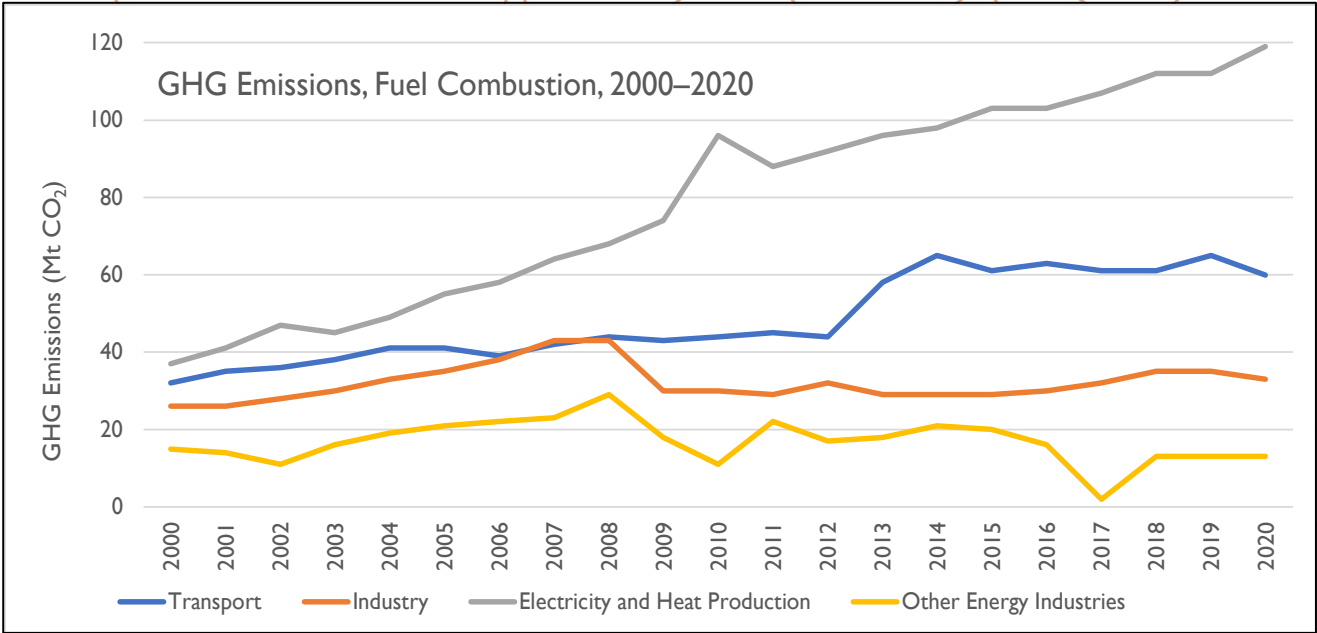
DESPITE MITIGATION EFFORTS, EMISSIONS CONTINUE TO RISE...

- Total GHG emissions have risen from 250 MtCO₂e in 2005 to 330 MtCO₂e in 2019.
 - Much of this is driven by growth in emissions from fuel combustion, primarily for electricity (42% of fuel combustion emissions in 2019) and transport (25%)



SUMMARY OF EMISSIONS REDUCTIONS, 2017–2019

Subsector	2017	2018	2019
RE	10,057	9,508	10,135
EE	1,284	2,144	3,165
Transport	1,555	1,556	2,141
O&G	2,940	3,760	4,910
Waste	7,053	7,767	8,496
IPPU	1,554	1,585	1,548
Agriculture	8	8	8
LULUCF	46,293	44,187	17,638
Total	70,743	70,515	48,041



KEY CLIMATE TARGETS ACROSS THE REGION

country	2030 NDC targets: GHGs	other key low-carbon targets
INDONESIA	31.89% reduction (unconditional), 43.2% reduction (conditional), relative to BAU	TFEC: Reductions of 15-20% (varies by sector) relative to BAU RE: 31% of installed capacity by 2030 LUCF: Net-sink by 2030 Emissions Peak: 2030 Net-Zero: 2060
MALAYSIA	45% reduction in GHG intensity of GDP, relative to 2005 baseline	RE: 40% of installed capacity by 2035; 70% by 2050 Net-Zero: 2050
PHILIPPINES	75% reduction (2.71% unconditional, 72.29% conditional)	Energy Intensity of GDP: 40% reduction by 2040, relative to 2005 Emissions Peak: 2030 RE: 15.2 GW of installed capacity by 2030
SINGAPORE	Reduce absolute emissions to 60 MtCO ₂ e economy-wide	Emissions Peak: Before 2030 Net-Zero: 2050
THAILAND	20% unconditional reduction, 25% conditional reduction, relative to 2005	Energy Intensity of GDP: 30% reduction by 2036, relative to 2010 RE: 30% of total energy consumption by 2036 Carbon Neutrality: 2050 Net-Zero: 2065
VIETNAM	15.8% unconditional reduction, additional 43.5% conditional reduction, relative to BAU	RE: 30.9% of generation mix by 2030; 67.5% by 2050, specific targets by technology Methane: 30% reduction by 2030 relative to 2020 Net-Zero: 2050

CARBON PRICING ACROSS SOUTHEAST ASIA

Countries	Carbon Pricing Instruments					
	Law or Act	Tax	ETS	Crediting ^α	Indirect ^β	FF Subsidies ^χ
Brunei	◆	◆	◆	◆	◆	◆
Cambodia	◆	◆	◆	◆	◆	◆
Indonesia	◆	◆	◆	◆	◆	◆
Laos	◆	◆	◆	◆	◆	◆
Malaysia	◆	◆	◆	◆	◆	◆
Myanmar	◆	◆	◆	◆	◆	◆
Philippines	◆	◆	◆	◆	◆	◆
Singapore	◆	◆	◆	◆	◆	◆
Thailand	◆	◆	◆	◆	◆	◆
Vietnam	◆	◆	◆	◆	◆	◆
Notes: ^α Includes carbon credit programs and voluntary market activities. ^β Includes indirect carbon pricing instruments, i.e., fossil fuel taxes and related environmental taxes. ^χ Includes only explicit subsidies to final consumers, as reported by Parry et al. (2021b)				Legend: ◆ Active ◆ In Development ◆ Under Consideration ◆ Inactive		

Sources: AMRO (2022); Parry et al. (2021a); Parry et al. (2021b); So et al. (2023); World Bank (2023)