

PURSUE EFFORTS TO LIMIT
THE TEMPERATURE
INCREASE TO

1.5°C

**GLOBAL WARMING → CLIMATE CHANGE
AND BUSINESSES**

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Thailand Greenhouse Gas Management Organization (Public Organization)

7 June 2019





The Guardian



Heatwaves –

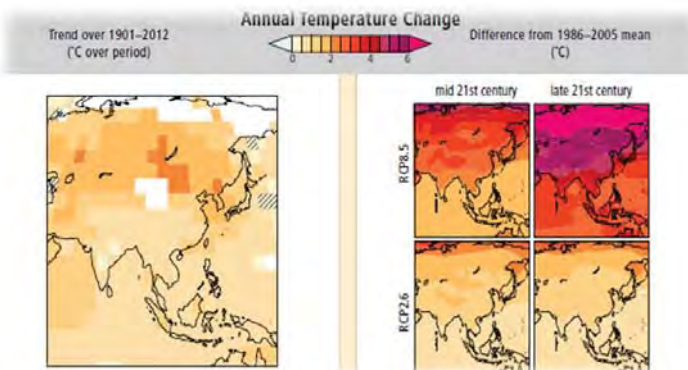
Nature's Silent Killer



KEY MESSAGES FROM THE UN IPCC FIFTH ASSESSMENT REPORT (AR5)

Warming trends and increasing temperature extremes

have been observed across most of the Asian region over the past century (*high confidence*).



Water scarcity is expected to be a major challenge for most of the region as a result of increased water demand and lack of good management (*medium confidence*).



Source: IPCC AR5

KEY MESSAGES FROM THE UN IPCC FIFTH ASSESSMENT REPORT (AR5)

Food production and food security in Asia will vary by region, with many regions to experience **a decline in productivity** (*medium confidence*).



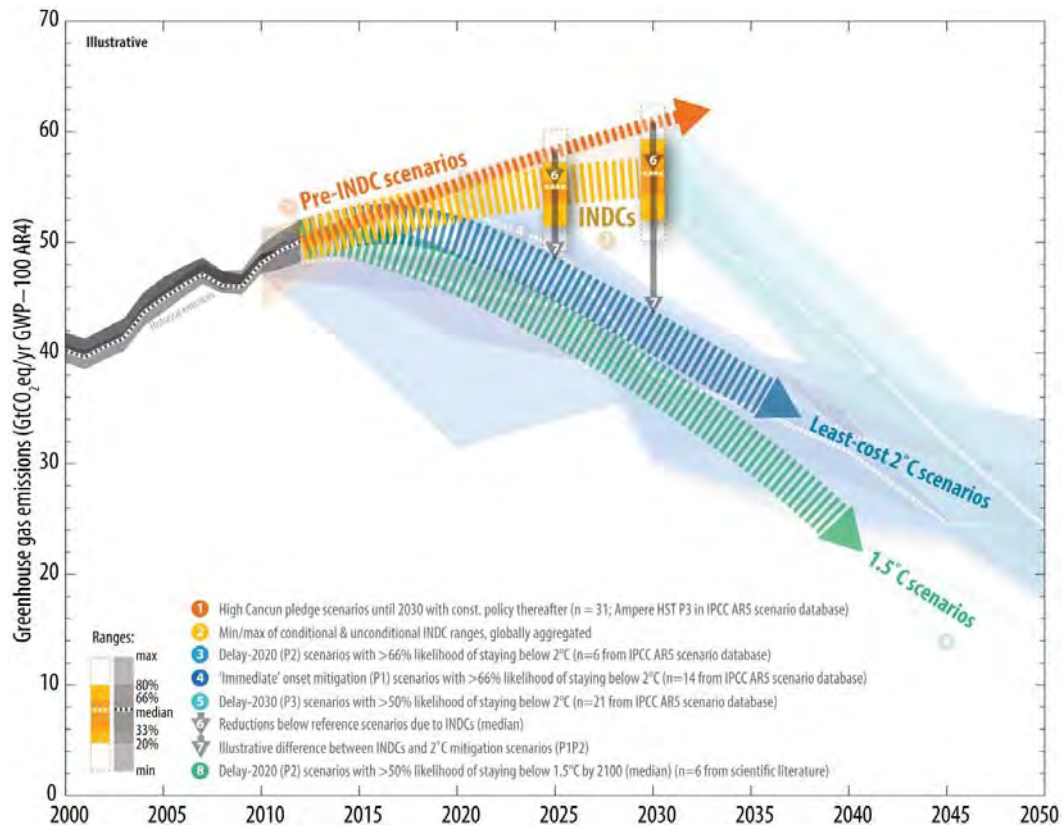
Extreme climate events will have an increasing impact on **human health, security, livelihoods, and poverty**, with the type and magnitude of impact varying across Asia (*high confidence*).



Source: IPCC AR5

Deep Reductions in Global Emissions are Required

UNFCCC Synthesis Report 2016



United Nations
Climate Change

UNFCCC & the Paris Agreement

Article 2

This Agreement,... aims to strengthen the global response to the threat of climate change...including by:

- Holding the increase in the global average temperature to well below 2°C above pre-industrial levels and to pursue efforts to limit the temperature increase to 1.5°C above pre-industrial levels, recognizing that this would significantly reduce the risks and impacts of climate change;
- Increasing the **ability** to adapt to the adverse impacts of climate change and foster climate resilience and low greenhouse gas emissions development, in a manner that does not threaten food production;
- Making **finance flows** consistent with a pathway towards low GHG emissions and climate resilient development.

**PARIS AGREEMENT
CROSSES THRESHOLD
TO ENTER INTO FORCE**

✓ **OVER 55 PARTIES JOINED**

✓ **OVER 55% OF GLOBAL EMISSIONS REPRESENTED**

Every 5 years countries **STRENGTHEN CLIMATE ACTIONS**

5 KEY ELEMENTS OF THE PARIS AGREEMENT

CLIMATE FINANCE to support developing countries

ADAPTATION is a central pillar to help world's most vulnerable

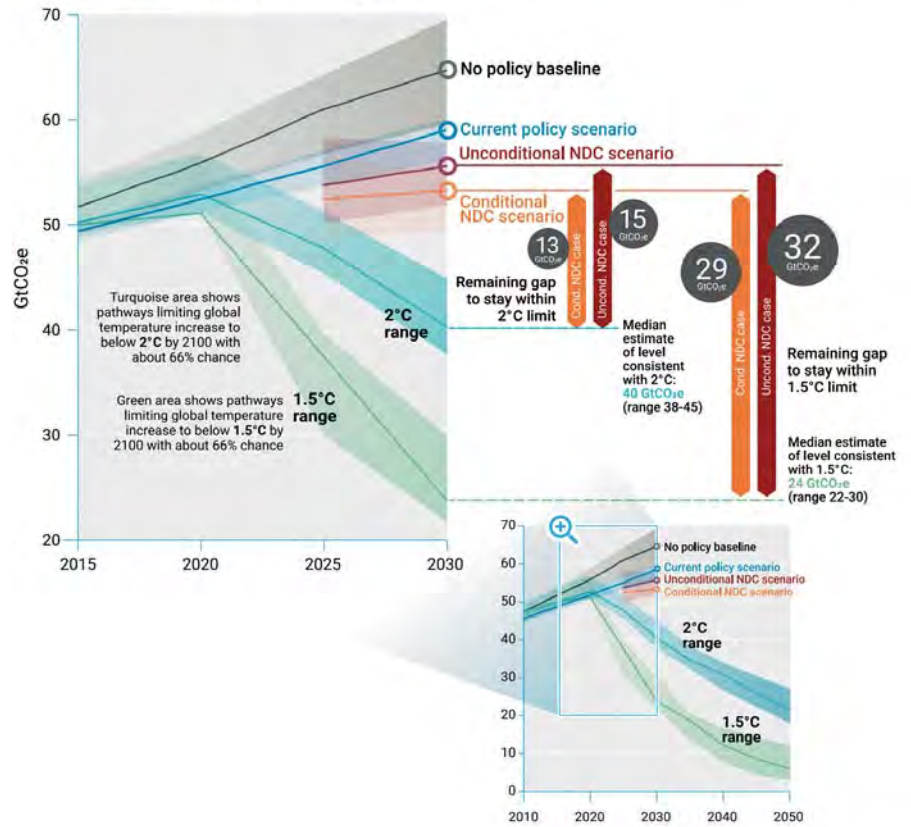
LONG-TERM GOAL to achieve net zero emissions

ENHANCED TRANSPARENCY to ensure commitments are met

Deeper Reductions ! in Global Emissions

UNEP Emission Gap Report (November 2018)

Figure ES.3: Global greenhouse gas emissions under different scenarios and the emissions gap in 2030 (median estimate and tenth to ninetieth percentile range)



GLOBAL TRENDS : CALL FOR CLIMATE ACTIONS

Post-2020 Efforts : Deeper Reductions in Global Emissions

Compare	Country	INDC
	China	A peak in carbon dioxide emissions by 2030, with best efforts to peak earlier. China has also pledged to source 20% of its energy from low-carbon sources by 2030 and to cut emissions per unit of GDP by 60-65% of 2005 levels by 2030, potentially putting it on course to peak by 2027.
	Malaysia	
	South Korea	
GDP	Chile	
	Uruguay	
	Uzbekistan	
	Indonesia	A 29% reduction in emissions by 2030, compared to business as usual. Indonesia says it will increase its reduction goal to 41%, conditional on support from international cooperation. Includes a section on adaptation.
	Colombia	A reduction of 27% in emissions below a business-as-usual scenario by 2030, with an additional target to
	Mexico	
	North Korea	
	Nigeria	
	Viet Nam	
	Japan	A 26% reduction in emissions on 2013 levels by 2030. Includes precise information on how it will generate its power by 2030.
	EU	At least a 40% domestic reduction in greenhouse gases by 2030 compared to 1990 levels. Carbon Brief has a more detailed article on the EU INDC.
	USA	[The US plans to withdraw from Paris and not meet this pledge] 26-28% domestic reduction in greenhouse gases by 2025 compared to 2005, making its best effort to reach the 28% target. This includes the land sector and excludes international credits at this time. Carbon Brief has a more detailed article on the US INDC.
	Canada	A 30% reduction on 2005 greenhouse gas emissions, by 2030. This includes possible use of international emissions credits. It also includes the land sector and forestry.
	Australia	A 26 to 28% reduction in emissions by 2030 on 2005 levels. This will be mainly implemented through Australia's Emissions Reduction Fund and a range of other policies currently under development. The government is also considering a potential long term emissions reduction goal.
	Brazil	A 37% reduction in emissions by 2025, compared to 2005 levels, with a further indicative target of a 43% reduction in emissions by 2030. Contains sections on adaptation and south-south initiatives.
	South Africa	Takes a peak, plateau and decline (PPD) approach to emissions. Aims to peak between 2020 and 2025, plateau for roughly a decade and then start to fall. Emissions during 2025-2030 will be in the range 398-614 million tonnes of CO ₂ equivalent, including land and all sectors of the economy. Emissions were 461MtCO ₂ e in 2000. Includes sections on adaptation and support needs.

POST-2020 : Thailand's INDC pledge



“Thailand intends to reduce its GHG emissions by 20 percent from the projected business-as-usual (BAU) level by 2030. The level of contribution could increase up to 25 percent, subject to adequate and enhanced access to Technology Development and Transfer, Financial Resources and Capacity Building through a balanced and ambitious global agreement under the UNFCCC.”

Sector Coverage: Economy-Wide

Inclusion of LULUCF will be decided later



ภาคพลังงาน
ENERGY



ภาคการขนส่ง
TRANSPORT



กระบวนการอุตสาหกรรม
INDUSTRIAL PROCESS



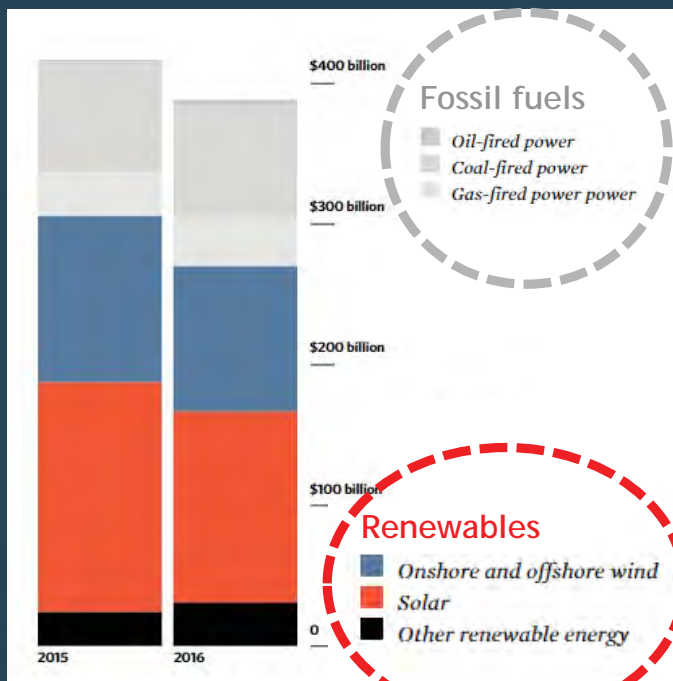
ภาคของเสีย
WASTE



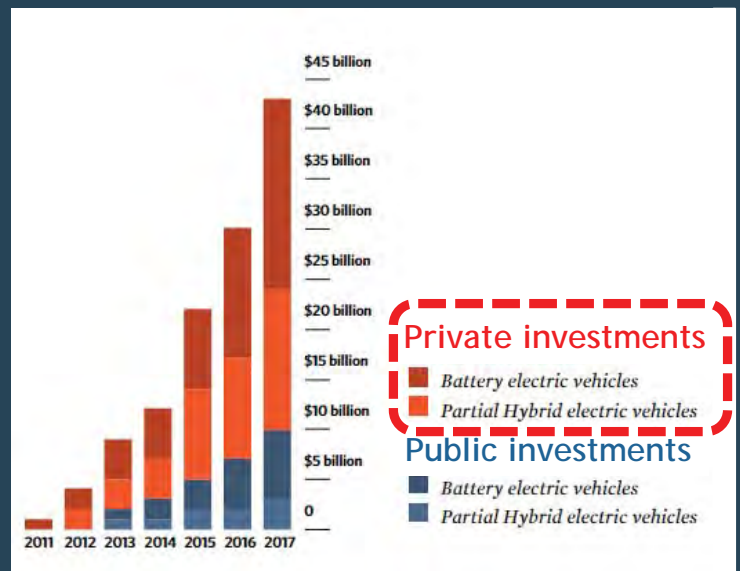
ภาคเกษตรกรรม
AGRICULTURE

Global Climate Investment Trends in selected sectors

Renewable Energy



Electric Vehicle



CLIMATE CHANGE & LINKAGES TO BUSINESS ?

QUANTIFY & CERTIFY

“GHG EMISSION REDUCTIONS”

CLIMATE MITIGATION TOOLS

TGO PROVIDES “GHG CERTIFY SERVICES” TO BUSINESS

Thailand Voluntary Emission Reduction Program = T-VER
Thailand Carbon Offsetting Program = TCOP
Carbon Footprint of Product = CFP
Carbon Footprint Reduction (for product) = CFR
Carbon Footprint for Organization = CFO

Clean Development Mechanism = CDM
Joint Crediting Mechanism = JCM



TELLING YOUR CARBON FOOTPRINT EMISSIONS & REDUCTIONS ?

CARBON FOOTPRINT OF PRODUCT

CARBON REDUCTION LABEL

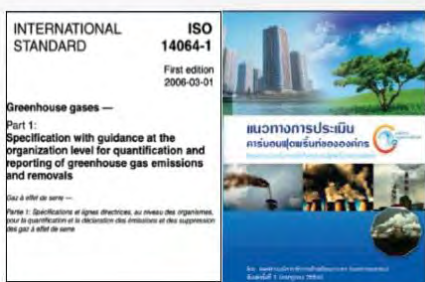
Current status: 3,019 products/551 companies (30 Apr 2019)

Carbon Footprint Reduction : 551 Products /81 companies (reduced GHG 3,007,028 tCO₂e)



TELLING YOUR CARBON FOOTPRINT EMISSIONS & REDUCTIONS ?

CARBON FOOTPRINT FOR ORGANIZATION



Certified Organization (356)



CARBON FOOTPRINT CERTIFICATE



Sector	No. of companies
Services and Offices	80
Food and Beverage	71
Power Generation	41
Petrochemical and Chemicals	35
Electronics	19
Plastics and Packaging	20
Others	90

GHG MITIGATION SCHEMES

CDM projects in Thailand

CDM since 2008

- TGO issued 222 Letters of Approval for CDM projects in Thailand.
- GHG reduction 12.71 million tons CO₂e per year
- Mobilize 249,000 million baht of investment for low carbon development



Create GHG mitigation schemes

Since 2014, TGO becomes a **"Certify Body"** for GHG units

- Domestic voluntary carbon market Thailand Voluntary Emission Reduction, or **T-VER**
- Non-market mechanism for awareness raising : Low Emission Support Scheme or **LESS**



Certified GHG Reductions

2,072,007

tons CO₂ equivalent

JCM

Since 2015, TGO becomes Thailand JCM secretariat

for Joint Crediting Mechanism or **JCM** between Japan & Thailand

JCM PROJECT STATUS

Registered Projects (5 projects)

Project Title	Expected Greenhouse Gas Emission Reduction (tCO ₂ eq/year)	Date of approval
Introduction of Solar PV Systems on Rooftops of Factory and Office Building	440	21 Aug 2017
Reducing GHG emission at Textile Factory of Luckytex (Thailand) Public Company Limited by Upgrading to Air-saving Loom	253	20 Apr 2018
Installation of High Efficiency Air Conditioning System and Chillers in Semiconductor Factory	3,327	20 Apr 2018
Energy Saving for Semiconductor Factory with High Efficiency Centrifugal Chiller and Compressor	324	20 Apr 2018
Introduction of 3.4MW Rooftop Solar Power System to Air-conditioning Parts Factories	1,071	14 Jan 2019
Total	5,415	

Request for registration (6 projects)

Project Title
Power Generation by Waste Heat Recovery in Cement Industry
Installation of Co-Generation Plant for On-site Energy Supply in Motorcycle Factory
Introduction of 2MW Rooftop Solar Power System for Power Supply in Factory
Energy Saving for Air-Conditioning in Tire Manufacturing Factory with High Efficiency Centrifugal Chiller
Introduction of Heat Recovery Heat Pumps to Food Processing Factory
Introduction of 27MW Rooftop Solar Power System to Large Supermarkets

Credit Issuance (1 project)

ID	Project Title
TH001	Introduction of Solar PV Systems on Rooftops of Factory and Office Building

Year	Credit (tCO ₂)	Thai side	Japanese Side	Percentage of Support
2016	137	68	69	54.1
2017	163	81	82	
Total	300	149	151	
Percentage	100	49.7	50.3	

Approved on 20th April 2018

Ready Thailand to Combat Climate Change

Thailand Greenhouse Gas Management Organization (Public Organization): TGO

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