



Coal Phase out: Opportunities for Asia-Pacific Region

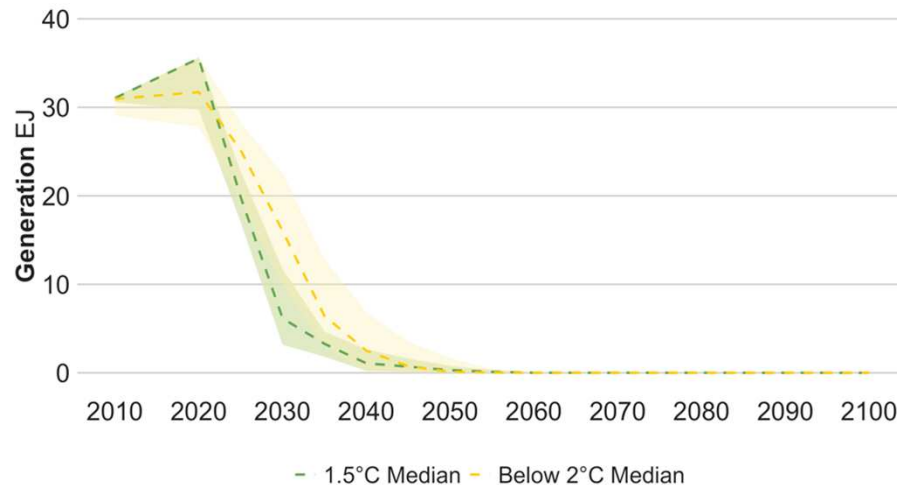
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Rapid Phaseout of Coal needed to get to 1.5°C ... and even to 2°C

Generation from Coal (w/o CCS)

Region: World



Source: Pathways from Huppmann et al. (2019) filtered with sustainability criteria

CLIMATE ANALYTICS Climate Analytics: Science-Based Policy to Prevent Dangerous Climate Change



Single most important step to keep the door open for achieving the Paris Agreement

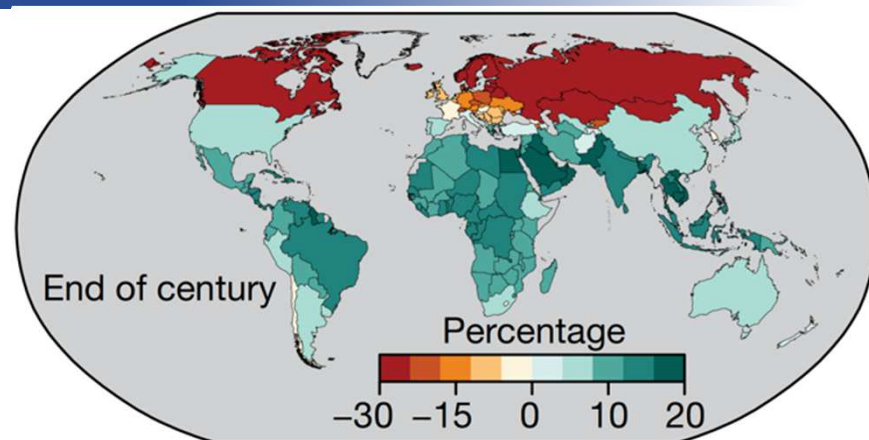
Region	Phaseout Date
OECD+EU	2031
ASIA	2037
LATIN AMERICA	2032
MIDDLE EAST AND AFRICA	2034
EASTERN EUROPE AND FORMER SOVIET UNION	2031

Coal power generation must:

- **Peak by 2020,**
- **Rapidly decrease to 80% below 2010 levels by 2030, and**
- **Be phased out by 2040 at the latest,**
- **Earlier in many regions**

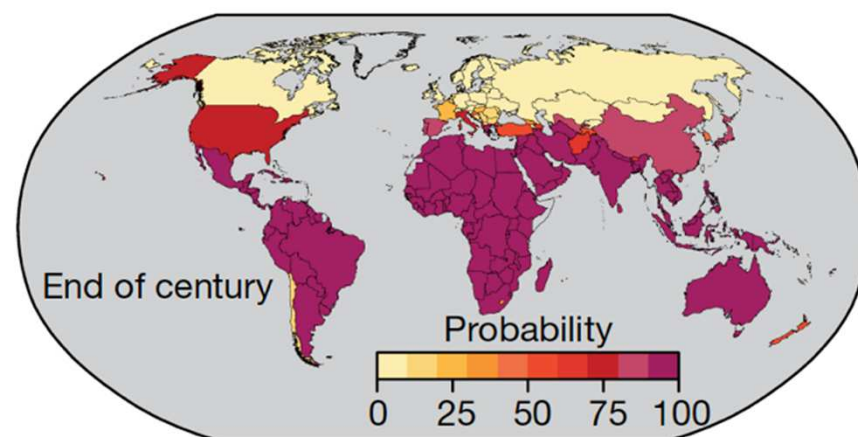
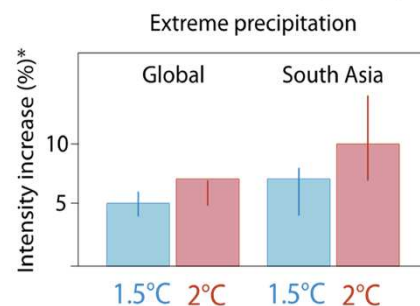
Significant differences in impacts between 1.5°C and 2°C

	1.5° C WORLD	2° C WORLD
HEATWAVES		
Tropics	~ 2 months	~ 3 months
ANNUAL WATER AVAILABILITY		
Central America	20% reduction	30% reduction
EXTREME PRECIPITATION		
South East Asia	7% increase	10% increase
SEA LEVEL RISE BY 2100		
Small Islands in the South Pacific and Caribbean and South East Asia	40 cm	50 cm
OCEAN ACIDIFICATION AND CORAL REEF LOSS		
Small Islands in the South Pacific and Caribbean and South East Asia	90% reduction [50;99]	98% reduction [86;100]



Benefits (**green**) of **reduced damages** (change GDP per capita) under 1.5°C warming, relative to 2°C warming

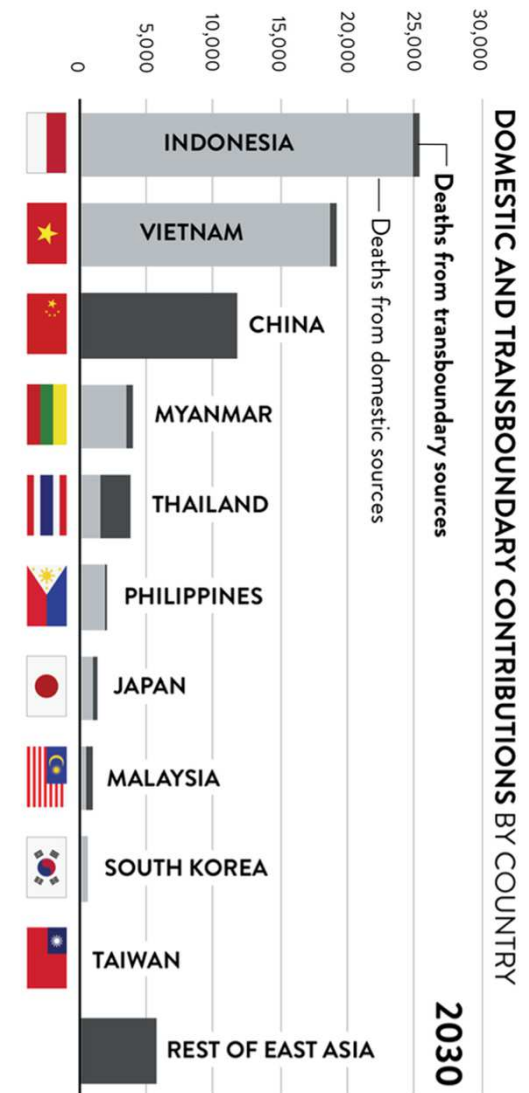
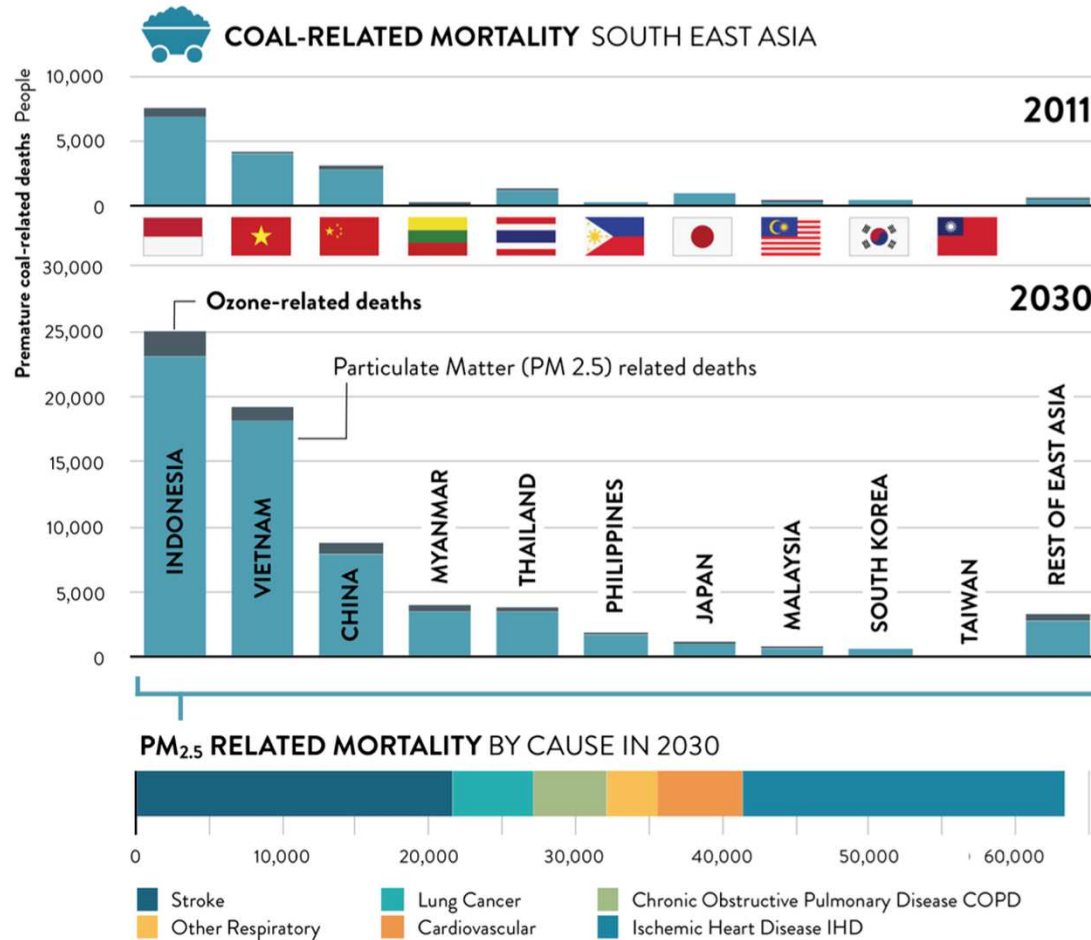
Source: Burke et al., 2018



Food Security:
Southeast Asia: **significant risks for crop yield reduction** in the region can be avoided.

Probability of **reduced economic damages** under 1.5°C warming relative to 2°C warming

Sustainable Development Co-benefits of energy system transformation in SEA / SA: Coal phase out

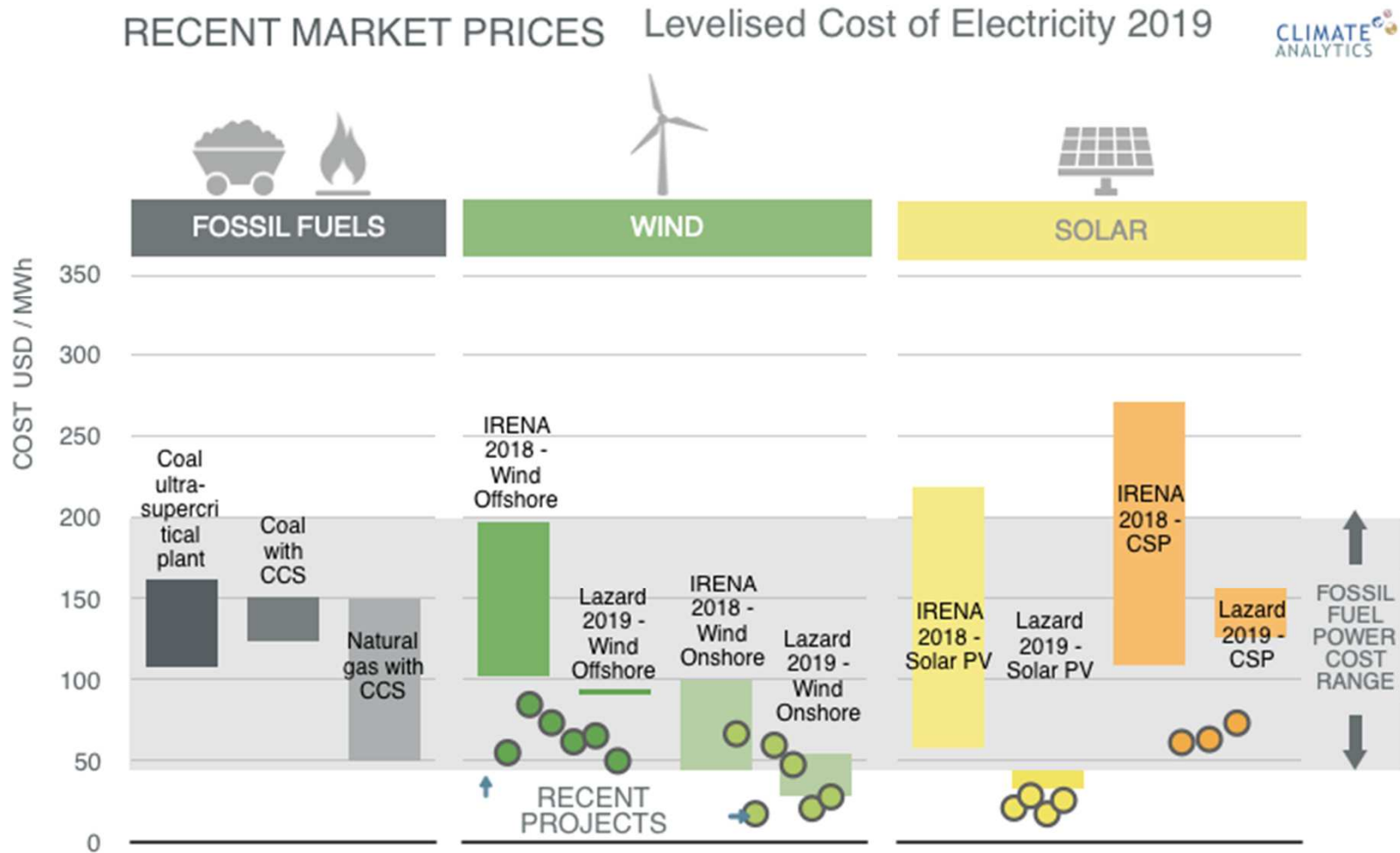


Left: Current (2011) and projected (2030) coal-related premature deaths due to emissions of coal power plants located in South East Asia.

Right: 2030 coal-related mortality by contributions from domestic and transboundary sources. For China and Rest of East Asia, only impacts from transboundary pollution, no national power plants included.

Source: Adapted from Koplit et al. (2017)

Large potential to speed up action in the power sector



Renewable energy technologies are **cost-competitive** with **new fossil fuel plants** and large parts of the **operating fleet** in many places

Source: Climate Analytics compilation based on Lazard's Levelized Cost of Energy Analysis, Version 12, IRENA's Renewable Power Generation Costs in 2018, and numerous sources for individual recent projects

Zooming into SA, SEA

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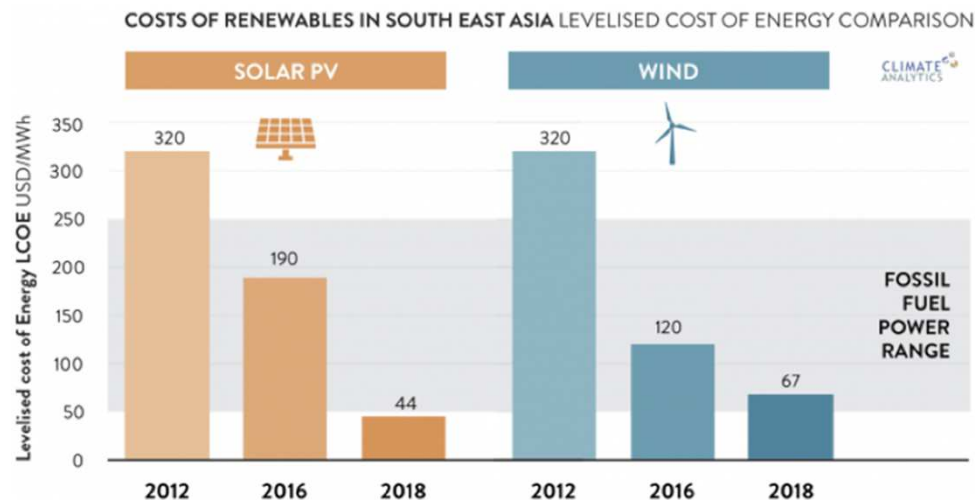
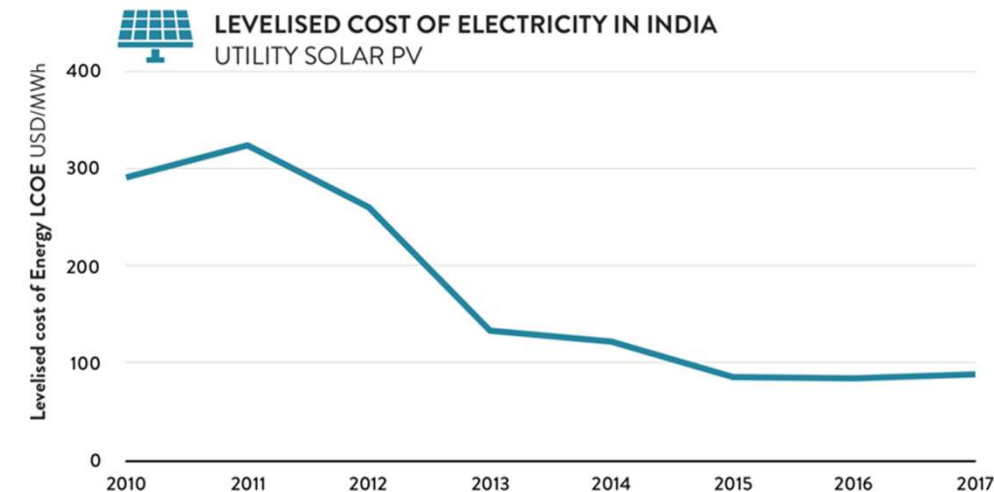
New York

Lomé

Australia



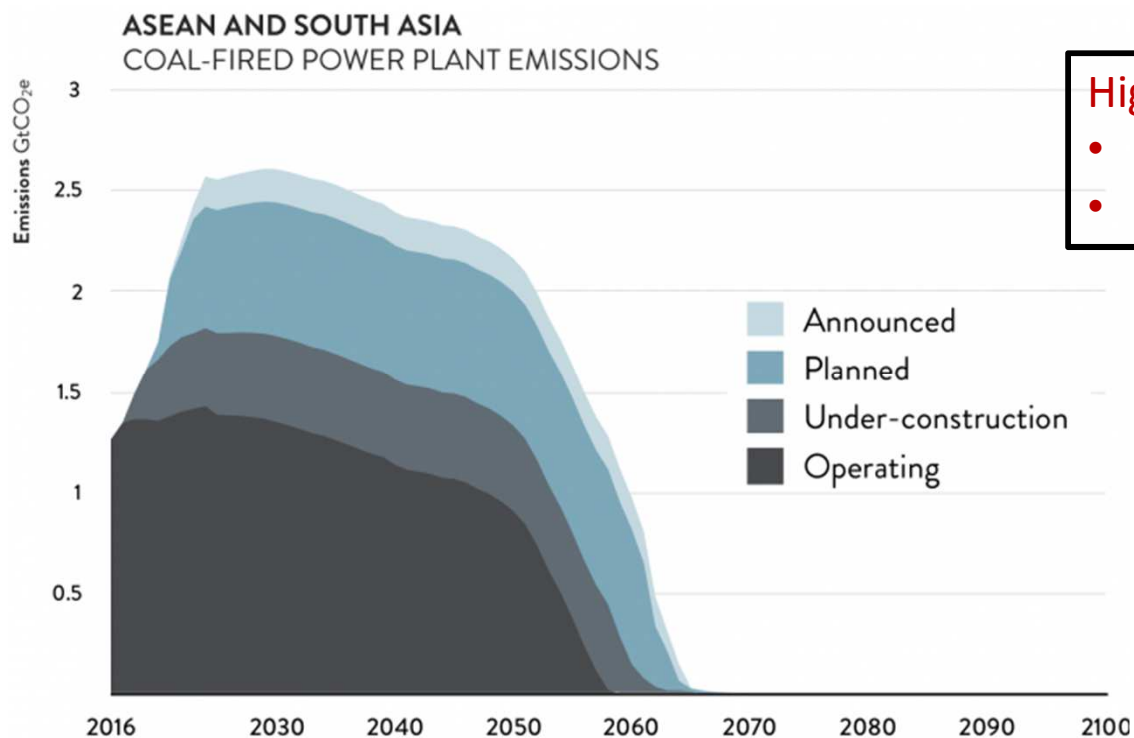
Decreasing costs of renewables in South and South East Asia



- Despite comparable solar radiation, **costs of PV differ significantly** between different countries Asia
 - The **Levelised Cost of Electricity (LCOE) of solar** has seen a dramatic decline in **India**.
 - **Costs of PV** in South East Asia however in 2016 one of the highest in the world
- > **Large potential to reduce costs**
- > **need to address barriers:**
- ✓ enabling deployment policies,
 - ✓ reducing capital costs through tax and duty exemptions,
 - ✓ reducing “soft costs” (licencing, permitting, grid connection and acquisition)

Source: Climate Analytics 2019, based on data from IRENA&PVTech

Coal plants expansion plans and emission implications



High risk of:

- Failing PA targets by large margin
- Massive stranded assets

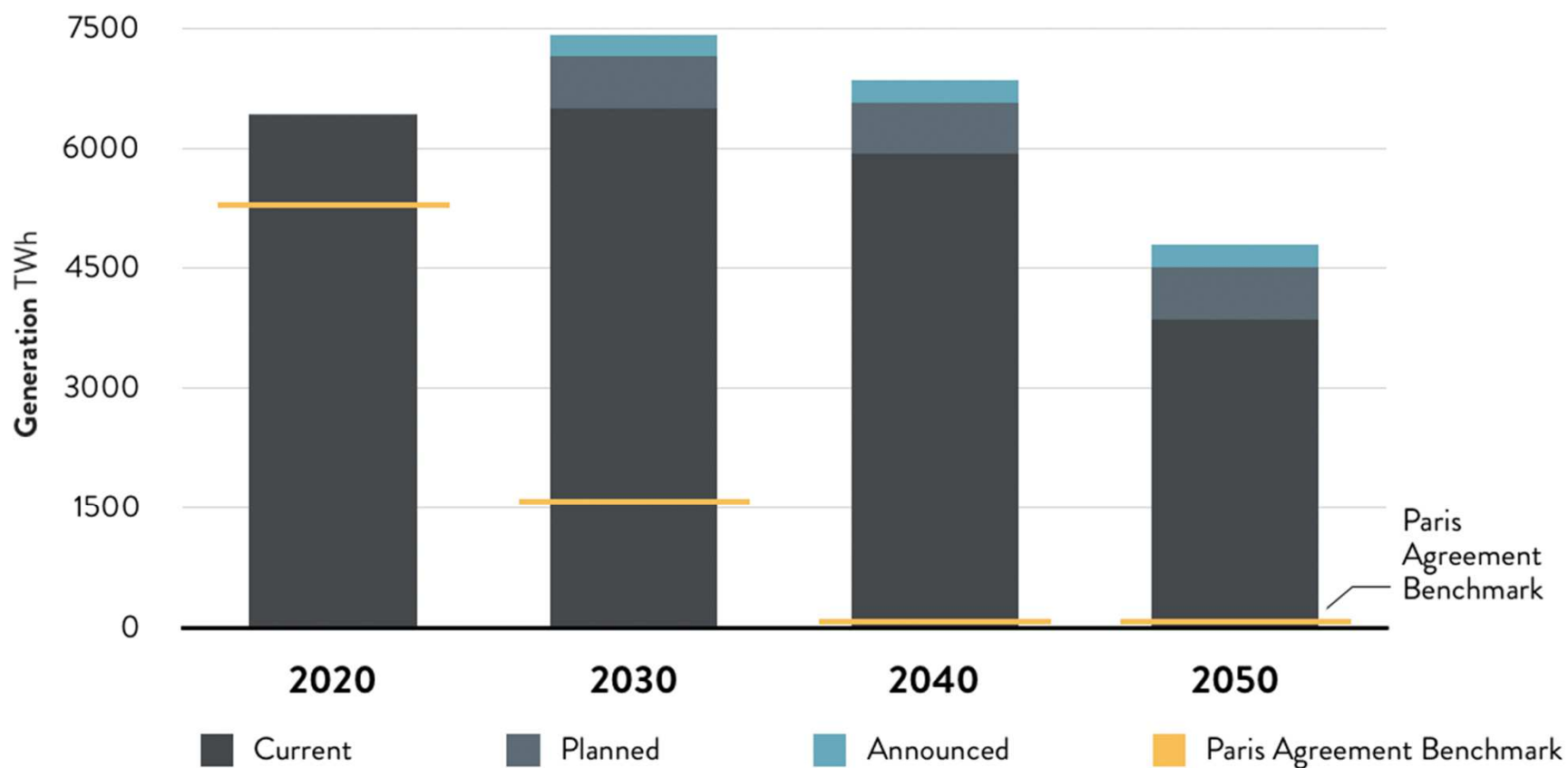
Country	Planned growth coal capacity	Planned capacity as share of global planned expansion
India	21%	15.55%
Vietnam	183%	11.97%
Indonesia	62%	7.29%
Bangladesh	320%	5.05%
Pakistan	236%	3.25%
Philippines	78%	2.59%
Thailand	57%	0.99%
Cambodia	471%	0.69%
Myanmar	3188%	0.42%
Malaysia	9%	0.33%
Laos	32%	0.16%
Sri Lanka	0%	0.00%

Climate Analytics 2019, based on PLATTS WEPP and Global Coal Plant Tracker (June 2018)

- Countries in SA and SEA accounted for half of the planned expansion of the global coal power in 2018.
- India, Vietnam, and Indonesia alone: over 30%
- Important share from countries whose energy systems have not depended on coal in the past (e.g. Bangladesh).

(non OECD) Asia: Highest risk of stranded assets

ASIA'S COAL BASED POWER GENERATION INCOMPATIBLE WITH PARIS AGREEMENT BENCHMARKS



Coal power pipeline globally – dominated by Asia-Pacific

Figure 1: Global commissioning and retirements and the net change, 2000–2019 (gigawatts)

China = light blue, India = gray, Other = yellow, US = red, EU28 = dark blue,
Net change = black line, Net change without China = dotted black line

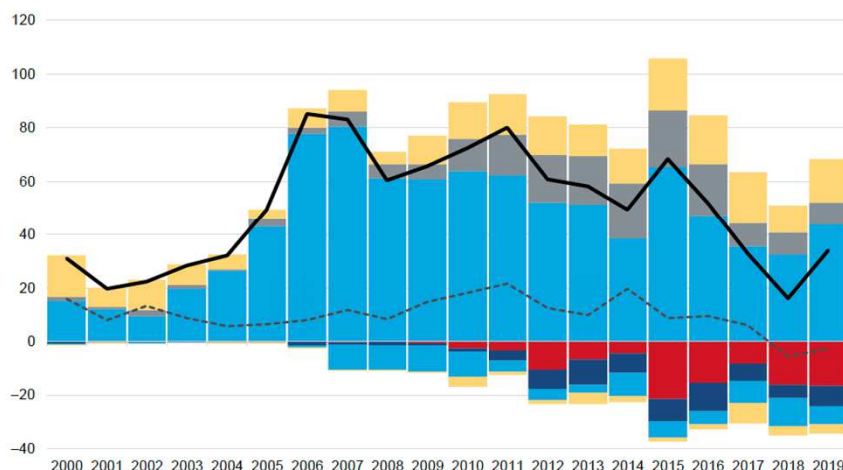
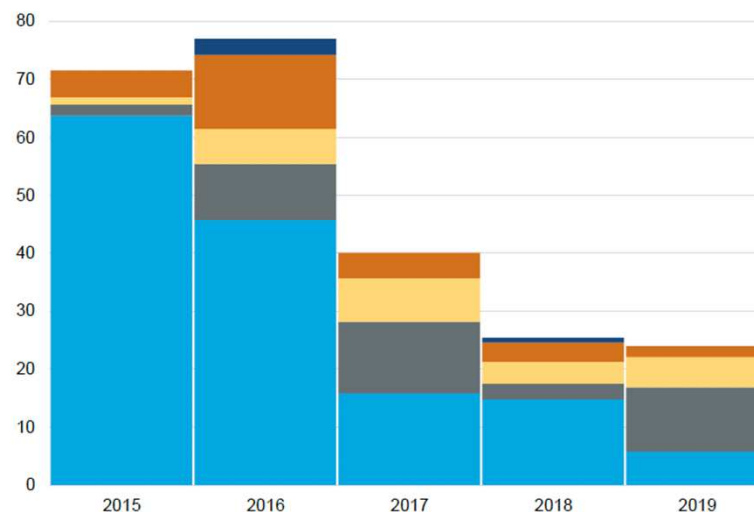


Figure 2: Global construction starts by region, 2015–2019 (gigawatts)

China = light blue, South Asia = gray, OECD = yellow, Southeast Asia = orange,
Latin America and Africa & Middle East = dark blue



- Pipeline for new commissioning is showing signs of a slowdown.
- Construction starts in 2019 have fallen by two-thirds since 2015, from 72.4 GW in 2015 to 24.3 GW in 2019
- OECD: South Korea (2.1 GW), Japan, (1.8 GW), and Turkey (1.3 GW)
- SEA: construction starts down 85%, from 12.8 GW in 2016 to 1.8 GW in 2019

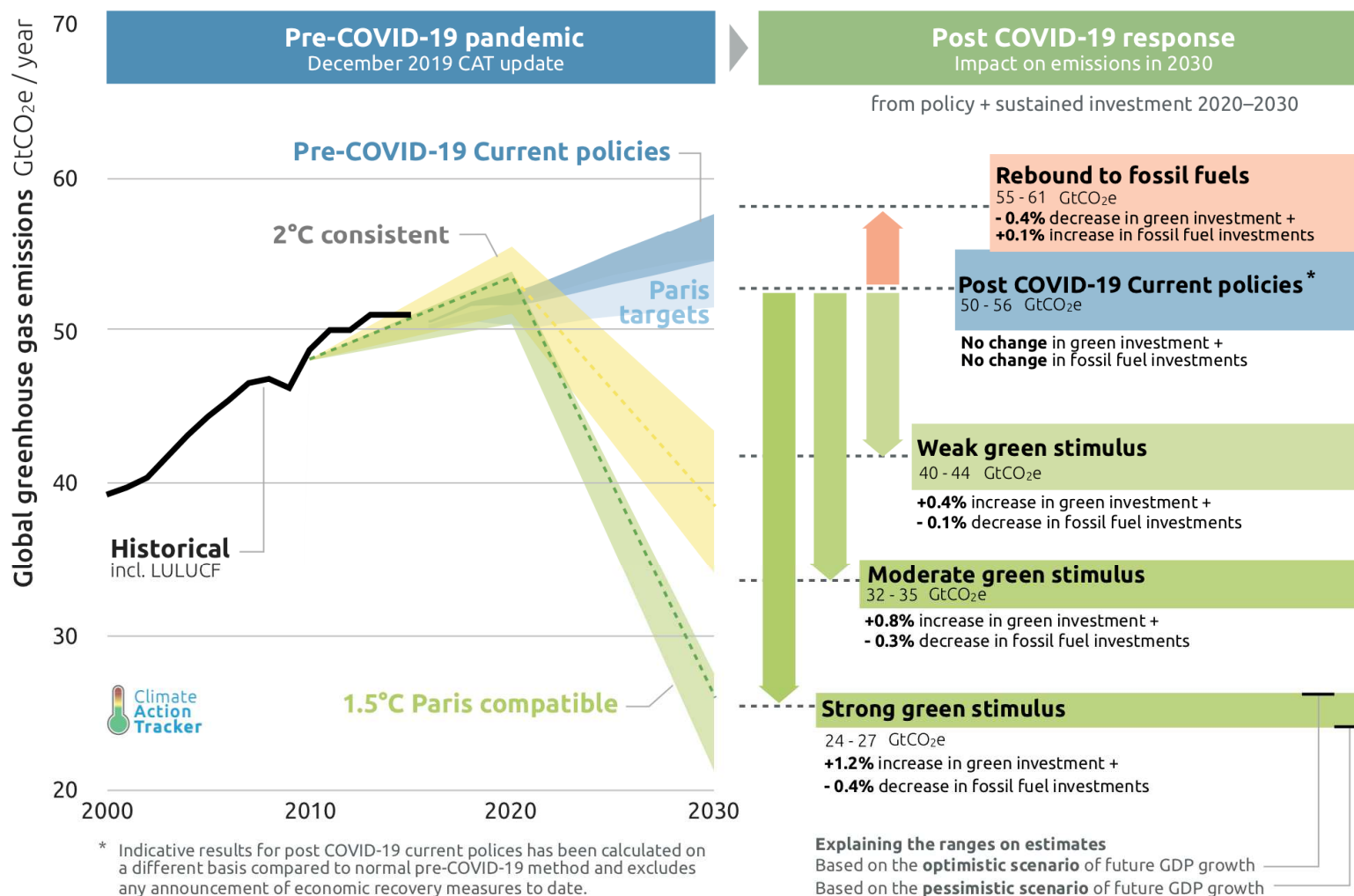
Source> Boom and Bust 2020 Tracking the Global Coal Plant Pipeline

<https://endcoal.org/global-coal-plant-tracker/reports/boom-and-bust-2020/>

Addressing climate and post-COVID 19 economic crises

Green stimulus to fight the COVID-19 economic crisis and the climate crisis

Strong climate policies plus sustained investment can provide valuable jobs, revitalise economies and get the world on track to meeting the 1.5°C Paris Agreement goal



Purpose of study for UNESCAP Regional Trends Report 2020

- Overview of current situation, trends and expansion plans
- drivers of coal expansion in Asia Pacific
- How can trend be reversed to be in line with Paris Agreement and SDG
- Benefits of transition away from coal in line with PA (Sustainable development implications of pathways)
- Policy options including based on best practice examples
- Options for regional co-operation

Thank you!

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