

# Leveraging carbon pricing to accelerate power sector decarbonisation in Asia Pacific

## CARBON PRICING DEVELOPMENT IN THAI POWER SECTOR

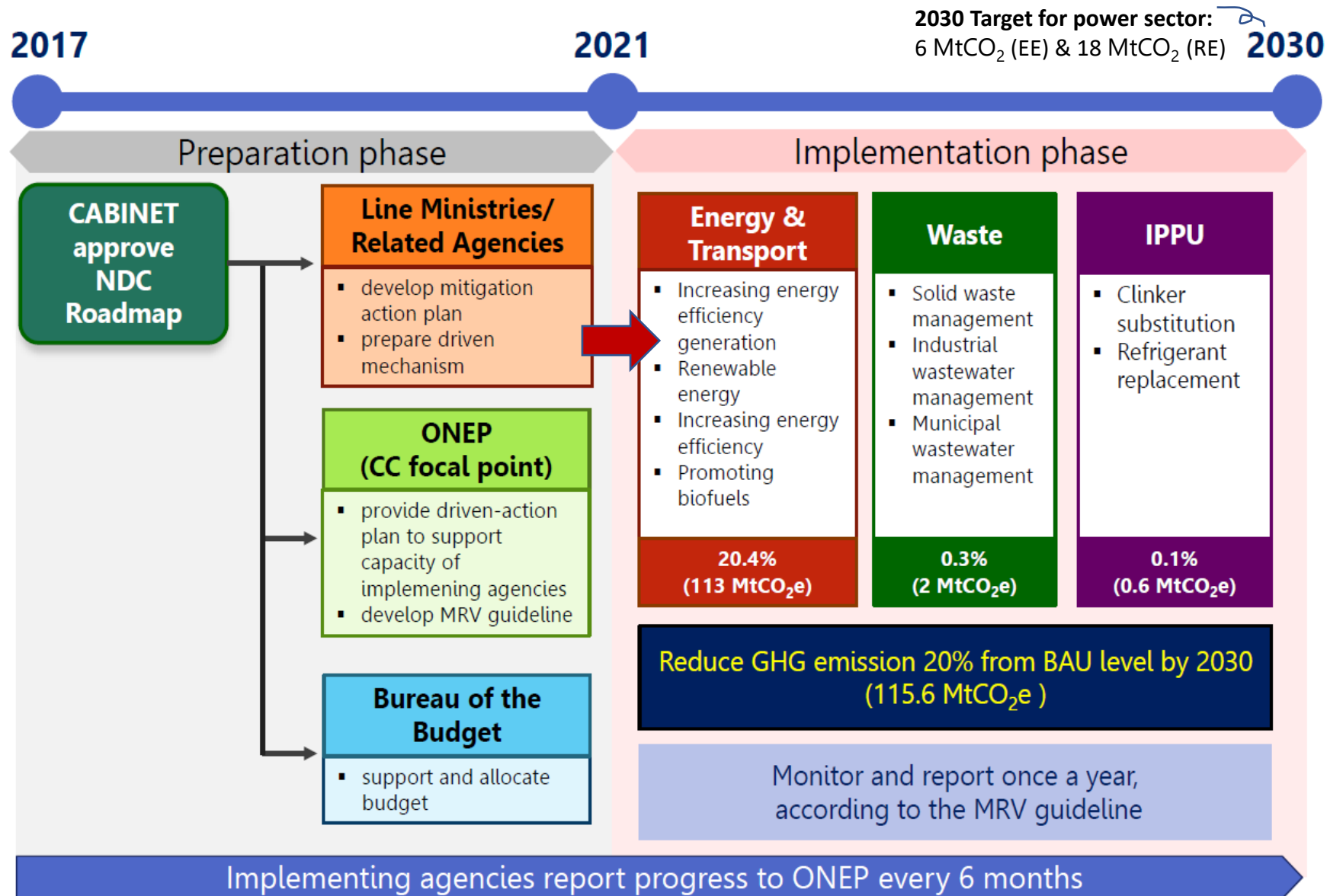


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# Thailand NDC Roadmap

Power generation is key sector with **24MtCO<sub>2</sub>** reduction target in 2030.



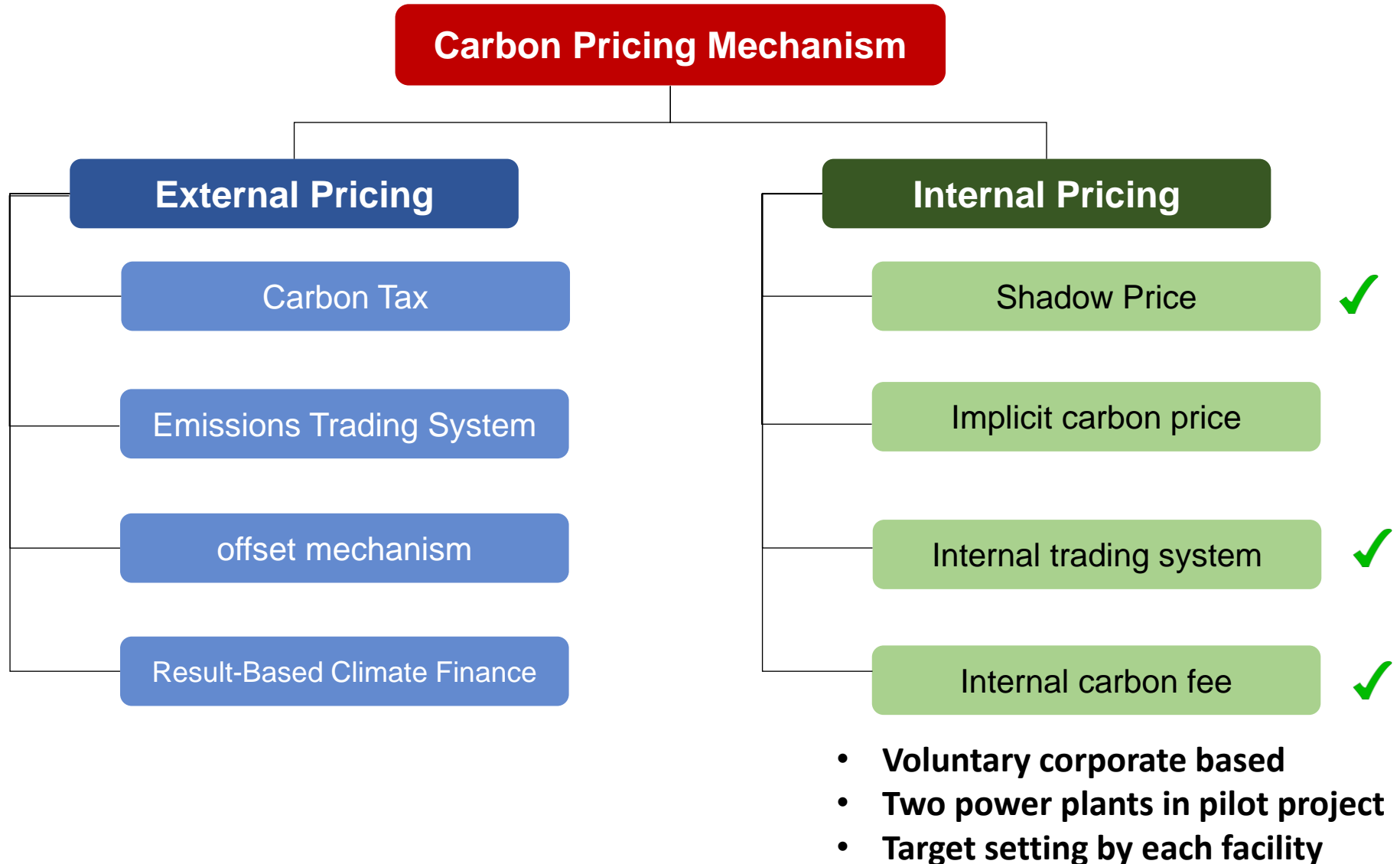
## At-a-glance

- Thailand's power sector GHG emission met highest figure in 2016 with 98.4 MtCO<sub>2</sub> and emitted around 90.0 MtCO<sub>2</sub>, from NG (61%) and coal/lignite (38.3%), in 2020.
- GHG Reduction, from Third BUR, is 22.99 MtCO<sub>2</sub> in 2018 (Base year 2010).
  - 4.62 MtCO<sub>2</sub> from energy efficiency improvement
  - 18.37 MtCO<sub>2</sub> from RE power generation
- External environmental cost (e.g. social cost of carbon) is exclude in Thai tariff structure.
- Thailand is now preparing the new energy plan, aimed for "net zero carbon" target, will launch this year.

## Selected two activities in 2020/21

- Potential role of carbon pricing in power sector.
- Pilot project in Internal carbon pricing (ICP).

# Carbon Pricing



# (1) Potential role of carbon pricing in Thai power sector (by IEA-TGO)



## Objectives:

- How carbon pricing could potentially spur emissions reductions from electricity generation and support power sector transformation in Thailand.
- What highlights potential challenges of implementing carbon pricing in Thai power sector and relevant policy insights to cost effectively achieve clean energy transition and support its long-term climate ambition.

## Key findings: Thai power sector limitation and challenges

- **Sufficient carbon price can effectively reduce emissions by triggering fuel switching in power generation.**
  - Price of around USD 30/tCO<sub>2</sub> in 2030 could trigger a shift from coal to gas while USD 40/tCO<sub>2</sub> price could incentivise a shift of 23 TWh of coal to gas and reduce GHG by 11% (13 MtCO<sub>2</sub>) in 2030.
- **Increasing flexibility for higher share of renewable integration.**

*Enhancing flexibility in convention plants will not only allow integrating higher share of VRE but will also encourage thermal power plants to run less. Together with new flexibility options (Smart EV charging, BSS and PSH) and changes to future gas contract to relax take-or-pay stipulations!*
- **Internalize the externality cost**
  - Incorporating external environmental costs (e.g. social cost of carbon) into generation cost could support faster power decarbonisation while ensure electricity security and affordability.
  - This will raise key challenge to encourage & support investment on new low carbon technology and phase-down of existing less efficient thermal power plants such as coal.

## (2) Application of Carbon Pricing Instruments (CPIs) in corporate level.



### Objectives:

- 1) To promote the application of Carbon Pricing Instruments (CPIs) in corporate business for Climate Change risks management and enhancement of investment opportunities in low carbon business;
- 2) To promote Internal Carbon Pricing (ICP) for determining carbon price of the business leading to cost management effectively;
- 3) To promote greenhouse gas emissions reduction in all sectors for the fulfillment of the emissions reduction target of the country.

### Key findings: Internal Carbon Pricing in power generation company

- **Strong commitment from top and concrete tech and financial data from middle management level are key for voluntary ICP in Thai power plant (corporate).**
  - Emission reduction target, set by corporate, have to reflect the real potential from corporate's marginal abatement cost of past related technologies.
  - Enabling of public participation process in future ICP's guideline development should be considered.
- **“Shadow price” is first key to analyse the risk of carbon price to company profit and can help accelerate the clean energy transitions from more low carbon project investment.**
  - Shadow price will help evaluate total additional cost to reach new additional emission reduction target.
- **Due to ICP concept is new for power sector, capacity building in pricing & technical assistant and clear internal communication are key for long-term success in corporate level.**
  - ICP act as one readiness preparation tool for smooth transfer to future mandatory mitigation program.



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