

Powering Prosperity and Enabling Sustainability in South East Asia

# **Theory of Change and Results Based Monitoring** Framework (RBMF)

2025 - 2030













## Introduction



- The Results Based Monitoring Framework (RBMF) is ETP's mechanism for tracking progress and performance.
- It starts with a Theory of Change, measures outputs, outcomes, and impacts against defined targets, and shows how outputs contribute to the achievement of intended outcomes.
- The RBMF allows continuous assessment of ETP's interventions and strengthens accountability with partners.
- This RBMF reflects ETP's <u>strategy for 2026 2030</u>, building on foundational work established in Indonesia, the Philippines and Vietnam.

















## **ETP Theory of Change**

**IMPACT** (2050)



**GHG Emissions Mitigation** and Environmental Protection



**Reliable Energy Supply and** Resilient Infrastructure



Sustainable Socio-Economic Growth



**Equitable Energy Transition** 

**LONG-TERM OUTCOMES** (2030)

**Increasing RE Capacities** and Share in Generation Mix

**Improving Air Quality** 

**Declining Energy** Intensity

**Increasing Green lobs** 

**Increasing Investments** in RE

**Accelerating Coal** Phasedown



#### **Strategic Outcome 1**

Policy Alignment with Climate Commitments



#### **Strategic Outcome 2**

De-risking Investments on RE, EE and Fossil Fuel Phasedown



#### **Strategic Outcome 3** Sustainable and Resilient

Infrastructure



### **Strategic Outcome 4**

**Just Transition** 

STRATEGIC **OUTCOMES** (2026-2030)

- 1.1 Effective policies, regulations, and plans that accelerate deployment of RE, adoption of EE, and promote fossil fuel phasedown
- 1.2 New and/or improved market mechanisms in favor of RE and EE
- 1.3 Improved coordination on energy transition agenda among government entities, and at the regional level



- 2.1 Enabling regulatory environment for RE and EE projects, national and cross-border grids, and
- fossil fuel phasedown efforts 2.2a Robust pipeline of bankable RE, EE, and grid
- projects to increase investments
- 2.2b Accelerated fossil fuel phasedown and increased adoption of repurposing mechanisms
- 2.3 Innovative RE and EE business models adopted
- 2.4 Enhanced domestic and regional energy transition supply chains



variable RE integration

- 3.1 Smart grid planning, development and operations aligned for higher
- 3.2 New grid reliability and flexibility solutions adopted
- 3.3 Increased cross-border interconnections and multilateral power trading
- 4.1 Enhanced institutional capacity and frameworks to support economic diversification, workforce reskilling for a just energy transition
- 4.2 Improved gender equality in energy transition efforts
- 4.3 Improved workforce development for the energy transition
- 4.4 Enhanced coordination among stakeholders supporting a just transition

### Underpinning Strategic Objective: Knowledge and Awareness Building

Stakeholders, including policy-makers, state-owned enterprises (SOEs), financial institutions, private sector, academia, and the public, are better equipped with information and capacity needed to drive energy transition.

**OUTPUTS** (2025-2030)

- · Energy policy and regulatory frameworks and plans aligned with climate commitments developed
- · RE and EE market mechanisms delivered
- · Coordination mechanisms among government entities established and convened
- Strategies, policies and regulations to reduce investment risks to RE, EE, and fossil fuel phasedown developed
- · Pre-development studies on RE and EE projects
- Fossil fuel early retirement mechanisms and options developed
- · RE and EE business models, including ESCOs and PPPs, disseminated
- · Energy transition supply chain plans developed

- Smart grid roadmaps and development programs delivered
- Grid standards and codes, reliability and flexibility solutions developed
- · ASEAN Power Grid (APG) roadmap and masterplan, technical standards and strategies for regional power integration and cross border trade developed
- · Regional coordinating mechanisms on APG convened

- Just transition plans, policies and strategic frameworks developed
- · Just energy transition knowledge sharing and capacity building platform established
- RE and EE capacity building programs developed and institutionalized
- · Gender action plans developed

**Assumptions** 

- · Resources are sufficient for mobilization and action
- Governments' direction and commitment towards energy transition is firm regardless of leadership
- · Governments adopt recommendations
- · Manageable adverse external economic and political factors
- Relevant national level and regional level stakeholders actively participate and open to coordinate
- Supportive civil society











# **IMPACT (2050)**



	GHG Emission Mitigation and Environmental Protection		2		3	4
			Reliable Energy Supply and Resilient Infrastructure		Sustainable Socio-Economic Growth	Equitable Energy Transition
Indicator	Energy GHG emissions (MtCO2e) or Net-Zero Emissions Goal	Air Quality: Particulate Matter (PM) 2.5 (µg/m³)	Percentage Share of Renewables (%MWh)	System Average Interruption Duration Index, SAIDI (min/yr)	GDP growth rate (%)	Electricity Access (% population electrified)
Attribution	Indirect	Indirect	Indirect	Indirect	Indirect	Indirect
Target (2050)	INO: Net-Zero Emissions (2060) PHI: 186.05 MTCO2eq avoided emissions (2050) from BAU case for the energy sector VIE: Net-Zero Emissions (2050)	WHO Targets <5 μg/m³	INO: 31% PHI: > 50% VIE: 31-39% excl hydro	INO: <250 mins/yr PHI: <1200 mins/yr VIE: <100 mins/yr	INO: 5.5-8% PHI: Maintain or increase VIE: Maintain or increase	INO: 100% PHI: 100% VIE: 100%
Baseline	2020 values INO: 636.5 MtCO2e PHI: 144.38 MtCO2e VIE: 528.4 Mt CO2eq	2020 values: INO: 18 μg/m <sup>3</sup> PHI: 20 μg/m <sup>3</sup> VIE: 25 μg/m <sup>3</sup>	INO: 17% (2024) PHI: 22% (2023) PHI: 26% (2024) VIE: 44% (2024) (incl. 31% of hydro)	INO: 338 mins/yr (2020) PHI: 1700 mins/yr (2022) VIE: 283 mins/yr (2022)	2024 values INO: 5.1% PHI: 6.1% VIE: 7.09%	2024 values INO: 99.63% (2022) PHI: 96.71% (2022) VIE: 99.8% (2023)
Means of Verification	GHG emissions data prepared by: IND: Ministry of Environment PHI: Department of Energy VIE: Ministry of Agriculture and Environment	World Bank	Country energy plans or reports published by: IND: Ministry of Energy and Mineral Resources (MEMR) PHI: Department of Energy VIE: Ministry of Industry and Trade	Country energy plans or reports published IND: MEMR PHI: Energy Regulatory Commission VIE: Ministry of Industry and Trade	International Monetary Fund,	Country energy plans or reports published by: IND: PHI: Department of Energy VIE: Ministry of Industry and Trade



## **STRATEGIC OUTCOMES (2030)**



	1	2	3	4	5	6	7
	Increasing RE Capacities and RE Share in The Generation Mix		Improving Air Quality	Declining Energy Intensity	Increasing Green Jobs	Increasing Investments in RE	Accelerating Coal Phasedown
Primary Indicators	RE capacity (GW)	Percentage Share of Renewables (%MWh)	Particulate Matter 2.5 (μg/m³)	Energy Intensity (TOE/million USD)	Number of green jobs	Investments (USD)	varied
Attribution	Indirect	Indirect	Indirect	Indirect	Indirect	Indirect	Indirect
Target (2030)	INO: 36 GW PHI: 98.5 GW VIE: 130 GW	INO: 21% PHI: 35% VIE: 31-39% excl hydro	WHO Interim Targets: INO: 10 μg/m³ PHI: 10 μg/m³ VIE: 10 μg/m³	INO: 213-249 TOE/million USD PHI: reduce by 3% until 2040 VIE: 400-420 TOE/million USD	INO: 1,700,000 PHI: 266,137 VIE: 350,000	INO: USD 146 billion PHI: USD 506 billion VIE: USD 135 billion	INO: targets under government review PHI: <10GW CFPPs VIE: 3 CFPPs retired
Baseline (2024)	INO: 11.6 GW (2021) PHI: 8.4 GW (2023) VIE: 22.7 GW (2024) (excl hydropower)	INO: 17% PHI: 22% (2023) VIE: 27% excl hydro (2024)	2020 values: <u>INO: 18 μg/m<sup>3</sup></u> <u>PHI: 20 μg/m<sup>3</sup></u> <u>VIE: 21 μg/m<sup>3</sup></u>	INO: 1,579 TOE/million USD PHI: 174 TOE/million USD VIE: 376 TOE/million USD	INO: 630,000 PHI: 106,439 VIE: 233,000	INO: USD 1.5 billion PHI: USD 1.34 billion VIE: USD 1.5 billion	INO: 0 CFPPs retired PHI: 12.1GW CFPPs VIE: 0 CFPPs retired
Means of Verification	Country energy plans or reports published by: INO: MEMR PHI: DOE VIE: MOIT	Country energy plans or reports published by: INO: MEMR PHI: DOE VIE: MOIT	World Bank	Country energy plans or reports published by: INO: MEMR PHI: DOE VIE: MOIT	Country energy plans or reports published by: INO: MEMR PHI: DOE VIE: MOIT	Country energy plans or reports published by: INO: MEMR PHI: DOE VIE: MOIT	Country energy plans or reports published by: INO: MEMR PHI: DOE VIE: MOIT

## **SO1 Summary: Policy Alignment with Climate Commitments**

Outcome Descriptions	Outcome Indicators	Outcome Targets	Output Indicators	Output Targets
1.1 Effective policies, regulations, and plans that accelerate deployment of RE, adoption of EE, and promote	OC 1.1a. Number of energy plans reflecting an ambition towards increasing the share of RE, improving EE, and phasing down fossil fuels	INO: 1 VIE: 1 PHI: 1 REG: 1	OP 1.1a. Number of research products and policy recommendations delivered to enhance energy plans	INO: 3 (2 by 2028) VIE: 3 (2 by 2028) PHI: 3 (2 by 2028) REG: 3 (2 by 2028)
fossil fuel phasedown	OC 1.1b. Number of policy and regulatory recommendations promoting RE, EE, and fossil fuel phasedown adopted by government entities	INO: 6 (3 by 2028) VIE: 6 (3 by 2028) PHI: 6 (3 by 2028)	OP 1.1b. Number of policy and regulatory recommendations promoting RE, EE, and fossil fuel phasedown presented to the government	INO: 8 (4 by 2028) VIE: 8 (4 by 2028) PHI: 8 (4 by 2028)
1.2 New and/or improved market mechanisms in favor of RE and EE	OC 1.2. Number of policy recommendations, plans, roadmaps to create new markets, operationalize or adjust existing markets in favor of RE and EE adopted by government entities	INO: 3 (1 by 2028) VIE: 3 (1 by 2028) PHI: 3 (1 by 2028)	OP 1.2. Number of policy recommendations, plans, to create new markets, operationalize or adjust existing markets in favor of RE and EE presented to government entities	INO: 3 (2 by 2028) VIE: 3 (2 by 2028) PHI: 3 (2 by 2028)
1.3 Improved coordination on energy transition agenda among government entities, and at the regional level			OP 1.3a. Number of national and regional coordinating mechanisms, technical working groups on RE, EE, and fossil fuel phasedown established and/or supported	INO: 6 (5 by 2028) VIE: 6 (5 by 2028) PHI: 6 (5 by 2028) REG: 2 (2 by 2028)
			OP 1.3b. Number of dialogues and meetings organized or supported for the technical working groups and other national and regional coordinating mechanisms	INO: 18 (12 by 2028) VIE: 18 (12 by 2028) PHI: 18 (12 by 2028) REG: 8 (6 by 2028)

### **SO2 Summary: De-risking Investments on RE, EE and Fossil Fuel Phasedown**

Outcome Descriptions	Outcome Indicators	Outcome Targets	Output Indicators	Output Targets
2.1 Enabling regulatory environment for RE and EE projects, national and cross-border grids, and fossil fuel phasedown efforts	OC 2.1. Number of new regulations, recommendations, and de-risking strategies adopted to reduce investment risks to RE, EE, grids, and fossil fuel phasedown	INO: 6 (2 by 2028) VIE: 6 (2 by 2028) PHI: 6 (2 by 2028) REG: 3 (1 by 2028)	OP 2.1. Number of new regulations, recommendations, and de-risking strategies proposed to reduce investment risks in RE, EE, grids, and fossil fuel phasedown	INO: 8 (4 by 2028) VIE: 8 (4 by 2028) PHI: 8 (4 by 2028) REG: 3 (2 by 2028)
2.2a. Robust pipeline of bankable RE, EE, and grid projects to increase investments	OC 2.2. Value of investments on RE, EE, and grid projects facilitated	INO: USD 730M VIE: USD 675M PHI: USD 2.53B	OP 2.2. Number of investment roadmaps, scoping studies, market assessment, and other pre-development analyses and tools completed for RE, EE, fossil fuel phasedown, and grid projects	INO: 6 (4 by 2028) VIE: 6 (4 by 2028) PHI: 6 (4 by 2028) REG: 3 (2 by 2028)
2.2b. Accelerated fossil fuel phasedown and increased adoption of repurposing mechanisms				
2.3. Innovative RE and EE business models adopted	OC 2.3. Number of RE and EE business models adopted	INO: 3 (1 by 2028) VIE: 3 (1 by 2028) PHI: 3 (1 by 2028) REG: 3 (1 by 2028)	OP 2.3.Number of studies, case studies, recommendations developed to promote adoption of innovative RE and EE business models	INO: 3 (2 by 2028) VIE: 3 (2 by 2028) PHI: 3 (2 by 2028) REG: 3 (2 by 2028)
2.4. Enhanced domestic and regional energy transition supply chains	OC 2.4. Number of studies, recommendations, investment plans, roadmaps for developing national and regional supply chains adopted	INO: 2 VIE: 2 PHI: 2 REG: 2	OP 2.4. Number of studies, recommendations, investment plans, roadmaps for developing national and regional supply chains presented to government entities and regional bodies	INO: 2 (1 by 2028) VIE: 2 (1 by 2028) PHI: 2 (1 by 2028) REG: 2 (1 by 2028)

## **S03 Summary: Sustainable and Resilient Infrastructure**

Outcome Descriptions	Outcome Indicators	Outcome Targets	Output Indicators	Output Targets
3.1 Smart grid planning, development, and operations aligned for higher variable renewable energy integration	OC 3.1. Number of grid simulations, regulatory and technical recommendations, smart grid roadmaps, and tools adopted by the government and/or grid operators to support smart grid transformation	INO: 2 (1 by 2028) VIE: 2 (1 by 2028) PHI: 2 (1 by 2028)	OP 3.1. Number of grid simulations, regulatory and technical recommendations, smart grid roadmaps, and tools presented to the government and/or grid operators to support smart grid transformation	INO: 2 (1 by 2028) VIE: 2 (1 by 2028) PHI: 2 (1 by 2028)
3.2 New grid reliability and flexibility solutions adopted	OC 3.2. Number of standards, analysis, grid reliability and flexibility solutions adopted	INO: 3 (1 by 2028) VIE: 3 (1 by 2028) PHI:3 (1 by 2028)	OP 3.2. Number of standards, codes, analysis for grid reliability and flexibility solutions developed	INO: 6 (3 by 2028) VIE: 3 (2 by 2028) PHI: 6 (3 by 2028)
3.3 Increased cross-border interconnections and multilateral power trading	OC 3.3a. Number of policy, regulatory and technical recommendations, plans, roadmaps to open cross-border power trading adopted by national governments and/or regional bodies	REG: 3 (1 by 2028)	OP 3.3a. Number of policy, regulatory and technical recommendations, plans, roadmaps to open markets for cross-border power trading presented to national governments and/or regional bodies	REG: 8 (5 by 2028)
	OC 3.3b. Number of cross-border power grid interconnections initiated	REG: 1	OP 3.3b. Number of multilateral dialogues on the regional power grid supported	REG: 5 (3 by 2028)

## **S04 Summary: Just Transition**

Outcome Descriptions	Outcome Indicators	Outcome Targets	Output Indicators	Output Targets
4.1. Enhanced institutional capacity and frameworks to support economic diversification and workforce reskilling for a just energy transition	OC 4.1. Number of institutional frameworks, just transition plans, workforce reskilling plans, and recommendations on just transition adopted	INO: 2 VIE: 2 PHI: 2 REG: 2	OP 4.1. Number of recommendations, institutional frameworks, just transition plans, workforce reskilling and development plans developed	INO: 3 (2 by 2028) VIE: 3 (2 by 2028) PHI: 3 (2 by 2028) REG: 2 (2 by 2028)
4.2. Improved gender equality in energy transition efforts	OC 4.2. Number of gender equality frameworks, action plans, and/or recommendations adopted	INO: 1 VIE: 1 PHI: 1 REG: 1	OP 4.2 Number of gender equality frameworks, action plans, and/or recommendations developed	INO: 1 (by 2028) VIE: 1 (by 2028) PHI: 1 (by 2028) REG: 1 (by 2028)
4.3. Improved workforce development for the energy transition	OC 4.3. Number of RE and EE curriculums implemented or institutionalized	INO: 1 VIE: 1 PHI: 1 REG: 1	OP 4.3. Number of RE and EE curriculums supported	INO: 1 (by 2028) VIE: 1 (by 2028) PHI: 1 (by 2028) REG: 1 (by 2028)
4.4. Enhanced coordination among stakeholders supporting a just transition			OP 4.4a. Number of national and regional coordinating mechanisms, committees, and technical working groups established and/or supported to promote just transition	INO: 1 (by 2028) VIE: 1 (by 2028) PHI: 1 (by 2028) REG: 3 (by 2028)
			OP 4.4b. Number of dialogues, meetings, and knowledge sharing events organized for just transition coordinating bodies	INO: 1 (by 2028) VIE: 1 (by 2028) PHI: 3 (2 by 2028) REG: 6 (4 by 2028)

## **Tracking Underpinning Strategic Objective: Knowledge and Awareness Building**

Outcome Descriptions	Output Indicators
Stakeholders, including policy-makers, state-owned enterprises (SOEs), financial	OP 5.1. Number of studies, research, new evidence published for raising awareness, improving the knowledge base, driving decisions, and dissemination to a wider audience
institutions, private sector, academia, and the public, are better equipped with information and capacity needed to drive energy transition.	OP 5.2a. Number of trainings, knowledge sharing events, organized at national and regional levels to build institutional capacity and knowledge networks
to unive energy transition.	OP 5.2b. Total number of attendees in trainings, knowledge sharing events organized at national and regional level to build institutional capacity and knowledge networks
	OP 5.2c. Total number of female attendees in trainings, knowledge sharing events organized at national and regional level to build institutional capacity and knowledge networks
	OP 5.3. Number of articles, press-releases on social media, and mass media, for outreach
	OP 5.4. Total number of entities supported through Technical Assistance
	OP 5.5a. Total number of members of coordinating mechanisms at the national and regional levels
	OP5.5b. Total number of female member of coordinating mechanisms at the national and regional levels

## **Acronyms and Units**



ASEAN	Association of Southeast Asian Nations	
APG	ASEAN Power Grid	
EE	Energy Efficiency	
ESCO	Energy Service Company	
GHG	Greenhouse gas	
GDP	Gross Domestic Product	
INO	Indonesia	
NDC	NDC Nationally Determined Contribution	
PHI	Philippines	
PPP	Public-Private Partnership	
RE	Renewable Energy	
SAIDI	System Average Interruption Duration Index	
SOE	State-owned Enterprises	
VIE	Vietnam	

Units	Metric Measured
MtCO2e - Megatonnes CO2 equivalent	Aggregated greenhouse gas emissions, standardized by global warming potential
	Expresses total greenhouse gas emissions as the equivalent amount of CO <sub>2</sub> , facilitating comparison across multiple gases (e.g., methane, nitrous oxide)
ug/m³ PM2.5 - micrograms per cubic meter PM 2.5	Concentration of tiny particulate matter (PM2.5) in air, often linked to health risks
% MWh RE - percent share megawatt-hours RE	Proportion of electricity generation from renewables (wind, solar, hydro, geothermal, biomass), by energy output
min/yr - minutes per year for SAIDI	System Average Interruption Duration Index (SAIDI) - average duration of power interruptions per customer annually. SAIDI provides insights into grid reliability and resilience.
% population electrified	Proportion of the population with electricity access - often used to measure equity in energy transition
GW - Gigawatt	Installed capacity of power producing facilities
TOE - Tons of Oil Equivalent	Unit of energy that represents the amount of energy released by burning one metric ton of crude oil.