

CIF ACT Investment Plan (IP) INDONESIA

Presentation to CIF TFC
26th October 2022



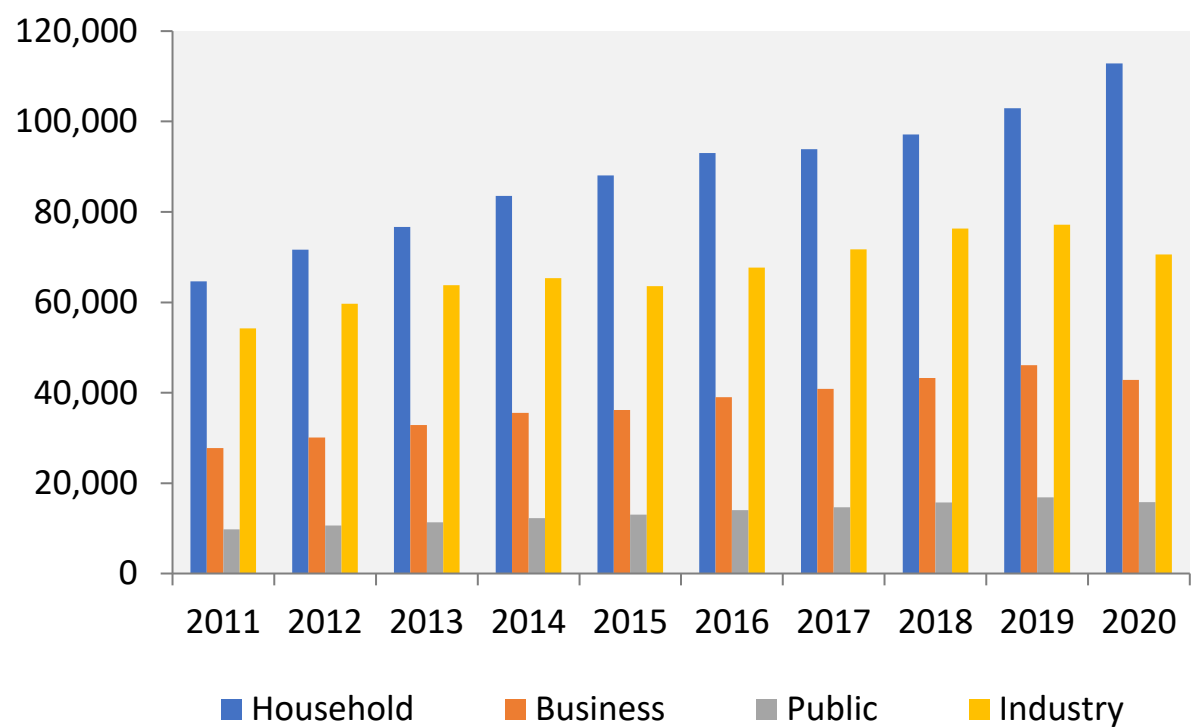
Fiscal Policy Agency
Ministry of Finance
Republic of Indonesia

Indonesia's Clean Energy Transition: Opportunities and Constraints



Rapid development and grid extension has come at the cost of increased emissions

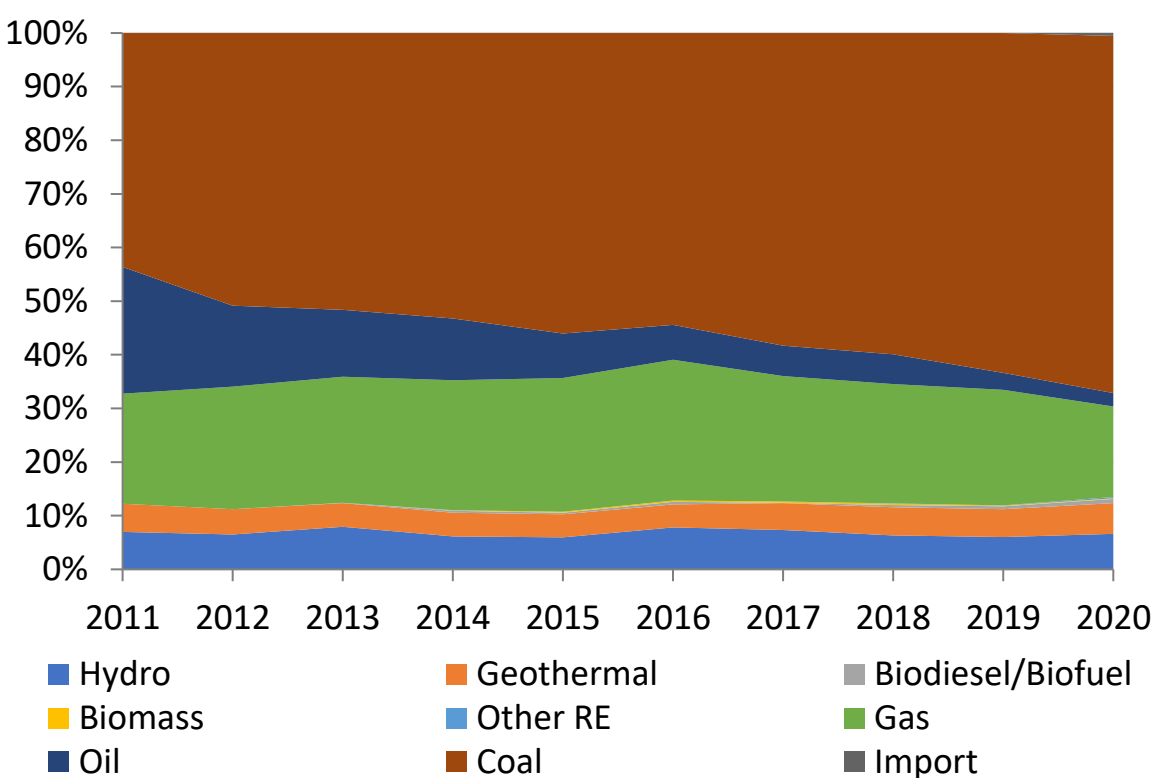
Electricity Consumption



Total electricity consumption has continuously grown in Indonesia, from 160 TWh to 250 TWh during last 10 years

Source: Data from RUPTL PT PLN (Persero) 2021-2030

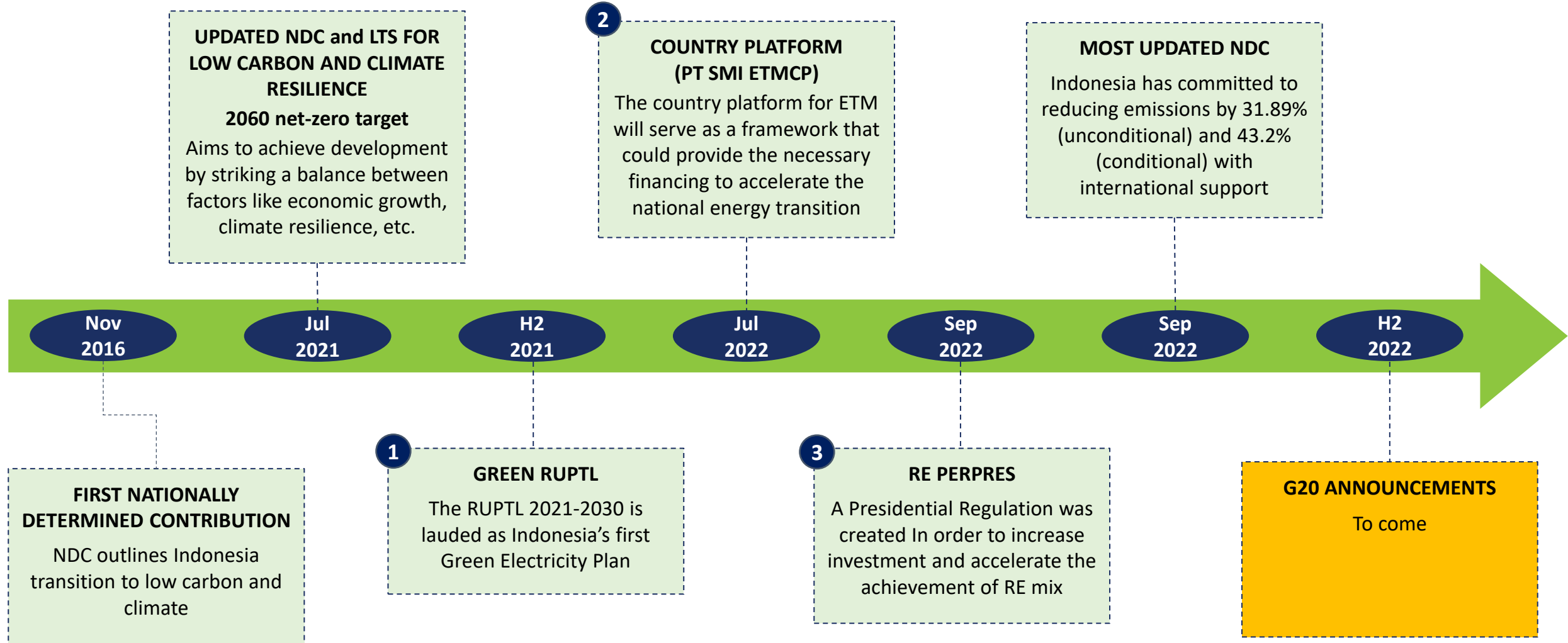
Generation Mix



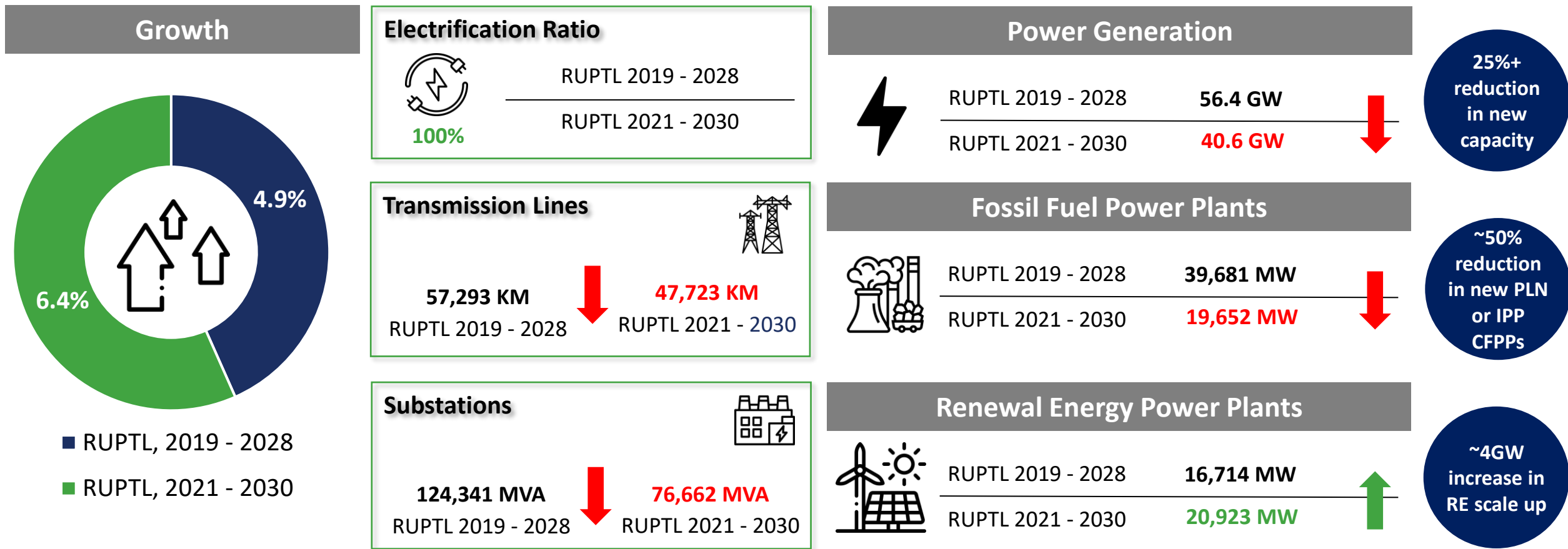
Simultaneously the share of coal in the generation mix increased from 44% to 65% (replacing diesel-fired generation)



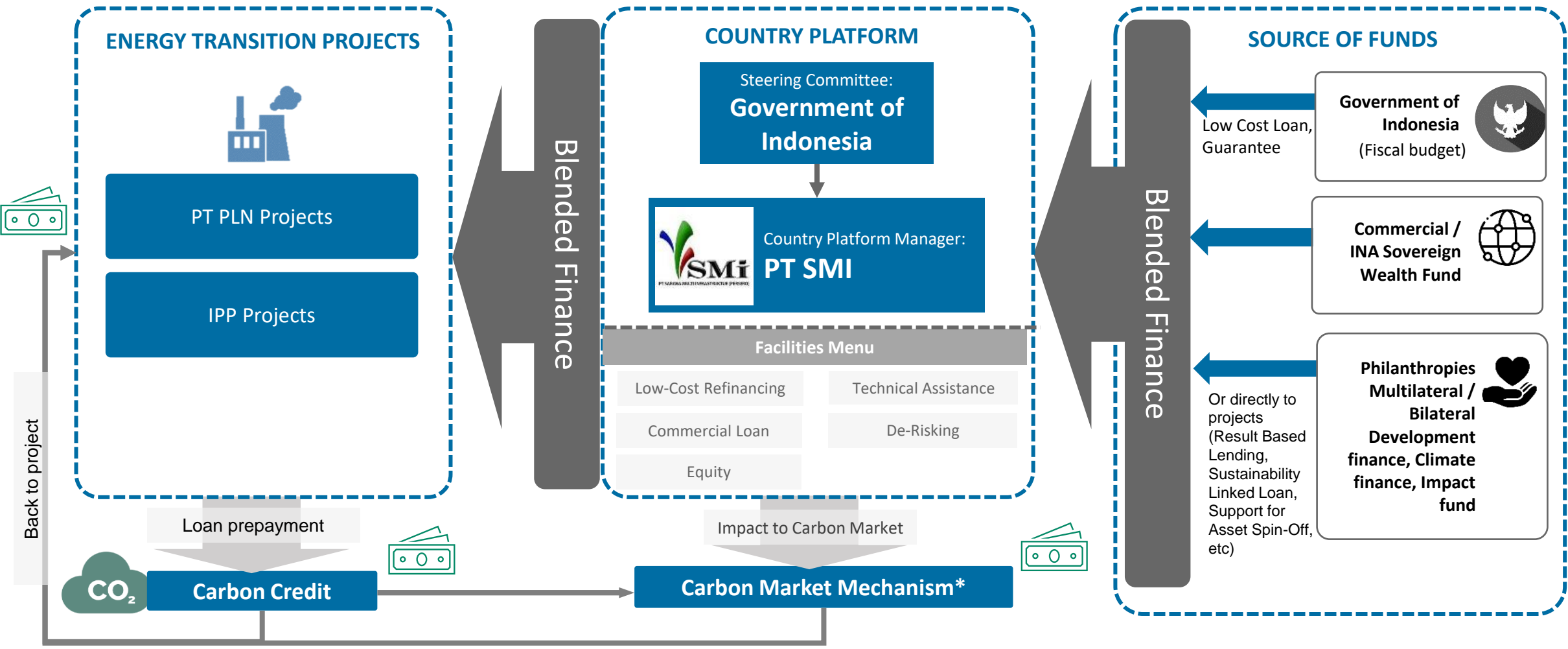
Recognizing the need for a energy transition, Indonesia has stated pledges and plans



1 PLN RUPTL 2021-2030 addressing overcapacity, leveraging decarbonization opportunity



2 Establishing a country platform to support various clean energy transition needs



*Carbon Trading, Carbon Bond, Result Based Payment, Stand By Buyer

3 Negotiating early retirement roadmap for PLN/IPP CFPPs in line with RE PERPRES

CFPP Early Retirement MEMR Initial Analysis

- Identification of candidate CFPPs that are best suited for early retirement based on multiple criteria – namely, cost, operational performance, carbon emissions reduced, and financial parameters, and impacts on grid stability.
- So far, 32 CFPP have been identified for early retirement (dates TBD), representing a total capacity of 16.8 GW. This consists of 27 PLN CFPPs (13.5 GW or 80% of the identified plants) and 5 IPP CFPPs (3.3 GW, or 20% of identified plants).
- The final CFPP early retirement roadmap will be announced at the G20.
- The CIF-ACT IP funds will be used to accelerate the retirement of select identified plants by an additional ~5 years, to enable pilot demonstration of early retirement assessment, design and implementation prior to scale up across the CFPP fleet.

Distribution of CFPP location exercise early retirement



5 CFPP Priorities to be early retired:

Based on **funding needs and generating capacity** in Jamali 500 kV system:

1. Paiton Unit 9 (660 MW)
 2. Suralaya Unit 5-7 (3x600 MW)
 3. Paiton Unit 1-2 (2x400 MW)
 4. Suralaya Unit 1-4 (4x400 MW)
 5. Suralaya Unit 8 (625 MW)
- Total: 5.485 MW

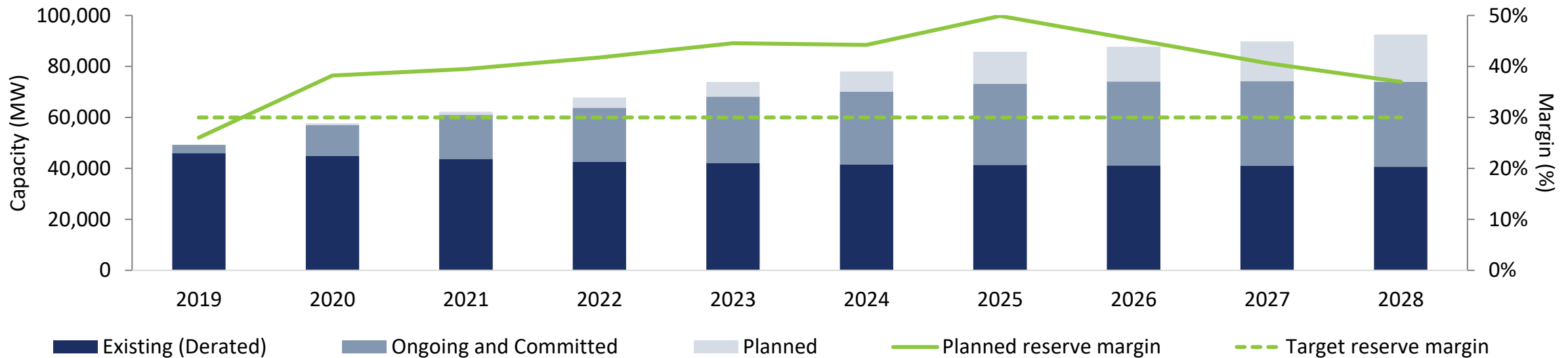
Based on **funding needs and CO₂ emission** in Jamali 500 kV system:

1. Paiton Unit 9 (660MW)
 2. Suralaya Unit 5-7 (3x600MW)
 3. Paiton Unit 1-2 (2x400MW)
 4. Suralaya Unit 1-4 (4x400MW)
 5. Adipala Unit 1 (660MW)
- Total: 5.520 MW



Overcapacity in the large demand centres poses a constraint to accelerating the clean energy transition

Reserve margins are expected to greatly exceed targets – too much capacity on the grid



Source: RUPTL 2019-28

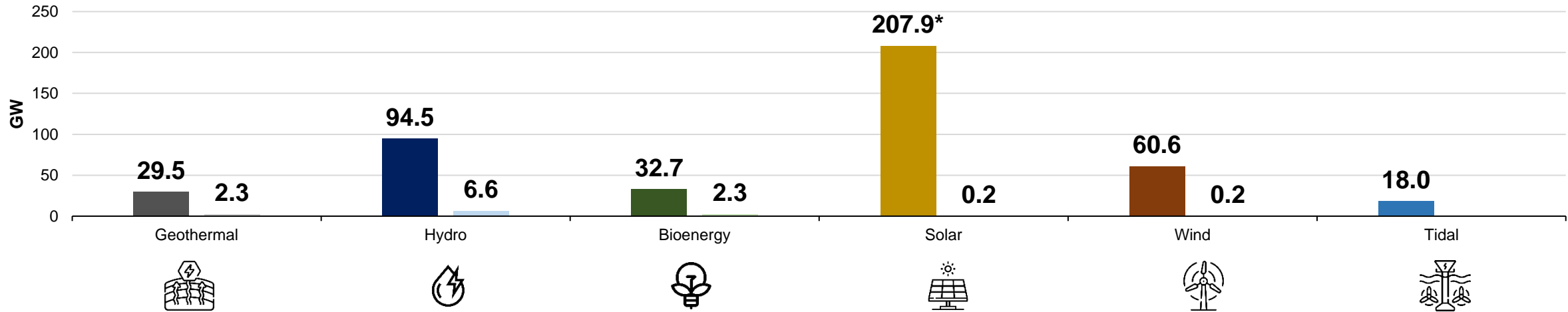
Near term structural challenges demand early decommissioning of CFPPs as first step of grid transformation

- Overly optimistic demand growth forecasts has led to overcapacity of thermal plants
- Limited room for renewables in the Java-Bali and Sumatra systems between now and 2030
- Interconnection of disparate island grids will take more time and investment



Renewable energy utilization is far below potential of indigenous resources

Indonesia 2019 RE Estimated Potential (LHS) vs. Installed Capacity (RHS)



Note: GW = gigawatt. RE = Renewable Energy.

*Higher solar potentials cited by MEMR and IEA (between 3,397 – 19,835 GW) based on further technical potential analysis. It is noted that IESR's analysis is based on available land cover and does not factor in economic or market potential (i.e. it does not consider projected costs and policy and regulatory limits).

Source: Institute for Essential Services Reform. 2021. 2021. *Beyond 443 GW: Indonesia's infinite renewable energy potentials.*

High transaction, transport and capital costs challenge RE development across the archipelago

- GOI has an ambitious target for a 23% share of renewables in the electricity mix by 2025 (up from 14% in 2021). It is not certain that these can be met without significant support from international partners.
- However, Indonesia has lagged our regional peers in scaling up renewables given previous unfavorable tariff regulations for wind and solar, permitting delays, national law requirements for local content and high capital costs for developing RE in major demand centers (largely due to accessibility of land) as well as remote grids (due to transport and construction, and cost of interconnections).
- Recent auction results in Indonesia for solar PV and wind revealed costs, while coming down, remain twice as high as those in comparable emerging market and developing economies.



Investment Plan



CIF ACT Indonesia IP – Approach & Objectives

CIF ACT Funds

Financial incentive to risk status quo given challenging macroeconomic context

Pilot first 1-2 GW of early CFPP retirement

- Reduce CFPP overcapacity on the grid to make room for RE
- Identify key technical, financial and just transition considerations involved in the decommissioning and repurposing of the first older, less efficient CFPPs and coal mines
- Post a viable model has been developed, Indonesia can learn, adapt and scale
- Early retirement roadmap for flexibilize middle-aged, efficient CFPPs as RE scale up is kickstarted

Scale up application of RE & storage technology

- Improve RE tariff and procurement policies and implementing regulations
- Guide necessary grid upgrades to optimize RE integration and demonstrate the viability of clean energy technology applications in Indonesia
- Concessional finance required to compensate for higher technology and capital costs for RE integration

Set up Just Transition, SESA and Gender frameworks

Establish **just and gender-balanced transition framework** and **bolster support for ETM Country Platform**-led clean energy transition activities

Ensuring national ownership/buy in/accountability of the transition



CIF ACT Indonesia – IP Financing Proposal (US\$ million)

#	Component	MDB Sector	ACT	MDB	Other/ Private	GoI*	TOTAL	Pillars		
								Governance	People & Communities	Infrastructure
Component 1: Accelerated Retirement of Coal Plants										
1.1	PLN RBL (early retirement of 1 GW)	ADB Public	50	600	300	[600]	1,550	✓	✓	✓
1.2	PT SMI ETMCP – Facility 1 (PLN Sustainability-Linked Loan)	ADB Public	50 1 (grant)	50	150	[250]	451		✓	✓
1.3	IPP CFPP early retirement program	ADB Private	100	400	300 ^b	N/A	800			✓
Component 2: Governance, Just Transition and Repurposing										
2.1	PLN/MEMR Energy Transition P4R	WB Public	30 5 (grant)	400	0	[100]	535	✓		
2.2	Just Transition and Repurposing Investment Project (Phase 1 & 2)	WB Public	180 5 (grant)	415	0	[60]	660		✓	✓
2.3	Prime STeP	ADB Public	9 (grant)	139	0	[21]	169		✓	
Component 3: Scaling Up Renewable Energy										
3.1	Dispatchable Renewables Program	IFC Private	70	140	350	N/A	560			✓
3.2	PT SMI ETMCP – Facilities 2 & 3 (Standby Facilities & RE Loans)	ADB Public	100	100	300	N/A	500		✓	✓
TOTAL			600	2,244	1,350	[1,031]	5,225			

Note: CFPP = Coal-fired Power Plant, ETMCP = Energy Transition Mechanism Country Platform, IPP = Independent Power Producer, P4R = Program For Results, RBL = Results Based Loan, PRIME STeP = Skills Development and Center of Excellence on Energy Transition Program, RE = Renewable Energy.

Source: ADB, GoI (Ministry of Finance, PLN, PT SMI, Ministry of Education, Ministry of Energy and Mineral Resources) and WBG.

^aGoI contribution figures subject to further discussion of program or project needs as well as annual budget approvals or endorsements. These numbers do not include broader MoF corporate support for implementing agencies such as PLN and PT SMI.

^bTo be confirmed in future market sounding.



IP designed to build foundation for sustainable, transformational change across ACT pillars

Governance and institutions

People and communities

Infrastructure

Component 1 – Accelerated retirement of coal plans

1.1 PLN RBL

- MEMR/PLN roadmap for coal retirement
- PLN ESG framework
- Strengthening PLN institutional capacity to manage a just energy transition

1.1 PLN RBL

- Engagement with PLN university for workforce and skills planning (integrating efforts with PRIME STeP loan for storage and solar PV technology training)
- Supporting communities and workers associated with 1-2 GW of early PLN CFPP retirement

1.2 PT SMI ETMCP

- Design and implement the just transition framework for ETM country platform under PT SMI.

1.3 IPP CFPP

- Just transition plans, particularly to safeguard the job security of the employees of the assets retired under the program

1.1 PLN RBL

- 1-2 GW of accelerated early retirement of PLN CFPP assets and associated system planning adjustments
- Expanding the smart transmission grid infrastructure.

1.2 PT SMI ETMCP

- 1-2 GW of accelerated early retirement of PLN CFPP assets

1.3 IPP CFPP

- Up to 1GW of accelerated early retirement of IPP CFPP assets.

Component 3 (Scaling up renewable energy storage)

3.2 PT SMI ETMCP (Stand-by and RE facility)

- Design and implement the just transition framework for the ETM country platform under PT SMI.

3.1 Dispatchable RE + 3.2 PT SMI ETMCP

- Investment in upwards of 300MW of RE generation in new/replacement capacity; and
- Up to 90MW of storage (co-located or standalone).



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Governance and institutions

People and communities

Infrastructure

Component 2 – Governance, Just Transition and Repurposing

2.1 P4R

- Policy and regulatory reform for coal transition
- Energy transition capacity building and training programs for government counterparts; and
- Improving power sector transparency, sustainability and efficiency

2.1 P4R

- Development of just transition framework, support for pilot JT projects

2.2 JT & Repurposing

- Minimize the social, economic, and environmental risks and impacts associated with decommissioning and repurposing of CFPPs and coal mines
- Address labor transition, reskilling, retraining and outplacement, social risks and gender impacts.
- Enhancing the opportunities of this transition (economic diversification)

2.3 PRIME STeP

- Targeted R&D for new energy technologies (i.e. storage systems and PV cells) commercialization (with private corporates and start-ups)
- Deployment of online and offline solar photovoltaic and battery storage trainings targeted to support labor transitions underway
- Jobs and skills study to assess supply and demand for upskilling/re-skilling for the labor market with respect to a just energy transition
- Establishing Centers of Excellence for the clean energy transition.

2.1 P4R

- Replacement RE, storage capacity and grid enhancements.

2.2 JT & Repurposing

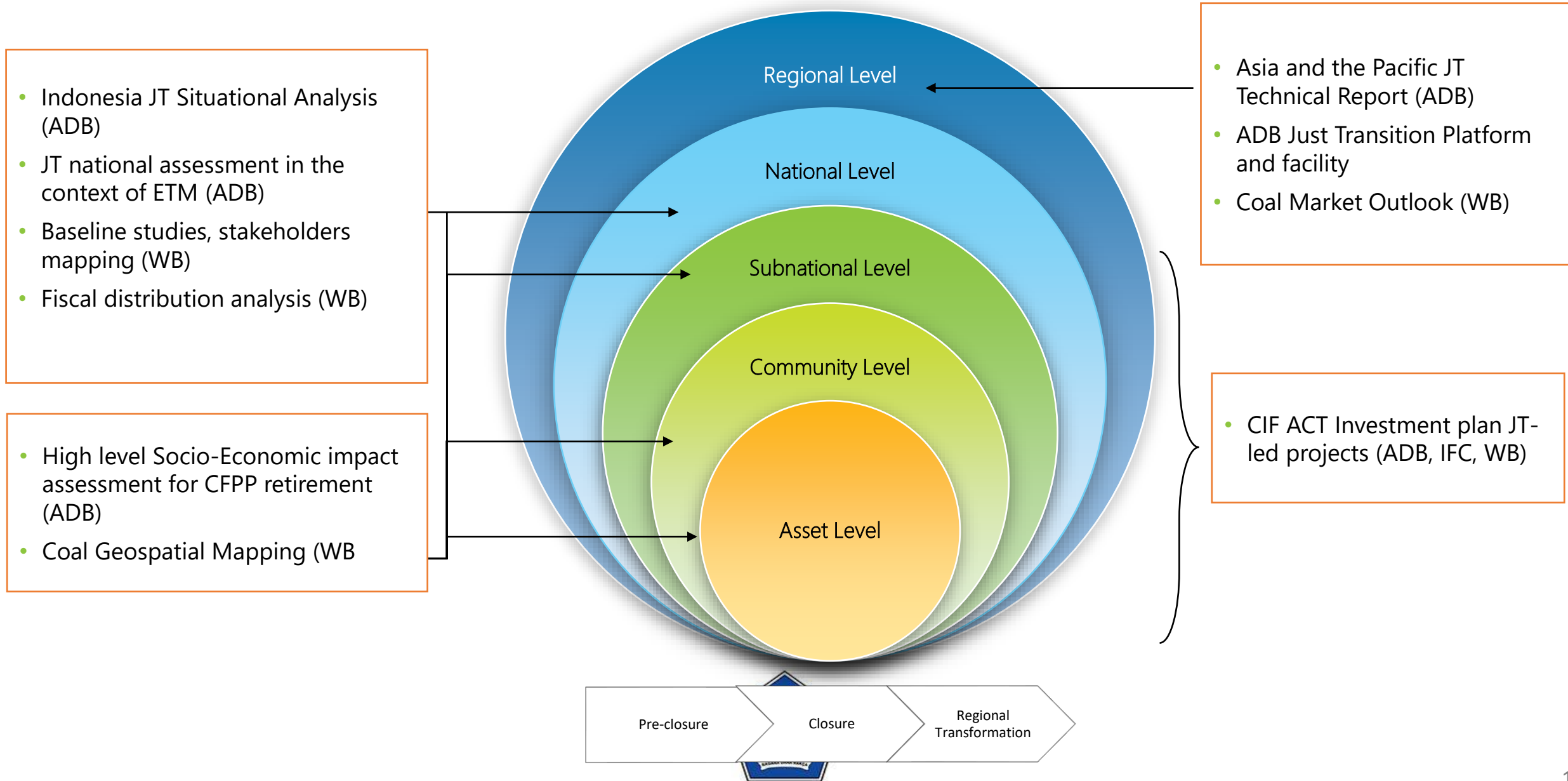
- Decommissioning of 1 or more of PLN CFPP assets
- CFPP repurposing investments (BESS or SYNCON), solar PV and Biomass; and
- Closed mine site repurposing



Just Transition, Safeguards and Gender Considerations



Comprehensive Approach to Just Transition in Collaboration with Government to Support Workers, Communities, and Regions Impacted by the Coal Phase-Out



Strategic Environmental and Social Assessment (SESA) – Clean Energy Transition

A national SESA is underway to identify key environmental, socio-economic and health and safety considerations associated with retiring CFPPs and coal mines, supply chains and replacement RE options through an inclusive and participatory process and to develop a strategic management plan to enable a sustainable and just energy transition.

A two-phase approach will be followed to apply SESA to the clean energy transition in Indonesia:

- SESA aims to improve sustainability of strategic plans, policies and programs
- Consultative Forum on National SESA established by MOF/BKF
- **Phase 1: Scoping** – a scoping exercise to identify key E&S risks and opportunities associated with transition to clean energy. **Completed July to November 2022.**
- **Phase 2: Assessment** – assessment of risks/impacts of implementing clean energy transition and preparation of a strategic environmental and social management plan (SESMP). **December 2022 to July 2023.**
- **Individual projects will be assessed through Environmental & Social Impact Assessments (ESIA)**

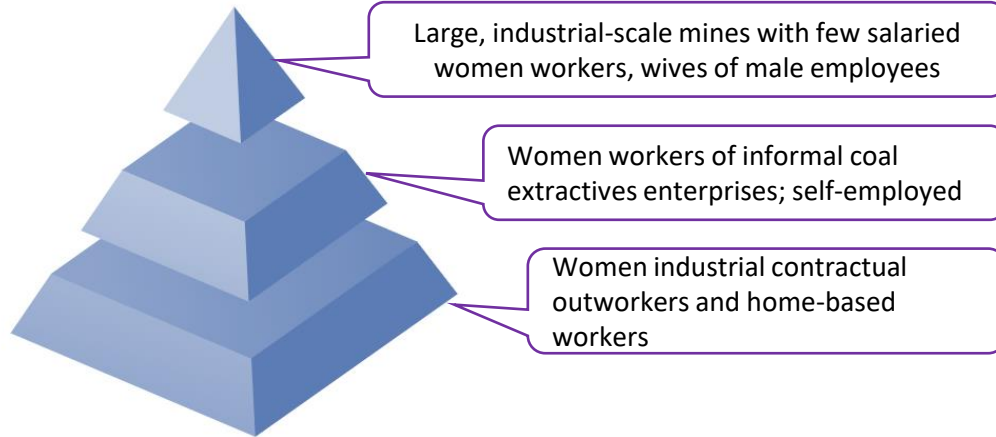


October 4, SESA Scoping Workshop with Government and Non-Government Stakeholders



Gender: Assessment, Planning and Implementation – addressing impacts of transition

Who is affected?



Distributional impacts of just transition

Social	(i) double burden of care, domestic and paid work for women, (ii) increased domestic violence and abuse against women in former mining households, (iii) mental health effects for former male miners, and (iv) stigma against seeking assistance for men.
Economic	(i) unemployment for men, unskilled work for women, (ii) surplus male labor displacing female employment, (iii) few/no employment opportunities for youth and older people, and (iv) outmigration/brain drain of youth/skilled workers.
Political	(i) increased activism of women in mining households, and (ii) disenchantment and anti-authoritarian culture among youth.

SESA & JT assessment (higher level overview)

- Gender, vulnerability and Indigenous Peoples aspect embedded
- Ministry of Women Empowerment and Child Protection and women rights NGO in the SESA Steering Committee
- Stakeholder engagement and Social Dialogue with a focus on women participation (partnership with women-led organizations)
- Ongoing consultation throughout individual investment cycle

Individual Investment (Asset-level)

Assessment

- Social Impact Assessment/Poverty, Gender and Social Analysis
- Gender Program Action Plan (RBL)
- Gender Action Plan (investment projects)
- Energy Sector Skills Demand/Supply Study and Mapping includes gender analysis
- Just Transition Plans will include measures focusing on women

Mitigation

- Compensation and impact mitigation in consultation and with focus on women
- Provision of decent work, equal pay, opportunities and gender responsive policies with a focus on vulnerable groups
- Future workforce preparation through STEM-related education, TVET, upskilling of workers and women's participation in non-traditional sectors
- Support the development of inclusive training and reskilling approaches and programs.



Outside of gender mainstreaming activities of ADB and WBG specified in this IP, separate additional workstreams to be developed through WOLCOT support may include: (i) WB plans to partner with WIME (Women in Mining and Energy) and KOWANI (Indonesian Women's Congress) to develop a "women for just transition" empowerment program, (ii) ADB plans to institutionalize engagement with stakeholders (initiated through SESA) to continue influencing just transition policy development and implementation and (iii) broader plans to develop comprehensive and coordinated approaches to promoting women in RE such as Women in Geothermal (WING) Indonesia Association and women's entrepreneurship in the green economy.

Stakeholder Consultation Summary

NGO/CSO Consultations

Conducted: 2
Attendees: 50+

Comments received and responded as part of the 2-week disclosure period

Development Partner Consultations

Conducted: 3
Attendees: AFD, KfW, USAID, Fire Dialogue, JETP, GIZ, ILO, and others.

Strategic Environmental & Social Assessment Events

Conducted: 2
Attendees: 95+

Planned: 3+



Theory of Change



IP Outcomes Expected

Adoption or amendment of up to 4 policies, regulations, standards or codes

3 accelerated CFPP retirement roadmaps, including policies and regulations that are explicitly inclusive of gender and other social exclusion factors and/or the gaps/barriers faced by specific social groups and targeted actions to address those gaps

Up to **1,160 (i.e., 89% of) employees** of retired CFPPs/coal mines with access to sustained income

Up to **2,200 direct beneficiaries of social plans and economic regeneration** activities, to be disaggregated by gender, other social characteristics and documented information about quality of jobs whenever relevant and possible

GOVERNANCE*



PEOPLE**



INFRASTRUCTURE***



Retirement of up to 2 GW of CFPP; **Avoid GHG emissions of up to 50 million tons** carbon dioxide equivalent (CO2e)

Install **RE up to 400 MW** and energy storage capacity up to 90 MW

Diversion of up to 15 million tons of coal

Reclaim, reforest and restore up to 150 hectares (ha) of mine area



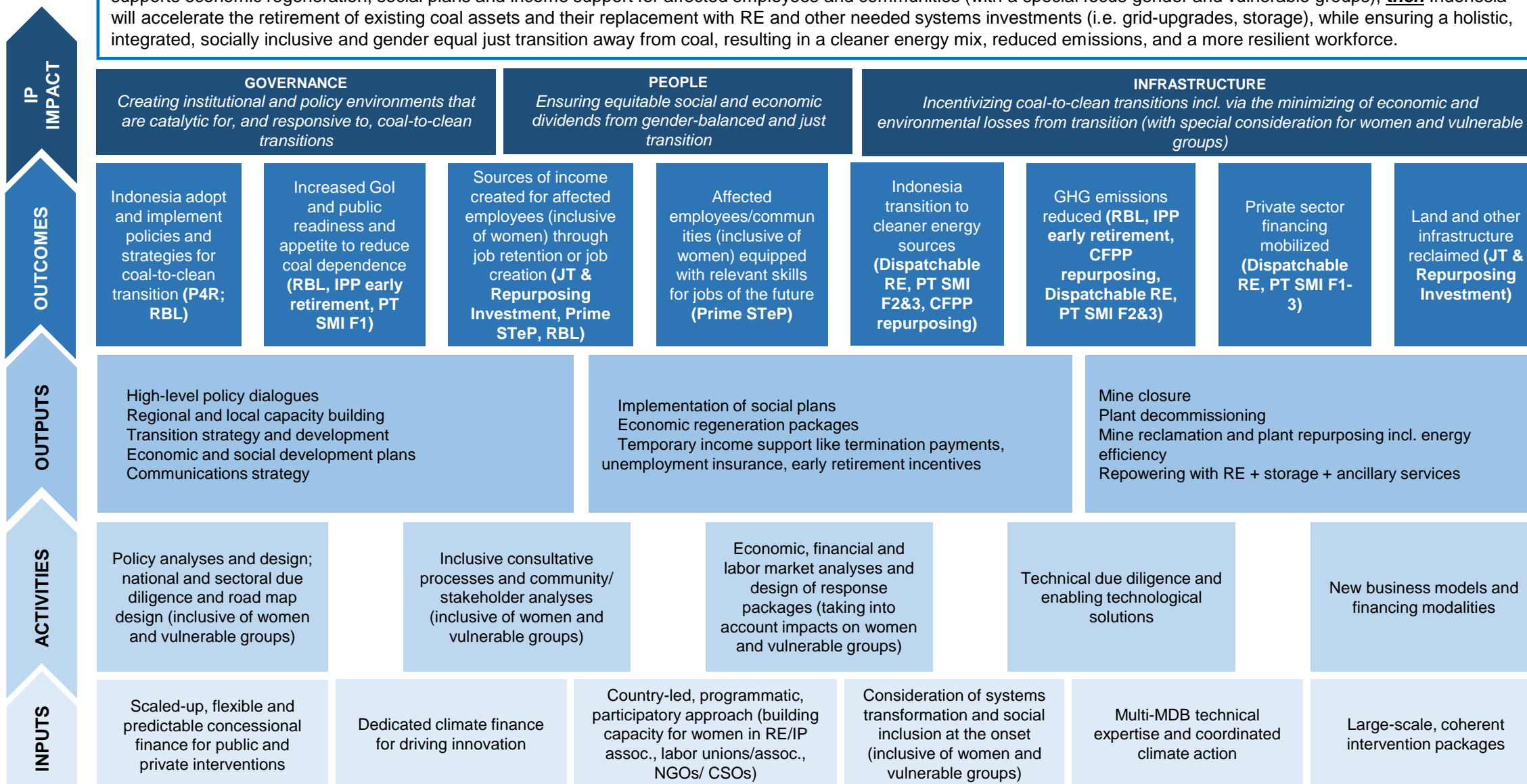
*Tracked by ACT Core Indicator 1 and 2

**Tracked by ACT Core Indicators 3 and 4

***Tracked by ACT Core Indicators 5, 6, 7, 8, 9 and 11

Accelerated transition from coal-powered to clean energy while supporting socio-economic goals and environmental remediation

Indonesia Theory of Change: If Indonesia **(i)** develops a roadmap for closure of CFPPs and unviable coal mines, including associated policy reforms and stakeholder consultations; **(ii)** creates a financing mechanism and catalyzes public, private and concessional financing to further accelerate the retirement of coal-fired power plants (CFPPs); **(iii)** conducts pilot repurposing on decommissioned CFPP asset sites, **(iv)** reduces policy, regulatory, procurement bottlenecks in RE scale-up (for PLN and IPPs) and **(v)** supports economic regeneration, social plans and income support for affected employees and communities (with a special focus gender and vulnerable groups), **then** Indonesia will accelerate the retirement of existing coal assets and their replacement with RE and other needed systems investments (i.e. grid-upgrades, storage), while ensuring a holistic, integrated, socially inclusive and gender equal just transition away from coal, resulting in a cleaner energy mix, reduced emissions, and a more resilient workforce.



Q&A

Thank you.



APPENDIX

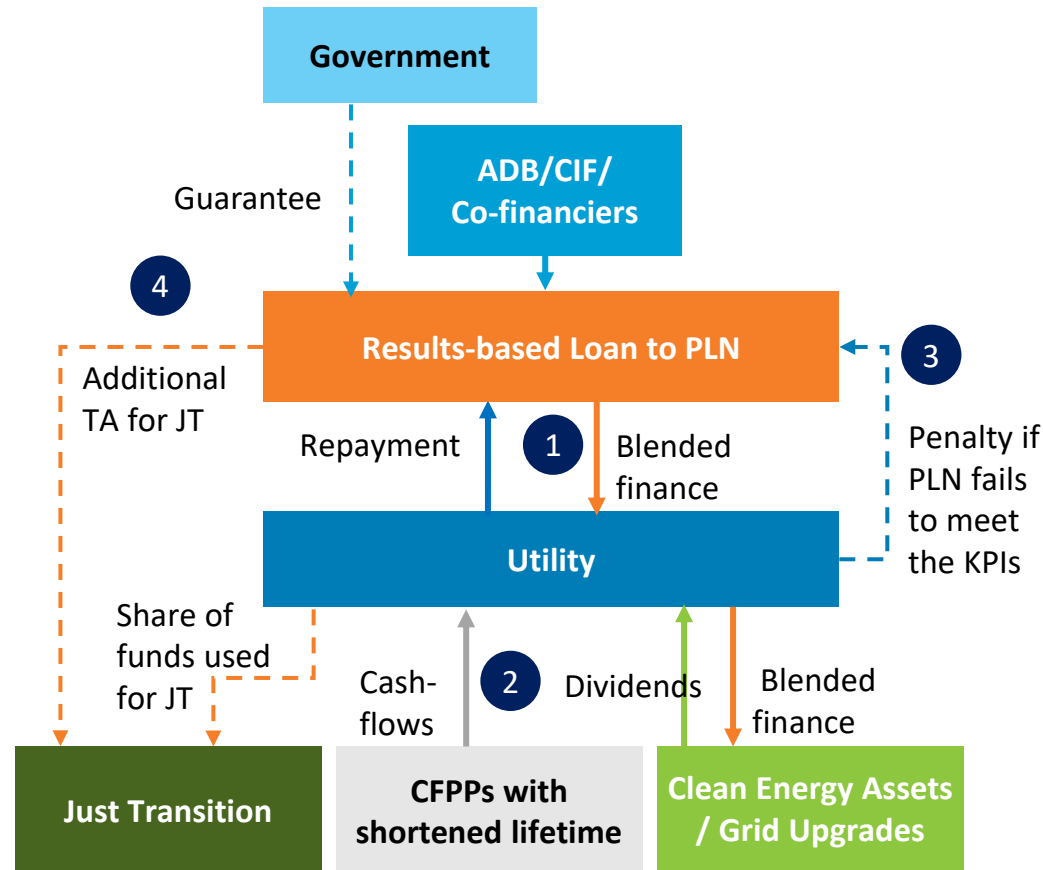


IP Project Concepts



Component 1.1 – PLN Results-based Loan (RBL)

Transaction Structure



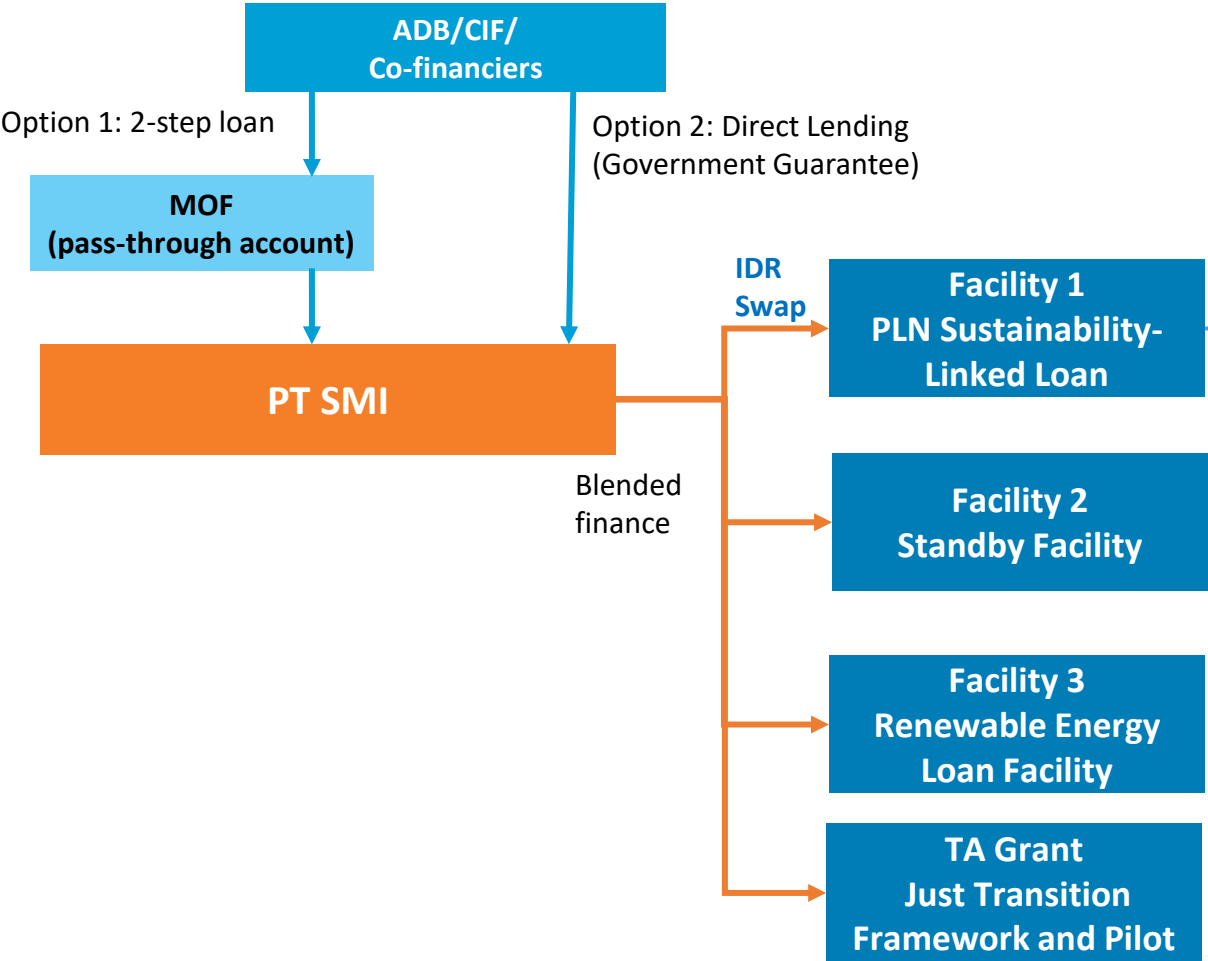
Overview

- 1 ADB to provide a corporate loan facility to PLN which uses the funding for renewable energy investments and grid upgrades
- 2 KPIs could include items such as:
 - Individual coal plant shutdown (identified CFPP(s) to cease operations- **Suralaya unit 1 and 2** (to be confirmed), and plans for repurposing
 - Lower utilization of CFPPs (flexible operation) and plans for repurposing
 - carbon emissions reduction - PLN and ADB/Financiers to agree a mechanism for calculating current emissions baseline and achieved CO2 reductions vis-à-vis this baseline
- 3 PLN to pay penalty for not meeting KPIs which may include
 - Penalty interest – level of concessionality of the loan would be reduced if KPIs are not met by applying a penalty interest (potentially cumulative since the inception of the loan)
 - Default – inappropriate use of funds or failure to meet KPIs could provide financiers the right to withhold future drawdowns and/or immediate repayment
- 4 Additional concessional capital/TA could be provided to help fund Just Transition (JT) activities

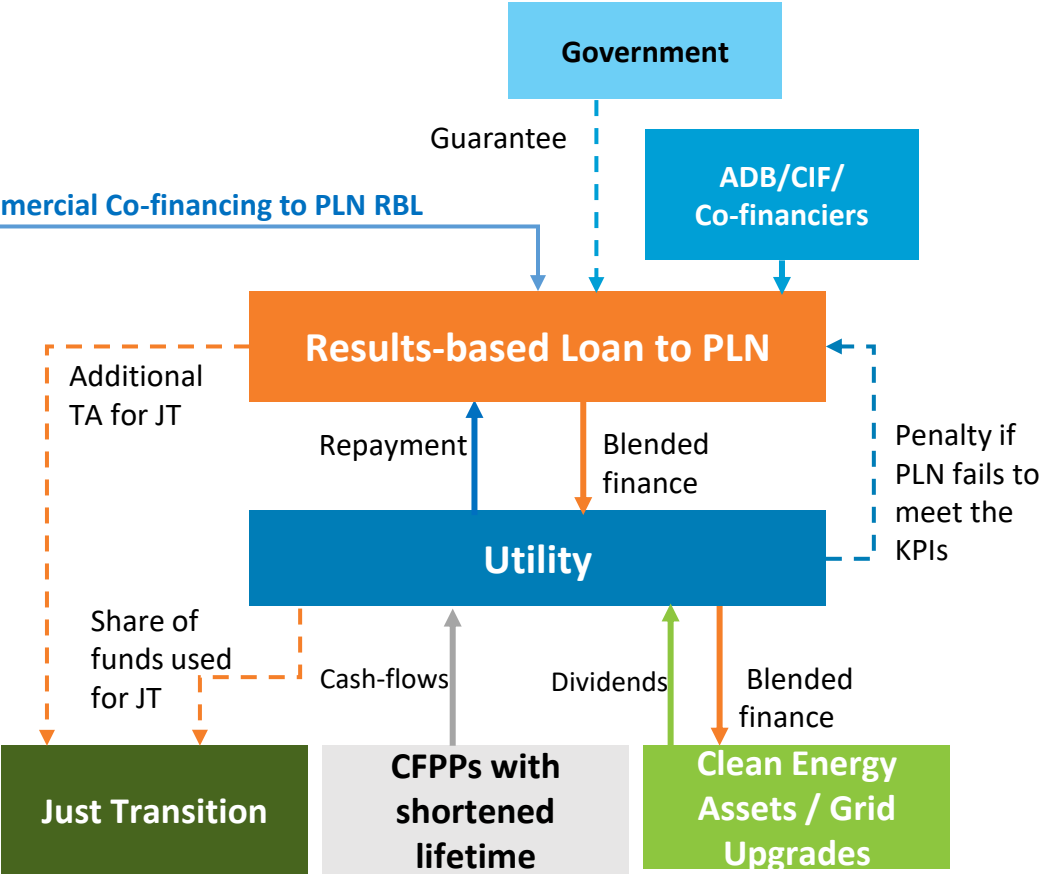


Component 1.2 & 3.2 – PT SMI ETM Country Platform (ETMCP)

Financial Intermediation Loan



Results-based lending



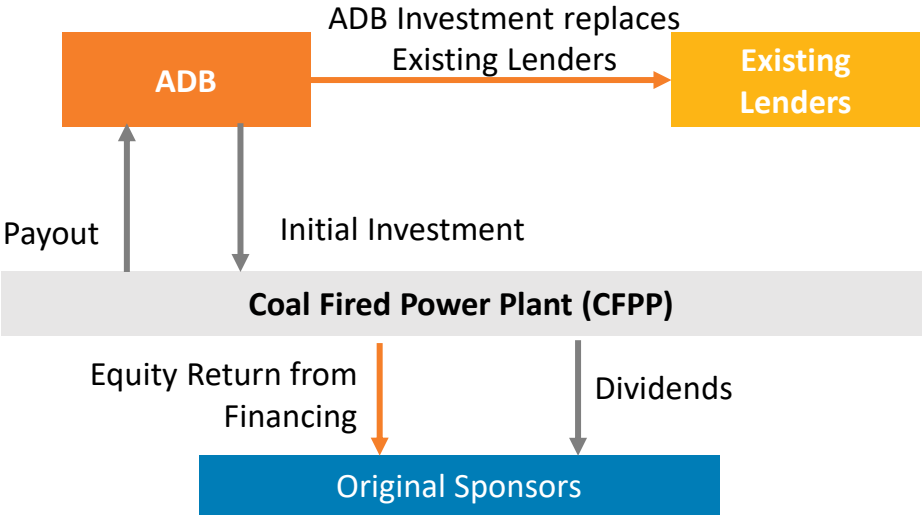
CFPP: Coal-Fired Power Plant

Component 1.3 – IPP CFPP early retirement program

Key Project Parameters

Installed Capacity	660 MW
Age	10 Years
PPA Tenor	30 Years
ADB Investment	USD 300 MN
Loan Tenor	10 years

Transaction Structure



Overview

- ADB OCR and CIF to invest in CFPPs through senior/ junior debt and/or other mezzanine capital at concessional rates. This would lead to a reduction in WACC for the CFPPs.
- **The investment shall be used to refinance the existing debt of the CFPP as well as a special dividend distribution to the sponsors.** This shall lead to PPA tenor reduction by 5-7 years, corresponding to significant CO₂ abatement.
- There would be no change in the operational responsibility of the CFPP and the same will be managed by the original sponsors
- **KPIs could vary depending on the scope of the investment** but could include items such as:
 - Plant shutdown date as agreed at the time of the investment
 - Utilization of funds by the sponsors for clean energy solutions
- **Penalty for not meeting KPIs** could be discussed but may include
 - **Penalty interest** – level of concessionality of the loan would be reduced if KPIs are not met by applying a penalty interest (potentially cumulative since the inception of the loan)
 - **Default** – inappropriate use of funds or failure to meet KPIs could provide financiers with the right to withhold future drawdowns and/or immediate repayment

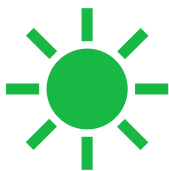


Component 2.2 – JT & Repurposing Project – Sub-component 1: Coal plant repurposing



Decommissioning and Closures

Demolition, rehabilitation and reclamation of land



Repurposing

Renewable Energy (Biomass, Solar PV)

Battery Energy Storage Systems

Ancillary Services (Synchronous Condensers)



Just Transition: mitigating economic and social impacts

Social Plan

Economic Regeneration

Income support

Generating unit	Location	Capacity
Suralaya-1	Banten	400
Suralaya-2	Banten	400
Suralaya-5	Banten	600
Suralaya-6	Banten	600
Suralaya-7	Banten	600
Suralaya-8	Banten	625
Paiton-1	East Java	400
Paiton-9	East Java	660
Bukit Asam-1	South Sumatra	65
Bukit Asam-2	South Sumatra	65
Bukit Asam-3	South Sumatra	65
Ombilin-1	West Sumatra	100
Labuhan Angin 1	North Sumatra	115
Labuhan Angin 2	North Sumatra	115
Nagan Raya-1	Aceh	110
Adipala-1	East Java	660
TOTAL (16 units)		5,580

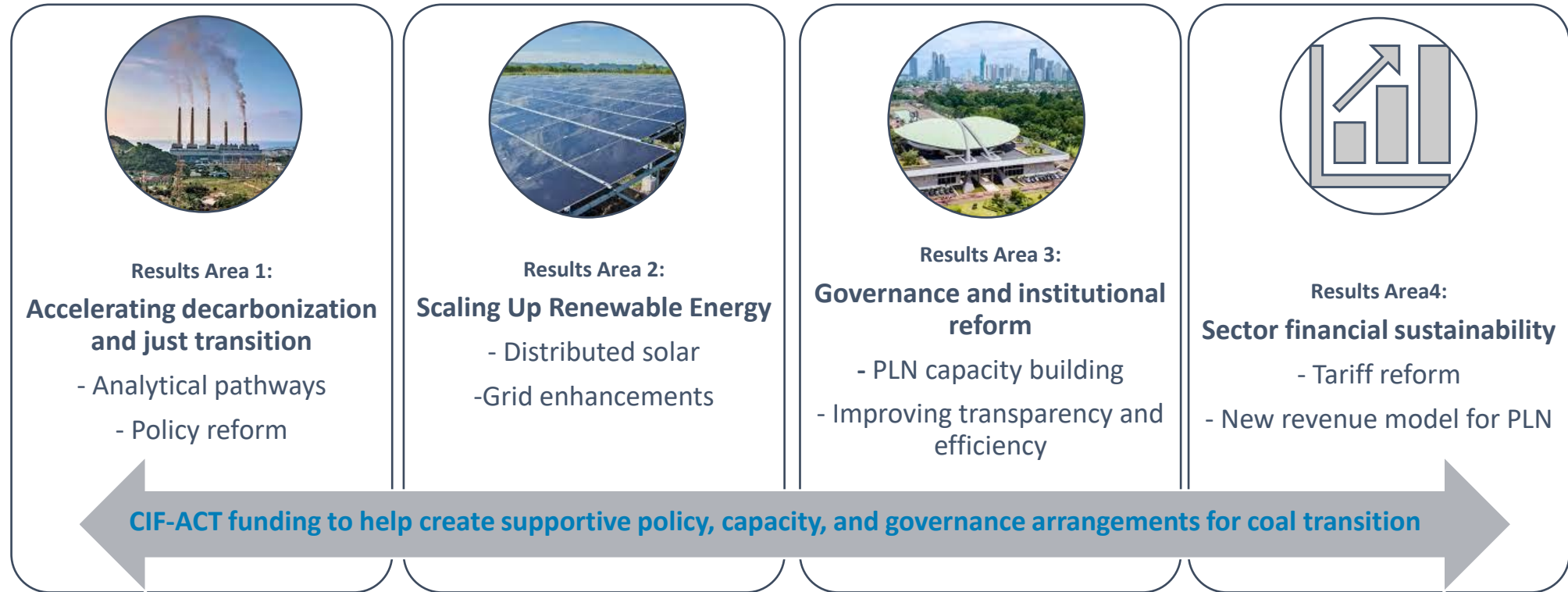
Key details:

- Loan to PLN to support on the decommissioning, repurposing and just transition of first PLN-owned coal plants to be closed; as well as to support just transition aspects of a mining site
- Screening and technical assessment of seven candidate PLN coal plants (for analysis of impact to the system on closure as well as repurposing options) and several coal mine sites in Sumatra and East Kalimantan is underway
- Estimated Financing of US\$600 million (US\$185M CIF and US\$415M IBRD) and expected implementation period: 2024-2030



Component 2.1 – PLN/MEMR Energy transition Program for results (P4R)

Roadmap to Net Zero and RUPTL



Implementation Readiness

- Program preparation is underway
- Estimated Financing of US\$435 million (US\$35M CIF and US\$400M IBRD)
- Expected implementation period: 2023-2028



Component 2.2 – JT & Repurposing Project – Sub-component 2: Coal mine repurposing



Solar PV

- Development of a solar power plant on post-mining lands, as well as complementary investments in community and worker education programs on energy transition and sustainability



Local Economic Diversification

- Development of post-mining lands into destinations for tourism, education and other commercial activity, to drive sustainable regional economic development and enhanced community amenity as the region moves away from coal dependency



Component 2.3 – PRIME STeP

- ✓ Research and Development on new energy technologies commercialization with the involvement of private sector companies and startup.
- ✓ Set up Centers of Excellence for Energy transition.
- ✓ Two applied research projects are proposed on (i) energy storage technologies, and (ii) PV cell development.
- ✓ Online curriculum related to clean energy technology and skills particularly through the above two applied research projects incorporated into Indonesia Cyber Education (ICE) Institute online education platform.
- ✓ Jobs and Skills Study within Indonesia's labor market to assess supply and demand for upskilling/re-skilling with focus on just energy transition.
- ✓ At least one start-up company related to energy storage system and advance PV cell technologies incubated.

Universities identified as key partners include:

- University Terbuka (Jakarta)
- Institut Teknologi Bandung



Component 3.1 – Dispatchable Renewables Program

Objective: To establish track record of financing private sector RE capacity in the Indonesia

Project 1: Developing RE+Storage projects that are capable of providing dispatchable or firm energy



Private sector financing in renewable energy and storage projects (RE+storage) including

- ground mounted solar PV,
- waste-to-energy,
- floating solar PV, and
- rooftop solar

Project 2: Supporting sustainability linked finance to private energy companies to develop renewable energy



- Sustainability-linked finance is designed to incentivize the private energy companies' achievement of environmental, social, or governance targets through pricing incentives.
- Sustainability linked finance allows the private energy companies to highlight sustainability commitments to their existing investor bases, while attracting a wider pool of investors interested in impact and sustainable investing

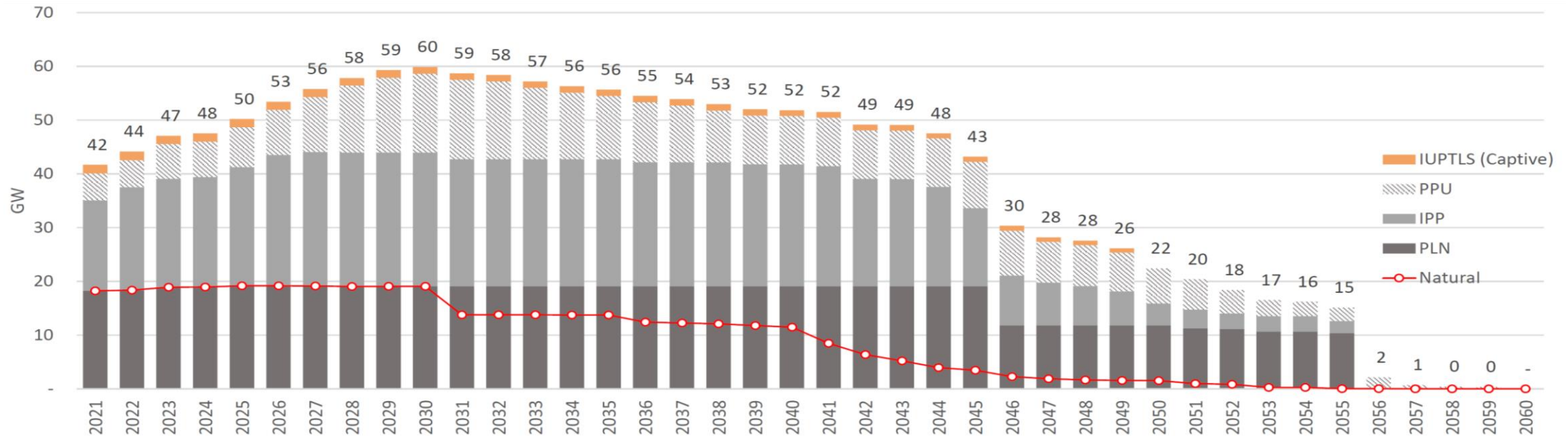


ADDITIONAL SLIDES



Captive & private power development – privately developed and financed

Indonesia PLN, IPP and captive/private CFPP (i.e. IUPTLS and PPU)

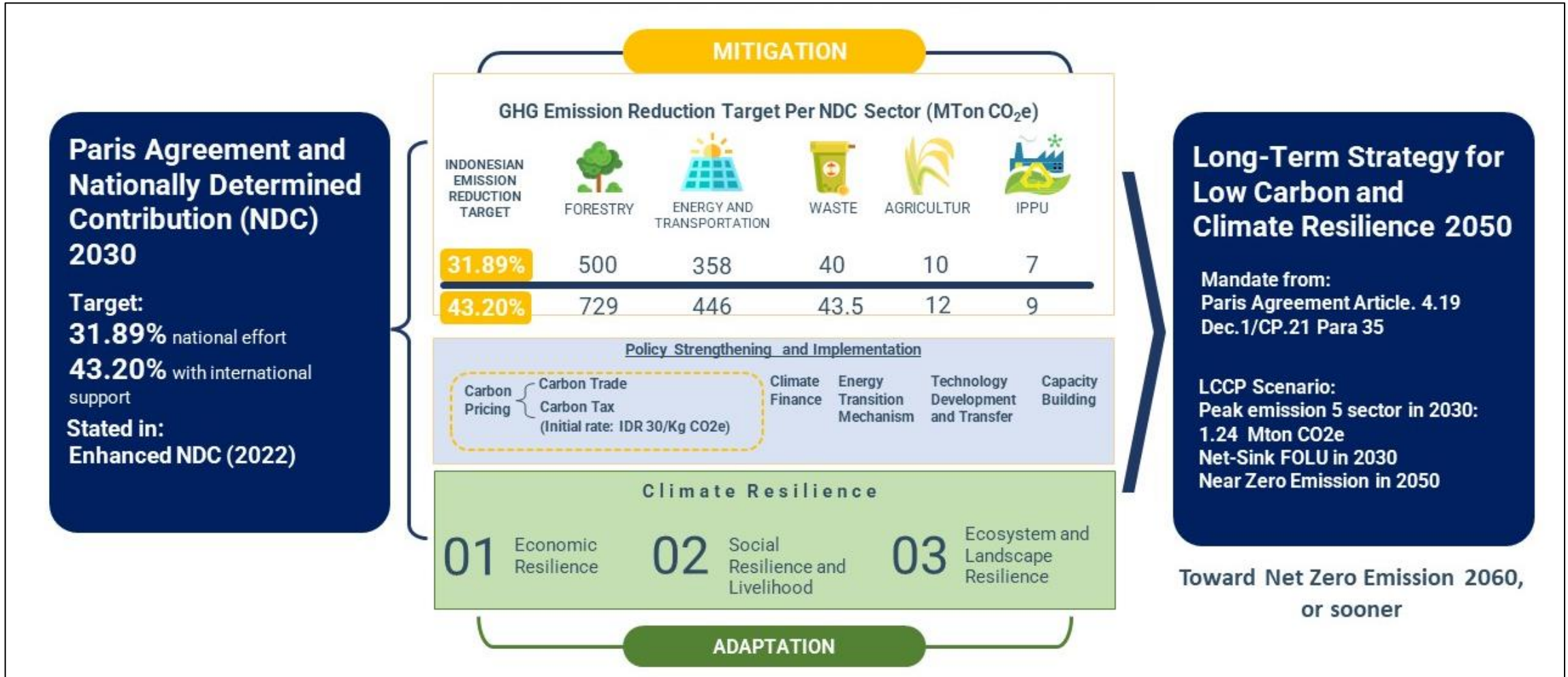


- Chart takes into account current PLN RUPTL CFPP capacity allocations and planned retirement based on CFPP asset life assumptions (PLN – existing balance sheet assumptions based on recent revaluation, IPP 25-30 years as per contract with PLN, private/captive 30 years)
- Chart does not show accelerated phase out of CFPPs yet as PLN/MEMR still negotiating on the roadmap.
- Private and captive plants, denoted as PPU and IUPTLS, are not contracted by PLN. They are privately developed and financed by industrial users. The data shown is based on the latest MEMR planning and permitting data.



Indonesia: The Net Zero Pathway

The government has responded to this with an ambitious net zero roadmap just ahead of COP26, but this has not led to significant policy changes enabling RE yet.



LCCP = Low Carbon and Climate Resilience.
Source: Government of Indonesia, Ministry of Finance.



Indonesia: The Net Zero Pathway

The government has responded to this with an ambitious net zero roadmap just ahead of COP26, but this has not led to significant policy changes enabling RE yet.

2021: President Regulation (PR) on Renewable Energy (RE), PR on Coal Retirement, PR on Carbon Economic Value, co-firing Coal Powerplant, CCT, Diesel powerplant conversion to gas & RE technology,

2022: Design of RE Law, Induction stoves 2 million households per year, Carbon Tax enforcement

2024: Interconnection, smart grid & smart meter

2025: 23% RE, dominated by solar

- 100% electrification ratio
- 1.217 kWh/capita electricity
- Pumped storage commissioning
- Emission Reduction of 198 million ton CO₂.

2021-2025

2026-2030

2027: Decreasing of imported LPG gradually

2030: 26,5% RE, dominated by hydro, geothermal, & solar

- No additional fossil fueled power plants after 2030
- 2 million EV cars, 13 million electric motorcycles
- 300 thousands gas fueled (BBG)
- Gas network for 10 million households
- DME utilization
- 1.548 kWh/capita electricity
- Emission reduction of 314 million ton CO₂.

2031: Coal Powerplant Retirement stage-1 (sub-critical) , island interconnection

- Zero diesel powerplants
- Hydrogen utilization for powerplant
- Higher uses of battery

2035: 57% RE, dominated by solar, hydro, & geothermal

- 2.085 kWh/capita electricity,
- Emission reduction of 475 million ton CO₂.

2031-2035

2036-2040

2036: Coal Powerplant Retirement Stage-2 (sub-critical, critical, & some super critical)

2040: 66% RE, dominated by solar, hydro & bioenergy

- Reduction of conventional cars sales
- 70% LED applications
- 2.847 kWh/capita electricity
- Emission reduction of 796 million ton CO₂.

2048: Large scale sea-wave powerplant commissioning

2049: 1st nuclear powerplant

2050: 93% RE dominated by solar, hydro, & bioenergy

- Reduction of conventional cars sales
- 4.299 kWh/capita electricity
- Emission reduction of 956 million ton CO₂.

2041-2050

2051-2060

2051: Massive use of hydrogen

2054: Combined Cycle Gas Turbine Plant < 1 GW

2057: Steam powerplant < 1 GW

2060: 100% RE, dominated by solar, hydro, wind

- EV for electric motorcycle
- Electric stoves for 52 million households,
- Gas network for 23 million households,
- 5.308 kWh/capita electricity
- Emission reduction of 1.526 million ton CO₂.



ADB launched Southeast Asia ETM Partnership at COP26 (Glasgow, 2021)

- Indonesia and the Philippines joined as key partners to launch the pilot study for ETM.
- Japan's Ministry of Finance announced a \$25 million grant, the first seed financing for ETM.
- The partnership was endorsed by senior cabinet-level officials from Denmark, the UK, and the US, as well as leading global financial institutions and philanthropies.
- MOU was signed with Rockefeller Foundation, including to accelerate the transition to clean energy.



Philippine Finance Secretary Carlos G. Dominguez, Indonesian Finance Minister Sri Mulyani Indrawati, and ADB President Masatsugu Asakawa during the ETM Launch at UN Climate Change COP26, Glasgow on 3 Nov. 2021.



"I am pleased by the Asian Development Bank's work to accelerate the decommissioning of coal facilities. The world needs forward-thinking creative approaches to financing, especially from the multilateral development banks. And we need to find creative solutions so that our public funds crowd in additional private investment, as the bank is aiming to do here."

- Janet Yellen, Secretary, US Department of the Treasury

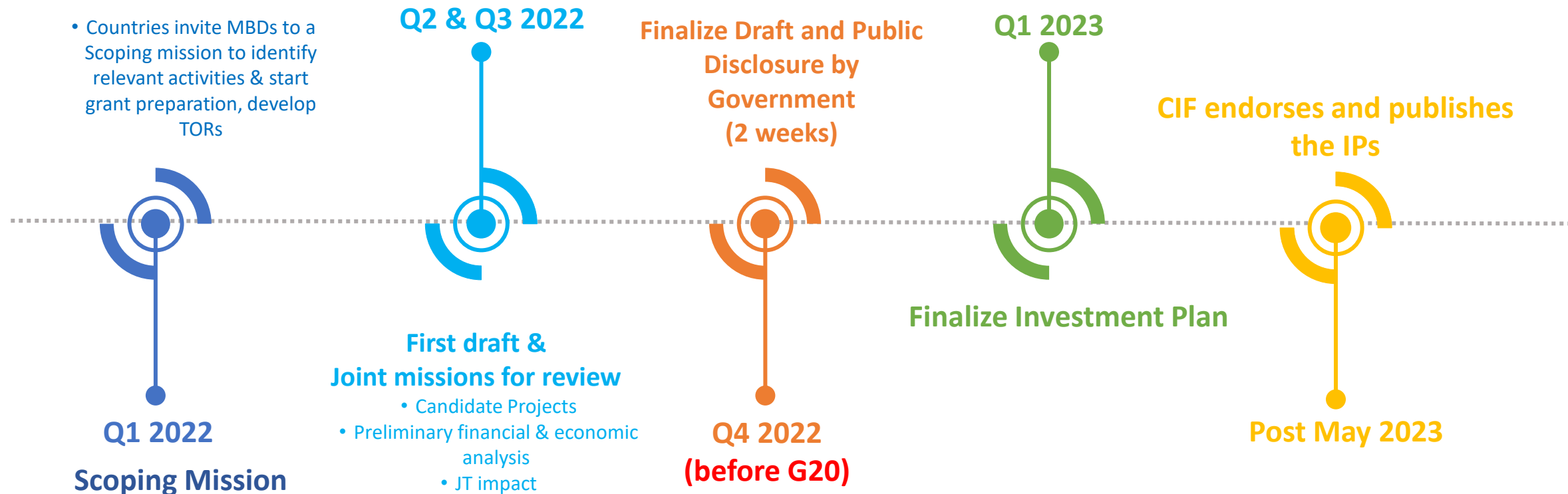
"I want to thank the Asian Development Bank for its work, which will help bring many benefits. Cutting coal use doesn't just reduce the risks we face from climate change, it also reduces air pollution that kills so many people, including in Asia. Today's announcement will help to jumpstart more climate finance that helps to retire coal plants faster and improve many lives."

- Michael Bloomberg, UN Secretary General's Special Envoy on Climate Ambitions and Solutions



CIF ACT Investment Planning Timeline for Indonesia

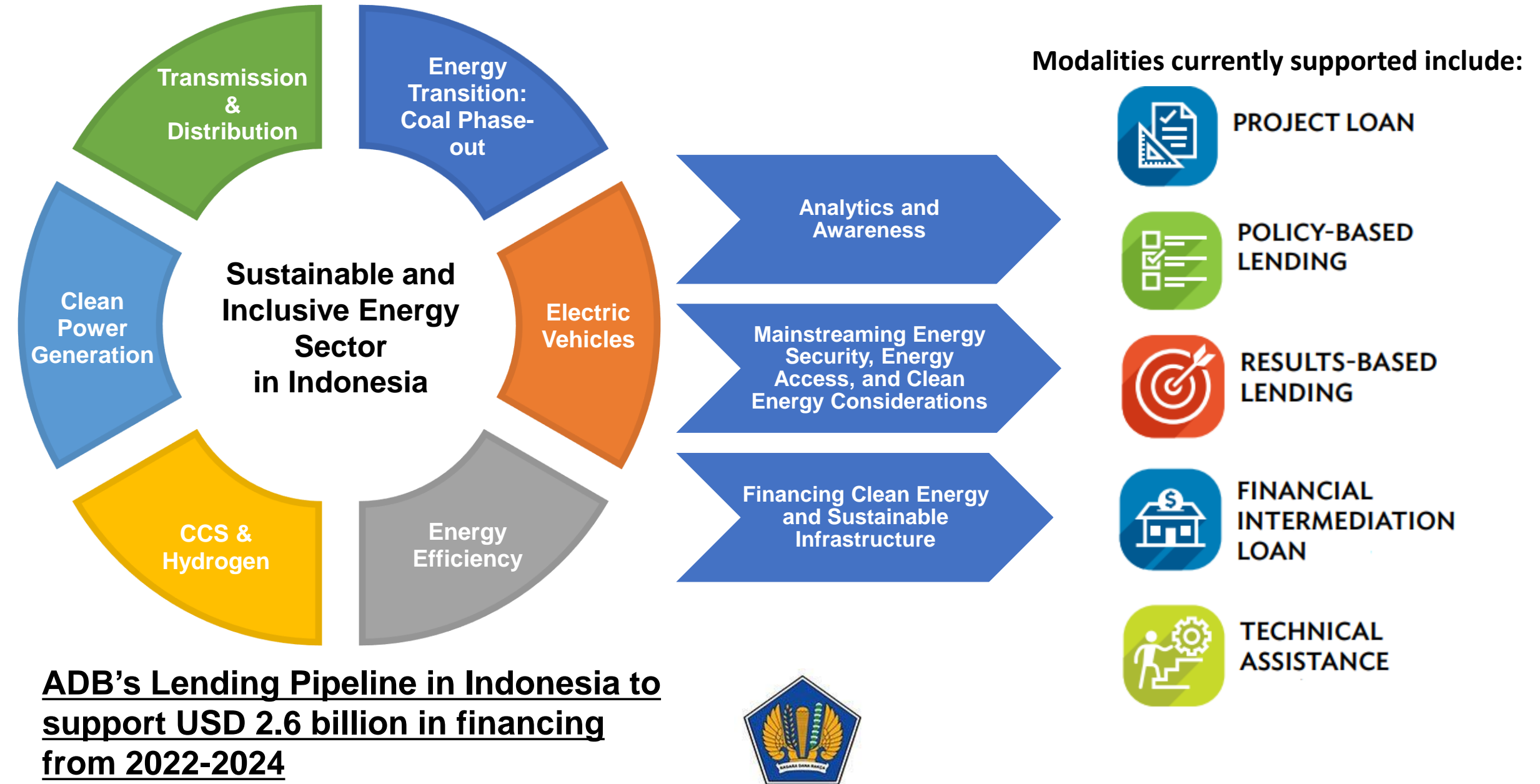
(Originally proposed during Scoping mission)



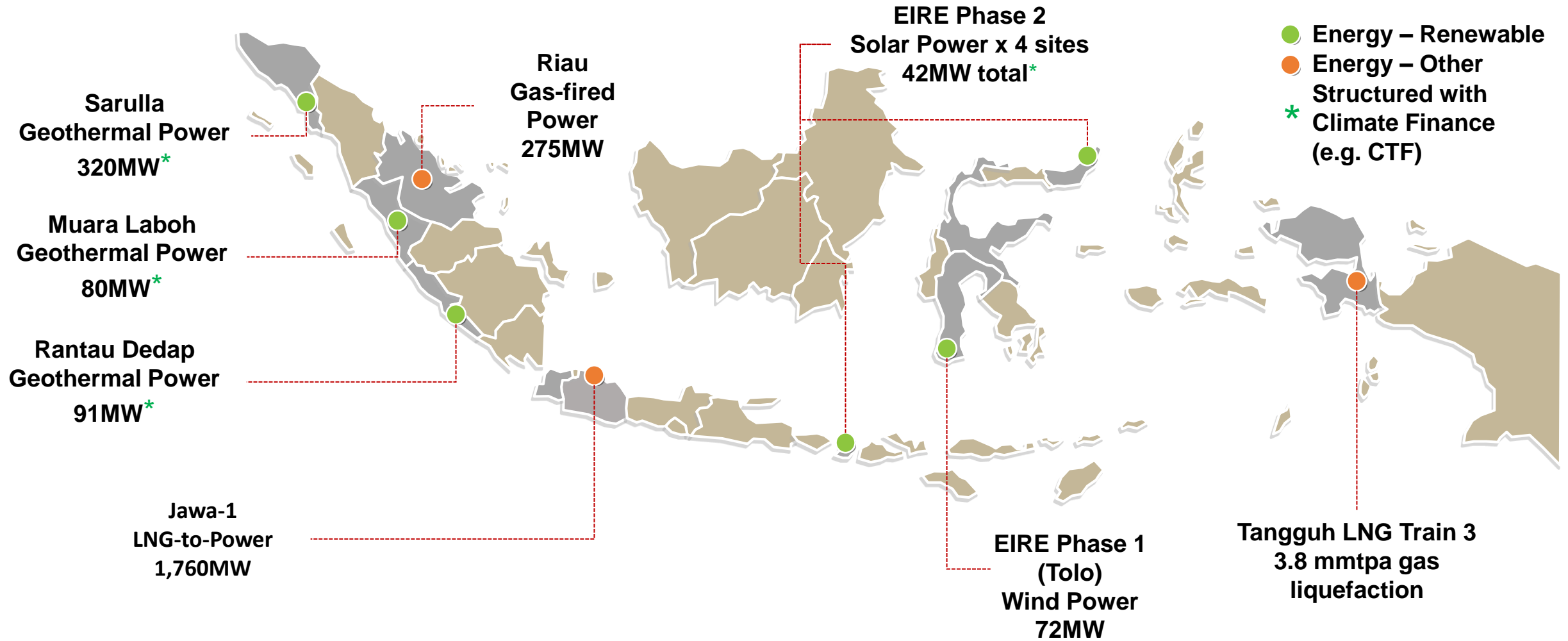
ADB Energy Sector Programs



ADB Energy Sector Support to Indonesia

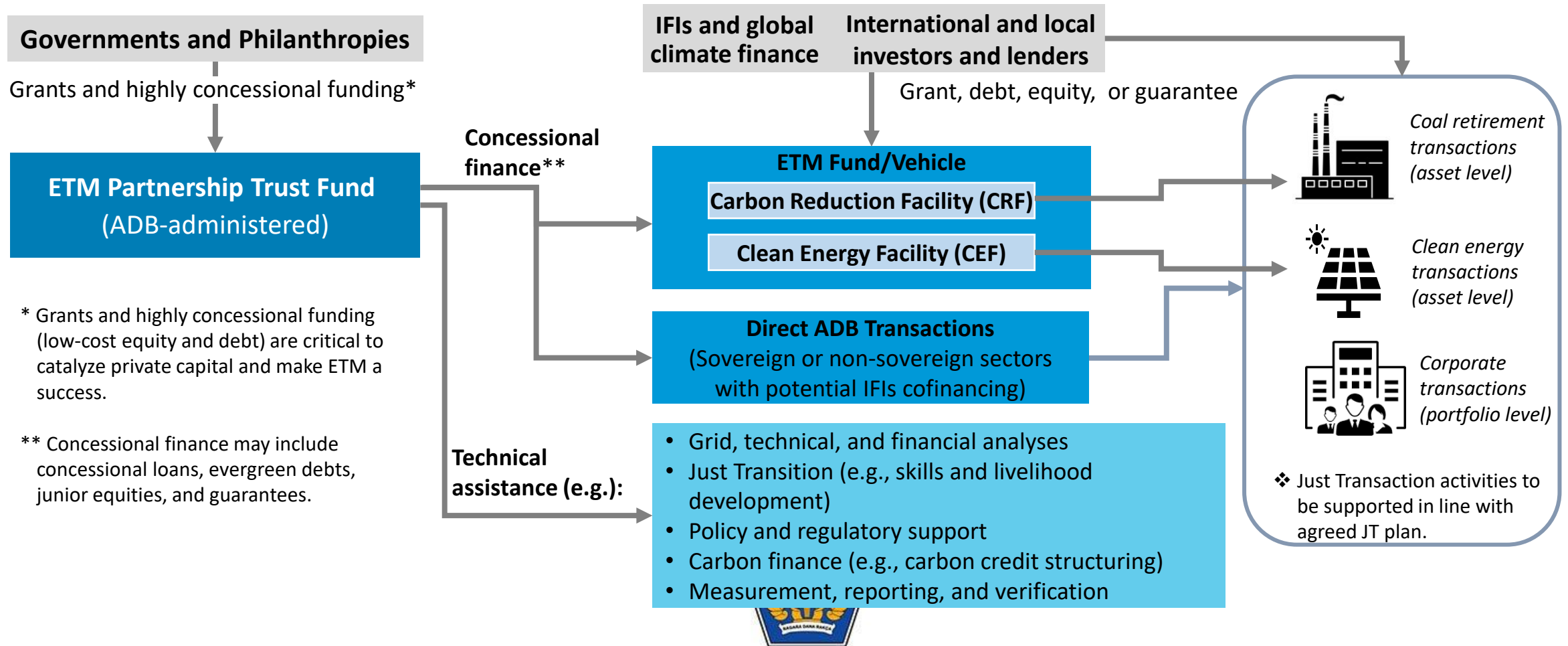


ADB Private Sector Energy Projects in Indonesia 2011-2021



The Energy Transition Mechanism (ETM) Program Overview

- **Accelerate the retirement or repurposing** of coal-fired power plants using public and private finance through refinancing, acquisition, or sustainability-linked corporate loans
- **Scale up investment** in clean energy and energy storage
- Aim to achieve **just and affordable transition**, addressing impacts of coal retirement on people and communities



WBG Energy Sector Programs



A comprehensive approach to Energy Transition in Indonesia



WORLD BANK GROUP

Climate commitments

Clean energy development and decarbonization for growth

Energy Sector Vision

RUPTL (10-year investment plan)
Roadmap to Net Zero Emissions
White Paper/**Power Action Plan**

A Comprehensive Energy Transition Framework building on five Pillars

Scaling-up RE Deployment

(deals for auction, Guarantee, risk-sharing for private/PPP investments, transmission, smart grids, hydro and battery storage)

Coal Phase-Down

(Pathways (mechanisms and financing) and planning including plans for retiring 8-10 GW by 2030)

Sector Financial Sustainability

(including service affordability and containing fiscal burden)

Sector Governance and Sector efficiency

(sector regulation, ESG framework, PLN structure)

Just Transition

(analytical work on coal supply chain, economic and social impacts and knowledge sharing)

Enabling Policies, Regulations & Institutional Strengthening:

RE and carbon pricing; enabling private sector and private financing; electricity, coal and fuel subsidies; PLN revenue requirements; tariff setting

Supported by

Investments for Energy Transition and Decarbonization:

Scaling up RE, storage capacity, grid capacity and flexibility, phasing down coal power



World Bank energy lending portfolio/pipeline



Portfolio

Development of Pumped Storage Hydropower in Java Bali System Project IPF

Geothermal Resource Risk Mitigation (phase 1)

Geothermal Energy Upstream Development

Key areas of engagement (FY23-25)

Targeted low-carbon projects (~ \$3B lending)

Least-Cost Electrification in Eastern Indonesia

Mobilization of private financing for the transition

Geothermal De-risking Facility (phase 2)

Facilitation of RE integration investment

- Pumped storage
- Transmission strengthening

Just Transition Support and Coal Fired Power Plant Repurposing (CIF-ACT)

Policy based support (~\$1-2B lending)

Energy Transition policy financing

Transitioning to Sustainable, Clean and Efficient Energy (CIF-ACT)

TA and analytics (\$5-7m grant)

WB is engaged on dialogue and TA in the following priority areas (amongst others):

- Decarbonization pathways
- Sector financial sustainability
- ESG frameworks
- Policy reforms for RE scale-up
 - Geothermal
 - Rooftop solar



IFC Engagements in Indonesia in Energy Sector



IFC has been engaging with private sectors in energy space in Indonesia both in investment and advisory sides with focus on the development of Renewable Energy. Selected IFC's investments in the energy sector include hydro power and gas IPP.

Upstream

Advisory

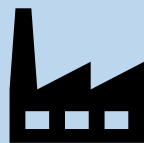
Investment



PPA framework
for IPPs



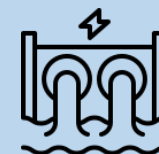
IFC has been working closely with the WB Team to integrate key policy asks in Development Policy Objectives (DPOs) in power sector to amend PPA framework for IPPs, including for renewable IPPs to include better risk allocation and integration of key bankability provisions.



Waste to
Energy



IFC has been appointed as transaction adviser for the first Waste to Energy PPP project in Indonesia: Legok Nangka Project – West Java



Hydro Power



- In 2014, IFC provided a US\$280 million loan facility with tenors of 13- and 15-year and acquired a minority stake in Asahan 1, a 180MW run-of-river hydro plant in North Sumatra
- In 2020, IFC refinanced the Asahan-1 facility and provided US\$230 million debt facility for Asahan-1, mobilized institutional investors to have direct exposure to de-risked Infrastructure assets for the first time and also extended the tenor of the loan facility to 17 years and improved the pricing.



Gas IPP



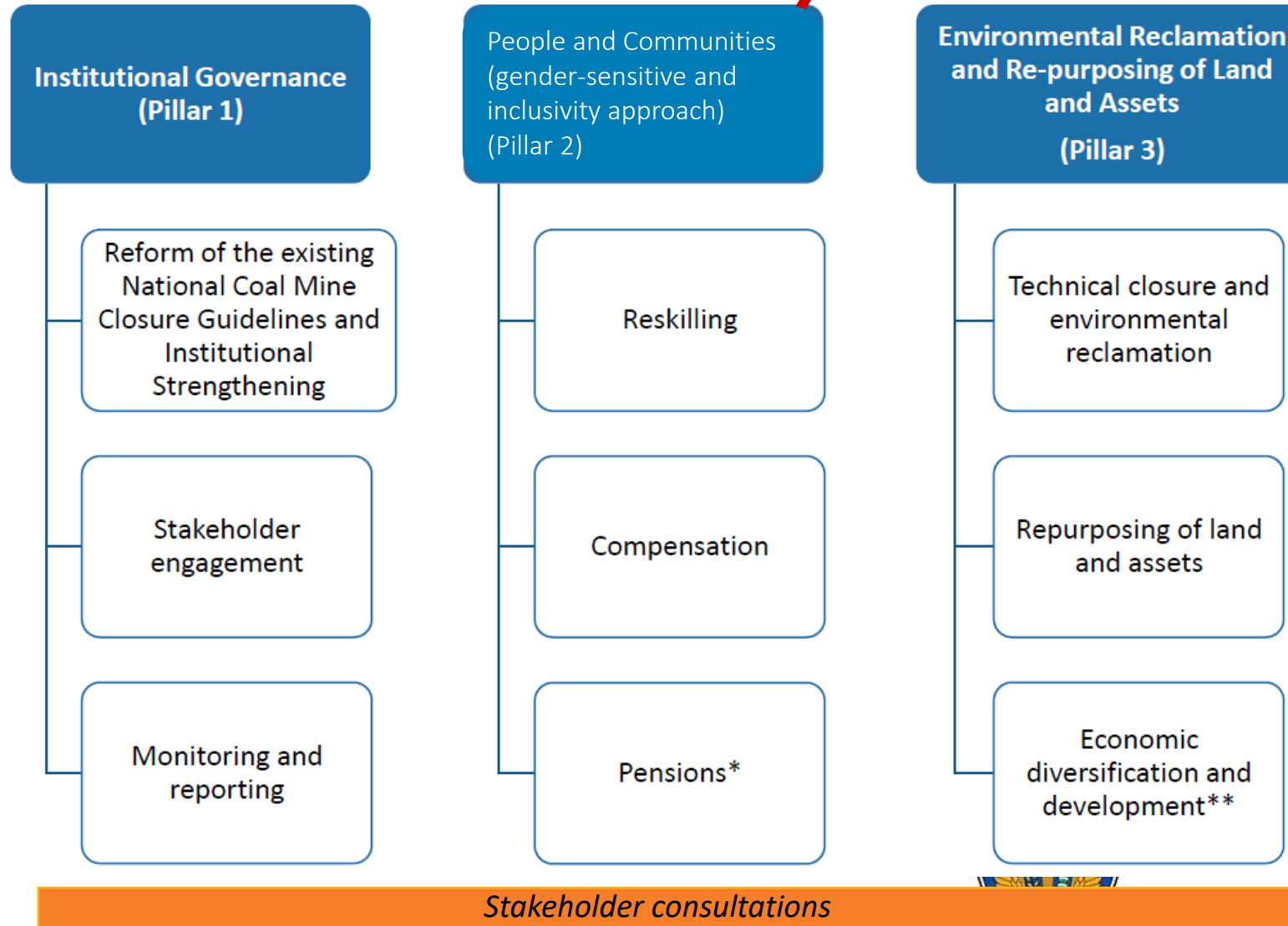
In 2018, IFC provided US\$50 million long-term project finance up to 20 years to Riau Gas IPP owned by Medco Power and Ratchaburi.

In FY21-24, IFC will focus on supporting private sector on the development of RE projects such as wind power and battery storage, floating solar project, hydro power plant, and waste-to-energy projects, in Indonesia

Just Transition (additional slides)



Key cost drivers of just transition



Assessment

Macro Context

- ADB Situational Analysis
- Consultation Mission
- [Link to other studies](#)



Upfront Assessment

- Socio Economic Impact Assessment
- Stakeholder Identification
- Research to inform on Economic Diversification
- ETM FS



Detailed Assessment

- Detailed Impact Assessments
- Individual Transactions
- To be identified

Consultation

Direct Consultation

Regional Platforms

FGD

SESA Steering Committee

Social Dialogue Process

[Link to WB](#)

Design Approach

National JT Approach Linked to NDC

PTSMI JT Framework

ETM JT Framework

Asset Level JT Planning

[Link to WB](#)

