How coal contract reforms can help Asia absorb more renewable energy

Press Release

Solar and wind energy are scaling up across South and Southeast Asia, but the contracts governing coal power plants stand in the way. A new Agora Energiewende analysis shows how reforming power purchase agreements can make coal plants more flexible and accelerate renewable energy integration.

Bangkok, 2 June 2026. Across South and Southeast Asia, governments have made significant renewable energy and climate commitments. Indonesia, for example, has announced a 100 GW solar target, signalling the scale of ambition driving the region's energy transition. Renewable energy capacity is growing in parts of South and Southeast Asia, yet long-term contracts have kept coal power plants running at high load factors, slowing the transition. In India, Indonesia, Viet Nam, the Philippines and Pakistan, these arrangements are now increasingly at odds with the requirements of transforming power systems.

A new report by Agora Energiewende examines the contractual and legal landscape across these five countries to identify common barriers and pathways. It finds that through contract reform, policymakers and system planners can unlock the flexibility potential already available in their power systems, deploying renewables faster and integrating variable wind and solar at lower system cost.

"Existing coal power plants can technically make space for renewable energy in South and Southeast Asia, but power purchase agreements designed for baseload operations currently prevent this transformation. Repurposing coal assets for flexibility and reforming governance contracts would help align existing infrastructure with the needs of a renewables-driven power system," said Dimitri Pescia, Director Power System Transformation at Agora Energiewende.

Coal contracts designed for baseload operations limit renewable energy integration

The study finds that three specific payment mechanisms in current power purchase agreements (PPAs) and fuel supply agreements obstruct flexible coal power operations. Capacity payments, while providing baseline revenue that enables coal plants to run fewer hours, may incentivise integrated utilities to maximise coal plant utilisation, thus delaying renewables deployment. In some contracts, minimum energy offtake requirements commit system operators to dispatch coal power plants at formally agreed volumes, even when cheaper renewables alternatives are available. Coal lifting obligations in fuel supply agreements impose financial penalties for lower offtake. These mechanisms lock coal plants into high-capacity operations at times when solar and wind generation makes flexible operation most valuable to the grid.

In their current form, coal power contracts were designed to secure baseload revenue rather than value or reward flexibility service provisions. The challenges vary across countries. While capacity payments remain widely used

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for coal power investments across the region's power systems, minimum offtake requirements impose constraints in Viet Nam, and to a lesser extent in Pakistan, the Philippines and India. Similarly, shorter fuel supply agreements allow generators to revisit coal offtake volumes relatively frequently, thus limiting the coal offtake barrier to operational flexibility compared to countries where such contracts are concluded for a period exceeding 10 years, and in some cases, up to 25 years.

Repurposing coal for flexibility requires a clear transition framework and binding guardrails

Embedding coal plant repurposing in a transition framework with binding guardrails can cut emissions and system costs, the paper's findings suggest. Such guardrails include a moratorium on new coal capacity additions, emission limits for operating plants, firm retirement dates tied to renewables milestones and a commitment not to restart retired assets. These measures would ensure that flexible coal power bridges the gap to renewables instead of extending coal dependence, the authors underline.

The report reiterates a "repurpose, reserve and retire" approach to reorganise coal fleets for renewables-based transitions. Young, efficient plants shift to flexible operation, ramping output up and down to complement solar and wind generation throughout the day. Mid-life assets move into strategic reserve, maintaining system adequacy whilst minimising generation and emissions. The oldest and least efficient units exit through managed early retirement. In countries facing structural overcapacity from coal overbuild, placing mid-life assets in strategic reserves helps reduce the operational cost of idle baseload capacity.

Reforming revenue models to incentivise flexible coal power

The analysis identifies two reform pathways depending on market structure, both of which require PPAs to be renegotiated. In single-buyer power systems, the dominant model across the region, utilities can introduce a three-part tariff within the existing PPA framework covering flexible capacity, time-differentiated energy payments and ancillary services. In systems with wholesale market competition, such as the Philippines and India, short-run price signals and emerging reserve markets can value coal flexibility. This entails reducing contracted capacities under the PPA in favour of market exposure, equally requiring contract renegotiation.

"Governments can make the repurpose, reserve and retire coal framework economically viable. Introducing incentives for flexible coal operation will enable rapid renewable energy expansion. Reforming revenue models lets producers recover costs and help utilities manage variable renewable output cost-effectively, ultimately reducing consumers bills," Pescia said.

Existing PPA provisions give policymakers and investors a legally grounded basis to renegotiate

Coal power contracts are rarely frozen. The study finds that most PPAs already contain provisions allowing contracts to be renegotiated in the face of regulatory changes. This allows policymakers to introduce new operating requirements on coal plants, followed by tariff adjustments to restore the economic balance of the

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contract. Such measures strike a balance between the host state's sovereign right to regulate while ensuring investors can recover costs and earn returns under the new requirements.

Dr. Anatole Boute, Professor at the Faculty of Law, The Chinese University of Hong Kong, and contributing author, said: "Legal and regulatory intervention is needed to accelerate the repurposing of coal power plants and ensure their supporting role in the deployment of renewables. International frameworks are increasingly recognising states' responsibility to regulate the greenhouse gas emissions of private actors under their jurisdiction, providing a concrete reference point for policymakers and investors as they navigate contract renegotiation."

The analysis points to structured engagement between policymakers, utilities and coal power producers as the foundation of a successful renegotiation process. Grounding that process in a clear system rationale and a credible commitment to restore the economic balance of the contract limits the risk of investment arbitration.

The study covers South and Southeast Asia, drawing on a detailed review of PPAs, fuel supply agreements and investor-state contracts across India, Indonesia, Viet Nam, the Philippines and Pakistan. It was developed by Agora Energiewende together with Professor Anatole Boute, who contributed in personal capacity, and supplemented by consultations with regulators, utilities, law firms, lenders, multilateral development banks and civil society organisations.

The full 76-page study 'Reforming power purchase agreements for flexible coal power' is available for free download at www.agora-energiewende.org

About Agora Energiewende

Agora Energiewende develops scientifically sound and politically feasible concepts for a successful pathway to climate neutrality – in Germany, Europe and internationally. The organisation which is part of the Agora Think Tanks works independently of economic and partisan interests. Its only commitment is to climate action.

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