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SYNOPSIS

An unstable global energy landscape is a wake-up call for Southeast Asia's energy security and transition efforts. Integrating ecological, health, and security concerns into solutions centred on the ASEAN Power Grid, as well as the sustainable management of critical minerals, can build resilience while safeguarding the planetary health the region seeks to protect.

COMMENTARY

Conflicts in the Middle East have exposed vulnerabilities linked to dependence on imported fossil fuels. This severe energy crisis reinforces the case for accelerating Southeast Asia's energy transition. Amid a fracturing global landscape, striving for regional resilience is crucial to reducing reliance on external resources and adapting to a decarbonised future.

Yet enhanced commitments to the energy transition also require critical engagement with its ends and means – integrating both technical solutions and the systems thinking of a Planetary Health perspective. The transition calls for the convergence of ecological stability, public health, and human security. This makes the region's aspirations for energy security inextricably linked to the preservation of human and environmental well-being.

The Cog in the Wheel: External Energy Reliance

The global momentum of the energy transition has been affected by the recalibration of US foreign policy, creating overlapping pressures on Southeast Asia's path to energy resilience. Disruptions to vital energy supply chains caused by the Iran war

have sparked swift energy shortages and price hikes across parts of Southeast Asia, prompting the Philippines to declare a state of national energy emergency.

Simultaneously, the US disengagement from the Just Energy Transition Partnerships (JETP) – the multilateral financial mechanisms designed to mobilise blended public-and-private finance to accelerate early coal-plant retirements and the integration of renewables – removes crucial financial architecture.

What is lost extends far beyond abstract capital, as it deprives energy transition frontrunners like Indonesia and Vietnam of critical low-cost, de-risking grants and concessional loans necessary for early coal phase-outs. Compounding this, the closure of USAID initiatives strips the region of critical technical assistance for grid modernisation.

Southeast Asia has also been affected by the export of carbon-intensive practices to the region. Facing substantial economic pressure from sweeping US tariffs, regional governments have prioritised immediate economic relief over long-term environmental health by signing long-term agreements for US liquefied natural gas (LNG) and oil. These import agreements represent generational infrastructure commitments, locking states into fossil-fuel dependence until the mid-2040s.

This triple impact leaves Southeast Asia in a precarious position, where reverting to environmentally damaging energy sources becomes the path of least resistance. Amid fossil fuel lock-ins and, most recently, a surge in coal production, immediate energy needs have taken precedence over decarbonisation commitments. Delaying the displacement of coal and gas locks the region into prolonged fossil fuel combustion, directly worsening localised air pollution and the burden of respiratory diseases. It also accelerates climate-induced disasters that undermine regional ecological resilience – profound planetary health consequences that compound over time.

The wider lesson for Southeast Asia is the vulnerability that arises when energy security and transition pathways are linked to external parties. Thus, while an enhanced energy partnership with China may offer a partial solution to the immediate crisis, this may ultimately expose the region to similar external shocks and asymmetric dependencies. Hence, the answer lies within the region itself.

The ASEAN Power Grid: A Planetary Health Paradigm

The unstable global energy landscape highlights the urgent need for Southeast Asia to strengthen regional interconnection and accelerate its transition to clean energy. This approach is a viable strategy that enhances energy security by reducing vulnerabilities linked to external crises and opens pathways towards meaningful progress on decarbonisation.

At the same time, energy transition strategies must now explicitly protect the region's environmental integrity. Clean energy advances are vital to the region’s future, but they must not come at the cost of local ecosystems or community well-being. In other

words, the pursuit of decarbonisation cannot justify the degradation of the very planetary health it seeks to protect.

ASEAN's strategy for enhanced energy resilience requires engagement with key transition initiatives that protect ecological and community integrity. At the heart of the approach lies the ASEAN Power Grid (APG), a regional mechanism capable of building energy security while accelerating the transition to a cleaner energy mix. Targeting a fully interconnected power system by 2045, the APG enables more affordable energy access through cross-border electricity flows that reduce dependence on uneven national capacities and external supply.

Importantly, the APG has the capacity to integrate the region's vast untapped renewable energy potential. Improved connectivity would facilitate significant gains in wind, solar and hydropower generation. By optimising the distribution of these transboundary clean energy sources, the APG can mitigate localised air pollution and climate-induced health risks associated with non-renewable sources.

Recent progress, such as the establishment of the ASEAN Power Grid Financing Initiative – aimed at mobilising large-scale public and private financing – must be reinforced by reducing investment risks and harmonising regulations. Equally important is a careful assessment of the environmental and community impacts of large-scale infrastructure development to minimise harm.

The Material Paradox of Regional Interconnection

A comprehensive systems perspective, however, reveals that the physical realisation of the APG cannot be decoupled from the broader ecological and material realities of resource extraction.

Southeast Asia holds vast reserves of critical minerals essential for manufacturing the technologies that power the regional grid. These include nickel, tin, and rare earth elements (REEs). Yet, because these resources frequently overlap with vital biodiversity hotspots and indigenous lands, extraction imposes profound costs on planetary health, directly threatening the region's biophysical stability – the state of ecological regulatory systems required to sustain human wellbeing.

The geopolitical race to secure critical minerals poses severe ecological risks, as research into the environmental destruction linked to rare earth mining has shown. Extracting REEs generates massive volumes of toxic and radioactive waste.

These crises are already unfolding across Southeast Asia, with vital waterways contaminated by toxic chemicals, spreading illness and causing unidentified tumours in marine life that fishing communities depend on for survival. Furthermore, rapid expansion of nickel mining has driven extensive deforestation, increasing localised vulnerabilities to landslides and floods.

If the expansion of the APG relies on a path of unchecked material extraction that destroys local ecosystems, disrupts livelihoods, and poisons community water

supplies, the transition will fail the systems test of a Planetary Health approach and trade one set of energy crises for another.

The pursuit of a regional grid must therefore not be treated purely as an engineering or market-integration goal. Instead, it must explicitly integrate the protection of terrestrial ecosystems and the well-being of local populations against the systemic and often irreversible harms of extraction.

Building Regional Resilience

Importantly, the fracturing global landscape can trigger a dangerous "race to the bottom" that must be avoided. The Iran war demonstrates that reliance on external guarantors for climate progress is an untenable strategy. While attaining full regional self-sufficiency is a difficult target, gradual advancements in this direction through a greater focus on its own renewable energy resources would support ASEAN's dual goals of building energy security and reducing fossil fuel dependence.

Fortunately, increased global demand for critical minerals strengthens ASEAN's bargaining position. To succeed, ASEAN must implement stringent regulatory oversight to avoid environmentally damaging lock-ins or worsening health risks from the destruction of its ecological systems.

Future agreements with international partners must mandate clean technology transfer and ensure strict adherence to sustainable mining standards – conditions that enable ASEAN to leverage its mineral wealth while mitigating planetary health risks. This steers capital towards genuinely sustainable development and energy resilience while avoiding over-reliance on any single energy source or partner.

A unified commitment to the ASEAN Power Grid is essential for leveraging intra-regional renewable energy potential. At the same time, critical mineral wealth must be managed as a strategic lever for sustainable development, not merely as an export commodity.

Ultimately, the region's success in managing ongoing and future energy crises will be measured, not only by its resilience to external shocks, but also by the preservation of its planetary health. ASEAN has the potential to pioneer a model of resilience that safeguards both its populations and ecological foundations. This requires charting a deliberate course where energy security and planetary health goals should be considered in an interconnected manner.

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