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# Hydropower is catalyst for sustainable economics

**ELECTRICITY** is a crucial infrastructure sector that profoundly influences a nation's economic sustainability.

Public policies ensuring the availability, accessibility, and capability of electricity services become pivotal in the economic development and well-being of its citizens.

Energy policies need to align various relationships, dependencies and stakeholders associated with the electricity sector.

In this context, two fundamental questions arise regarding the dependence of economic growth on the electricity sector and the environmental impact it generates.

The choice of electricity generation sources in a region depends on factors such as institutional frameworks, geography and demographics.

Therefore, identifying reliable electricity generation sources in energy planning varies among countries and regions, where this diversity is assimilated into the

## ➤ Minimal environmental impact from using water to generate energy

trajectories of economic growth, energy demand, environmental concerns and global commitments.

Asean countries, aside from economic cooperation, also bear responsibility for sustainable development, with the energy sector playing a crucial role.

The rapid economic growth over the past three decades has driven energy demand in this region.

However, the overall energy supply scenario in Southeast Asia indicates that 90% of its primary electricity comes from fossil fuels such as coal, oil, and natural gas, leading to environmental impacts such as carbon emissions.

Ironically, these countries are more sensitive and vulnerable to the effects of global climate change exacerbated by these emissions.

A passive commitment to the

Paris Agreement and the low proportion of renewable energy in their energy portfolios paints a pessimistic picture of the future of development, the environment, and sustainability.

A study of six Asean countries – Indonesia, Malaysia, the Philippines, Thailand, Vietnam, and Myanmar – during the 1994 to 2014 period reveals that their economic growth was supported by electricity generation from various sources, both fossil fuels and renewable energy.

Fossil fuel-based power plants emit carbon dioxide, with coal being the main contributor to CO2 emissions, followed by natural gas and oil.

Scenarios where economic growth correlates with CO2 emissions have the potential to cause environmental damage,

hindering economic progress due to human health issues.

Interestingly, hydropower contributes the most substantial and robust share to economic growth among electricity generation sources.

Power plants using hydropower as a renewable energy source do not produce significant environmental impacts.

In this case, the environmental impact of hydropower plants appears promising as they have minimal effects on carbon dioxide emissions while still making the most significant contribution to economic growth.

The minimal negative impact of hydropower plants on environmental pollution strengthens the belief that hydropower is an environmentally friendly energy solution capable of preserving the environment.

The implications of these findings suggest that Asean countries need to prioritise investments in hydropower projects, effectively harnessing untapped water sources for electricity generation.

Myanmar and Thailand stand out as prime examples of countries with the highest proportion of hydropower, exceeding 70%, with minimal reliance on coal and oil for electricity generation.

Implementing subsidies and tax incentives for cleaner alternative energy can help reduce dependence on coal in electricity generation.

For countries heavily reliant on coal for power generation, such as Indonesia, encouraging investments in new clean coal technologies will be crucial.

This technology is expected to drive economic efficiency and minimise environmental impact associated with coal-fired power plants.

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