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Financing Practice in Renewable Energy Project Development in Southeast Asian Economies

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Abstract

This paper explores the financing practices in renewable energy project development in Southeast Asia, with a focus on the role of green bonds, bank financing, and private sector participation. The paper discusses the importance of multilateral development banks, such as the Asian Development Bank (ADB), in facilitating cross-border cooperation, especially in projects like the Monsoon Wind Power Project in Laos. It further examines key case studies, such as the Bac Lieu Offshore Wind Power Project and the V1-2 Offshore Wind Project, to illustrate the successful application of project financing and blended finance solutions in achieving clean energy transition and regional energy security.

Keywords

Renewable Energy; Financing Activities; Regional Cooperation; Southeast Asia.

1. Introduction

Over the past decade, Southeast Asia has experienced significant development in renewable energy. It reflects the region's growing commitment to sustainable development and clean energy transition as the world's biggest economy. With continued support from governments, financial institutions, and the private sector, renewable energy financing is expected to play an increasingly vital role in driving the region's energy transformation in the years to come, in order to achieve decarbonization goals[1].

Table 1. Renewable Capacity in Major Asian Countries

Country	Total Renewable Capacity (GW)	Solar Capacity (GW)	Wind Capacity (GW)	Hydropower Capacity (GW)	Year
Vietnam	12.5	10.2	0.7	1.6	2023
Philippines	10.8	3.1	1.0	6.5	2023
Laos	8.2	0.1	0.0	7.9	2023
Thailand	11.3	4.5	1.5	5.3	2023
Indonesia	6.3	1.4	0.5	4.4	2023

2. Financing Initiatives in Renewable Energy in Southeast Asia Economies

Financial integration of economies in Asia and the Pacific has deepened significantly in recent decades, both within the region and outward globally.20 A 34% increase in cross-border assets and 22% increase in liabilities as shares of regional gross domestic product (GDP) over 2010–2022 reflects the region's financial openness and the effectiveness of numerous policy initiatives to build more integrated capital markets. Progress in cross-border financial integration further attests to significant gains in harnessing the opportunities of financial openness, notably access to foreign capital in support of the region's development priorities, knowledge transfers aiding the development of regional capital markets, and risk sharing. In

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line with rising wealth, greater integration with international financial markets allows Asia's investors to better diversify risks [2].

The Asia - Pacific region is at a crucial juncture in its energy transition journey. With a large population and rapid economic growth, the demand for energy is surging. Simultaneously, the region is increasingly aware of the need to reduce carbon emissions and shift towards renewable energy sources.

The Asia - Pacific region is rich in diverse renewable energy resources. Abundant sunlight in countries like Australia, India, and many Southeast Asian nations makes solar energy a promising option. Vast coastlines and strong wind patterns offer significant potential for wind power, as seen in Japan, South Korea, and some Pacific island states. Hydroelectric power remains a major renewable energy source in countries with substantial water resources, such as China, India, and several Southeast Asian countries. Geothermal energy is also harnessed in regions with active volcanic activity, like Indonesia and the Philippines.

Many governments in the Asia - Pacific region have introduced various incentives to attract investment in renewable energy. These include feed - in tariffs, which guarantee a fixed price for electricity generated from renewable sources, tax breaks for renewable energy developers, and subsidies for equipment installation. For example, China has implemented a series of subsidy policies to support the development of its solar and wind energy industries, which have contributed to its leading position in global renewable energy capacity.

International financial institutions play a crucial role in financing renewable energy projects in the Asia - Pacific. The Asian Development Bank (ADB), World Bank, and other multilateral development banks provide loans, grants, and technical assistance. For instance, the ADB has financed numerous renewable energy projects across the region, helping countries build infrastructure, improve energy efficiency, and develop sustainable energy systems.

The private sector has increasingly recognized the potential of renewable energy in the Asia - Pacific. Private companies, both domestic and international, are investing in renewable energy projects. This includes independent power producers, energy technology firms, and large corporations looking to meet their sustainability goals. In some cases, public - private partnerships (PPPs) have been established to combine the resources and expertise of the public and private sectors. For example, in Australia, private companies are leading the development of large - scale solar and wind farms, often in partnership with local governments.

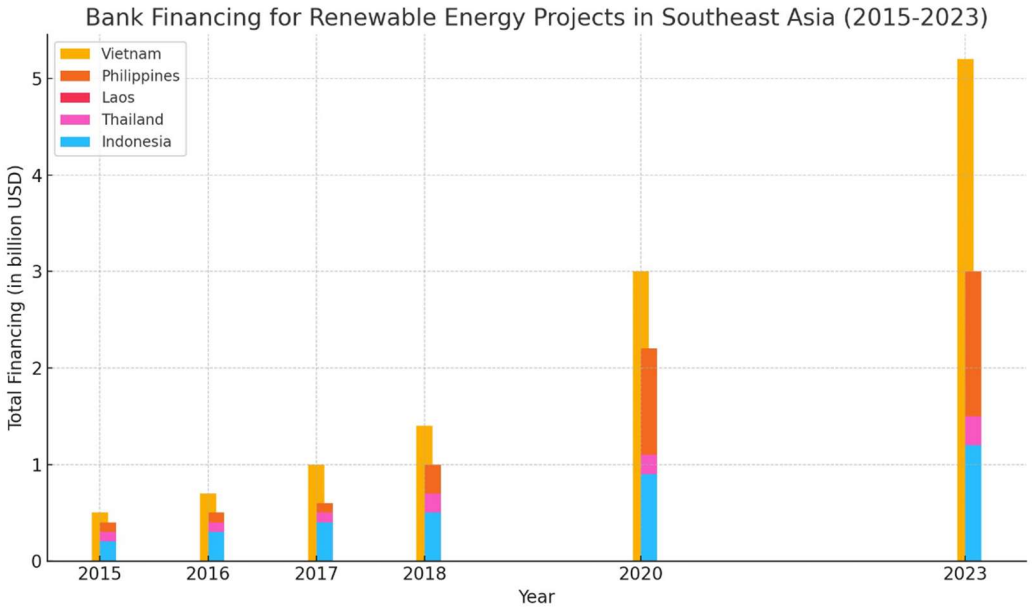

Figure 1. Bank Financing Growth in Renewable Energy Projects

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3. Vietnam Offshore Wind Power Projects

Bac Lieu Offshore Wind Power Project is located in the Mekong Delta and is expected to be one of Vietnam's largest offshore wind farms once completed with the total capacity of 3.9GW. The project has received significant backing from green financing mechanisms, including green bonds and bank loans, as well as international financial institutions like the AIIB ADB, both of which are heavily involved in promoting sustainable energy projects in Southeast Asia. Bac Lieu is seen as a flagship project for offshore wind energy in Vietnam, and it represents a major step in the country's transition toward renewable energy. The project's success has the potential to unlock further investments in Vietnam's offshore wind sector[4].

V1-2 Offshore Wind Power Project, located in Tra Vinh province, with the capacity of 48MW, was proved to be another successful practice in Vietnam. The Sermsung Thailand and TTVN Vietnam joint venture brings together local and international expertise to drive the development of the project. Moreover, the JV applied the project-financing model which significantly reduces the risk for lenders by using the future cash flows generated by the project as collateral. Since the lenders are primarily looking at the project's performance rather than the financial health of the developers, it lowers their exposure to potential risks. Offshore wind projects, with their predictable and stable revenue from long-term PPAs, become attractive to institutional investors who are seeking long-term, stable returns. This allows the project to access financing at lower interest rates.

4. ADB Fund in Renewable Project Practice

The Asian Development Bank (ADB) has always been committed to Lao PDR development. In the past two year, a series of projects have been approved in respects of building resilience and reducing rural poverty, developing local currency bond markets for a sustainable future, supporting human and social development, promoting cross-border financial transactions.

Monsoon Wind Power Project is a tailed renewable project aiming at enhancing regional cooperation, overcoming poverty and achieving prosperity[2].

The project entails a wind power project with a contracted capacity of 600-megawatt (MW) to be constructed in Lao PDR that will export and sell electricity into neighboring Viet Nam. It will be the first wind power project in Lao PDR, the largest in Southeast Asia, and the first cross-border in Asia. The project will provide a substantial source of clean renewable energy supply to Viet Nam to help meet the country's growing energy demand. The project will help unlock Lao PDR's significant untapped wind resource potential and provide social and economic benefits to the country in the form of employment, improved infrastructure, increased regional connectivity, and revenues through collection of royalties, lease payments, and taxes.

The project faced additional first mover costs and risks due to its position as the first wind power project in Lao PDR, the largest wind project in Southeast Asia, and the first cross-border wind project in Asia. ADB used the PSW grant to help mitigate potential curtailment risk, which was a key bankability issue for lenders. The project will provide a substantial source of clean renewable energy supply to Viet Nam to help meet the country's growing demand for energy. It aims to unlock Lao PDR's significant untapped wind resource potential and provide social and economic benefits to the country in the form of employment, improved infrastructure, increased regional connectivity, and revenues through collection of royalties, lease payments, and taxes.

ADB estimated the nominal grant element of PSW support to be up to $10,000,000. ADB's loan from its ordinary capital resources is up to $150,000,000. Due to the high nature of the potential curtailment risk assumed by PSW in the project and the absence of pricing for this risk, ADB assumed the grant would not be recoverable[3].

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ADB sized the PSW grant (blended finance solution) to fill a curtailment debt service reserve account that the borrower could use to partially mitigate repayment risk to senior lenders in case of extreme curtailment (noting that under the project's power purchase agreement, the output of the project can be curtailed, or restricted for technical reasons). This account would provide funds to cover a portion of debt service in periods where extreme curtailment results in insufficient cash for the borrower to repay senior lenders. ADB agreed upon this structure with the borrower ahead of launching the syndication in order to bring a bankable project structure to market.

Monsoon Wind Power Company Limited (MWPC) is the project owner, behind which several lenders are engaged including ADB. Multiple lenders for a project can offer various advantages and disadvantages, which are important to consider when structuring project financing. With multiple lenders, the risk is spread among several parties, reducing the exposure of any single lender to the project. This can make the financing structure more resilient to individual lender defaults or financial difficulties.

Having multiple lenders can increase the total amount of financing available for the project. Each lender may be willing to provide a portion of the financing, allowing for larger project budgets and the ability to undertake more extensive or ambitious projects. With the total capacity of 600MW, 133 WTGs, over 140km transmission lines, four booster stations, and along with the relocation, rehabilitation, and reestablishment, the Project requires a substantial amount of capital. More lenders engaged ensures guarantee to such financing resources.

5. Conclusion

In conclusion, financing mechanisms such as bank loans, green bonds, and public-private partnerships have played a vital role in the renewable energy development in Southeast Asia. To accelerate renewable energy deployment, Southeast Asia must continue to foster regional cooperation and create stable regulatory frameworks. The adoption of green finance and innovative financing tools will be crucial in attracting the capital needed to meet the region’s energy and climate goals. As the region leads the way in renewable energy, its financing practices offer valuable lessons for other emerging economies.

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