



Finance Carbon

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Abstract

Negative externalities of carbon emissions are a global problem that requires government intervention to deal with. This research method uses a qualitative approach using the literature review method. The conclusion is that carbon finance is an important tool in global efforts to reduce greenhouse gas emissions and mitigate climate change. With a combination of carbon markets, public funding, and private investment, there are many opportunities to support projects that have a positive impact on the environment. However, to achieve success, the challenges of regulation, transparency, and market stability must be overcome.

Keywords: *finance carbo*, funding, financing

Introduction

Carbon financing refers to financial mechanisms designed to support projects aimed at reducing carbon dioxide (CO₂) emissions and other greenhouse gases (Şen et al., 2019). This funding can come from a variety of sources, including governments, the private sector, non-governmental organizations (NGOs), and international carbon markets (Michaelowa et al., 2021).

In Presidential Regulation No. 71 of 2011 concerning the Implementation of National Greenhouse Gas Inventory and Presidential Regulation No. 61 of 2011 concerning the National Action Plan for Greenhouse Gas Reduction, Indonesia has committed to reducing carbon emissions. Through this regulation, the government invites economic actors to reduce their carbon footprint, which is realized through the disclosure of carbon emissions (Villena & Dhanorkar, 2020). Climate change has become one of the biggest environmental problems in recent years due to global warming (Dewayani & Ratnadi, 2021).

One of the *carbon commission disclosure* phenomena seen in mining companies is the awareness of economic actors that coal contributes greatly to carbon dioxide or greenhouse gas emissions (Curran, 2021). Coal emits more than 66% of CO₂ per unit of energy produced, mainly from mining operations and Steam Power Plants (PLTU) (Sutrisno et al., 2021). Chairman of the Association of Coal Entrepreneurs (APBI) Pandu Syahrir said coal mining and coal-fired power plants account for one-third of the total carbon emissions produced today, reaching 1,263 gigatons. Therefore, there needs to be an appropriate strategy to be applied to the mining sector. Such as the conversion of fuel

oil from diesel to B30 biodiesel for mining operations, rooftop solar power plants as a source of electricity to replace generators and supercritical technology to improve efficiency and reduce pollution due to the creation of coal-fired power plants.

When a company conducts *voluntary carbon commission disclosure*, it means that the company is in good condition. The condition of the company can be seen from leverage, where if the company is willing to make carbon commission disclosure, it means that the company has good leverage and the level of debt is low. In addition, the condition of the company can be seen through profitability, if the company has high profits, it will care more about the surrounding environment. And large companies that are developing will publish more environmental information because they realize that the activities of large companies will greatly affect environmental pollution.

Research Methods

This research method uses a qualitative approach using the literature review method. A literature review is a term used to refer to a specific research or research and development methodology conducted to collect and evaluate related research on a particular topic focus of Ramirez in (Wibisono & Soepriyanto, 2024)

Results and Discussion

The Role of the Government and the Private Sector in Carbon Financing

Carbon finance often involves government programs regarding compliance and how the private sector responds to carbon regulations (Battocletti et al., 2024). Climate policies that encourage carbon financing in compliance markets can reduce the impact that large corporations have on climate change (Zhou & Li, 2019). But it's not just about companies changing their business models to comply with policies (Rauter et al., 2017). Some entities in the private sector have also begun to capitalize on the carbon financing opportunities generated by the compliance market (Bielenberg et al., 2016). Here are some examples of how governments and the private sector are influencing carbon finance.

1. Green Credits and Bonds:

There are many incentives available for businesses that want to create eco-friendly projects. Bonds and green loans, for example, for green project companies play a significant role in creating these opportunities (Zhao et al., 2022).

2. Carbon Tax:

The purpose of the carbon tax is to change the way entities do business to reduce their emissions. Carbon taxes apply to the direct emissions of an entity as well as goods that emit CO₂ (Geroe, 2019).

How to Participate in Carbon Finance

There is no denying that government regulations regarding emissions have significantly reduced carbon levels (Green & Stern, 2017). However, there is much more that can be done with the help of individuals and businesses who voluntarily reduce their

footprint. This is where voluntary carbon markets become very important (Kreibich & Hermwille, 2021). When entities feel responsible for offsetting their emissions, they can work together and raise funds to finance carbon projects.

How can I participate in carbon financing in VCM (Voluntary Carbon Market)?

1. It is best to invest in emission reduction projects by purchasing the resulting carbon offset credits.
2. The amount of credit to purchase depends on how much you want to voluntarily offset your personal or corporate emissions.
3. Carbon credit providers offer a variety of options to meet a variety of reimbursement needs, from individuals to large corporations.
4. You can even stake your money on carbon credits on spot exchanges and earn a certain amount of profit. Blockchain-based or tokenized carbon credits are now emerging, providing market participants with more transparent transactions.

Carbon Financing Mechanism

1. Pasar Karbon
 - a. Cap-and-Trade: A system in which the government sets a cap on the total emissions allowed and companies can buy or sell allowances in the open market.
 - b. Carbon Credits: Projects that reduce emissions generate carbon credits that can be sold to companies or countries that need to balance their emissions.
2. Public Funding
 - a. International Climate Finance Facility: Bodies such as the Green Climate Fund (GCF) and the Global Environment Facility (GEF) that provide funding for climate projects in developing countries.
 - b. Tax Subsidies and Incentives: Governments offer tax subsidies or incentives for projects that contribute to reducing carbon emissions.
3. Private Funding
 - a. **Green Investment:** Direct investment by companies or investment funds in renewable energy, energy efficiency, or other clean technology projects.
 - b. **Green Bonds:** Financial instruments used by governments or companies to raise funds for environmentally sustainable projects.

Funded Projects

1. Renewable Energy: Projects such as solar, wind, hydro, and biomass power plants.
2. Energy Efficiency: Initiatives to improve energy efficiency in industry, buildings, and transportation.
3. Reforestation and Afforestation: Reforestation and the formation of new forests to absorb CO₂ from the atmosphere.
4. Clean Technology: The development and application of technologies that reduce carbon emissions, such as carbon capture and storage (CCS) technology.

Challenges and Opportunities

1. Challenge
 - a. Regulatory Complexity: Differences in regulations in different countries can make it difficult to implement and harmonize carbon markets.
 - b. Economic Uncertainty: Fluctuations in carbon prices in the market can be a risk for investors.
 - c. Transparency and Accountability: Ensuring that funds are used effectively and actually result in significant emission reductions.
2. Chance
 - a. Technology Innovation: Carbon financing drives innovation in green technologies.
 - b. Sustainable Development: Investment in low-carbon projects can promote sustainable economic development.
 - c. Global Collaboration: Strengthening international cooperation in tackling climate change.

Discussion

The Role of Government and the Private Sector in Carbon Financing

The government and the private sector play crucial roles in advancing carbon financing. Governments, through climate policies and regulations such as carbon taxes and carbon markets, incentivize businesses to reduce their carbon emissions. Programs like green credits and green bonds offer financial incentives for companies to develop environmentally friendly projects. On the other hand, the private sector responds by adjusting their business models to not only comply with regulations but also to capitalize on the opportunities presented by carbon financing. For instance, companies involved in the Voluntary Carbon Market (VCM) can purchase carbon credits to offset their emissions or even invest in emission reduction projects.

How to Participate in Carbon Financing

The Voluntary Carbon Market (VCM) offers opportunities for individuals and companies to contribute to reducing their carbon footprint. Participation can be achieved by purchasing carbon credits generated from emission reduction projects. These credits can be used to offset emissions from daily activities or corporate operations. Additionally, there are financial opportunities in carbon credits through spot exchanges or blockchain-based platforms, which offer transparency in transactions.

Carbon Financing Mechanism

Carbon financing mechanisms can be implemented through various methods, including carbon markets, public funding, and private funding. In carbon markets, cap-and-trade systems and carbon credit trading play vital roles. Public funding, such as support from the Green Climate Fund (GCF), provides financial backing for climate projects in developing countries. Meanwhile, private funding, including green investments and green bonds, finances sustainable projects such as renewable energy and energy efficiency.

Challenges and Opportunities

Challenges in carbon financing include regulatory complexity, economic uncertainty, and the need for transparency and accountability. Regulatory differences between countries can complicate the implementation of harmonized carbon markets, while fluctuations in carbon prices pose risks for investors. Moreover, it is crucial to ensure that funds raised are effectively used in projects that significantly reduce carbon emissions.

However, these challenges also present opportunities for technological innovation, sustainable development, and global collaboration. Carbon financing drives the advancement of green technologies and promotes more sustainable economic development. Additionally, international cooperation is strengthened as the world collectively addresses the challenges of climate change.

Conclusion

Carbon financing is a vital tool in the global effort to reduce greenhouse gas emissions and combat climate change. With active roles from governments, the private sector, and individual participation in the Voluntary Carbon Market, various emission reduction projects can be effectively funded and implemented. Although challenges such as regulatory complexity and economic uncertainty exist, the potential for technological innovation and sustainable development offers significant opportunities. The success of carbon financing depends on the collective commitment of all stakeholders to continue innovating and collaborating towards a greener and more sustainable future.

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