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Analysis of Green Sukuk Potential Against Green Infrastructure in Bekasi City

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Abstract

The Republic Indonesia Government in realizing the welfare has a fundamental role that is realized through economic and infrastructure development in various cities in Indonesia. The problem faced by Indonesia in realizing this development is how to keep infrastructure development in line with efforts to preserve the environment, and this is also one of the sustainable development goals. In this study using qualitative descriptive method. Case study that uses the object of research, is City of Bekasi-West Java. Data obtained through interviews with Bekasi City Government officials, documentation and literature studies. The analysis carried out is a SWOT analysis. Based on this research, it proves that Bekasi City, when viewed from geographical aspect, regulations, and existing legal aspects, is able to issue sukuk and carry out green infrastructure development with financing from the green sukuk. However, the reality is, until now there has been no green infrastructure development in Bekasi City that uses financing sources from sukuk or green sukuk. The existing green infrastructure in Bekasi City is a project of several ministries and is not a project of Bekasi City itself.

Abstrak

Pemerintah Negara Republik Indonesia dalam mewujudkan kesejahteraan memiliki peran mendasar yang diwujudkan melalui pembangunan ekonomi dan infrastruktur di berbagai kota di Indonesia. Permasalahan yang dihadapi Indonesia untuk mewujudkan pembangunan tersebut adalah bagaimana menjaga pembangunan infrastruktur tetap sejalan dengan upaya pelestarian lingkungan, dan ini juga merupakan salah satu tujuan pembangunan berkelanjutan. Penelitian ini menggunakan metode deskriptif kualitatif dengan studi kasus yang menggunakan objek penelitian yaitu Kota Bekasi. Data diperoleh melalui wawancara dengan pejabat Pemkot Bekasi, dokumentasi dan studi literature. Analisis yang dilakukan yaitu analisis SWOT. Berdasarkan hasil penelitian ini membuktikan bahwa Kota Bekasi jika dilihat dari aspek geografis, regulasi, dan aspek hukum yang ada sudah mampu dan bisa untuk menerbitkan sukuk serta melakukan pembangunan infrastruktur hijau dengan pembiayaan dari sukuk hijau tersebut. Tetapi, kenyataannya sampai saat ini masih belum ada pembangunan infrastruktur hijau di Kota Bekasi yang menggunakan sumber pembiayaan dari sukuk ataupun sukuk

Kata kunci:

Sukuk, Sukuk Hijau, Infrastruktur Hijau, Pembiayaan Infrastruktur, Pengelolaan Limbah Berkelanjutan, dan Pengelolaan Limbah menjadi Energi

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hijau. Infrastruktur hijau yang ada di Kota Bekasi merupakan proyek dari beberapa kementerian dan bukan merupakan proyek Kota Bekasi itu sendiri.

1. Introduction

The Republic Indonesia Government in realizing the welfare has a fundamental role that is realized through economic and infrastructure development in various cities in Indonesia. The availability of good infrastructure is an important basis of developed economic development, and the existence of infrastructure provides an important role in the national economy. The problem faced by Indonesia in realizing this development is how to keep infrastructure development in line with efforts to preserve the environment, and this is also one of the sustainable development goals (Abubakar & Handayani, 2020).

The availability of natural resources that are the main capital in development is decreasing. This happened because of the increasing use of these resources to become a source of raw materials for domestic industrial needs, as well as a source of foreign exchange. Therefore, the government in the National Medium-Term Development Plan (RPJMN) for the 2020-2024 period explained several handling of existing problems such as climate change and effort to increase economic growth and infrastructure in Indonesia. The 5 main points are human resource development, infrastructure development, regulatory simplification, bureaucratic simplification and economic transformation (Bappenas, 2020).

The environmental phenomenon that is currently occurring and is quite worrying and has become a public conversation, namely the Atlantis phenomenon, is called that because a number of areas on the north coast, Java are threatened with being submerged like Atlantis. Another problem that has long been a problem in Indonesia is in the waste management sector, where the sector always gets a low allocation of around 20% per issuance. To overcome financing problems and to implement the national development agenda, the government has issued green infrastructure development and green financing instruments. Therefore, the Ministry of Finance issued a new investment instrument for sustainable financing, namely Green sukuk (Abubakar & Handayani, 2020).

The idea of green sukuk itself emerged as an initiative of developed countries whose people already have a higher awareness of sustainability. Green sukuk is inseparable from the presence of green bond instruments that have existed since they were first published in 2008 by the World Bank. Green bonds focus on natural capital which is a strong financial instrument in realizing ecosystem conservation, sustainable use of water and also preventing air pollution (World Wildlife Fund, 2016). The green sukuk publishing is also an implementation of Indonesia's responsibility for the Paris Agreement which was established on April 22, 2016. Indonesia is listed as one of the pioneers in publishing green bonds in the Southeast Asian region through the publication of green sukuk worth US\$ 1.25 billion in March 2018.

The problem that is still not resolved properly in the city of Bekasi is environmental governance and this is the main concentration of the government. The full area of landfills in Bekasi City requires the Bekasi City government to reduce waste and waste stockpiles as an effort to overcome environmental problems. However, the reality is that until now waste management in Bekasi City has not been optimal. This can be seen from data from the Environment Agency where in a day there are as many as 800-tons of waste not collected from 1,800-tons of community waste. Another problem that is seen is the absence of waste processing technology at the Sumur Batu landfill, so far the existing waste has only been stockpiled. Even though the PLTSa project has been around for a long time, but until now the project has not been realized (Klikbekasi, 2022). The

development of Bekasi City is still not running optimally. Where infrastructure construction will begin in the first quarter of each current year (February - March). Unfortunately, until now, promises have not been realized from the executive (Sunaryo, 2022).

Research conducted by (Abubakar & Handayani, 2020) resulted that the goal of prolonged development opens the opportunity for the issuance of green sukuk as an alternative financing instrument in carrying out green projects which is the commitment of the Indonesian government in combating weather changes. Indonesia is increasing green sukuk to support the development of green infrastructure based on the World Bank's Green Bond model to fulfill issuance with internationally accepted principles.

Furthermore, (Risanti et al., n.d.) in the study explained that the green sukuk that has been published is an effort in order to realize sustainable development in Indonesia, because both global green sukuk and retail green sukuk offered, are all used for projects that fall into criteria 9 eligible green sectors, with measurable contribution rankings in accordance with CICERO standards. This study is important to be carried out based on the large opportunities for green infrastructure development in Bekasi City with alternative sources of financing using green sukuk.

2. Literature Review

2.1 Theoretical Framework

2.1.1 Sukuk

Sukuk is an interest-free bond that provides yield profits to investors without violating sharia regulations (Islamic law) that prohibit interest payments. This is sharia-compliant security backed by a certain set of underlying assets (Mardi et al., 2020:17)

2.1.2 Green Bond

Green bonds are basically ordinary bonds with one main difference that is, the proceeds obtained from the issuance of these bonds can only be used for environmentally friendly projects, investments and expenditures (Mardi et al., 2020:17)

2.1.3 Green Sukuk

Green sukuk is an innovative financial instrument to support Indonesia's commitment to reducing greenhouse gas emissions based on Islamic Law. These publishing principles are guided by Green Bond and the Green sukuk framework, and reviewed by international independent reviewer CICERO (Center of International Climate Research). Green sukuk aims to finance environmentally friendly projects in an effort to bring down the impact of global warming, including projects aimed at reducing carbon emissions (green infrastructure). (Karina, 2019)

Table 1. Color classification financed by green sukuk

	categories
Dark Green Allocated projects and completions that match the long-term vision of a low carbon weather resistant future. Fossil fuel technologies that lock in long-term emissions do not meet the requirements for financing. Ideally, exposure to transitional weather risks and forms are considered or mitigated.	1. Renewable Energy 2. Resilience to weather change for highly vulnerable areas and zones or disaster risk reduction
Medium Green	1. Sustainable transport 2. Waste management into energy

Allotted to projects and breakdowns represent steps that lead a long-term vision, but not quite there yet. Fossil fuel technologies that trigger long-term emissions do not meet the requirements for financing. The effects of physical weather as well as transitions can be considered.	3. Waste management (blue economy) 4. Green tourism
<p>Light Green</p> <p>Allotted to weather-friendly projects and completions but not representing or contributing to the long-term vision. This is a short-term reduction in GHG emissions that is needed and potentially significant, but needs to be tried to stay away from extended life that could lock in fossil fuel elements. Projects can be exposed to physical and transitional risks without the right strategy to protect them.</p>	1. Energy efficiency 2. Sustainable management of natural resources on land. 3. Sustainable management of natural resources in the sea. 4. Green buildings 5. Sustainable water and wastewater management. 6. Food security and sustainable food systems. 7. Access to essential services 8. Affordable basic infrastructure.

sources : (CICERO, 2021)

2.1.4 Green Infrastructure

Green Infrastructure or green infrastructure is a spatial planning concept that applies environmentally friendly infrastructure. Eco friendly infrastructure is infrastructure that does not damage with the environmental cycle. Green infrastructure plans represent a change in local and state governments in thinking about green spaces. The role of green infrastructure includes contributions related to environmental conservation, adaptation to climate change, sanitation, economic functioning, and meeting social needs. Green Infrastructure is part of the economic chain related to social aspects (Ummah, 2014). On (GII, n.d.) explain some types of green infrastructure are as follows:

1. Solid Waste Management
2. Water and Wastewater Management
3. Urban Public Transport

2.1.5 Bekasi City Infrastructure Financing

Infrastructure Development is an activity that includes construction work to build or improve infrastructure capabilities and/or infrastructure management and maintenance activities in order to increase infrastructure benefits (Bekasi Mayor Regulation, No 28 of 2011).

2.1.6 Waste

Waste management is a systematic, equitable, and sustainable activity that includes reducing and cracking down on waste. The government is tasked with ensuring the implementation of good and environmentally sound waste management in accordance with the objectives as interpreted in Law No. 18 of 2008 concerning Waste Management.

2.1.7 Waste Power Plant (PLTSa)

A Waste-Based Power Plant called PLTSa is a waste processor into electrical energy based on environmentally friendly technology that meets quality standards in accordance with laws and regulations and can help reduce the amount of waste significantly and tested. The explanation is in accordance with the Presidential Regulation of the Republic of Indonesia No. 35 of 2018. Waste Management is carried out in an integrated manner from upstream to downstream through waste reduction and handling.

2.1.8 Previous Research

In the research (Abubakar & Handayani, 2020), said the Sustainable Development Goals open up opportunities for the issuance of Green sukuk as an alternative instrument for financing green projects to support the Indonesian government's commitment to combating climate change. Green sukuk in Indonesia is facing hurdles where stakeholders do not understand the concept of Green sukuk and steps to assert that the project meets the criteria of green infrastructure. Thus, regulations are still needed to strengthen the issuance of Green sukuk and the implementation of green infrastructure projects.

The green sukuk that has been issued is a way in the plan to carry out sustainable development in Indonesia. The distribution of green sukuk funds has targeted five sectors, there are Sustainable Transport, Resilience to Climate Change for Highly Vulnerable Areas & Sector/Disaster Risk Reduction, Energy Efficiency, Waste to Energy & Waste Management and Renewable Energy.

In research by Benedict & McMahon, (2002), green infrastructure plans can generate a working chart for future growth while ensuring that significant natural energy sources will be maintained for future generations. They can reduce opposition to new development by convincing civic groups and environmental organizations that growth will only occur in expanded conservation charts and open spaces.

Naufal Azaki (2022), through a mixture of research results and studies discussed, concluded that optimization of alternative sources of infrastructure financing needs to be prioritized by the government, especially by encouraging private involvement. Various challenges still arise in encouraging private participation. Therefore, a holistic and coherent policy framework is needed both in terms of investment and climate, sharpening financial instruments and incentives, green investment campaigns, innovation in procurement of goods & services, and removing various obstacles in green infrastructure.

In the research (Hariyani & Kusuma, 2020) revealed that funding sustainable waste management in Indonesia with the Green sukuk instrument can be applied because it will have three benefits, namely for financial diversification, waste reduction, and job opportunities. In addition, the emergence of other alternative energy sources as well as Sukuk liquidity and the increasing role of Islamic finance are opportunities that of course must be faced with potential costs that will come out such as expensive technology, large state property, and the increasing burden of the state budget and if the lack of community participation and support from local governments and human error can be a risk in the future.

3. Data and Method

3.1 Research Method

The type of research used a qualitative method. The study approach used is a descriptive qualitative analysis. This study identifies the potential of Green sukuk as an option in financing infrastructure development in Bekasi City. This research uses SWOT analysis to determine formulations in the preparation of long-term strategies.

3.2 Place and Time of Research

This study is located at Bekasi City, West Java Province. Precisely at the Bekasi City Government Mayor's Office which is located at Jl. Jend. A. Yani No. 1 Bekasi, West Java. This study was done from May to October 2022

3.3 Research Object

Object in the study is stakeholders involved in uncovering the potential of Green sukuk in infrastructure financing in Bekasi City, namely apparatus in the Bekasi City Government, Bekasi City Statistics Central Agency and related agencies.

3.4 Data Type

3.4.1 Primary Data

In this study, researchers used primary data and obtained directly on the Bekasi city government apparatus.

Table 2. Informant Data

No	Informant Name	Description	Status
1	Suganda M.Si	Sub. Coordinator of Public Works and Spatial Planning Agency for Regional Development Planning and Development Research (Bappelitbangda)	Main Informant
2.	Febrima	Infrastructure and Regional Development Agency for Development Planning and Regional Development Research (Bappelitbangda)	Supporting Informant

Source: Researcher Data, 2022

3.4.2 Secondary Data

Secondary data will also be used in this study to obtain documented data such as at the Central Statistics Agency of Bekasi City, statutory provisions relevant to Green sukuk, and so on.

3.5 Data Collection Methods

1. Observation

Observation is a complex process, which consists of several biological and psychological processes. The two most important are the observation process and memory.

2. Interview

Interview on this study was conducted a structured manner by visiting the Bekasi City Regional Development Planning and Research Agency

3. Documentation

The documents used in this study, namely the regulations or regulations used and related in the discussion of this research include:

- Bekasi City Regional Regulation Number 13 of 2011 concerning the Bekasi City Regional Spatial Plan for 2011-2031.
- Presidential Regulation of the Republic of Indonesia Number 58 of 2017 concerning Amendments to Presidential Regulation Number 3 of 2016 concerning the Acceleration of the Implementation of National Strategic Projects.
- Presidential Regulation of the Republic of Indonesia Number 35 of 2018 concerning the Acceleration of the Construction of Waste Processing Plants into Electrical Energy Based on Environmentally Friendly Technology.

3.6 Research Instrument

In this study, the one who acted as an instrument was the researcher himself. According to Sugiyono (2013:222) in qualitative research, the research instrument or tool is the researcher himself. As a human instrument, Qualitative researchers function to establish research focus, interpret, collect, assess quality, and analyze data, as well as select informants as data sources, and make inferences on their findings.

3.7 Checking the Validity of Findings

3.7.1 Extension of Participation

The contribution of researchers is decisive in data collection efforts. Such contributions are not only made in a short time, but require an extension of participation in research tasks.

3.7.2 Perseverance/Accuracy of Observation

The plurality of observations is to seek explanations consistently in many ways in conjunction with a stable or tentative process of analysis.

3.7.3 Triangulation

Triangulation is a technique for checking the validity of data that utilizes something else. Outside of that data for the purposes of checking or comparing that data.

3.8 Data Analysis Method

3.8.1 Interactive Analysis (Miles and Huberman):

- a. Data Collection, process and prepare data for analysis.
- b. Data Reduction, means summarizing, choosing something essential, focusing on something important, looking for themes and patterns.
- c. Data Display, it can be done in the form of tables, graphs, pie charts, pictograms, etc.
- d. Conclusion Drawing/Verification, conclusions are drawing conclusions and verification.

3.8.2 SWOT Analysis

According to (Rangkuti, 2009:21) the process of preparing strategic planning in SWOT analysis goes through 3 stages of analysis, namely

- a. Data Collection Phase
This stage is the activity of collecting data and information that is related with internal and external factors.
- b. Analysis Stages
The values of internal and external factors that acquired from the Internal and External Strategy Factor Matrix result are further described in the form of a SWOT diagram by describing the strength value (Strength) with the weakness value (Weakness), and the opportunity value (Opportunity) with the threat value (Threat).
- c. Decision Making Stage
At this stage, review of the 4 strategies that have been formulated in the analysis stage.

3.8.3 SWOT Analysis Model

a. Internal Factor of Analysis Strategy (IFAS)

IFAS matrix is used to summarize and assess the major strength and weakness within the company functional areas as well as providing a basis for identifying and assessing of organizational relationships.

b. External Factor of Analysis Strategy (EFAS)

EFAS matrix are used to review matters relating to economic, social, cultural, demographic, environmental, political, legal, technological and information issues regarding opportunities and threats to organizations.

3.8.4 SWOT Matrix

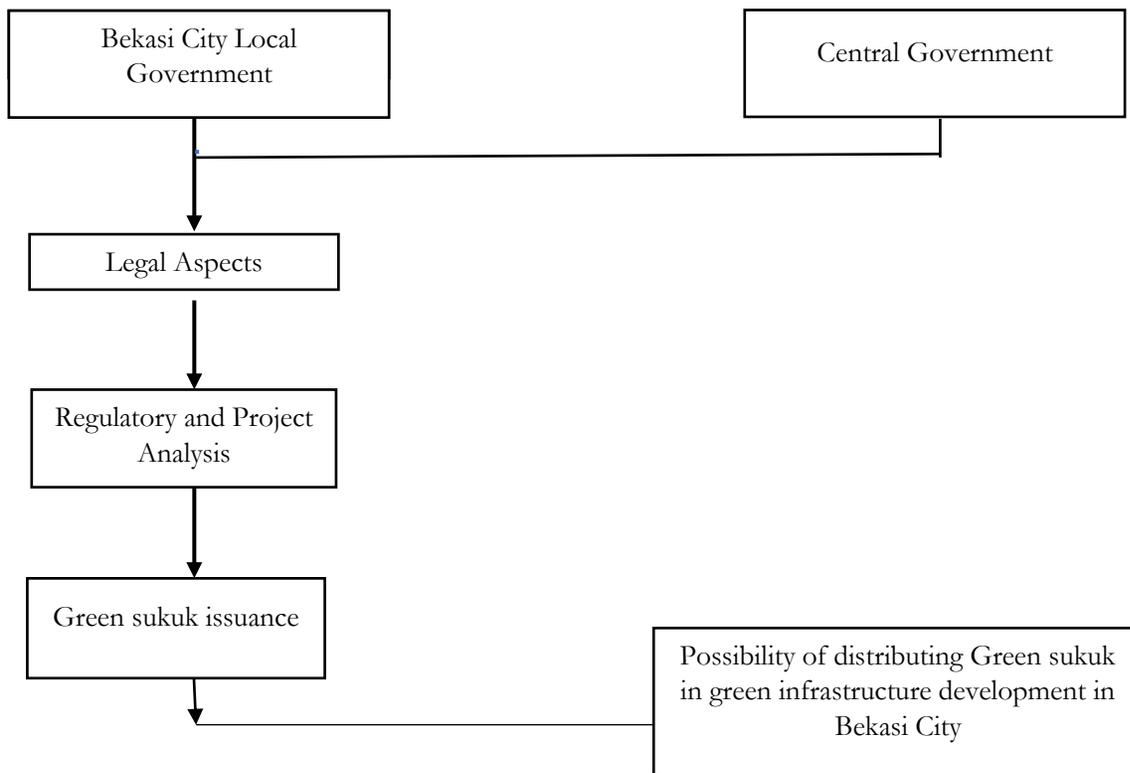
Is a tool used to strategize an organization. SWOT stands for Strengths (S), Weaknesses (W), Opportunities (O), and Threats (T) which means strengths, weaknesses, opportunities and threats or constraints.

Table 3. SWOT Matrix

IFAS FFAS	Strength (S) Determine 5 – 10 Internal strength factors.	Weaknesses (W) Determine 5 – 10 Internal weakness factors.
Opportunities (O) Specify 5 – 10 factors of External opportunity.	SO Strategy Make strategy by using existing strengths to take advantage of opportunities.	WO Strategy Make a strategy to take advantage of opportunities by minimizing weaknesses.
Opportunities (O) Specify 5 – 10 factors of External threat.	ST Strategy Make a strategy by using existing powers to take overcome threats.	WT Strategy To avoid threats, make a strategy that minimizes existing weaknesses.

Source: Rangkuti, 2009:21

3.9 Conceptual Framework



4. Results

4.1 Overview of Bekasi City

Bekasi City is one of the cities in West Java Province, Indonesia. Bekasi City is located at an altitude of 19 m above sea level. The name Bekasi comes from the word Bagasasi which means the same as Candrabaga written in the Tugu Inscription of the Tarumanegara Kingdom era, which is the name of the river that passes through this city. Bekasi City is part of the Jabodetabek metropolitan area and is the satellite city with the largest population in Indonesia. Currently, Bekasi City has developed into an urban residence and industrial center.

a. Geographical Aspects of Bekasi City

The Area and Geographical Location of Bekasi City has an area of about 210.49 km², with the regional boundaries of Bekasi City being:

- North : Kabupaten Bekasi
- South : Kabupaten Bogor dan Kota Depok
- West : Provinsi DKI Jakarta
- East : Kabupaten Bekasi

Geographical location: 106°48'28" - 107°27'29" East Longitude and 6°10'5" - 6°30'6" South Latitude.

Based on the description of the Bekasi City boundaries, it shows that Bekasi City is strategically connected to Bekasi Regency. In addition, the location of Bekasi City is also adjacent to DKI Jakarta Province. This connectedness has an impact on the rapid development of shopping centers and the mobilization of large outgoing and inbound vehicles in Bekasi City.

b. Topography

Topographic Conditions of Bekasi City with a slope between 0-2% and located at an altitude between 11 m – 81 m above sea level.

- Altitude > 25 m: Medan Satria District, North Bekasi, South Bekasi, East Bekasi and Pondok Gede
- Altitude 25 - 100 m: Bantargebang District, Pondok Melati, Jatiasih.

Areas with low altitude and slope that cause the area to inundate a lot, especially during the rainy season

c. Geology and Soil Types

The geological structure of the Bekasi City area is dominated by pleistocene volcanic facies but there are two districts that have other structural characteristics, namely:

- North Bekasi : Alluvium Structure
- East Bekasi : Structure of Miocene Sedimentary Facies

In South Bekasi there are JNG-A gas wells (106o 55' 8,687" BT; 06O 20'54,051") and JNBG Wells (106O 55'21, 155' BT; 06o 21' 10,498").

d. Hydrology and Climatology

The hydrological conditions of Bekasi City are divided into two:

- Surface water, including the condition of rainwater flowing into rivers.
The Bekasi City area is fed by 3 (three) main rivers, namely the Cakung River, Bekasi River and Sunter River, along with their tributaries. Bekasi River has its headwaters in the Cikeas River which originates from a mountain at an altitude of approximately 1,500 meters from the water level.
- Groundwater
The condition of groundwater in the Bekasi City area is partly quite potential to be used as a source of clean water, especially in the southern area of Bekasi City, but for areas around the Bantargebang landfill, the groundwater condition is likely to be polluted.

e. Climate

The Bekasi City area is generally classified as a tropical monsoon climate (Am) with a high humidity level of $\pm 78\%$. The daily environmental conditions are very hot. This is mainly influenced by increasing land use, especially industry or trade and settlements. Daily air temperatures are expected to range from 24°C - 33°C . Because of its tropical monsoon climate, Bekasi City experiences two seasons, namely the rainy season and the dry season.

f. Settlement

The total population of Bekasi City is currently more than 2.2 million people spread across 12 sub-districts. They are Pondok Gede District, Jatisampurna District, Jati Asih District, Bantargebang District, East Bekasi District, Rawa Lumbu District, South Bekasi District, West Bekasi District, Medan Satria District, North Bekasi District, Mustika Jaya District, and Pondok Melati District.

5. Discussion

In this section, the author will describe and explain the data and research results of the potential of Green sukuk for green infrastructure in Bekasi City. The focus of this analysis is on the Bekasi City Government at the Bappelitbangda (Regional Development Planning and Development Research Agency). In order for researchers to be more objective and accurate in conducting this study, researchers seek additional information by looking at field conditions in Bekasi City, and looking for news via the internet related to Green sukuk in Bekasi City. The interview schedule is as follows:

Table 4. Informant Interview Schedule

No	Day / Date	Informant Name	Description
1	Friday, September 16, 2022 Friday, September 23, 2022	Suganda M.Si	Sub. Coordinator of Public Works and Spatial Planning Agency for Regional Development Planning and Development Research (Bappelitbangda)
2	Wednesday, 21 September 2022 Friday, September 23, 2022	Febrima	Infrastructure and Regional Development Agency for Development Planning and Regional Development Research (Bappelitbangda)

Source: Researcher Data, 2022

5.1 Financing Infrastructure Facilities in Bekasi City

The Bekasi City Government in carrying out infrastructure development and development in its area uses the main sources of financing, namely:

- Regional Revenue and Expenditure Budget (APBD)
- State Budget (APBN)
- DKI Jakarta Regional Government Assistance

Assistance from the DKI Jakarta Government because the City of Bekasi has a connection relevant to the DKI Jakarta Integrated Waste Processing Plant (TPST) in the Bekasi City area, namely Bantargebang.

5.2 Legal Aspects

The results of an interview with Mrs. Febrima, the Infrastructure and Regional Development Section (IPW) at the Regional Development Planning and Research Agency (Bappelitbangda) of Bekasi City, she explained that in Bekasi City itself follows local government policies and directions from the central government.

The guidelines used by the Bekasi City Government include the Regional Spatial Plan (RTRW), the Regional Medium-Term Development Plan (RPJMD) is a regional planning document for a period of 5 years and the Regional Long-Term Development Plan (RPJPD) is a regional planning document for a period of 20 years.

5.3 Regulatory and Project Analysis

According to (Yaniza et al., 2022) here are some legal umbrellas that regulate green sukuk in general, for special arrangements related to green sukuk itself does not exist until now so it is still based on:

- Law No. 19 of 2008 concerning State Sharia Securities
- Fatwa of the National Sharia Council Number 32/DSN-MUI/IX/2002
- Financial Services Authority Regulation Number 60/POJK.04/2017 concerning the Issuance and Requirements for Environmentally Sound Debt Securities (Green Bond)

Other regulations that become guidelines for the Bekasi City Government regarding green sukuk and green infrastructure include:

- Bekasi City Regional Regulation Number 13 of 2011 concerning the Bekasi City Regional Spatial Plan for 2011-2031
- Presidential Regulation of the Republic of Indonesia Number 3 of 2016 concerning the Acceleration of the Implementation of National Strategic Projects
- Presidential Regulation of the Republic of Indonesia Number 58 of 2017 concerning Amendments to Presidential Regulation Number 3 of 2016 concerning the Acceleration of the Implementation of National Strategic Projects
- Presidential Regulation Number 35 of 2018 concerning the Acceleration of the Construction of Waste Processing Installations into Electrical Energy Based on Environmentally Friendly Technology.

5.4 Green Sukuk Issuance

Until now, Indonesia is listed as the first to issue green bonds in the Southeast Asian region and this transaction is the first green sukuk issuance in the world carried out by the state through the issuance of Green sukuk in March 2018 worth US\$ 1.25 billion exclusively to be distributed to environmentally friendly projects according to the Green Framework of the Republic of Indonesia (Hadi, 2018)

In Bekasi City itself, based on the results of an interview by Mr. Suganda, he explained that in Bekasi City there is no and has not used sukuk or green sukuk. The main financing in Bekasi City is still sourced from the APBN, APBD, and the DKI Jakarta City Government. The alternative financing is still not using sukuk, but receiving assistance from state-owned companies. Although Bekasi City still uses financing from the government budget, Bekasi City itself does not rule out the possibility of finding or opening other financing alternatives such as looking for private investors or sukuk itself.

However, during the researchers' observations in the field, the researchers found a bridge project in the Bekasi City area where there was a sign of the name of the sukuk project. The project is the creation of an underpass in the East Bekasi region. The researcher also checked through a re-interview with Mr. Suganda, and he explained that the jobs were not Bekasi City jobs but jobs from the center, there are from the Ministry of Public Works and People's Housing (PUPR).

However, due to the lack of massive socialization, this has caused alternative financing through sukuk to be unknown to the public in general, as well as among Bekasi City government officials. This is an irony because the Bappelitbangda office itself also does not know that there are already projects that use alternative sukuk financing while they are the ones who make the development planning and financing.

5.5 Infrastructure Development Plan in Bekasi City

- Transportation infrastructure sector, such as the construction and development of inner-city toll roads, intersections of plots and parking areas, terminal development, construction of Transit Oriented Development (TOD), development of public transportation, and development of railway networks.
- Energy, electricity and gas sectors, in the form of developing gas distribution pipelines, equitable distribution of Public Road Services (PJU), and developing renewable energy sources such as the construction of PLTSa.
- Entertainment sector, such as the development of natural tourism, shopping centers, hotels and restaurants.
- Drinking water and sanitation sectors, such as the development of clean water systems (Water Management Installations (IP), SPAM), the construction of wastewater systems (Wastewater Treatment Plants (WWTP), and the development of waste systems (waste containers, transportation, construction and development of integrated TPS, development of PLTSa Refuse Derived Fuel at the final Processing Site (TPA).
- Industry, Trade and Services Sector, which includes the development of residential and residential areas.

5.6 Green Infrastructure Development in Bekasi City

- Energy and Gas Network System Development Facilities
The results of a data search by researchers that in Bekasi City there has been a development of energy and gas network systems. This is explained in the Bekasi City Regional Regulation Number 13 of 2011 concerning the Bekasi City Regional Spatial Plan for 2011-2031. On this regulation, it is stated and explained, one of which is the development of an integrated gas energy network system and telecommunications network. Starting with the regional spatial planning policy (article 5), the city infrastructure network system plan (article 9), the gas and electricity energy network development plan (article 11) which includes:
 - Gas Distribution Pipeline Plan, including the development of gas services through pipelines for industrial, trade and service, and residential areas
 - structuring the gas energy network through an underground integrated network
- Waste and Cleanliness Service Facilities
 - Sumur Batu Landfill
Sumur Batu landfill is a landfill in all areas of Bekasi City, where in its management it is in accordance with the proper waste processing procedures. However, based on the news conveyed by (Fadlurrohman, 2022) in the news media.detik, the Head of the Bekasi City Environmental Service, Yayan Yuliana, said that the Batu Well Waste Landfill was overloaded. The landfill can only accommodate 70% of the total waste produced by Bekasi residents every day. Another problem is that not all waste can be collected due to a limited fleet, as much as 30% of the waste that is not collected has caused the emergence of wild TPS-TPS. The efforts made by the Bekasi City Government are to require the managers of shopping centers and offices to sort waste, but because there are no sanctions, the selection of waste is still not optimal.
 - TPS3R in several sub-districts in Bekasi City
TPS-3R itself is a waste processing that uses innovative waste shredding machine technology and compost sieving that is more effective and efficient. This method is implemented in Bekasi City to support sustainability programs and waste management in Bekasi City.
- The Construction of PLTSa

The construction of PLTSa in Bekasi City has become the city government's plan to realize a clean and healthy city. Planning for the processing of waste into electrical energy, the Bekasi City Government refers to the Presidential Regulation of the Republic of Indonesia Number 35 of 2018 concerning the Acceleration of the Construction of Waste Processing Plants into Electrical Energy Based on Environmentally Friendly Technology. Bekasi City in its waste management has led to the PLTSa program, but for one reason or another the program has not been realized and has not even started until now. Seeing that it has been quite a long period since the Presidential Regulation on PLTSa, namely since 2018, the researcher also asked Mr. Suganda again, if what is the obstacle in Bekasi City itself so that it takes a long time to start this PLTSa program.

The explanation from Mr. Suganda is that each city selected for the program continues to run the PLTSa program as stated in Presidential Regulation No. 35 of 2018, but because each city has its own obstacles and problems, so the application of the presidential regulation and the implementation of the PLTSa program vary in time in each city. However, the length of progress does not mean that Bekasi City does not run the program, it's just that until now Bekasi City is still in the planning stage.

5.7 Projects Allocated Through Green Sukuk And Its Realization in Bekasi City

In one of the sectors financed by green sukuk, namely the Sustainable Transportation sector, it shows that there are ministry green projects located in Bekasi City as follows:

- Procurement of 381-unit Bus Rapid Transit (BRT) to all regions in Indonesia except for DKI Jakarta Province with a value of Rp 255.97 billion in 2018 with the Ministry of Transportation as the project owner.
- Construction of Double-Double Track (DDT) lines with a value of Rp 4.58 trillion in 2018 and 2019 with the Ministry of Transportation as the project owner.

5.8 SWOT Analysis of Green Sukuk's Potential for Green Infrastructure in Bekasi City

5.8.1 Strength

- Strategic geographical location of Bekasi City, where this location is very supportive of economic growth in Bekasi City.
- Availability of green infrastructure. With the availability of Bus Rapid Transit.
- Complete economic facilities and infrastructure, as evidenced by the vast banking network in Bekasi City. Where banks can be one of the agents in selling sukuk by the government. In Bekasi City itself, there are 310 bank offices spread across 167 persero banks, or conventional, 111 private banks and 32 Islamic commercial banks.
- Work ethic and entrepreneurial spirit of the community in the microeconomic sector for macroeconomic growth in Bekasi City
- The potential of sustainability-based industries as capital to support economic growth in Bekasi City.

5.8.2 Weakness

- Human Resources from the City Government environment are still minimal for knowledge and issuance of sukuk.
- Local regulations that have not covered the issuance of sukuk. The existing legal umbrella regarding sukuk and green sukuk still comes from central government regulations.
- Socialization of sukuk issuance to the general public and investors is still low.

- Lack of literature and socialization among the Bekasi City Government apparatus.
- Lack of Natural Resources in Bekasi City, because natural resources also have an important role in supporting development in the regions.

5.8.3 Opportunity

- Bekasi City can be a very developed city and become a supporting city for a large capital city.
- Supporting sustainable development programs that have been planned by the central government contained in the Bekasi City RPJMD for 2018-2023
- Regulations related to regional autonomy and central financial considerations in order to ensure legal certainty of development in Bekasi City.
- Bureaucracy to obtain permission from the Bekasi City Government.
- Cooperation with the area around Bekasi City to increase economic growth.
- Economic and environmental conditions in the Bekasi City area as a result of sustainability development.

5.8.4 Threat

- Increase and open opportunities for corruption in the Bekasi City environment.
- Misuse of sukuk products that are not in accordance with their designation.
- The impact of infrastructure and the influence of infrastructure development in Bekasi City.
- Human resources who cannot be responsible for carrying out maintenance and repairs to existing infrastructure.
- The risk of increasing regional debt.

6. Conclusion

- Based on the strategic geographical location of Bekasi City, Bekasi City is able to build and improve the economy in its region and is quite capable of starting sustainability programs, especially those related to green infrastructure.
- Bekasi City already has a medium-term development discourse for the development of some infrastructure in its area, but it has not been seen if the financing for the development will use sukuk or not, seeing the unpreparedness of Bekasi City to open up sukuk opportunities in its area.
- There are already many financial institutions in Bekasi City that can be a means of distributing sukuk such as banks, but Bekasi City still has not used this to introduce and use sukuk as an alternative financing for infrastructure.
- The development of the waste system in Bekasi City still has no development to restart the PLTSa project which had failed, because until now Bekasi City is still experiencing problems at the Sumur Batu landfill because only 1 zone is still active and the zone is already overloaded.
- There is no green infrastructure in the Bekasi City area that is the result of funding or the result of the City Government project, because the green infrastructure in the area is one of the projects of the Ministry that focuses on Bekasi City.

Recommendation

- Expanding socialization about sukuk in the Bekasi City Government area as well as the general public so that sukuk opportunities are even greater and can attract investors to choose investment through sukuk.
- Bekasi City government must start the implementation of a strategic waste processing project considering that Presidential Regulation of the Republic of Indonesia Number 35 of 2018 has been issued for quite a long time.

- Increase vigilance and anticipation of the possibility of KKN (Corruption Collusion and Nepotism) practices within the Bekasi City Government when investment through sukuk is opened publicly.
- Creating real regulations and policies on green sukuk and sukuk, as well as strict penalties for misuse of sukuk products.
- The use and distribution of energy sources from PLTSa results are expected to be will distributed for the needs and interest of the community.

Limitations and Avenue for Future Research

Lack of data obtained from informants due to shortage of knowledge on the topics at hand, and the complexity of regulations for conducting interviews. It is hoped that the government can be more open to conveying information related to this topic. Researchers are then expected to provide a long enough time to conduct research in the government environment.

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