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# THE IMPACT OF GREEN ISLAMIC FINANCE ON THE RENEWABLE ENERGY INVESTMENTS: INDONESIA'S EXPERIENCE IN GREEN SOVEREIGN SUKUK INSTRUMENT

# أثر التمويل الإسلامي الأخضر على مشاريع الطاقات المتجددة: تجربة إندونيسيا في الصكوك السيادية الخضراء

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**Abstract:** In this study, we have addressed the subject sovereign green sukuk as an innovative Islamic financial tool interested to the green responsible infrastructure projects in order to back the huge financing need to combat the climate change. We tried to highlight the role of Indonesian government in promoting the renewable energy projects as a means to enable sustainable development at a global scale through the use of a new mechanism to increase the effectiveness and efficiency of the current climate change spending budget that complies with Islamic principles .

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**Keywords:** Islamic finance, sustainable development, sovereign green sukuk, Indonesia's renewable energy projects

**ملخص:** في هذه الدراسة تناولنا موضوع الصكوك الخضراء السيادية كأداة مالية إسلامية جديدة ومبتكرة تهتم بالاستثمار في مشاريع البنى التحتية الخضراء وذلك بهدف دعم الحاجة التمويلية الهائلة لمكافحة تغير المناخ. فلقد حاولنا إبراز دور الحكومة الإندونيسية في تعزيز مشاريع الطاقة المتجددة كوسيلة لتحقيق التنمية المستدامة من خلال استخدام آلية الصكوك السيادية الخضراء التي تخضع لمبادئ الشريعة الإسلامية،لزيادة فعالية وكفاءة ميزانية إنفاقها الحالية لآثار تغير المناخ.
**الكلمات المفتاحية:** التمويل الإسلامي، التنمية المستدامة، الصكوك الخضراء السيادية، مشاريع الطاقات المتجددة بإندونيسيا.

## 1- Introduction:

The development of economic life and population growth, have been a major reason for the high demand of energy in the whole world, which led to increase the consumption of the fossil energy, and caused serious damage to the environment, due to pollutants and greenhouse gases resulting from these conventional energies. Therefore, it became necessary to find sustainable sources to replace those depleted energies; to meet the global demand of energy; and to achieve economic diversification and sustainable development together. Hence, investment in renewable energies as substitute energy was the logical step to mitigate climate change and its negative effects. Given the huge scale of the financial needs of these investments that adapt the climate change, the International Energy Agency estimates that an average of US$3.5 trillion per annum in energy sector investment is required to limit the rise in global temperatures to below two degrees Celsius by the end of the century(Richard , 2019, p. 25).While, developing countries are short of these financial resources, which will hinder the development of such projects, it becomes imperative to mobilize financing through innovative financial instruments to support green infrastructure projects, sustainable technologies and businesses.

In this context, it seems that Islamic finance is the appropriate funding for such projects in the Islamic developing countries, where the *Maqasid al-Shariah*, the Islamic law, shares common principles and values in the preservation of the environment and society, especially under the strong growth of the green finance and investment sectors worldwide. With these similarities, Islamic finance provides an optimal tool for green finance, which are both compliant with the requirements of climate preservation and *Shari'ah* principles.

Consequently, the issuance of the new instrument green Sukuk which the plural of "*Sakk*" in Arabic, it refers to a certificate of ownership of an asset, which is designed to finance sustainable, climate-resilient growth and environmental-friendly projects(Siti Rohaya & zam zuriyati, 2018, p. 130). It has not only been supported by the natural progression of Sukuk market, but it is also in line with the increasing investor awareness on ethical and social responsible investments what made it the optimal solution for the stringent capital requirements in funding the infrastructural projects.

Recently, Indonesia faces an enormous electricity challenge, with demand expected to rise 6.8% annually in the next few years, threatening access 30 million people sufficient energy (Aan , Slamet, & Juju, 2017). Wherefore, the shift of Indonesian government toward supporting Islamic green financing programs to fund the renewable energy projects, as it is considered the best source to provide clean energy and to address the growing electricity demand. Thus, Indonesia is one of the first Islamic countries, which sought after new Islamic financial instrument to address climate change, by issuing the first Islamic green Sovereign Sukuk in 2018, similar to the application of environmental and social policies in its development plan.

The remainder of this paper is organized as follow; Section 2 provides an overview of Green Islamic finance and its role to spread the sustainable development. Section 3 examineswhat the government can achieve through the issuance of Green Sovereign Sukuk. Section 4;

discuss the Indonesian experience in issuing the first Green Sovereign Sukukoffering in USD in which its proceeds will be used exclusively to fund green projects.

## 2- The sustainable development and renewable energy:

due to environmental challenges such as pollution and the aggravation of the ozone layer and increasing people's awareness of the negative effects of this, governments of countries around the world are paying great attention to improving their economic and environmental performance together, making them obliged to direct their responsible investments to achieve sustainable development.

### 2-1. The definition of sustainable development:

Sustainable development has been defined in many ways, but the most frequently quoted definition is from “our common future”, also known as the Brundtland Report (World Commission , report 1987, p. 162): “Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs”. It contains within it two key concepts:

2-1-2.The concept of 'needs', in particular the essential needs of the world's poor, to which overriding priority should be given; and

2-1-3. The idea of limitations imposed by the state of technology and social organization on the environment's ability to meet present and future needs.

### 2-2. The relation between sustainable development the renewable energy:

One of the most important needs for generations is providing energy, and given the growth or energy demand in response to industrialization, urbanization, and societal affluence has led to an extremely uneven global distribution of primary energy consumption since the energy is the golden thread that connects economic growth. Thus, the united nation has, sought to promote the use of clean energy through the international conferences in which it stated in its reports that governments should

develop and utilize all resources available, renewable sources of energy included, as a long-term endeavor requiring a continuous and sustained effort that will not be subject to short-term economic fluctuations, in order to achieve a successful and orderly transition to a more diversified and balanced structure of energy supply and environmentally sound energy supply system, which is the ultimate goal of the united nation's policy(World Commission , report 1987, p. 162).

The United Nations has highlighted the need to use clean energy within the Sustainable Development Goals as energy sources contribute directly to climate change. Goals 7, 9, 11, 12, and 13 have been dedicated to promoting the use of environmentally friendly energy (United nation, 2019):

5-3-1. Goal 7: Affordable and clean energy, energy is central to nearly every major challenge and opportunity, use only clean energy efficient appliances and light bulbs

5-3-2. Goal 9: Industry, Innovation, and Infrastructure; Investments in infrastructure are crucial to achieving sustainable development, transport, irrigation, energy and information and communication technology, think of innovative new ways to repurpose old material

5-3-3. Goal 11: Sustainable Cities and Communities, bike walk or use public transportation to keep our cities' air clean. There needs to be a future in which cities provide opportunities for all, with access to basic services, energy, housing, transportation and more.

5-3-4. Goal 12: Responsible Consumption and Production is about promoting resource and energy efficiency, by reducing resource use, degradation and pollution along the whole life cycle.

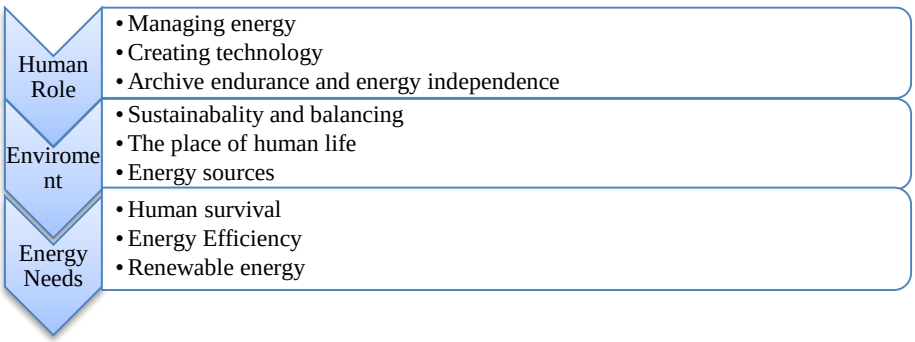
5-3-5. Goal 13: Climate Action Climate change is a global challenge that affects everyone, everywhere.

## 3- The Islamic finance and the renewable energy:

In every corner of the globe, markets are experiencing an increasing need for capital to back assets. Apart from conventional loans,

bonds and equity schemes, Shariah compliant financing instruments, such as Sukuk, serve as a catalyst for funding sustainable projects. In Islamic economics, the philosophical approach of energy from the perspective of the Qur'an can be traced from three interrelated aspects of the energy economy, namely the task of human being as the khalifah of Allah in prospering the earth, the environment as a place of human life, and the human need for energy. These three aspects can be illustrated in Figure1.

**Figure N° 1: Qur'anic philosophy on human, environment and energy**




Source: (Aan , Slamet, & Juju, 2017)

### 3-1. Relevant Principles of Islamic Finance:

The key principles relevant to structuring sukuk in accordance with the principles of *Shari'ah* are the same as the principles which apply to other Islamic financing structures, and can be summarized as follows (Latham & Watkins, 2016, p. 07):

3-1-1.The charging or receiving of interest (*Riba*) is prohibited**:** Under the principles of *Shari'ah*, money is considered to be a tool for measuring value and a medium of exchange, and has no intrinsic utility. The return to an investor must be linked to the profits of an enterprise and derived from the commercial risk assumed by that investor. Investors should therefore share in the income generated by the ownership of assets or the profits or revenues of the business in which they invest.

3-1-2.The underlying Sukuk assets must be Shari'ah-compliant: The assets or businesses underlying the sukuk must be *Shari'ah*-compliant and therefore cannot be related, for example, to gambling or to the production or sale of alcohol or pork.

3-1-3. Prohibition on uncertainty (*Gharar*), speculation (*Maysir*) and exploitation of ignorance (*Jahl*):Shari'ahprohibits intentionally induced uncertainty or unnecessary risk in contracts (*Gharar*), transactions in which the outcome is entirely dependent on chance or speculation (*Maysir*) and transactions in which one party gains because of the other party's ignorance (*Jahl*).

**3-2. Summary of Common Sukuk Structures:**

The following definitions provide an introduction to the most common sukuk structures in Islamic finance (Latham & Watkins, 2016):

3-2-1. Sukuk*Al-Ijara:* It has become the most commonly used structure by issuance volume since 2008. This structure's popularity stems from its uncontested *Shari'ah*-compliance and investors' familiarity with the sale and leaseback structure. The rental payments can be either fixed or calculated with reference to a market rate, such as LIBOR1 or EIBOR2.

3-2-2. SukukAl-Wakalah: The structure is similar to the Mudarabastructure (described below) in that the agent, or Wakeel, selects and manages the underlying businesses or investments on behalf

1LIBOR: LIBOR stands for London Inter-Bank Offered Rate; it is set daily by the British Bankers' Association (BBA), which works with a small group of large banks to set the LIBOR rate which is an average interbank interest rate at which a selection of banks on the London money market are prepared to lend to one another https://www.global-rates.com/interest-rates/libor/libor.aspx

2EIBOR: Emirates Inter Bank Offered Rate, it is an interest rate charged by banks in the UAE for transactions between the banks and as elsewhere is set by a panel of 12 banks operating in the country ,is often used to benchmark mortgage variable rates or rental rates for Ijara leasing agreements (CENTRAL BANK OF UAE) https://www.centralbank.ae/en/services/eibor-prices)

of the investor to ensure an agreed profit rate, the Wakalahstructure allows the investor to receive only the agreed upon profit return. The Wakeel, on the other hand, may keep any profit in excess of this agreed upon profit return as an incentive fee.

3-2-3. Sukukal-Mudaraba: The Mudarabastructure similar to the Musharakastructure (described below), is suitable if the originator does not own an actual tangible asset or does not have sufficient funds to purchase such asset to permit an Ijarato be structured on a sale and leaseback arrangement. Sukuk al-Mudarabaare particularly fitting for development financing as this structure is connected to a project's profitability.

3-2-4. SukukAl-Musharaka: The Musharakastructure is used to mobilize funds for establishing or developing a project or financing a business activity. Otherwise, the Musharakais similar to the other structures in that it requires the performance of an underlying asset to generate profits for investors.

3-2-5. Sukuk Al-Istithmar: The Istithmar structure is an investment structure which may be instrumental if the originator's business does not comprise any or very few tangible assets, for example, Islamic financial institutions which derive their rights to receivables from various Islamic contracts with their customers. The rights under these contracts can be sold together in a portfolio which forms the underlying basis for Sukuk as long as the contracts are not construed as trading in debt.

3-2-6. Sukuk al-Manafa'a: In the Manafa'a structure, the underlying asset is the capacity of, or rights to commercial activities, allowing for the use of intangibles in Sukuk. In circumstances in which the issuer does not hold unencumbered tangible assets or is commercially unable or unwilling to utilize them in a Sukuk structure, the Manafa'a structure may allow issuances based on available intangible assets.

3-2-7. SukukAl-Istisna'a: The Istina'a structure is a contractual agreement for the sale of goods or commodities to be produced in the

future. Hence, the Istisna'a structure is especially suitable for financing large infrastructure projects.

3-2-8. SukukAl-Murabaha: In a typical Murabaha structure, the issuer acquires commodities as trustee on behalf of the Sukuk holders and sells those commodities to the originator on deferred payment terms. The Murabaha structure cannot be traded in the secondary market at a premium, because trading these sukuk in the secondary market would amount to trading in debt, which the Shari'ah prohibits.

3-2-9. Green Sukuk: The Green Sukuk are regular bonds with one distinguishing feature; proceeds are earmarked for projects with environmental benefits, primarily projects that address climate change mitigation and adaptation, but also natural resources depletion, loss of biodiversity and air and water pollution. Green bonds often carry social co-benefits such as access to clean energy and water, health improvements, and poverty alleviation through better resilience to climate change and development of sustainable infrastructure (Diletta , March 2018). Through this innovative instrument the green Islamic finance can be defined as it shares similar underlying principles as that of sustainable finance, i.e. financial stability and economic growth, poverty alleviation and wealth distribution, financial and social inclusion as well as environmental preservation. This has therefore allowed for Islamic finance to capitalize on these similarities to become a natural vehicle to propagate the elements of green finance (Tan Sri & Seri Ranjit, 2019 , p. 07).

**3-3.The role of Islamic finance in achieving Sustainable Development Goals (SDGs):**

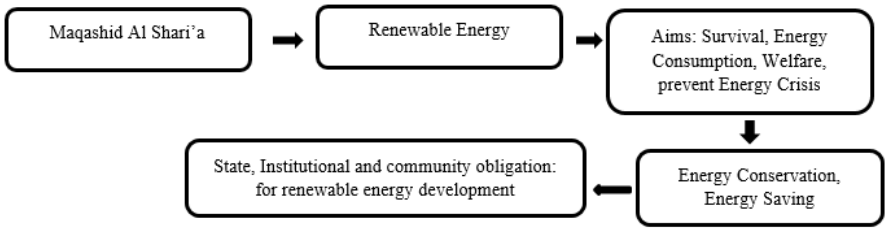
Achieving the SDGs requires a comprehensive approach that includes the mobilization of required financing from both the public and private sector. Realizing the importance in moving towards Sustainable Development Goals, many institutions have accelerated their policy efforts in mobilizing finance to green growth investments through

policies, incentives, standards and awareness building. Some of the examples (Suruhanjaya, 2019, p. 29):

3-3-1. The Securities Commission Malaysia, together with the World Bank Group and the IOSCO Asia Pacific Hub convened a one and half day conference themed, 'Harnessing Islamic Finance for a Green Future'. The Conference discussed and deliberated on ways to explore the use of Islamic finance to support climate mitigation and adaptation efforts including the use of Islamic finance instruments to finance renewable energy and energy efficiency projects;

3-3-2. Given the potential of Islamic finance's contributions towards green development, the growth of Islamic finance has been rapid at 10-12% annually over the past two decades. By 2015, the industry had surpassed US$1.88 trillion in size. Islamic finance has emerged as an effective tool for financing development worldwide, including in non-Muslim countries, and may prove to be an important contributor towards realizing the Sustainable Development Goals. Particularly, in Asia, in which it is considered as the largest market for both sukuk and Islamic funds. The region contributed to 60.7% of global sukuk outstanding and 42.8% of global Islamic assets under management as at end 2017 (Malaysia World's Islamic, 2018, p. 03).In addition, the development of renewable energy resources needed by the community, MaqashidShariahor Islamic law objectives in the aspects of the maintenance of human life, the development of renewable energy that aims for human survival, the need for energy consumption, the welfare of society, energy crisis, and then the development of renewable energy is religious obligatory (Figure 2).

**Figure N° 2: MaqashidShariah (Islamic law objectives) on renewable energy**




Source: (Aan , Slamet, & Juju, 2017)

## 4- The Green Sovereign Sukuk:

Green Sovereign Sukuk are a key tool for governments to raise capital to implement infrastructure plans in line with national climate targets, as governments move to achieve their Nationally Determined Contribution targets. Poland was the first to issue sovereign green bonds in December 2016, followed by France, Fiji, Nigeria, Belgium and Lithuania. Indonesia is the latest to follow suit with the issuance of the first sovereign Green Sukuk this year. The issuances of these Sukuk enable the government what follow (Diletta , March 2018, p. 11)**:**

### 4-1. Strategic coordination:

A sovereign green bond can signal the country's commitment to its sustainable, low-carbon growth strategies, which will have a positive impact on the private sector investment case for green sectors. Internal collaboration between different departments in government (traditionally treasury and sustainability) is one of the positive spill-overs of issuing a green bond; inter-ministerial collaboration can support ongoing efforts to implement a country's long-term low-carbon growth strategy.

### 4-2. New and diverse investors:

Green bond issuers have often reported a diversification of their investor base as one of the benefits of green transactions: the deal attracts new socially responsible investors and asset managers with green investment mandates.

### 4-3. Pricing advantages:

Driven by high demand and increasingly diversified investor base, several treasuries have reported better pricing of their green bonds compared to past issuances. A recent pricing study conducted by the Climate Bonds Initiative in partnership with the IFC, Pax, Obvion and Rabobank.

**4-4. Visibility:**

Reputational benefits are one of the gains issuers look for in a green bond issuance. The government can use the green bond issuance as a promotional tool, to reinforce its sustainability agenda, such as the case of France, or signal a policy shift, such as the case of Nigeria.

**4-5. Green market creation:**

Sovereign green bonds can support the market's further development. They can provide a nascent green bond market with the scale and liquidity it needs to encourage trading and facilitate price discovery. A sovereign issuance will also automatically raise the profile of green bonds with other potential issuers and indirectly set good practice issuance processes and standards for the whole market.

**4-6. Capital mobilization:**

It has been made clear that public funds will not be enough to cover the challenges posed by climate change and infrastructure demand over the next 15 years. Mobilizing private capital towards the "right" investments will be paramount. Further, sovereign green bond programs can include financial incentives such as tax reliefs and subsidies for the development of low-carbon assets to crowd-in private investments in priority sectors.

**4-7. International leadership:**

Sovereign green bonds provide governments to take action on green finance and engage in cross-border collaborations by sharing experiences between developed and developing countries on sovereign issuances in which can facilitate, where permitted, foreign investments into the development of local low-carbon industries.

## 5- Indonesian experience in Sovereign Green Sukuk :

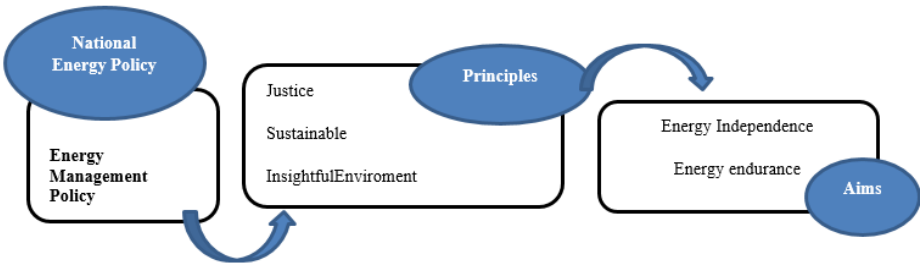
Indonesia is the 4th most Muslim populated Country in the world, comprised of over 17,000 islands. Its economic development has flourished over the past 20 years or so, it has charted impressive economic growth since overcoming the Asian financial crisis of the late 1990s (World bank). This has contributed to increase the energy consumption which is still dominated by the use of fossil-based energy, especially fuel oil and coal which effect negatively on the environment and climate. Therefore, Indonesia has made a number of commitments to step up its climate change adaptation and mitigation priorities, It has ratified the Paris Agreement in 2016 and submitted its Nationally Determined Contributions (NDCs) to a low carbon and climate resilient future in order to sustain sustainable development (UNFCCC, , 2016), thus the Indonesian government has adopt new strategies to increase their share of energy through developing and funding the renewable energies projects and avoid wasting or causing environmental pollution. As part of a responsible and committed global community, Indonesia is the highest Muslim populated, it is only befitting that considerations are made on how to innovatively utilize available Islamic financing mechanisms to finance renewable energies projects, It is affirming that the fundamental principles of SDGs, are all completely aligned with the principles of "Maqasid Al-Shariah", the Islamic perspective (John Kimani & Verania , 2018). Consequently, to address climate change must come not only in the form of policies transformation and enabling environment, but also in financial investments, this forms the basis on Islamic financing which can play a role in developing renewable energies in Indonesia by using the proceeds of the Islamic finance instrument "Sovereign green Sukuk".

**5-1. The renewable energy policy in Indonesia:**

In the Law of the Republic of Indonesia Number 30 year 2007 on energy, mentioned energy management includes: Energy independence, ensuring the availability of energy from domestic and non-domestic sources, ensuring optimal, integrated and sustainable energy resources

management, utilization energy efficiency, ensuring people's access to energy, improving the capacity of domestic energy industry and services so as to become more independent, creating jobs, and ensuring environmental sustainability and in the Regulation of the Minister of Energy and Mineral Resources of 2017 states that renewable energy sources are sources of energy generated from sustainable energy resources if well managed, among others, geothermal, the wind, bioenergy, sunlight, flow and waterfall, as well as the movement and differences in sea lining temperature. Thus, renewable energy sources include: Sunlight, wind, hydropower, biomass, biogas, municipal waste, and geothermal (Aan , Slamet, & Juju, 2017).In the presidential regulation number 27 of 2017 on the National General Energy Plan "RencanaUmumEnergiNasional" (RUEN), stated that the National Energy Policy is based on the principles of justice, sustainable and environmentally friendly for the creation of independence energy and national energy security, including the development of renewable energy (Aan , Slamet, & Juju, 2017) figure 3.

**Figure N° 3: National energy policy in Indonesia 2017**




Source: (Aan , Slamet, & Juju, 2017)

## 5-2. Green sovereign Sukuk issuance in Indonesia:

On 01 march 2018, Indonesia has made their mark in the global sukuk market where they were the first to issue a sovereign green sukuk amounting of US$1.25 billion,with a return of 3.75 per cent. The transaction represents the first ever sovereign green offering in USD in either Sukuk or conventional formats. The proceeds of the five-year sukuk Wakalah will be used exclusively for spending in the form of budget allocation, subsidies or project funding of eligible green projects(Renewable Energy, Energy Efficiency, Resilience to Climate Change, Sustainable Transport, Waste to Energy and Waste Management, Sustainable Management of Natural Resources, Green Tourism and Building). It includes a broad range of sectors which promote the transition to a low emission economy and climate resilient growth, including climate mitigation, adaptation and biodiversity(Suruhanjaya, 2019).The transaction highlights the Republic's ongoing objectives to strengthen the global Islamic financial market and commit to environmentally sustainable green financing. A green Sukuk funds projects that have a positive environmental impact, despite the same financial risks for investors. Green Sukuk is structured based on the Shari'ah principles of Wakalah, of which assets under issuance consist of (Ministry of finance, 2019):

5-2-1. State-owned assets including land and buildings, refinancing (51%) of 2016 project and;

5-2-2. Project assets which are under construction or to be constructed (49%), projects of 2018.

**5-3. The Framework of green sovereign sukuk in Indonesia:**

The Republic of Indonesia has developed The Green Sukuk Framework under which it plans to finance and/ or re-finance Eligible Green Projects (table 3),via the issuance of Green Bonds and Green Sukuk (UNDP Indonesia, 2018, p. 21):

5-3-3. Use of Proceeds**:** With reference to the Green Bond Principles, the proceeds of each Green Sukuk will be used exclusively to finance or re-finance expenditure directly related to "Eligible Green Projects".

5-3-4. The proceeds will be managed within the Government's general account until proceeds are transferred to one of the relevant ministries, into an account of the relevant ministries for funding exclusively eligible projects.

5-3-5. Unallocated proceeds will be held in cash; with setting a register will be established to record the allocation of each Green Bond or Green Sukuk proceeds.

5-3-6. The framework aligns with the Green Bond Principles, the ASEAN Green Bond Standards, and Indonesia's Financial Services Authority's green bond regulations

**5-4. The green sukuk and sovereign sukuk proceeds fund sustainable projects in Indonesia**:

Projects funded by 2018 Green Sukuk issuance fall into five of the nine green sectors under the Framework: Sustainable Transport, Renewable Energy, Waste to Energy and Waste Management, Energy Efficiency and Resilience to Climate Change for Highly Vulnerable Areas and Sectors/ Disaster Risk Reduction. Proceeds were utilized to refinance completed project from 2016 budget (51%) and to finance new projects from 2018 budget (49%).

5-4-1. Refinancing 2016 project: The amount of USD 637.6 Million was utilized to refinance 2016 projects. A total of 15 projects were refinanced. 67% of these proceeds were utilized to refinance projects from Sustainable Transport Sector. Waste to Energy and Waste Management and Renewable Energy sectors utilized 14% and 13% respectively, while the rest 6% is covered by Energy Efficiency sector. The following tables highlight distribution of proceeds by sector (Ministry of finance, 2019).

**Table N° 4: Breakdown by Sector (2016)**

| Breakdown by Sector | USDCommitted | % of 2016proceeds |
|---|---|---|
| **Sustainable Transport** | 426,535,842 | 67 |
| **Waste to Energy and Waste Management** | 92,598,527 | 14 |
| **Renewable Energy** | 80,176,104 | 13 |
| **Energy Efficiency** | 38,244,718 | 6 |

| | | |
|---|---|---|
| **TOTAL** | **637,555,191** | 100 |

Source: Ministry of finance, Republic of Indonesia, Green Sukuk issuance, Allocation and Impact Report, February 2019

**Table N° 5: Breakdown by Objective (2016)**

| Breakdown by Sector | USD Committed | % of 2016 proceeds |
|---|---|---|
| **Adaptation** | - | - |
| **Mitigation** | 637,555,191 | 100 |
| **TOTAL** | **637,555,191** | 100 |

Source: Ministry of finance, Republic of Indonesia, Green Sukuk issuance, Allocation and Impact Report, February2019

5-4-2. Financing 2018 projects: The following tables outline distribution of proceeds by sector, objective and ministry, related to 2018 eligible green projects. Projects financed from the 2018 budget include for both mitigation and adaptation projects.

**Table N° 6: Breakdown by Sector (2018)**

| Breakdown by Sector | USD Committed | % of 2016 proceeds |
|---|---|---|
| **Sustainable Transport** | 359,430,586 | 46 |
| **Renewable Energy** | 33,704,894 | 4 |
| **Energy Efficiency** | 76,784,136 | 10 |
| **Resilience to Climate Change for Highly Vulnerable Areas and Sectors/Disaster Risk Reduction** | 316,205,074 | 40 |
| **TOTAL** | **786,124,690** | 100 |

Source: (Ministry of finance, 2019)

**Table (7): Breakdown by Objective (2018)**

| Breakdown by Objective | USD Allocated | % of 2018 proceeds |
|---|---|---|
| **Adaptation** | 316,205,074 | 40 |
| **Mitigation** | 469,919,616 | 60 |
| **TOTAL** | **786,124,690** | 100 |

Source: (Ministry of finance, 2019)

The distribution of 2018 projects by sector is covered 46% by Sustainable Transport, 40% by Resilience to Climate Change for Highly Vulnerable Areas and Sectors/Disaster Risk Reduction, 4% by Renewable Energy and 10% by Energy Efficiency.

### 5-5. The impact of green sukuk on renewable energy sector in Indonesia:

The Indonesian Government sets to realize 23% of primary energy supply from new and renewable energy by 2025, and 31% by 2050, as part of its plans to reduce greenhouse gas emissions. The following projects aim at providing electrification in off-grid areas, especially in remote areas and small islands utilizing locally available resources (Ministry of finance, 2019):

The projects were implemented in 2016 and 2018, in which of 2018, the government promotes the installation of rooftop solar Photo Voltaic at government buildings in Jakarta, Bogor Presidential Palaces, State Secretary and Indonesian Armed Forces post guards. As for 2016, the projects covered development of 121 units of renewable energy facilities and infrastructure project, aiming to provide rural electrification in off-grid areas, especially in remote areas and small islands. There are 121 units developed under this project which is consist of: Development and revitalization of centralized solar power plants; Construction of micro-hydro and mini-hydro power plant. (Micro-hydro is of <100 kW and mini-hydro is of 100 kW-10 MW). Aligned with the Framework, these power plants built next to river or stream and do not largely affect the ecosystem. Additionally, the purpose of these is to satisfy low to medium electricity needs such as lightings.

## 6- Conclusion:

The Republic of Indonesia understands the adverse impact of climate change and thus the needs to take immediate actions against it. Thus, since 2015, the financial institutions, has been supporting national efforts to integrate climate change into planning and budgeting systems. Fundamentally, this paper presented how it is important for the government to think and act innovatively in order to respond to climate change actions effectively and systematically .Thus, Indonesia tried to explore options to encourage investments in green or sustainable projects

through the development of green Islamic finance markets in order to fund renewable energy projects, which often require substantial amounts of money to be set. Indonesia recognizes that state budget alone will not be sufficient to cover all the cost considering the high initial capital investment in remote areas, so It could launch their the first green Sovereign Sukuk in 2018 and to diversify its financial assets while ensuring the achievement of its National Priorities. This issuance of Green Sukuk is a milestone a combination of innovative financing mechanism that shows the effectiveness of partnership and between government and the private sector in addressing climate change and building a Resilient Economy for an Islamic country.

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