

# Financing Climate Change Mitigation Using Green Sukuk

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## Abstract

*Using global data from Bloomberg over the period 2017-2021, this paper provides a review of issuance and policies promoting Green sukuk, a Shari'ah-compliant financial instrument that is designed to fund environmentally friendly projects.*

## Introduction

Countries in Southeast Asia, such as Indonesia, Thailand, and Viet Nam, have announced their net-zero carbon emission targets by mid-century at the COP26 and financing climate change mitigation has been at the forefront of discussions for making ambitious climate action a reality (Azhgaliyeva 2021a). Limiting global warming to within 1.5°C will require rapid, far-reaching, and unprecedented changes in all sectors (Azhgaliyeva, Rahut and Morgan 2021). Such a transition requires substantial investments from both public and private funds (Azhgaliyeva and Mishra 2021).

Green sukuk, green Islamic financial instrument, have the potential to unlock investments in climate change mitigation and adaptation, particularly access to private and international finance from responsible investors with green investment targets. Studies on green bonds are abundant, however, the literature on green sukuk is narrow and usually focuses on a case study of one or two countries. Our study attempts to fill this void in the literature by providing a review of the green sukuk concept, policies, and discussion over the green sukuk issuance, using the global data on green sukuk from Bloomberg over the period 2017-2021.

## The Concept of Green Sukuk

Green sukuk are Shari'ah-compliant financial instruments that are designed to fund environmentally friendly projects (Alam et al., 2016; Azhgaliyeva 2021b, c). Sukuk in Arabic refers to certificates that serve as proof of asset ownership, such as assets of specific projects or investment activities (Mat Rahim & Mohamad, 2018). Similar to sukuk, green sukuk adheres to Shari'ah principles of risk sharing, the prohibition of interest (riba), exposure to excessive risk (gharar), and speculative behavior (maysir) (Güçlü, 2019). Islamic finance supports real economic activities and sustainable development; bans products with gambling, short sales, and financing of activities which are destructive to society (Kammer et al., 2015).

Conceptually green sukuk is similar to a green bond, in that its proceeds are used to fund environmentally friendly projects. However, green sukuk represents "the property right of the underlying asset, while green bonds represent the right to claim" (Aassouli et al., 2018).

The literature on green sukuk is limited. The extant studies argue that green sukuk and sukuk, in general,

are compliant with sustainability goals and have the potential to address environmental challenges, stimulate conservation of natural resources and environmental protection (Al-Roubaie & M. Sarea, 2019; Kassim & Abdullah, 2018; Moghul & Safar-Aly, 2015; Obaidullah, 2018). Growing energy demand, limited financing from commercial banks in the MENA region, and South-East Asia, a growing interest to invest in socially responsible investment can further stimulate the development of green sukuk market (Kassim and Abdullah, 2018). Literature studying green sukuk after the first issuance in 2017 focused mostly on country cases in Indonesia and Malaysia (Abubakar & Handayani, 2020; Keshminder et al., 2019; Rahim & Mohamad, 2018; Siswantoro, 2018). However, green sukuk issuance is growing in MENA. Over the period 2019-2020 green sukuk was issued in Saudi Arabia and UAE (Figure 3).

Islamic finance is consistent with environmental, social, and governance objectives, United Nations principles for responsible investment, and the 17 United Nations Sustainable Development Goals (Deloitte & Touche, 2017). However, the terms "socially responsible investment" or "green" financing are novel to the Islamic finance literature (Moghul & Safar-Aly, 2015).

There are challenges to growing the green sukuk market. Such list of challenges includes lack of knowledge and skills; high transaction cost (Deloitte & Touche, 2017); lack of universal standards on green sukuk as most of the standards are set by organizations and may differ, voluntary nature of the process (Güçlü, 2019); lack of an assessment and green performance evaluation, verification system and independent verification agencies to certify the green initiatives (Kassim and Abdullah, 2018); high-risk profile of green sukuk projects due to construction and operation of green technologies (Kassim and Abdullah, 2018); the small size of the sukuk market leads to its low liquidity in the secondary market; low awareness of green investment and green sukuk (Aassouli et al., 2018; Güçlü, 2019; Kassim & Abdullah, 2018). That further complicates the diligence process for investors, due to the challenges associated with the ability to compare environmental impact between projects.

## Policy support

Green sukuk market development receives government support, mainly in Malaysia and Indonesia (Table 1). In 2014 the Securities Commission Malaysia introduced a national Sustainable and Responsible Investment (SRI) Sukuk Framework. The Islamic Fund and Wealth Management Blueprint for Sustainable Investment provide strategies to invest in Islamic products

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**Table 1: Green Sukuk National Policies in Indonesia and Malaysia**

Country	Policy Title	Policy Implementation Date	Policy Description
Indonesia	Green Bond and Green Sukuk Framework	2017	Eligible projects are renewable energy, energy efficiency, resilience to climate change or disaster risk reduction, sustainable transport, waste to energy and waste management, sustainable management of natural resources, green tourism, green buildings, and sustainable agriculture. Excluded projects are new fossil fuel-based electric power generation capacity, large-scale hydro plants, and nuclear and nuclear-related assets.
Indonesia	Sovereign Green Sukuk	2018-2021	Perusahaan Penerbit SBSN Indonesia has issued \$7 billion (nearly 60% global green sukuk) of sovereign green sukuk.
Malaysia	Sustainable and Responsible Investment Sukuk Framework	August 2014	Eligible projects are natural resources, renewable energy and energy efficiency, and community and economic development.
	Green Sustainable and Responsible Investment Sukuk Grant Scheme	July 2017	Cost of external reviewer for issuing green bonds compliant with the SRI Sukuk Framework can be subsidized at 90% of the costs of independent review, but up to RM300,000.
Malaysia	Income tax exemption	January 2018	Income tax exemptions for recipients of the Green SRI Sukuk Grant Scheme.
Malaysia	Tax deduction	2017	Tax deductions on the issuance costs of SRI sukuk.

Source: Azhgaliyeva, Kapoor and Liu (2020); Azhgaliyeva 2021c; Bloomberg terminal.

that have sustainable features (Aassouli et al., 2018). Proceeds of SRI sukuk can be applied to fund the projects in natural resources, sustainable energy, economic development, and waqf properties/assets (Aassouli et al., 2018). Additional incentives are provided in Malaysia for sukuk that comply with the SRI Sukuk framework:

- *Green SRI Sukuk Grant Scheme* for the cost of external review for labeling sukuk green (90% of the cost, but not greater than MYR 300,000) (Azhgaliyeva et al., 2020);
- tax deduction on the issuance cost;
- income tax exemptions for recipients of the Green SRI Sukuk Grant.

After the implementation of these policies, corporates issued green sukuk in Malaysia, most of which are the first-time issuers.

Indonesia also has a national 'framework and regulation for green bond issuance' and a national 'Green Bond and Green Sukuk Framework'. Eligible green projects include "renewable energy, energy efficiency, resilience to climate change or disaster risk reduction, sustainable transport, waste to energy and waste management, sustainable management of natural resources, green tourism, green buildings, and sustainable agriculture" (Azhgaliyeva et al., 2020). Green sukuk in Indonesia, the largest green sukuk issuing country, is issued by a public organisation, Perusahaan Penerbit SBSN Indonesia. Public issuance of green sukuk can promote private issuance by providing liquidity and initial market products, as well as by educating investors about green sukuk.

reliance on the profits from the oil sector and therefore lower reliance on debt finance. However, changing oil prices and lowered perspective for rapid oil growth, will affect the demand and supply of other financial instruments, including green sukuk.

Similarly, Turkey only recently started to facilitate the understanding of Islamic finance in clean energy projects. Istanbul International Center for Private Sector and Development under the Global Islamic Finance and Impact Investing Platform (GIFIIP) hosted a meeting of stakeholders from the public and private sector to study the role of Islamic finance in clean energy projects in Turkey in March 2018 (Deloitte & Touche, 2018). The first sustainable Sukuk in Turkey is issued by a power company Zorlu Enerji in June 2020. Zorlu Enerji prepared the framework aligned with the Green Bond Principles and identified renewable energy, sustainable energy supply, sustainable infrastructure, and clean transportation as key eligible project areas.

Overall, the green sukuk market and green sukuk policies are less widely spread. Therefore, it is vital to carefully tailor policies required to unlock the potential of green sukuk.

### Green sukuk issuance

The first green (labelled) sukuk was issued in 2017 in Malaysia by the solar energy producer, Tadau Energy. By 2019, the annual issuance of green sukuk increased five times. The accumulated issuance of green sukuk reached \$12 billion by 2021. Nevertheless, green sukuk was only 0.65% of sukuk and 0.30% of green bond issuance in 2021 (Figures 1-2).

In 2012 CBI, the Clean Energy Business Council of the Middle East and North Africa, and the Gulf Bond and Sukuk Association established Green Sukuk Working Group (Rahman et al., 2020). It develops guidance and practices related to the issuance of sukuk for sustainable projects (Kassim and Abdullah, 2018). Despite some MENA countries experience a boom in clean energy projects, green sukuk market development is behind Malaysia and Indonesia, due to the region's heavy

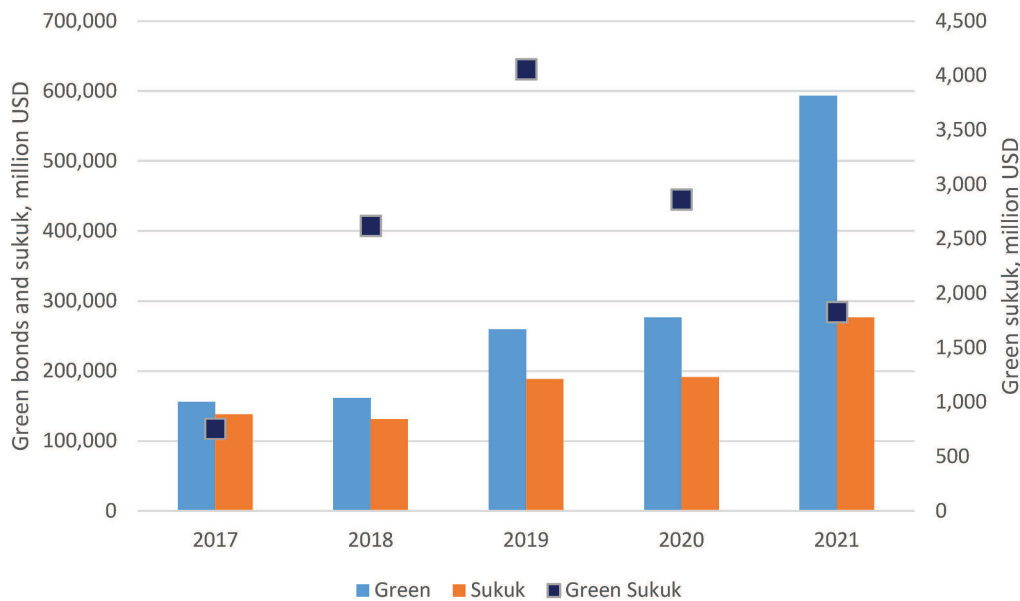


Figure 1: Issuance of green bonds, sukuk and green sukuk by years  
Data source: Bloomberg terminal

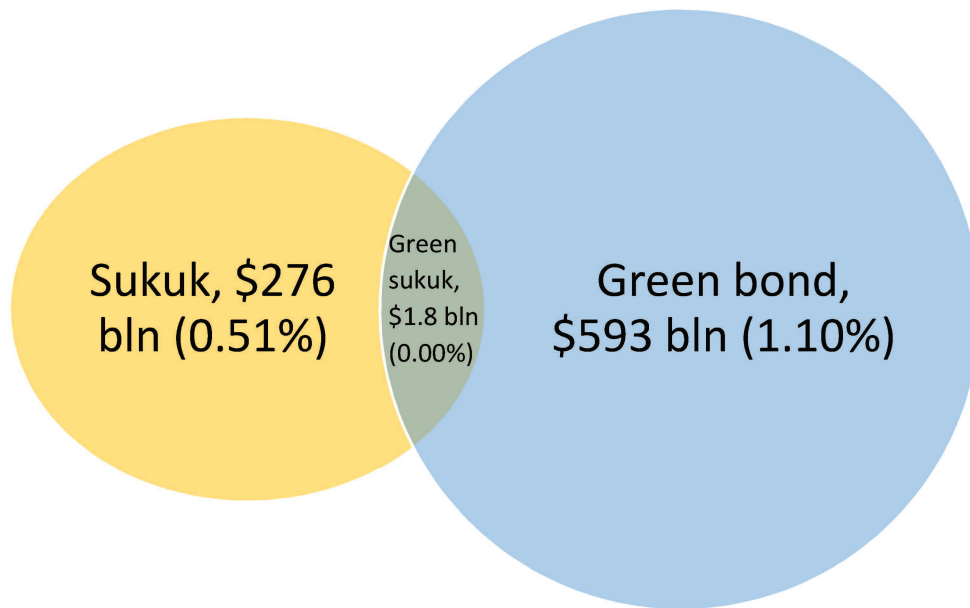


Figure 2: Global issuance of sukuk, green bonds and green sukuk in 2021, share in total bond issuance  
Data source: Bloomberg terminal

According to Bloomberg data over the period 2017-2021, (labelled) green sukuk securities were issued by 15 issuers from four countries, Malaysia, Indonesia, UAE, and Saudi Arabia, as well as by the Islamic Development Bank (Figures 3). These four countries are all top issuers of sukuk (Figures 4). Green sukuk issuing sectors are government, energy, real estate and banks. A detailed list of green sukuk issuance is provided in Appendix A.

### Demand for Green Sukuk

Demand for green sukuk is represented mainly by investment advisors, banks, insurance companies, and sovereign wealth funds (in descending order). Interestingly, country investors in green sukuk are nearly all

top country investors in sukuk (Figure 5), which means that countries with high demand for sukuk represent a demand for green sukuk. Also, most investors in green sukuk are the top investors in sukuk. Thus, green sukuk attracts investors in sukuk with environmental objectives.

Most issuers of green sukuk rely on international demand, except for issuers from Malaysia. Unlike issuers from other countries, issuers from Malaysia issue green sukuk in domestic currency. United States dollar-denominated issuances make up 78% of green sukuk issuances, followed by ringgit-denominated (12%), euro-denominated (9%) issuances (Figure 6). Green sukuk that are denominated in United States dollars and euro attracted international investors, while Malaysian ringgit-denominated green sukuk issued in Malaysia attracted local investors only.

### Conclusions and policy implications

This paper provides a review of Green sukuk, a Shari'ah-compliant financial instrument that is designed to fund environmentally friendly projects. Although the share of green sukuk in green bonds is very small

(0.3%) the annual issuance was growing fast in 2017-2019 (before COVID-19 pandemic) in top sukuk-issuing countries, particularly in South-East Asia (i.e. Indonesia and Malaysia). From 2017 to 2019, the annual issuance of green sukuk increased five times. By 2021, total green sukuk issuance reached \$12 billion.

Green sukuk issuance in South-East Asia, i.e. Indonesia and Malaysia, is driven by policy support. Although, Malaysia is not the largest green sukuk issuer, it has the largest number of issuers. Malaysia promotes private green Sukuk issuance by subsidising the cost of external review for labelling sukuk green and providing tax incentives for green sukuk issuance. After the implementation of the SRI sukuk grant and tax incentives entities have issued green sukuk, most of which are

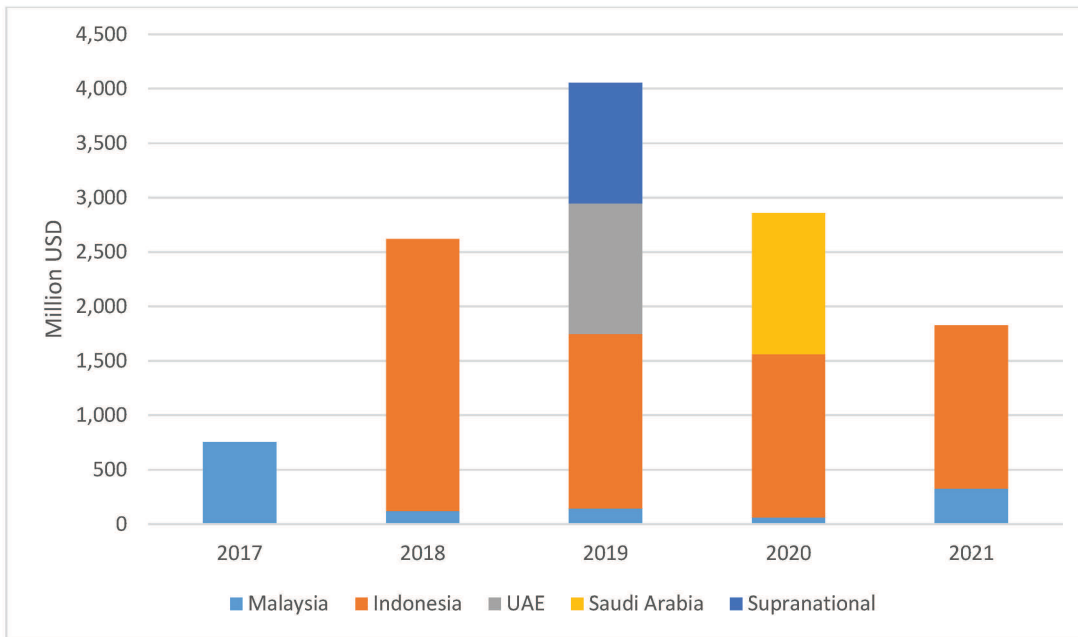


Figure 3: Issuance of green sukuk by countries and years

Data source: Bloomberg terminal

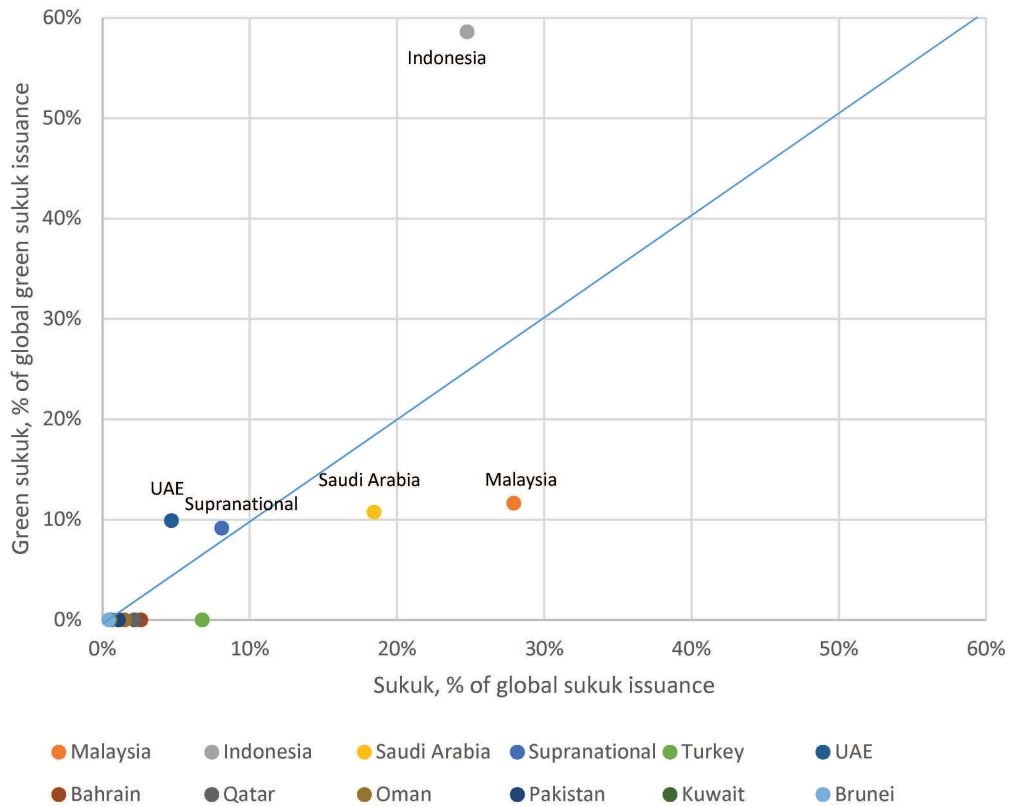


Figure 4: Listing of sukuk and green sukuk as a share of global listing (2017-2021)

Note: Countries included are those which listed more than 0.4% of global sukuk over the period 2017-2021.

Data source: Bloomberg terminal

first-time issuers. Policies, reducing the cost of labeling sukuk green, are especially beneficial for the first-time issuers.

In Indonesia, the largest green sukuk-issuing country, green sukuk is issued by the government. Public issuance may promote private issuance by providing

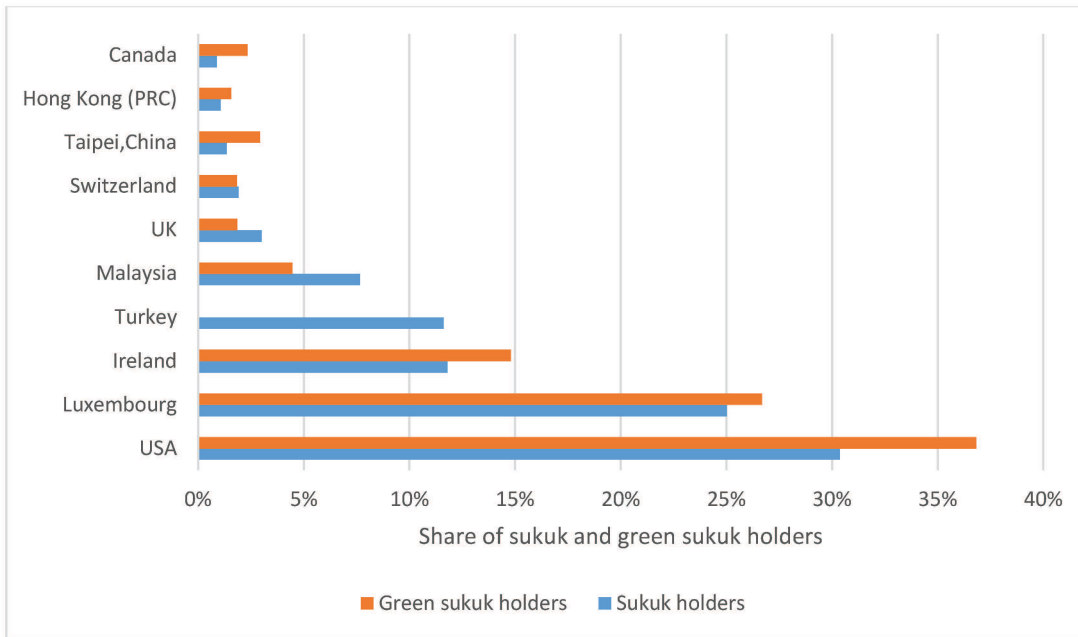


Figure 5: Demand for sukuk and green sukuk (2017-2021)

Data source: Bloomberg terminal

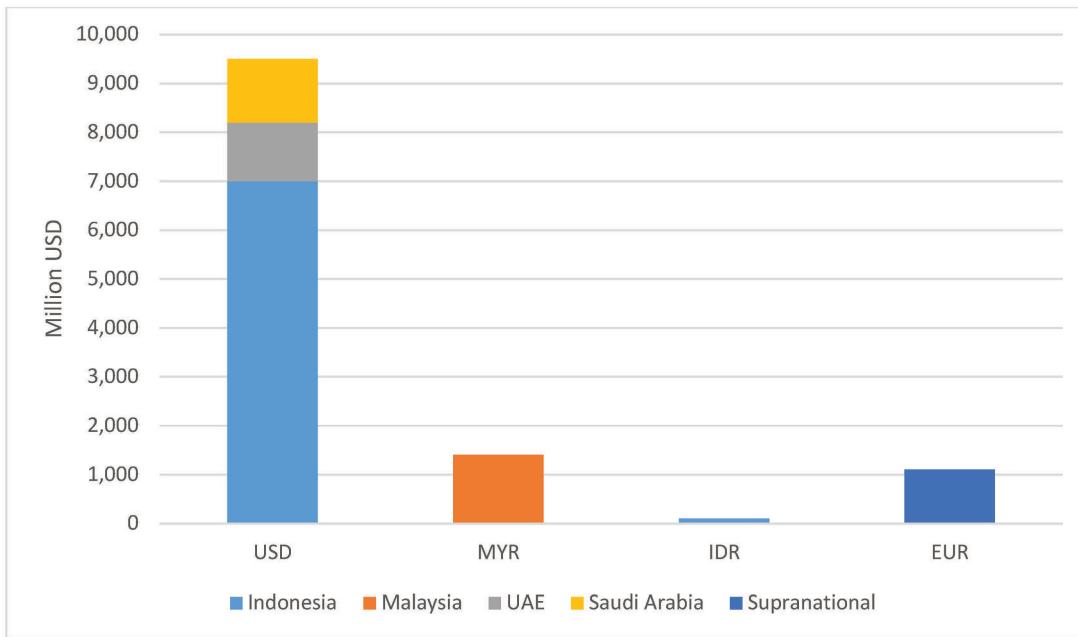


Figure 6: Issuance of green sukuk by currency (2017-2021)

Note: MYR – Malaysian ringgit, IDR – Indonesian rupiah

Data source: Bloomberg terminal

liquidity, engaging, and educating investors about green sukuk.

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## Appendix A

Table A1. Green sukuk issuance

Issuer	Date of issuance	\$ mln	Issuer industry	Country of risk	Project	Project location	Currency	ICMA GBP	ACMF ASEAN GBS	SRI	External review/ second opinion	Green shading rating
Tadau Energy	Jul-17	58	Energy	Malaysia	50 MW Solar	Malaysia	MVR	✓		✓	<a href="#">CICERO</a>	Dark green
Quantrum Solar Park	Oct-17	236			50 MW Solar			✓		✓	<a href="#">CICERO</a>	Dark green
PNB Merdeka Ventures	Dec-17	461	Real estate		Green building			✓	✓	✓	<a href="#">CICERO</a>	Medium green
	Dec-19	29						✓	✓	✓		
	Jun-21	103.44										
Sinar Kamiri	Jan-18	63	Energy		49 MW Solar			✓		✓	<a href="#">RAM Consultancy</a>	Tier-1 Environmental Benefit
UJTM Solar Power	May-18	56			Solar			✓	✓	✓	<a href="#">CICERO</a>	Dark green
	Mar-21	1.75										
Telekosang Hydro One	Jul-19	115			40 MW Hydro			✓	✓	✓	RAM	
Cypark Ref	Oct-19	5			Solar			✓				
Perusahaan Penerbit SBSN Indonesia	Mar-18	2,500	Government	Indonesia	Green projects	Indonesia	USD	✓			CICERO	Medium green
	Feb-19	1,500			Green projects			✓				
	Jun-20	1,500			Green projects			✓				
	Jun-21	1,500										
MAF sukuk	May-19	600	Real estate	UAE	Green projects (Renewable energy, energy efficiency, water, green buildings)	Middle East and North Africa	USD	✓			<a href="#">Sustainalytics</a>	
	Oct-19	600						✓				
Islamic Development Bank (IDB) Trust Services	Dec-19	1,136	Bank	Supranational	Social and green projects		EU	✓			<a href="#">CICERO</a>	Medium green
Saudi Electricity	Sep-20	1,300	Energy	Saudi Arabia	10 mln. smart meters & connection to 3587 MW of renewable energy	Saudi Arabia	USD	✓			<a href="#">Vigeo Eiris</a>	
	Jul-20	61	Solar power	Malaysia	solar PV 49MW	Malaysia	MVR		✓			
Leader Energy	Oct-21	104	Public water supply	Malaysia	Renewable energy, sustainable water management, green building, exc. fossil fuels, alcohol, gambling, tobacco and weaponry	Malaysia	MVR	✓	✓	✓	<a href="#">RAM sustainability</a>	Tier-1, 2, 3 (depending on project) Environmental Benefit
<a href="#">reNIKOLA Solar</a>	May-21	95	Energy	Malaysia	refinance 3 large-scale solar power plants 88 MWp	Malaysia	MVR	✓	✓	✓	<a href="#">RAM sustainability</a>	Tier-1 Environmental Benefit

 Source: Own elaboration using data from Bloomberg, Climate Bond Initiative, [World Bank \(2020\)](#), and other.