

Green Islamic Sukuk as a Tool for Financing Various Projects: The Malaysian Experience as a Model

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Abstract:

This paper investigates the role of Green Islamic Sukuk as an innovative financing instrument for sustainable investment and infrastructure projects. It seeks to elucidate the conceptual foundations of Green Sukuk and their contribution to promoting environmentally responsible economic growth within the framework of Islamic finance. Given Malaysia's pioneering experience in issuing and developing Green Islamic Sukuk, the study highlights the major projects financed through these instruments, particularly in renewable energy and green infrastructure sectors. The findings underscore Malaysia's successful integration of Sharia-compliant finance with sustainable development objectives, positioning the country as a global leader in the transition toward a green economy.

Keywords: Green Islamic Sukuk, Sustainable Finance, Investment Projects, Malaysia, Islamic Finance, Green Economy

Introduction:

Green Sukuk are Sharia-compliant debt instruments used to finance environmentally friendly projects. They have witnessed remarkable growth in both global and domestic markets. These Sukuk offer numerous advantages, as their risks are often lower compared to other types of investments, owing to the nature of the projects they finance.

The Malaysian government has made significant efforts to develop and promote the issuance and trading of Green Sukuk through several initiatives, beginning with the integration of guidelines and regulations related to sustainable and responsible investment Sukuk. The issuance of such Sukuk is expected to grow in response to the increasing demand for green financing instruments.

Malaysia is considered one of the leading countries in issuing Islamic Sukuk. According to the International Islamic Financial Market (IIFM) report of 2018, the total global Sukuk

issuance amounted to USD 97.9 billion, with Malaysia ranking first, achieving a total issuance of USD 32.8 billion—representing 33.5% of global issuances.

Research Problem:

Based on the above, the study poses the following main question:

How do Green Islamic Sukuk contribute to project financing in Malaysia?

This question raises several sub-questions:

- What are Green Islamic Sukuk?
- When were they first introduced in Malaysia?
- What are the main sectors financed through Green Islamic Sukuk?

Research Hypothesis:

To answer the main research question and the sub-questions, the study is based on the following main hypothesis:

Malaysia is a pioneering country in Islamic banking, which has enabled it to develop and expand the issuance of Green Islamic Sukuk.

Methodology:

This study employs a descriptive-analytical methodology to investigate the research problem and evaluate the proposed hypotheses, providing an appropriate framework for examining the characteristics of Green Islamic Sukuk and assessing their implementation within the Malaysian economy

Research Objectives:

This study aims to:

- Identify Green Islamic Sukuk as a financing instrument;
- Understand their features and the reasons behind the growing global interest in them;
- Trace the history of this type of Sukuk within the Malaysian economy;
- Highlight the main investments financed through Green Islamic Sukuk.

Structure of the Study:

To comprehensively address the different aspects of the topic, this study is divided into three sections:

- I. The conceptual framework of the study;
- II. The role of Green Sukuk in financing investment projects in Malaysia.

Section One: The Conceptual Framework of the Study

1. An Overview of Green Islamic Sukuk

1.1. Definition of Green Sukuk:

Green Sukuk are financial instruments issued by governments, private sectors, commercial banks, or international financial institutions. The proceeds of these Sukuk are exclusively directed toward supporting specific projects that meet pre-defined criteria for low-carbon and sustainable development. These instruments have attracted strong interest from environmentally conscious investors.¹

1.2. Definition of Green Islamic Sukuk:

Green Islamic Sukuk are Sharia-compliant financial instruments designed for socially responsible investment. The funds raised are typically used to finance renewable energy projects and other environmentally friendly assets such as solar parks, biogas plants, wind energy projects, sustainable transportation systems, and green infrastructure. These Sukuk

¹ Lahcene, A. K. (Year). *Green Bonds as a Tool for Financing and Supporting the Transition to a Green Economy within the Path of Achieving Sustainable Development*. *Journal of Finance and Markets*, 4(8), 271.

serve as a bridge between conventional and Islamic finance by promoting ethical investment principles that prohibit interest (riba) and ensure asset-backed financing.²

1.3. Another Definition:

Green Sukuk are Sharia-compliant certificates whose proceeds are used to finance environmentally sustainable infrastructure projects. They serve as an attractive alternative to conventional bonds due to their growing liquidity in secondary markets and their flexibility in structure and adaptation to finance green initiatives. Consequently, they are becoming a key financial mechanism for funding the increasing number of environmentally responsible projects worldwide.³

1.4. According to the World Bank:

Green Islamic Sukuk provide investors with a high level of confidence that their funds are being used for a specific, transparent purpose aligned with Islamic principles. The funds raised through the issuance of such Sukuk are directed toward investments in identifiable assets and projects, such as renewable energy developments.

2. The Emergence of the Islamic Capital Market in Malaysia

The origins of the Islamic capital market in Malaysia can be traced as follows:⁴

The first real step toward developing the Islamic banking system in Malaysia began in **1983** with the issuance of the Islamic Banking Act, which introduced a range of banking services and products in accordance with Islamic Sharia principles. This was followed by the establishment of the first Islamic bank in Malaysia — Bank Islam Malaysia Berhad, which commenced operations on July 1, 1983. Additionally, the Interest-Free Banking Scheme was launched on March 4, 1993, further expanding Islamic financial operations.

The true development of Malaysia's Islamic capital market, however, dates back to the early 1990s, when Shell MDS Sdn. Bhd. issued and offered Islamic Sukuk for trading in the domestic market for the first time in 1990. This milestone was followed by the issuance of several other Islamic financial instruments, leading to the deepening and consolidation of Islamic financial tools in Malaysia's capital market and its continuous expansion.

As this market began to take shape, questions arose concerning the Sharia compliance of its instruments and operations. Consequently, the Ministry of Finance and the Securities Commission Malaysia (SC) took specific measures, including the establishment of the Islamic Capital Market Department in 1994 — the administrative body within the Securities Commission responsible for overseeing the Islamic capital market. In the same year, a Sharia Advisory Committee was formed to study Islamic financial instruments. A year later, it evolved into the Shariah Advisory Council (SAC).

These initiatives and developments were crucial in building and regulating Malaysia's Islamic capital market. The Shariah Advisory Council oversees compliance and collaborates with the Securities Commission Malaysia in the market's continuous development through:

- ✓ Providing studies, research, and holding discussions and seminars related to the Islamic capital market.
- ✓ Developing and strengthening the effectiveness of Islamic financial instruments.

² Ben Ali, S., & Sakhri, A. W. (2022). *Green Islamic Sukuk as a Financial Support for Small and Medium Enterprises in the Context of the Transition Toward a Green Economy: The Case of Malaysia*. *Algerian Journal of Economic Performance*, 7(1), 82.

³ Siakhen, M., & Rebahi, S. (2019). *Mechanisms for Enhancing Social Responsibility in Islamic Banks and Their Role in Achieving Sustainable Development: Green Islamic Sukuk as a Model*. *Forum Journal for Economic Studies and Research*, 3, 66.

⁴ Bouabdallah, A. (2015). *The Development of Islamic Financial Sukuk Issuance in the Malaysian Stock Exchange*. *Journal of Economic, Management and Commercial Sciences*, 14, 19.

- ✓ Promoting Malaysia's Islamic capital market both domestically and internationally through conferences, workshops, and other initiatives that highlight the market's structure and potential.

3. Investment Projects Financed Through Islamic Sukuk

Islamic Sukuk offer various financing structures suitable for **infrastructure projects**, including the following:⁵

a. **Financing Infrastructure Projects Using Islamic Sukuk Structures:**

Sukuk serve as effective instruments for funding large-scale infrastructure developments while adhering to Sharia principles.

b. **Issuance of Mudarabah and Musharakah Government Sukuk for Infrastructure Projects:**

These sovereign Sukuk are well-suited for financing income-generating projects, such as power plants and ports, based on Mudarabah (profit-sharing) or Musharakah (partnership) contracts. Investors share in the project's profits and losses, while the government may gradually repurchase the Sukuk holders' shares according to a pre-defined schedule and timeframe.

c. **Issuance of Ijarah Sukuk for Infrastructure Development:**

Ijarah Sukuk (leasing Sukuk) can be employed to finance various public infrastructure projects in sectors such as education, health, telecommunications, and transport. In this case, the government acts as the lessee, renting the assets owned by Sukuk holders and making them available for public use and benefit. Additionally, Ijarah Sukuk can also be utilized for housing programs and real estate development.

d. **Issuance of Istisna Sukuk for Infrastructure Construction Projects:**

Modern applications of Islamic Sukuk in public project financing often include Istisna Sukuk (construction or manufacturing contracts). These are particularly useful for projects such as building construction, roads, bridges, power generation plants, and water desalination facilities. Under this structure, an agreement is made between the financier (or its representative) and the government to construct the project and deliver it upon completion. Payment is made in installments over a specified period — a financing approach commonly known as the Istisna method.

Section Two: The Role of Green Sukuk in Financing Investment Projects in Malaysia

1. The History of Green Sukuk in Malaysia

Since 2010, the Malaysian government has worked on implementing comprehensive plans to transition toward a high-income economy through new approaches based on innovation, creativity, and high value-added activities. This strategy relied heavily on optimizing key sectors such as Islamic finance and banking, green technology, and the halal industry as instruments for achieving national economic goals.

In 2016, following strong interest from Malaysian authorities and the emerging opportunities in large-scale solar energy generation, Malaysia witnessed a unique convergence between green finance and Islamic finance. This integration led to the creation of a new Islamic green financing instrument known as Green Sukuk — combining the ethical and environmental principles of green finance with the Sharia-compliant structure of Islamic finance.

In January 2017, the World Bank joined the Technical Working Group (TWG) alongside Bank Negara Malaysia (BNM) and the Securities Commission Malaysia (SC) to explore options for mobilizing investments in green projects through the development of green Islamic finance markets. The Malaysia Green Finance Project facilitated the development of the Green Sukuk market by leveraging the World Bank's technical

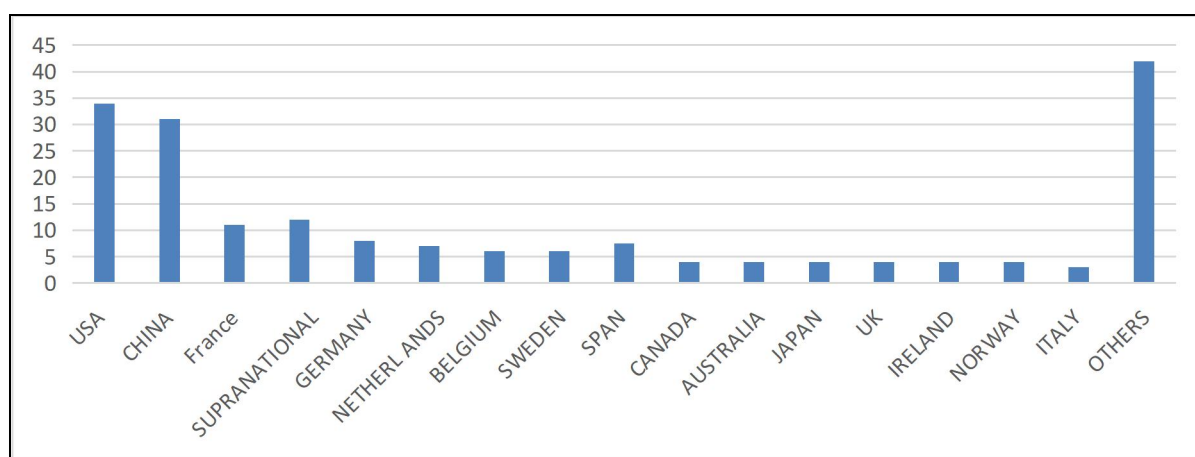
⁵ Al-Najjar, R. A. M. H. (2021). *The Role of Islamic Sukuk in Financing Infrastructure Projects: International Experiences*. *Scientific Journal of the Faculty of Commerce*, 26, 38.

expertise in structuring and issuing green bonds, as well as Malaysia's Sustainable and Responsible Investment (SRI) Sukuk Framework, established in 2014, which aligned with green finance principles. This framework served as the regulatory foundation upon which Green Sukuk were developed.

As potential issuers began expressing interest in launching Green Sukuk, the TWG provided additional technical support to the financial sector to aid in the development of the first few Green Sukuk issuances.

The first Green Sukuk in the world was issued in July 2017 by Tadau Energy Sdn. Bhd., aimed at financing a 50-megawatt solar photovoltaic power plant — marking a pioneering achievement for Malaysia in sustainable Islamic finance.⁶

Figure 01. Green Sukuk Issuances by Country, 2018

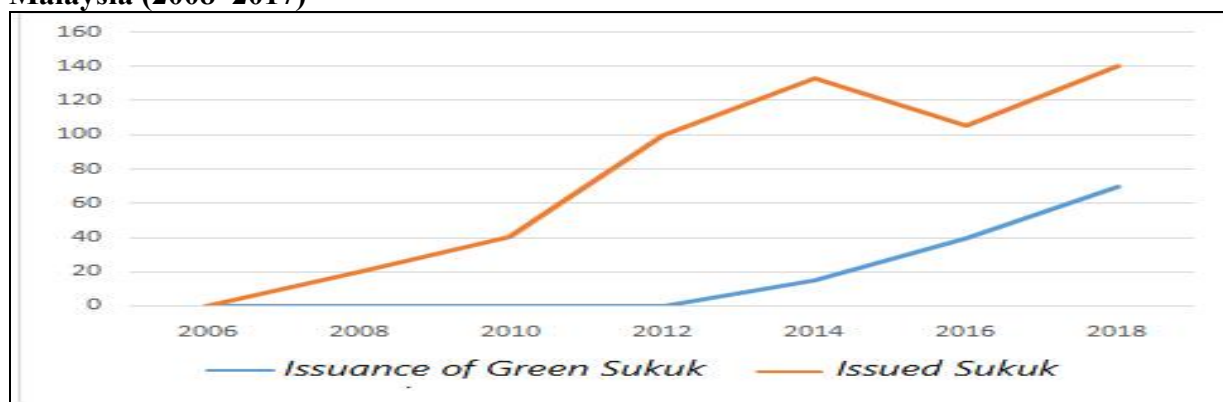


Source: Sara Azaizia, *Green Sukuk as a Mechanism for Supporting Environmentally Responsible Investments – An Analytical Study of the Global Trend*, *Journal of Economic Studies*, Vol. 11, No. 2, University of Larbi Tebessi, 2020, p. 6.

Analysis of Global Green Sukuk Issuances : The total value of global Green Sukuk issuances reached approximately USD 167.3 billion in 2018, surpassing the USD 162.1 billion recorded in 2017 — an increase of about 3%.

The figure illustrates the leading countries in Green Sukuk issuances for 2018, with the United States, China, and France emerging as the top three issuers worldwide.

Figure 02. Evolution of Green Sukuk Issuances Compared to Total Sukuk Issuances in Malaysia (2008–2017)



⁶ Hammadi, M., Farajallah, A., & Khababa, H. (2022). *Study of the Malaysian Experience in Adopting Green Sukuk as a Mechanism for Transition to a Green Economy*. *Journal of Financial, Accounting, and Administrative Studies*, 9(01), 880.

Source: Meriem Kafi, *Enhancing Socially Responsible Investment in Malaysia: Green Sukuk as a Model*, *Journal of Research and Development Studies*, Vol. 9, No. 1, University of Mohamed Bachir El-Ibrahimi – Bordj Bou Arréridj, Algeria, Laboratory for Studies and Research in Rural Development (LERDR), 2022, pp. 495–496.

Evolution of Green Sukuk Issuances Compared to Total Sukuk in Malaysia (2008–2017)

As shown in the previous figure, the total Sukuk issuances in Malaysia were estimated at USD 20 billion in 2008, increasing to USD 60 billion in 2011, and then rising further to around USD 102 billion in 2012, before declining again to approximately USD 24 billion in 2017.

This decline coincided with the introduction of Green Sukuk to the Malaysian financial market. The figure indicates that the value of these instruments was non-existent prior to 2011, then began to rise in 2012, reaching USD 72 billion in 2017.

This reflects the shift in the Malaysian capital market from general Sukuk to promoting investment in Green Sukuk, due to their diverse returns and sustainable nature. It also highlights the participation of the Islamic financial sector in Malaysia's green economy, in line with the National Green Technology Policy.

2. The Contribution of Green Islamic Sukuk to Financing Renewable Energy Projects in Malaysia

In July 2017, Malaysia marked a historic milestone in both green finance and the global Sukuk arena with the issuance of the world's first Green Sukuk (*Socially Responsible Investment Sukuk*) by Tadau Energy Sdn. Bhd.

By April 2018, a total of five Green Sukuk issuances had been recorded, with an approved aggregate value of 3.7 billion Malaysian Ringgit (MYR), of which MYR 2.4 billion was allocated to renewable energy and green building projects.

Tadau Energy, an investment company specializing in renewable energy and sustainable technologies, issued MYR 250 million in Socially Responsible Investment Green Sukuk structured under *Istisna'* and *Ijara* contracts to finance large-scale photovoltaic power plants in Kudat.

In October 2017, Quantum Solar Park Malaysia issued the largest Green Sukuk in the world to finance the construction of Malaysia's largest solar photovoltaic plant, spanning three states: Kedah, Melaka, and Terengganu.

Similarly, Sinar Kamiri Sdn. Bhd., another renewable energy investment company, issued MYR 245 million in Green Sukuk to fund the construction of a solar power generation plant in Perak.

There is no doubt that the future of Green Sukuk in Malaysia is highly promising, primarily because the Malaysian government aspires to position the country as a leading hub for sustainable investment.⁷

Table 01. List of Green Sukuk Issuances in Malaysia

Date of Issuance	Project	Value	Type of Contract
July 17, 2017	Construction of photovoltaic solar energy plant	MYR 250 million	<i>Istisna'</i> and <i>Ijara</i>
October 6, 2017	Solar power plant	MYR 1 billion	<i>Murabaha</i>
December 29, 2017	Construction of Phase I of Merdeka Tower (Green Building)	MYR 2 billion	<i>Murabaha</i> and <i>Wakalah</i>

⁷ Laqwi, S., & Bournan, M. (2021). *Green Islamic Sukuk and Their Importance in Financing Environmentally Friendly Projects: The Case of Malaysia*. *Al-Asil Journal of Economic and Administrative Research*, 5(2), 171.

January 30, 2018	Development of solar energy facilities	MYR 245 million	<i>Wakalah</i>
April 27, 2018	Solar energy	MYR 240 million	<i>Murabaha</i>
February 28, 2019	Hydropower plant	MYR 17 million	<i>Murabaha and Wakalah</i>
June 28, 2019	Construction of Phase II of Merdeka Tower (Green Building)	MYR 445 million	<i>Murabaha and Wakalah</i>
August 6, 2019	Renewable energies	MYR 440 million	<i>Murabaha and Wakalah</i>
December 27, 2019	Construction of Phase III of Merdeka Tower (Green Building)	MYR 435 million	<i>Murabaha and Wakalah</i>
July 16, 2020	Renewable energies	MYR 260 million	<i>Murabaha and Wakalah</i>

Source: Hammadi Mourad, Ahlam Farjallah, & Hassan Khababa, *Op. cit.*, pp. 883–884.

Summary of Green Sukuk Projects in Malaysia

Based on the projects implemented, Malaysia is clearly on the right path to becoming a global leader in green investment through the introduction of Green Sukuk, supported by a Shariah-compliant financial system.

The first issuance, valued at MYR 250 million, financed solar energy projects, followed by a record-breaking issuance of MYR 1 billion, which became the world's largest Green Sukuk for the construction of the largest solar power project in Southeast Asia. This positioned Malaysia as a global pioneer in green energy finance.

3. The Contribution of Green Islamic Sukuk to Financing Infrastructure Projects in Malaysia

During the 1997 Southeast Asian financial crisis, Malaysia implemented a national action plan that included strict monetary policies and granted the Central Bank (Bank Negara Malaysia) extensive powers to execute an emergency plan aimed at stabilizing capital flows and attracting foreign currency inflows.

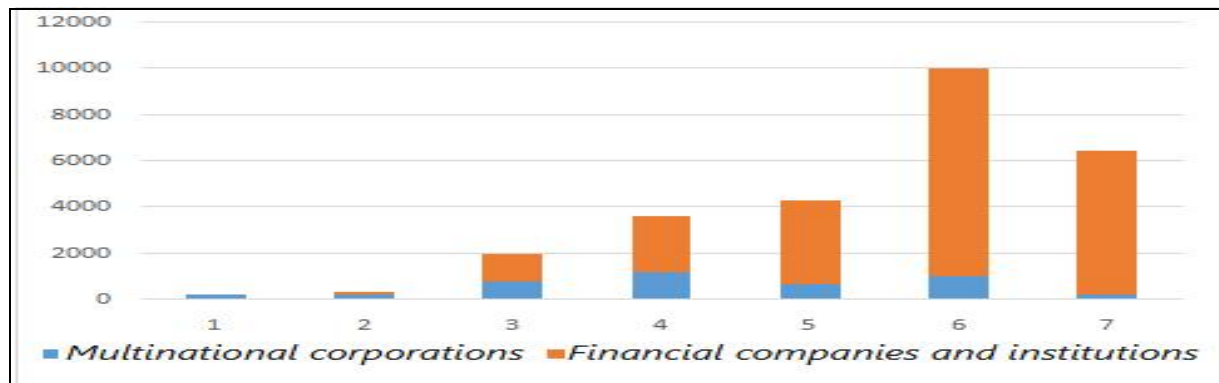
Remarkably, Malaysia recovered from the crisis within just two years, making its experience a model of economic resilience and developmental success. Unlike many other nations, the Malaysian government refused to cut public spending on infrastructure projects, recognizing that strong infrastructure is key to long-term economic stability.

Malaysia has since become a global leader in using Islamic finance to develop infrastructure, accounting for over 60% of all infrastructure Sukuk issuances worldwide. Policymakers in the country have taken an extra step by aligning financial investments with public welfare objectives, ensuring that growth benefits society at large.⁸

The Malaysian experience stands as one of the most successful models in issuing and trading Sukuk, offering valuable insights for other nations. The Malaysian government's continued efforts to develop and enhance the issuance and trading of Green Sukuk—by integrating guidelines and regulations for sustainable and responsible investment Sukuk (SRI Sukuk)—are expected to further increase issuance levels as demand for green Islamic finance continues to grow.

Figure 03. Evolution of the Volume of Green Sukuk Issued in Malaysia (2011–2017)

⁸ Laqwi, S., & Bournan, M. (2021). *Ibid.*, p. 172.



Source: Aladja Mabtoush & Khalidia Boujnan (2019). *An Empirical Study to Promote Sustainable Development through Green Sukuk Financing – The Malaysian Experience as a Model*. Proceedings of the 2nd International Conference on Green Energy and Sustainable Development – Experiences and Comparisons, Antalya, Turkey, October 24–28, p. 9.

Conclusion:

Green Sukuk focus on a set of fundamental principles, foremost among them environmental protection, the rational use of natural resources, the balance in energy consumption, the promotion of renewable energy, and the reduction of greenhouse gas emissions. These principles are of great importance in supporting today's global efforts to combat the environmental consequences of the modern industrial revolution, which has exacerbated climate phenomena that now threaten both humankind and nature.

Green Islamic Sukuk have thus emerged as an innovative financing option targeting developmental and infrastructure projects, as well as a mechanism to narrow the gap between Islamic finance and the international capital market.

After studying the topic, the following conclusions were reached:

- ❖ Islamic Sukuk contribute significantly to financing infrastructure and large-scale projects that require substantial capital, thereby benefiting both investors and issuers. They stimulate capital movement and attract funds toward investment opportunities, helping achieve the desired economic development of the country.
- ❖ The Malaysian experience in Sukuk issuance demonstrates that Malaysia occupies a leading position in the global Islamic Sukuk market. These instruments have helped finance infrastructure, renewable energy, and developmental projects in Malaysia, and the study has shown the crucial role of Islamic Sukuk in driving the country's economic growth.
- ❖ It is essential to further develop Green Islamic Sukuk in line with the requirements of the global economy while maintaining their compliance with Islamic law (Sharia).
- ❖ Malaysia, the United Arab Emirates, and Indonesia are pioneers in the issuance of Green Islamic Sukuk, and thus other Arab and Islamic countries should follow their lead and move away from the rentier economic systems they currently rely on.
- ❖ Green Islamic Sukuk are among the leading experiments in financing environmentally friendly projects and represent a practical move toward a green economy.
- ❖ Aligning Islamic finance with environmental projects through Green Sukuk requires the ability to harmonize local instruments and enact flexible laws that balance goal achievement with positive risk management. One of the major challenges facing Green Sukuk lies in the lengthy structuring and regulatory approval process. Drafting laws and frameworks that make these Sukuk acceptable to governments, investors, and legislators takes considerable time and adds to the overall cost. Establishing a unified local legal and regulatory framework for these Sukuk can serve as a temporary solution to this issue.

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