

Webinar:Opportunities for Fintech to Scale up Finance for Clean Energy

Paris, 11th June 2020

Introduction

- The state of digitisation of green bonds and its potentials to unlock finance for energy efficiency projects
- How does the technology work?
- Lessons learnt from Indonesia's digital retail green bond issuance
- Q&A (30 mins)
- Wrap up



Welcome to the webinar



Emi Bertoli, IEA



Cecilia Tam, OECD



Speakers



• Marianne Haahr, Executive Director of Green Digital Finance Alliance



 Jacob Ninan, Kottackal Business Solutions



 Dwi Irianti Hadiningdyah, Director of Islamic Financing, Ministry of Finance, Indonesia



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Webinar - Opportunities for Fintech to Scale up Clean Energy Finance

Cecilia Tam, Team Leader, OECD Environment Directorate

https://www.oecd.org/cgfi/

CENTRE®GREEN FINANCE™INVESTMENT

STAKEHOLDERS

Institutional investors Banks and asset managers Industry sectors Data and ratings providers Research institutions Philanthropies

SAVE THE DATE 7th OECD Forum on Green Finance and Investment

8-9 October 2020, Paris or virtual conference (TBC)

Advisory Board Knowledge Partners

OECD policy and

economics expertise

OECD policy

communities



- Whole-of-government approach across various policy communities
- **Convening power** to bring together the Finance, Environment and Energy Ministries as well as Networks of institutional investors





Integrated approach to unlocking finance and investment





Blockchain technology and low-carbon infrastructure



Financing Infrastructure

Unlock new and mobilise existing sources of financing



Visibility & Alignment

Visibility of climate action and alignment of stakeholders



Awareness & Access

Transactive infrastructure of new market models













Source: Citi Research



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Fintech to Innovate Energy Efficiency Finance





Capabilities FinTech brings to EE finance





Three avenues







Green capital market instruments



	1) Digitize green bonds		2) Innovate digital green bonds Security Token Offerings for EE	3) Converting EE to new digital financing vehicles		
10/0	08/2018 F	eb 2019				
			380 Token offerings 2019	Neighbourhood level: Saved energy is traded,		
	SUSTAINABLE BOND	STRUCTURED GREEN BOND	4.1 bn USD raised	used to pay storage (EV		
VALUE:	\$110 MILLION	EUR 35 MILLION		charging station)		
ORGANISATION:	World Bank and CBA		TOP15: 5 FinTech, 1 part			
PROCESSES:	Structuring and Issuance		of energy market	Incumbent level: Green tagging and asset		
BLOCKCHAIN:	Private Permissioned version of Ethereum blockchain	Hyperledger Fabric (bid process) Ethereum testnet		performance forecasting		

Innovation

Integration of EE in financial decision making algorithms towards new green asset classes

Green Digital Finance Alliance

Automated analysis of green data footprints

Test incentives "data for benefit SWAPS"

Aggregate green SMEs

Package new digital finance instruments

Green in automated credit scoring

Get EE into accounting and business model of SMEs

Advisory of EE in production

Digitization of EE and other green metrics

Automated analysis of green data footprints

"Data for benefit SWAPS"

Building EE into new asset classes of green SMEs



Behaviours: New Incentives

New incentives:

- Networked business models
- Social incentives
- Gamification
- Financial/material incentives











Thank You!

www.GreenDigitalFinanceAlliance.org



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Digitalisation Webinar - Opportunities for FinTech to Scale up Finance for Clean Energy

Jacob Ninan

Co-Founder, Kottackal

director@kottackal.org

Green Project Funding





Challenges : Financing Clean Energy Projects



Shortage of Bankable Projects Generic funding products

Opaque, Expensive Process

Technical Architecture : 3 Pillars





Tools







Internet of Things



Smart Infrastructure

Phases : Financing Clean Energy Projects





UC1 – Pre - Development funding



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Task1: Review and Eval of Existing data	Nil	Fri May 03 2019	Mon Jun 03 2019	PMU	DoE	View	Thu May 02 2019	Nil	0	150,000
Task2: Secure permits/clearance		Mon Jun 03 2019	Mon Nov 04 2019							5000,00
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	2.2: DENR(CNC)	Mon Jun 03 2019	Mon Jun 03 2019	PMU	DoE D	Choose file No file chosen	Nil	Nil	*	
	2.3: NCIP(CNO/CP)	Mon Jun 03 2019	Mon Jun 03 2019	PMU	DoE	Choose file No file chosen	Nil	Nil	*	
	2.4: Security assessment(PNP/AFP)	Mon Jun 03 2019	Mon Jun 03 2019	PMU	DoE	Choose file No file chosen	Nil	Nil	*	
	2.5: Social acceptability	Mon Jun 03 2019	Mon Jun 03 2019	PMU	DoE	Choose file No file chosen	Nil	Nil	*	
Task3: Reconnaissance Geological & Geochemical	Nil	Tue Nov 05 2019	Mon Feb 03 2020	PMU	DoE	Choose file No file chosen	Nil	Nil	*	500,000
Task4: Submission of Report	Nil	Mon Feb 03	Thu Apr 30	PMU	DoE	Choose file No file chosen	Nil	Nil	*	

UC2 – Green Bonds Funding



Green Bonds	× +							000
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ISIN	Bond Name	Documents		Dates	Coupon Value	Price (in ETH)	Bonds Available	Bank
					1			
TH413056609	ICO Green Bond	View	Issue	Sun Nov 12 2017	4.7	3	100	ING
			Publish	Tue Nov 14 2017				
			Mature	Sun Nov 15 2020				
US411628790	Argosys GB	View	Issue	Fri Jan 13 2017	5.8	5	400	Dividend Solar
			Publish	Sun Jan 15 2017				
			Mature	Thu Jan 16 2020				
JP628545812	JCR Green Bond	View	Issue	Thu Jun 14 2018	2.5	6	300	Sumitomo Mitsui Banking
		racit.	Publish	Wed Jun 20 2018				
			Mature	Tue Jun 21 2022				
AU284233777	ORs green bond		Iccue	Mon Apr 17 2017	0.58	2	600	SID Bank
10201233777	ONS green bond	View	Dublich	Wed Apr 19 2017	0.00	-	000	ULD DUIK
			Mature	Mon Apr 20 2020				
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AU870958338	AU Solar Bond	View	Issue	Tue Sep 18 2018	7.3	1	700	Bank of Guiznou

UC3 – Project Discovery and Matching



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Log In

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HOME REGISTER CREATE TOKEN



Enphase Solar Project

Tranche closes on Thu Mar 05 2020 or earlier if target amount is reached.

A new 7-day Access Bond from Enphase with a fixed rate of 3% p.a. and a flexible term. The Borrower makes investments into energy infrastructure such as solar, wind etc.



Pelham Solar Project

Tranche closes on Fri Mar 06 2020 or earlier if target amount is reached.

A company acquiring and converting a Grade II* listed hotel into an exclusive-use wedding venue. The investment comprises a fixed return of 7.5% p.a. with a share of potential upside on exit, targeting an annualised return for the investment (IRR) of c. 10%.



Nerth Solar Project

Tranche closes on Mon Mar 02 2020 or earlier if target amount is reached.

Nerth Energy Ltd owns and operates a 2MW portfolio of hydro stations . The bond will be secured with a first charge over Nerth's assets. Nerth plans to use the capital raised to grow its renewable portfolio over the coming year.

Raised £4000

Raised £0

UC4 – IoT Data (From Energy Project) write to platform in near real time



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Learnings : Financing Clean Energy Projects



Need for Project Finance customization

Simple and Transperant process Blended Finance for preparing Bankable projects

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SAVING SUKUK - ST006

Debut to Green Sukuk Retail Market Using Online Platform

Dwi Irianti Hadiningdyah

Director of Islamic Financing Directorate General of Budget Financing and Risk Management Ministry of Finance Republic of Indonesia



WHY SELLING ONLINE?



"Retail Government Securities distribution platform needs to adapt to the future Indonesia Economic Digital Trends"

Digital buyer penetration in Indonesia from 2017 to 2024



E-commerce penetration in Indonesia is expected to grow to 77.2 percent of population in 2024.



76% of all internet users in Indonesia make purchases from their phones, the highest rate of mobile e-commerce of any country in the world.

Source: UN, Forbes, Katadata, Central Bureou of Statistics (BPS)

Retail e-commerce Penetration by Country (2018)



The potential for growth in online retail far exceeds anything offline retail can generate.



Demographic bonus in the era of digital economy facilitates government's roadmap of online retail government securities issuances 35





01

02

03

04

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Advantages



Easy access anywhere and anytime during the offer period

User Friendly

Order can be done via gadget

Convenience

Investors do not need to come to Distribution Partners to book*

Fairness

First Come First Serve

elektronik - Surat Berharga Negara (Electronic - Government Securities) Types of SBN Retail : Svariah -Svariah -Sukuk Negara Tradable Non Tradable sukuk ritel Since 2016 Since 2009 Conventional -Conventional-Non Tradable Tradable

" MOF Indonesia supported its **millennial members** in developing this online system without involving any external IT providers "

Since 2014

Berinvestasi Membanaun Neaeri

Since 2006



HOW to BUY

REGISTRATION

- 1. Investor has to register via Agents' Electronic System;
- Create SID (Single Investor Identification) and Securities Account (if needed).



ORDER

- 3. Investor orders via Agents' Electronic System having fully understand all terms and conditions as stipulated in the Memorandum of Information
- 4. Investor receives billing code via Agents' Electronic System or email;
- 5. This code (billing code) is later to be used for payment

PAYMEN



- Based on billing code, investor pays in certain Banks*)via teller, ATM, internet banking, mobile banking, under specified time limit;
- 7. Investor receives transaction number & notification of *completed order* via Agents' electronic system and registered email.

CONFIRMATION

8. Statement of Account as the confirmation of the ownership of the retail bonds shall be sent to investor's registered email via Agents' Electronic System



Retail Sukuk Development



"Issuance of Retail Sukuk continues to increase and supports financial inclusion

policies in Indonesia."

- Retail Sukuk issued since 2009.
- Support the development of Islamic Financial Markets and financial inclusion
- Encourage the transformation of society towards investment-oriented society.
- Investors can buy in small units of purchase.
- ST002 is the 1st retail sukuk that was issued online in 2018





Individual investors come from 34 Provinces





WHY GREEN SUKUK RETAIL

Sustainable investors base

Retail investors are less sensitive to economic cycles



Engagement through environment issues

Green is currently a trend



Increase level of awareness, especially millennials, on climate change/environment issues





CASE STUDY : Green Sukuk Retail 2019

• Terms & Conditions :

Tenor	:	2 years
Туре	:	Non-tradable
Min order size	:	IDR 1 million (USD72)
Max order size	:	IDR 3 billion
		(USD216,000)
Nominal per unit	:	IDR 1 million (USD72)

- •On 28 November 2019, Republic of Indonesia (ROI) issued the 1st Retail Green Sukuk in the world, ST-006.
- •ST-006 has a 2-year tenor and a floor return of 6,75% p.a., with minimum order size of IDR1 million and maximum of IDR3 billion. It is non tradable.
- It gained an overwhelming response from investors with total issuance of IDR1,46 trillion. ST-006 attracted interest from 7,735 individual investors across all province in Indonesia.

ST006 has been issued to finance and refinance eligible green sector in accordance with the ROI green bond/sukuk framework

> Resilience to Climate Change









Impact Report of Green Sukuk Issuance

(available at https://www.djppr.kemenkeu.go.id/page/load/2357)

Examples: Energy Efficiency Projects

Installation of smart street lighting integrated with solar power plant.

Installation of smart street lightings integrated with solar power plant and is combined with retrofitting the existing bulbs with LEDs

Renewable Energy

Mini-hydro Power Plant Project

The projects aim at providing electrification in offgrid areas, especially in remote areas and small islands utilizing locally available resources.

Resilience to Climate Change

Installation of Smart Public Street Lighting

Smart street lighting, also referred to as adaptive street lighting, dims when no activity is detected, but brightens when movement is detected.



Installation of Energy-Saving Solar Energy Lights in previously Unnelectrified Rural Areas. Source: Directorate General of New Renewable and Energy Conservation, Ministry of Energy and Mineral Resources.



A micro-hydro power plant site. Source: Directorate General of New Renewable and Energy Conservation, Ministry of Energy and Mineral Resources.



Installation of Smart Public Street Lighting. Source: Directorate General of New Renewable and Energy Conservation, Ministry of Energy and Mineral Resources.







The first ever Green Retail Sukuk issuance using SID (single investor identification) as a unique code.

2

Online system produces more categories from Distribution Agents, not only Bank and Securities Companies, but also Fintech Companies

3

With the online system, order book from eastern part of Indonesia increased significantly

4

Online system created more new investors which were dominated by young generation (25-40 years of age). The ration increased significantly (from 13% by offline to more than 50% by online)

5

The green sukuk retail issuance manages millennial not only for profit, but also concern about environment. Also, it helps to attracts green communities, i.e TRASH HERO.







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Q&A Session

Moderated by Vida Rozite and Emi Bertoli (IEA)



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• Cecilia Tam, OECD

• Emi Bertoli, IEA



