



UNIVERSITAS MUHAMMADIYAH YOGYAKARTA
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PROTEKSI ISI LAPORAN KEMAJUAN PENELITIAN

Dilarang menyalin, menyimpan, memperbanyak sebagian atau seluruh isi laporan ini dalam bentuk apapun kecuali oleh peneliti dan pengelola administrasi penelitian.

LAPORAN KEMAJUAN PENELITIAN

Informasi Data Usulan Penelitian

1. IDENTITAS PENELITIAN

A. JUDUL PENELITIAN

SUSTAINABLE GREEN FINANCING BANK POLICY IMPLEMENTATION DESIGN ON NEW RENEWABLE ENERGY PROJECTS IN REGIONS

B. SKEMA, BIDANG, TEMA, DAN TOPIK PENELITIAN

Skema Penelitian	Bidang Fokus Penelitian	Tema Penelitian	Topik Penelitian
Penelitian Terapan	Energi - Energi Baru dan Terbarukan	Teknologi ketahanan, diversifikasi energi dan penguatan komunitas sosial	Transfer dan adopsi inovasi diversifikasi energi berbasis komunitas berwawasan gender dan berkelanjutan.

C. KOLABORASI DAN RUMPUN ILMU PENELITIAN

Jenis Kolaborasi Penelitian	Rumpun Ilmu 1	Rumpun Ilmu 2	Rumpun Ilmu 3
Kolaboratif Luar Negri	ILMU EKONOMI	ILMU EKONOMI	Bidang Ekonomi Lain Yang Belum Tercantum

D. WAKTU PELAKSANAAN

Tahun Usulan	Tahun Pelaksanaan	Lama Penelitian
2022	2023	1

E. ANCOR RESEARCH

Anchor Research	Topik Anchor
Eko Priyo Purnomo, Prof., S.IP., M.Si.,M.Res., Ph.D.	ICT Governance interoperability, Development and Policy Sustainability stainability

2. IDENTITAS PENELITIAN

Nama	Peran	Tugas
Dessy Rachmawatie, Dr., M.Si.	Ketua Pengusul	
Eko Priyo Purnomo, Prof., S.IP., M.Si.,M.Res., Ph.D.	Anggota Pengusul	? Provide input in building indicators and variables of influence from each actor in the green investment bank policy for EBT projects in the regions. ? Providing input on research recommendations on the implementation of Green Investment Banking po
Additya Rizqi	Mahasiswa Bimbingan	? Assist in assisting the 3rd FGD process in the field; ? Entry data

3. MITRA KERJASAMA PENELITIAN (JIKA ADA)

Pelaksanaan penelitian dapat melibatkan mitra kerjasama, yaitu mitra kerjasama dalam melaksanakan penelitian, mitra sebagai calon pengguna hasil penelitian, atau mitra investor

Mitra	Nama Mitra	Kepakaran
Western University	Prof. Joshua Pearce, Phd	Teknologi dan Inovasi Energi

4. KOLABORASI PENELITIAN (JIKA ADA)

Mitra	NIDN/NIK	Instansi
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5. LUARAN DAN TARGET CAPAIAN

Luaran Wajib

Tahun	Jenis Luaran
1	Publikasi Jurnal Internasional terindeks SCOPUS,
1	Hak Cipta

Luaran Tambahan

Tahun	Jenis Luaran
1	Publikasi (Minimal Jurnal SINTA 2)

6. KLUSTER

Kluster	Sub Kluster	Group Riset	Mata kuliah
			--

7. ANGGARAN

Rencana anggaran biaya penelitian mengacu pada PMK yang berlaku dengan besaran minimum dan maksimum sebagaimana diatur pada buku Panduan Penelitian dan Pengabdian kepada Masyarakat.

Total Keseluruhan RAB Rp. 30,000,000

Tahun 1 Total Rp. 30,000,000

Jenis Pembelanjaan	Komponen	Item	Satuan	Vol.	Harga Satuan	Total
BAHAN	ATK (Kertas/Tinta/Alat Tulis dll)	FGD	Paket	5	Rp. 50,000	Rp. 250,000
BAHAN	ATK (Kertas/Tinta/Alat Tulis dll)	Pendamping FGD	Paket	5	Rp. 50,000	Rp. 250,000
BAHAN	ATK (Kertas/Tinta/Alat Tulis dll)	Analisis data	Paket	4	Rp. 50,000	Rp. 200,000
PENGUMPULAN DATA	Transportasi/BBM	Survey lapangan	OK(Kali)	7	Rp. 100,000	Rp. 700,000
PENGUMPULAN DATA	Tiket Transportasi	Honorarium	OK(Kali)	10	Rp. 650,000	Rp. 6,500,000
PENGUMPULAN DATA	Hotel/penginapan	FGD	OH	10	Rp. 550,000	Rp. 5,500,000
PENGUMPULAN DATA	Biaya Konsumsi Harian	FGD	OH	10	Rp. 50,000	Rp. 500,000
PENGUMPULAN DATA	Biaya Fotocopy	FGD	Lembar	30	Rp. 15,000	Rp. 450,000
PENGUMPULAN DATA	Biaya Telepon	Survey lapangan	OK(Kali)	10	Rp. 100,000	Rp. 1,000,000
PENGUMPULAN DATA	Biaya Telepon	FGD	OK(Kali)	10	Rp. 100,000	Rp. 1,000,000
PENGUMPULAN DATA	Honorarium Asisten Lapangan	Survey lapangan	OJ	3	Rp. 150,000	Rp. 450,000
PENGUMPULAN DATA	Honorarium Petugas Survey	Survey lapangan	OH/OR	5	Rp. 200,000	Rp. 1,000,000
PENGUMPULAN DATA	Uang Harian	Pendamping FGD	OH	5	Rp. 200,000	Rp. 1,000,000
PENGUMPULAN DATA	Uang Harian	Pendamping FGD	OH	6	Rp. 200,000	Rp. 1,200,000
PENGUMPULAN DATA	Tunjangan Kehadiran FGD	FGD	OK(Kali)	10	Rp. 100,000	Rp. 1,000,000
ANALISIS DATA	Honorarium Pengolah Data	Analisis data	Per Penelitian	2	Rp. 1,000,000	Rp. 2,000,000
ANALISIS DATA	Honorarium Narasumber	FGD	OJ	2	Rp. 2,000,000	Rp. 4,000,000

Jenis Pembelian	Komponen	Item	Satuan	Vol.	Harga Satuan	Total
ANALISIS DATA	Honorarium Analisis Data	Analisis data	OK(Kali)	2	Rp. 1,000,000	Rp. 2,000,000

8. LEMBAR PENGESAHAN

HALAMAN PENGESAHAN LAPORAN KEMAJUAN PENELITIAN SKEMA:

Judul : SUSTAINABLE GREEN FINANCING BANK POLICY IMPLEMENTATION DESIGN ON NEW RENEWABLE ENERGY PROJECTS IN REGIONS

Peneliti/Pelaksana : Dessy Rachmawatie, Dr., M.Si.

NIDN : 0516128202

Jabatan Fungsional : Lektor

Program Studi/Fakultas : Ekonomi

Nomor HP :

Alamat surel (e-mail) : d.rachmawatie@umy.ac.id

Anggota

Nama : Eko Priyo Purnomo, Prof., S.IP., M.Si.,M.Res., Ph.D.

NIDN : 0023027801

Jabatan Fungsional : Guru Besar

Program Studi/Fakultas : Program Doktor Ilmu Pemerintahan

Nama : Additya Rizqi

NIM : 20190430226

Prodi : S1 Ekonomi

Mitra : Western University

Nama Mitra : Prof. Joshua Pearce, Phd

Kepakaran : Teknologi dan Inovasi Energi

Biaya : Rp. 30,000,000

Yogyakarta, 09 Juni 2023

Mengetahui,
Kepala LRI,



9. RINGKASAN

Indonesia's target to reduce GHG emissions by around 26 percent has caused the government to prioritize 5 (five) sectors, including the sectors: forestry and peatlands, agriculture, industry and waste, and the **energy** and transportation sectors.

Green Economy implementation policies in the energy sector include the provision/supply of energy that still relies on fossil energy sources, so efforts are needed to encourage energy conservation and efficiency. This is stated in Presidential Instruction Number 13 of 2011 concerning Saving Energy and Water, to all government agencies both at the central and regional levels, and saving the use of Subsidized Fuel by 10%, through setting restrictions on the use of Subsidized Fuel for vehicles within their respective agencies and within state-owned enterprises (BUMN) and regional owned enterprises (BUMD).

Currently, in line with the strengthening of world attention to environmental issues, banking is carrying out a transformation in its behavior and activities. The Green Economy concept, which basically encourages every economic activity to minimize its impact on the environment, has also been adopted by the banking world. One of them is through the concept of *Green Financing*.

Green Financing is a financing activity carried out by banks that focuses on companies or investment and financing prospects that have a commitment to natural resource conservation, production and discovery of alternative sources of new and renewable energy (NRE), implementation of clean water and air projects, as well as other activities environmentally friendly investment. The focus of developing a Green Economy must be in line with environmental development objectives such as: climate change, control of damage to biodiversity and environmental pollution, as well as the use of new and renewable energy.

By providing loans or financing to their customers, banks can become triggers for activities that have an impact on the environment and inclusive development. Until now, the debate about which party (banks or debtors) should be responsible for the environmental impacts caused. Some banks have tried to select from the start the financing proposed by prospective debtors. Banks have full rights to reduce financing or not, depending on the extent to which the activities to be financed with bank loans have an impact on the environment (Jeucken, 2004). Another alternative is through the pattern of giving incentives and disincentives. Thus, banks can provide loans with different loan interest rates. The higher the negative impact generated by an activity, the higher the loan interest rate charged. Vice versa, the lower the negative impact generated, the lower the loan interest rate.

Technically, the level of tightness or leniency of bank policies in financing can be formulated. One way is to identify the level of balance between bank sustainability and the environment. By heeding these two factors, banks can optimize their role in reducing the rate of environmental degradation. In fact, even further, banks can provide a stimulus that encourages "environmentally friendly" behavior. The banking sector can become a key player in efforts to mainstream sustainable development. In Indonesia, before OJK was established, Bank Indonesia had issued Bank Indonesia Regulation (PBI) No 14/15/PBI/2012 concerning Asset Quality Rating for Commercial Banks. With this regulation, Bank Indonesia encourages national banks to consider environmental feasibility factors in assessing a business prospect or through EBT projects.

The specific purpose of this research is to create a Green Financing framework from banking for development activities and investment in EBT projects so that it can be implemented in the regions. Making it easier for investors to jointly invest with the central and regional governments in order to encourage the energy transition towards the use of new, renewable energy can be implemented in the regions.

10. KEYWORDS

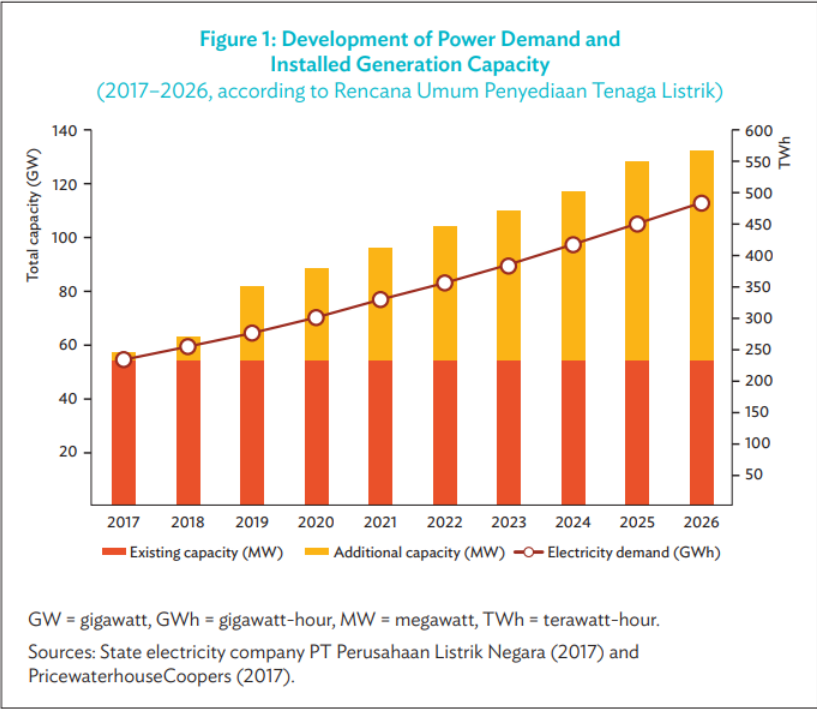
Green financing, new and renewable energy.

11. HASIL PELAKSANAAN PENELITIAN

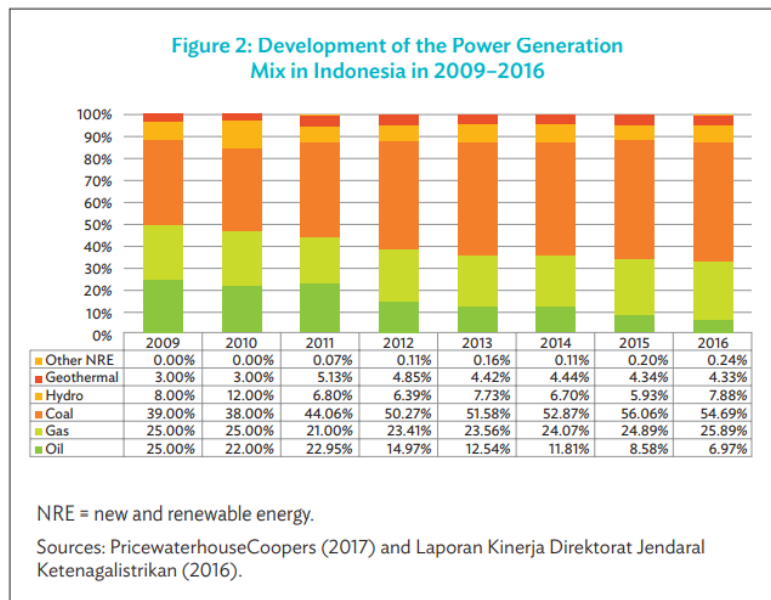
11.1 Introduction

Indonesia has the world's fourth biggest population, with around 255 million people. At the same time, per capita power consumption is modest, around 1 megawatt-hour (MWh) in 2016, resulting in total power demand of 234 terawatt-hours (TWh), total installed capacity of approximately 60 gigatonnes (GW), and power generation of approximately 290 TWh, according to PricewaterhouseCoopers (PwC, 2017).

The Indonesian economy is expected to develop at a 5% annual rate over the next ten years (The Economist 2018). At the same time, power consumption is expected to expand at an 8.4% annual rate, more than tripling electricity demand to 483 TWh by 2026 and installed power generation capacity to 137 GW, as illustrated in Figure 1.



Another challenge in Indonesia's power sector is the rapid increase in coal use and overall reliance on fossil fuels, as illustrated in Figure 2.



Even though Indonesia has committed to a 29% reduction in greenhouse gas emissions from the baseline in its Nationally Determined Contribution to the Paris climate agreement under the United Nations Framework Convention on Climate Change (UNFCCC), and has a conditional commitment to 41% reduction with international climate finance (IRENA 2017), it has not been able to significantly increase the share of low-carbon power generation in its power generation mix. Instead, coal's portion of the power generating mix has climbed from below 40% to around 55% today, while the share of all fossil fuels has stayed close to 90% throughout the decade.

Increasing the amount of renewable energy in the whole energy mix will be beneficial not only to Indonesia's greenhouse gas emission reduction targets, but also to GDP, employment, trade balance, and welfare. According to IRENA (2017), accelerating renewable energy deployment to double the share of renewable energy in the energy mix from 2015 to 2030 could increase Indonesia's GDP by 0.3%-1.3% in 2030 compared to the baseline, owing to higher overall levels of energy sector investment. By 2030, Indonesia's trade balance could increase by 0.9%-1.6%. In Indonesia, the number of renewable energy-related jobs could climb to 1.3 million by 2030, up from around 100,000 in 2015.

Currently, more than 90% of renewable energy jobs in Indonesia are in the labor-intensive palm oil-based biodiesel business; however, mobilizing investment in the electrical and industrial sectors, for example, would result in a diversification of renewable energy-related jobs in Indonesia. Increased use of renewable energy would also have favorable social and environmental consequences, such as reduced local pollution and associated negative health effects, as well as environmental and material degradation.

However, renewable energy power generation is encountering a number of obstacles that are impeding the implementation of project development pipelines. For example, under the

independent power producer (IPP) plan, there are now 43 small-scale renewable energy projects and project developers who have signed a PPA with the PT Perusahaan Listrik Negara (PLN, State Electricity Company) but are facing implementation issues. Some of these issues are due to the project developers' lack of resources and capabilities to construct bankable projects, but it is also widely agreed that the PPAs signed between IPPs and the PLN are not bankable.

In many situations, the very low price level is one factor, but additional terms and restrictions make raising money to implement these projects prohibitively difficult. Some stakeholders also regard PLN's lack of experience handling variable renewable energy generation as part of the power mix as a concern. These difficulties are highlighted and examined further in the following chapter.

Furthermore, based on stakeholder discussions during the fact-finding mission, it is unlikely that the PLN's existing or new PPAs would be modified in the short term to include cost-reflective tariffs that would make the projects' internal rates of return (IRRs) sufficient to make them bankable. Various parties also thought it was unreasonable to propose a new regular competitive auction plan for renewable energy, in which the PLN would seek bids and award bankable long-term PPAs through IPP or public-private partnership (PPP) schemes. As a result, any fund structure soon should be based on the current condition of unoptimal and (at least in many cases) non-bankable PPAs with excessively low pricing.

According to stakeholder meetings held during the fact-finding expedition, the same holds true for concessions under the electrification plan, which is another current and essential component of Indonesia's renewable energy project pipeline.

Based on a comparison of the current situation to the design criteria for the proposed Renewable Energy Fund (REF), specifically that the REF should "avoid a complex financial structure and aim at a time-limited support scheme that helps jump-start the development of renewable energy generation resources and can be implemented on a fast-track basis," it is possible to conclude that:

- a) The REF concept should not presuppose that project development and PPA procedures, nor the terms of PPAs, as now used by PLN, should be modified, but rather that the REF should work in the current context.
- b) The same is true for other renewable energy industries, including electrification project incentives.
- c) As a result, the most realistic way forward for jump-starting the renewable energy market with a time-limited assistance scheme executed on a fast-track basis is to create exclusively "PPA- and concession-external" initiatives.
- d) Jump-starting the market quickly also implies that the intervention should target current project pipelines rather than proposing to construct new project pipelines, which takes time;
- e) Even if the current project pipeline consists mostly of small-scale projects (such as IPP and electrification schemes), this appears to be a necessary step to help create and mobilize the renewable energy market in Indonesia, as well as beneficial from PLN's perspective to gain experience and a track record in managing variable renewable energy generation in its power system.
- f) As a result, the REF concept proposed in this report could also be referred to as "phase 1 interventions";

- g) If the proposed "phase 1 interventions" in this report are implemented and proven to be effective, the target, scope, and resources of the REF can be expanded in the next phase to provide more funding to a larger number of larger projects;

11.2 Method

This type of research is exploratory qualitative research using a mix method, the stages are based on theoretical concepts, secondary and primary data. Explorative qualitative research in this study includes understanding the subject and object of research in depth, conducting problem mapping, direct field observations/observations, conducting in-depth interviews with core and supporting sources and collecting primary and secondary data.

Based on the background and urgency of the research, the objectives of this research are as follows: (1) Identified what variables are the key (internal and external) in the sustainability of green investment banking for renewable energy projects in Indonesia regions, (2) map and analyze which actors influence green investment banking policies in the regions, and (3) design green investment banking policies for EBT projects that are implemented in the regions.

Table 1. The analytical method used in each stage of the research

Research stages	Research stages Sub stages	Method/approach	Outcome
Determining the key variables for the sustainability of green investment banking policy for NRE project in the regional	Study of literature relevant to NRE sustainability in the context of sustainable development conducted by previous research, particularly and then analyzed using the MICMAC method.	<ul style="list-style-type: none"> ▪ Literature study ▪ Focus Group Discussion ▪ MICMAC Analysis Method 	Identified key variables of green investment banking policy for NRE project in the regional
Identification and analysis of the influence of each actor in making green	Conduct a site survey, determine which actors are involved in the development of	<ul style="list-style-type: none"> ▪ Survey ▪ Focus Group Discussion ▪ MACTOR analysis method. 	Identified: <ul style="list-style-type: none"> ▪ Map between actors

investment banking policy.	NRE through FGDs, then analyze using the MACTOR method.		<ul style="list-style-type: none"> ▪ Convergence and Divergence between actors ▪ The value of ambivalence between actors.
Validation	<p>Key variables and</p> <p>The relationship between actors in NRE sustainability needs to be validated.</p>	<i>expert judgement</i>	Validated evaluation criteria and indicators.

11.3 Result and Discussion

In most of the surveyed financial institutions, responsibility relating to sustainable finance primarily sits under credit, risk management and business units, which are typically in charge of originating, evaluating risks, and executing deals. However, the sustainable finance function should ideally be placed in the risk management and/or compliance directorate/division which has a co-ordinating function between other directorates/divisions related to financing/investment.

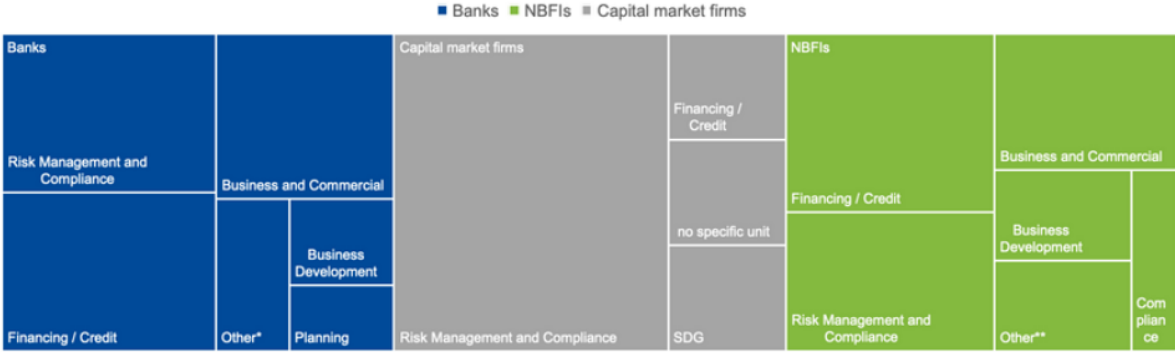


Figure Responsible Units for Sustainable Finance

The main drivers for surveyed financial institutions to mainstream sustainable finance are organisational readiness (29%), staff capacity (27%) and financial conditions (19%).

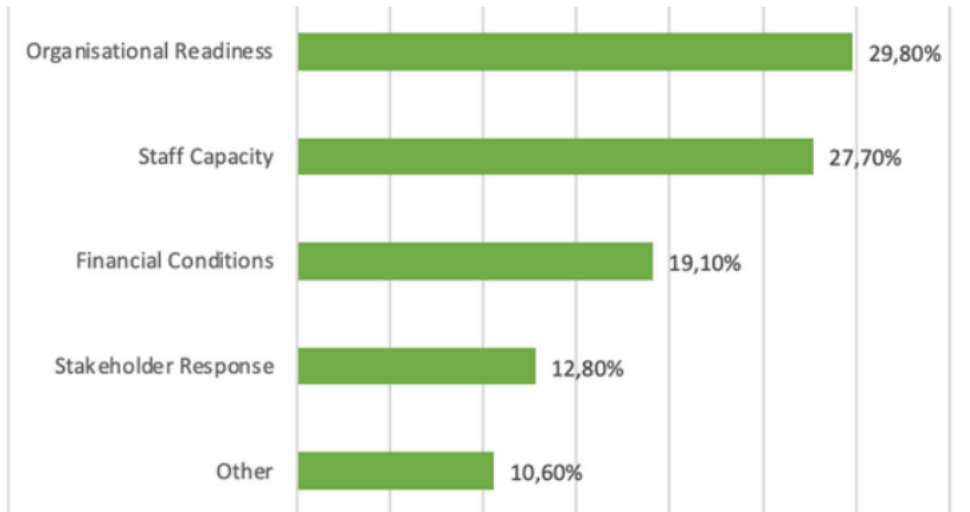


Figure Main Driver to Define Priorities for Sustainable Finance

The bulk of surveyed commercial banks and NBFIs have measures in place to implement sustainable finance, contrasting with capital market firms, two thirds of which responded negatively. According to the survey, most of these efforts took the form of capacity building and information sharing sessions with senior management around sustainable finance as well as a number of awareness-raising activities (e.g. sustainable finance awards).

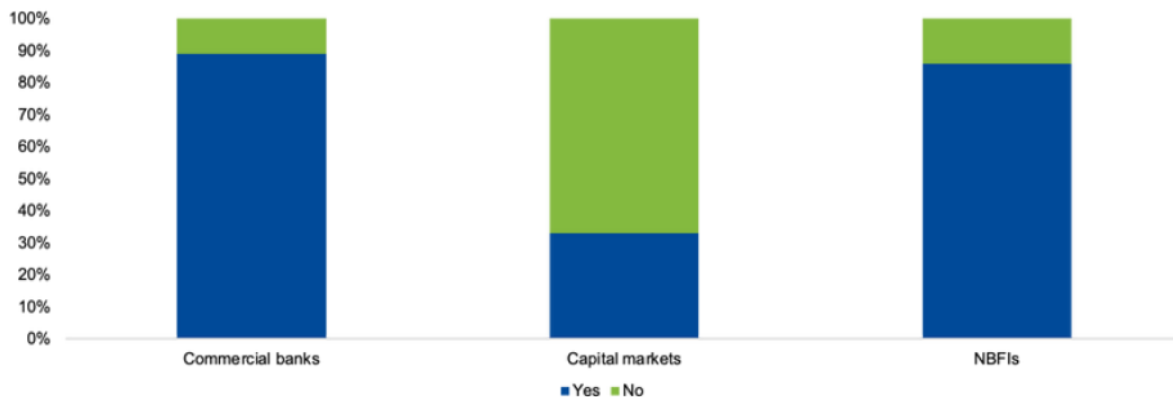


Figure Measures Implementation to Mainstream Sustainable Finance

On average, capacity building activities took place between one and three times a year and gathered around 100 staff. The bulk of this training related to sustainable finance although a significant share focused on renewable energy. Equally, financial institutions held on average two sharing sessions with senior management a year; among the surveyed institutions, NBFIs are those having made greatest use of sharing sessions (only one bank and capital market firm respectively indicated having held such sessions).

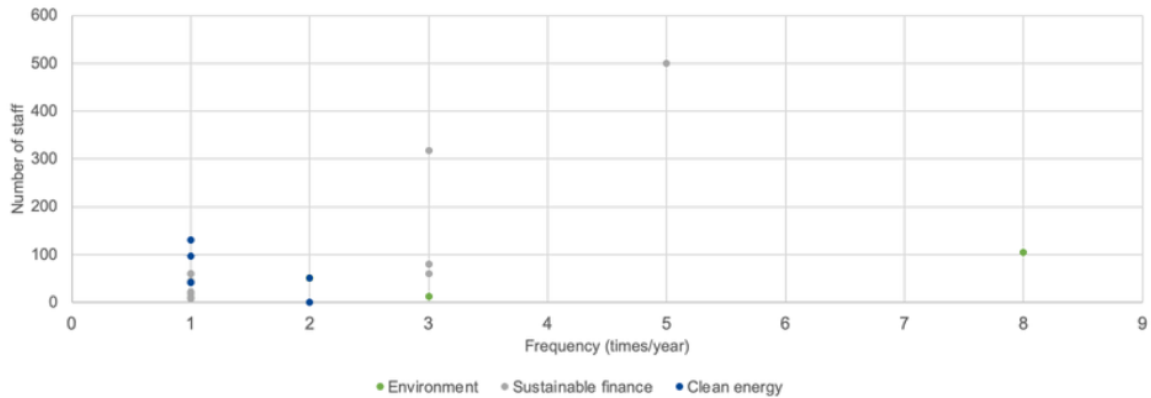


Figure Capacity Building Activities for Sustainable Finance

12. STATUS LUARAN

Belum ada, karena hasil penulisan analisis dan diskusi belum rampung.

13. PERAN MITRA

- Provide input on the preparation and selection of technical sustainability indicators and variables to be used in research methods that are relevant to the research objectives.
- Diversification of research results in seminars conducted between institutions.
- provide input in the analysis and discussion section, and review the writing of international journal publication manuscripts.

14. KENDALA PELAKSANAAN PENELITIAN

Penelitian ini didesain sebagai penelitian mix methode dengan mendesain kuesioner penelitian. Informasi yang diperoleh berasal dari informan kunci, tantangan yang dihadapi dalam tahapan ini yaitu pada *Focus Group Discussion*, karena peneliti harus mencari informan kunci yang tersedia waktunya masih memiliki data yang diperlukan oleh peneliti.

15. RENCANA TAHAPAN SELANJUTNYA

Analisis dan pembahasan details. Menyiapkan penulisan naskah publikasi jurnal internasional.

16. DAFTAR PUSTAKA

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17. LAMPIRAN-LAMPIRAN

- a. Ada MoU/MoA/LoA/ToA/Surat Pernyataan Kerjasama dari anggota yang berasal dari luar UMY;
- b. Ada Surat Pernyataan *budget sharing* / dana *in-kind* / dana *in-cash* dari anggota yang berasal dari luar UMY;
- c. Ada *Curriculum Vitae* mitra;