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April 2020 – March 2021

Annual Report

Prepared by: NZMATES PMO

Prepared for: NZ MFAT

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Annual report #3

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Cover photo: NZMATES virtual PSG meeting, November 2020.

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LIST OF ACRONYMS

ADB	Asian Development Bank
AFD	Agence Francais de Developpement (French Development Agency)
Bappeda	Badan Perencanaan Pembangunan Daerah (Maluku Development Planning Board)
BPS	Badan Pusat Statistik (Maluku Statistics Board)
DJ EBTKE	Direktorat Jenderal Energi Baru Terbarukan dan Konservasi Energi (Directorate General for New and Renewable Energy and Energy Conservation)
Dinas ESDM	Dinas Energi dan Sumber Daya Mineral (Energy and Mineral Resources Agency)
FOP	Forward Operating Plan
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit (German Development Agency)
HSS	Health, Safety and Security
LOP	Life of Programme
MEL	Monitoring, Evaluation and Learning
MFAT	Ministry of Foreign Affairs and Trade
MMU	Maluku dan Maluku Utara (Maluku and North Maluku Provinces)
MP	Maluku - Papua
NZMATES	New Zealand – Maluku Access To Renewable Energy Support
PDPC	Partnerships and Development Practice Coordinator
PLN	Perusahaan Listrik Negara (National Electricity Company)
PM	Programme Manager
PMO	Programme Management Office
PSG	Programme Steering Group
RBL	Results-based loan
RE	Renewable Energy
Renstra	Rencana Strategis (Strategic Plan)
RPJMD	Rencana Pembangunan Jangka Menengah Daerah (Medium-Term Regional Development Plan)
RUED	Rencana Umum Energi Daerah (General Provincial Energy Plan)
TC	Technical Committee
YMCI	Yayasan Mercy Corps Indonesia

EXECUTIVE SUMMARY

This annual report corresponds to the third year of the NZMATES programme, from 1st of April 2020 to 31st March 2021. This period was a challenging one due to the prolonged Covid-19 pandemic which limited NZMATES' ability to conduct activities involving field travel, meetings and training. This required constant and rapid adaptation of activities, and led to a focus on desk studies, online capacity building and coordination, and the development of guidelines. While on-the-ground implementation of projects was hindered, and budgets for renewable energy investment were cut or repurposed towards pandemic response activities, NZMATES together with our partners nevertheless managed to make important progress towards the programme outcomes.

Figure 1: The NZMATES Programme team during a weekly meeting in November 2020

1 KEY ACHIEVEMENTS AND PROGRESS

1.1 Results framework

NZMATES' updated results framework was presented and accepted at the Programme Steering Group (PSG) meeting held virtually in November 2020. This updated version of the results framework is used in this report.

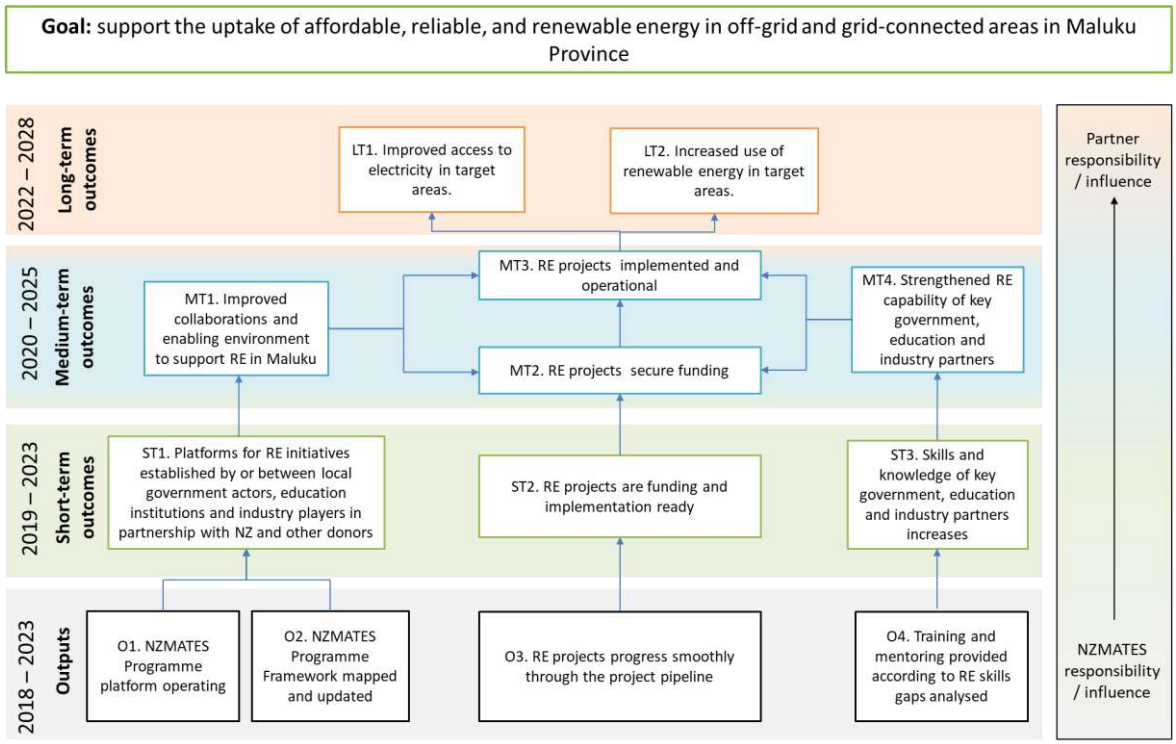


Figure 2: Current version of NZMATES results framework

The changes from the previous results framework were largely a result of the baseline study conducted in 2019, and included:

- Combining the grid-connected and off-grid pipelines into a single project pipeline, to facilitate tracking and maintain flexibility in project design.
- Updating short-term outcome 1 and medium-term outcome 1 to focus less on the internal success of NZMATES, and more on the impacts of that success in facilitating collaboration and improving the enabling environment for RE in Maluku.
- Changes to some indicators to align with updated outputs and outcomes, and to better measure outcomes of capacity-building activities.

In addition, NZMATES was delighted to receive approval from MFAT to expand the geographical scope of the programme from Seram and surrounding islands to the whole of Maluku Province. This change is reflected in the goal shown in the results diagram.

Output 1: Programme Platform Operating

Programme Management Office

O1.1
Qualified PMO Team in place

	Actual	Target
Year 1	Yes	Yes
Year 2	Yes	Yes
Year 3	Yes	Yes
LOP		Yes

O1.2
PMO has sound, relevant procedures and policies in place, approved by Programme Manager and updated annually.

	Actual	Target
Year 1	Yes	Yes
Year 2	Yes	Yes
Year 3	Yes	Yes
LOP		Yes

Stakeholder Engagement and Program Governance

O1.4
Number of PSG meetings that are well-attended and produce clear outcomes.

	Actual	Target
Year 1	0	0
Year 2	2	2
Year 3	3	4
LOP		8

O1.5
Number of TC meetings that are well-attended and produce clear outcomes.

	Actual	Target
Year 1	1	0
Year 2	3	5
Year 3	4	5
LOP		9

Monitoring, Evaluation, and Learning (MEL)

O1.3
Results framework reviewed annually and endorsed by PSG.

	Actual	Target
Year 1	Partial	Partial
Year 2	Yes	Yes
Year 3	Yes	Yes
LOP		Yes

1.2 Output 1: Programme Platform Operating

NZMATES' third year began in the context of the emerging Covid-19 pandemic. In April 2020 the NZMATES team were all working from home, and the Programme Manager had been relocated to his home country of Costa Rica. This situation was anticipated to be temporary, however one year later at the time of writing this report the team has not yet returned to the office. While many other institutions have opted to allow staff to return in limited numbers or with health protocols in place, case numbers in Indonesia remain high and NZMATES has assessed that the risk of staff contracting or spreading the virus by returning to the office or face-to-face activities remains high.

The NZMATES HSS Committee continues to meet at least once per week to assess recent developments and recommend any necessary changes to policies and procedures. Plans and protocols have been prepared for an eventual return to the office once Ambon's risk level reduces to yellow or green in the Indonesian government's 4-tier risk assessment scale.

The following sections summarise progress in the key sub-areas of Output 1.

1.2.1 Programme Management Office

No.	Indicator	Year 1	Year 2	Year 3	LOP[1] target
O1.1	Qualified PMO team in place	Yes	Yes	Yes	Yes
O1.2	PMO has sound, relevant procedures and policies in place, approved by Programme Manager and updated annually.	Yes	Yes	Yes	Yes

During last year, there was a departure of Senior Community Engagement Officer, Johanis Valentino Fofied. Johanis completed 6-months contract to support NZMATES with field activities and desk research on project locations.

There were also several new staff members who joined NZMATES. Lutfi Lesilolo joined NZMATES as a Temporary Senior Renewable Energy Technical Specialist. He has over 20 years of experience working in the energy sector. Previously, Lutfi worked on biogas projects, environmental assessments, climate change, waste-to-energy initiatives, renewable energy project scoping, and most recently as business developer for implementing renewable energy projects.

Seruni Putri Soewondo was recruited as Senior Communication Officer. Seruni has an M.A in Critical Media and Cultural Studies from SOAS in London, and several years of experience in communications and marketing for the not-for-profit sector. In NZMATES, she is responsible for updating and maintaining NZMATES' communications strategy, implementation, communicating stories from the field, managing website and social media. Seruni also launched the new NZMATES e-newsletter, the first edition of which was sent out at the end of 2020.

Finally, Sheflijane "Vivi" Toumahuw joined NZMATES as Senior Stakeholder Engagement and Partnerships Officer. Vivi is responsible for local stakeholder engagement activities and is transitioning to take responsibility for some of the international partnerships and training activities from the Partnerships and Development Practice Coordinator (PDPC) role, which has reduced to 50% FTE dedication. Vivi, who is from Maluku, holds a Master of Public Policy from Victoria University in Wellington and a Master of Environmental Engineering from the University of Wollongong. Vivi has

[1] Life of Programme target – target for end of NZMATES programme in June 2023

worked at YMCI's Ambon office for many years, and supported in the early stages of the NZMATES programme design in 2017.

There is a vacant position for Senior Finance and Admin Officer. Rifay Toisutta (Admin Logistics Procurement Officer) currently covers finance and admin tasks. NZMATES is also in the process of recruiting for a new Renewable Energy Technical Specialist to support the many continuing technical requests from our partners.

With the on-going pandemic, one security staff member continues to live on site at the NZMATES office to minimise movement and ensure safety of the office. The PM residence in Ambon was vacated after a landslide incident which damaged the roof and caused flooding. All of the PM's and PDPC's belongings have been moved to storage at the office.

NZMATES has provided support to staff to work from home, and has adapted to the use of virtual technologies such as Zoom and Slack for regular communication. The team has also made a significant effort to maintain morale and motivation through online social activities. NZMATES HSS Committee continues to assess recent developments of pandemic in Ambon and in Indonesia, and periodically updates policies and procedures as needed.

Figure 3: NZMATES Team at end of year virtual party

1.2.2 Monitoring, Evaluation and Learning (MEL)

No.	Indicator	Year 1	Year 2	Year 3	LOP target
O1.3	Results framework reviewed annually and endorsed by PSG.	Partial	Yes	Yes	Yes

The second review of the NZMATES results framework was completed with acceptance of the updated framework at the PSG meeting in November 2020. As NZMATES finishes its third year, the mid-term evaluation has been postponed due to the covid pandemic, and is now due to be conducted in late 2021.

NZMATES implemented a new process of reflection meeting with partners in February – March 2021 to gather partners' perspectives on NZMATES' performance and identify areas for improvement. The meetings were conducted fully online, using online forms and Zoom meetings. Discussion sessions were scheduled depending on partners' availability. Out of 24 targeted key persons, 13 (55%) filled out the questionnaire and 11 joined the discussion sessions, including at least one representative from each targeted institution (PLN, Dinas ESDM, Bappeda, EBTKE, Pattimura University and Ambon State Polytechnic).

In general, partners agreed that NZMATES activities contribute to outcomes, such as supporting sustainability, creating an enabling environment for renewable energy implementation, and improving partners' capacity. Almost all NZMATES activities were scored as "very good" or "good" by partners. Training activities and contribution to sustainability were rated as "sufficient" by 7.7% of respondents. Figure 4 summarizes partners' evaluation of NZMATES activities.

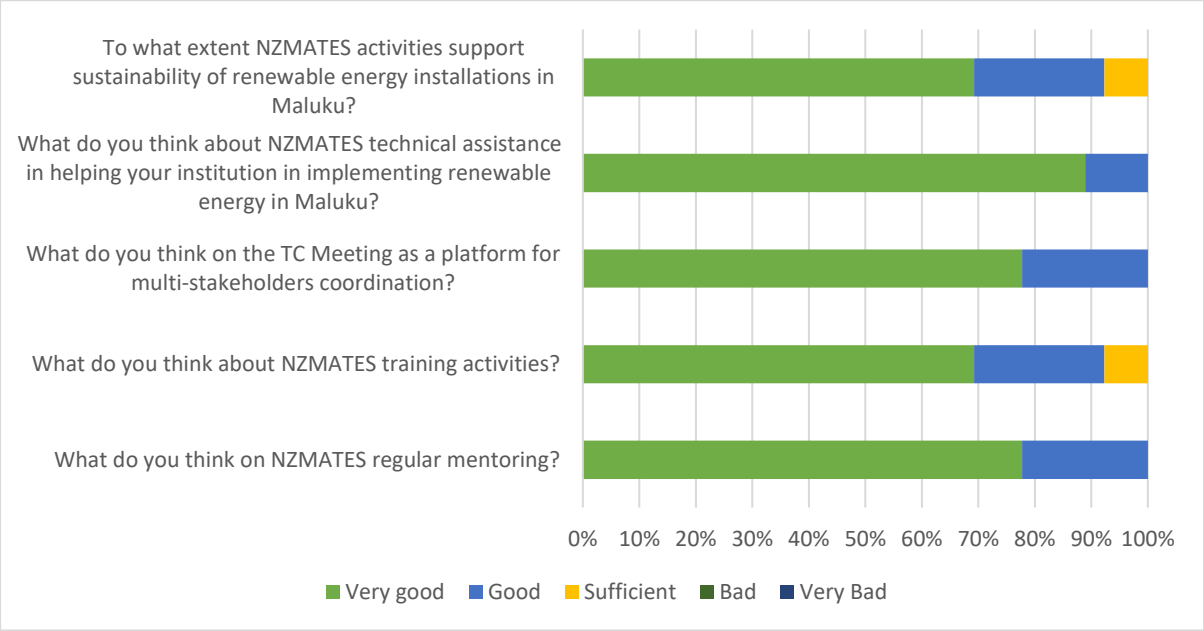


Figure 4: Brief Result of Partners Evaluation on NZMATES Activities

During the meetings, stories of change in partners' institutions were also identified. In PLN, NZMATES technical assessment reports have been utilized as a basis for PLN MMU to propose refurbishment budget for broken assets. PLN staff also show improved skills in developing renewable-based electricity planning. Meanwhile, more students in UnPatti are interested in choosing renewable energy as a topic for their bachelor thesis. More detailed results of these meetings are presented in Section 3.

Within the NZMATES team, the regular internal reflection workshops moved online with agenda to identify successes, challenges, changes, and opportunities. The meetings allow team member to discuss any difficulties with remote working and develop strategies to move forward, including approaches to stakeholder engagement and training activities. These reflection meetings were conducted using Zoom and online brainstorming tool Mural to keep the discussion sessions lively and participatory.

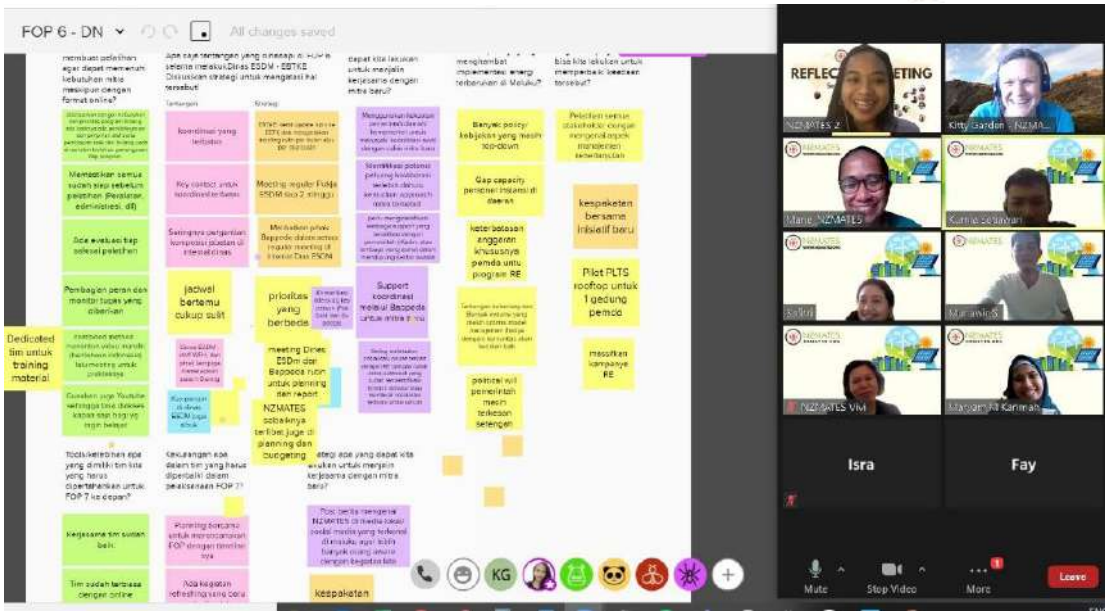


Figure 5: Internal Reflection Meeting using Zoom and Mural to accommodate discussion

1.2.3 Stakeholder Engagement and Programme Governance

No.	Indicator	Year 1	Year 2	Year 3	LOP target
O1.4	Number of PSG meetings that are well-attended and produce clear outcomes.	0	2	3	9
O1.5	Number of TC meetings that are well-attended and produce clear outcomes.	1	3	4	9[2]

NZMATES' fourth Technical Committee was held in September 2020. In the meeting, NZMATES, PLN MMU, and Dinas ESDM presented progress on the last year's workplan. A new workplan was endorsed, which included some adaptations to the Covid-19 pandemic. Nevertheless, NZMATES assured the committee that implementation projects in Pulau Tiga and UnPatti Solar Lab would continue. The next TC Meeting will be held on 6th of April, 2021.

The third Programme Steering Group (PSG) meeting was held virtually in November 2020. The meeting attended by representative from the New Zealand Embassy, EBTKE, PLN Pusat, Dinas ESDM Maluku, and staffs from NZMATES team. In the meeting, pipeline workplan developed in collaboration with PLN MMU and Dinas ESDM was presented, including adaptation of several projects to the pandemic setting. The pipeline workplan was approved by the PSG, allowing NZMATES to move forward.

There were several changes in key personnel among NZMATES' partners and other stakeholders in the past year. Dr. Dadan Kusdiana is the new Director of EBTKE replacing Ir. FX Sutijastoto, M.A. (Pak Toto). Within the Directorates, Harris Yahya, S.T., M.T. who was NZMATES key contact was named the new Geothermal Director. Replacing Harris in the Directorate of Various New and Renewable Energy is Chrisnawan Anditya, S.T., M.T. as the new key senior contact for NZMATES within EBTKE.

[2] Original LOP target was 16, however at last TC it was decided to meet only every 6 months, with 3-monthly progress reporting in the interim.

Peggy Suitela was assigned a new role in Maluku's Agency for Border Management, leaving her position as Secretary of Dinas ESDM. Peggy Suitela has actively participated in NZMATES activities, especially in the Dinas ESDM working group, since the beginning of the programme. Ibu Peggy is replaced by Pak Susilo, who the NZMATES team has met and briefed on the programme.

As per March 2021, PLN MMU appointed new General Manager, Adams Yogasara, replacing Romantika Dwi Juni Putra. PLN also assigned new Senior Planning Manager, Husein Sobri, replacing former manager Widodo. These changes required some quick engagement to get the new Managers up to speed on NZMATES activities, such as asset transfer and Dedieselisasi Programme (Diesel Replacement initiative from PLN EBT).

Moreover, while the asset transfer process was paused for most of last year, given the fact that ADB's Results-based loan (RBL) for Maluku, Papua, and Sulawesi has been launched, the process has been re-started. Two Maluku sites are being proposed to PLN MP for asset transfer and use of ADB RBL grant budget to fund the rebuilding of these two power plants. Conversations with PLN MP continue, as there are some legal concerns from PLN regarding the transfer of assets and land from EBTKE to them.

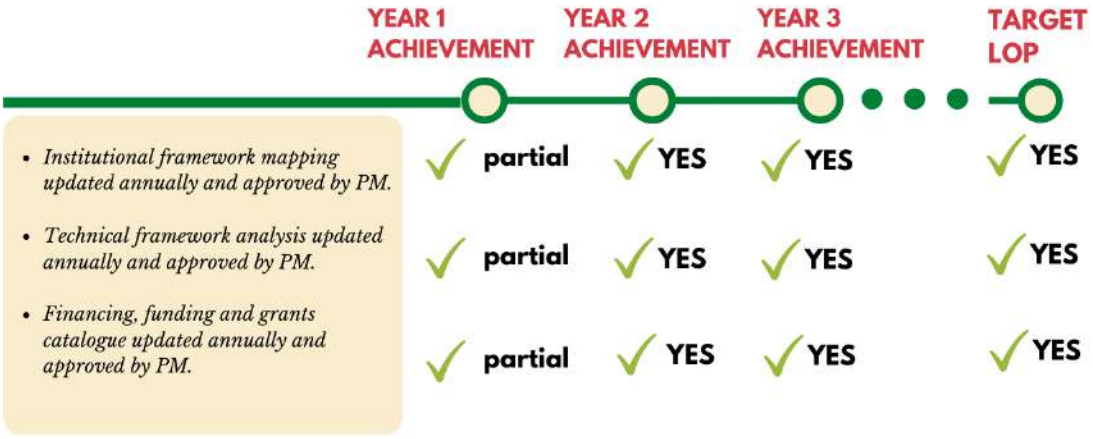
From December 2020 NZMATES started to engage with the MENTARI programme, funded by UK FCO. MENTARI has been collaborating with PLN Renewable energy (EBT) on the Dedieselisasi Programme for Maluku, Papua, Sulawesi, and NTT. NZMATES engaged with Mentari to ensure collaboration and reduce work replication. Work was aligned in initial weeks and NZMATES provided MENTARI with key data on costs for systems, field data on loads, locations, information from site visits, and modelling. Jointly MENTARI and NZMATES adjusted methodologies and modelling to ensure that work done for PLN was homogenous and would be comparable. Work has recently been submitted to PLN EBT and the next step is for PLN MP to select sites and kick-start its installation strategy.

In parallel, NZMATES has been looking at possible funding sources. For example, PLN EBT and MENTARI's goal is to fund systems through a Sustainability Bond. Other options being progressed include the use of national budget APBN, ADB RBL loan, and/or Green Climate Fund.

Finally, NZMATES also participated in public events to increase awareness of the programme and trigger possible future collaborations. One of our RETS, Maryam Karimah, selected as a speaker in Homer International Microgrid Conference and presented study result on reducing fuel use through hybridization in remote areas in Maluku. Safitri Yanti Baharuddin, NZMATES Deputy Programme Manager and Kurnia Setiawan, NZMATES Renewable Energy Technical Specialist participated in the 9th IndoEBTKE CoNex 2020. NZMATES' PDPC also participated in the PPSDM KEBTKE webinar on New Zealand support for renewable energy in Indonesia held in September 2020, reaching some 700 participants.

Figure 6: Maryam presenting at HOMER International Microgrid Conference in October 2020

Output 2: Programme Framework Mapped and In Use



1.3 Output 2: Programme Framework Mapped and In Use

No.	Indicator	Year 1	Year 2	Year 3	LOP target
O2.1	Institutional framework mapping updated annually and approved by PM.	Partial	Yes	Yes	Yes
O2.2	Technical framework analysis updated annually and approved by PM.	Partial	Yes	Yes	Yes
O2.3	Financing, funding and grants catalogue updated annually and approved by PM.	Partial	Yes	Yes	Yes

NZMATES has updated all three framework deliverables according to current developments, new information, and data.

The Technical Framework is updated with data and information related to renewable energy and electrification plan. New data collected are references for RUED document, and existing studies on renewable energy potential in Maluku. The data will be used to support NZMATES assistance for Dinas ESDM's RUED and PLN's 23% renewable energy target planning, both of which are ongoing.

To support Dinas ESDM in finalising its RUED, NZMATES hired an independent consultant to review and update the draft document, help with modelling using LEAP software, and work together with Dinas ESDM to ensure staff there build the knowledge and capacities to monitor implementation of the plan and conduct future planning activities. NZMATES also conducted several training workshops on the LEAP software for Dinas ESDM and other stakeholders in Maluku as part of knowledge transfer and coordination. Another follow-up training is scheduled for the following month.

Figure 7: LEAP software training for key Maluku stakeholders

NZMATES also helped PLN with its strategic energy planning by helping to prepare a plan to reach the target of 23% renewable energy in the Province's energy mix by 2025. NZMATES compiled data and modelled various different types of projects and found that reaching the 23% target by 2025 could be within reach for PLN MMU.

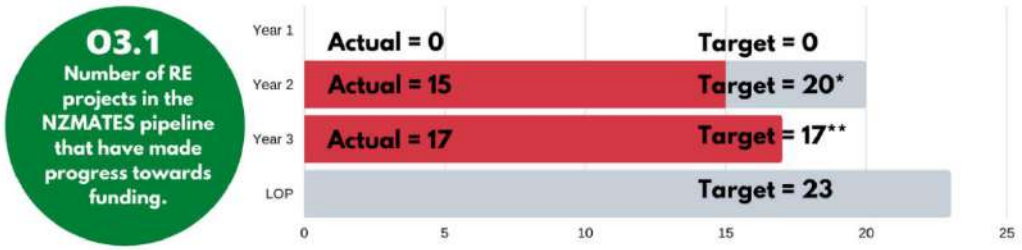
Under the Institutional Framework, NZMATES continues to monitor the development of regulation related to the renewable energy and electricity sectors, while continuing to update information socioeconomic and cross-cutting issues. During this reporting period, NZMATES updated policy and regulation information on asset management in Maluku's Provincial Government. This particular focus was to analyse the possibility of transferring assets from regional government to PLN, as an effort to sustain renewable energy installations.

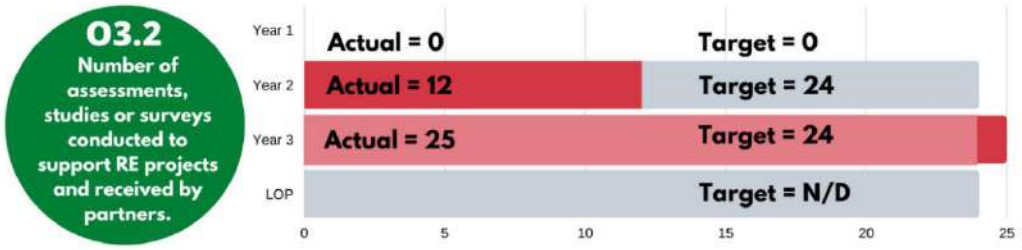
Finally, NZMATES has been monitoring potential sources of funding and working to access those that align well with NZMATES objectives. Within this reporting period, NZMATES submitted two concept notes to the Green Climate Fund, one for 6 PLTS refurbishment sites and another for 11 hybridisation sites. Both concepts were accepted to proceed to the next stage.

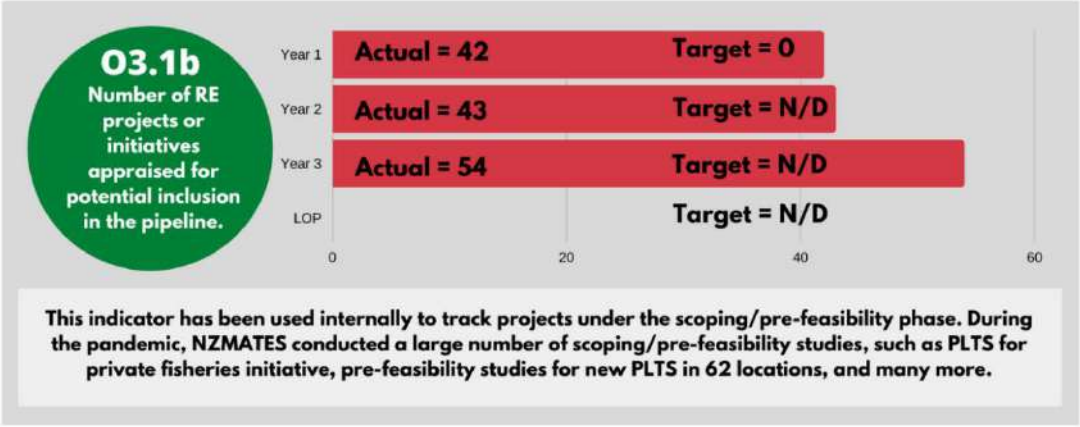
NZMATES also worked with South Pole to present project information to an investor interested in renewable energy projects. While this particular investor chose to focus elsewhere, South Pole continues to present NZMATES projects as part of their potential investment portfolio.

Other fund-seeking activities include supporting UnPatti to develop a funding proposal to Ministry of Higher Education to access innovation funds to support activities related to the new Pūngao Pattimura Mini-grid Training Lab. NZMATES has been collaborating closely with UK RE proramme MENTARI to access PLN budget such as through the use of Sustainability Bonds to fund hybridisation sites in Maluku. Lastly, NZMATES has maintained coordination with ADB related to asset transfer and refurbishment with grant funding for PLTS in Watmasa and Batu Goyang.

Output 3: Off-grid RE projects progress smoothly through the project pipeline







*) The Year 2 target for this indicator was incorrectly reported in the 2nd Annual Report as 17. The correct target was 20 projects.
**) The Year 3 target for this indicator was originally 24, but was adjusted in the 6th FOP to 17 due to COVID travel restrictions.

1.4 Output 3: RE projects progress smoothly through the project pipeline

No.	Indicator	Year 1	Year 2	Year 3	LOP target
O3.1	Number of RE projects in the NZMATES pipeline that have made progress towards funding.	0	15	**17**	23
O3.1b[3]	Number of RE projects or initiatives appraised for potential inclusion in the pipeline	42	43	**54**	ND
O3.2	Number of project assessments, studies or surveys conducted to support RE project progress through the pipeline and received by partners.	0	12	**25**	NA

This year there was a change in the type of work carried out for the NZMATES pipeline compared to previous years. Given that no field visits could take place, pipeline support focused instead on desk studies – including pre-feasibility studies for a large number of potential solar projects – and support in seeking funding.

1.4.1 Appraisal

NZMATES prepared three pre-feasibility studies for PLN on potential hybrid PLTS and new off-grid PLTS sites (according to PLN yearly planning), identifying the most promising solutions for each site and prioritising locations in terms of technical and economic feasibility. Hybrid sites were defined by PLN MMU according to their 2020 and 2021 planning (which has been delayed due to Covid-19 Pandemic). The proposed locations by PLN MMU are comprised of sites with existing and running diesel gensets and sites where new gensets have been approved and have the budget approved/available, have already been procured, or are on their way. The new sites considered are PLN MMU's preliminary plan of locations to be electrified with independent grids.

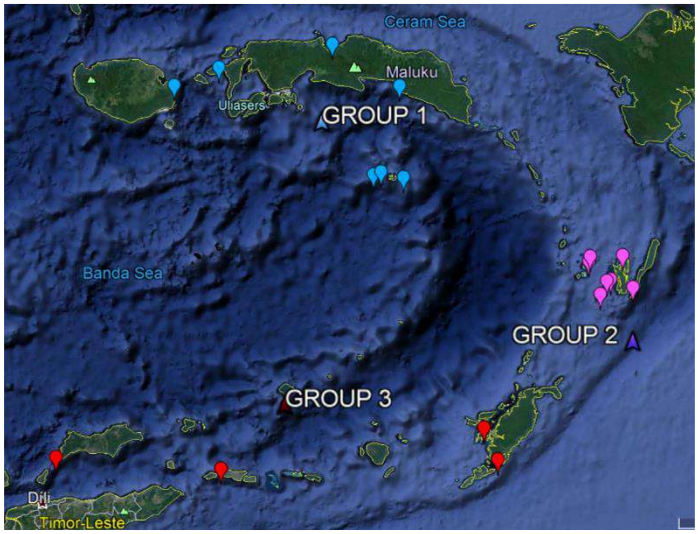


Figure 8: Map showing grouping of 18 hybrid locations assessed

The three pre-feasibility studies each covered two groups of sites, as follows:

1. Hybridisation with solar in 18 diesel sites
2. Hybridisation with solar in 42 diesel sites

[3] New indicator introduced in the last year. LOP is not defined (ND) yet.

3. New off-grid PLTS in 62[4] potential sites (8 from PLN's 2020 plan and 54 from 2021 plan – two initiatives combined in one report)

These reports have all been submitted to PLN and will feed into PLN's planning for the coming years. It is likely that some of these sites may be included in PLN's dedieselisasi programme and/or funded through ADB's results-based loan or PLN's Sustainability Bonds programme.

Other appraisal activities included due diligence on EBTKE's 2020 solar rooftop programme, resulting in recommendations and a workplan for NZMATES to support Dinas ESDM in supervision of the installations and in developing O&M protocols and capacities to improve the sustainability of the systems in each of the buildings. A key necessary step required from the different government entities is their commitment to formally define a technician and ensure there is a guaranteed role for these activities to be conducted. Before proceeding with additional rooftop installation, NZMATES has recommended to EBTKE and Dinas ESDM to make sure to have the commitment of the Dinas or government entity in upkeeping the O&M activities and proper role defined accordingly.

Due diligence was also conducted on an IPP proposal for a solar installation in Ambon, and recommendations have been provided to PLN. Given several proposals on the table, NZMATES and PLN MMU are working together on a feasibility study that supports the need/potential for renewable energy IPP projects in Maluku to be included in PLN's RUPTL.

Finally, NZMATES conducted scoping work for EBTKE on possible applications for solar PV to support the fishing industry in Maluku. This led to three different fisheries sector initiatives – one aimed at local government-owned cold storage facilities, one for community-owned facilities and one aimed at private sector cold storage companies. The community-owned initiative is currently on-hold due sustainability concerns. While the government-owned cold storage initiative has unfortunately been paused due to EBTKE reallocating budget elsewhere, NZMATES has progressed with the private sector initiative, and has identified and gathered data from two potential facilities with an interest in a co-financing arrangement for a solar installation.

Figure 9: EBTKE Solar PV Rooftop Installations

NZMATES continues to scope new project opportunities including rooftop installations for government facilities and the tourism sector. The Figure below summarises the progress of the 11 new projects through the NZMATES pipeline.

[4] 29 locations were eliminated due to proximity to other sources of electricity, so the final report included only the 33 locations with good potential.

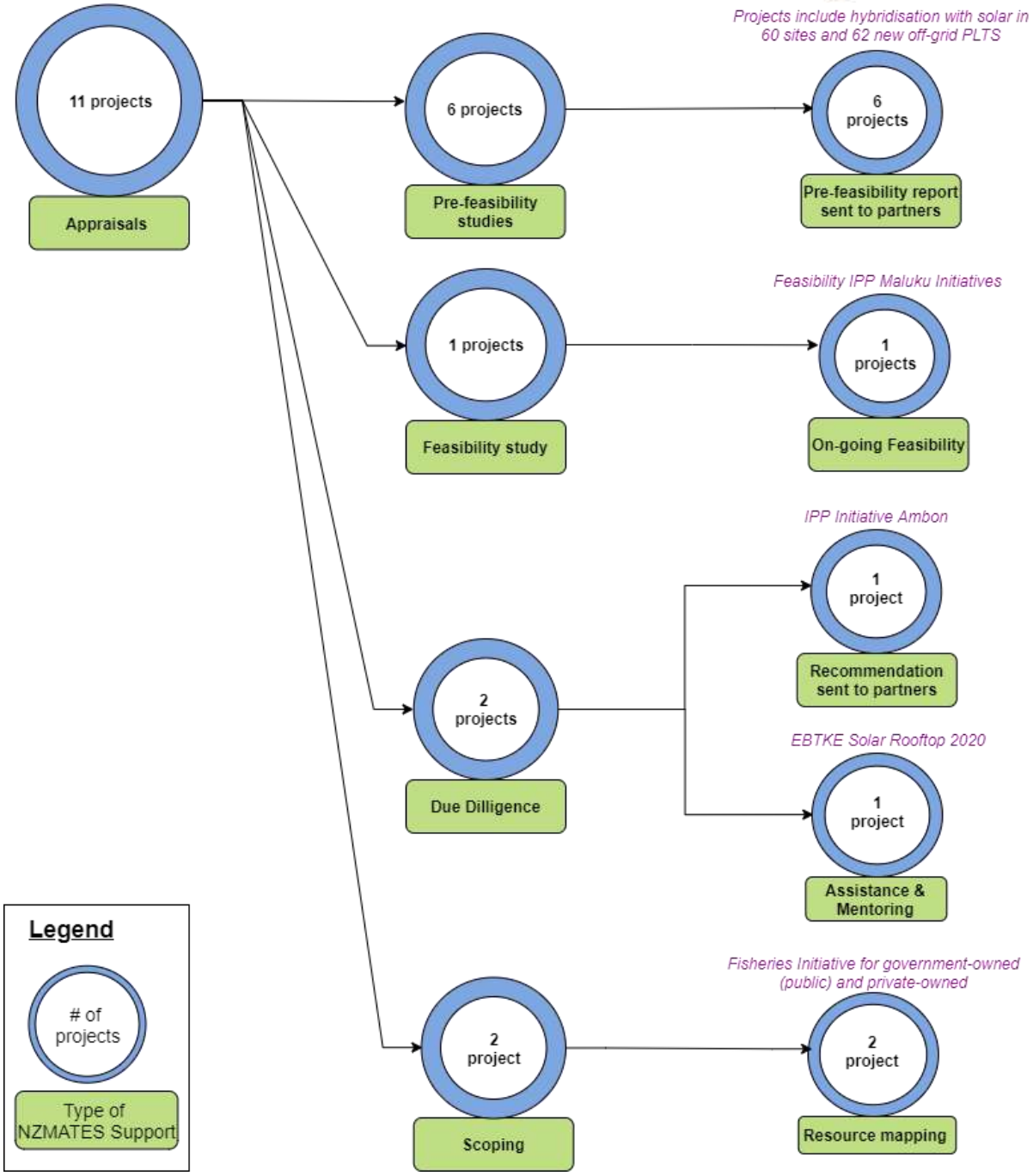


Figure 10: Summary of new projects appraised in Year 3

1.4.2 Other technical assistance

For the two projects in the pipeline that have secured funding and are ready for implementation – Pulau Tiga refurbishment and UnPatti mini-grid lab – progress was slowed awaiting improvement in the pandemic situation. For the Mini-grid lab, the tender process has been completed, supplier selected and materials for construction have arrived in Ambon. The contractor is expected to begin construction in early FOP 7, with strict covid-19 protocols in place.

The Pulau Tiga tender process was meant to happen at the early stages of FOP 6. Nevertheless, the tendering has seen delays due to the need to re-sign the Project Agreement with PLN for this initiative,

risks of site visits, and personnel changes in PLN. Orange and red alerts continue to persist in Maluku, hence NZMATES has decided to proceed with the tendering, and having only additional imagery, videos, and extra Q&A sessions with bidders and have no site visit at all.

NZMATES also provided implementation and sustainability support to the 2020 EBTKE rooftop programme in Ambon. EBTKE installed rooftop solar on 6 government buildings in Ambon, including the offices of Dinas ESDM Maluku. NZMATES prepared guidelines on operation and maintenance (O&M) of these systems for Dinas ESDM and other agencies and has conducted online mentoring sessions to help prepare the provincial agencies to look after these systems on an ongoing basis.

NZMATES has also supported PLN with its planning to reach the target of 23% renewable energy by 2025. NZMATES worked with PLN MMU staff to put together a list of viable renewable energy projects, based on PLN's existing plans, NZMATES' pipeline and other studies, and compiled technical and economic data, to show that it is feasible for PLN MMU to reach the renewable energy mix target within the specified timeframe.

Figure 11: Arrival of lithium-ion battery for UnPatti mini-grid lab

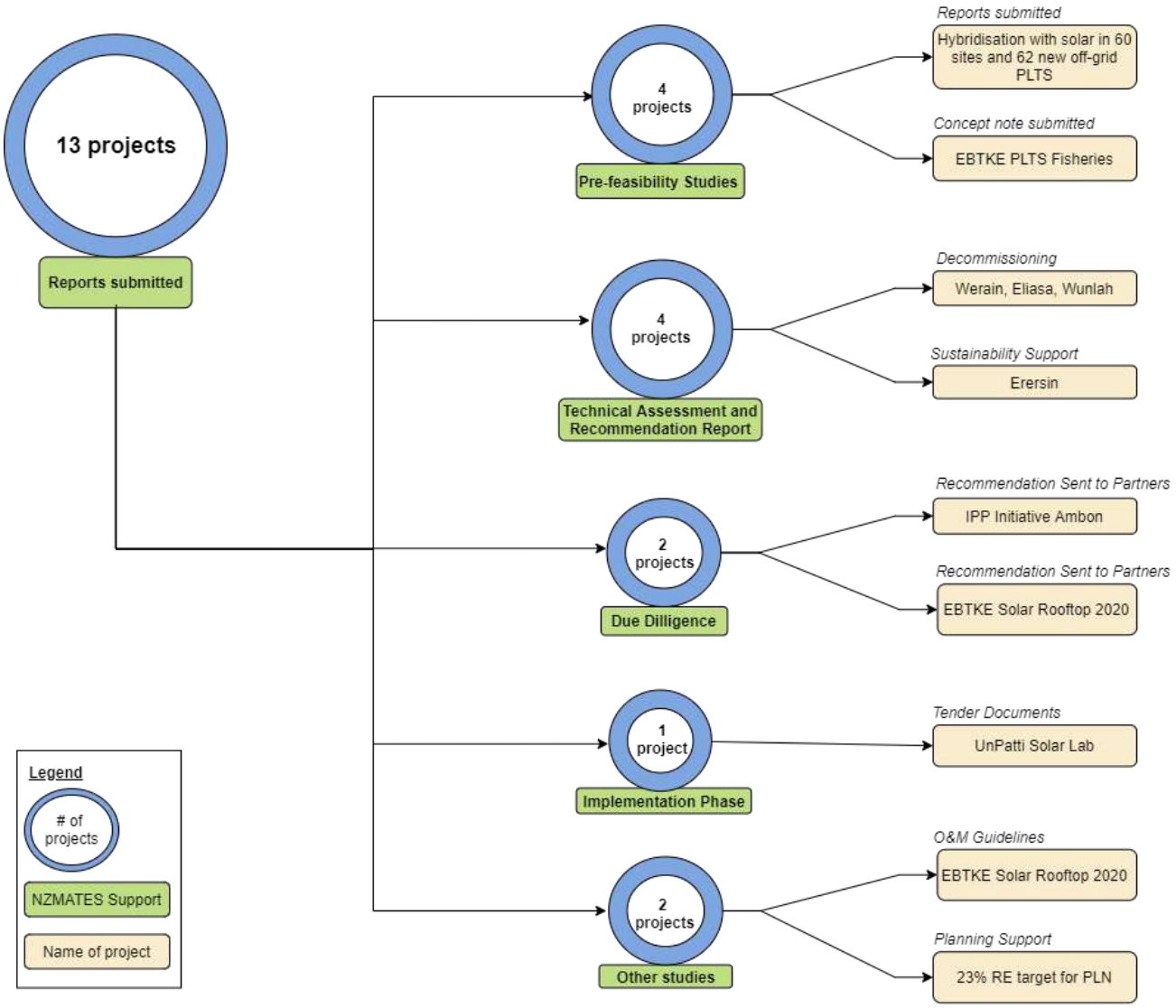


Figure 12: Summary of reporting progress in Year 3

Given that PLN's budget for new RE projects was suspended for 2020 due to the pandemic, NZMATES started working actively on alternative ways to finance refurbishment, hybrid and new PLTS projects for PLN. NZMATES submitted two proposals to the Green Climate Fund, one covering 6 cherry-picked PLTS refurbishment sites, and another covering 11 hybridization sites – approval of both was given on April 12th.

NZMATES also submitted various possible projects to South Pole for consideration by their climate investors. While these proposals have not been funded as yet, South Pole continues to include NZMATES projects in their portfolio of projects presented to potential investors.

NZMATES has also engaged closely with the new MENTARI programme launched by the United Kingdom's Foreign Commonwealth Office (FCO), which focuses on renewable energy support throughout Indonesia. This programme has a strand of activities focused on fund-matching, and their team is working with PLN Renewables in Jakarta to identify sites for funding under their *dedieselisasi* (diesel replacement) programme, which covers Sumatera, Kalimantan, Sulawesi, Nusa Tengara, Maluku, Maluku Utara and Papua. NZMATES has been able to collaborate with MENTARI to propose a large number of sites in Maluku as part of the first group from this initiative to receive funding for a packaged tender and constructions process. NZMATES continues to work with MENTARI to align technical assumptions and modelling inputs, and prioritise sites together with PLN.

The figure below summarises the funding opportunities for NZMATES in Year 3.

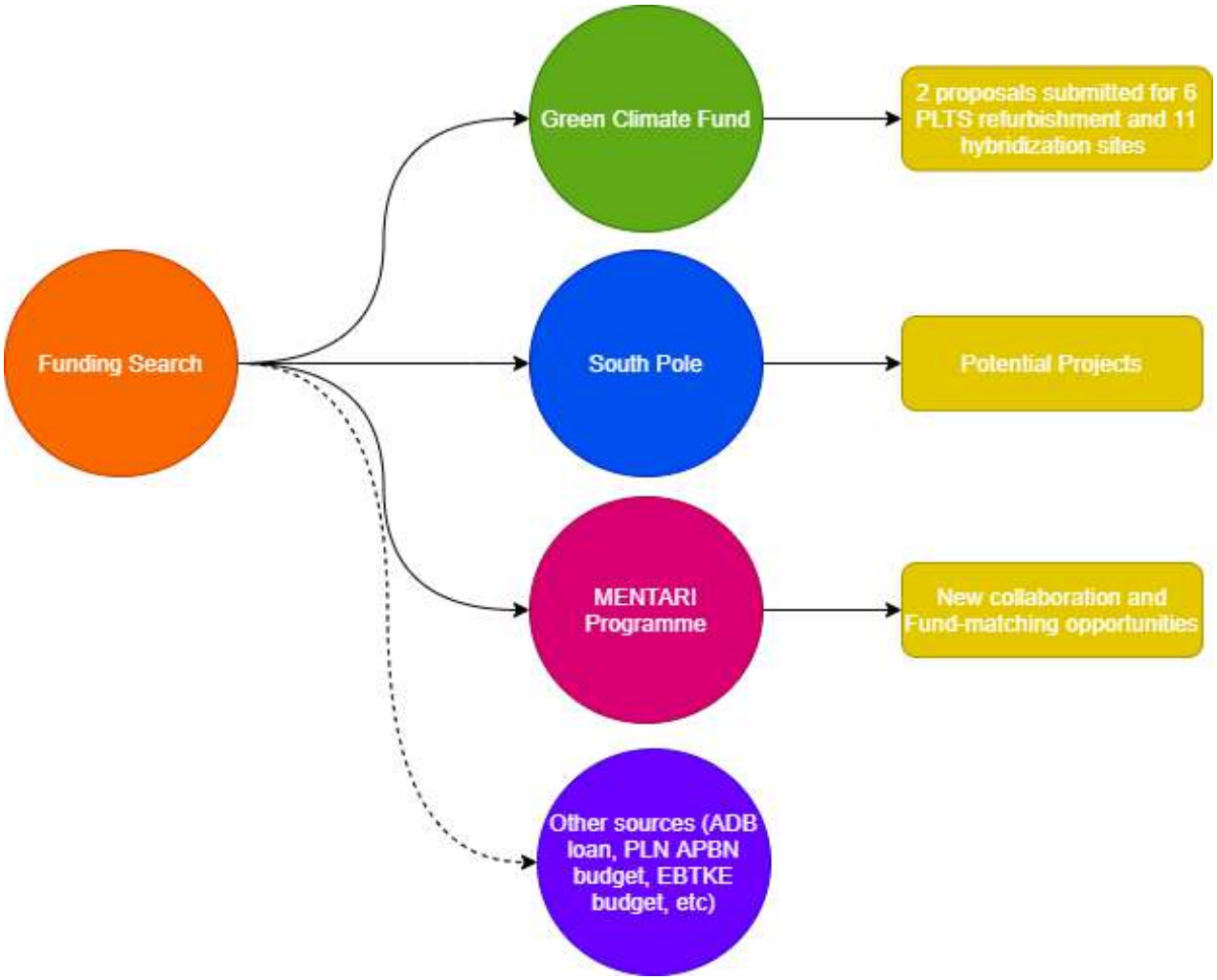
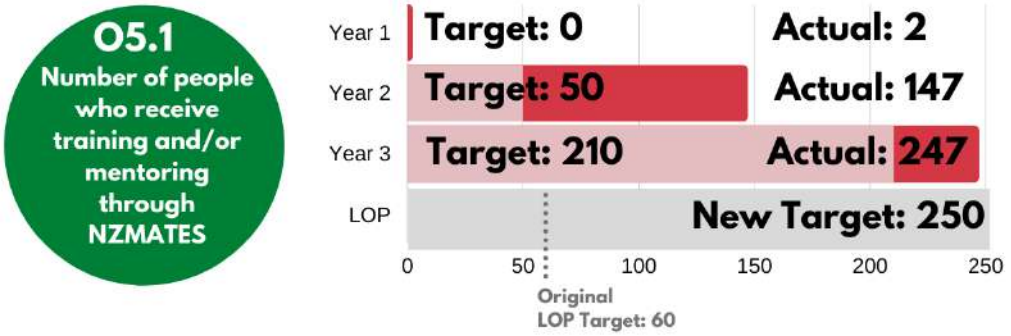
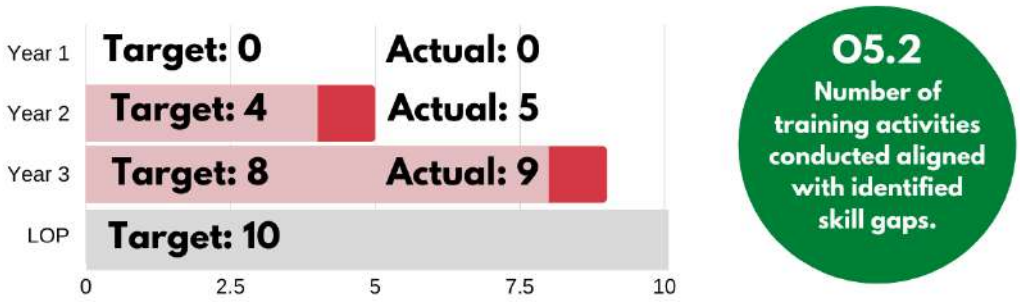
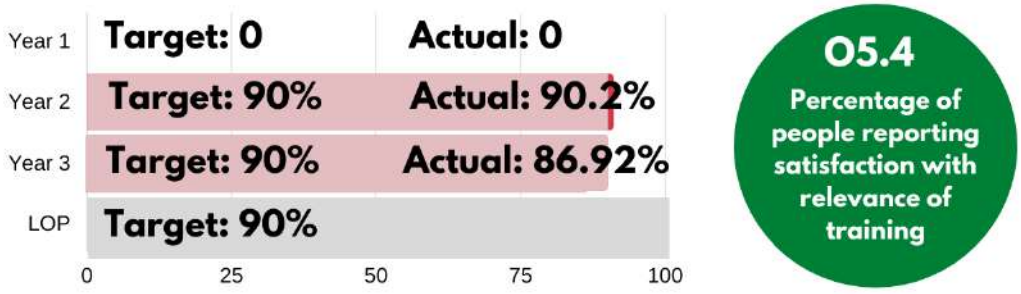


Figure 13: Summary of funding opportunities in Year 3

Output 5: Training and mentoring provided according to RE skills gaps identified







1.5 Output 4: Training and mentoring provided according to RE skills gaps identified

No.	Indicator	Year 1	Year 2	Year 3	LOP target
O4.1	Number of people who receive training and/or mentoring through NZMATES	2	147 (20 women)	**247 (38 women)**	60
O4.2	Number of training activities conducted aligned with identified skill gaps.	0	5	**9**	10
O4.3	Number of training arrangements established between Indonesian and NZ universities or other educational institutions	0	0	**0**	1
O4.4	Percentage (%) of people reporting satisfaction with the relevance of training.	-	90.2%	**86.92%**	90%

NZMATES' third year was a challenging one for the training and mentoring programme, as no face-to-face events or meetings were possible throughout the whole period. However, NZMATES was able to pivot to online training to continue delivering most of the types of capacity building assistance, with the exception of hands-on workshops.

NZMATES delivered a series of online trainings to PLN in technical design, economic analysis and transmission and distribution for solar PV, to a total of 64 participants from PLN MMU – unfortunately, despite requests for 20% female participation, only 6% of the final participants were women. On a positive note, participants included staff from offices outside of Ambon, which was a great opportunity to extend capacity-building activities to Maluku staff who are not usually able to attend NZMATES in-person training.

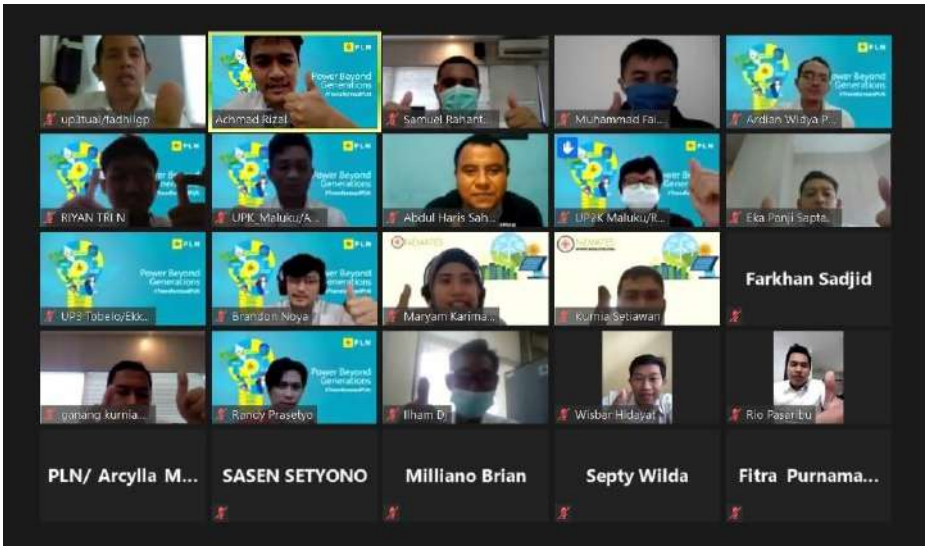


Figure 14: Online training to PLN

The evaluations from these training sessions were used to inform PLN in establishing three specialised RE teams, and NZMATES now does regular mentoring sessions with each team to help them to work through due diligence of IPP proposals and pre-feasibility studies for new renewable energy installations. While these mentoring sessions have slowed in recent months due to limited availability on the part of PLN staff, progress continued.

For Dinas ESDM, mentoring sessions initially focused on building basic knowledge on solar PV. More recent sessions have looked at the EBTKE 2020 solar rooftop programme, talking Dinas ESDM staff through the NZMATES evaluation of the rooftop design, and the guidelines for O&M of the installed systems. 6 Dinas ESDM staff attended the mentoring sessions, including one woman (17%).

NZMATES has also provided training for Dinas ESDM and other provincial stakeholders in use of the Low Emissions Analysis Platform (LEAP) energy planning software, as part of the RUED consultancy. An initial virtual training was held for Dinas ESDM and NZMATES staff only, and a second session was open also to staff from other key provincial stakeholders, including PLN MMU, Maluku Development Planning Board, Maluku Statistics Board, Maluku One-Stop Integrated Services Agency, Maluku Industry and Trade Service, UnPatti and Politeknik Negeri Ambon (PNA). 10 Dinas ESDM staff attended the first training, including 3 women (30%). The second training brought together 18 participants, including 6 women (33%).

After the postponement of the introductory solar training planned for March last year with PNA, the NZMATES team adapted the material and delivered the theoretical component online to students in October and November 2020. Over 40 students and lecturers attended the training, of which 8 were women (20%).

Coordination with educational partners continued to be challenging this year, as educational institutions themselves were forced to adapt to Covid-19 restrictions and extended periods of restrictions on face-to-face activities. At PNA, staff changes meant that the working group established to coordinate with NZMATES was significantly reduced and most activities relied on a single lecturer who continued to be actively involved. As a response to these challenges, monthly online coordination meetings were established in late 2020, and in early 2021, a new working group was formally established. NZMATES is now working with this new group to prioritise activities for the coming year, which will include a series of guest lectures from NZMATES covering industry-relevant topics related to renewable energy.

Coordination with Pattimura University faced similar challenges as faculty were themselves under pressure adapting to the conditions of the pandemic. The installation of the solar lab however was able to progress, albeit more slowly than originally planned. Regular online coordination meetings have also helped to keep momentum going since the latter part of 2020.

As a result of these challenges, progress on the planned curriculum assessment and training of trainers consultancy has continued to be slower than originally planned. However, the discretionary budget proposal has been drafted in collaboration with both UnPatti and PNA, and is undergoing internal review before submission to MFAT.

Finally, NZMATES engagement with Vocational Highschool SMK 4 was disrupted when the pandemic forced the school to postpone its plans to introduce a new Renewable Energy specialisation for students. However, in recent months the school has indicated its intention to open the new programme in the second half of 2021, if the pandemic situation allows classes to return to normal. A draft MoU has been agreed between NZMATES and SMK 4, and is expected to be signed in the coming weeks.

Overall, in its third year NZMATES has moved closer to its target of 20% women's participation in training activities, with an overall 14.8% of women participants.

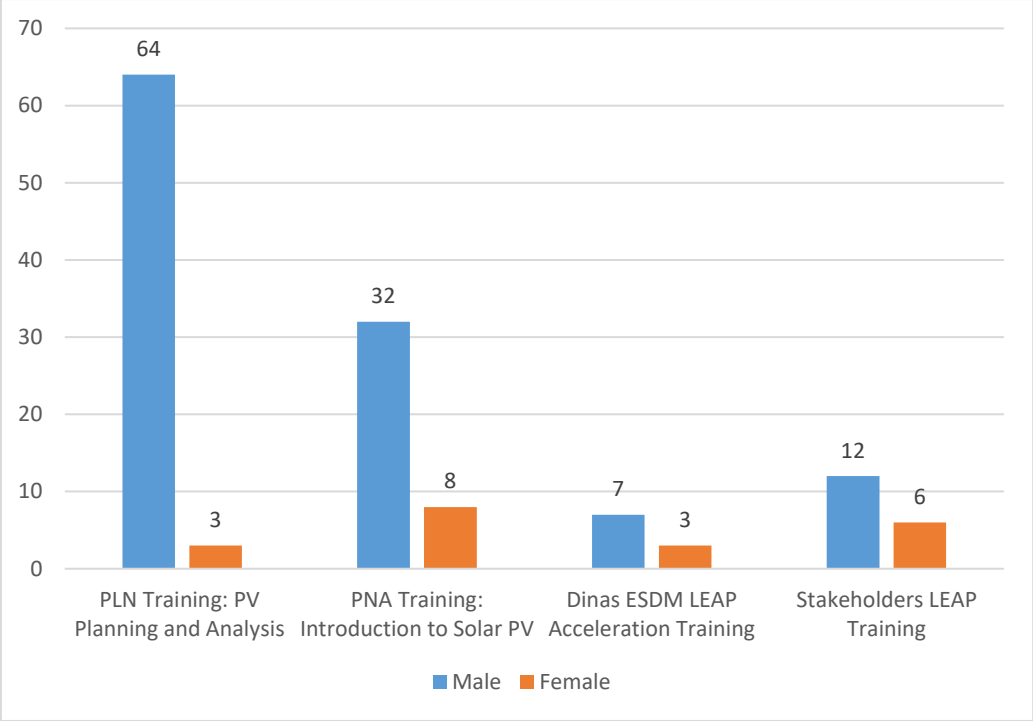


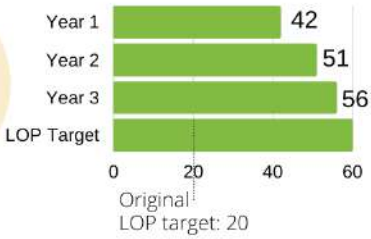
Figure 15: Number and gender of NZMATES training participants by event

Another point to note is that the percentage of participants reporting satisfaction with the relevance of training was lower during this year than previous years, falling short of the target of 90% at 86.92%. An analysis of training feedback shows that this is likely due to the online delivery format.

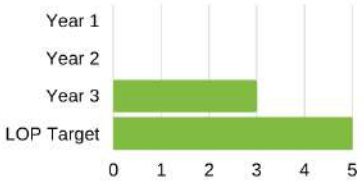
SHORT-TERM OUTCOMES

ST1. NZMATES recognised as the go-to office for RE support that operates effectively within partner plans and objectives

ST1.1 Number of project assistance requests from private sector, government or community

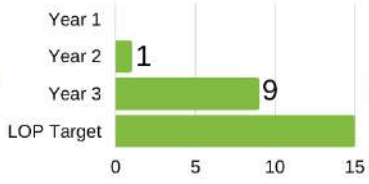


ST1.2 Number of functional RE platforms/mechanisms supported by NZMATES



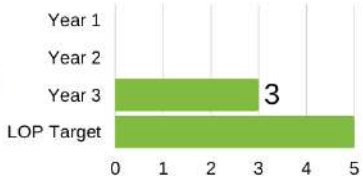
ST2.1 Off-grid projects are funding-ready

ST2.1 Number of off-grid projects meeting funding-ready criteria.



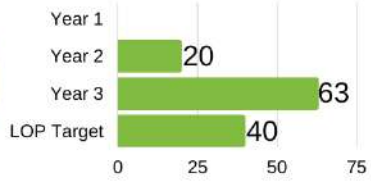
ST2.2 Grid-connected projects meeting funding-ready criteria

ST2.2 Number of grid-connected projects meeting funding-ready criteria

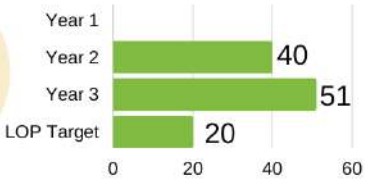


ST4. Skills and knowledge of key government, education and industry partners increases.

ST4.1 Number of PLN and ESDM staff with increased skills and knowledge



ST4.2 Number of individuals from other organisations with increased RE skills and knowledge



1.6 Progress towards short-term outcomes

As the third year of the NZMATES programme comes to an end, despite the challenges of the covid-19 pandemic, we have managed to continue to make progress towards our short-term outcomes. These are described below.

1.6.1 Short-term outcome 1: Platforms for RE initiatives established by or between local government actors, education institutions and industry players in partnership with NZ and other donors[5]

No.	Indicator	Year 1	Year 2	Year 3	LOP target
ST1.1	Number of project assistance requests from private sector, government or community	42	51	**56**	20
ST1.2	Number of functional RE platforms/mechanisms supported by NZMATES	-	-	**3**	5

NZMATES received 5 new project requests in the past year. Given the unusual circumstances of the covid-19 pandemic, both PLN and EBTKE had unexpected budget changes during the year, and this had an impact on project requests. This means that there are some project requests received from partners which were subsequently paused or de-prioritised, so not every request received will be appraised or progressed through the pipeline at this stage.

The new requests were:

1. Ambon solar rooftop programme 2020
2. Ambon solar rooftop programme 2021 (on hold due to EBTKE budget reallocation)
3. PLTS for government-owned fisheries cold storage facility (on hold due to EBTKE budget reallocation)
4. PLTS for private sector-owned fisheries cold storage facility
5. PLTS for community-owned fisheries facility (on hold due to EBTKE budget reallocation)

As part of the results framework review that was finalised during the past year, NZMATES added a new indicator to track functional renewable energy platforms or mechanisms that are supported by NZMATES, with a target of 5 such platforms or mechanisms to be established by the end of the NZMATES programme. So far NZMATES has identified three such mechanisms currently supported under the programme, these are:

- NZMATES Technical Committee, operating at the provincial level, including PLN MMU, Dinas ESDM and the NZMATES PMO, with Bappeda Maluku as secretariat. This platform provides a forum for different stakeholders involved in the electrification and renewable energy sector to coordinate regarding work plans and progress. Main objective is to solidify this into a Maluku Energy Stakeholder Forum that carries on with coordination and collaboration in the energy sector.
- NZMATES Programme Steering Group, operating at the national level and including PLN Regional Maluku Papua and EBTKE. As NZMATES provincial partners report progress and workplans with NZMATES through to the PSG, it also provides a useful coordination platform between the national and provincial levels.

[5] Short term outcome 1 updated during results framework review.

- PLN MMU Renewable Energy teams, established as an outcome of training provided by NZMATES.

1.6.2 Short-term outcome 2: RE projects are funding and implementation ready

No.	Indicator	Year 1	Year 2	Year 3	LOP target
ST2.1	Number of off-grid projects meeting funding-ready criteria	0	1	**9**	15
ST2.2	Number of grid-connected projects meeting funding-ready criteria	0	0	**3**	5

Eight new off-grid projects and three grid-connected projects reached funding-ready status during the past year, meaning that all technical and socio-economic data is available in a comprehensive feasibility study report, and there is agreement with PLN on preferred way forward. These projects are:

- Tahalupu off-grid PLTS refurbishment
- Pulau Kur off-grid PLTS refurbishment
- Pulau Panjang off-grid PLTS refurbishment
- Pulau Manawoko off-grid PLTS refurbishment
- Pulau Wetar off-grid PLTS refurbishment
- Watmasa off-grid PLTS refurbishment
- Batu Goyang off-grid PLTS refurbishment
- Lirang off-grid PLTS refurbishment
- Elat grid-connected PLTS refurbishment
- Kisar grid-connected PLTS refurbishment
- UnPatti solar lab

1.6.3 Short-term outcome 3: Skills and knowledge of key government, education and industry partners increases.

No.	Indicator	Year 1	Year 2	Year 3	LOP target
ST3.1	Number of PLN and ESDM staff with increased skills and knowledge after participating in training activities through NZMATES.	0	20	**63**	40
ST3.2	Number of individuals from other organisations (companies, communities, educational institutions) with increased RE skills and knowledge after participating in training activities through NZMATES.	0	40	**51**	20

During the third year, NZMATES held five training activities with partners from key partners, education institutions, and other stakeholders. Indicators on this short-term outcome intend to identify any improved skills and knowledge from individuals who joined the trainings, as measured by comparing pre- and post-test scores. Gathering this data can be challenging, particularly for online training, as not all participants complete the pre- and/or post-test because they join late or have to leave early.

Nevertheless, NZMATES has already exceeded its LOP target for both indicators. The number of PLN and ESDM staff who increased their skills and knowledge reached 63 in total, which is 158% of the LOP

Target (40). This is due to the wider outreach of online training provided to PLN, which was joined by staff from throughout Maluku Province and even a few from Maluku Utara. Meanwhile, the number of training participants with improved skills and knowledge from other organisations is 51. Affiliations of the training participants from other organizations are PNA, Bappeda, and Maluku Bureau of Statistics (Badan Pusat Statistics/BPS).

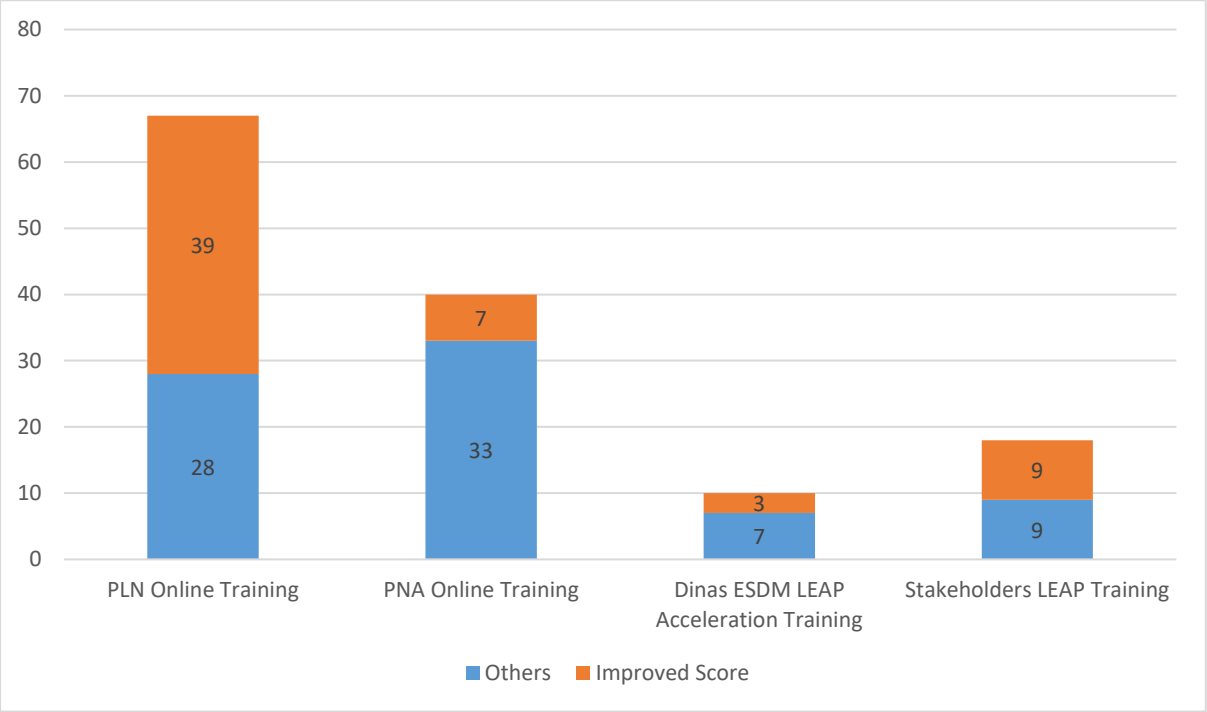


Figure 16: Proportion of training participants who have improved skills/knowledge after NZMATES trainings in Year 3

2 REFLECTION MEETING WITH PARTNERS

This year, NZMATES conducted a reflection process with partners to gather evaluation and feedback. This process was kicked off on 18 February 2021 by sending out a questionnaire to key persons from each partner institution. Out of 24 people targeted, 13 (55%) filled out the questionnaire and 11 joined the discussion sessions, which were held separately for each institution. Details of target participants are presented in Table 1 below.

Table 1: Participants Detail for Reflection Meeting with Partners

Institutions	Target Participants	Number completing questionnaire	Number attending discussion sessions
PT PLN MMU	5	4	3
Dinas ESDM Propinsi Maluku	3	2	2
Badan Perencanaan Pembangunan Daerah (Bappeda)	5	2	3
Universitas Pattimura	4	2	1
Politeknik Negeri Ambon	4	2	1
EBTKE ESDM	3	1	1
TOTAL	24	13	11

About 92% of the participants agree that NZMATES activities have been supporting the sustainability of renewable energy in Maluku; 69% rated activities as "very good", and 23% as "good". Only 8% of the participants said the activities are only "sufficient" to support sustainability, and none rated them "bad" or "very bad".

A majority of participants agreed that NZMATES activities contribute to creating enabling environment and increasing institutional capacity for renewable energy implementation in Maluku. Partners agreed that project assistance, regular mentoring, training, and providing guideline documents have great impact. No respondents rated these activities as anything below "sufficient". Funding search is the only activity rated by one respondent as making a "small contribution" towards increasing the capacities of partner institutions.

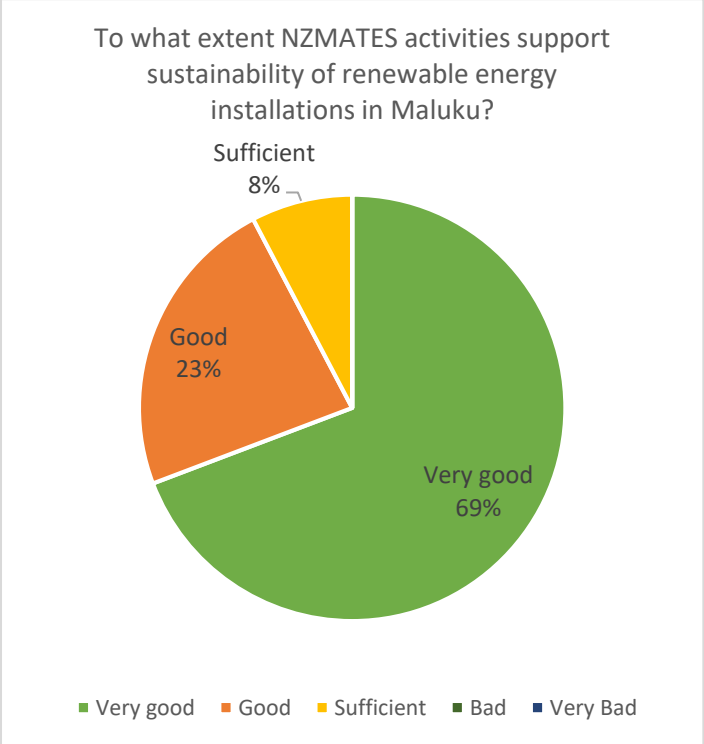


Figure 17: Result of Reflection Meeting with Partners

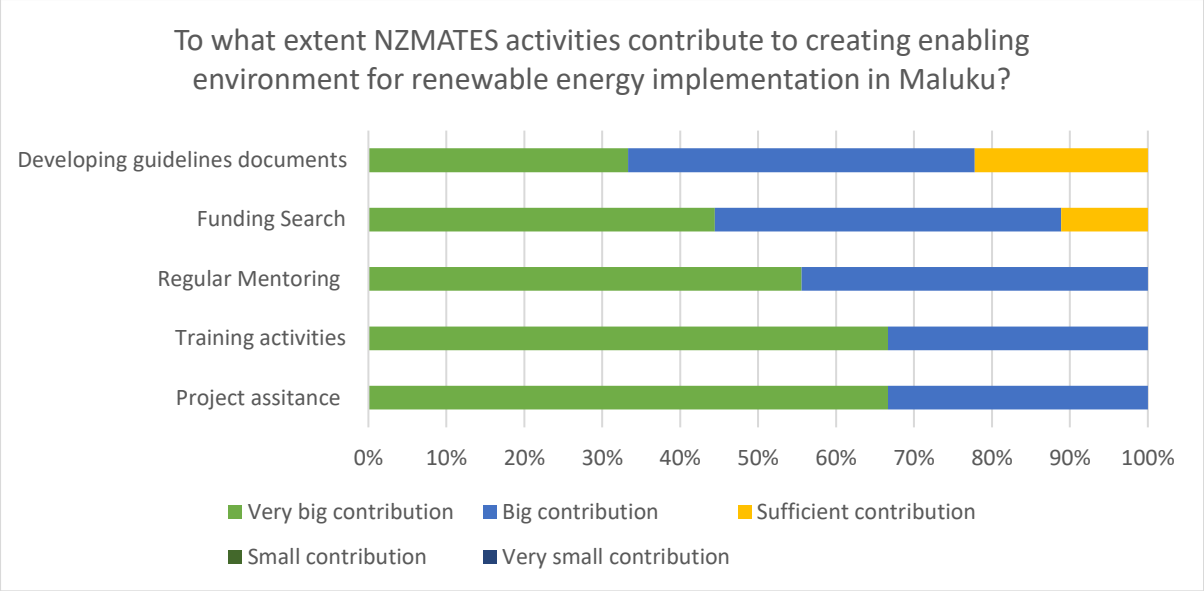


Figure 18: Reflection with Partners Result regarding NZMATES contribution (1)

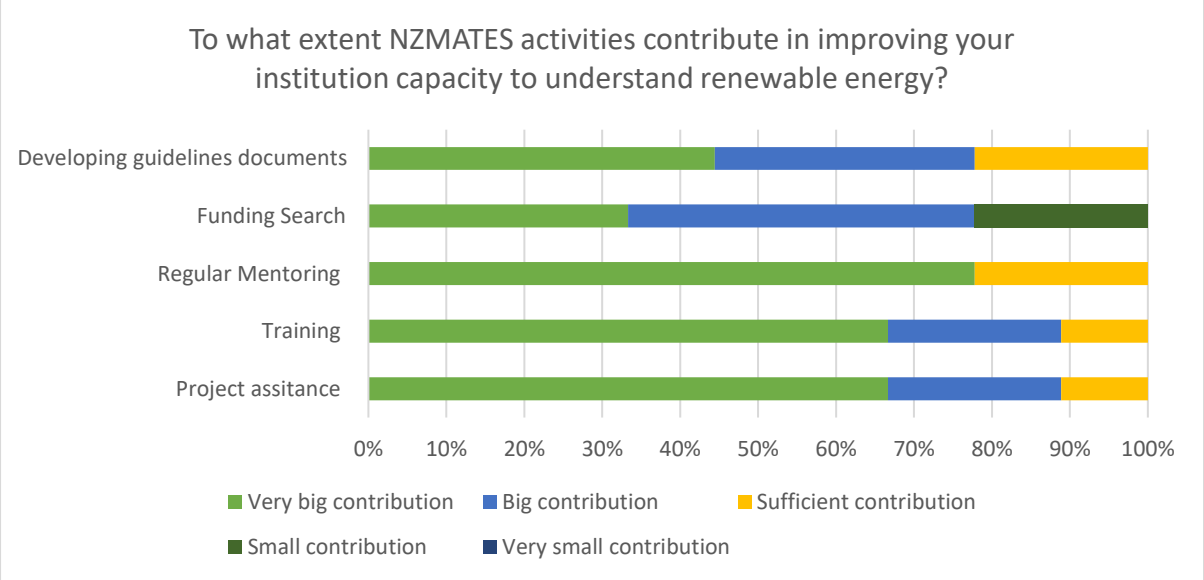


Figure 19: Reflection with Partners Result regarding NZMATES contribution (2)

We asked all participants whether any changes had occurred in their institutions due to NZMATES assistance. In general, two stories of change that were mentioned repeatedly by partners are improved collaboration with other stakeholders and improved capacity building. In PLN, employees show improved understanding and skills on how to develop feasibility studies and renewable-based electricity planning. NZMATES technical assessment reports were also used as a basis for PLN MMU to propose refurbishment budget for broken assets. In addition, improved skills for staff was also mentioned as one of the changes in UnPatti, as well as more students choosing solar PV as their bachelor thesis topic.

NZMATES activities are also seen as connecting stakeholders in energy sector, such as Dinas ESDM with PLN, EBTKE with the Maluku Provincial Government, UnPatti with Dinas ESDM and PLN, and so on. Given that NZMATES governance meetings, such as the TC and PSG meetings, provide opportunities for multi-stakeholder discussions, we explored with partners the possibility of continuing these platforms after the NZMATES Programme ends. EBTKE mentioned that, at the national level, there is the Solusi Listrik Desa (SOLID) Forum established by GIZ which serves a similar function. However, partners in Bappeda and Dinas ESDM in Maluku disclosed that establishing multi-stakeholder platform

for energy planning should have regulation foundation. NZMATES is keen to work in solidifying this energy stakeholder forum in Maluku. There is also a challenge as government employees changing over time. The discussion session also explored how to improve NZMATES delivery and coordination with partners, especially within the pandemic setting.

The partner reflection process will be carried out annually for the remaining years of the NZMATES programme.

Figure 20: Reflection meeting with Bappeda in February 2021

3 CROSS-CUTTING ISSUES

3.1 Human rights

NZMATES continued to focus on promoting human rights by grounding all activities in a strong understanding of social, cultural and economic context, including any underlying structures of power or vulnerability, to avoid contributing to human rights violations.

In its third year, NZMATES enhanced protection of human rights through the implementation of a Community Accountability Reporting Mechanism (CARM). Within CARM, anyone can submit feedback, complaints, or report suspicious behaviour of any team member, partner or consultant. Within CARM, each submission will be responded to depending on its level of urgency, and an escalation process is in place for feedback relating to serious allegations of wrongdoing to ensure they are dealt with appropriately. Informant data is confidential and will be shared only to team members who are responsible for responding to the report. So far, all feedback related to NZMATES activities have been responded to and closed. The CARM mechanism adopted by NZMATES is part of an agency-wide roll-out at Mercy Corps Global as a part of their efforts to strengthen safeguarding systems.

Figure 21: CARM Flyers in Bahasa Indonesia (left) and Bahasa Ambon (right)

There are several channels available for anyone who wants to submit feedback through CARM, i.e. email, call and text message, face-to-face submission, and front-desk submission during field activities. These channels have been promoted to all NZMATES partners and contractors. The wider community is also informed through social media, and soon, by stickers and flyers in NZMATES' implementation locations. CARM media promotion will be distributed in Bahasa Indonesia and Bahasa Ambon to make local communities familiar with the mechanism.

NZMATES has also aligned with other Mercy Corps efforts to strengthen safeguarding, including adopting Mercy Corps' updated policies on Sexual Exploitation and Abuse, Child Safeguarding, Anti Trafficking, Ethics Compliant and Whistleblower, and Sexual Misconduct. In September 2020, NZMATES members joined a workshop from Mercy Corps Indonesia to raising awareness on safeguarding.

3.2 Gender

NZMATES has moved closer to its target of 20% women participants in training activities. Overall, 38 women have participated in NZMATES training activities, 14 of whom were new in the past year. This increased the share of women in NZMATES Direct participants increase significantly from 9% in Year 2 to almost 20% in Year 3, bringing up the average in the three years closer to 15% and on track.

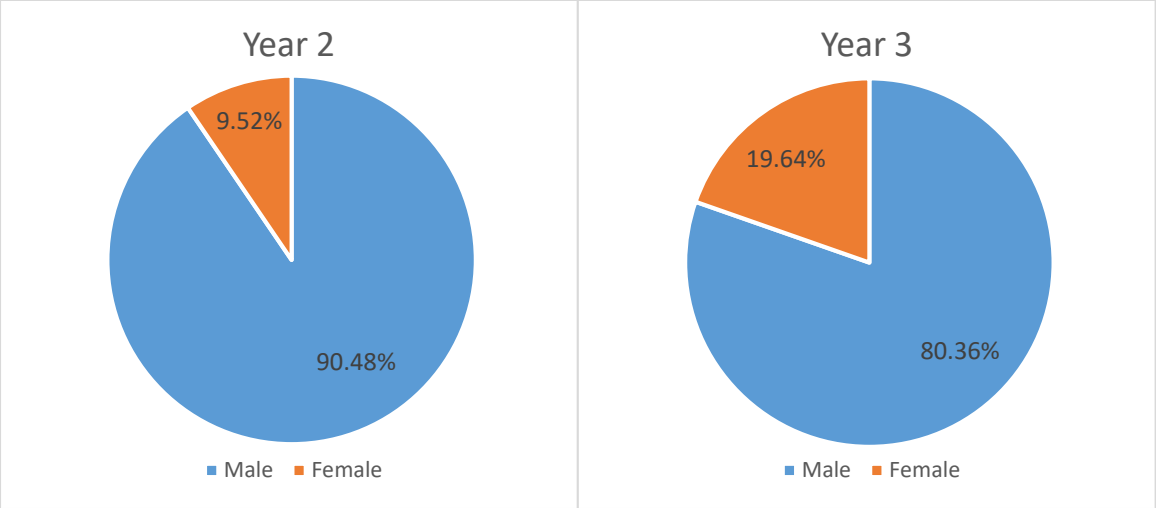


Figure 22: NZMATES Training Participants by Gender

53% of women participants are affiliated with Politeknik Negeri Ambon, which one of them is a lecturer. Women participants from PLN and Dinas ESDM are 16% and 17%, respectively. The rest of women participants are affiliated with Agency for Regional Planning and Development (Badan Perencanaan dan Pembangunan Daerah/Bappeda), and Regional Agency for Industry and Trade (Dinas Perindustrian dan Perdagangan).

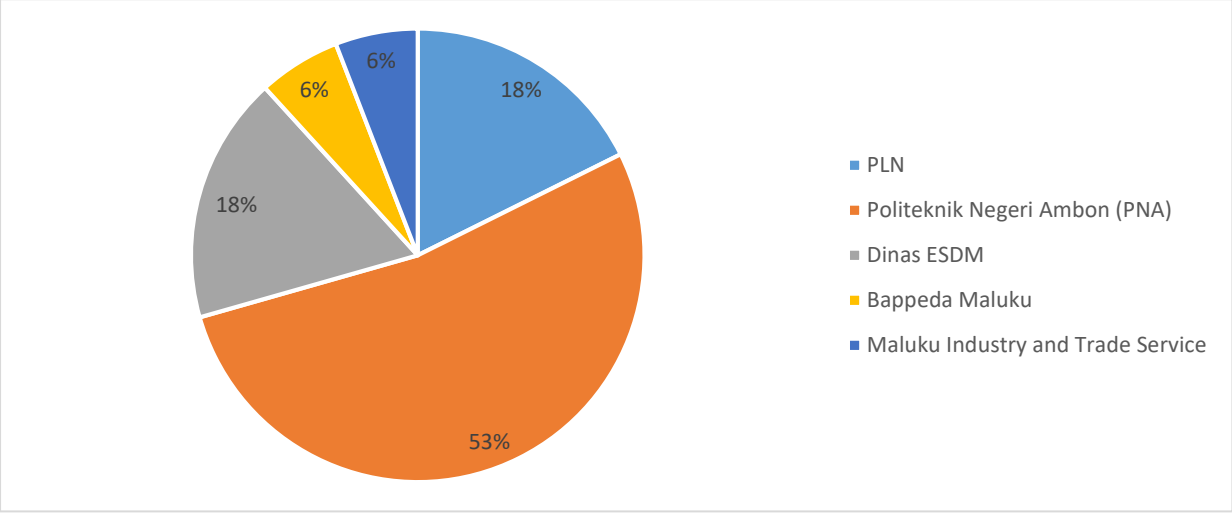


Figure 23: Affiliation of Women Participants in Year 3

Internally in the NZMATES team of 13 people, 53% are women, including the Deputy Programme Manager and one of the three Renewable Energy Technical Specialists.

NZMATES has been supporting a female engineering student in her final year at Pattimura University with her final project, which is looking at earthing and lightning protection at the Pulau Tiga solar installation. It is hoped that she will be able to join NZMATES in a paid internship once she completes her studies later in 2021.

3.3 Environment and Resilience

Mitigating climate change and environmental impact is at the heart of the NZMATES Programme, which aims to support the Government of Indonesia's targets:

- Increasing renewable energy to 23% of the total energy supply by 2025 and 31% by 2050 (NEP, 2014);
- Reducing unconditionally 26% of its greenhouse gases against the business as usual scenario by the year 2020 (UNFCCC, 2015) and conditional reduction of up to 41% reduction by 2030 (COP21, 2015).

As we learned many installations in Maluku failed prematurely, so NZMATES has continued to focus on sustainability of renewable energy, starting from planning phase up to decommissioning and waste management. In its third year, NZMATES produced two guideline documents, i.e. operation and maintenance (O&M) for solar rooftop, and waste management guidelines. NZMATES is also working on helping PLN to deploy a cloud-based O&M Platform in several PLN mini-grid locations. These efforts aim to prepare local stakeholders to carry out effective maintenance of renewable energy installations to keep them operational in the long run.

Together with partners, NZMATES has been working to provide reliable access to electricity to improve climate adaptation capacity, especially for communities in small islands and remote areas. Reliable and affordable clean energy will improve public service, education and healthcare systems. This becomes more urgent during the pandemic. Healthcare systems need to have 24-hour electricity to support the vaccine roll-out as part of Indonesia's national recovery plan.

Environmental initiatives outside of NZMATES renewable energy scope have included a "Plastics Ban" for all NZMATES events, office, and other activities. Over the past year this was less intensive as no activities took place. Moreover, for the UnPatti Mini-grid lab tender a specific criteria was defined that aimed at assessing good environmental practices from bidders and promoting an environmental friendly construction site.

4 KEY LESSONS LEARNED

As an adaptive programme, learning and reflection play an important role in NZMATES' planning and management approach. NZMATES has strengthened its reflection and learning processes over the past year, conducting a reflection process with partners as well as internally. This process is intended to allow NZMATES and partners to identify and analyse challenges and successes, to allow NZMATES to adapt activities to better serve the programme's intended outcomes and goal.

The sub-section below provides a brief overview of one of the key areas of learnings over the past year – Covid-19 and the challenges it has posed to all aspects of the NZMATES programme, from operation of the programme team to stakeholder engagement and implementation of activities. Following that, a summary of other lessons learned across the other aspects of the programme is provided.

4.1 Keeping NZMATES moving in the face of Covid-19

For over a year now the NZMATES team has been working remotely due to the coronavirus pandemic. Our team is currently spread over three countries – with five different time zones. Restricted travel limits our response to assistance requests, and all meetings and training activities have moved online. This situation has forced the NZMATES team to learn and adapt to this new way of working.

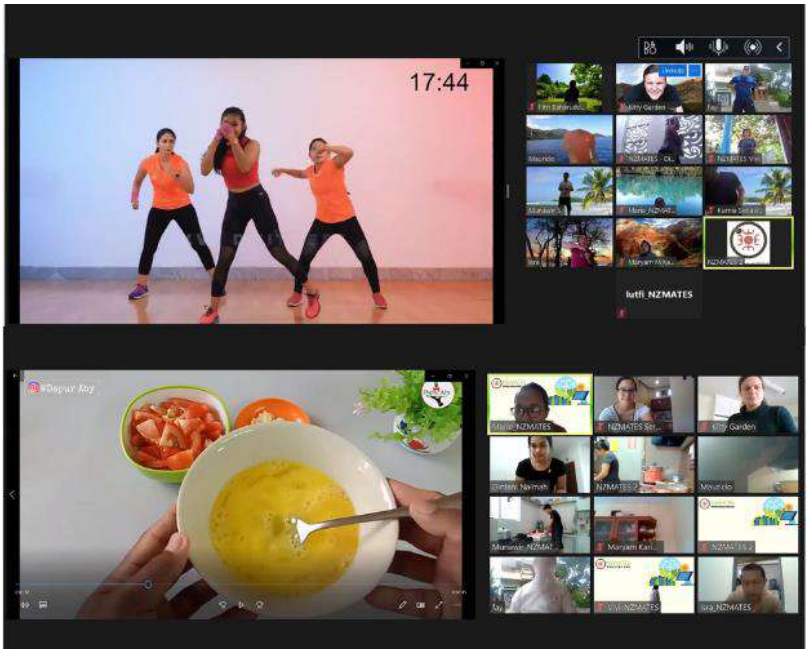


Figure 24: Weekly Team Refreshment Activities

When the team first started to work from home, NZMATES asked each team member to conduct a home office safety audit to identify any hazards or difficulties. Where possible, NZMATES provided support to address these problems – such as a comfortable working desk or extra phone or internet credit. NZMATES also pivoted to use online collaboration platform Slack for day-to-day communication.

In the early days of working from home several team members expressed difficulty in adapting with online platforms, working across different time zones, collaborating with new stakeholders, and slow progress on implementation projects. As schools are closed, parents in our team have had to juggle between working and assisting their children with home schooling. Yet, our team members also acknowledged some benefits, including more opportunities to join webinars, training, or other events as other institutions move to online platforms. By the end of the third year, team members reported better collaboration and coordination as they grew more accustomed with online platforms. To maintain motivation and morale, NZMATES has held social activities, such as a Virtual End of Year Party, and weekly team building and well-being activities, like doing exercise together online.

Taking advantage of remote working, NZMATES also ran a series of internal training sessions where one team member shared about their work in NZMATES or other skills or knowledge. This aims to expand team members' understanding of renewable energy, improve skills, and allow opportunities for the team to connect in a less formal setting. The topics varied from research methods, data

visualisation, community engagement, and of course renewable energy. In FOP 6, NZMATES also encouraged team members to sign up to online training courses to improve their skills or knowledge. From this support, our team members have taken training on renewable energy, energy storage, renewables financing, environmental impact assessments, among others.

Regarding external outreach, while the inability to meet face-to-face has made stakeholder engagement more challenging in many ways, there have also been some unexpected advantages to the use of online platforms, such as the ability to reach a wider range of participants to join training activities. For example, when NZMATES ran a series of training workshops for PLN MMU on software for renewable energy design and planning, participants included not only Ambon-based staff, but also staff based on other islands throughout Maluku, and even some from PLN offices in North Maluku.

However, keeping participants engaged in online training workshops is more of a challenge, as shown by slightly lower satisfaction levels with several training workshops held in the beginning of the pandemic (approximately 80% - 87%, compared to around 90% satisfaction on average in previous years). Pre- and post-test scores also highlighted the challenges of online learning, with the proportion of participants showing an improvement in post-test scores ranging from only 17.5% to 58%. NZMATES responded to this by adapting the format of online workshops. For example, in the last training that was conducted, NZMATES engaged participants by giving case studies, dividing participants into small groups, and assigning several team members as support facilitators, tasked with checking in directly with participants via WhatsApp and giving assistance to those who had difficulties following the training. This strategy raised the satisfaction level of NZMATES' last training to 97.4%.

5 NEXT STEPS

Progress over the fourth year of the NZMATES programme will depend greatly on the evolution of the global pandemic and the rollout of Covid-19 vaccination in Indonesia. For full details on next steps please see the seventh Forward Operating Plan (FOP). A high-level summary of planned next steps is provided below, based on a gradual improvement in the global pandemic situation towards the end of the FOP 7 period. The table below outlines the key tasks planned for semesters 7 and 8 of the NZMATES programme, from April 1st 2021 – March 30th 2022.

Table 2: Key tasks planned for FOP 7

Key Task	Timeline
Maintain office operations and stakeholder relationships	Ongoing
Hold fourth and fifth PSG meetings	April & Oct 2021
Hold fifth and sixth TC meetings	April & Sept 2021
Conduct third review of results framework	Oct 2021
Mid-term evaluation	Dec 2021 – Feb 2022
Hold workshop for women in energy	July 2021
Continue coordination with other donor programmes, including ADB, World Bank, French Development Agency, and Foreign Commonwealth Office from the United Kingdom	Ongoing
Continue to identify and appraise new grid-connected and off-grid projects for the project pipeline	Ongoing
Finalise support for Dinas ESDM with RUED (General Provincial Energy Plan)	June 2021
Finalise support for PLN 5-year electricity planning for 23% RE target	May 2021
Finalise concept note for new private project initiative and progress to feasibility study	Sept 2021
Disseminate waste management and decommissioning guidelines with local government stakeholders	Sept 2021
Complete support for PLN IPP proposal process streamlining	Sept 2021
Complete feasibility study for private sector fisheries project	Sept 2021
Progress with feasibility studies for PLN PLTS sites as required	TBD
Complete feasibility study for Ambon PLTS IPP project	Sept 2021
Submit fund match-making proposal through IRENA Climate Investment Platform	Aug 2021
Complete tender and contracting process for Pulau Tiga PLTS	Aug 2021
Complete implementation of Pulau Tiga refurbishment and associated community engagement activities	March 2022
O&M training for Pulau Tiga operators	March 2022
Complete implementation support for EBTKE 2020 rooftop PLTS programme through finalising O&M training	May 2021

Complete mini-grid sustainability guidelines and hold dissemination and training sessions with provincial stakeholders	Sept 2021
Complete sustainability planning for Pulau Tiga PLTS	Sept 2021
Continue training and mentoring activities for Dinas ESDM and PLN MMU	Ongoing
Complete O&M platform deployment and training for PLN	March 2022
Complete LEAP training with Dinas ESDM	May 2021
Contract supplier and complete implementation of curriculum assessment and support, training materials development and training of trainers for Pattimura University and Ambon State Polytechnic	Dec 2021
Complete construction of mini-grid training lab at Pattimura University	Sept 2021
Support Pattimura University with application for Dikti innovation funds	June 2021
Sign MoU with Vocational Highschool (SMK) 4	June 2021
Training on renewable energy for school students	March 2022

For the full plan for semester 7 of the NZMATES programme, and an outline of estimated semester 8 activities, please refer to the seventh Forward Operating Plan (FOP).

ANNEX 1: NZMATES INDICATORS

Level	Result	No.	Performance Indicator
Long term outcome	Improved access to electricity in target areas	LT1.1	Electrification rate in Maluku Province.
		LT1.2	Number of communities with new or improved access to electricity from RE sources through NZMATES.
Long term outcome	Increased use of renewable energy in target areas	LT2.1	Percentage (%) of electricity produced in Maluku from renewable energy sources.
Medium term outcome	Improved collaborations and enabling environment to support RE in Maluku	MT1.1	Stories of changes related to stakeholder collaboration and RE enabling environment in Maluku
		MT1.2	Number of collaborative actions to support RE in Maluku
Medium term outcome	Renewable energy projects secure funding	MT2.1	Number of off-grid RE generation projects from the NZMATES pipeline that have secured implementation funding.
		MT2.2	Number of grid-connected RE generation projects from the NZMATES pipeline that have secured implementation funding.
Medium term outcome	Renewable energy projects implemented and operational	MT3.1	Number of off-grid RE generation projects from the NZMATES pipeline that are operating sustainably.
		MT3.2	Number of grid-connected RE generation projects from the NZMATES pipeline that are operating sustainably.
Medium term outcome	Strengthened RE capability of key government, education and industry partners	MT4.1	Number of actions taken by partners to respond to/follow up on training and mentoring provided by NZMATES
		MT4.2	Number of institutions in Maluku with improved capability to deliver RE technical training programmes
Short term outcome	Platforms for RE initiatives established by or between local government actors, education institutions and industry players in partnership with NZ and other donors	ST1.1	Number of project assistance requests from private sector, government or community
		ST1.2	Number of functional RE platforms/mechanisms supported by NZMATES
Short term outcome	Renewable energy projects are funding and implementation ready	ST2.1	Number of off-grid projects meeting funding- and implementation-ready criteria.
		ST2.2	Number of grid-connected projects meeting funding- and implementation-ready criteria
Short term outcome	Skills and knowledge of key government, education and industry partners increases	ST3.1	Number of PLN and ESDM staff with increased skills and knowledge after participating in training activities through NZMATES.
		ST3.2	Number of individuals from other organisations (companies, communities, educational institutions) with increased RE skills and knowledge after participating in training activities through NZMATES.
Output	Programme platform operating	O1.1	Qualified PMO team in place.
		O1.2	PMO has sound, relevant procedures and policies in place, approved by Programme Manager and updated annually.
		O1.3	Results framework reviewed annually and endorsed by PSG.

		O1.4	Number of PSG meetings that are well-attended and produce clear outcomes.
		O1.5	Number of TC meetings that are well-attended and produce clear outcomes.
Output	Programme framework mapped and in use	O2.1	Institutional framework mapping updated annually and approved by PM.
		O2.2	Technical framework analysis updated annually and approved by PM.
		O2.3	Financing, funding and grants catalogue updated annually and approved by PM.
Output	Renewable energy projects progress smoothly through the project pipeline	O3.1	Number of RE projects in the NZMATES pipeline that have made progress towards funding.
		O3.2	Number of RE project assessments, studies or surveys conducted to support project progress through the pipeline and approved by partners.
Output	Training and mentoring provided according to RE skills gaps identified	O4.1	Number of people who receive training through NZMATES
		O4.2	Number of training activities conducted aligned with identified skill gaps.
		O4.3	Number of training arrangements established between Indonesian and NZ universities or other educational institutions
		O4.4	Percentage of people reporting satisfaction with relevance of training.

ANNEX 2: SUMMARY OF PROGRESS AGAINST INDICATORS

The table below shows progress so far against output and short-term outcome level indicators. It also includes progress so far against medium-term indicators.

No.	Indicator	Year 1	Year 2	FOP 5	FOP 6	LOP target	Comments
O1.1	Qualified PMO team in place	Yes	Yes	Yes	Yes	Yes	
O1.2	PMO has sound, relevant procedures and policies in place, approved by Programme Manager and updated annually.	Yes	Yes	Yes	Yes	Yes	
O1.3	Results framework reviewed annually and endorsed by PSG.	No	Yes	Yes	Yes	Yes	
O1.4	Number of PSG meetings that are well-attended and produce clear outcomes.	0	2	2	2	9	
O1.5	Number of TC meetings that are well-attended and produce clear outcomes.	1	3	4	4	9	Next TC Meeting scheduled in April 2021
O2.1	Institutional framework mapping updated annually and approved by PM.	Partial	Yes	Yes	Yes	Yes	
O2.2	Technical framework analysis updated annually and approved by PM.	Partial	Yes	Yes	Yes	Yes	
O2.3	Financing, funding and grants catalogue updated annually and approved by PM.	Partial	Yes	Yes	Yes	Yes	
O3.1	Number of RE projects in the NZMATES pipeline that have made progress towards funding.	0	14	16	17	15	New pipeline progressing: Unpatti mini-grid lab PLTS for Private Fisheries
O3.2	Number of assessments, studies or surveys conducted to support RE projects and received by partners.	0	12	20	25	NA	New Reports: 13. IPP Ambon #43 14. UnPatti solar lab (tender docs) #53 15. Werain #3 16. Eliasa #1 17. Wunlah #4 18. Hybridization 18 locations (as 1 report) #45 #46 19. Ambon solar rooftop due diligence #51 20. PLTS for fisheries #52 21. Erersin #12 22. Hybrid 42 locations #47 #48 23. Study on 23% RE target for Maluku 24. Offgrid 62 locations #49 #50 25. Dinas ESDM Rooftop O&M guidelines
O4.1	Number of people who receive training and/or mentoring through NZMATES	2	147	207	247	60	60 new participants from PLN Online Training 28 new participants from PNA Online Training

							5 new participants from Dinas ESDM LEAP Acceleration Training 7 new participants from Stakeholder LEAP Training
O4.2	Number of training activities conducted aligned with identified skill gaps.	0	5	6	9	10	August 2020 PLN Online Training: Introduction to Solar PV planning and analysis October 2020 PNA Online Training: Introduction to Solar PV January 2021 Dinas ESDM LEAP Acceleration Training March 2021 Maluku Stakeholders LEAP Training
O4.3	Number of training arrangements established between Indonesian and NZ universities or other educational institutions	0	0	0	0	1	
O4.4	Percentage (%) of people reporting satisfaction with the relevance of training.	-	90.2%	87.4%	86.92%	90%	
ST1.1	Number of project assistance requests from private sector, government or community	42	51	54	56	20	UnPatti solar lab Ambon solar rooftop 2021 PLTS for Fisheries (government owned) PLTS for private fisheries PLTS for community fisheries
ST1.2	Number of functional RE platforms/mechanisms supported by NZMATES	-	-	3	3	5	PSG Meeting TC Meeting PLN MMU RE Specialized Team
ST2.1	Number of off-grid projects meeting funding-ready criteria.	0	1	1	1	15	Pulau Tiga
ST3.1	Number of grid-connected projects meeting funding-ready criteria	0	0	1	1	5	Unpatti Mini-grid Lab
ST4.1	Number of PLN and ESDM staff with increased skills and knowledge after participating in training activities through NZMATES.	0	20	58	63	40	38 new participants with increased skills from PLN Online Training 5 new participants with increased skills from Dinas ESDM LEAP Training
ST4.2	Number of individuals from other organisations (companies, communities, educational institutions) with increased RE skills and knowledge after participating in training activities through NZMATES.	0	40	47	51	20	7 new participants with increased skills from PNA Training 4 new participants with increased skills from LEAP Stakeholder
MT1.1	Stories of changes related to stakeholder collaboration and RE enabling environment in Maluku	NA	NA	1	1	10	
MT1.2	Number of collaborative actions to support RE in Maluku	1	4	4	4	10	

MT2.1	Number of off-grid RE generation projects from the NZMATES pipeline that have secured implementation funding.	0	0	1	1	15	
MT2.2	Number of grid-connected RE generation projects from the NZMATES pipeline that have secured implementation funding.	0	0	1	1	5	
MT3.1	Number of off-grid RE generation systems from the NZMATES pipeline that are operating sustainably.	0	0	0	0	10	
MT3.2	Number of grid-connected RE generation systems from the NZMATES pipeline that are operating sustainably.	0	0	0	0	3	
MT4.1	Number of actions taken by partners to respond to/follow up on training and mentoring provided by NZMATES	NA	NA	2	2	10	
MT4.2	Number of institutions in Maluku with improved capability to deliver RE technical training programmes	NA	NA	1	1	1	