



TETRA TECH
International Development

Evaluation of the Support Acceleration of Geothermal Development in Indonesia Activity (Geo-INZ)

Evaluation Report

July 2022



*Photo: Discussion of resource data and
recommendations to relocate 3 MT survey stations.
Source: Jacobs' Annual Report*

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Photo: Discussion at WING Workshop – 14 June. Source: MFAT



List of acronyms

4YP	Four- Year Plan
ADB	Asian Development Bank
ADD	Activity Design Document
AMA	Activity Monitoring Assessment
EBTKE	Directorate for New Energy, Renewable Energy and Energy Conservation
CfD	New Zealand – Indonesia Joint Commitment for Development 2017-2022
CTF	Clean Technology Fund
FLOGIS	Flores Geothermal Island
FPIC	Free, Prior and Informed Consent
Geo-INZ	Support Acceleration of Geothermal Development in Indonesia Activity
Geo Dipa	PT Geo Dipa Energi
GEUDP	Geothermal Energy Upstream Development Project
GEWE	Gender Equity and Women’s Empowerment
GoI	Government of Indonesia
GSF	Geothermal Support Fund
ILO	International Labour Organization
INAGA	Indonesia Geothermal Association
JICA	Japan International Cooperation Agency
M&E	Monitoring and Evaluation
MEMR	Ministry of Energy and Mineral Resources
MFAT	New Zealand Ministry of Foreign Affairs and Trade
MoU	Memorandum of Understanding
NZSTIGS	New Zealand Support for Technical Training in the Indonesia Geothermal Sector
NZTE	New Zealand Trade and Enterprise
OECD-DAC	Organisation for Economic Cooperation and Development - Development Assistance Committee
PCG	Partner Coordination Group
PSG	Project Steering Group
PT SMI	PT Sarana Multi Infrastruktur
SoE	State Owned Entity
Tetra Tech	Tetra Tech International Development
UNDRIP	United Nations Declaration on the Rights of Indigenous Peoples

Executive Summary

The New Zealand Ministry of Foreign Affairs and Trade (MFAT) commissioned Tetra Tech International Development (Tetra Tech) to conduct an evaluation of the Support Acceleration of Geothermal Development in Indonesia Activity (Geo-INZ) Activity. The evaluation was conducted from February 2022 to June 2022. This report presents the evaluation findings and considerations for future directions of the Activity. The purpose of the evaluation was to review the overall effectiveness, alignment, and modality of the Geo-INZ Activity (the Activity) and identify lessons to inform the design and implementation of a future phase of this Activity.

Background and context

The Activity supports geothermal energy development and access to energy in Indonesia through the provision of technical assistance and capacity building to three Indonesian partner agencies: Badan Geologi, the Directorate for New Energy, Renewable Energy and Energy (EBTKE), and PT Sarana Multi Infrastruktur (PT SMI). The current phase of the Activity commenced in July 2018 and is due to be completed in August 2022. It is anticipated that the Activity will continue in some form following the completion of this five-year phase of support.

Evaluation purpose and scope

The evaluation was a forward-looking summative evaluation focused primarily on assessing the Activity's implementation processes, outcomes achieved, and key lessons learned to inform the next phase of the Activity. The key evaluation objectives were as follows:

1. To examine the relevance, significance, and coherence of the Geo-INZ Activity
2. To examine the extent to which the Geo-INZ Activity has achieved its intended outputs, short-term outcomes and medium-term outcomes.
3. To examine the extent to which the Geo-INZ Activity is well managed and governed for success (considering roles, responsibilities, skills, contracting and delivery approaches)
4. To examine the extent to which Geo-INZ is providing inclusive development, addressing exclusions and inequality while promoting human rights, and equitable participation for all
5. To examine the extent to which Geo-INZ Activity is providing resilient and sustainable development
6. To use the evaluation findings to inform the future direction of the Programme.

The evaluation covered the Activity's two phases – Phase 1 (May 2017 to July 2018) and Phase 2 (July 2018 to August 2022). The evaluation utilised a mixed-methods approach combining different forms of data collection (primary and secondary) in a phased manner and both qualitative and quantitative data sources. Evidence from multiple data sources was then triangulated to inform the evaluation's findings and considerations.

Summary of key findings and lessons learned

The Activity remains relevant and is aligned with the needs and priorities of the Government of Indonesia (GoI) and is supporting GoI's geothermal development targets of reaching 2,395 MW capacity by 2030. GoI stakeholders confirmed the continued relevance of the Activity and noted the important role the Activity is playing in progressing renewable energy targets for the government. Further, stakeholders reported that the Activity's relevance has been maintained and supported by the flexible approaches employed by the Activity to respond to the rapidly changing renewable energy policy and regulatory frameworks in Indonesia.

The Activity is also aligned with MFAT's development priorities and principles and supports New Zealand's use of geothermal expertise to raise New Zealand's profile as a partner of choice in geothermal sector development. However, it should be noted that opportunities exist to improve communication and 'brand awareness' that the support provided through Jacobs New Zealand (the Supplier) is a result of New Zealand's development cooperation priorities to support Indonesia in achieving development outcomes.

The capacity building and technical assistance delivered by the Activity is deemed appropriate and effective, noting there are opportunities to increase effectiveness and sustainability through a greater in-country presence and by scaling up the 'learning by doing' approaches. The key findings and lessons learned in relation to effectiveness and other development principles are outlined below.

- The Activity was moderately successful in adapting to the COVID-19 context, noting hybrid models for capacity building and training were appropriate to maintain service delivery. However, remote and online

service delivery took longer than expected to be working effectively as a result of the strongly entrenched ‘fly-in, fly-out’ nature of the service delivery model.

- The high-quality technical geothermal expertise, strong relationships, and the Supplier and MFAT’s local presence in Indonesia are among the key enabling factors of the Activity’s results and achievements. In terms of factors hindering or slowing down achievement, the COVID-19 pandemic, rapidly changing policy environment, high Gol and MFAT staff turnover and periods lacking adequate project management emerged as some of the most significant challenges.
- The current Gol partners are deemed adequate and the right partners to work with in advancing geothermal development in Indonesia. However, future designs should undertake a situational analysis and mapping of the partner agencies’ mandate and capability against the Activity’s objectives to ensure that the support is meeting needs and consider whether additional partners need to be included to drive and support a more integrated approach to progressing geothermal development.
- To achieve the long-term goal of the Activity and support the sustainability of the geothermal investments in Indonesia, MFAT’s commitment must continue for the longer term given the time required for benefits to be seen with geothermal investments. Another phase of the Activity is needed to support the achievement of medium- and long-term outcomes with a focus on further strengthening the Gol partner agencies to progress geothermal energy development ambitions and targets. However, continued MFAT support should be strategic and incorporate clear transition and/or exit strategies.
- The Activity addressed gender and social inclusion by establishing the Women in Geothermal Sector (WING) – Indonesia Chapter initiative which is noted as the greatest gender outcome of the Activity. However, more should be done to support mainstreaming inclusion across the Activity and developing targeted activities for women and other marginalised groups.
- The approach to how the Activity works with Indigenous peoples is not clear. Mechanisms to further work with and engage Indigenous people should be explored through enhanced community consultations to improve local communities’ perceptions of geothermal energy exploration. This will also support broader opportunities for improved communication and stakeholder buy-in for geothermal development.
- Opportunities exist for the Activity to create more opportunities for the participation of all groups especially those most marginalised in the future through targeted and greater engagement with local communities, resourcing for the GEDSI Specialists, and cultural sensitivity and awareness training.
- Monitoring, Evaluation and Learning (MEL), Gender and Social Inclusion, communication and brand awareness, project management and financial reporting were noted as areas requiring improvement and greater efforts for future phases to address shortcomings and issues that emerged in activity reporting and this evaluation. In particular, outcomes reporting was noted to be a challenge limiting the ability of the Activity to report on results achieved and most significant changes while communication and branding. Most of these challenges could be linked to the gaps and lack of clarity in the Activity Design and supplier procurement documentation/arrangements that make clear the requirements of the Supplier to provide a team with expertise and skill sets beyond technical geothermal expertise to meet Gol partner’s broader support needs and MFAT’s requirements to apply key development principles and achieve development outcomes.

Summary of considerations for the future of the Activity

The considerations below are intended to inform the design of the next phase of the Activity.

Focus area	Considerations for the future
<p>Strategy and policy direction</p>	<ul style="list-style-type: none"> • The next phase of the Activity should not deviate from the current objectives but should clearly define and provide clarity on what technical assistance and capacity building support can be provided to the Gol partners. Greater clarity and agreement on the support required by Gol partners and the support available through the Activity is required to ensure adequate uptake, pipeline planning, and to facilitate greater coordination and prioritisation of tasks to help the Gol progress in geothermal development and meet targets. • There is value and merit for MFAT to develop a whole of geothermal sector strategy in Indonesia that clarifies sector support for geothermal energy. Currently, MFAT has two geothermal activities in Indonesia with the Geo-INZ and NZSTIGS activities providing technical assistance and capacity building. A strategy that brings everything together will be useful that articulates the objectives of the investments in the geothermal sector, the rationale of different activities and the balance between physical assets, institutional support, and capacity development.

Focus area	Considerations for the future
<p>Approach and ways of working</p>	<ul style="list-style-type: none"> • Better articulate the scope and extent of services provided to Gol partners at the inception stage. Efficiency and forward planning can be improved through greater clarity and communication on the scope and extent of support available and understanding of how this aligns with the Gol partners’ needs as well as the Supplier’s skillsets. • Training should ramp up ‘train-the-trainer’ models and ‘learning by doing’ approaches for greater skills transfer, localisation and sustainability. Where possible, emphasis should be on training local people as trainers and creating spaces and opportunities during training for participants to practice what they have learned. Also, twinning arrangements and exchanges between Indonesian participants and agencies in New Zealand should continue given their value for capacity building, relationship building as well as supporting the ongoing aligning of standards and practices to international standards. • Consider Activity branding and communication to enhance the visibility of MFAT’s geothermal support and results to enhance appreciation and understanding of MFAT’s contributions across stakeholders in Indonesia. This could be supported by having a branding and communication strategy and allocating human resources to lead communication and brand management. The communication approach should consider the inclusion of all people through the adoption of different media channels and platforms including radio and other channels used by indigenous and local community members. Doing this will raise New Zealand’s profile as a geothermal expertise provider beyond being a donor. • If feasible, enhance local presence by having MFAT as well as Jacob’s Project Manager based in Indonesia. The Project Managers based in Indonesia will support relationship building and provide on-site project management which will help with brand awareness and communication of the Activity results to Gol and other partners. The presence of the managers will enhance the recognition of MFAT as a partner of choice and build the relationships needed to navigate the geothermal sector in Indonesia.
<p>Future designs</p>	<ul style="list-style-type: none"> • Prioritise a situational analysis and partners needs assessment during the design of the next phase of the Activity. To better understand each partner’s needs and priorities post-COVID 19, the next design should conduct an assessment to understand and map the partners’ needs and priorities. This will also help clarify roles and responsibilities for partners such as for PT SMI and Geo Dipa. If possible, the assessment should broaden the scope to include other partners in the industry and local and indigenous communities in the local areas of intervention. This will provide the Activity with the opportunities to co-design, listen, share and align interests and stakes in the Activity. • Future designs and procurement should consider the Supplier’s skillset beyond technical competency. Future procurement should assess and articulate the contractor’s skillset in project management, financial and broader reporting, GEDSI and MEL as requirements and contracting obligations.
<p>Monitoring and Evaluation</p>	<ul style="list-style-type: none"> • Consider resourcing for a Monitoring, Evaluation and Learning (MEL) Specialist as part of the core project management team. If and when resources allow, MFAT should prioritise investment in a dedicated MEL role to address ongoing gaps in the MEL (and reporting) functions. A dedicated MEL specialist would ease and improve outcomes by reporting and facilitating learning and sharing of Activity’s stories of most significant change and impact. Such a role would enhance the Activity’s ability to measure, assess, and communicate its results, move beyond its current activity- and output-oriented reporting, and guide learning processes that enrich the Activity’s work and enable adaptive management.
<p>Gender and social inclusion</p>	<ul style="list-style-type: none"> • Put inclusion at the centre of Activity design and implementation. Findings from the evaluation indicate that embedding inclusion into activities can contribute to the effectiveness and achievement of broader development outcomes. As analysis indicates, inclusiveness is not yet well-grounded in the Activity. There are opportunities for the Activity to strengthen gender equality and social inclusion in its programming and help to deliver better results and support a clearer understanding of the distribution of activity benefits. Focus on inclusiveness can be enhanced by ensuring Activity designs are informed by gender and inclusion analysis, resourcing for Gender and Social Inclusion Specialists and considering cultural sensitivities and awareness during implementation.

1 Overview of the Geo-INZ Activity

1.1 Background of the Activity

The New Zealand Support for Accelerating Geothermal Development in Indonesia (Geo-INZ) Activity is a NZD10.6 million, five-year activity supporting geothermal energy development in Indonesia through the provision of technical assistance and capacity building to three Indonesian Partner agencies. Jacobs New Zealand (the Supplier) were engaged for the design and implementation of the Activity, with in-country support from Jacobs Indonesia. The Activity was part of a broader contribution of NZD30 million from the New Zealand Government to support Indonesia's development through geothermal technical assistance as well as support to access renewable energy in Maluku from 2016 onwards.

The goal of the Geo-INZ Activity (the Activity) is to achieve accelerated geothermal development in Indonesia that supports economic and social development while increasing human capacity and advancing gender, environment and human rights in the sector. The Activity has two long-term outcomes: (1) increased and equitable access to energy in targeted areas; and (2) increased geothermal production. The Activity aims to work with key Government of Indonesia (GoI) agencies and partners to develop and improve capacity for progressing geothermal energy and increase Indonesia's ability to develop its geothermal resources, reducing reliance on fossil fuels and increasing access to reliable, clean energy.

The objectives (also expressed as medium-term outcomes) of the Activity are that:

- New Zealand's relationship with Indonesia and our reputation as experts in the geothermal sector is further strengthened.
- National and regional energy planning, reporting and coordination are improved
- Effective project development processes are deployed within GOI agencies.

Due to the complexity of the Activity and the potential for change within the industry over a period of years, delivery of the activity was split into two phases:

- **Phase 1** (May 2017 to July 2018, NZD6.05 million) provided intense support to the three Partners over 15 months, assessing and building existing capabilities, and progressing short-term outcomes as quickly as possible to gain the trust of stakeholders and foster relationships both with and across the three Partners. Due to the need to be adaptive and flexible to meet the changing needs of the Partners and industry, Phase 1 was contracted under an entirely inputs-based mechanism.
- **Phase 2** (July 2018 to August 2022, NZD4.55 million) built on the success of Phase 1, providing less intense but longer-term support, with more targeted capacity development.

1.2 Key outputs and tasks of the Activity

The Activity Design Document outlined a programme of ten priorities/areas for technical assistance, which were identified in collaboration between the Supplier and the key partners to deliver the outcomes of the Activity. These priorities (organised by key partners) are shown in the diagram below. The Activity Logic Diagram (shown in Section 3.2) shows that technical assistance and capacity development tasks were also to be delivered across key stakeholders and to other State-Owned Entities (SOEs) for enabling projects.

Photo: Direct Use workshop held in January 2022 with EBTKE, Jacobs, and other stakeholders. Source: Jacobs' Annual Report



Technical assistance to Badan Geologi	Technical assistance to EBTKE	Technical assistance to PT SMI*
<ol style="list-style-type: none"> Support deep slimhole drilling a cross-partner initiative with EBTKE and PT SMI Medium enthalpy (medium temperature) resources Review preliminary survey data to assist in the determination of geothermal working areas and promote a consistent approach to energy assessment entry Develop resource database: Review information management systems, data entry and interpretation methods, and provide training and support 	<ol style="list-style-type: none"> Regulation Support: Assessment of relevant regulations Support for Improvement and Management of Standards, Procedures and Criteria (SPC): An assessment of relevant SPCs will inform support required for drafting of specific SPC Review preliminary survey data to assist in the determination of geothermal working areas and promote a consistent approach to energy assessment entry Complete Master Planning for Eastern Indonesia: to inform Badan Geologi and EBTKE of potential areas for development 	<ol style="list-style-type: none"> Support Wae Sano Exploration Drilling: to assist with the planning and delivery of the drilling Develop Operations/Project Implementation Manuals: as required for World Bank board approval Support Geothermal Support Facility (GSF) Utilisation: “Quick wins” to build geothermal output identified in parallel with review and development of a pipeline of “traditional” geothermal prospects. <p>*PT SMI, Geo Dipa and World Bank worked together to initiate exploration drilling ahead of tendering a number of prospects.</p>

In tandem with the identified priorities, the Activity targeted all three levels of capacity development: the enabling environment; the organisational level; and individual knowledge transfer. For example, developing the enabling environment through improved understanding of regulations; the organisational level through improving SPCs; and at the individual level through several specific approaches intended to balance technical supplementation and formal training with on-the-job coaching and support.

1.3 Key partners and stakeholders

The Activity seeks to develop capacity within the GoI for progressing geothermal development by working with:

- **Badan Geologi** – part of the Ministry of Energy and Mineral Resources (MEMR); Badan Geologi is the national geological agency and the newly formed Centre for Mineral Resources, Coal and Geothermal is the division that conducts field surveys of geothermal areas
- **Directorate for New Energy, Renewable Energy and Energy Conservation (EBTKE)**, also part of MEMR – EBTKE is responsible for formulating and implementing policy related to geothermal concessions and has a key role in achieving Indonesia’s targets for geothermal development
- **PT Sarana Multi Infrastruktur (PT SMI)** – a SOE under the Ministry of Finance. PT SMI provides finance for a wide range of infrastructure projects and is responsible for administering the Geothermal Support Fund (GSF), a facility to support the exploration and exploitation of geothermal areas, and the expansion of existing geothermal projects.

Additional stakeholders include:

- **PT Geo Dipa Energi** – supporting with financial planning strategies for securing external funding to support geothermal development
- **World Bank** – working with PT SMI on the Geothermal Energy Upstream Development Project (GEUDP)
- **PLN** – Indonesia’s major power operator and generator of electricity. Phase 2 was intended to place greater emphasis on engagement with PLN.

Partnership Arrangements were established between New Zealand’s Ministry of Foreign Affairs and Trade (MFAT) and each of the three GoI Partners outlining how the parties will work together, including through individual Project Steering Groups (PSGs). Further background on the partnerships and governance arrangements for this Activity are outlined in Section 0.

2 Evaluation Purpose, Approach and Methods

The purpose of this evaluation is to review the overall effectiveness, alignment, and modality of the Geo-INZ Activity, and identify lessons to inform the design and implementation of a future phase of this Activity. This evaluation was designed to be more forward-looking than a traditional activity evaluation with a focus on identifying and documenting key lessons learned that would inform future design and implementation. This evaluation examined the implementation progress to date, operational and management aspects, and assessed the achievement of outcomes and documents to inform recommendations on the future strategy and policy direction of the Activity.

The evaluation had six objectives as indicated in the table below:

Objective	Key evaluation questions
Objective 1: Relevance and coherence	<ul style="list-style-type: none"> • How well is Geo-INZ aligned with MFAT's development priorities? • To what extent is Geo-INZ aligned with the Government of Indonesia partner's needs, policies and priorities? Particularly in light of the shifting context of COVID-19 and Indonesia's economic growth. • Is Geo-INZ still delivering the right things? Is the capability building and technical assistance that Geo-INZ provides still the most effective support that can be offered?
Objective 2: Effectiveness	<ul style="list-style-type: none"> • What evidence exists to demonstrate that the Geo-INZ Activity has achieved intended outputs and short-term outcomes? Has the Activity achieved any medium-term outcomes yet? • To what extent has the Geo-INZ activity achieved unintended outcomes (positive & negative) and how can the programme achieve better outcomes? • What factors have facilitated or hindered the achievement and sustainability of the achieved results?
Objective 3: Efficiency	<ul style="list-style-type: none"> • To what extent has the Geo-INZ Activity utilised the most effective and efficient modalities to achieve desired results in a timely way and effectively prioritised and balanced investment to achieve desired results? • What factors have constrained or enhanced Geo-INZ's ability to deliver the desired results?
Objective 4: Inclusive	<ul style="list-style-type: none"> • To what extent has the Geo-INZ Activity addressed gender and women's equality, addressed social inequalities and advanced human rights? • What opportunities are there for indigenous approaches in Geo-INZ? • How could Geo-INZ create more opportunities for the participation of all groups especially those most marginalised in the future?
Objective 5: Resilient and Sustainable	<ul style="list-style-type: none"> • What evidence exists to demonstrate that the outcomes achieved by Geo-INZ are likely to be sustained over the lifetime of the investment, are resilient i.e., withstand shocks and protects the environment, ecology and resource base; and will continue beyond the lifetime of the investment?
Objective 6: Future directions	<ul style="list-style-type: none"> • What are the lessons learned from Geo-INZ that could inform its future: strategy and policy direction; and approach and ways of working?

The evaluation covered the Activity's two phases – Phase 1 (May 2017 to July 2018) and Phase 2 (July 2018 to August 2022) and its geographic focus is limited to Indonesia, inclusive of all Geo-INZ work sites. It should be noted that other relevant and related activities (i.e. NZMATES and NZSTIGS) in Indonesia are not within the scope of this evaluation.

The evaluation adopted a mixed-methods approach combining different forms of data collection and data sources to arrive at a richer and more nuanced understanding than what might be achieved through the use of a single method alone. The mixed approach collected both qualitative and quantitative data and integrated them into analysis and synthesis. Doing this provided a more comprehensive picture and enabled the triangulation of findings in a robust way.

The evaluation team first employed a deductive approach which involved gathering data against the evaluation objectives, followed by a more inductive approach where findings within that theme were assessed without pre-determined criteria so that other emerging themes were discovered and described under it. Alongside this, the evaluation applied a realist approach where mechanisms/factors driving achievement (or not) of expected results/objectives and the reasons why were explored.






Data was collected using the following data collection methods:

- **Document review:** The team conducted a thorough desktop review of both operational and reporting data for the Activity, and analysed secondary data to generate initial findings and identify where primary data collection should focus.
- **Semi-structured interviews:** Interviews were used flexibly to gather data to answer the evaluation questions, understand stakeholder perspectives as well as seek a response to evaluation material.
- **Focus group discussions:** In some cases, where was appropriate to group people together to enable more people to contribute and interact with each other, focus group discussions were facilitated. The team engaged translation support for focus group discussions when required.

The table below shows the five phases of the evaluation and how and when the data collection and analysis methods were applied.

Evaluation of the Support Acceleration of Geothermal Development in Indonesia Activity (Geo-INZ)

Evaluation Report

Phase	Objectives	Methods
 1: Inception (April 2022)	Develop a methodological design and Analytical Framework, identify data sources and data collection methods, and map out the diverse stakeholders to be interviewed	<ul style="list-style-type: none"> Interviews with MFAT stakeholders to understand expectations and identify areas of interest Preliminary document review Stakeholder mapping
 2: Document review (April 2022)	Review Activity documentation to conduct an initial analysis on how the Activity performed in line with the evaluation objectives, explore data gaps and where primary data collection should focus	<ul style="list-style-type: none"> Review Activity documentation (including Activity Design Document, Results Framework, Forward Work Plan, Statement of Work) and Activity reporting (2 AMAs and annual / monthly progress reports)
 3: Stakeholder consultations (April 2022)	Undertake primary data collection to understand stakeholder perspectives against the key evaluation objectives and explore emerging themes	<ul style="list-style-type: none"> Interviews with MFAT stakeholders including Energy team, Activity Manager(s) and Post Interviews and focus group discussions with Government of Indonesia partners, managing contractor, other development partners, technical experts and supplier 15 interviews and focus group discussions conducted, with 27 people participating
 4: Analysis and presentation (May to June 2022)	Analyse and triangulate the different evidence sources and identify emerging themes against the evaluation objectives, present key findings and future directions for sensemaking and validation	<ul style="list-style-type: none"> Triangulate findings from the document review and stakeholder consultations Sensemaking workshop with MFAT stakeholders (i.e. Activity Manager, Energy and country team/ Post) to test whether emerging findings resonate
 5: Reporting (June 2022)	Drafting the evaluation report and addressing MFAT feedback	<ul style="list-style-type: none"> 15-page Evaluation Report will present presents key findings, conclusions, and recommendations 3-page executive summary to expand reach and communication of the evaluation findings and recommendations

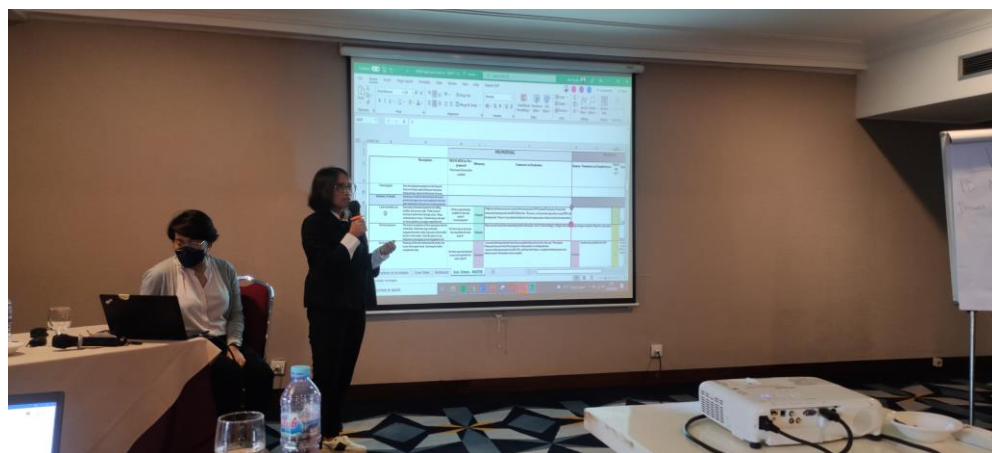


Photo: Group presentation at SMI Technical Meeting & Workshop – 7 June. Source: MFAT

3 Key Evaluation Findings and Lessons Learned

This chapter presents the evaluation findings and key lessons learned against the six evaluation objectives. The report is structured by the evaluation objectives, which guided the analysis and synthesis of evaluation findings and lessons identified. The next chapter then provides the overall conclusion of the evaluation and provides broad strategic and programmatic considerations for the future.

Objective	Description
Relevance and coherence	To examine the relevance, significance, and coherence of the Geo-INZ Activity (Section 3.1)
Effectiveness	To examine the extent to which the Geo-INZ Activity has achieved its intended outputs, short-term outcomes and medium-term outcomes. (Section 3.2)
Efficiency	To examine the extent to which the Activity is well managed and governed for success, considering roles, responsibilities, skills, contracting and delivery approaches (Section 3.3)
Inclusive	To examine the extent to which the Activity is providing inclusive development, addressing exclusions and inequality while promoting human rights, and equitable participation for all (Section 3.4)
Resilience and Sustainable	To examine the extent to which Geo-INZ Activity is providing resilient and sustainable development (Section 3.5)
Future directions	To inform the future direction of the Activity (Chapter 4)

3.1 Relevance and coherence

The evaluation assessed the relevance of the Activity’s objectives and design to respond to the needs and priorities of the Gol and New Zealand Government, and assessed coherence assessed in terms of compatibility of the Activity with other interventions in the Indonesian geothermal sector.

The Activity remains relevant and is aligned with the needs and priorities of the Gol and is supporting the government’s geothermal development targets of reaching 2,395 MW capacity by 2030. New Zealand’s commitment to supporting Indonesia’s renewable energy sector has been formalised through the Memorandum of Understanding between New Zealand and Indonesia on ‘Cooperation in Renewable Energy and Energy Conservation’ signed in July 2016. Moreover, the New Zealand – Indonesia Joint Commitment for Development 2017-2022 (CfD) confirms New Zealand’s provision of support to increase Indonesia’s access to affordable energy, renewable energy production (particularly geothermal), and renewable energy workforce skills and capability.

A review of documentation and literature indicates good alignment of the Activity with the Gol policies, priorities and plans. Indonesia’s economy depends on cost-effective and reliable energy, but the country is currently reliant on fossil fuels for power generation (89% of electricity generation), with coal-fired power plants providing most base load power at a relatively low cost. While Indonesia has significant sources of renewable energy, in particular geothermal and hydropower, these are underutilised at present. For example, while Indonesia has an estimated 29,000 MW of geothermal reserves (approximately 40% of global reserves), only 1,500 MW has so far been developed into operational power projects.

Government policies and plans show that Gol is committed to increasing the use of renewable energy and reducing CO2 emissions, with targets intended to increase renewable energy to 23% of the total energy supply by 2025 and 31% by 2050 (National Energy Policy, 2014). Other targets include increasing the use of geothermal energy, with a target installed capacity of 2,395 MW by 2030 and reduce unconditionally 26% of its greenhouse gases by the year 2020 (United Nations Framework Convention on Climate Change, 2015) and conditional reduction of up to 41% reduction by 2030 (Conference of the Parties, 2015). The Gol geothermal target is currently stagnant, sitting at 12% of the desired goal. This is largely hindered by regulatory capacity and continued reliance on fossil fuels. MFAT’s investment through the Geo-INZ Activity sought to maximise a window of opportunity to make a meaningful contribution to the Indonesian geothermal sector and resolve some of the barriers to development.

Gol stakeholders confirmed the continued relevance of the Activity and noted the important role the Activity is playing in progressing renewable energy targets for Indonesia. Further, stakeholders noted that the Activity has been flexible in responding to the rapidly changing renewable energy policy and regulatory framework in

Indonesia. The flexible ways of working and modality have supported responsiveness, though opportunities for improvement exist to respond to the priorities of the geothermal sector as well as the unique challenges and needs of the Gol partners.

The Activity is aligned with MFAT's development priorities and principles and supports New Zealand's use of geothermal expertise to raise New Zealand's profile as a partner of choice in geothermal sector development.

However, opportunities exist to better showcase the outcomes and impact of MFAT's support through improved communication and brand awareness/management. Four principles underpin New Zealand's international development cooperation: effectiveness, inclusiveness, resilience, and sustainability. The Activity's investments and tasks are generally aligned to these principles, particularly through contributions to renewable energy activities which support greenhouse gas emission reductions and climate change mitigation efforts. Overall, the Activity's investments are seen as effective in supporting the achievement of its renewable energy targets. Evidence and reporting show that the Activity is relevant and aligned to MFAT's bilateral and regional Four Year Plans (4YPs) priorities and objectives as well as the ASEAN 20Year Development Strategy which seeks to increase both geothermal production and increased equitable access to energy.

MFAT stakeholders broadly agreed on the strategic value of the Activity in increasing access to geothermal energy and advancing renewable energy in Indonesia. Moreover, stakeholders agreed that the Activity provided high value and visibility for MFAT's facilitation of public-private partnerships (seen through the Supplier, Jacobs, subsequently being subcontracted to work with the World Bank) and in effect raised New Zealand's profile as a partner of choice in geothermal development. Overall, MFAT and the Supplier's public reputation within Gol's relevant agencies are strong, and they are highly regarded for their high-quality geothermal expertise. However, some Gol stakeholders noted that due to the developmental and commercial interests of the Supplier, sometimes it has been confusing for Gol stakeholders to differentiate between activities supported and funded by MFAT through Jacobs and the ones provided by Jacobs through their other geothermal commercial interests in Indonesia. The evaluation was not able to ascertain the exact factors driving the confusion and what can be done to resolve it, however, it is clear that greater communication and brand awareness/management efforts are required to demonstrate New Zealand's support and commitment to development outcomes in Indonesia.

The capacity building and technical assistance provided by the Activity is deemed appropriate, relevant and coherent to Indonesia's needs and priorities noting opportunities to improve in-country support and presence and scaling up of 'learning by doing' approaches for increased sustainability of the knowledge and skills transferred.

The Activity supports geothermal energy development in Indonesia through the provision of technical assistance and capacity building to three Indonesian Partner agencies (see section 1.3). In terms of capacity building and technical assistance, most stakeholders noted that the support is appropriate because of the capacity and capability gaps within the Gol geothermal sector. Overall, Jacobs is seen as providing high-quality technical assistance and support to Gol Partners.

Most stakeholders reported that due to the Gol's competing priorities which were exacerbated by the COVID-19 pandemic, technical assistance and capacity building is the best way to support the geothermal sector for sustainability. For instance, in June 2021, the Gol announced budget cuts to the government exploration drilling programme, due to the impacts of COVID-19 on the economy and non-urgent work being put on hold so monetary support could be redirected to those impacted by the pandemic. However, drilling commenced at Nagi and Cisolok-Cisukarame in September 2021 and the success of these two campaigns will impact future support to Badan Geologi for exploration drilling at other locations.

For the Activity to remain relevant, coherent and effective, stakeholders reported that the local capacities of people and agencies need to be scaled up so that skills gained can be transferred and sustained. Though this was reported to be happening in some form, some stakeholders noted that this has been affected by the pandemic where in-country travel and face-to-face meetings were limited. They noted that future efforts should further emphasise localisation through for instance having Project Managers in-country (see 3.5) because COVID-19 presented an opportunity to invest in local people and institutions. Evidence shows that COVID-19 has showcased MFAT's ability to effectively navigate change but also highlighted existing vulnerabilities and opportunities to increase localisation. Best practice shows that there are cost efficiencies in employing and empowering local implementing partners (institutions and people) which have been brought to the fore during the pandemic. Further evidence shows that local Partners and Jacobs Indonesia's presence were instrumental in business continuity and with further support from New Zealand to continue with implementation on the ground. For the next phase of the Activity designs, some stakeholders noted that there is value in reassessing the Gol partners' capacity and capability to ensure that future capacity building reflects the emerging needs and gaps.



Photo: Taken at Cisolok-Cisukarame geothermal prospect location. Source: Jacobs' Annual Report.

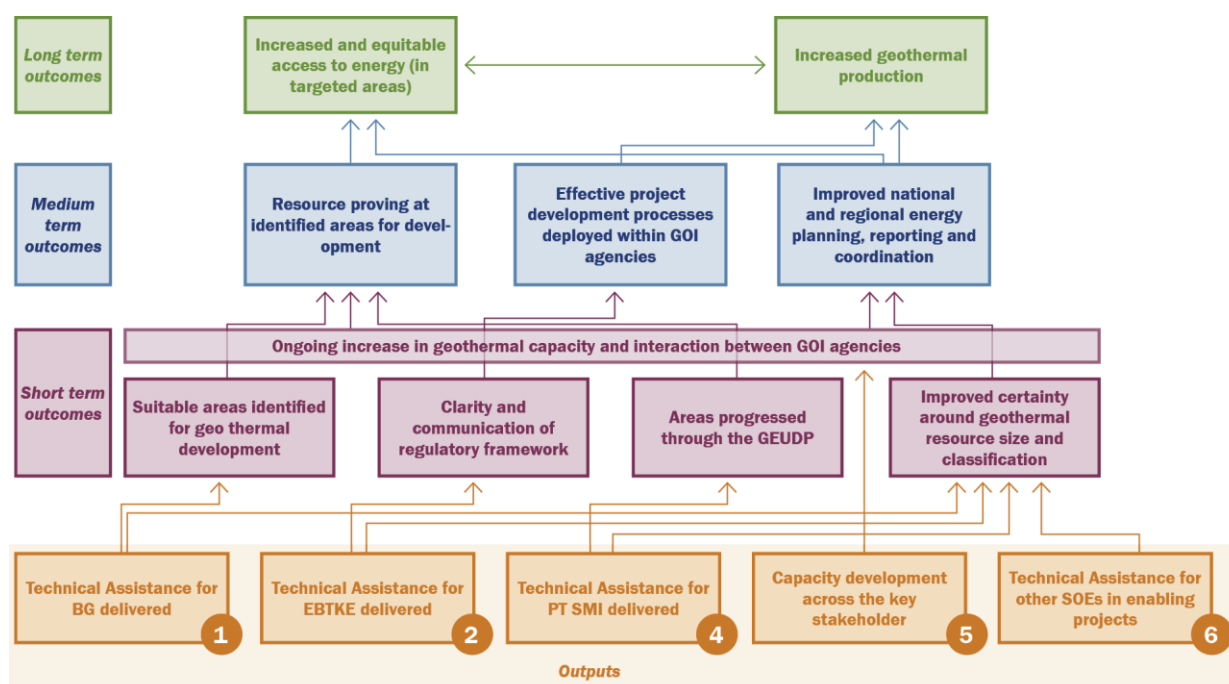
Also, given that the Activity provides training and capacity building support, most GoI stakeholders noted that 'train-the-trainer' and 'learning by doing' approaches where participants merge theory and practice should be expanded across the Activity's training initiatives. Though some stakeholders noted that Jacobs has been doing this, the COVID-19 travel restrictions affected the face-to-face interaction needed for on-site support. The 'learning by doing' approach is in line with the andragogy principles of adult learning where adult participants learn better if they are seen as a valuable resource during the training process, when they identify something they want to know or become proficient at, or when they experience something that connects with their own life. Jacobs notes that, in 2022, with the easing of travel restrictions face-to-face training and interaction is gaining momentum. For instance, in January 2022 a workshop was held on Direct Use by EBTKE to socialise the concept of utilization of geothermal direct use in Indonesia. The workshop was attended by more than 50 people from the local government and representatives from the provincial office. By adopting this approach, practice shows that initiatives will likely be more sustainable because participants will have hands-on experience and the knowledge acquired will be retained locally with a pool of engaged and competent trainers both at the national and provincial levels.

3.2 Effectiveness

This section presents the key findings and analysis of the effectiveness of the Activity and describes whether the Activity achieved its intended outputs, short-term outcomes and medium-term outcomes. This section first explores the extent to which the Activity was expected to, and did, achieve its objectives and results (Objective 2 of the evaluation), and then discusses the factors that contributed to effectiveness as well as opportunities for improving effectiveness. It also explores how the Activity achieved unintended outcomes and how the programme could achieve better outcomes.

The intended outputs and outcomes of the Activity were designed in collaboration with key partners and stakeholders and are shown in the Activity Logic Diagram provided below.

Diagram 1: Activity Program Logic



Source: Geo-INZ Phase 2 Business Case

The Activity has partially achieved its intended outputs and short-term outcomes and contributed to the ongoing increase in geothermal capacity amongst GoI partners and agencies. Overall, GoI partners acknowledged MFAT and Jacobs’s support and expressed that responsive technical assistance has been very effective and given GoI a jumpstart. Beneficiaries of support welcomed further cooperation between GoI and MFAT.

Technical assistance to **Badan Geologi** was mostly delivered as intended, and in particular, demonstrated the Activity’s responsiveness and strong beneficiary satisfaction. The Activity supported the exploration and evaluation of lower temperature resources, the development and training in a geothermal database, and introduced new technologies and methods (with one recent example being slim hole drilling). Collectively, this support influenced government-industry discussions and increased the credibility of resources and led to suitable areas identified for geothermal development. While support for the Government’s Drilling Programme and broader capacity development were only partially achieved due to COVID-19 impacts (including GoI budget cuts and travel restrictions), Badan Geologi confirmed satisfaction with support received and identified areas they were seeking continued support on, including slim hole drilling and data acquisition and management. The table below provides further evidence and information on assistance delivered to Badan Geologi.

Output	Assessment and supporting evidence	Data sources
Technical Assistance for Badan Geologi delivered		
Explore and evaluate lower temperature resources	<ul style="list-style-type: none"> Output achieved Industry workshops delivered on lower temperature resources Evidence shows greater consideration by the GoI of Geothermal developments for direct heat use in appropriate locations, showing relevant stakeholders that lower temperature projects with favourable conditions can be competitive compared to high temperature systems 	<ul style="list-style-type: none"> Annual Progress Reports Stakeholder interviews AMAs
Develop a detailed resource database	<ul style="list-style-type: none"> Output mostly achieved Effective geothermal database was developed, and training was delivered to the GoI to ensure that this database is being implemented in a sustainable and maintainable way, noting limitations partially due to COVID-19 travel restrictions and subsequent impacts on stakeholder engagement 	<ul style="list-style-type: none"> Annual Progress Reports AMAs Stakeholder interviews
Review methodologies and processes & Energy	<ul style="list-style-type: none"> Output not achieved. Opportunities exist to collect better data to demonstrate achievement of revised output in relation to Government Drilling Programme 	<ul style="list-style-type: none"> Annual Progress Reports

Output	Assessment and supporting evidence	Data sources
estimate and classification	<ul style="list-style-type: none"> Reporting confirms initial progress for Review methodologies and processes and Energy estimate and classification. These outputs were incorporated within the workshops and target application to the Government Drilling Programme 	
Support for Government Drilling Programme	<ul style="list-style-type: none"> Output partially achieved. Delays are mostly attributed to Gol budget cuts due to the impacts of COVID-19 on the economy and funds and efforts being redirected to the pandemic response 	<ul style="list-style-type: none"> Annual Progress Reports
Capacity development	<ul style="list-style-type: none"> Output partially achieved Beneficiaries reported greater confidence in their work and the ability to quickly identify problems, inaccuracies and uncertainties. Workshops to build knowledge and understanding of exploration development and new technologies and methods, with a focus on slim hole drilling (including planning, execution, well delivery, wellsite geology, results) and lower-grade geothermal technologies were beneficial, responsive and well received As a result, Badan Geologi used slim hole drilling in Flores to drill 2 wells recently 	<ul style="list-style-type: none"> Annual Progress Reports Stakeholder interviews

With regard to technical assistance delivered to **EBTKE**, there was clear evidence that the Activity was responsive to EBTKE's requests and that intended outputs were partially achieved. Evidence shows clear progress in aligning Indonesia's national geothermal standards to global standards and that the Activity supported Badan Geologi and EBTKE in a joint collaboration on the master planning of geothermal development in eastern Indonesia. EBTKE reported increased confidence in undertaking proposal and permit assessments and exploring geothermal permits. However, intended short-term outcomes to achieve clarity and communication of regulatory framework is yet to be achieved due to Gol's changing political environment and priorities in response to COVID-19 pandemic responses and lack of stakeholder buy-in.

Further work is required to establish an enabling regulatory environment and create favourable commercial conditions for geothermal development. Stakeholders reported that this included support to proactively address and manage social and environmental issues/risks that could cause delays and even cessation of geothermal development in some areas. Evidence shows that some stakeholders viewed the provision of regulatory and policy support as too challenging and not good value for money, however, Gol stakeholders (including EBTKE), saw the need for further support but saw the need for greater clarification that they could receive from the Activity to support multi-faceted progress and cross-agency support required to establish an enabling regulatory environment.

Output	Assessment and supporting evidence	Data sources
Technical Assistance for EBTKE delivered		
Regulation support	<ul style="list-style-type: none"> Output partially achieved Greater clarity developed within the Indonesian geothermal industry/stakeholders of Indonesia national standard (SNI) that are applicable to geothermal developments and United Nations Frameworks Clarification for Resources (UNFC) terminology has been incorporated into SNI. This has started the process of aligning Indonesia to global geothermal standards Stakeholders reported that facilitating more favourable commercial conditions for geothermal projects is quite political and difficult, and geothermal development requires more socialisation in non-technical language to facilitate stakeholder buy-in 	<ul style="list-style-type: none"> Annual Progress Reports AMAs Stakeholder interviews
Support for improvement and management of Standards, Procedures and Criteria	<ul style="list-style-type: none"> Output achieved Reporting also confirms the SNI and Guidelines were complete and met the needs of both EBTKE and industry, resulting in additional projects moving forward. EBTKE have put further work on hold until 2022. EBTKE awarded Budi Arifen of Jacobs the Dharma Karya ESDM 2021 national award in recognition of his proactive work and contribution to developing SNI 	<ul style="list-style-type: none"> Annual Progress Reports

Output	Assessment and supporting evidence	Data sources
Prepare Master Planning for Indonesia	<ul style="list-style-type: none"> Output mostly achieved Evidence confirms the Activity supported Badan Geologi and EBTKE in a joint collaboration on the master planning of geothermal development in eastern Indonesia. Specifically, a workable strategy and 'live' plan was developed for the Gol, which outlines a clear path forward for Flores Geothermal Island (FLOGIS) with potential replication across other areas in Indonesia 	<ul style="list-style-type: none"> Annual Progress Reports AMAs Stakeholder interviews
Capacity Development	<ul style="list-style-type: none"> Output was partially achieved. Evidence shows a greater understanding within EBTKE of developer requirements, resulting in additional areas explored, and that EBTKE and Badan Geologi demonstrated improvement in the capacity of the agencies to assess geothermal resources, evaluate the levelised power costs of potential working areas and strengthen the regulatory environment 	<ul style="list-style-type: none"> Annual Progress Reports Stakeholder interviews Business Case
Joint assistance for Badan Geologi and EBTKE delivered		
Prioritisation Methodology (Summary Database)	<ul style="list-style-type: none"> Output partially achieved. Reporting confirms an effective database was developed which acts as "one source of the truth" and is being implemented in a sustainable, maintainable way; prioritisation is robust and offers suitable insights to move projects forward 	<ul style="list-style-type: none"> Annual Progress Reports
Support for Slimhole Drilling	<ul style="list-style-type: none"> Output partially achieved. This ties in closely with capacity development for Badan Geologi with their role in Government Drilling Programme although does not yet involve EBTKE 	<ul style="list-style-type: none"> Annual Progress Reports Stakeholder interviews

While only partially achieved, technical assistance to **PT SMI** was well received and supported the Geothermal Energy Upstream Development Project (GEUDP) with procurement support. Starting from a low baseline of background knowledge of geothermal PT SMI reported as a result of the Activity, they had increased understanding of and competency in undertaking project management and evaluating the technical and commercial potential of other geothermal working areas. Stakeholders reported evident capacity building in relation to due diligence and guidance on the technical and financial assessments of proposals were beneficial and demonstrated applying the learned knowledge.

Evidence shows that there was an early misunderstanding on the capabilities of PT SMI with regard to financing geothermal projects and the type and extent of support that PT SMI required to support implementation from a finance and project management perspective. PT SMI's role was to support financing and feasibility assessments, however, they did not have the technical expertise in geothermal to undertake the implementation itself. Geo Diwasere was brought on to support and supplement PT SMI's capabilities with the technical implementation components. The Activity demonstrated responsiveness to provide support to both PT SMI and PT Geo Dipa Energi to achieve the short-term outcomes of progressing areas through GEUDP. Further work and efforts are required to consider whether and how future phases of support should also provide support to PT Geo Dipa Energi and/or PT SMI and understand their responsibilities for supporting geothermal development efforts going forward.

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Output	Assessment and supporting evidence	Data sources
Joint Assistance for PT SMI delivered		
GEUDP Support – Wae Sano	<ul style="list-style-type: none"> Output achieved. Evidence confirms procurement support was provided including through developing documents and knowledge sharing regarding contractor procurement 	<ul style="list-style-type: none"> Annual Progress Reports Stakeholder interviews
GEUDP Support – pipeline	<ul style="list-style-type: none"> Output not achieved. Limited evidence regarding this output, and available evidence shows minimal support provided 	<ul style="list-style-type: none"> Annual Progress Reports
Operations Manuals	<ul style="list-style-type: none"> Output not achieved, with this component being on hold 	<ul style="list-style-type: none"> Annual Progress Reports
Fund Utilisation: PISP fund, GREM	<ul style="list-style-type: none"> Output partially achieved Evidence confirms delivery of capacity building regarding due diligence and guidance on the technical and financial assessments of proposals 	<ul style="list-style-type: none"> Annual Progress Reports Stakeholder interviews
Capacity Development	<ul style="list-style-type: none"> Output partially achieved Stakeholders confirm PT SMI demonstrates a much deeper understanding of the exploration drilling projects instigated by Gol 	<ul style="list-style-type: none"> Annual Progress Reports Stakeholder interviews

In addition to capacity development provided to **PT Geo Dipa Energi** which was seen to be responsive and beneficial, technical assistance provided was instrumental for developing and enabling the **Women in Geothermal (WING) Indonesia Chapter**, noting WING is now self-directed with Indonesian women taking ownership. This was a crucial part of ensuring this Activity is taking an inclusive approach and targeting equitable participation in the benefits of development by advancing gender equality and women’s empowerment using women’s events, networks, mentoring programmes and feeling of connection in the male-dominated industry as indicators. Other elements of capacity development that were well received and were seen to be beneficial for building knowledge, capacities and relationship was the availability for Gol staff to undertake short-term courses in New Zealand. The table below provides further information on other capacity development initiatives.

Output	Assessment and supporting evidence	Data sources
Specific Capacity Development		
Gender Equality and Women’s Empowerment	<ul style="list-style-type: none"> Output partially achieved The Activity has been instrumental in enabling WING to develop and now become self-directed with Indonesian women taking ownership While there was limited activity outside of WING, WING’s Indonesia Chapter has been visible on social media and hosting webinars and is considered a success. 	<ul style="list-style-type: none"> Annual Progress Reports AMAs Stakeholder interviews
Industry Training and Workshops	<ul style="list-style-type: none"> Output partially achieved. Delivery of a series of weekly webinars on developing Lower Temperature Geothermal Resources was most noted by stakeholders and in reporting 	<ul style="list-style-type: none"> Annual Progress Reports AMAs

The evaluation found that the Activity is on track to achieve the overarching short-term goal to support an ongoing increase in geothermal capacity and interaction between Gol agencies, noting improvements should be made to achieve this by 2025. The technical assistance and capacity development provided contributed to overall increases in knowledge and capacity development amongst Gol partners, however, much more can be done to facilitate ongoing interaction between Gol agencies. Collaboration projects (i.e. involving Badan Geologi and EBTKE) supported ongoing interaction, however, it was identified that the effectiveness of the overall Activity and increases geothermal capacity could be improved by having more interaction between MFAT, and the Supplier and Gol partners. A Partner Coordination Group was established in 2019, but due to COVID-19, it has only met twice (in 2019 and 2022). The interaction between Gol agencies and how it can improve effectiveness is discussed further in the next section (Section 0).

While the Activity is on track to achieving the overarching short-term goal, the specific measures identified for the **short-term and medium-term outcomes** were not all achieved in this phase of support. The Activity Logic Diagram shows that **short-term outcomes** were to commence being achieved from 2020 (to 2025), while medium-term outcomes were to be seen from 2021 (to 2027). This is primarily due to COVID-19 impacts, changes in Gol priorities and stakeholder/community buy-in. Future phases should ensure appropriate indicators (aligned to the type and extent of support provided) and data collection methods to measure, analyse and demonstrate the achievement of outcomes. Communication of these outcomes to a wide range of stakeholders will support the achievement of the long-term goals of the Activity and help address issues of existing and potential stakeholder buy-in.

Outcome	Assessment and supporting evidence	Data sources
Short-term outcomes (2020-2025)		
Suitable areas identified for brown and green field geothermal development	<ul style="list-style-type: none"> Outcome not achieved, with reporting showing only 2 out of 5 suitable green field areas have been identified for tender/assignment. Progress in identifying brown field areas has not continued as it was no longer seen as an area of focus 	<ul style="list-style-type: none"> Annual Progress Reports
Clarity and communication of regulatory framework	<ul style="list-style-type: none"> Outcome not achieved, with reporting showing 0 of 3 IPP tenders were taken up by end of 2020. Auction/tender process is on hold and will resume in 2023 	<ul style="list-style-type: none"> Annual Progress Reports
Global Support Fund (GSF) utilised to progress areas for development through the Government Drilling Program (GEUDP)	<ul style="list-style-type: none"> Outcome not achieved as intended, but progress was made through Gol funding rather than GSF funding. Reporting showing 0 of at least 2 areas drilled using GSF funding by end of 2018 and only 1 of at least 10 additional areas identified as exploration sites by end of 2019. This was primarily due to delays to the Wae Sano project resulting in changes in land access issues and community concerns and having to bring on Geo Dipa to lead GEUDP implementation Stakeholders confirmed that the Gol is now financing and implementing drilling projects in Nagi in NTT and Wae Sano in NTT via state-owned entities PT SMI and PT Geo Dipa. This showed increased capacity to do so, which did not exist before the Activity's support 	<ul style="list-style-type: none"> Annual Progress Reports AMAs Qualitative interviews with stakeholders
Improved certainty around geothermal resource size and classification	<ul style="list-style-type: none"> Outcome partially achieved, with reporting showing 3 additional people are able to work through resource assessment by end 2020, fulfilling the indicator People using skills/knowledge received in training/advisory support. However, 0 out of 3 identified areas for suitable resource assessments were complete by end of 2020. 	<ul style="list-style-type: none"> Annual Progress Reports Qualitative interviews with stakeholders

In terms of **unintended outcomes**, the support contributed to enabling Gol to finance and implement drilling projects in Nagi and Wae Sano via state-owned entities. However, the drilling projects also highlighted other issues and gaps resulting in unintended negative outcomes – a lack of coordination and communication can result in not obtaining stakeholder and community buy-in to progress drilling projects. For example, land access, and social and environmental issues with the Wae Sano project resulted in media coverage that required the Activity's support even though this type of support was not formally within the Activity's scope. However, it highlighted that projects could be delayed (and even cancelled) if social and environmental matters were not appropriately considered, communities not adequately engaged, and risks not appropriately mitigated. Future phases of support should include technical assistance with regard to social and environmental impact assessments/safeguards, community education and communications support.

The following table summarises the **factors that enabled/contributed to or hindered** the achievement of results and outcomes and the overall effectiveness of the Activity.

<p>Factors enabling/contributing to effectiveness</p>	<ul style="list-style-type: none"> • Positive working relationship (founded on trust and respect for New Zealand and the Supplier’s technical expertise in geothermal development) between MFAT, the Supplier and key Gol partners enabled capacity building and increased knowledge and understanding of geothermal amongst Gol partners. It also enabled hybrid approaches during COVID-19 to work adequately and maintain progress with capacity development aspects of the Activity • Local presence was a clear factor for the achievement of outputs and also short-term outcomes (where achieved). In particular, support from MFAT post to maintain the relationship was seen as important and the one-on-one meetings between partners and MFAT helped to sustain the relationship. By pivoting to have Jacobs Indonesia take on more responsibilities during COVID-19, the Supplier was able to maintain a hybrid model and maintain progress. • One-stop-shop external interface / single managing contractor: The use of a single well-recognised managing contractor (together with enabling MoUs) supported a moderate understanding of what technical assistance and capacity development support Gol stakeholders could expect from the Supplier. While stakeholders raised potential conflict of interest and brand awareness (support viewed as Jacob’s rather than MFAT support), stakeholders valued having a one-stop shop and having a well-respected firm as a supplier that had strong technical expertise and understood commercial aspects of geothermal. • Flexible funding modality enabled the Activity to be responsive to the capacity building needs (i.e. slim hole drilling) in a rapidly changing political environment • Learning by doing approaches to training were highlighted as important for capacity building and applying the knowledge and insights acquired. As such, stakeholders stressed the importance of activities returning to the intended face-to-face mode of engagement as soon as practical
<p>Factor hindering effectiveness</p>	<ul style="list-style-type: none"> • The COVID-19 pandemic significantly constrained the Activity’s operating environment, with lockdowns and travel restrictions impacting the provision of face-to-face training and capacity building. While stakeholders expressed appreciation of Jacobs’ ability to transition to online and hybrid delivery models as an interim measure, they were not deemed to be as effective when compared to hands-on technical sessions conducted in person or in the field. • Rapidly changing policy environment and priorities over the last couple of years have impacted the ability of the Activity to respond nimbly, especially in light of Indonesian government restructures (i.e. desire to consolidate the renewable energy sector). The Activity’s effectiveness was constrained by Gol redirecting resources into COVID-19 responses. Underspends relating to COVID-19 revealed that the Activity would benefit from a larger pipeline to pivot funds and redirect funding when some tasks or outputs were on hold. • High turnover at Gol partner agencies (in particular EBTKE) as well as within MFAT due to rotating staff programme, resulting in some loss of corporate knowledge and sometimes lack of clarity on what support the Activity could provide. This could be improved by building relationships with multiple personnel in agencies, to facilitate better handover sessions with outgoing /incoming personnel and to document discussions and actions to maintain momentum and not lose corporate knowledge. • Inadequate focus for M&E and project communications, to more effectively report and disseminate outcomes and achievements to non-technical audiences, which would in turn support policy and advocacy efforts and progress towards the long-term goal of the Activity. Reporting by Jacobs was quite technical and would benefit from greater MFAT feedback and expectations to ensure reporting on outcomes and against development principles. Project communications was lacking in terms of producing evidence-based products such as brochures, and factsheets on the benefits, challenges, etc of geothermal development that will help MFAT and Gol communicate actual and intended outcomes. • Fragmentation of support and inability to fully apply governance mechanisms show that the modality could be improved to achieve greater effectiveness and better outcomes. The support to different partner agencies despite delivering complementary activities has been quite fragmented (and through one-on-one relationships) and has resulted in missed opportunities to identify and provide key support activities such as advocacy and social/environmental impact assessments that would support the achievement of the long-term goal. The introduction of the Partner Coordination Group in 2019 was a step in the right direction to increase coordination and interaction between parties, however, COVID-19 disruptions meant that these meetings did not occur annually as planned.

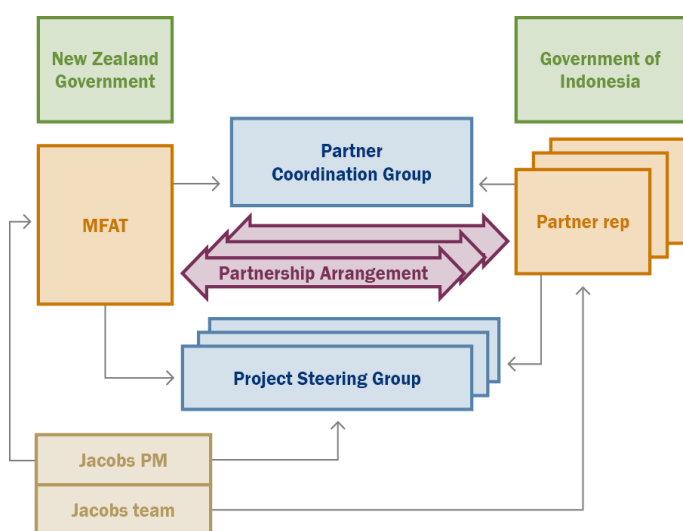
3.3 Efficiency

This section presents the key findings and analysis on the efficiency of the Activity and responds to Objective 3 of the evaluation. Specifically, it explores questions related to MFAT's approach and ways of working (including roles, responsibilities, skills, contracting and delivery approaches) to deliver expected results.

The Activity is a flexible support modality focused on providing technical assistance and capacity building for the purpose of supporting increased and equitable access to energy in targeted areas and increased geothermal production in Indonesia. The Activity is implemented by a single supplier/managing contractor, Jacobs New Zealand, which has a presence in Indonesia through Jacobs Indonesia. As the Supplier, Jacobs New Zealand delivers services against the agreed outputs and work packages leveraging staff from their New Zealand office and the Jakarta-based Programme Management Office.

MFAT is the responsible New Zealand Government ministry for oversight and financial governance of the Activity and approves work plans and budgets following endorsement by key Gol partners. MFAT staff at Post (within the New Zealand Embassy) maintain significant responsibilities with regard to stakeholder engagement and management of Gol partners through the overarching Memorandum of Understanding between New Zealand and Indonesia, and through individual Partnership Arrangements with the three key Gol partners. The diagram below shows the governance arrangements and mechanism for the Activity.

Diagram 2: Governance and management arrangements (Source: Geo-INZ Phase 2 Business Case)



Each of the individual Partnership arrangements is operationalised by individual Project Steering Groups (PSGs) which provide strategic oversight and guidance on activity inputs and reviews and endorse work plans/budgets. PSGs meet six monthly and include MFAT and senior Partner representatives. A Partner Coordination Group (PCG) was established in 2019 comprising of senior representatives from each of the Partners, MFAT and the Supplier, and was intended to convene on an annual basis. The PCG is designed to focus on the big picture and the geothermal sector as a whole, as well as to review the work to date, celebrate positive outcomes and plan for the next year. It was also intended that the PCG would encourage sector-wide information sharing and collaboration. The PCG met once in 2019 and then recently in June 2022 (following the lifting of COVID-19 restrictions).

Overall, the Activity utilised the most effective and efficient modality to achieve desired results, noting that improvements can be made to simplify and improve governance and management arrangements to achieve desired results. The flexible support modality, coupled together with responsiveness on behalf of MFAT and Jacobs, was viewed as effective and fit-for-purpose for achieving outputs and partially achieving short-term outcomes. The evaluation found that flexibility and responsiveness were critical key factors that would remain critical for future phases of support as Gol partners continue to face rapidly changing policy and regulatory environments themselves. In addition, strong project and adaptive management were also deemed important to responding to partner requests in a timely and agile manner and to achieving outcomes and overarching Activity goal. This includes collecting and documenting evidence of what worked well and did not work well, and documenting course corrections and reprioritisation of efforts and investments.

While the procurement mechanisms and partnership arrangements were effective for building individual relationships with Gol partners and demonstrating balanced prioritisation of MFAT support, the arrangements could be simplified for efficiency purposes as well as to encourage and enhance more integrated support and results across Gol partners. Simplified procurement mechanisms could also enable bringing in other partners with greater ease, including for defined periods of time, if it would progress geothermal development. Analysis showed mixed perceptions on the number of partners appropriate for this Activity, with some stakeholders stating that more partners should be engaged to drive integrated geothermal development and increase the relevance of the Activity, while others considered there to be too many partners to provide strategic, meaningful and tailored support that leveraged New Zealand's expertise. Some MFAT stakeholders noted that the recent Gol investment in exploration drilling, financed by the World Bank and Asian Development Bank (ADB), has called into question the

value of MFAT's support for Badan Geologi in a similar area. This points to the need for a situational analysis and capacity assessment of the Partners to better understand needs and gaps as discussed below and in Section 3.1.

While governance and management arrangements (in particular Project Steering Groups) were beneficial for ongoing stakeholder management, stakeholders expressed that the need for more regular and informal coordination beyond formal six-monthly meetings. Stakeholders conveyed that this, combined with more integrated support approaches across Gol partners, could result in greater effectiveness and sustainability. Analysis showed that MFAT stakeholders viewed existing and individual partnership arrangements and adaptive management approaches as time-consuming, and some efforts relating to relationship building and management could be better directed. However, on the whole, more coordination is required to achieve the desired results and outcomes of the Activity, rather than less. Future phases should focus on understanding (with Gol partners) the desired and effective frequency for meeting formally and informally (and as a combined group and/or individual agencies). Coordination would also be strengthened by having appropriately skilled MFAT staff managing this Activity (and the Supplier) given the in-depth technical knowledge and project management expertise required for this and related MFAT activities. Also, MFAT can continue contracting technical expertise/advisor on a part-time basis to maintain more technical oversight and support for the Activity and Post throughout the life of the Activity.

Overall, the Activity was reasonably managed by the Supplier (with MFAT support as required) with project management challenges noted in phase 1 being addressed in the course of phase 2. Analysis shows that there is room for improvement in the areas of project and adaptive management, reporting and communication. The single Managing Contractor (Jacobs) approach appears to be working well, despite concerns of conflict of interest because of the benefits of strong technical knowledge and expertise required for this Activity. Reporting and consultations show that Jacobs was responsive to requests (i.e. when a partner requested additional support through MFAT to focus on drilling activities, this occurred as requested). The quality of Jacob's work has improved over time with challenges experienced in phase 1 being addressed in phase 2. Some of the reasons noted for these improvements was the appropriate resourcing in both New Zealand and Jacobs to scale up as required. However, almost all stakeholders acknowledged it took some time for Jacobs and the Activity to transition to more hybrid and online approaches to continue activities when COVID-19 travel restrictions applied. This evaluation revealed the importance of face-to-face engagement for an Activity of this nature for achieving effectiveness and efficiency.

Analysis shows areas for improvement in relation to financial management and reporting to manage overspends (i.e. from Phase 1 whereby there was evidence of cost overruns, which were better managed and mitigated in Phase 2) and underspends (i.e. during COVID-19 when some planned outputs were on hold and the lack of a pipeline or forward work plan resulted in difficulty with reallocating funds to other outputs). It should be noted that improvements were seen when Jacobs brought on a project manager with the relevant competence and skill set, and that strong project management should be a key requirement of the Supplier for a future phase.

Reporting on Activity outcomes and on the achievement of broader development principles remains a challenge for Jacobs and evidence shows a lack of ability to report on the key results achieved, most significant changes and impact that are useful for MFAT's reporting obligations. Evidence shows that MFAT requested that Jacobs provide clearer financial projections and a pipeline of outputs but could have done more to help Jacob's understand MFAT's reporting requirements and the importance of activities and reporting aligning to MFAT's development principles. Alongside this, stakeholders suggested that MEL, Inclusion and communications support are also key requirements for a future phase, and an external provider could be brought on to complement the preferred supplier's technical expertise if in-house staff did not have the relevant skills and expertise. Stakeholders expressed the need to clarify attribution of technical assistance that Supplier has delivered through the Activity as opposed to work undertaken in a commercial capacity to improve both an understanding of attribution and also help to minimise the risk of perceived conflicts of interest.

Efficiency and forward planning can be improved through greater clarity and communication on the scope and extent of support available and understanding how this aligns with the Gol partners' needs as well as the Supplier's skillsets. Several stakeholders reported that there was some misalignment of expectations of the type and focus on capacity building and technical assistance this Activity would and could provide. For instance, early on, there was a mismatch of expectations between MFAT and the Supplier on the types and areas of the capacity building required, resulting in the Supplier not having coverage of all types of support that Gol partners required and/or were seeking (i.e. policy and advocacy support) in order to progress their distinct geothermal ambitions and targets. The Activity Design and procurement documents focused largely on the technical geothermal expertise required and could have better communicated other enabling support and requirements (i.e. policy and regulatory support, Indigenous/local community engagement, social and environmental impact assessments, project management, reporting requirements).

In particular, stakeholders commented on whether the Activity had the right expertise and support for EBTK, which resulted in a lack of certainty about whether the Activity could add value for this partner and whether

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support was desired. The evaluation found that support was desired by EBTKE and EBKTE acknowledged the quality of early contributions of the Supplier and their responsiveness when requests were made. However, EBTKE required and requested greater clarity on what support was available to further address their distinct roles and responsibilities which required not only technical expertise but also policy, advocacy and communications support.

Stakeholders reported that a better understanding of the unique challenges, priorities and needs of each partner is necessary ahead of designing a future phase of support. A situational analysis could support an examination of support required by each of the key and other Gol partners to show the “big picture” of support required and enable the identification of other gaps and opportunities. This evaluation highlights some of the gaps and opportunities in Chapter 4, however, a more in-depth analysis is required which could be undertaken in collaboration or tested with the Partner Coordination Group, ahead of the design and funding of a future phase of support. Adopting a holistic, whole-of-sector approach and streamlining coordination mechanisms both within Activity-level partners and across the energy portfolio would also enable effective scaling-up of resourcing to respond to changing priorities and needs.

As part of this situational analysis, it was also suggested that consideration be given to whether MFAT’s other complementary activities (i.e. for NZSTIGS) should be included as part of this analysis and future designs to support integrated support from MFAT for geothermal activities. MFAT stakeholders emphasised there is room to find complementarity amongst the activities (Geo-INZ and NZSTIGS) in order to achieve these long-term geothermal outcomes, while Gol stakeholders reported the benefit of one-stop-shop approaches whereby key contact points were clear. This is especially important in light of the brand confusion around whether training is delivered by Geo-INZ or NZSTIGS (with Wintec as the Supplier) given Wintec has subcontracted Jacobs to be the project manager/client liaison because Jacobs is well known by stakeholders in Indonesia. As all two MFAT activities share similar stakeholders within the geothermal sector while fulfilling different areas of focus, there is potential to coordinate components of these activities or merge activities to improve both the efficiency and effectiveness of MFAT’s support to Gol.

Photo: Drillin Lesson Learned at BG Meeting and Workshop 9-10 June. Source: MFAT



3.4 Inclusiveness

The evaluation assessed the extent to which the Activity is providing inclusive development, addressing exclusions and inequality while promoting human rights, and equitable participation for all. Key findings and lessons learned are presented below.

The Activity addressed gender and social inclusion through establishing the Women in Geothermal Sector (WING) – Indonesia Chapter initiative which is noted as the greatest gender outcome of the project. However, more needs to be done to support mainstreaming of inclusion across the project and the development of targeted activities for women and other marginalised groups. The Activity was instrumental in establishing the WING Indonesia chapter and supported it to operationalise and become self-directed, with Indonesian women taking ownership. Over time, WING Indonesia Chapter has matured and become very visible within the Indonesia geothermal sector and the broader industry. Stakeholders consulted confirmed the success of WING Indonesia as a gender-specific activity that ensures the Activity is taking an inclusive approach and targeting equitable participation of men and women. Through the use of women’s events, networks and mentoring programmes in the male-dominated industry, Geo-INZ has been instrumental in supporting women to take leadership and ownership within the sector. Though progress has slowed during COVID-19 due to limited opportunities for interpersonal networking, the Supplier confirmed that activities have slowly resumed, with plans underway to facilitate international mentor matching with women of WING.

The Activity design outlined gender-specific workstreams within the Activity that aimed to target the empowerment of women in the industry, including through mentoring women directly (e.g. by women in the Supplier’s organisation) and indirectly by setting up mentoring networks, including the use of social media, hosting specific technical workshops for women, working with universities and other organisations to encourage women to enter the geothermal industry and considering how to accommodate women in the field. Even though targeted activities were outlined in the design, other than WING, the evaluation found little evidence that gender-specific initiatives were advanced by the Activity. The Geo-INZ 2022 Annual Report notes further activities to progress the indicators under gender equality and women’s empowerment (GEWE) either through WING or other means for the last six months have not progressed.

The Activity’s approach to engaging Indigenous peoples and communities is not clear. Mechanisms to work with and engage Indigenous peoples should be explored through enhanced community consultations to improve local communities’ perceptions of geothermal energy exploration. Indonesia is home to an estimated 50 to 70 million Indigenous people, representing 19% of the Indonesian people.¹ Most stakeholders noted the importance of community consultations with local Indigenous peoples as a key enabler and indicator of how successful the Activity will be in the long term. Some stakeholders noted that failure to engage the community can affect and delay implementation. For instance, delays in progressing the pilot exploration project at Wae Sano in East Nusa Tenggara, funded by the World Bank under the Geothermal Energy Upstream Development Project (GEUDP) are attributed to community resistance to geothermal exploration due to a lack of community consultation.

Geo Dipa reported that they developed a draft Indigenous People Plan (IPP) which outlines consultation approaches that engage with customary traditions in place in Wae Sano, East Nusa Tenggara. The IPP notes that the project has obtained “partial” broad community support as a result of community consultations in 2020, however, there are several residual issues that need to be resolved, including increased community acceptance and support; implementation of a Grievance Redress Mechanism particularly for the affected communities; implementation of project communication strategies at the local and site level; and communication of project updates related to potential environmental and social impacts and its mitigation measures.

Stakeholders in Indonesia noted that future incorporation of Indigenous approaches into the Activity should further emphasise community consultations in activity planning and design processes, cultural sensitivities and awareness, communication strategies, articulation of direct long-term (not just short-term) community benefits and including community leadership in the participatory processes. Some MFAT stakeholders noted the need for diversity and inclusion specialists as part of the infrastructure technical support and that the Supplier should have access to this skillset so that inclusion is well embedded into activity design and implementation phases. Some stakeholders in Indonesia consulted shared their belief that New Zealand has expertise with indigenous

¹ Source: International Work Group for Indigenous Affairs - Indigenous peoples in Indonesia – Accessed at <https://www.iwgia.org/en/indonesia.html>

approaches (through the Te Tiriti o Waitangi (ToW)² to develop mutually beneficial relationships in project establishment, and could share this best practice with Indonesia on how to develop a benefit-sharing mechanism within the project design and implementation.

Opportunities exist for the Activity to create more opportunities for the participation of all groups especially those most marginalised in the future through targeted inclusive activities, better engagement with local communities, resourcing for the GEDSI Specialists within the project and cultural sensitivities and awareness. Supporting inclusiveness is both a challenge and an opportunity for the Activity. Though the Activity design articulated inclusion work packages, evidence shows that not all of them were implemented. Stakeholders consulted broadly acknowledged the male-dominated geothermal sector in Indonesia and recognised the contrasting experiences of women in urban populations and in remote locations where many field sites are located. Some MFAT stakeholders commented that while the Supplier had strong geothermal technical skills that enabled the success of overall technical activities, more effort could have been invested into the mainstreaming of Gender Equity and Women's Empowerment (GEWE) across activities.

This calls for concerted efforts to mainstream gender and social inclusion but also develop targeted inclusive activities for the different marginalised groups. Practice shows that for better inclusion outcomes, there is a need for a mix of targeted activities to reach the specific segment of the marginalised population (such as WING for women in geothermal) but also mainstreaming inclusion in the operations of the Activity. Mainstreaming could include ensuring a gender-balanced project team, having gender quotas for all training and capacity building, developing gender action plans at the design and applying a gender lens in project activities to understand how interventions affect men and women.

Photo: Group photo at WING Workshop – 14 June. Source: MFAT



All these efforts can be implemented with the support of gender and social inclusion specialists. Stakeholders interviewed noted the absence of a gender and inclusion specialist as a weakness of the Activity because the initial contracting of the Activity did not explicitly articulate the need for this resource. Future designs should explore how Gender and Social Inclusion specialists can be included in the Activity's operations and management. Some options were provided by stakeholders such as including Inclusion Specialists as a needed skillset by the Supplier, sub-contracting Inclusion Specialists as short-term consultants/advisors to provide support at specific times of implementation or partnering with local organisations with inclusion expertise to support the Activity as needed.

3.5 Sustainability and resilience

This section presents findings and analysis on the sustainability and resilience of the Activity's investments **and responds to Objective 5 of the evaluation**. Specifically, this section explores questions relating to the extent to which the Activity's investments and systems are likely to be sustained over the lifetime of the investment, are resilient and will continue beyond the lifetime of the investments. It should be noted that sustained development was intended to be a core component of the Activity, with technical assistance and capacity development delivered to the three key Gol partners to assist them with both immediate, short-term projects as well as strategic, long-term projects that are central to each Gol partner's purpose.

² Source: Applying Te Tiriti o Waitangi within the Pacific and Development Group at MFAT: Action Plan (2022) [DRAFT]



Photo: Discussion of resource data and recommendations to relocate 3 MT survey stations. Source: Jacobs' Annual Report

The Activity has produced results and outcomes that are likely to be sustained over the lifetime of the investment, however, it will also take more time to see the achievement of the Activity's long-term goal and a self-sustaining geothermal sector in Indonesia. The evaluation found that technical assistance and capacity building delivered to date has resulted in increased knowledge, tools and frameworks which are sustainable and will have long-lasting benefits as they have enabled a systematic way of thinking. Gol partners and recipients viewed this as 'Jacobs' legacy. There was evidence of sustainability through increasing government ownership of the exploration drilling program and government-funded exploration projects and the use of materials (i.e. procurement documentation used by Badan Geologi resembles documentation from the Wae Sano exploration project) developed through capacity training sessions to support the establishment and implementation of these projects. In particular, stakeholders expressed appreciation of the strong technical value of the Supplier and a continued desire to involve the Supplier in the pipeline of government drilling projects, suggesting a potential for sustained progress toward outcomes beyond the current phase of the Activity.

In order to see the continued realisation and sustaining of benefits from this Activity, MFAT's support needs to be long-term and strategic given the nature of the geothermal sector in Indonesia and the challenges and opportunities currently facing the sector. Given the time required to develop a geothermal plant, stakeholders noted that at least another 10 to 15 years of support would be required to achieve the Activity's long-term goal, noting that geothermal investments are a 'long-term game' and capacity building in a technical and infrastructure-related sector such as this often takes decades. This is in line with the timeframes as set out in the Activity Logic Diagram. Stakeholders considered a situational analysis that assesses what support is required across Gol to progress geothermal development and medium-term outcomes are important to support strategic decision-making and design an effective modality for a future phase of support. This will also help to contribute to pipeline planning and minimise underspends. Though the long-term support mentioned by the Gol stakeholders might be at odds with the MFAT intentions, whichever the partnership modality, long-term support was emphasised. For instance, if capacities and capabilities are built and sustained in the geothermal sector in the short to medium term, maybe MFAT could explore geothermal financing (like what multilateral banks do) to the Gol to manage and implement activities on their own.

Acknowledging the need for further support from New Zealand so that Gol can demonstrate equivalent geothermal standards and progress compared to comparable countries, stakeholders suggested that future phases of support must be strategic, clear and contain transition and/or exit strategies. Clearly considered and well-documented MFAT support going forward would enable the achievement of long-lasting benefits. Stakeholders either suggested the necessity for transition and/or exit strategies for future phases. One stakeholder stated that consideration should be given to whether MFAT should transition from a donor arrangement to a partnership arrangement to maximise benefits for New Zealand and to support the sustainability of the sector. Given the scope of the evaluation, this suggestion was not explored in detail, however, this could extend to more partnership-based approaches, working with the private sector and/or investing in geothermal energy development for trade and profit purposes.

Stakeholders reported that sustainability of the Activity would be improved with a greater local presence and project management to undertake face-to-face engagement and site visits as well as to build the local workforce and support to manage environmental protection and social risks/safeguards. Other suggestions for improving the sustainability of the Activity included: harmonisation with other donors and private sector contributions to minimise any duplication and reporting burdens; continuously documenting guidelines, materials and outcomes for transferring knowledge and communicating success stories; further embedding 'learning by doing' and 'train the trainer' models; stronger MEL and inclusion approaches, as well as continuing training exchanges in NZ and supporting further funding of geothermal studies as a course with local Indonesian universities. Sustainability can also be improved by stronger risk mitigation processes by both MFAT and the Supplier to ensure the maintenance of good relationships which are critical for an activity of this nature and to support continued ownership by Gol partners.

4 Overall conclusions and considerations for the future

4.1 Overall lessons learned and conclusions

The evaluation finds the Activity to be relevant and valued by a range of stakeholders and partners in Indonesia. The Activity provides strategic and niche support in Indonesia rooted in New Zealand's world-class geothermal expertise and its commitment to supporting partner countries to advance their renewable energy ambitions and meet their mitigation targets. MFAT's and Jacobs' geothermal expertise is highly regarded thanks to its good reputation, commitment to objectives and values, strong in-country relationships and capable and skilled staff

During the second phase of the Activity, the COVID-19 pandemic created many challenges, required many adjustments, and led to a slowdown of the Activity. Nevertheless, the evaluation found that Jacobs continued to implement activities and produced a wide array of outputs, contributing to providing technical assistance and building capacities and influencing the geothermal industry in Indonesia. The ability of Jacobs and MFAT at large to carry on during the pandemic was valued by a range of Gol stakeholders.,

Yet, the evaluation found that MEL, Gender and Social Inclusion, communication and brand awareness, project management and financial reporting were areas requiring improvement and greater efforts are required in future phases to address shortcomings and issues that emerged in activity reporting and this evaluation. In particular, outcomes reporting was noted to be a challenge limiting the ability of the Activity to report on results achieved and most significant changes while communication and branding. Most of these challenges could be linked to the gaps and lack of clarity in the Activity Design and supplier procurement documentation/arrangements that make clear the requirements of the Supplier to provide a team with expertise and skill sets beyond technical geothermal expertise to meet Gol partner's broader support needs and MFAT's requirements to apply key development principles and achieve development outcomes.

The evaluation found that the next phase of the Activity should not deviate from the current objectives but should clearly define and provide clarity on what technical assistance and capacity-building support can be provided to the Gol partners. Greater clarity and agreement on the support required by Gol partners and the support available through the Activity is required to ensure adequate uptake, pipeline planning, and to facilitate greater coordination and prioritisation of tasks that will help the Gol progress in geothermal development and meet targets. Support to Gol partners requires greater integration, including facilitating more integrated governance and management arrangements for the Activity and ensuring the modality is designed to achieve this.

4.2 Considerations for the future

Emerging areas for consideration by and for the Activity are summarised below and respond to Objective Six of the evaluation. Emerging areas of consideration are based on the evaluation findings, lessons learned as well as recommendations from internal and external stakeholders consulted on the future strategy and policy direction of the Activity. These considerations are intended to inform the future directions of the next phase of the Geo-INZ Activity.

- **The next phase of the Activity should not deviate from the current objectives but should clearly define and provide clarity on what technical assistance and capacity building support can be provided to the Gol partners.** Greater clarity and agreement on the support required by Gol partners and the support available through the Activity is required to ensure adequate uptake, pipeline planning, and to facilitate greater coordination and prioritisation of tasks to help the Gol progress in geothermal development and meet targets.
- **There is value and merit for MFAT to develop a whole of geothermal sector strategy in Indonesia that clarifies sector support for geothermal energy.** Currently, MFAT has two geothermal activities in Indonesia with the Geo-INZ and NZSTIGS activities providing technical assistance and capacity building. A strategy that brings everything together will be useful that articulates the objectives of the investments in the geothermal sector, the rationale of different activities and the balance between physical assets, institutional support, and capacity development.
- **Maintain a single supplier modality as is now for one-stop-shop access for Partners and explore mechanisms for an agile and responsive approval process of pipeline activities.** Supported by good project management, the Supplier should also work with Partners on identifying activities for implementation that are responsive to the sector and helps meet the Gol priorities. Through this approach, activities will be funded based on priority meaning that funding will not be shared equally among the Partners but will be based on what activities by the Partners are considered a priority.

- **Support further investments in quality geothermal data.** The first and second phases of the Activity have supported geothermal data capture (through the Summary Database) well however, data quality gaps and analysis exist for the Partners. Future support in quality data is needed to enhance data access, quality and analysis for better decision making. MFAT could explore working with other partners in the geothermal sector to support streamlining and improving the quality of the geothermal data in Indonesia.
- **If possible and within the scope of the Activity other geothermal technical support could be explored.** These areas were identified by Partners as areas they would like more support. This includes areas such as technical assistance for infrastructure financing (supporting Partners access infrastructure funds), policy advocacy and support and further support for a better sim hole drilling.
- **Better articulate the scope and extent of services provided to Gol partners at the inception stage.** Efficiency and forward planning can be improved through greater clarity and communication on the scope and extent of support available and understanding of how this aligns with the Gol partners' needs as well as the Supplier's skillsets.
- **If feasible, enhance local presence by having MFAT as well as Jacob's Project Manager based in Indonesia.** The Project Managers based in Indonesia will support relationship building and provide on-site project management which will help with brand awareness and communication of the Activity results to Gol and other partners. The presence of the managers will enhance the recognition of MFAT as a partner of choice and build the relationships needed to navigate the geothermal sector in Indonesia. The managers to be based in Indonesia should have good stakeholder engagement and coordination skills, good project management skills, a strong local presence and a good context and cultural understanding of Indonesia. Also, having communications and policy and advocacy skills will be desirable so that they can provide strategic policy and communication advice to Gol agencies.
- **Review governance, management and procurement mechanisms to ensure that it supports efficiency, relationship building and also effectiveness.** For instance, MFAT should consider whether individual partnership arrangements are appropriate to meet the objectives of the Activity. Also, Activity governance mechanisms should be assessed to agree on the scope and frequency of meetings to support effective decision-making and delivery. How frequent PSGs and PCGs should meet should be further discussed post-COVID 19 and whether these should be through formal and/or informal mechanisms.
- **Training should ramp up 'train-the-trainer' models and 'learning by doing' approaches for greater skills transfer, localisation and sustainability.** Where possible, emphasis should be on training local people as trainers and creating spaces and opportunities during training for participants to practice what they have learned. Also, twinning arrangements and exchanges between Indonesian participants and agencies in New Zealand should continue given their value for capacity building for relationship building as well as supporting the ongoing aligning of standards and practice to international standards.
- **Consider Activity branding and communication to enhance the visibility of MFAT's geothermal support and results to enhance appreciation and understanding of MFAT's contributions across stakeholders in Indonesia.** This could be supported by having a branding and communication strategy and allocating human resources to lead communication and brand management. The Communication resource will develop communication and knowledge products to enhance communication and dissemination of the Activity results and achievements. The communication approach should consider the inclusion of all people through the adoption of different media channels and platforms including radio and other channels used by indigenous and local community members. Doing this will raise New Zealand's profile as a geothermal expertise provider beyond being a donor.
- **Consider resourcing for a Monitoring, Evaluation and Learning (MEL) Specialist as part of the core project management team.** If and when resources allow, MFAT should prioritise investment in a dedicated MEL role to address ongoing gaps in the MEL (and reporting) functions. A dedicated MEL specialist would ease and improve outcomes by reporting and facilitating learning and sharing of Activity's stories of most significant change and impact. Such a role would enhance the Activity's ability to measure, assess, and communicate its results, move beyond its current activity- and output-oriented reporting, and guide learning processes that enrich the Activity's work and enable adaptive management.
- **Put inclusion at the centre of Activity design and management.** Findings from the evaluation indicate that embedding inclusion into activities can contribute to the effectiveness and achievement of broader development outcomes. As analysis indicates, inclusiveness is not yet well-grounded in the Activity. There are opportunities for the Activity to strengthen gender equality and social inclusion in its programming and help to deliver better results and support a clearer understanding of the distribution of activity benefits. Focus on inclusiveness can be enhanced by:
 - **Ensuring Activity designs are informed by gender and inclusion analysis.** This will ensure that the right approaches are selected, negative unintended consequences are limited and help to deliver better results and support a clearer understanding of the distribution of activity benefits.

- **Developing gender and inclusion-sensitive results frameworks.** MEL frameworks should identify inclusive outcomes and appropriate indicators that go beyond counting participation to measuring the change and impact of gender equality, human rights and social inclusion efforts.
- **Embedding an inclusion lens in Activity management.** Doing so would help identify who is benefiting from these efforts and help validate whether the right interventions are being supported and working as intended.
- **Consider resourcing for Gender and Social Inclusion Specialists to guide the Activity's inclusion efforts and ambitions.** If possible, this Specialist should have expertise in working with local and indigenous people. Ideally, this Specialist should be part of the core project team or can be sub-contracted on a consultancy basis to the Activity. Alternatively, this function can be sourced from local organisations through a partnership arrangement.
- **To support engagement with indigenous communities, MFAT should consider the development and delivery of a project benefit sharing program or community development programme in areas of work.** This programme should articulate both short-term and long-term community benefits. Doing this will support ownership and appreciation of the project by the community members.
- **Consider cultural sensitivities and awareness during the design phase to strengthen activity implementation.** MFAT could further invest more time into introductions and establish genuine relationships and partnerships by consulting national staff or hiring people to provide insights into the local context and political economy. Lessons could be learned from the NZMATES Activity where the supplier engaged a subcontractor with a strong local presence who was proactive about building linkages with government and local industry to develop a good relationship with Gol and partners.

Photo: Taken at Cisulok-Cisukarame geothermal prospect location. Source: Jacobs' Annual Report



Annex 1: Stakeholder Consultation List

Stakeholder group	No. of stakeholders interviewed	Type of interview
New Zealand Government / MFAT		
New Zealand High Commission / Jakarta Post	2	Key Informant Interviews
Bilateral Programme team – Wellington	1	Key Informant Interviews
Energy Programme team – Wellington	3	Key Informant Interviews
MFAT contractors / Technical Advisers	2	Key Informant Interviews
Government of Indonesia		
Badan Geologi	3	Focus Group Discussion
EBTKE - Directorate for New Energy, Renewable Energy and Energy	4	Focus Group Discussion
PT SMI	2	Focus Group Discussion
PT Geo Dipa Energi	1	Key Informant Interview
Other stakeholders		
Jacobs New Zealand	2	Focus Group Discussion
World Bank	2	Focus Group Discussion
Indonesian Renewable Energy Society	1	Key Informant Interview
New Zealand Trade and Enterprise	2	Focus Group Discussion