

Indonesia's Geothermal Sector

Under The Volcano: A Regulatory Update on Indonesia's Geothermal Potential

March 2016

Indonesia enjoys an abundance of potential geothermal resources, albeit often located in remote areas. Recognising the potential, the Indonesian government has introduced various incentives to try to encourage development, as described in this report. If the relevant public authorities made full use of such incentives and implemented them consistently in a way that mitigated key private sector risks, they could make a real difference. However, political and bureaucratic tensions often get in the way of effective administration, and sponsors may be discouraged by exploration risks, complex regulations and inadequate feed-in tariffs ("FiTs").

Is geothermal energy a viable way to plug Indonesia's power shortfall?

The Indonesian government has ambitions to add 35 gigawatts ("GW") of generation capacity in the next 4 years, so as to resolve electricity shortages and meet future power demand, which is expected to double from 2016 to 2025. Some of this new capacity must come from renewable sources, in line with Indonesia's INDC submission to the United Nations. Specifically, by 2025 the Indonesian government wants 25% of its total electricity needs derived from geothermal and other renewable sources. In light of falling fossil fuel prices, this is an ambitious target as geothermal currently accounts for only about 4% of total electricity generation, in contrast with 55.7% for coal and 25.3% for gas¹. Accordingly, the Indonesian government must continue to focus on resolving roadblocks that can lead to delay, including providing adequate funding to the Indonesian Geothermal SOEs (defined below). Notably, geothermal is included in President Jokowi's tenth economic stimulus package, dubbed the "big bang", and will be opened to

100% foreign ownership (up from 95% at present for geothermal drilling). This is a small change in the grand scheme, but will allow new ways to structure foreign equity, including for foreign developers to avoid a local joint venture.

What are the existing geothermal opportunities, and what is the potential for new projects

Our clients continue to display interest in the Indonesian geothermal sector, either in terms of investing in exploration-stage concessions or acquiring a foothold in the market through interests in existing, brownfield assets. In the past, tenders for geothermal concessions have been conducted with scant reference to international best practice, sometimes resulting in awards to sponsors who do not have the necessary expertise or financial resources. Hopefully the steps that PT PLN (Persero) ("PLN"), the state electricity company, has taken in recent years to improve the bidding process, including more rigid bid bond and other requirements, will be reflected in the current tender rounds (see below for more details). Whilst it is fine to hold new tenders, many existing projects need to be developed.

The **Annexure** to this report sets out a list of greenfield projects, each in varying stages of development. Some projects (but not all) have an Energy Supply Contract ("ESC") with PLN, or a more recent Power Purchase Agreement ("PPA").

Also set out is a list of existing geothermal facilities. During the mid-1980s to mid-1990s, President Suharto's government at the time brought to fruition the Darajat, Ganung Salak and Wayang Windu geothermal projects under Joint Operation Contracts ("JOC") between Pertamina, the oil and gas state company, and certain foreign contractors, namely Chevron and Star Energy. These projects were developed under a Build, Own and

¹ 2015 figures from PT PLN (Persero)

Transfer (“**BOT**”) model, encompassing both the production of geothermal steam and its conversion into electricity pursuant to Presidential Decree (“**PD**”) No. 22 of 1981, amended by PD No. 45 of 1991. This is in contrast to a previous Build, Own and Operate (“**BOO**”) model, which related to upstream steam only. For these projects, Pertamina is the resource holder and operation manager, with electricity sold to PLN under up to 42 year take-or-pay ESCs. JOCs for other geothermal work areas, such as Karaha and Talaga Bodas (WKP Karaha Cakrabuana) in West Java, were ultimately awarded to state-owned entities such as PT Geo Dipa Energi², PT Pertamina (Persero) and PT Pertamina Geothermal Energy (“**PGE**”)³ (the “**Indonesian Geothermal SOEs**”) for their own operation.

Since then, progress with new projects has been slow, with the exception of the 330-MW Sarulla Geothermal Power Plant Project. Sarulla reached financial close on 23 May 2014⁴ and was financed under the JOC model, relying on grandfathering exemptions under Law No. 27 of 2003 and its replacement, Law No. 21 of 2014 (the “**New Geothermal Law**”), which go some way to preserve the validity of joint operations notwithstanding the requirement for newer projects to have a geothermal licence (*Izin Panas Bumi*) or a direct utilisation licence (*Izin Pemanfaatan Langsung*) (depending on the intended use of the geothermal resource).

Exploration risks – the key challenge for investors

One distinguishing feature of geothermal projects is that they are acutely “front-ended” from a capital perspective, meaning that developers must outlay significant amounts of their own equity for exploration without any assurance that they will find commercially exploitable reserves. These substantial exploration risks mean that debt funding – even from multilateral development agencies (MDAs) such as the Asian Development Bank (ADB) – is unlikely to be available unless at least 50% of the steam resource is proven, leaving investors to front up with valuable equity. This creates a roadblock for project development, with the private sector often unwilling to invest in exploratory drilling programs without an attractive feed-in tariff to compensate for up-front risk.

In regards to any PPA tender and negotiation process with PLN, one of the key challenges is securing a viable feed-in tariff. As we understand from officers in PLN, this is because the Ministry of Finance (“**MoF**”) views its Public Service Obligation (PSO) to PLN as too big, and there is pressure on PLN to reduce its reliance on subsidies. Unfortunately, this does not help the position for many geothermal projects. They are more expensive than coal-fired power, while involving exploration risks analogous to the oil and gas industry but with long-term, stable returns instead of a fast pay-back if drilling is successful.

² GDE is a joint venture subsidiary of PT Pertamina (Persero) and PT PLN (Persero)

³ PGE is a subsidiary of Pertamina

⁴ The original JOC, which was subsequently terminated and then replaced, was granted to Unocal in 1993.

While the tensions between the MoF and PLN will be difficult to unravel in the short term, the Indonesian government can focus on sufficiently capitalising the Indonesian Geothermal SOEs so that they may conduct initial exploration work, even before a project is tendered. This model has been successfully deployed in other countries such as New Zealand, who is ready to assist. Furthermore, Indonesia must also consider the role of its Geothermal Fund, which has never been used (discussed in greater detail below).

Available financing options

Once a project company identifies proven steam reserves, a range of institutions may offer funding on favourable terms. For example, the Asian Development Bank administered US\$ 5.3 billion Clean Energy Fund (“**CTF**”) offers concessional financing for renewable energy projects with multilateral banking partners. US\$ 80 million of CTF funds supported the Sarulla project, for example. In that case, the CTF concessional financing bridged the gap between equity and commercial banks and provided flexibility in the timing of funding and payment. Japan Bank for International Co-operation (JBIC) also provides long tenor low interest loans, and incidentally was part of the consortium of lenders to the Sarulla project.

In terms of domestic funding, local governments may take advantage of soft loan facilities that bear interest at a lower interest rate than commercially available loan rates, offered by PIP (*Pusat Investasi Pemerintah*), the Government Investment Unit (PMK No. 177/KMK.01/2010), as an “environmentally friendly investment”. These facilities may be offered in the future by Indonesia’s Green Investment Fund, which in any event will sit under PIP, although it remains to be seen if they can make a noticeable difference. Engaging the public sector through Indonesia’s PPP framework is also a possibility.

The role of international co-operation

On 17 April 2012, PGE and Geothermal New Zealand signed a memorandum of understanding in order to cooperate in regards to Indonesian geothermal. This has resulted in various areas of collaboration, including the provision of specialised geothermal training to Indonesian technical officers by GNS Science, New Zealand’s geological and nuclear sciences institute. Whilst New Zealand has been involved in most Indonesian geothermal projects, given the similar geology and domestic expertise, much more could be done if PGE was properly engaged and capitalised.

Other geothermal co-operation includes the American Green Prosperity Project, which provides grants of between US\$ 1 million to US\$ 20 million per project but has a co-funding requirement.

Indonesia’s financial incentives

The Indonesian government has introduced a series of revenue measures, aimed to entice more investment in the sector, as follows:

- reduced value-added tax and import duty on machinery and capital goods used for the development of power plants (subject to a few qualifications);
- 5% net income tax reduction of the investment value for each year over 6 years;
- accelerated depreciation and amortisation (as set out in the Ministry of Finance Regulation No 21/2010);
- compensation for losses incurred over a 5 year period but for no more than 10 years (with 1 year extension in certain circumstances);
- 10% withholding tax reduction on dividends to foreign investors (or such lower rate determined by a double tax treaty);
- income tax holidays which can exempt income tax for up to 15 years;
- increased business permit periods of up to 37 years (for a geothermal permit); and
- a proposal to abolish property tax (“PBB”) on geothermal exploration areas is sitting with the MoF for approval. Exploration activity had previously been considered a taxable activity even though there was no guarantee that investors would find a sufficient geothermal resource. Note that the PBB is still applicable currently.

It is hoped that these financial incentives help to mitigate any issues relating to PPA pricing (in particular, the ability to escalate prices over time in keeping with production costs and inflation). Given the policy directive of PLN to keep electricity prices low and hence effectively cap PPA pricing, commercial returns for a geothermal project can only really be increased by reducing costs and risk associated with the project rather than by increasing the FIT.

PPAs - pricing

A durable and predictable PPA between the geothermal concessionaire and PLN can be a huge help in driving the development of an independent geothermal power project. The pricing structure of the PPA, in particular, is a major factor in the economic viability and returns of a project.

The 2014 tariff revisions (MEMR Regulation No. 17/2014) (“**2014 Tariffs**”) revised the maximum electricity tariffs that bidders are allowed to submit in a competitive tender. A tariff above the “ceiling price” must be approved by the relevant Minister. These increased tariffs are based on geographical area and commercial operation date - that is, projects that are more remote and harder to develop attract higher tariffs as will those where the projected commercial operation date is further in the future (to mitigate inflation risk). The 2014 Tariffs also provided for the escalation of tariff prices for the first time, although the permitted rate of escalation is not prescribed and escalation is not permitted until the commercial operation date of the project. The 2014 Tariff was to be revised in mid-2015, however recent government publications suggest that this may be in the next month.

Commercial realities of geothermal projects are paid lip service, at least, in the New Geothermal Law. The New

Geothermal Law mandates that the price paid for geothermal energy generated by indirect utilisation must be determined with consideration to “economic cost”. The precise method for determining the FIT has not been announced nor how it will interact with the 2014 Tariffs (or their successor) but it is possible that this pricing methodology may increase the rate of return for geothermal projects. We understand that the geothermal regulation is still being studied by MEMR.

Whilst tariff rates remain effectively capped, the 2014 Tariffs in combination with the New Geothermal Law show a recognition that, despite the policy directive of PLN to keep consumer electricity prices low, some compromise is necessary if electricity sourced from geothermal projects is to be encouraged as part of Indonesia’s domestic energy mix. Geothermal projects will only be developed by independent power producers if it is economic for them to do so.

The recent PPA negotiations between PLN and PGE are encouraging. Following a year-long deadlock, PGE (as generator) successfully negotiated steam price adjustments across several projects of between 2-3.4 US cents per kilowatt hour (“kWh”) above PLN’s stated maximum price of 4 cents per kWh. Whilst this increase is relatively small, it is nevertheless a step in the right direction and a concrete example that PPAs with PLN may be adjusted to reflect changing commercial realities.

PPAs – offtake risk

Given that PLN enjoys a monopoly over electricity distribution, it would be helpful if the Indonesian government mitigates some of PLN’s off-take risk. Historically in periods of economic downturn not all PPA obligations have been honoured. The Indonesian government offers a Business Viability Guarantee Letter (“**BVGL**”) for projects on the Fast Track 2 Programme and the Indonesia Infrastructure Guarantee Fund may provide a guarantee in the case of PPPs. However, recent comments from the Indonesian government suggest that they may be reluctant to give government guarantees, even though the MoF supported the Sarulla project, and it has even been suggested that the BVGL may actually prove to be an administrative roadblock.

Less red tape?

The New Geothermal Law created a “one stop shop” for tendering and licensing for geothermal projects. This power now resides centrally with the Investment Coordinating Board (“**BKPM**”). This should ease supervisionism and accelerate projects. Prior to this, tenders for geothermal working areas were held by local administrators. A mandatory production sharing bonus (calculated on the gross income of the geothermal licence holder from first commercial production) has been introduced, arguably to compensate regions for loss of authority, although the amount of the potential bonus and other terms are currently unclear. Whilst it is yet to be seen whether the implementation of the law will result in enhancements to the cumbersome tendering process, it does signal government recognition of the drawbacks of the current tendering process.

PLN is also now under a regulatory mandate to produce a standard form PPA, which is provided at the beginning of a tender and serves as the basis for negotiations. PLN publishes a Bahasa version of its template geothermal PPA (called a Draft Energy Sales Contract) on its website. The PPA is considered to be generally standard form and requires performance bonds from the developer but promisingly contains price escalation provisions. The base template permits developers to get an indication of the risk allocation between the parties and the structure of pricing prior to submitting a tender, although heavy negotiation is still often expected.

A future for the Geothermal Fund?

A Geothermal Fund Facility of US\$ 200 million was set up in 2012 (MoF Decree No. 3 of 2012) to fund loans, equity participation and financing of government drilling. In the case of a PPP, drilling funds are provided to tendering parties with the winning bidder repaying the outstanding amounts to the government with a 5% margin. In the case of a winning permit holder, the loan for exploration activities must be repaid within 4 years or on financial close, whichever is earlier. Collateral is required for the loan.

The Minister of Finance has declared that the Geothermal Fund Facility is to be used to fund activities at both the exploration and exploitation stages. If the fund were used to further map work areas prior to tender in cases other than PPPs, bidders would have greater certainty about the nature and size of the geothermal resource for which they are bidding. The Indonesian government prefers that developers take resource risk, but this would be a small but significant mitigant. Even where the winning bidder obtains a loan for exploration activities, the deferred repayment of the loan may be useful from a cash-flow perspective (although posting collateral may be difficult).

The Geothermal Fund Facility is currently entrusted to PT Sarana Multi Infrastruktur and there have been no further public statements about the use of the fund although we understand that the MoF are currently formulating a new regulation on its management. As yet no funds have been disbursed as the inherent uncertainty of geothermal drilling discourages government officials from funding such activities. If funds were spent on drilling activities that were ultimately unsuccessful (and costs cannot be recovered from a bidder) this would cause a loss to the state balance sheet and may be grounds for an allegation of corruption against that official. In light of this, absent a very clear regulatory direction to fund speculative drilling and to remove the discretion of a government official to fund or not fund, it is ultimately unlikely that the Geothermal Fund Facility will be used to fund preliminary drilling. This is a missed opportunity as it may weigh the risk/reward analysis of project developer in favour of developing a project.

It has been said that the public budget is the biggest driver of green investment and this seems set to remain unless "resource risk" can be mitigated. In the case of geothermal, operational risk is relatively low compared with other renewable energy sources so risk mitigant measures (other than those relating to the PPA) will make the most difference at the initial stages of a project.

New foreign investment rules and exit strategy

BKPM has signaled that it intends to make certain changes to the "negative investment list" which imposes maximum limits on foreign ownership in certain sectors. Currently, a maximum of 95% foreign ownership is permitted for geothermal drilling; a maximum of 95% foreign ownership for power generation projects above 10 megawatts (MW) and a maximum of 49% foreign ownership for power generation projects of between 1 and 10 MW. Foreign investment in power generation projects of 1MW or less is not permitted. The official revisions are expected in March 2016 and, if implemented, will permit full foreign ownership of power generation projects of more than 10MW, maximum foreign ownership of 67% of smaller generation projects and permit foreign investment in smaller generation projects of less than 1MW for the first time.

Foreign developers who wish to exit a geothermal project will need to do so via a share sale mechanism rather than an asset sale mechanism. It is often prudent to hold shares in an Indonesian project company through two or more clean holding companies whose shares may be sold without disturbing the share capital of the Indonesian concession holder. Under the New Geothermal Law, the holder of a geothermal licence may transfer its shares on a stock exchange listing (with the approval of MEMR) after it has conducted exploration activities. However, private share sales are not permitted. This restriction only applies in respect of geothermal licences issued after the introduction of the New Geothermal Law. Implementing regulations still need to be issued in relation to this restriction.

Structural changes to the Indonesian Geothermal SOEs

According to Indonesian media sources, there are proposals to make PGE a separate state owned utility company or to restructure it as a special public service agency. This would permit the government to inject funds directly for geothermal activities rather than providing them to PGE's parent company and would provide Indonesia with a separate renewable energy utility. Whilst the creation of new renewable energy bodies signals the Indonesian government's intent to encourage geothermal development, there is a concern that the authority of such bodies and utilities may overlap and ultimately cause regulatory confusion and stifle the development they were intended to encourage. The key will be to properly capitalise whichever public entity is ultimately chosen to promote and develop geothermal projects.

The Indonesian media have also reported that the Indonesian government is working on an instrument that will permit a state-owned entity to obtain a geothermal working area (Wilayah Kerja Panas Bumi) without the need for a tender⁵. The direct-appointment right is likely to be given to Pertamina but the operations will be carried out by PGE. This may permit the government to

⁵ We understand that this proposal is still being studied by the Directorate General of New Energy, Renewable and Energy, Conservation of MEMB.

directly assign geothermal working areas to PGE to avoid a protracted tender process and hence speed up development. For example, Danau Ranau was recently re-tendered with slightly different specifications, as the previous auction resulted in only one bidder. This direct appointment proposal may be positive for foreign investors who wish to invest in geothermal projects in partnership with PGE whilst avoiding the time, expense and uncertainty of a tender process. PGE has indicated willingness to consider foreign investment in such geothermal projects.

The way forward

In December 2015, the Indonesian Government opened bidding on three geothermal projects – Way Ratai (Lampung), Bukit Kili (West Sumatra) and Marana (Central Sulawesi). The bidding process is expected to be completed by May 2016. These tenders are collectively worth about US\$ 380 million. It is reported that a further 21 blocks are set to be tendered in 2016-2017. The majority of these will be offered at an open auction but 5 will be by direct appointment (most likely of PGE).

The Indonesian loan markets have signalled their willingness to support green technologies. In November 2015, eight of the largest Indonesian banks signed up to a pilot to implement sustainable financing. Although the initial pilot stages focus on limiting exposure of the banks to sectors associated with environmental issues such as palm oil, there is hope that banks would then seek to deploy capital to emerging sectors such as renewables. This comes ahead of the announcement that the Indonesian Financial Services Authority intends to limit the scope of banks to lend to environmentally damaging projects by 2018.

All in all, in view of the 2015 Paris (COP21) Agreement, there is reason to be optimistic about the Indonesian geothermal sector. However, the Indonesian government must now take definitive steps to consolidate the Indonesian Geothermal SOEs and drive forward exploration programmes at the most promising geothermal work areas.

For further information, please contact:



Marius Toime

Partner
Singapore
T: +65 6571 6603
Marius.toime@blplaw.com



Katherine Frederick

Associate
Singapore
T: +65 6571 6605
Katherine.frederick@blplaw.com

ANNEXURE

List of Indonesian Geothermal Projects

IPPS

Project	Developer	MW	COD	MW (potential)	Status
<u>Installed</u>					
Ganung Salak Project (West Java)	P.T Chevron Geothermal Salak, Ltd (Joint Operating Contract with PGE)	377			6 units operating. 3 units owned by Chevron.
Wayang Windu (West Java)	Star Energy Geothermal Wayang Windu (Joint Operating Contract with PGE)	227			Units 1 and 2 are operational. Unit 3 to be built.
Darajat Project (West Java)	Chevron Geothermal Indonesia, Ltd	270			Units 1-3 are operational.
<u>In progress</u>					
North Duri Cogeneration Plant (Sumatra)	95% owned by Chevron (and operated by Chevron)	300			Supplies electrical power to CPI as well as steam in support of CPI's Duri steamflood project.
Jailolo (North Maluku)	Star Energy	10	2017	2,345	Tender won in 2009. Currently Star Energy has completed geosciences survey and related environmental permit process and is ready for drilling exploration and Power Purchase Agreement negotiation.
Muara Laboh (West Sumatra)	PT Supreme Energy Muara Laboh	220	2019	1,825	Exploration drilling program of 6 wells completed and submitted to the government. EPC tender process completed, construction of power plant to commence in 2016.

Project	Developer	MW	COD	MW (potential)	Status
Gunung Rajabasa (Sumatra)	PT Supreme Energy Rajabasa	220MW	2018	2,730	Exploration program completed. Construction of jetty completed end of 2015.
Rantau Dedap (South Sumatra)	PT Supreme Energy Rantau Dedap				Exploration survey has been completed. Various roads have been opened and all land required for the project has been acquired. 6 exploration drilling wells were completed in 2015. Feasibility study report, FEED and EPC tender to be carried out in 2016.
Sarulla (North Sumatra)	Sarulla Operations Ltd	330	2018	27,000	In construction phase. First phase of development to be completed end of 2016.

State-owned Projects

Project	Developer	MW	COD	MW (potential)	Status
<u>Installed capacity</u>					
Kamojang-Darajat (West Java)	PGE	235			4 unit Geothermal Power Plant installed.
Lahendong (North Sulawesi) (Units 1-4)	PGE	80			4 unit Geothermal Power Plant installed.
Dataran Tinggi Dieng (Jateng)	PT. Geo Dipa Energi	60			1 unit installed. Two additional units (60MW each) are being considered.
Gunung Sibayak-Ganung Sinabung (North Sumatra)	PGE	12			1 Monoblok Unit and 2 units of Geothermal Power Plant installed.
Ganung Way Paras - Ulubelu (Lampung) (Units 1 and 2)	PGE	110			2 unit Geothermal Power Plant installed.

Project	Developer	MW	COD	MW (potential)	Status
Ulumbu - NTT	PT.PLN (Persero)	5		1,615	2 Units installed.
<u>In progress</u>					
Ganung Way Paras - Ulubelu Area (Lampung) (Units 3 and 4)	PGE	110	2016 (Unit 3), 2017 (Unit 4)	1,502	Currently at Engineering Procurement Construction and Commissioning ("EPCC") stage and drilling.
Lahendong (North Sulawesi) (Units 5 and 6)	PGE	40 MW	2016 (Unit 5), 2017 (Unit 6)	2,335	Unit 5 is at EPCC stage. Unit 6 is has completed drilling and EPCC stage.
Lumut Balai (South Sumatra) (Units 1 and 2)	PGE	110	2016 (Unit 1), 2018 (Unit 2)		Unit 1 is at EPCC stage. Unit 2 is at infrastructure and drilling preparation.
Lumut Balai & Margabayur (South Sumatra) (Units 3 and 4)	PGE	110	2022	2,455	At permit stage.
Karaha Cakrabuana (West Java)	PGE	30	2017	2,185	This is at EPC contract stage.
Hululais (Bengkulu) (Units 1 and 2)	PGE	110	2018	2,620	Infrastructure drilling and production testing have been completed.
Sungai Penuh (Jambi) (Units 1 and 2)	PGE	110	2019	2,155	Exploration phase conducted.
Kotamobagu Units 1-4	PGE	80		180	Exploration phase conducted.
Gunung Iyang Argopuro	PGE	55			Exploration phase conducted.
Ganung Sibual Buali (Sarulla)	PGE				
Ulubelu II (Lampung) (Units 3 and 4)	PGE	110			Under construction.
Kamojang-Darajat (West Java) (Unit V)	PGE	35		1,612	Drilling complete.

Note: This report is for general information purposes only, and is not a substitute for specific legal advice.

Project	Developer	MW	COD	MW (potential)	Status
Kerinci (Sumatra)	PGE	55			
Patuha (West Java)	PT. Geo Dipa Energi	55	2018	2,960	Activities currently being undertaken regarding Unit 1, 2 and 3 projects, each with a capacity of 55MW.
Sokoria (Flores island)	Raya Group JV PT Bakrie Power	30	2018 (Unit 1)	3,000	For sale as at 2015.

POTENTIAL PROJECTS

Recently awarded tenders or ongoing tenders

Work Area	Tender process opened	Tender awarded
Way Ratai (South Sumatra) (approx. 55MW)	December 2015	Approx. April-May 2016
Bukit Kili (West Sumatra) (approx.65MW)	December 2015	Approx. April-May 2016
Marana (Central Sulawesi) (approx. 36MW)	December 2015	Approx. April-May 2016
Danau Ranau (South Sumatra) (approx.40MW)	Retendered December 2015	Approx. April-May 2016. To commence commercial operations in 2022.
Gunung Lawu (East Java)	July 2015	Awarded February 2016 to Pertamina. To commence commercial operations in 2022.
Kepahiang (Bengkulu) (approx. 110 MW)	July 2015	

Geothermal work areas to be tendered in 2016-2018⁶

Name of work area	Capacity (MW)
Bonjol (West Sumatra)	60
Ganung Talang Bukit Kili	20
Ganung Endut (Banten)	40

⁶ Source: Ministry of Energy and Mineral Resources.

Name of work area	Capacity (MW)
Candi Umbul Telomoyo (Cental Java)	55
Ganung Wilis (East Java)	20
Ganung Arjuno Welirang (East Java)	110
Ganung Pandan (East Java)	10
Ganung Gede Pangrango	55
Songgoriti (East Java)	20
Sipaholon Ria-ria (North Sumatra)	20
Simbolon Samosir (North Sumatra)	110
Graho Nyabu (Jambi)	110
Suwawa (Gorontalo)	25
Sembalun (West Nusa Tenggara)	20
Oka-Ille Ange (East Nusa Tenggara)	10
Bora Pulu (Central Sulawesi)	40
Ganung Hamiding (North Maluku)	10
Bonga Wayaua	5
Ganung Geureudong (Nad)	110
Ganung Galanggung (West Java)	110
Ganung Ciremai (West Java)	110
Tanjung Sakti (Bengkulu)	55
Telaga Ranu (North Maluku)	10
Songa Wayaua (North Maluku)	5
Lainea (South East Sulawesi)	55