

Making the geothermal dream come true

Conor McCooie, Singapore | Opinion | Thu, September 05 2013

Geothermal — energy generated from the Earth's heat — is a reliable source of base load power and a sustainable alternative to fossil fuels such as coal, oil and gas. Indonesia, with its volcanic geology, is blessed with the world's largest geothermal reserves.

However, despite having more than 29,000 megawatts of potential geothermal power — 40 percent of the world's reserves — only an estimated 2 to 5 percent have been tapped so far.

Against the backdrop of increasing fossil fuel prices and how such sources of energy will deplete in due course, the increasingly populous country (fourth after China, India and the US) faces a potential crisis of how the exponential growth in the demand for local energy consumption may not be met from conventional sources of energy.

Clearly, the matter can't be left to market forces alone. Very little new exploratory drilling is currently happening.

Without further government intervention, Indonesia's target of deriving 12 percent of its energy mix from geothermal by 2025 looks hopelessly optimistic.

And funding is not the issue, at least not for the small number of development stage projects. Banks are open for business and ready to finance deals, and we know that our clients are interested in investing in Indonesia — which will in turn create jobs in remote, rural areas of Indonesia that would not otherwise receive major investment.

In addition to creating an opportunity to exploit a sustainable, domestic source of energy — while reducing its carbon footprint — Indonesia essentially frees up oil, gas and coal for export too.

How can a step change occur?

Six years ago, when Star Energy took over the Wayang Windu geothermal power plant and went on to renegotiate its tariff, refinance its debt and launch the second 110MW unit in record time, many hoped a string of similar projects would follow in its wake.

However, despite the launch of a fast track program and other measures — progress toward turning geothermal into a major clean energy source for Indonesia has been frustratingly slow.

Wayang Windu has demonstrated that banks can finance a private sector geothermal project quickly. And the fact that state-owned Pertamina Geothermal Energy was able to finance its publicly owned

project at Ulubelu provides further proof that the appetite is there.

What's needed is a concerted focus on unblocking bureaucratic obstacles, and the implementation of suitable structures to encourage more new projects to get started.

What about the issue of project risk?

Similar to oil and gas, geothermal projects require a significant amount of up-front investment. Exploration is expensive and fraught with uncertainty, involving the drilling of wells at around 6 million dollars apiece.

Yet, in the operation phase, returns are no higher than for conventional power and infrastructure projects.

Indonesia has at least three good options to address this issue and help to kick-start investment:

First, Indonesia should consider devising a publicly funded insurance mechanism to help developers jump the exploration hurdle. The high cost and high level of uncertainty associated with geothermal exploration deter investors and delay projects.

As a result, this stage of a project is virtually impossible to finance without public funding.

A scheme, such as the existing French model proposed by the French development organization AFD for Indonesia, would offer developers a guarantee that failed exploration wells will be covered in one way or another.

Funding may be allocated from the state budget or a specific tax, and should be sufficient to support a pre-determined number of geothermal exploration programs at any one time.

Second, the government should encourage geothermal projects to get underway more quickly by allowing more generous tariffs for first units, with tariffs stepping down after five years.

Typically, once exploration wells are been drilled successfully, developers wait until they have certainty that the geothermal resource will be sufficiently large to recover their costs before starting to develop the project. As a result, projects can be delayed for years. However, a higher tariff for first units will encourage developers to build sooner, as it would compensate for the higher cost of small projects.

Third, the government should encourage Indonesian companies sitting on geothermal projects that have stalled to "use them or lose them". Indonesia has a sizable portfolio of geothermal resources which have been explored and drilled — in some cases going back years.

But the majority of projects for which geothermal licenses have been awarded have not subsequently been developed.

These idle resources represent a missed opportunity for Indonesia, and the government should step in to move them on.

The options to kick-start geothermal investment are many but without a greater sense of urgency in all the government departments whose approvals are required for new projects this is unlikely to change significantly in the near future.

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