Solar power projects up in the air

JAKARTA: Eighty solar-power plant construction projects, some up for tender, are currently in limbo as the government has halted the process pending a Supreme Court ruling, following a lawsuit from a business group. Energy and Mineral Resources Ministry renewable energy director general Rida Mulyana said the lawsuit was still at the Supreme Court. "Of the 80 power-plant projects, 12 are already at tender and are awaiting the PPA [power purchase agreement] process. The tender process for the remaining projects must wait for the ruling," Rida said. The government had placed 12 power plant projects up for tender when the Solar Cell Association (APAMSI) filed a lawsuit, claiming there was an obligation to use local content and to prioritize local players to carry out the projects. Rida argued that the demands would likely conflict with the principles of the World Trade Organization (WTO), of which Indonesia is a member. "We need to wait for the decision. If it rules in favor of the suit, we must revise the regulation," he added.

The Supreme Court's website showed that it had ruled in favor of APAMSI's suit, but a complete document highlighting the court's ruling was not available. As part of attempts to boost solar power-plant development in the country, in 2013 the ministry issued a ministerial decree regulating the purchasing of electricity produced by photovoltaic solar power plants by state-owned electricity company PLN. Under the regulation, the highest tariff set is US$0.25 per kilowatt hour (kWh) and can be set as high as $0.3 per kWh if the photovoltaic solar power plants use at least 40 percent of local components in the material required. Following the regulation, the government placed 80 solar power plant construction projects up for tender. If completed, the power plants will have a combined capacity of up to 140 megawatts (MW). Most of the plants will be located in eastern Indonesia, such as in Papua, West Papua, Maluku, Sulawesi and the Nusa Tenggara region. The plants will have a range of 1 to 6 MW in capacity. Investment for the 140-MW plants is estimated to be roughly Rp 2.8 trillion, as a solar cell requires around Rp 20 billion per MW.

The country is estimated to have 50,000 MW in solar energy potential. However, the utilization of resources is said to be low. The development of solar power plants is expected to meet the minor electricity demands of remote areas. Providing remote areas with electricity represents one of the government's efforts to boost the country's electrification ratio, which was 84 percent at the end of last year.

source: http://www.thejakartapost.com/news/2015/02/10/solar-power-projects-air.html#sthash.OKRCKfVv.dpuf

Update on the solar power market

Made Yossy Pratiwi., S.H.

During the 19th century, the economist Friedrich List proposed the theory that developing countries should temporarily protect new industries until they reach a certain volume and quality in the production of goods. Otherwise, they may be inundated by lower priced products from overseas. Developing countries should therefore enact measures to protect local production until it has sufficiently developed to compete internationally. It was probably following this line of thought that the Supreme Court accept the request of the Indonesian Association of Solar Panel Manufacturers to revoke MEMR Regulation No. 17 of 2013, regarding Purchase of Power by PLN from Solar Photovoltaic Power Plants ("MEMR 17").

According to the association, all businesses in Indonesia both local and foreign should be obliged to purchase local modules to support local manufacturers. In the Indonesian solar power market, foreign players usually use foreign solar modules for two reasons (1) they are significantly less expensive and (2) because funding (which comes from abroad) is conditional upon purchase of that country's modules. The association pointed out that this practice does not comply with Law No. 30 of 2007 regarding Energy, Law No. 30 of 2009 on Electricity nor with Law No. 5 of 1984 ((which has now been replaced by Law No. 3 of 2014), regarding Industry in which it is stipulated that priority must be given to local products in any commercial activity (or TKDN *Tingkat Komponen Dalam Negeri*/amount of domestic components).

Following the decision of the Supreme Court, EBTKE (the Director General of Renewable Energy, Ministry of Energy and Mineral Resources) has no regulatory regime to sign power purchase agreements (PPAs) or to award tenders for solar power plants. Therefore, all solar energy projects that are currently being established have been suspended. Notwithstanding protectionist arguments, many counter that the Indonesian market is not large enough to support a local solar module industry. In addition, a ban on the use of foreign modules means that no one will be able to benefit from overproduction of Chinese-made modules (and the resulting low price) or from foreign financing at attractive interest rates. Rida Mulyana, Director of Renewable Energy Resources, for his part warned that such a decision based on protectionist reasoning is probably contrary to representations that Indonesia has made as a member of the WTO (http://www.thejakartapost.com/news/2015/02/10/solar-power-projects-air.html

Hopefully, the government can turn the situation around by taking the opportunity to enact a new regulation that will restart the Indonesian solar energy market. The previous regulation did not give the PLN a strong regulatory regime to approve solar power plants on a large scale and the public utility had no right to directly appoint tender winners. Since the regulation was revoked, the government thus has the opportunity to enact a new one which addresses the above concerns, promotes the use of solar power while meeting the association's demands to some degree. Recent reports in the press (notably on *Bisnis Indonesia* on June 8, 2016) suggest that a new MEMR regulation will be enacted very shortly that will establish a feed-in tariff as well as tender procedures which will greatly simplify negotiations with PLN and give a much needed supercharge to the nation's solar power industry.

Necessity of scaffolding for geothermal projects: a modest proposal

MKK geothermal team

The Indonesian government is increasingly looking at geothermal energy as a way of meeting its energy needs rather than relying exclusively on coal-fired power plants, which produce unhealthy levels of carbon emissions. If the government's ambitious 35,00MW production target is to be met, more geothermal projects will have to be realized in a relatively short amount of time.

Unfortunately, the cost of geothermal exploration is extremely high and the risk of drilling a successful well the first time is only 25 percent at best. In this short note, we will look at the various types of risk-mitigating insurance products for every phase of a geothermal project and the implications thereof. With respect to insurance coverage, a geothermal project can be divided into three main phases.

Phase I is the exploration phase, and this is perhaps the riskiest of the whole operation, even though in theory the operation could experience total failure at any point in the production chain. Almost fifty percent of the cost of the entire operation is incurred during this phase. Various tests and drilling are carried out to seek out a 'hotspot' or heat source, usually at a rift area or magma plume. Then, once a fault line or its equivalent has been detected, exploratory wells are drilled and strengthened with casings so that further testing can be done to determine if the area has the right hydrology with the correct flow of geothermal fluids and vapors. Most importantly, a recharge area then needs to be located nearby that can replenish water into the reservoir to ensure the sustainability of the flow of fluids.

However, when all is said and done, the key is economic feasibility. Finding an area that ticks all the boxes is one thing, but if because of the temperature or flow rate or whatever reason the project owner cannot make it commercially viable, it is all in vain. During this whole process, keep in mind that the cost of drilling a single well can be from $5 million to $10 million, and so the price of mistakes is very high indeed. Unfortunately, insurance companies do not usually cover this type of commercial risk; they tend to cover purely incidental damages or mishaps that occur during the drilling (with *Third Party Liability* insurance) and not the business outcome of exploration drilling itself.

Phase II is the construction of the power island and plant. Here we are looking at a form of *Third Party Liability* insurance to cover the actions of the contractor. This phase is generally less risky than Phase I. *Construction All Risk* insurance focuses on the construction of the plant and equipment once the initial wells have been drilled. *Transit Coverage* is not as common, but is important to protect expensive equipment during its journey to the geothermal site, which is often in remote locations, usually in a forested area. Any losses incurred during construction and commissioning would be covered under *Delay in Start Up* coverage or *Construction All Risk*. *NAT CAT Coverage* is good to have since a natural disaster (earthquake, landslide, etc.) could change the underground geology and the delicate alignment of conditions that made the geothermal plant feasible in the first place.

Phase III is the actual operation of the power plant. Here the types of insurance that are needed are for property, machinery failure and service interruption. *Business Interruption* insurance is a commonly sought after insurance for geothermal operations. Sometimes, inexplicably, steam can stop flowing: for decades. It goes without saying that it is prudent to have insurance coverage for such an eventuality. *Business Interruption* can have multiple causes: changes in the regulatory environment can stop operations or make them non-viable commercially; engineering problems can put the plant offline until the problem is fixed; land issues or conflicts with members of the local community could lead to plant stoppage as well. *Completion Risk* covers any problems that arise due to the EPC contractor being unable to finish his work, whether because of an engineering problem or because of lack of funds. In addition to the foregoing, *Earthquake Insurance* and *General Liability* insurance are common sense ideas too. *Pollution Coverage* and *Public Liability*, *Environmental Damage* insurance are products for companies that seek coverage for the risk of contamination, damages from operations to crops, nearby inhabitants, etc.

Insurance as protection

The main reason to have insurance is to protect one's investment costs. If a loss does occur, insurance proceeds generally will be paid to the financiers that provided the

debt financing --- this usually represents around 70 percent of the total cost of the geothermal project. However, despite all the best estimates and measures taken, no one can provide a 100 percent guarantee that the insurance coverage will be available to the parties at commercially feasible costs or terms or that the insured amounts will fully compensate the funds that are being risked in the project. Exploration risk is the most difficult risk to cover it is by its nature high risk and it is hard for the insurance company to diversify or minimize it, but the other phases of the project can be insured and the risk mitigated to enhance the bankability of the project.

Insurance as a facilitator

Successfully obtaining insurance coverage can go a long way in facilitating the business plan of the project owners. Insurance helps the project owners make a better business case for the project, thereby making it easier to gain access to funds if various risks can be mitigated. An extremely high level of sophistication is needed on the part of the insurance company and familiarity with the issues facing the geothermal power plant project owners. It takes time and experience to assemble a skilled team that is able to underwrite projects of this complexity and with this risk profile. The insurance company underwriting the risk of the project must consider a wealth of data and considerable sophistication is called upon to custom-make an insurance project for the needs of the project owners.

First of all, information such as geological data, well design, well data, information on the reservoir, the location of the project, the country/region and it politics will figure into the equation as well as the project owner's experience and track record. Second, the track record and experience of the project partners and stakeholders will also be factored into the equation. These will all be evaluated to determine the total risk of the project. Third, insurance related information must be assembled: the scope of the insurance, the sums to be insured, the cost of capital and the individual insurance needs of the client. Finally, the coverage and protection the client ideally seeks and what realistically can be offered to him must be considered.

Conclusion

Ultimately, geothermal is about targeting major faults in the earth's crust with the hope of finding a basin from which the right composition of fluids and vapors with the right flow rate can be harnessed to produce electricity at an economically feasible rate. The whole enterprise is fraught with risk. Success relies upon releasing fluids that have been trapped literally for millennia in the crust of the earth by drilling many kilometers in the earth in seismically unstable areas, and it is a testament to man's ingenuity that such a project can even be undertaken, but it is one which rides on a knife edge of success or failure at every moment.

An insurance, legal and tax superstructure that facilitates the geothermal project from exploration, financial close to commissioning and operation is thus an essential *'scaffolding'* that needs to be in place if there is to be any hope of continued success. The scaffolding we are thus talking about is, of course, not a physical one but a support network that enables the smooth functioning of the entire geothermal supply chain. Insurance in an integral part of the scaffolding; it is not simply capital in the form of a guarantee but capital in motion that dynamically underpins and supports every phase of the project.

If Indonesia hopes to make geothermal an integral part of its 35,000MW power program, insurance companies will have to step up to the plate and play their role in the process. The right architecture of products will help facilitate loans, underwrite and offset risk, safeguard the industry's success and create increased levels of confidence in the development of the geothermal supply chain. Ideally, insurance can help secure steady and sufficient levels of risk capital, without which the industry will be unable to develop optimally. According to the concept we have set out above, we propose that insurance should not merely be a peripheral add-on, but an active enabler and project enhancer that can augment the bankability and viability of geothermal projects. And with such scaffolding in place, projects can begin in earnest.