Swiss Thai
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HERE COMES THE SUN

Solar power is an extremely popular concept these days; interestingly humans have been harnessing the power of the sun since the 7th century B.C to light torches. Swiss scientist Horace de Saussure is credited as building the world's first solar collector, which would serve as a precursor to solar cookers. In more recent years solar energy is being used to generate electricity using the photovoltaic process; it is this method that is still used today to harness the energy derived from the source of all life, the sun.

Measuring solar irradiance levels (the measure of electromagnetic radiation produced by the sun which is perceived as sunlight) proves as an effective way to determine the solar energy generating capacity of a country. As expected, Thailand has an enormous solar power generation potential with solar irradiance levels ranging between 1700-2100 kWh/m2/year. These figures can be compared to Switzerland which has solar irradiance levels ranging from 800 -1400 kWh/m2/year.

Thailand, since the early 2000's has put forth several ambitious renewable energy promotion policies. The most recent being the Department of Alternative Energy Development and Efficiency's "Alternative Energy Development Plan 2012 – 2021" ("AEDP"). The AEDP aims to reduce Thailand's dependence on fossil fuels by having renewable energy provide 25% of Thailand's total energy generation by 2021.

The current target for solar energy under the AEDP is to increase generation, by 2021, to 2,500 megawatts ("MW"). Solar power currently generates power only in the amount of 448 MW. Presently, almost all of Thailand's solar power is generated by solar farms that are over one MW in capacity such as the Lopburi Solar Plant in central Thailand, with only 1% coming from industrial rooftops and/or residential sources. The AEDP understands the importance of both large and small scale solar generators and as such introduced one of the key pillars of its plan; the Solar Photovoltaic (PV) Rooftop Programme.

The Solar Photovoltaic ("PV") Rooftop Programme is aimed at encouraging domestic and commercial buildings to install

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PV systems on their rooftops with the intent of generating electricity which can be either self-consumed and/or sold to the government via entities such as the Provincial Electricity Authority ("PEA") or the Metropolitan Electricity Authority ("MEA") under the Energy Regulatory Comission's Rules and Regulations on Thailand's Solar PV Rooftop Programme. These regulations outline the various rules for determining the eligibility of participants, sale processes and the method for calculating remuneration, and mandate use of a standardized Power Purchase Agreement to be entered into between the proposed generator and either the PEA or MEA.

One impediment to the implementation of the Solar PV Rooftop Programme has been the quagmire of licensing and permit requirements. Those wishing to install solar panel systems with generating capacities below 3.85 KW on their residential homes in Thailand for private, off-the-grid consumption may do so without fulfilling any licensing and permit requirements. The problem arises when such systems are connected to the grid and have a generating capacity of in excess of 3.85 KW. To be eligible for (i) electricity generation in excess of 3.85 KW, and (ii) grid-connection, a Factory License issued by the Department of Industrial Works and a Permit to Alter Residential Buildings issued by the Civil Works Department are required in addition to entering into a standardized power purchase agreement.

Unfortunately, since October 2013, the MEA have stopped accepting applications to sell power generated by participation into the Solar Photovoltaic (PV) Rooftop Programme. Based on the effectiveness of the current grid connected systems and subject to when the political situation is at ease, applications may be reopened in the coming months.

In regard to the relevant licenses and permits, on 25 March 2014 the Energy Regulatory Commission ("ERC") issued an announcement which ruled that the generation of electricity under the Solar PV Rooftop Programme did not constitute a power plant factory. Since the issuance of the announcement there has been an a debate between which governmental authority has the power to issue such a notification, there issue has be referred to the Office of the Attorney-General so as to determine which agency has authority to issue such an announcement.

Nevertheless solar energy development remains an exciting industry which will be heavily promoted by the Thai government until the AEDP targets are met. This is facilitated by the

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decreasing manufacturing costs for solar PV cell technology which are making solar energy an increasingly viable option for smaller scale and domestic use; as such strong supporters and advocates of solar energy have not been hindered by the stringent licensing requirements for their future installations. Technological developments have also aided in the development of solar energy as there exists a variety of solar panels available for purchase such as foldable panels to save space, panels with higher efficiencies and panels created from semi-transparent organic nanotechnology. Despite the considerable potential for solar generation on a micro and macro level in Thailand, it has yet to gain adequate traction due to its relatively high set-up costs and a lack of awareness among the general public. These issues have not barred the Swiss Embassy from launching its own initiatives to install a 150 KW solar generating set-up. We understand that several Swiss Embassies have also implemented this initiative globally.

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