THE STATUS REPORT OF THE PV SYSTEM REAM INTER-CONNECTED GUIDELINE IN 5 COUNTRIES OF ASIA

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The investigation about the status of the PV standards such as industrial standards for equipment of PV system, certification of equipment, regulations (guideline) of grid connection in China, Korea, Taiwan, Thailand and Malaysia.

The Renewable Energy Law was effective from January 1st in 2006. Renewable Energy such as PV, Wind, Hydro attracts attention. There are expected spreader installations. There are making original standards for PV in china. They are introduction of Japanese Standards and Certification program in other to be export to Japanese market for their equipments. The stage of PV market is aggressive installation period in Korea and Taiwan. The person, who is expert in PV, makes a planning to install of PV by National Projects in Thailand and Malaysia.

Keywords: PV system, certification of PV system, PV standards, regulations, guideline, Asia

FOREWORD

General

The introduction of Asian major power's including Japan PV system is active now. As for Japan, the standard and the guideline are maintained for the operation of the PV system. It is thought that the thing to investigate the PV operation of another country is very advantageous information when Japan of the future approaches another country. The investigation about the status of the PV standards such as industrial standards for equipment of PV system, certification of equipment, regulations (guideline) of grid connection in China, Korea, Taiwan, Thailand and Malaysia.

The following turned out by the investigation that we had executed. The Renewable Energy Law was effective from January 1st in 2006. Renewable Energy such as PV, Wind, and Hydro attracts attention. There are expected spreader installations. There are making original standards for PV. Korea and Taiwan are introduction of Japanese Standards and Certification program in other to be export to Japanese market for their equipments. The stage of PV market is aggressive installation period. Korea, and Taiwan are introduction of Japanese Standards and Certification program in other to be export to Japanese market for their equipments. The stage of PV market is aggressive installation period.

This study is part of the Investigation concerning maintenance situation of standard etc. related to PV in cooperation base business China, South Korea, Taiwan, Thailand, and Malaysia like measures business of international energy use rationalization etc. international energy consumption efficiency improvement etc. etc.," project we conducted under contract to the New Energy and Industrial Technology Development Organization (NEDO).

MAINTENANCE SITUATION OF STANDARD IN EACH COUNTRY

National standardization conservancy Standardization Administration of China has jurisdiction, and standards in China are maintained as People's Republic of China national standard (GB). China has the standard of 39. China is quoting the IEC standard as a standard in the country. A lot of standards are the one of the characteristic of the solar sells. However, the equipment such as PV systems and the power conditioners is not standardized.

KS: Korean Industrial Standards that is the national standard of Korea is what a technological standard academy of the Korea industrial resource part enacts it. A technological standard academy of the Korea industrial resource part and a Korea standard society can retrieve standards of Korea from the managed site. Korea is quoting an IEC standard and Japanese JIS standard as a standard in the country. Korea was a country where standardization and the attestation system were maintained most in five countries that had been investigated this time.

CNS:Chinese National Standards that is the national standard of Taiwan is what Bureau of Standards, Metrology and Inspection (BSMI) enacts it. Taiwan has the standard of 10.

It investigated in Department of Alternative DEDE: Energy Development and Efficiency and NSTDA: National Science and Technology Development Agency. If the standard that relates to the solar battery in a Thai country conforms to the standard of IEC, it is a current state in the problem in a domestic procedure it not is. Moreover, it is expected for original standards to be made by groups of Wattanapong Ratkwichian professors of the Dr. Porponth Sichanugrist and Naresuan University of the science and technology ministry, and to be promulgated from TISI: Thailand Industrial Standard Institute though a detailed content is uncertain.

It conforms from the result of the survey in PTM: Pusat Tenaga Malaysia and UKM: University Kebangsaan Malaysia to the standard of IEC about the standard related to the solar bsells in a Thai similar country in Malaysia, and it is a current state in the problem in a domestic procedure it not is. The business that sets up the photovoltaic generation system in the roof top type for the house is begun as a national project of Malaysia according to the Malaysian energy center in fiscal year 2006. I hear that the standard by which a ream system requirement to the low-pressure supply of electric power system was recorded referring to the standard of IEC was enacted as MS1837 along with this.

ABOUT THE CERTIFICATION SYSTEM RELATED TO PV SYSTEM THAT EACH COUNTRY

In China and Thailand and Malaysia, there was no certification system concerning the photovoltaic generation system.

The authentication system of the power conditioner in Korea quotes the system that JET of Japan executes and has gone. Moreover, the attestation examination standard also similarly used the same one as Japan, and part had been changed to a demand regulated in Korea. Korea is executing the test of the power conditioner with Korea Institute of Energy Research: KIER and Korea Testing Laboratory: KTL. The investigation of the factory that manufactures the equipment is a system where the attestation of the equipment can be taken after Korea Energy Management Cooperation: KEMCO executes, and the examination result of the power conditioner and the examination result of the factory pass.

In Taiwan, there were neither solar modules nor an certification system concerning the PV inverter. The subsidy is delivered to those who set it up about the photovoltaic generation system as a government's position now. Therefore, a positive introduction of the Grid connects type photovoltaic generation system will be expected in the future. t is thought that the attestation system will be needed from such a background in the future.

ABOUT THE STANDARD CONCERNING THE PHOTOVOLTAIC GENERATION SYSTEM INSTALLATION

There were no standards of the photovoltaic generation system in China when constructing it the design. However, many books that relate to the design and the construction, etc. of the photovoltaic generation system are published in 2005. The case with the photovoltaic generation is introduced to these books besides the principle of the solar battery, the inverter, and the storage battery is technically recorded, and the view will be described in the future. Moreover, there is a description concerning the independent type photovoltaic generation system, and the capacity of the storage battery is selected and the number of sheets of the solar battery module is calculated about the design approach. Neither the design nor the economy of the Grid connect type photovoltaic generation system are discussed.

I hear that the application permission was necessary to confirm the bearing force in the building when standards made an express statement were not found when the photovoltaic generation system is designed, and constructed, and photovoltaic generation system was set up from the rooftop side in the rooftop in the building as a law in the country by the height of 1.5m or more.

There were no standards of the photovoltaic generation system when designing, and constructing it in Korea and Thailand.

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CURRENT STATE OF GRID CONNECT GUIDELINE

China is recorded to enact the standard of a Grid connect guideline and a technological requirement, and to promulgate it in "People's Republic of China acceptable reproduction Nou source method" of the renewable energy method enforced about the guideline that lies a Grid connect in the power generation field by renewable energy on January 1, 2006, so-called Article 11,

Korea Electric Power Company: KEPCO issued "Decentralized power supply of electric power Grid connect technological standard" to the guideline related to the Grid connect system in Korea in 2005. It follows Korea Electric Power Corporation's standard though this is a technological standard concerning all of not only the photovoltaic generation but also the decentralized power supply of electric power Grid connects of the cogeneration and other renewable energy power generations, etc. and no national standard.

The technological standard related to the Grid connects system of Taiwan is "Cogeneration Grid connect technological points." intended for the general cogeneration power generation that the government enacted in 1989(the fourth revision in 1999). Moreover, "Taiwanese electric power company renewable energy power generation Grid connect technological points" was promulgated as a technological standard to the renewable energy power generation by Taiwanese Economic Department in 2002. The revision work to add a more concrete standard is proceeded, and "Photovoltaic generation Grid connect type inverter Grid connect technological standard" is expected to be enacted as a technological standard of the inverter now.

A technological requirement for ream system is provided and Thailand executed to the system of dynamo of the power generation output 1MW or less. MEA: Metropolitan Electricity Authority from May, 2002 and PEA: Provincial Electricity Authority.

A Malaysian government made the start in May, 2001 to SREP: Small Renewable Energy Power Programme: SREP public. It is being advanced by the government so that SREP may promote the use of renewable energy in the power generation field. The dynamo in this program should confer directly with the electric power company where Grid connects and the

contractor relate in the supply of electric power system.

SUMMARY

The photovoltaic generation industry might be immature, Korea was excluded, and the attestation system was not maintained.

However, the contribution of our country for the establishment of the solar sells market is possible in the future by increasing the chance to introduce the system of Japan to the object country and the region from the viewpoint etc. of the simplification of the ream system conference on the quality securing of the composition equipment and the electric power company because of the expectation of the spread of the photovoltaic sells, and sharing the finding in these regions.

Concretely, the symposium and the lecture meeting are held for an electrical engineering laboratory (China), Taiwanese Agency of Industrial Science and Technology (Taiwan), the science and technology ministry, the alternative energy development efficiency improvement bureau (Thailand), and the energy commission and the energy centers (Malaysia). It is thought that it is possible to contribute to the spread of the photovoltaic generation technology including the attestation system by sharing information.

There is a project for the roof top PV systems for house in Malaysia. The future can be expected that the introduction number of Grid connect photovoltaic generation systems increases. When the PV system is set up, inefficiency needing the attendance of the electric power company whenever setting it up, and the execution of the test of various of relay on the site. Therefore, it is thought that it maintains and it is introducing necessary of the inverter attestation system.

Thus, maintenance and smooth operation of inside and these attestation systems from which the Grid connect type photovoltaic generation system is expected to be introduced by centering on the national policy become keys to the introduction of the photovoltaic generation system of a private base and the spread..

References

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