

Addressing Challenges of AMI Deployment in APEC (EWG 07 2011A)

Expert Group on New and Renewable Energy Technologies (EGNRET)

Background and Objectives of the Project

Power is the most common used energy type worldwide and the balance between generation and demand are highly considered to achieve better energy efficiency. Due to the limitations of existing power systems, it is not possible to understand the magnitude, place and time does the power demand occurs. In order to balance both sides, power generation and demand, building the energy information infrastructure is highly accepted by many economies worldwide, and many of the APEC economies are currently carried out their own AMI/AMR (Advanced Metering Infrastructure/Advanced Meter Reading) pilot tests for future deployment. As each economy has different environment as well as different prospects for AMI, sometimes the findings from existing case study can be quite different. Furthermore, due to the scales of power systems, the investment, benefits and potential risks of AMI deployment are highly considered. These considerations provoked the APEC economies to find their own strategies to develop their own deployment plans by studying AMI more to avoid mistakes occurred from the past – challenges of AMI development.

This project aims to identify the true value of AMI that can do for APEC economies, and discover the possible risks while deploying. To achieve this goal, the project objectives were defined as followings:

- Investigate and confer the development strategies and current status of AMI in APEC economies.
- Identify effective AMI policies and best practices.
- Offer guidelines to economies and industry for AMI deployment.
- Provide recommendations for power network upgrading and Smart Grid integration.
- Increase the awareness and effectiveness of AMI.

Approach

Among this project, the main target is to address the challenges of AMI deployment in APEC. In order to achieve this goal, three major activities were proposed, one is data survey, another is an international workshop for experience sharing and the other is a survey by questionnaire. The progress will be described as following:

1. Data survey

AMI is highly considered as the infrastructure to improve energy awareness and efficiency of power system and currently many worldwide economies are carrying out AMI deployment plans. In order to collect more details, the survey is carried by regions sequentially, including Australia, Asia, Europe and the US. The survey started from Australia, and it was found out that each state has its own deployment plan. More important, the plan adopted the Minimum AMI Functionality Specification and Minimum AMI Service Levels Specification to ensure the quality of system integration. In addition, the interconnection with HAN (Home Area Network) and the functionality of IHD was also considered in Australia.

2. International workshop

In order to increase the understanding of benefits and challenges of AMI system, experts who involved in AMI deployment worldwide were invited to the workshop to share their experience and knowledge with the attendee. It is aimed to use this chance to present the key considerations of AMI deployment plans worldwide, and allow APEC economies to understand the real value of AMI as well as its costs.

Since AMI is often considered as the first step to the smart grids, the interlinks of these two systems will be covered by the international workshop, and more issues to build a comprehensive and intelligent power network are also listed as the topics during the workshop. As a result, the international workshop will be held in Taipei International Convention Center (TICC) on 24th to 25th of August, 2011 in Taipei, and the speakers are invited from different regions and economies. The agenda of the workshop is in Appendix 1.

3. The design of the questionnaire

The questionnaire is aimed to interview the key persons who lead the AMI plan or deployment in their economies to discover the true considerations hidden behind. In order to fulfill the purposes, major factors were proposed, such as cost, technology, engineering integration, policy, system operation and business model. Moreover, as the AMI is thought as the first step to Smart Grids, it will be also considered as a major issue during the design of the questionnaire. After defining the main stream, detailed issues will be composed to finish the design and development of questionnaire.

Difficulties

The major attention of this project during the period of time was organizing the international workshop, and the criterion had been listed in the project proposal, such as the number of speakers, and regions. Originally, six speakers were set in the proposal, and two of them will be from Europe, one from the US, one from Australia and two from Asia. As the date of the workshop is set to follow the EGNRET 37 meeting, and it did cause some problems while inviting the speakers as they are scheduled for some other events. Even though we did invite enough speakers for a two-day workshop, we cannot have any speaker from Australia, and the Secretariat suggested that the place can be taken by inviting another speaker from APEC economies. Eventually, two US speakers were invited and the final agenda of the workshop was set. To invite the speaker from the US to replace the Australia will make no changes to budget and project schedule.

Even though the questionnaire has not been finished, this project has started to survey the potential interviewers. However, many of them might not have direct connection with project team member, and it is hope that the Secretariat will help to complete the questionnaire survey among APEC economies.

Project Status

The worldwide AMI deployment status is continuously collected, and the first completed region was Australia. It was found out that each economy has its own deployment plan. More important, the plan adopted the Minimum AMI Functionality Specification and Minimum AMI Service Levels Specification to ensure the quality of system integration. In addition, the interconnection with HAN (Home Area Network) and the functionality of IHD was also considered in Australia.

An APEC AMI Workshop was held on 24th to 25th August, 2011 in Chinese Taipei. In total 16 speakers were invited from 9 economies, and 216 participants from 7 economies attended the Workshop.