Chapter 1

Introduction

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Chapter 1

Introduction

This literature report constitutes one of the main deliverables in the project 'Study on the Formation of the ASEAN Power Grid Transmission System Operator Institution (ATSO)'. It provides background on the ASEAN Power grid (APG) situation and supporting information on the proposed solutions in the ASEAN Power Pool (APP) guideline and its related Implementation plan. The international experiences from the European Union (EU) (Chapter 2), Southern African region (Chapter 4), Greater Mekong Sub region (GMS) (Chapter 5), and Japan (Chapter 6) are summarized and presented in this document. This report also provides a summary of the proposed ASEAN Power Pool Guideline and its related implementation plan and roadmap to enable a quick overview of the ATSO project conclusions. Chapter 7 provides a high-level discussion on the possible future expansions of APP to host an efficient, multilateral regional trading in APG. The importance of the regional cooperation in power markets and the possible ways of achieving this are presented, drawing from some of the best practices from Europe and the Southern Africa Power Pool (SAPP).

The following section provides a background on the APG situation and awareness that are deemed important before looking into the details provided by the 'Study on the Formation of the ASEAN Power Grid Transmission System Operator Institution'.

1. Background: The Challenges of ASEAN Connectivity

There have been significant developments, although a bit slow, within the ASEAN region on increasing the regional trading based on bilateral deals and using the existing infrastructures to move power throughout the region, but there is still a long way to go to establish a full-fledged regional ASEAN power market. One of the reasons for the slow progress has been suggested to be the many types of power sector structures and markets throughout the ASEAN, creating problems and barriers on all levels of collaboration. To solve these issues several studies has been conducted, by both Heads of ASEAN Power Utilities Authorities (HAPUA), the ASEAN Centre for Energy and the Asian Development Bank. The findings suggest a need of harmonizing the legal and regulatory frameworks and creating technical standards and codes relating to planning, design, system operation, and maintenance.

Also, trading related agreements such as third-party access and wheeling methodology are important points to establish to further increase the regional trade. Another important cooperation is between the national regulatory authorities where the ASEAN Energy Regulatory Network (AERN) has been established to take responsibility for the review and approval of the set of needed Codes and Guidelines for the ASEAN Power Grid (APG) and monitor the effectiveness of the standards and procedures developed.

The ASEAN plan of action for energy cooperation (APAEC) (2014) is a series of guiding policy documents to support the implementation of multilateral energy cooperation to advance regional integration and connectivity goals in ASEAN. It serves as a blueprint for better

cooperation towards enhancing energy security, accessibility, affordability and sustainability under the framework of the AEC for the designated period. The key initiatives under this APAEC include embarking on multilateral electricity trading to accelerate the realisation of the ASEAN Power Grid (APG).

The obstacles and barriers face now in the ASEAN region, have been faced, recognised and overcome by the other regions throughout the world that have established a regional market for power. As mentions above some of these international examples are presented and discussed in this literature report to utilize the experiences gained in these other implementations and to use this in the establishment of the regional cooperation in ASEAN.

As a first step to lay out a plan for increasing the interconnection infrastructure, the ASEAN Interconnection Master Plan Study (AIMS-l) was finished in 2003 and aimed to identify, evaluate and propose a viable regional power interconnection network. Due to rapid developments in the region a secondary study, AIMS-II, become necessary and was carried out in 2010 along with this study the APGCC was established as a mechanism to coordinate and lead the needed studies.

The AIMS-II study also aims to establish the following points as the priorities for further developments of the APG[1]:

1. To create APG through interconnections among all ASEAN countries;
2. To promote more efficient, economic, and secure operation of power systems through harmonious development of national electricity networks in ASEAN by region-wide interconnections;
3. To optimise the use of energy resources in the region by sharing the benefits;
4. To reduce capital required for generation capacity expansion;
5. To share experiences among member countries;
6. To provide close power cooperation in the region; and
7. To identify barriers to the implementation of APG.

Many new interconnectors have been built the last couple of years and more is scheduled to be commissioned.

[1] Executive Summary of the ASEAN Interconnection Master Plan Study no 2