

FEASIBILITY OF ETS FOR ASEAN: VIEWPOINT FROM POWER SECTOR

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Overview

Power generation contributes to over a third of the global energy-related CO₂ emissions. Due to robust economic and population growth in ASEAN countries, the power demand in the region is growing and the energy related CO₂ emissions are expected to double by 2035. Power sector will remain the most important contributor to the emissions increase in the region making ASEAN countries more vulnerable to the impacts of the climate change. According to projections, economic losses associated with the climate change could cost Indonesia, the Philippines, Thailand and Vietnam an equivalent of 6.7 percent of the annual GDP by 2100 which is double the global average loss. To facilitate measures of carbon reduction a range of countries around the world has considered application of price and trading mechanisms among which the emissions trading schemes (ETS) are the most prominent example. Emissions trading is a central element of the Kyoto protocol in the form of the Clean Development Mechanism (CDM) and is the cornerstone policy of the EU whose ETS is the largest in the world. The ASEAN countries are all classified as non-Annex I countries in the United Nations Framework Convention on Climate Change and are not obligated by emissions caps in any form. However, some members, such as Indonesia and Malaysia, have adopted emissions reduction targets under the Copenhagen Accord while Thailand is planning to introduce a voluntary emissions trading system which likely to be a precursor to a future mandatory scheme.

The motivation behind creating a carbon market in ASEAN comprises a range of economic and environmental benefits. These benefits range from developing a large number of CDM projects to creating regulatory and financial instruments to develop innovative ways to reduce emissions. This paper investigates opportunities and challenges of creating an ETS scheme for ASEAN from the viewpoint of the power sector as the main contributor of CO₂ emissions. Based on anticipated projections of the national fuel mixes used for power generation, the paper analyzes which ASEAN members could become net exporters and net importers of carbon credits. The paper also analyzes the consequences of possible emissions caps for the national power sectors of individual countries under different ETS schemes designs.

Methods

Analysis of future CO₂ emissions for power sectors of individual ASEAN members
Discussion of different ETS designs and their feasibility for the ASEAN region
Discussion of consequences for the power sectors of the individual ASEAN members

Results

First, emissions projections for ASEAN countries were calculated in total and per MWh of generated power (operating margin) .

Second, the results were analysed from the viewpoint of emissions caps under different ETS designs.

Third, different consequences were found for different ASEAN members

Conclusions

Carbon market would allow several ASEAN countries benefit from reduction of carbon emissions in particular under CDM mechanism. Countries which envisage adding large-scale hydro, nuclear and renewable capacities would furthermore benefit from exporting of carbon credits especially if ASEAN ETS is linked with other schemes. The growth of coal-fired power capacity is associated with economic drawbacks if carbon pricing mechanisms are implemented. CO₂ emissions from coal-fired power plants can be offset if other carbon neutral power sources are deployed concurrently.

References

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