

A Study of Nuclear Phase-Out Policy of Germany after Fukushima Accident and its Implication for Japan

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Abstract

Nuclear disaster of Fukushima accident in 2011 influences diverse nuclear policy in every country. This study focuses on German nuclear policy to understand the factors for the complete nuclear power phase-out policy. Decision-making of radical policy reversal in Germany presents the implication for Japan in nuclear policy.

Keywords: Nuclear policy, Fukushima accident, Germany, Japan

1. Introduction

Nuclear power is believed as low-cost, but high efficiency which supports enforcement of GHG emission regulation. However, it turned out to be controversial after Fukushima accident in 2011. Qualitative research on German's nuclear phase-out policy tells the background of decision-making which implicates for Japanese energy policy.

2. Factors for German Nuclear Policy Change

2-1. Political and Social Aspect

Germany was once world top five nuclear powered country, but nuclear policy was one of the most important issues after Fukushima accident during election period in 2011. Increasing pressure from anti-nuclear federal states voiced by public opinion made Merkel administration change its political status to anti-nuclear policy. Drastic change toward nuclear policy was political decision considering public opinion and election in 2011 [1].

2-2. Technical Aspect

Power production from renewable energy takes account almost 30% in 2016 [2], which Germany has quite mature renewable energy technology and diffusion enough to replace nuclear power at certain level. It is reported that renewable energy provided approximate 75% responding to power consumption in July 2017.

2-3. Geo-political Aspect

Geo-political status of Germany is possible for electricity import and export, because of interconnection of German grid with neighboring countries. Despite nuclear phase out results in electricity shortage, it is possible to solve the problem by exporting and importing from neighboring countries.

3. Discussion: Implication for Japanese Nuclear Policy

Strong willingness of political decision by pressure from public opinion changes German position to nuclear phase-out policy with strong support of renewable energy supply in Germany. For Japan, although public opinion on nuclear power plant is overall negative, political decision to restart nuclear power plants is for national survival to provide stable energy, because the current renewable energy ratio in the generated electric power amount is 12.2% [3] that is not enough to replace nuclear power. Electricity trade market does not geo-politically exist in Northeast Asia so far. Hence, nuclear power is a positive option for Japan as being an "energy island."

References

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