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# The Conditions of Successful Renewable Energy Governance. Exploring Qualitative Comparative Analysis (QCA) in Energy Policy Research

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## Abstract

In order to understand the occurrence of successful renewable energy governance, it is necessary to understand the factors (conditions) that might influence it. This paper presents an exploratory study which pursues the goal of discussing one of the main methodological approaches and testing key theoretical assumptions with the aim to answer the following question: What are the conditions of successful renewable energy governance? Successful governance is to be understood as governance that enables states to actually attain the European and national goals regarding the transformation of the energy system(s). In concrete terms, the objective of this paper is to explore and illustrate the opportunities and limitations of one specific configurational method – Qualitative Comparative Analysis (QCA) – for analyzing successful (renewable) energy governance, to assess the possibilities for mixed method approaches, and to evaluate its use for further research.

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**Keywords:** Energy Governance; Renewable Energy Policy; Configurational Comparative Method; Qualitative Comparative Analysis

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## 1. Introduction

The transformation of the European energy systems will take generations to complete. Current planning forecasts suggest it will take decades to create a sustainable and climate-friendly energy system. Therefore, the energy

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transition needs to be understood as a long-term project. In this context it is necessary to understand which factors influence the sustaining of truly long-term policies. An important aspect of this research concentrates on the political driving forces that promote the deployment of renewable energy sources/renewable energies (RES/RE).<sup>†</sup> To establish possible factors regarding renewable energy governance (RE governance), the Configurational Comparative Methods approach (CCM) is used. CCM enables social scientists to perform systematic comparative analysis of complex cases [1]. Thereby, cases are transferred into configurations. “Simply said, a configuration is a specific combination of factors [...] that produces a given outcome of interest” [2]. Another common term used in the literature for those factors is conditions. Therefore, the question guiding this paper is: What are the specific conditions for successful renewable energy governance?

There are several possibilities to tackle this question. The procedure chosen corresponds to a specific CCM technique: Qualitative Comparative Analysis (QCA). The question will be answered by testing hypotheses and existing theories. The conditions derived will be tested with respect to their influence on energy transitions and on the deployment of RE policies.

Regarding the exploratory character of the paper at hand, this approach will be presented only illustratively. Only one scientific paper will be analyzed to explore the approach with the aim of presenting and discussing the results that may be achieved through its use. The main goal of the paper is to explore, test, and challenge the methodological and theoretical key assumptions of the research project.

## 2. Methodological Approach and Theoretical Assumptions

### 2.1. Data Collection – Systematic Review

Possible conditions are derived from empirical research, scientific studies, and medium range theories that are concerned with factors or drivers that promote the transformation of the energy system towards more sustainable and climate-friendly concepts. Based on systematic review approaches, a large portion of the relevant studies are to be found through systematic database researches followed by thorough screenings of the respective title, abstract, and keywords.

Preliminary investigations show that research on the issue is quite advanced and the first attempt of the systematic review<sup>‡</sup> shows that there are several studies which deal with drivers and determining factors for RES growth. Subsequently, the factors and drivers in these studies need to be analyzed and narrowed down so that they can be defined as conditions. The goal of the intended research project is to falsify or to corroborate these conditions, as well as the models presented in the studies.

### 2.2. Data analysis - Configurational Comparative Methods and *csQCA*

An approach based on configurational and comparative thinking is used to analyze the data. QCA is based on the conception of ‘multiple conjunctural’ causation. While the term ‘multiple’ is referring to the number of paths, the term ‘conjunctural’ implies that each path consists of a combination of conditions [3]. That different paths can lead to the same outcome is one of the core assumptions of QCA. This *equifinality* challenges the assumptions of mainstream statistical techniques. Besides the search for so-called necessary and sufficient conditions, the main goal of QCA is to explain complex phenomena of interest as short and simply as possible, while still providing appropriate allowance for causal complexity. This is the *parsimony principle* [4].

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<sup>†</sup> This paper represents a part of a doctoral research project that is concerned with the following question: How can political systems induce sustainable and long-term governance in the field of energy policy, how can certain governances succeed, and which (processes of) institutionalizations are used? The project is one of twelve research projects at the Boysen-TU Dresden Research Training Group. The institute is concerned with the technical feasibility and the social impacts of energy transitions.

<sup>‡</sup> With a first systematic literature review 127 papers with reference to factors influencing RE governance were found. One of the next steps of the research project is to derive, systematize and operationalize these factors and utilize them as conditions for the QCA.

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