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Energy Policies of Gulf Cooperation Council (GCC) countries—possibilities and limitations of ecological modernization in rentier states

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ABSTRACT

Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, and the United Arab Emirates are major oil and natural gas producing countries that make up the Gulf Cooperation Council. The six GCC countries fall in the top 25 countries of carbon dioxide emissions per capita and are perceived as the main actors blocking international climate change negotiations. The aim of this article is to discuss from a policy perspective the capacities of the GCC states to switch toward an ecological modernization of their energy sectors. At the beginning of the paper, I analyze the benefits of transforming oil wealth into funding for renewable energy and energy efficiency. After this, I discuss obstacles to such a transformation process based on the rentier states theory. Finally, I investigate governance of the GCC on all levels (international, regional, and local). The article shows that the GCC countries have recently adopted a more pro-active approach toward ecological modernization. This reorientation has not yet resulted in the development of consistent strategies and policies, however. The concluding assumption based on the concept of policy transfer is that pioneering projects such as Masdar City and innovative regulation like the green building code in Dubai will spread within the GCC.

1. Introduction

Discussing the climate change policy of the Gulf Cooperation Council (GCC), a trade bloc comprised of the 6 Arab states of the Persian Gulf (Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, and the United Arab Emirates) created in 1981, would seem to be a paradox: GCC member states are major oil and natural gas producing countries. They hold approximately 40% of the world's proven oil and 23.6% of the world's proven gas reserves (BP, 2008: 213). Furthermore, the general perception of the world is that GCC is one of the main actors impeding international climate change negotiations. Per capita, they are also one of the top contributors to pollution in the world.

The Climate Change Performance Index 2009 (CCPI) by Germanwatch evaluates and compares the climate protection performances of the 57 countries responsible for more than 90% of global energy-related CO_2 emissions. In the 2009 CCPI the Kingdom of Saudi Arabia (KSA) ranked last on the list. "Some countries, such as, e.g. Sweden, Germany, and the United Kingdom, are showing successful approaches, for example in raising the share of renewable energies in their country. The emission trends in Canada, Australia, China, and Saudi Arabia are especially worrisome," sums up the CCPI 2009 (Germanwatch, 2008: 10). Due to their relatively small populations – 26 out of 39 million people in the GCC are living in the KSA – the other GCC countries are not evaluated by the Germanwatch ranking. But on a global scale all GCC countries fall in the top 25 countries of carbon dioxide emissions per capita, with UAE and Kuwait leading, according to the United Nations Statistic Division (United Nations Statistic Division, 2007), as well as the Climate Analysis Indicators Tool (CAIT), an information and analysis tool on global climate change developed by the World Resources Institute (World Resources Institute, 2009).

Just 0.6% of the global population is living in the GCC, but the region is contributing 2.4% of the global greenhouse gas emissions (Raouf, 2008: 3). "CO_2 emissions per capita, energy intensities and CO_2 emissions per GDP in the GCC countries are higher than the average of 25-EU and the average of the OECD countries. Considering all the above, it is clear the energy efficiency could be improved in the region" (Doukas et al., 2006: 755).

Despite all the evidence of the GCC countries' contribution to global warming, I analyze in this paper to what extent ecological modernization is possible in the GCC countries.

2. Theory and methodology

In this article I analyze the possibilities and limits of *ecological modernization* in the GCC states. The term ecological

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modernization is defined as the wide spectrum of possible environmental improvements in a state. The concept of ecological modernization was developed by Martin Jänicke in the early 1980s to describe the common field of ecology and economy. A policy for ecological modernization is defined as the sum of government actions aimed to stimulate environmental innovations and their diffusion (Jänicke, 2000).

The article focuses on one key pillar of ecological change: the energy sector. Energy demands and the impacts of global warming are increasing in the Gulf Cooperation Council countries at a rate higher than the global average. This article will not further analyze how the GCC is contributing to climate change; it will instead focus on the capacities of the six countries that make up the GCC to switch toward ecological modernization in the energy sector from a policy perspective.

At the beginning of this article, I argue that the GCC countries would significantly benefit from ecological change in the energy sector. Ecological modernization in the energy sector is defined as the promotion of energy efficiency and renewable energies. Thereafter, the following research question is analyzed: What are the political obstacles to ecological modernization in the GCC? This section mainly refers to the *rentier state theory*. The Gulf Cooperation Council countries are dictatorial monarchies. According to the rentier state theory, Arab monarchies survive by exploiting the 'rent' revenues from the oil industry. These revenues allow a regime to provide its subjects with substantial material benefits without the need for heavy taxation and democratic representation. In other words: "No representation without taxation" (Brooker, 2008: 138).

The third part of the article analyzes *governance* in the GCC countries. Peters (2008: 60) defines governance as "establishing the goals for society, finding the means to reach those goals, and then learning from the successes or failures of their decisions." Governance refers to activities at different levels (national, regional, global) involving regulation and control. According to Sørensen (2008: 611) "there appears to be a general trend away from national government within a defined territory toward multi-level governance in several interlocked arenas overlapping each other." This article evaluates all levels of governance and seeks to answer the following questions: What is the role of the GCC on an international level in the negotiations on the United Nations Framework Convention on Climate Change (UNFSS)? What is the role of the GCC on a regional level? Are there any strategies or policies for renewable energies and energy efficiency within the GCC countries on a domestic level?

Based on the concept of *policy transfer*, it is assumed in the conclusion that pioneering projects and innovative regulations in individual countries will spread within the GCC.

One difficulty in studying the GCC is the lack of reliable domestic data. Only a few sources such as the 2009 report of the Arab Forum for Environment and Development (AFED, 2009) are available from within the Arab world. In 2009, AFED conducted a survey covering 19 Arab countries in order to collect the public attitudes toward climate change issues (see Section 4). According to AFED "virtually no work is being carried out to make the Arab countries prepared for climate change challenges. Specifically, no concerted data gathering and research efforts could be traced regarding the impacts of climate change on health, infrastructure, biodiversity, tourism, water, and food production. (...) Government policies that promote low-carbon and efficient goods and services, and endorse sustainable management of natural resources and coastal protection, are overdue (2009: *xx*)."

Therefore, most data cited in this article are not from the region but from international sources such as BP (2008), Economist Intelligence Unit (2008), Freedom House (2008), Germanwatch (2008), GTZ (2008), UNFCCC, (2009), World Resources Institute (2009), and WWF (2008).

Most political science discussion on GCC climate protection policies has a background in international relations and focuses on the role of the Gulf Cooperation Council countries in the climate change regime (see for example Depledge, 2008). Only a few studies (such as Raouf, 2008) have been conducted about what happens within the GCC countries and the interactions among them. The new contributions of this article are the inclusion of analysis at all political levels as well as the comparative perspective.

3. Benefit of climate protection policies for GCC countries

A switch toward more efficient use of fossil fuels and an increased share of renewable energies would have several benefits for the GCC countries: if the domestic use of fossil fuels were reduced, more oil and natural gas could be exported. Norway is an example of an oil and natural gas exporting country that has benefited for decades from the fact that almost 100% of its domestic electricity production is coming from renewables (Reiche, 2008). This is mainly due to hydropower—a resource that is hardly available in the GCC. However, due to the favorable geographical conditions for other renewable energy options, the Norwegian success story could be transferred in only a few decades to the GCC. Whereas Saudi Arabia and the UAE have limited potential for wind electricity generation (2.5–4.5 m/s), Bahrain, Kuwait, Oman, and Qatar have at least moderate opportunities (5–7 m/s) (Patlitzianas et al., 2006: 3722). Solar energy, on the other hand, is the most promising renewable energy source. The conditions for solar energy potential in the GCC are among the most favorable in the world: the GCC countries are in a rainless region extending from North Africa to Central Asia which has 80% clear skies throughout the year. Saudi Arabia, for example, is irradiated by at least 2200 kWh thermal kilowatt hours per square meter (Alawaji, 2001: 15). Currently, there are even discussions to produce large amounts of solar electricity in the Middle East and North Africa and export portions of it to Europe. A group of companies has founded the so-called "DESERTEC Industrial Initiative" to lobby for this idea (Vallentin/Viebahn, 2009).

Aside from the financial benefit of reducing highly subsidized domestic consumption and increasing export capacities, the GCC countries would gain another important benefit from such an ecological transformation process: they would prepare themselves for the post-oil age. Their energy infrastructure would be ready for an era when domestic oil and natural gas are no longer available. As discussed below, some of the GCC countries are already, or will be in the near future, confronted with the finiteness of fossil fuels. Even for those GCC countries such as Qatar that still have plenty of reserves it makes sense to begin to make changes; costly adjustments could be avoided in the future if an incremental transformation process were initiated now, rather than radical change later.

Another reason for the GCC countries to reduce their fossil fuel consumption is the effects climate change already has and will have on them. GCC falls in the "high category" for vulnerability to the effects of climate change. According to Janardhan (2007: 4), there are two major and immediate consequences of climate change, population growth, rapid urbanization, and wasteful consumption for GCC countries: first, rising sea levels will severely affect coastlines and marine life and could impact desalinization plants that are the source of water for the region. Additionally, rising temperatures will mean increasing water demand. With falling freshwater levels and increasing salinity in