Environmental regulation and low-carbon development

CHAPTER 10

Valorisation

Relevance and target groups

The research results are relevant in several ways. They add to existing insights into environmental policymaking, technology transfer and renewable energy based economic development in qualitative and quantitative ways.

First, they provide insights into the mechanisms behind environmental policymaking and try to prove political economy theory. The drivers of environmental regulation and influences on national level have rarely been studied in the past. The research provides important information for policymakers as well as civil society and the private sector industry.

Policymakers can retrieve information from the research findings on how different interest groups and institutions interact in the policymaking process with regard to environmental regulation. Civil society can use the information in order to improve their strategic work in lobbying for their interests in the environmental policymaking process. Industry can benefit from the insights with regard to their own lobbying activity, by learning how different institutions and actors behave, and about their own influence in the environmental policymaking process. It also helps them to sharpen their influence and role in the policymaking process. The social relevance is high, as the research results shall improve transparency of the policymaking process, in which industry lobbying is dominant and the balance of powers between stakeholders can be uneven.

Second, the research informs climate policymakers how they could improve climate policy in order to foster economic development in developing countries alongside with the adoption of climate change mitigation technologies. The research detects weaknesses in the design of climate mitigation technology transfer mechanisms with regard to developing countries and provides suggestions on how those mechanisms can be improved and adapted to the needs of developing countries. The purpose of the research is to: i) illustrate that technology transfer must take into account technology specifics on a technology component or technology system level; and ii) demonstrate the potential to add value within an economy by sourcing technology from the domestic industrial sector; while at the same time being country-specific. Those findings could potentially help maximise the economic benefits of RET transfer in developing countries and increase the domestic value added in RET manufacturing sectors in developing countries.

Case study results give insights into the role and importance of technology suppliers within the innovation systems framework of RET deployment in technology adopting countries. Those results are directly applicable for renewable energy policy designs aiming to improve the deployment of RET and overcome institutional shortcomings within the innovation systems of developing countries. Similarly, the interactions of actors and technology, as well as the knowledge transfer routes with regard to energy efficiency technologies, are assessed. It highlights success factors for energy efficiency uptake in developing countries.

Third, the research gives insights into the potential contribution to economic growth in developing countries that a renewable energy transition could make. This can be used as a reference for developing countries committed to RET diffusion. Green growth pathways are described for the Middle East and North Africa (MENA) region, as well as for Egypt as an example of a country in the midst of a renewable energy transition. Results give promising insights that the transition to RET can be beneficial under certain circumstances. Policymakers and consultants likewise can utilise those insights for the design of renewable energy deployment pathways.

Research results are of interest to policymakers and policy consultants as well as civil society advocates. Policymakers can learn how the different institutions and groups interact in environmental policymaking. Further, policymakers get insights into the potential obstacles and benefits of a transition to RET in their country. Policy consultants can use the assessment of barriers and technology specifics of the clean technology transfer process to advise governments, technology providers and infrastructure project developers alike. Civil society advocates can learn how their interests are channelled in the environmental policymaking process and what the barriers and potential benefits of a renewable energy transition are.

Activities and products

Insights into the drivers of environmental regulation can help environmental lobby groups and policymakers to increase their influence. It could be applied in lobbying activity and policy advice. The research results on the assessment of technology transfer policies could be used as guidance for consulting and capacity building activities in developing countries. Further, they can aid in the design of national technology adoption policies and spur the diffusion of renewable energy and energy efficiency technologies in developing countries by strengthening various institutions and actors in the technology adoption process.

The insights into the potential for green growth can be used in the renewable energy transformation process in the MENA region and beyond to convince governments, stakeholders and the broader community about the potential economic benefits of a renewable energy transition. Those findings clearly contribute to the public debate about renewable energy based green growth in general and the economic and sustainable transition in the MENA region in particular. Civil society, non-governmental organisations and political stakeholders can make use of the research findings in order to further strengthen the renewable energy and energy efficiency transition in the region and beyond, and gain from a growing market in the region. The economic modelling approaches used in this thesis can be expanded to other world regions and used for consulting purposes or green growth policymaking objectives in different geographical contexts.

The research results on economic impacts from renewable energy deployment have been presented at the Economic Research Forum (ERF, Cairo) in 2014 and the DIE / PEGNet conference in March 2014.

Innovation

Results on the drivers of environmental regulation are new in the sense that structural equation modelling has been rarely applied in the political science area. This approach could be used commercially for policy analysis and consulting activities.

The results regarding the technology component complexity assessment in relation to the technology transfer mechanisms are innovative. Component disaggregation is new in the context of technology complexity assessment, technology transfer and global climate policy. As yet, technology transfer mechanisms have not inspected technologies on a component basis. This is recommended when the technology sub-systems can be categorised and differentiated by their degree of technology complexity. Based on this disaggregation approach, country-specific and technology-specific technology transfer and diffusion pathways can be described, and tailored accordingly to be congruent with national, component-specific innovation capabilities.

The work on green growth modelling is innovative as it has been a novelty to disaggregate the electricity sector in a Computable General Equilibrium model by introducing CSP, PV, and Wind technology into the modelling environment and also the trade of electricity between world regions/countries in such a model.

Schedule and implementation

Currently there are no plans for valorisation of the above mentioned research results and methods.