

Publizierbarer Endbericht

Gilt für Studien aus der Programmlinie Forschung

A) Projektdaten

Allgemeines zum Projekt	
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Projekt- und KooperationspartnerIn (inkl. Bundesland):	Wegener Center for Climate and Global Change, University of Graz (WEGC) (Graz) Austrian Institute for International Politics (OIIP) (Wien) SMADER / MENARES (Marokko)
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B) Projektübersicht

1 Kurzfassung

LINKS befasst sich mit politischen Strategien zu Klimawandel und Energiesicherheit auf regionaler Ebene, einschließlich deren sozioökonomischer Auswirkungen.

Ziele des Projekts sind: 1) Untersuchung der wirtschaftlichen Machbarkeit einer Entschärfung des Klimawandels, von Energieautarkie und Regionalentwicklung im Zusammenhang mit der Entwicklung erneuerbarer Energie in den österreichischen Modellregionen. Dies inkludiert eine Reihe von Fragen, ob beispielsweise die Hinwendung zu erneuerbarer Energie wirtschaftlich gehalten, was sie versprochen hat, welche interessenpolitische Konstellation für die Entscheidung den Ausschlag gegeben hat, was die Pro- und Contra-Argumente waren, welche Kosten und Nutzen für die Regionen durch die angestrebte Unabhängigkeit von fossilen Energieträgern entstanden? 2) Beurteilung des sozialen und politischen Engagements für die Ziele einer Entschärfung des Klimawandels, von Energieautarkie und Regionalentwicklung durch eine Untersuchung der sozialen Akzeptanz innerhalb der Modellregionen sowie auf überregionaler Ebene des politischen Willens und der Bereitschaft, die Maßnahmen zu fördern sowie der Bereitschaft der Energiekunden, höhere Preise zu bezahlen. 3) Beurteilung der Relevanz und der Vorbildhaftigkeit der österreichischen Klima- und Energiemodellregionen für die Entwicklung erneuerbarer Energien in Marokko, ausgeführt in Zusammenarbeit mit Marokkanischen politischen Entscheidungsträgern.

Zielgruppe des Projekts sind einerseits die österreichischen Klima- und Energiemodellregionen und andererseits politische Entscheidungsträger und die Bewohner in den betroffenen Regionen. Zur Beantwortung der Forschungsfragen bedienen wir uns gleichermaßen quantitativer Methoden und qualitativer Methoden, insbesondere Literaturrecherchen, Interviews mit Entscheidungsträgern, standardisierte Erhebungen und Fokusgruppen-Diskussionen.

- Was sind die ökonomischen Effekte von Energieautarkie auf regionaler oder nationaler Ebene? Was sind die zu erwartenden Effekte auf die öffentlichen Haushalte auf Ebene der Gemeinden, Länder und des Bundes? Welche Beschäftigungswirkungen ergeben sich?
- Welcher politische Wille steckt hinter dem kapitalintensiven Einsatz für nachhaltige Energiequellen? Wie ist Akzeptanz von Entscheidungsträgern und Konsumenten, dafür höhere Energiekosten zu bezahlen? Gibt es Unterschiede in der öffentlichen Wahrnehmung zwischen Regionen, wo Informationskampagnen gestartet und Mitbestimmung der Bevölkerung bei der Entscheidungsfindung zu erneuerbaren Energien betrieben wurden im Vergleich zu Regionen, wo dies nicht passierte?
- Wie können die österreichische Erfahrungen in andere Regionen übertragen wurden? Wie kann der österreichisch-marokkanische Dialog unterstützt werden, um gegenseitiges Lernen, Teilhabe und gemeinsame Wissensbildung zu erzielen?

2 Executive Summary

The major research aim of the LINKS project was to provide social, economic and political insights on the Austrian policy to implement renewable energy sources at the regional level as well as transferability of the Austrian experience of energy transition at the regional level to other countries.

The project addressed this aim in frames of three work packages. Each of these work packages had the following **major research questions**:

Work package 1 (WP1): Can investment into renewable energies be a driver for socio-economic development, and what are the pros and cons for Austria, financial or otherwise, of pursuing regional energy independence through renewable energy?

Work package 2 (WP2): What are measures of participatory governance in the CEM regions? To what extent is there public acceptance of renewable energy infrastructure, and how does this relate to stakeholders' and consumers' willingness to pay for it?

Work package 3 (WP3): To what extent can the Austrian experience be transferred to other regions? How can the Austrian-Moroccan dialogue be promoted in order to stimulate mutual learning, participation and the co-production of knowledge?

The following **methodology** was applied to address the above-mentioned questions.

WP1: The methodology was largely based on application of the Computable General Equilibrium (CGE) model to conduct macroeconomic assessment of the deployment of renewable energy sources and its impact on regional economies. In frames of this WP, we also conducted a cluster analysis of 95% of all CEMs in Austria and developed three kinds of clusters. Further on, we developed the renewable energies technology scenarios with sectoral output effects, GDP and aggregate output effects. Also a comprehensive review of all available energy transition concepts from all CEM regions was provided to identify to which extent the settled targets towards energy transition correspond to available resources and patterns of energy demand.

WP2: The methodology included several methods of stakeholders' dialogue and several steps when data developed at one step were included into following work during the next steps. The application of such methods as observations, discourse analysis, content analysis, statistical regressions and correlations allowed us to understand various stakeholders discourses about energy transition at the regional level as well as to identify major drivers of social acceptance and patterns of participatory governance, providing potentials for development of compromise solutions for contested policy options like energy transition and engagement of various stakeholders groups into different phases of energy transition.

WP3: the methodology included various methods of stakeholders' dialogue in Morocco. First, based on the available written evidence we conducted a comprehensive review of institutional structures which shape energy transition in Morocco as well as patterns of decision-making processes. Second, we provided a matrix of stakeholders who are involved into energy transition in the region of Tata, which was selected as our case study region. Based on this matrix we conducted qualitative in-depth interviews. We also conducted the stakeholders' forum and several roundtable discussions with various groups of stakeholders. The received results were analyzed in frames of the socio-technological imaginaries.

We received following **major results** in frames of each WP. Later on, we describe these results in more details.

WP1: The macroeconomic effects of the achievement of ambitious renewable electricity (RES-E) targets in the Climate and Energy Model (CEM) regions were assessed in two scenarios. While a focus on biomass and biogas benefits the agricultural sector in the CEM regions, the overall macroeconomic effect is found negative because of the required subsidies to these technologies. If instead a stronger focus lies on “new renewables”, in particular photovoltaics and wind, positive macroeconomic effects may result.

WP2: We identified a very high level of awareness about climate change as well as a clear link which inhabitants of the surveyed CEM regions make to the man-made activities. The perception of the need of energy transition is also very high. The level of awareness about energy transition in particular CEM and possibilities for participation is lower but still remains at the level much above of the EU average. There is a very positive attitude towards renewable energy sources with solar power being the most popular technology. The majority of respondents completely reject nuclear power. Willingness to pay for renewable energies is available but varies strongly dependently on income and occupation. The strongest correlation is with the real estate ownership structure and the size of households. The tendency is that the large household is the higher is willingness to pay for energy transition. This might be connected to the fact that larger households are usually people with children. Also, willingness to pay for renewable energies is much higher among households who have real estate in private property than among households who are renting their property. In average, inhabitants stated that they would pay additional 10% for renewable energies but on conditions of complete transparency about the sources of energy and that energy comes from their region. Ownership of energy transition in various forms seems to be an important factor. However, this high level of awareness does not translate into action for various regions. One of the reasons is that current participatory governance measures are mainly focused at the tokenism level where awareness about energy transition is raised with some opportunity to provide opinion. Engagement into energy transition itself is available in form of financial participation in various projects. Energy groups in Freistadt were identified as a best practice for participatory energy transition. There was also a clear correlation that availability of such groups and possibility to provide input into discussion about energy transition raises the level of trust among inhabitants towards policymakers who are dealing with energy transition.

WP 3: the objective of the third work package (WP3) was to determine the transferability of Austrian experiences to an environment such as Morocco. Morocco is a developing country that has ambitious energy transition goals. Methods applied included desk research on energy and climate policies in Morocco, political structures and decision-making processes, two field trips. During these field trips; many background talks and semi-structured interviews with local NGOs, state representatives, representatives of the local council and mayors were held. A stakeholder forum and a focus group discussion were two moderated platforms that enabled the observation of debates. During the forum two Austrian climate region models; Güssing and Freistadt were presented and discussed. Major insights are that de-centralized solutions are rather difficult to implement in overly centralized, authoritarian contexts. The many local initiatives do often lack support. The state and its international partners are mainly focusing on centralized, large-scale solutions.

3 Initial situation and motivation of the project

The initial situation for the project was the target of energy policy in Austria to reach electricity self-sufficiency through deployment of renewable energies in the CEM regions. The idea was that the CEM regions would be able to become independent from fossil fuel imports by 2050. The renewable energy sources were also viewed as a driver of regional development.

Therefore, at that time two major research questions appeared:

- a) Can the Austrian regional strategy serve as a model to resolve one of the most intractable problem of climate change mitigation: the allocation of resources to capital – intensive RES infrastructure with high initial costs and benefits over years?
- b) Can investment into renewable energy sources in structurally poor regions be viewed as a no-regret strategy for mitigating climate change, at least to the extent that the gains from regional development exceed the additional costs of renewable energy?

The starting point for WP1 was the question of economic feasibility of such targets. It included the need to evaluate pros and cons, namely, benefits and costs of pursuing regional energy independence with renewable energy sources and under which conditions it could be a no-regret strategy. There was also the need to evaluate of how much added economic benefits from ensuring regional development can contribute to balancing added economic costs for renewable energy sources.

The starting point for WP2 was connected with the results of the WP1 and the need to understand who will pay for additional costs, which might occur while moving to a higher share of renewable energy generation, and how it will motivate willingness to pay of the inhabitants. The willingness to pay is closely connected with social support for renewable energy sources. The initial intension of this work package was to understand what are the drivers of support of energy transition in the CEM regions and if and how inhabitants want to participate and to engage in energy transition.

The starting point for WP3 was the question whether experiences made with the Austrian CEM regions can be transferred to an environment such as the Tata province in Morocco. Tata is a remote and economically underdeveloped province, where a large-scale solar power plant is planned to be built in the next years. Expectations in Tata in regard to the benefits of the province are running high. The underlying motivation was to introduce de-centralized, small-scale energy production models as an alternative to the centralized, large-scale solutions promoted by the central state and its international partners. De-centralized, small scale solutions were seen as a more local approach to energy transition and development. The major aim was to capture the imaginaries of local stakeholders and assess the transferability of the Austrian model.

Therefore, the major objective of the WP 1 was to evaluate economic feasibility of climate mitigation and regional development energy targets. The major objective of the WP 2 was to assess social commitment to energy transition and the drivers of this commitment such as possibilities for participatory governance. The major objectives of WP3 was to assess conditions defining the transferability of models and to identify structural, legal, financial, political and governmental framework in Morocco relevant to the governance of energy transition.

4 Major results of the project

WP1: Economic feasibility of the model region concept (Leadership of WEGC)

Figure 1 illustrates the regional distribution of the three CEM clusters. The main result of the cluster analysis is that the three clusters differ greatly in their economic and energy characteristics, which also translates into the conclusion that mainly rural and semi-rural Austrian regions have the theoretical potential to become energy autarkic. Furthermore, around half of the analyzed CEMs could – based on the available data provided in the implementation concepts – potentially become energy autarkic in heat and electricity production. Fewer CEMs have defined quantitative energy targets, but around half of them which did, pursue the goal of energy autarky, at least in heat and electricity production. The detailed results of this cluster analysis were prepared as a report in “Identification of framework conditions for economic feasibility of energy autarky based on existing literature” (Bramreiter et al., 2016).

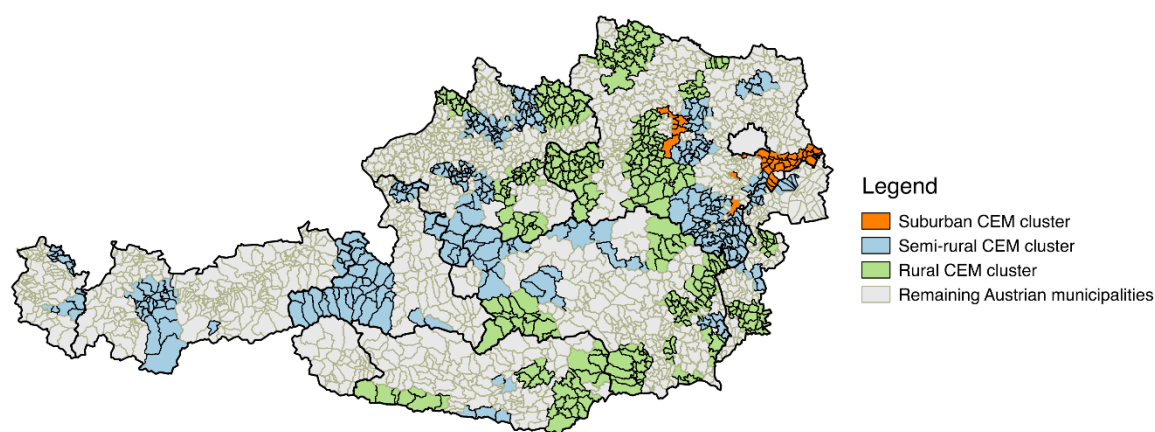


Figure 1: Regional distribution of the CEM clusters

The CGE analysis addressed two specific research questions: What are the consequences of 100% RES-E in the CEM regions for the public budget and energy prices? What are the economy-wide (net) benefits or costs of RES-E self-sufficiency in the CEM regions?

In answering these questions, we find that for scenario 1 the semi-rural and the rural cluster -- those CEM regions with a high share of biomass in their electricity generation mix -- experience a decrease in welfare (measured in terms of consumption possibilities). This is due to the high subsidies for biomass electricity generation. This in turn leads to negative spill-over effects on welfare in the Rest of Austria as well (Figure 2a). In this bioenergy focused scenario the agricultural sector is the only sector with positive output effects; for all Austrian sectors in total, the output decreases (Figure 2b).

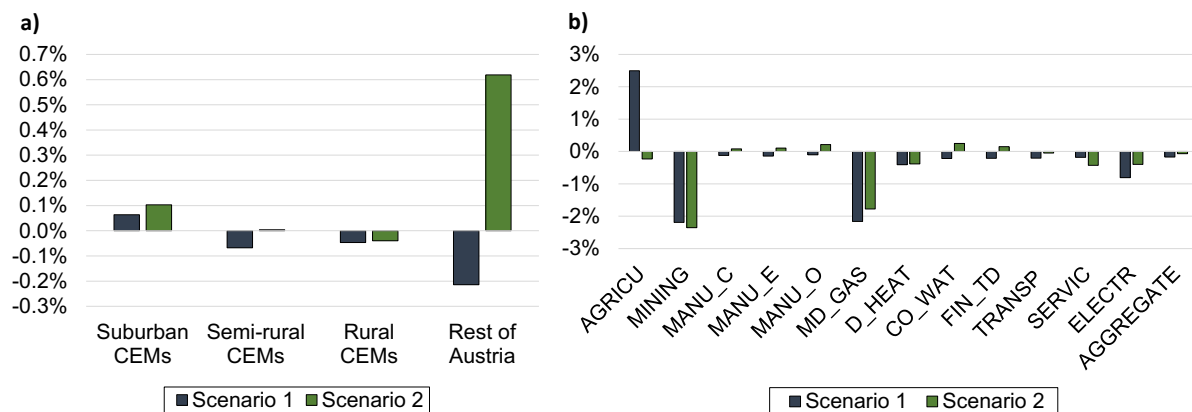


Figure 2: a) Welfare effects across the four model regions relative to Baseline.
b) Sectoral and aggregate output effects at the Austrian scale relative to Baseline.

For scenario 2, which relies solely on hydro, wind and PV to achieve the 100% RES-E targets in the three CEM clusters, we find positive welfare effects for all model regions, except of the rural CEM cluster (Figure 2a). The positive effects stem from a less costly RES electricity production compared to scenario 1, while the remaining negative welfare effect for the rural cluster results from an output decrease in the agricultural sector, which is the predominant economic sector in this cluster (Figure 2b).

The structure of the CGE model, the data preparation, and the detailed results were summarized in a journal article which is currently under review (Schinko et al. 2019).

WP2: Social acceptance, consumer WTP and political will (Leadership of IIASA)

The results of WP2 show the existing patterns of social acceptance towards energy transition, including also willingness to pay and to use renewable energy sources. They also show differences in discourses about energy transition and therefore allow developing of recommendations on energy policy actions, which can address various discourses and motivate for movement beyond passive acceptance of energy transition towards active participation. Such results also allow for developing of compromise energy policy solutions. Our results also show at which level of participation various stakeholders' groups are currently involved into energy transition and how action could be stimulated further through participatory governance and ownership of energy transition. These results are reflected in two project reports (Truger et al., 2016; Riegler et al., 2017) as well as in three peer-reviewed papers (Komendantova et al., 2018a and Komendantova et al., 2018b; Komendantova, 2018; Komendantova and Neumueller, submitted) and a book chapter (Reusswig et al., 2018).

While speaking about participatory governance of energy transition the figure 4 shows the matrix of stakeholders who are involved into energy transition in the CEM Freistadt, as an example of stakeholders' matrices developed in frames of the project. The matrices of stakeholders for other evaluated regions are similar and show that the decision-making process is mainly focused on organised stakeholders. The decision-making process on definition of the need of the projects has a certain degree of centralization but settled at the local level, with the local government or the CEM manager being a key stakeholder.

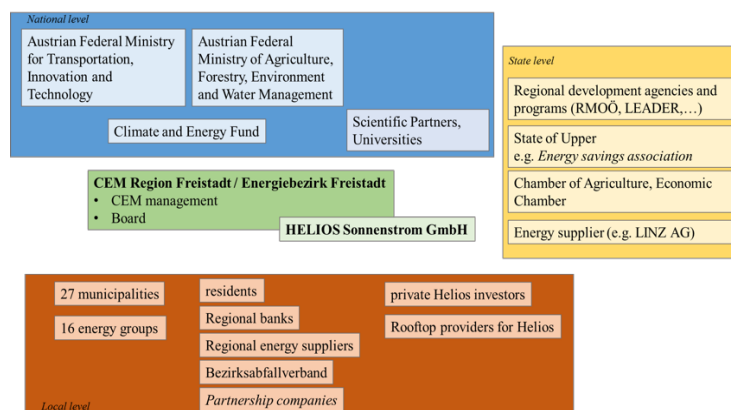


Figure 3: Stakeholders involved into energy transition in the CEM Freistadt

Evaluation of existing in the CEM regions participatory governance measures shows that involvement into different phases of decision-making process for laypeople differs. For instance, inhabitants have hardly an opportunity to participate in the decision-making on definition of the need of the project. At the same time, they have an opportunity to participate with financing in the implementation of the projects. In the latter case the engagement of local people mainly takes place through different forms of financial participation, such as shares in companies, saving books, leasing etc.

All participatory governance measures were mapped according to the ladder of participation developed by Arnstein. Our results show that the majority of these measures is focused at the level of tokenism and awareness raising among inhabitants (table 1).

Table 1: Participatory governance of energy transition and the level of involvement of inhabitants into energy transition in three CEM regions

	Freistadt	Ebreichsdorf	Baden
Decision-making process	Combination of top-down and bottom-up approaches	Key role of CEM manager; CEM implementation unit associated with local government	CEM process is managed by municipality; decision making is in different working groups
Involvement of inhabitants	Involvement through energy groups	Mainly targeted on stakeholders	Mainly targeted on stakeholders
Awareness raising	Climate schools, public information events, excursions and exhibitions	Strong focus on targeted measures for different groups of inhabitants (children, students, elderly people)	Public information events and targeted information campaigns; consultations on technical issues
Participation	Financial participation (Helios Sonnenstrom)	Financial participation (PV park in Trumau and wind park in Pottendorf)	Financial participation (Badener Sonnenkraft, "bea" Baden's Car-Sharing scheme)

The majority of participatory governance measures in all three CEMs are focused at the level of informing population. These are mainly awareness- raising measures, which in some cases are targeted at specific groups of inhabitants. Some of the measures include therapy elements, for example, media campaigns

to alleviate risk perceptions related to energy transition. The information and consultation levels include such awareness-building measures as climate schools, designed especially for young people, public information events to raise awareness of renewable energy and energy efficiency, and media reports in local newspapers and social media with information on the need for climate change mitigation. There are also excursions and exhibitions where local people have a chance to get to know renewable-energy and energy-efficiency technologies and also experience innovative energy-transition measures such as car-sharing. All these measures speak to raising awareness of the need for an energy transition; however, they do not allow for involvement of feedback from local people or for their engagement into decision-making processes.

The analysis of decision-making process on energy transition in CEMs allows making conclusions that we are still speaking about shaping of energy transition by “educated experts”. A certain progress was done in the area of inclusion of organized stakeholders, such as interest groups, into decision-making process. However, inhabitants are almost not included neither into definition of the need of the project nor into the process of implementation of the projects.

The results of the discourse analysis allowed to identify major arguments which are relevant for implementation of energy transition and fall into different world views such as egalitarian, individualistic and hierarchical. The content analysis allowed us to identify major arguments relevant for every discourse which would allow to move energy transition beyond passive social acceptance rather towards active participation and ownership of energy transition. The individualistic discourse is characterized by perceptions of innovation and progress as well as individual responsibility, costs and benefits. The egalitarian discourse includes such key words as equal responsibility in decision-making processes, joint decision-making, or equal spread of costs and benefits of energy transition. The authoritarian or hierarchical discourse includes such words as expert-driven decision-making, controlled implementation of policy interventions, controlled risk, or science-policy communication. Elements of each of these discourses could be found in each of our case study regions.

The results from the survey show that over 90% believe that climate change is happening, 61% support the deployment of renewable energy as an applicable climate change mitigation strategy, overwhelmingly, 70 % of the respondents rejected nuclear as a potential energy source in both regions, over 30% of respondents do not know about CEM regions, over 40% have heard of it, and only 17% know about it, more than 50% of the youth had never heard of the energy transition, only 3% of the youth knew about the CEM regions endeavour.

While comparing feedback on various renewable energy technologies solar power is perceived as a preferable RES, followed by geothermal, hydro, biomass, wind and biogas (figure 4 a and b). Over 60% of all respondents in Freistadt and in Amstetten have in general a very positive attitude towards solar power. The second most popular source of energy in both regions is geothermal, followed by biomass and wind energy. Biogas is the least popular source of energy, with less than 20% of inhabitants in Freistadt and Amstetten having a very positive attitude towards it. The share of inhabitants having a very negative attitude towards biogas is more than 14% in Amstetten and more than 10% in Freistadt. At the same time only 4% in both regions have a very negative attitude towards solar energy.

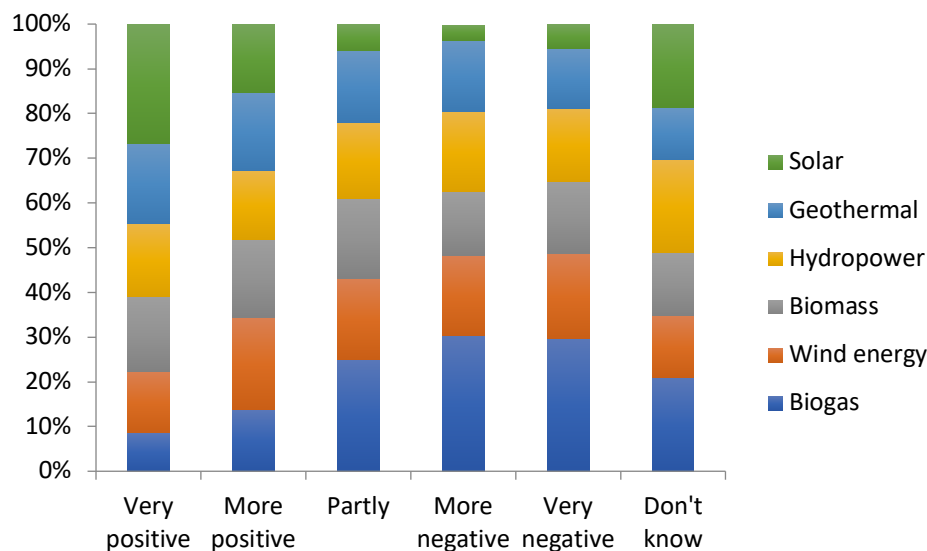


Figure 4a: Support for renewable energy sources in Freistadt

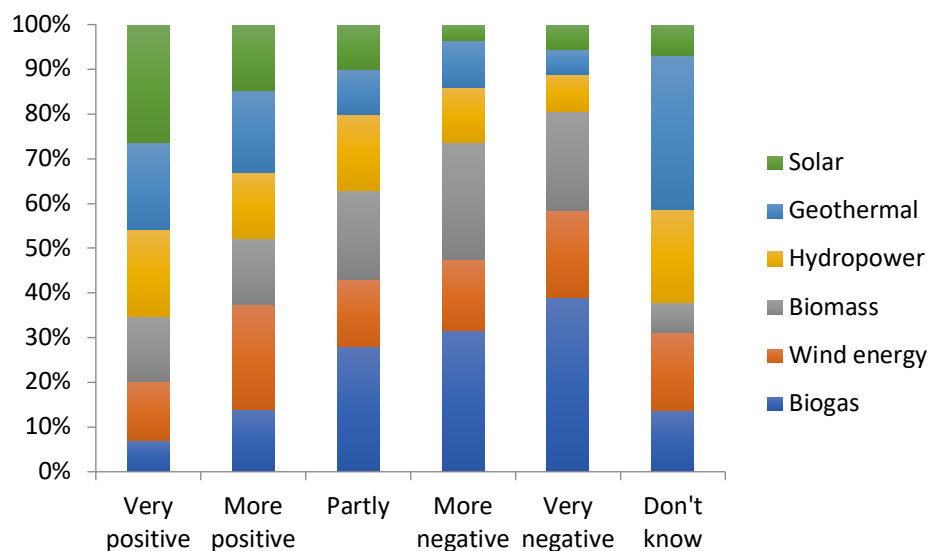


Figure 4b: Support for renewable energy sources in Amstetten

When respondents were asked to explain their negative attitude towards certain types of renewable energy sources, they mentioned visibility impacts, noise, smell, and health and safety issues. Also, according to these variables biogas had the lowest level of support.

The willingness to pay (WTP) for RES depends on the size of household, with the higher the number of people the higher is WTP which can correlate with the ownership structure and presence of children in the households (figure 5).

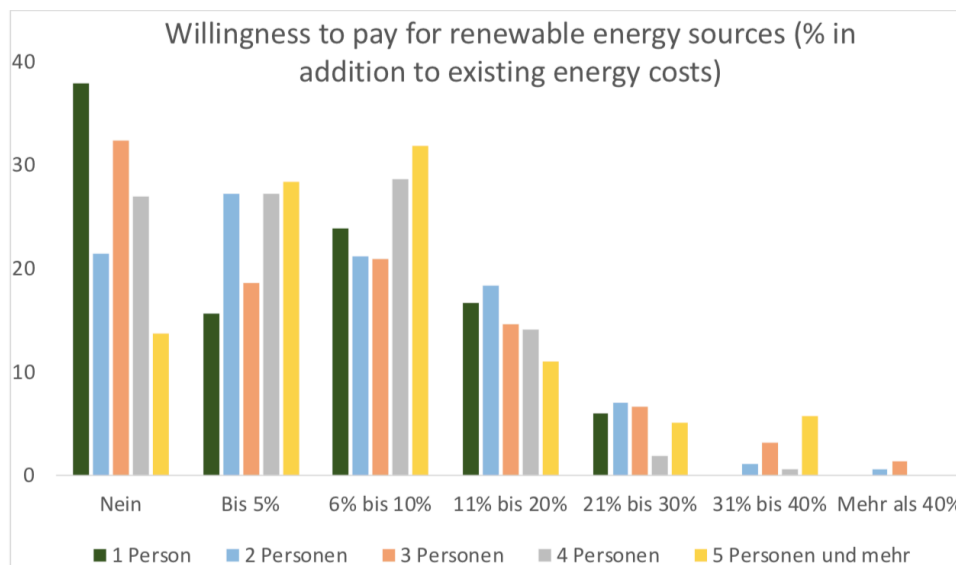


Figure 5: Willingness to pay for renewable energy transition

There is a strong correlation between WTP and such factors as ownership of estate. WTP is much higher in privately owned houses followed by privately owned apartments. It is the lowest in rented apartments.

The average WTP is between 5% and 10% meaning that people would agree to pay additional 10% for electricity coming from renewable energy sources. But it is conditional namely that transparency about the sources of electricity is essential. Also, WTP increases significantly if renewable energy comes from the region and with possibility for ownership of renewable energy projects. From demographic variables there is strong correlation between WTP and occupation with the lowest WTP among blue collar workers. There is no correlation, however, between the level of education or income.

WP3: Co-assessing lessons for Morocco (Leadership of OIIP)

The activities of WP3 included the mapping of the major stakeholders in Tata; the analysis of the sociotechnical imaginaries involved; the local debates on energy transition; understanding the expectations from energy transition; the assessment of the transferability of Austrian experiences to Tata. In August 2016, a meeting with partners from Austrian Institute for International Affairs (oiip), IIASA and MENARES in Vienna/Austria, set the initial to WP3. Partners from MENARES gave a first briefing on the Moroccan energy policies and the situation in Tata. Moreover, project partners defined tasks and their allocation, and discussed the fine-tuning of the research question in view of the findings of WP1 and WP2 as. The first milestone agreed upon was drafting a background report that analyses energy policies in Morocco, assesses the general political environment, defines the decision-making structures and includes a preliminary analysis of Tata, but it also included the task of identifying the local and national stakeholders and their positions, the assessment socio-technical imaginaries. Local as well as regional and national stakeholders were categorised as;

- representatives of the state administration (governors, bureaucrats in ministries);
- elected representatives of regions (president of the region and his staff);
- representatives of local administration (mayors, deputy mayors and their staff);

- representatives of civil society (formal NGOs and associations as well as informal networks on the local level);
- representatives of foreign development agencies (such as GIZ);
- strongmen (and women) in society.

The background report was then completed after a first field mission to Morocco / Tata. This field trip included a number of meetings with officials in the region and in the province, background talks with state representatives, elected persons, representatives of national, regional and local NGOs, mayors and state agencies as ONEE. Interviews/talks with officials and representatives of civil society organizations were semi-structured. They followed an earlier developed questionnaire. However, in semi-structured in-depth interviews the questionnaire only provided a guideline. Questions were posed according to the expertise and responsibility of the respective interview partners. Expertise can be divided according to decision-making processes, technical questions, legal provisions, expectations of the population, and environment.

Talks served as a first step to introduce the project, establish trust and interest. Contacts established have been of great value for the stakeholder forum scheduled for mid-October in Tata.

Moreover, they helped understand the sociotechnical imaginaries such as expectations regarding the construction of large-scale solar energy plants, social acceptance and the degree of societal involvement. By doing so we have drawn on definition of socio-technical imaginaries as "collectively imagined forms of social life and social order reflected in the design and fulfilment of nation-specific scientific and/or technological projects." Practically enacted, the concept has proven helpful in the transfer of useable knowledge from one national setting to another, as well as in the establishment of policy processes that are perceived as legitimate.

The background report highlighted the structural, political, administrative and social setting against which any energy transition and the adoption of models would take place. The report focuses on the decision-making structures in Morocco, but also highlights the expectations of decision makers and stakeholders regarding solar energy production. The insights of the background report and the field trip were then used for the working paper, published by the oiip under the title: "Green Modernization - The political, social and societal setting of Morocco's solar energy policies".

The background report and the first field mission were important steps in preparation of the stakeholder forum and the focus group discussion held on October 18th and October 19th in Tata. Both field missions to Morocco were organized in close cooperation with Moroccan partners.

The overarching aim of both events (stakeholder forum and focus group discussion) was to engage and bring together decision makers, experts, and civil society to (1) discuss and jointly develop the issues at stake in the planning and governance process of renewable energy infrastructure projects in Morocco, and (2) how and to which extent experiences with different RES models in Austria might be transferable to Morocco.

During the stakeholder forum and the focus group discussion, participants were presented with the two Austrian models of Güssing and Freistadt and their differing governance structures. Whereas Moroccan authorities signaled preference for the more centralized Güssing model, the decentralized small-scale solar energy production model of Freistadt attracted the interest of small local communities.

Insights gained from work package III highlight the complexity of the transfer of renewable energy technology and governance models.

The insights were then brought together in the final report. The final report included the analysis of the debates on energy transition in Tata, the different expectations from these investments and the desires and hopes of the different stakeholders. The final report was then transformed into a working paper, which was then published by the oiip. The working paper in turn constitutes the basis for an academic article that is currently in preparation and is to be submitted for peer review in September.

In cooperation with OIIP and IIASA, the MENARES conducted results dissemination activities in Morocco. We had meetings with organization representing several decision makers and sectorial spheres. We presented to them the key results from our consultation and stakeholders forum in the province of Tata, as well as based on the results obtained from the different analysis and assessments conducted in Austria. The consulted stakeholders commented on the presented results and shared their related projects and programs that, in somehow, fall into the recommendation of the Links case study in the province of Tata.

5 Schlussfolgerungen und Empfehlungen

Unlike previous assessments which focused on regional economic effects and find positive effects on employment generation and value added within the region, our analysis shows that there are important feedback effects of regional energy autarky also on the federal level. If regional energy autarky is achieved by a substantial support of national scale policies, such as feed-in tariffs for bioenergy in Austria, the net benefit of regional energy autarky could turn negative at the national scale because these support policies have to be financed out of the tax system.

It is therefore important that national renewable support policies provide the right incentives to achieve regional energy autarky at least costs. In particular, our analysis illustrates that policy costs are much lower for solar photovoltaics, small-scale hydro and wind than they are for biomass and biogas, leading to net welfare gain on the national scale if this "new" renewables are used for electricity generation.

Energy transition in the CEM regions is a contested energy policy issue because of the large number of stakeholders involved with various interests and perceptions. These stakeholders are shaping energy transition at the various levels of governance, including local, regional and national levels. They also represent various groups in horizontal perspective, involving policy-makers, private sector, civil society and academia.

In general, there is a very high level of awareness and acceptance of energy transition among lay people. Actually, it is one of the highest levels of acceptance in the world where people clearly make the link of climate change and man-made activities. However, this level of acceptance does not completely translate into behavioural change and action. Willingness to pay depends on the source of electricity, its availability in the region and transparency. It also varies strongly dependently on the size of households and the form of the property ownership. Solar energy is the most preferable renewable energy source.

Discourse analysis provided insights about how various groups of stakeholders see the actions on energy transition and responsibility for these actions. Also, participatory governance analysis on the ladder of Arnstein showed that energy policy actions are currently focused mainly at the level of tokenism. There are however best practices, such as energy groups in Freistadt, which give possibility for co-designing energy transition and also increase the level of trust into governance institutions of energy transition.

Aside from economic and political structures and capacities, the solutions to pressing societal challenges – such as climate change – highly depend on the meanings attributed to the phenomena at stake. Hence, any transfer of technology and governance models needs to consider the broader sociotechnical and political environments from which they emerged and where they travel. Furthermore, it is important to keep in mind that the notion of transfer includes a broad spectrum of transfers, ranging from ideational transfer (an idea is taken up in another policy context) to the full adoption of policy/technology. Hence, sociotechnical systems cannot be simply detached from one context in which they seem to “function” and transferred to another.

The LINKS project allowed developing of the following general findings. Transferability depends on a variety of different factors such as financial means, expectations, political, social, and economic orders, the stakeholders involved, and the context from which the model to be transferred emerged. Therefore, any assessment of transferability requires profound research on the political and economic structures and social developments. The early inclusion of embedded social science research is key to any assessment of a policy travel and thus enhances the overall success of such a project. Qualitative research methods used for this research such as semi-structured interviews, stakeholder forum, focus group discussion are particularly useful to explore diverging expectations and contending discourses. Such insights cannot be appropriately captured by merely quantitative indicators and surveys that predominately inform innovation policy assessments. This highlights the importance of field research and cooperation with local partners.

Generally, it is important to highlight that there is no “one size fits all” approach to the question of transferability of technical solutions and the governance models involved. The question of transferability strongly depends on different variables and factors, which might change from case to case. Therefore, the insights from the Moroccan case study are the following. For people in Tata, climate change is not an abstract notion, but rather an immediate and embodied experience. Heat waves and sudden floods, desertification and water scarcity shape meanings of climate change and renewable energy policy. As a consequence, climate mitigation policies are not merely the aspirations of policy entrepreneurs but have rather become a broad-based mission that involve many different stakeholders. Renewable energy is not an abstract policy goal, but rather understood as a vital necessity. This mission is successfully communicated by the state and its institutions as a future-oriented development model. This strongly corresponds with the hopes and expectations of the people on the ground. The Morocco’s goal to reduce energy dependency has been a driver, which has opened many rooms on different political, economic and societal levels. Yet, critical voices can hardly make themselves heard and be visible on a larger-scale. This means that critical approaches cannot be addressed or included into any political strategy. Hence, there is no room for adaptation. Inclusion is only possible at a higher national level. At lower levels such as the regions, provinces or communes’ participation is

welcome on a discursive level, but real participatory democratic practices and inclusion into decision-making processes are not possible. In the context of a centralized political setting as Morocco, there is little room for bottom-up projects which go beyond small communities. There are neither the financial or political capacities, nor does the state tolerate bottom-up initiatives on a larger-scale (such as provincial or regional level), as they would threaten to undermine the mission and the authority of those in charge.

C) Projektdetails

6 Methodik

WP1: Economic feasibility of the model region concept (Leadership of WEGC)

The aim of WP1 was to examine the economic feasibility of the climate and energy model region (CEM) concept, in two steps and using two methodologies: a cluster analysis and computable general equilibrium modelling. The goal of the cluster analysis was to derive homogenous types of CEM regions based on energy and economic characteristics. The goal of the CGE analysis was to assess the economic viability of the CEM region concept, by differentiating between the different CEM clusters.

Cluster analysis included the presentation of a realistic picture regarding the goal of becoming energy autarkic at the regional level. By means of a literature survey, assessment of the implementation concepts of 89 CEM regions, and the collection of secondary economic and energy data for these regions a cluster analysis was conducted to identify homogenous types of CEM regions in Austria. The cluster analysis used economic and energy data available at the municipal level: population density (inhabitants/ha), gross value added per capita (€/capita), and employees in the primary, secondary and tertiary sector, energy consumption (MWh/capita), potential electricity self-sufficiency (%), and potential heat self-sufficiency (%). The resulting clusters were a rural cluster, a semi-rural cluster and an urban cluster.

Assessment of macroeconomic viability of energy (autarky) strategies and energy self-sufficiency were conducted by means of a Computable General Equilibrium (CGE) model. Based on the cluster analysis, a multi-regional, multi-sectoral sub-national CGE model was developed, which differentiates between three CEM clusters (rural, semi-urban, and urban) and the rest of Austria. As the first step, the model input data was prepared, which required to update the SAM to the latest Input-Output table for Austria (2011), to collect and integrate technology cost data for 9 different renewable electricity and heating technologies, and to regionalize the national scale SAM to the representative energy model regions by means of secondary data (GVA, employment, consumption and demand, international and regional trade, ...). The next task involved the development of a regional version of the existing national CGE model. As illustrated in Figure 6, the CGE model comprises twelve economic sectors and the electricity sector is further disentangled to explicitly represent different renewable electricity (RES-E) technologies (biomass, biogas, wind, photovoltaics (PV) small scale; PV large scale). Regarding the energy autarky scenarios, we use technology cost

estimates from a bottom-up electricity sector model (EEG, 2016) and an existing RES potential scenario analysis for Austria (Stanzer et al., 2010). We assessed two RES-E technology scenarios in which CEM clusters pursue 100% RES-E generation by 2020. In both scenarios, the Rest of Austria does not increase its RES-E shares.

- Scenario 1: RES-E mix in CEM clusters based on a broad portfolio of RES technologies: hydro, PV, wind, biogas, biomass (relative RES-E technology shares according to Stanzer et al., 2010).
- Scenario 2: RES-E mix in CEM clusters consisting of hydro, PV, and wind, but not biomass and biogas.

These scenarios were then analyzed within the CGE model regarding their effects on sectoral output, as well as on macroeconomic indicators, such as employment, GDP and welfare in the CEM regions and the Rest of Austria.

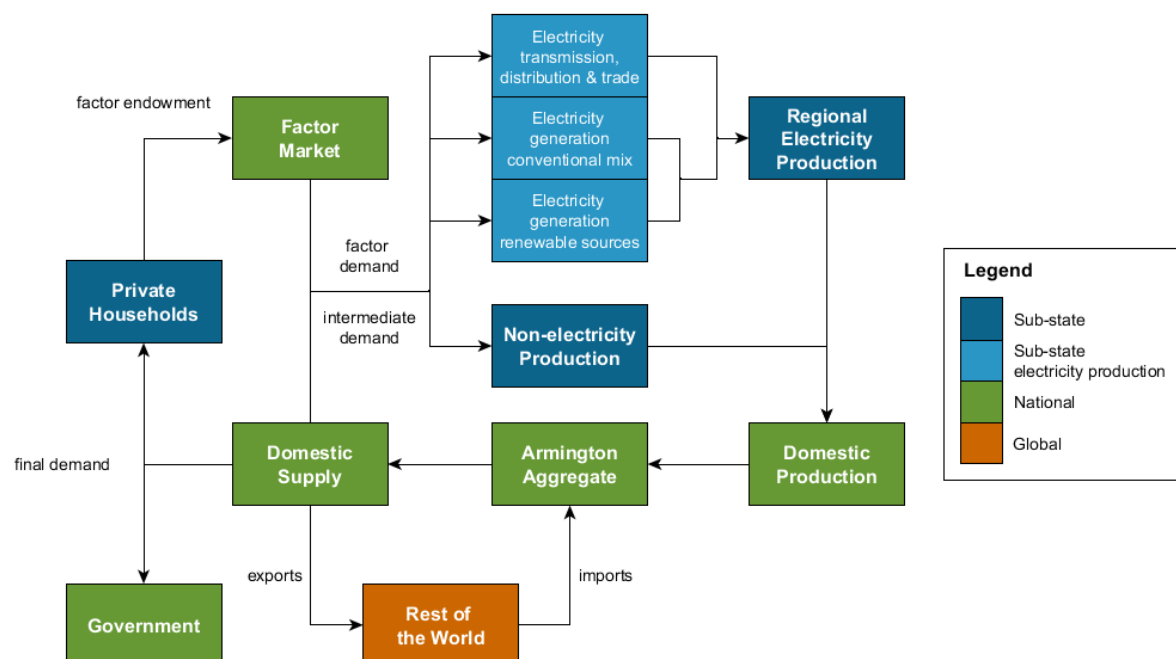


Figure 6: Structure of the CGE Model

WP2: Social acceptance, consumer WTP and political will (Leadership of IIASA)

Discourses about energy transition among various stakeholders' groups

We started from the review of the existing scientific literature on participatory governance and human factors of social acceptance which was necessary to develop the theoretical basis of our research and the research protocol. We also conducted a comprehensive media analysis of over 100 local and national newspapers to identify patterns of discourse about energy transition in the Climate and Energy Model (CEM) regions and to develop the matrix of key words for the research protocol and the following up surveys and interviews. At the next step we conducted a comprehensive stakeholders' matrix when the major stakeholders' groups and organizations which shape energy transition in CEM regions were identified. The stakeholders' matrix served a basis for selection of partners for in-depth qualitative expert interviews. Interviews were conducted in each case region and included stakeholders from major groups. Interview partners were selected in a way that we had a representative sampling of all stakeholders' groups in each of

the regions. The case study regions were identified based on the results of cluster analysis from the WP1. We selected a region from each cluster group, one rural (Freistadt), one semi-rural (Ebreichsdorf) and one semi-urban region (Baden). Also, preliminary interviews helped us to identify the most relevant regions. We also conducted a review of energy transition and participatory measures in various CEM regions and identified the regions with various measures on awareness raising and engagement into energy transition. Each interview lasted for more than two hours and was fully transcribed. Further on, we conducted observations of the stakeholders' events in the CEM regions such as CEM management meetings, networking events of energy groups and public information events. We also conducted two large scale surveys in two CEM regions. The regions were carefully selected to have the major socio-economic characteristics as comparable as possible. The major critical variable was availability of energy transition participatory governance measures such as stakeholders' energy groups.

Social acceptance and willingness to pay for energy transition

The surveys were conducted after we concluded a comprehensive sampling of inhabitants of the regions. Surveys were conducted in Freistadt and Amstetten, 4.500 questionnaires sent out in Freistadt (7%) and 30.000 questionnaire in Amstetten (1.2%). Questionnaires were printed out in local newspapers of 25 communities in Freistadt and 19 communities in Amstetten, followed by web-based questionnaires, 240 web interviews in Amstetten and 322 web interviews in Freistadt. Finally, a task force of 5 people was in Freistadt and Amstetten 5 days each to conduct face-to-face interviews. Altogether we collected more than 1.600 completed questionnaires. Interviews and questionnaires were analyzed with the help of artificial intelligence methods such as various methods of content analysis, including INVivo and Atlas.si. Surveys analyzed with various methods of statistical analysis including correlations and regressions. Finally, we conducted a validation workshop with CEM managers of the identified regions as well as from other CEM regions to discuss our results and their implementation in the energy policy process.

WP3: Co-assessing lessons for Morocco (Leadership of OIIP)

Methods applied during WP3 were advanced literature review, expert conversations and informal open ended, semi-structured interviews and numerous informal background talks.

The first phase of the literature review process included the search and study of documents, articles, reports and other publications dealing with Morocco's history, state formation, governance structure, and energy policy. Journals were selected according to four categories and searched through different data base search engines. The scanning of relevant literature was facilitated through access to the data base Scopus, provided by IIASA. Other data search engines visited were Sage Journals, Taylor and Francis online and Elsevier.

We applied the literature review. First, we set out to find out what is already known, while secondly, we set out to suggest what research is needed. First documents were provided by project partners from IIASA and MENARES. Literature review was then expanded to a set of relevant peer-reviewed journals. Journals were selected according to four categories and searched through different data base search engines. Categories were derived from the thematic focus of the background report and defined as; "Morocco -governance structure"; "Morocco –

renewable energy”; “theory and concepts”; “Austrian climate regions – Güssing and Freistadt”.

We used the most important keywords (Morocco, governance, energy governance, energy policy, Green Growth, PV, CSP, renewable, small-scale, large-scale, inclusion, civil society, centralized and decentralized). Results were crosschecked through google scholar search. This broadened the findings by including peer-reviewed open access journals as Politics and Governance. Through Elsevier we screened journals as “Energy Policy”, “Energy Research & Social Science” and “Renewable and Sustainable Energy Review” giving an overview of quantitative studies with a usually more technical focus. Sage online helped gain an overview of the conceptual side and of security and energy policies through Journals such as “Security Dialogue”. The most important one for our focus turned out to be Taylor and Francis online and particularly Journals with a focus on the Middle East and specifically the Maghreb region. Those journals usually have a focus on qualitative and ethnographic case studies. It was this third section, which provided most of the information regarding Morocco’s governance structure. This certainly helped understand and analyse the political settlement in place and provided fertile ground for empirical fieldwork indispensable to generate valid insights into actual practices of Moroccan energy policy.

Hence, the major task of WP3 consisted of empirical fieldwork in Morocco. This included a field mission in April 2017 involving a series of exploratory episodic interviews; and a second field mission involving the organization of the two participatory events in October 2017; the stakeholder forum and the focus group discussion.

The opinions, insights and local knowledge gathered in these two events provided the qualitative database for analysis. However, because both events present different “settings” of interaction and dialogue, it was necessary to describe their respective make up and point to significant differences inscribed into the particular forms of public engagement.

7 Work plan and time schedule

Work plan / tasks	Time schedule (MM/YY)
WP 1: Economic feasibility of the model region concept	
Identification of framework conditions for economic feasibility of energy autarky based on existing literature	June 2016
Social Accounting Matrices for Austria and for three stylized energy model regions	March 2016
Model preparation and refinement	March 2017
Assessment of macroeconomic feasibility of regional energy autarky	December 2017
WP 2: Social acceptance, consumer WTP and political will	
Report on scoping study, building also on early stakeholders' workshop	July 2016
Report on stakeholders' views of communication and participatory processes: lessons learned	December 2016
Analysis of interviews and questionnaires	December 2016
Co-produced recommendations on energy transition governance	September 2018
WP3: Co-assessing lessons for Morocco	
Report of scoping study	May 2017
Stakeholders map	May 2017
Stakeholders forum	October 2017
Synthesis of results	March 2019
WP4: Project management and dissemination	
Kick-off meeting at the beginning of the project	September 2015
Medium-term meeting to discuss on-going progress	June 2016
Stakeholders meeting	March 2018
Final meeting	December 2018
Interim and final reporting	May 2019
Conferences and dissemination	March 2019

8 Publications and dissimulation

Publication and dissemination activities within the framework of WP1

Two master thesis were prepared in frames of the project and successfully defended:

Bramreiter, R. (2017), A Regional Economic Analysis of Austria's Climate and Energy Model Regions. Master Thesis, University of Graz, Institute of Economics. <http://resolver.obvsg.at/urn:nbn:at:at-ubg:1-111014>

Truger, B. (2018), An Economic Analysis of Renewable Energy Production in Austrias Climate and Energy Regions. Master Thesis, University of Graz, Institute of Economics. <http://unipub.uni-graz.at/obvugrhs/content/titleinfo/3140249>

The following working paper was published:

Bramreiter, R., Truger, R., Schinko, T., Bednar-Friedl, B. (2016), Identification of economic and energy framework conditions of the Austrian climate and energy model regions, LINKS Working Paper 1.1, 14 March 2016.

One paper for peer-reviewed journal was prepared and is currently under revision by the journal:

Schinko, T., Bednar-Friedl, B., Truger, B., Bramreiter, R., Komendantova, N., Hartner, M. (2019), Energy transition in the Austrian Climate and Energy Model Regions: What are economy-wide benefits and costs? Submitted to Regional Studies in February 2019.

The results of the WP1 were discussed during two Austrian Climate Day conferences in 2017 and in 2018. The presentations were: Schinko, T., Bednar-Friedl, B., Bramreiter, R., Truger, B. (2017), A macroeconomic assessment of ambitious renewable energy targets in Austria's Climate and Energy Model Regions. Austrian Climate Day 2017, May 22-24, 2017, Vienna (Poster) and Truger, B., Schinko, T., Bednar-Friedl, B., Bramreiter, R., Komendantova, N., Hartner, M. (2018), Energy transition in the Austrian Climate and Energy Model Regions: What are economy-wide benefits and costs? Austrian Climate Day 2018, April 23-25, 2018, Salzburg (Presentation).

Publication and dissemination activities within the framework of WP2

The results of WP2 were published in deliverables and working papers as well as in papers in the peer-reviewed journals. The following peer-reviewed papers were prepared:

Komendantova, N. and Neumueller, S., (submitted). Egalitarian, hierarchical and individualistic discourses of Austrian energy transition: in frames of climate and energy model regions.

Komendantova, N., Schwarz, M., Amann, W., (2018). Decarbonisation of the multi-apartment building sector in Austria: Policy barriers and economic feasibility of photovoltaic (PV) electricity generation. AIMS Energy 6 (5): 810-831. DOI:10.3934/energy.2018.5.810

Komendantova, N., (2018). Energy Transition in the Austrian Climate and Energy model regions: a multi-risk participatory governance perspective on regional resilience. Procedia Engineering 212: 15-21. DOI:10.1016/j.proeng.2018.01.003

Komendantova, N., Riegler, M., Neumueller S., (2018). Of transitions and models: Community engagement, democracy, and empowerment in the Austrian

energy transition. Energy Research & Social Science 39: 141-151. DOI:10.1016/j.erss.2017.10.031.

Komendantova, N., (2017). Necessity of system approach to management of energy revolution. Information and mathematical technologies in science and management, N3 (7), 2017, ISSN: 2413-0133

One book chapter was prepared based on results of participatory governance in the CEM regions:

Reusswig F, Komendantova N, & Battaglini A (2018). New Governance Challenges and Conflicts of the Energy Transition: Renewable Electricity Generation and Transmission as Contested Socio-technical Options. In: The Geopolitics of Renewables. Eds. Scholten, D., pp. 231-256 Delft, The Netherlands: Springer. ISBN 978-3-319-67855-9.1007/978-3-319-67855-9.

Based on the results of WP2 three working papers were prepared:

Riegler, M., Vogler, C., Neumueller, S., Komendantova, N., (2017). Engaging inhabitants into energy transition in climate and energy model (CEM) regions: case studies of Freistadt, Ebreichsdorf and Baden. IIASA Working Paper. IIASA, Laxenburg, Austria: WP-17-003

Riegler, M., Komendantova, N., (2016). Report on stakeholders' views of communication and participatory processes: lessons learned. Working Paper 1.3. Linking Climate Change Mitigation, Energy Security and Regional Development in Climate and Energy Model regions in Austria (LINKS) project. LINKS project.

Truger, B., Bramreiter, R., Riegler, M., Schinko, T., Bednar-Friedl, B., Komendantova, N. (2016), Scoping study: The history and current context of the model region concept and identification of case study regions, Links Working Paper 1.2.

The results reflected in these deliverables were presented and discussed at the Austrian Climate Day. The presentation was: Komendantova, N., (2017). Linking climate change mitigation, energy security and regional development in climate and energy model regions in Austria. 18th Austrian Climate Day. Vienna, 22-24 May 2017

The results on stakeholders' engagement in various CEM regions in Austria were discussed during the Austrian International Renewable Energy Forum. The presentation was: Komendantova, N., (2018). Participatory governance of energy transition: example of the Climate and Energy Model Regions in Austria. International Renewable Energy Forum. September 06-07, 2018, Vienna, Austria. The results were also discussed during the 5th Annual Renewable Energy Finance in Practice Forum in Vienna. The presentation was: Komendantova, N., (2016). Renewable energy and the need of participatory governance of energy transition. 5th Annual Renewable Energy Finance in Practice Forum. Vienna, October 2016.

Further on, the results on social acceptance of renewable energy transition at the regional level were discussed at the joint workshop between OSCE, the University of Birmingham and Energy Community Secretariat. The presentation was: Komendantova, N., (2018). Energy as an opportunity or as a barrier for connectivity? Joint OSCE, University of Birmingham and Energy Community Secretariat workshop on Economic Diplomacy and Connectivity. Vienna, 25 June 2018. The energy groups identified as a best practice of participatory governance of energy transition were discussed during another OSCE event where participants from the Central Asian countries had an opportunity to learn from the Austrian practice. The presentation was: Komendantova, N., (2018). Successful initiatives and the best practices in the area of energy infrastructural projects, OSCE Regional

Ministerial Conference "Governance and Economic Connectivity – best practices within the OSCE region", Ashgabat, Turkmenistan, 30-31 May, 2018. The results on synergies between climate change mitigation and regional development strategies were presented at the 25th OSCE Economic and Environmental Forum. The presentation was: Komendantova, N., (2017). Renewable energy in support of climate action and sustainable development. Invited Panel Speaker. 25th OSCE Economic and Environmental Forum, Second Preparatory Meeting, 15 June 2017

Furthermore, the LINKS project was presented and discussed during the 2018 Economic and Environmental Dimension Implementation Meeting of OSCE, which took place at the Hofburg Palace in Vienna on 15-16 of October 2018. The goal of the meeting was to discuss the implementation of the OSCE commitments in the field of energy also in the context of the 2030 Agenda for Sustainable Development. A significant part of this discussion was dedicated to the renewable energy and energy efficiency for promoting sustainable economic growth. The list of participants of these meeting included several national ministries as well as the representatives from the Energy Community Secretariat, United Nations Economic Commission for Europe, International Renewable Energy Agency (IRENA), Energy and Extractives Global Practice of the World Bank Group. The presentation was: Komendantova, M., (2018). Participatory governance of energy transition and interconnectivity. Economic and Environmental Dimension Implementation Meeting (EEDIM) of Organisation for Security and Cooperation in Europe (OSCE), October 15-16, Vienna, Austria

Presentation of the results on participatory governance of energy transition in CEM regions took place at the 2018 Organization for Security and Cooperation in Europe (OSCE) Mediterranean Conference, which took place in Malaga, Spain on October 25-26, 2018. The conference was organized by the Slovak Mediterranean Contact Group in close collaboration with the Kingdom of Spain and the Mediterranean Partners for Cooperation. It was dedicated to the topics of importance of energy for economic growth and cooperation in the Mediterranean region. The objective of the conference was to stimulate the political dialogue between OSCE participating States and their partners for cooperation on key energy, economic and environmental issues related to security. The presentation was: Komendantova, N., (2018). Stakeholders Dialogue and Negotiations in Energy Transition: Example of Austrian Climate and Energy Model Regions. 2018 OSCE Mediterranean Conference: The Importance of Energy for Economic Growth and Cooperation in the Mediterranean. October 25-26, 2018. Malaga, Spain

The results on participatory governance of energy transition in the CEM regions were also discussed during the workshop on renewable energy prospects organized by IRENA and UNECE. The workshop targeted the government officials, representatives of industry associations, project developers, financial institutions and experts in the field. The aim of the workshop was to discuss the regional initiatives to support governments in the process of undertaking new commitments and developing long-term strategies for renewables through comprehensive analysis of renewable energy markets and identification of feasible options for scaling up technology deployment in power generation and end-use sectors. The workshop featured discussion about the recent developments, prospects of renewables in the medium and long-term and opportunities and challenges of a transition to renewable based energy system. The workshop was also organized in parallel with the International Energy Forum, which was organized in Kiev in November 2018.

Publication and dissemination activities within the framework of WP3

The Working Paper titled; "Green Modernization - The political, social and societal setting of Morocco's solar energy policies" was published online and disseminated through the newsletter of the Austrian Institute for International Affairs in October 2017. Another Working Paper (No 103 oiip series) titled "Green growth and its global-local meanings - Insights from Morocco" was published in October 2018.

Following working papers were prepared with results of WP3:

El Mostafa J, Zejli D, & Komendantova N (2019). Dynamics of Energy Transition in Morocco: Centralized versus Decentralized Options. IIASA Working Paper. Laxenburg, Austria: WP-19-001

Gruber, B., Günay, C., Rizvan, A., El Jamea, M., Komendantova, N., Zejli, D., (2017). Green Modernization – The political, social and societal setting of Morocco's solar energy policies. Working Paper 97 / October 2017. Austrian Institute for International Affairs.

Günay C, Haddad C, Gharib S, Jamea EM, Zejli D, & Komendantova N (2018). Green growth and its global-local meanings - Insights from Morocco. Working Paper 103. Österreichisches Institut für Internationale Politik – oiip.

Günay, C., Haddad, Ch., Gharib, S., El Jamea, M., Zejli, D., Komendantova, N., (2018). Global-environmentalist, national-developmental and local socio-economic transformative discourses about energy transition in Morocco. Linking Climate Change Mitigation, Energy Security and Regional Development in Climate and Energy Model regions in Austria (LINKS) project.

An academic article, combining the insights explored in both working papers is, at the time of reporting still in preparation. It will be submitted to peer review in September 2019.

Further published peer-reviewed papers are:

Komendantova, N., Schinko, T., Patt, A., (2019). De-risking policies as a substantial determinant of climate change mitigation costs in developing countries: Case study of the Middle East and North African region. Energy Policy 127: 404-411. DOI:10.1016/j.enpol.2018.12.023.

Komendantova, N., (2017). Renewable Energy Policy – Mitigating Risks for Investment. In Mahmoudi, H., Ghaffour, N., Goosen, M., and Bundschuh, J., (eds.). Renewable Energy Technologies for Water Desalination. CRC Press new book series on Sustainable Water Developments. Alfaisal University, Saudi Arabia.

Komendantova, N., (2016). Reducing risks for foreign direct investment into solar projects in the North African region. ESI Bulletin on Energy Trends and Development. Volume 9. Issue 1, April 2016. Energy Studies Institute, National University of Singapore.

Schinko, T., Bohm, S., Komendantova, N., El Jamea, M., Blohm, M., (2019). Morocco's sustainable energy transition and the role of financing costs: a participatory electricity system modeling approach. Energy, Sustainability and Society 9 (1): 1-17. DOI:10.1186/s13705-018-0186-8.

Schinko, T., Komendantova, N., (2016). De-risking investment into concentrated solar power in North Africa: Impacts on the costs of electricity generation. Renewable Energy, 92:262-292 [July 2016]

Dissemination activities in the framework of WP3 included participation and the organization of events in Morocco and the organization of an experts' discussion at oiip in Vienna.

The first field trip to Morocco (Agadir and Tata) did not only help set the terrain, understand the political, structural and economic environment and define the relevant stakeholders, but the field trip was also useful from the perspective of dissemination. Project team members explained the project and its motivation and insights to officials at the state, regional, provincial and local (communal) level as well as with representatives of civil society associations operating on the regional as well as at the local level. Particularly useful for the dissemination of our project was the participation in a workshop held in Agadir. The workshop brought together representatives of NGOs that are active in the field of energy transition and awareness raising with enterprises and regional decision makers. Interest in LINKS and its results was high. Also contact with representatives of GIZ (the German Development Agency) on the regional level as well as the local level allowed team members not only to learn from their experiences, but to present LINKS. The second field trip even further broadened the target group for the dissemination of LINKS and its insights. Both, the stakeholder forum as well as the focus group discussion included the presentation of LINKS. The results from WP1 and WP2 as well as the preliminary results from WP3 were presented to discussion.

An experts talk at oiip in Vienna in January titled: "Die Wissensgesellschaft als Perspektive für die Jugend – Lehren aus Tunesien und Jordanien" including Dr. Maximilian Benner and Dr. Christian Haddad provided another opportunity to touch upon the data and insights gathered in the framework of LINKS.

The following dissemination activities took place in Morocco, provided mainly by MENARES:

Jamea, M., Zejli, D., Komendantova, N. (2019), Conflicts and synergies in stakeholders' views at national and local governance level on deployment of renewable energy sources. Workshop at the University of Kenitra, Morocco. March 19-23, 2019

Jamea, M. and Zgou H. (2019) Energy transition and deployment of green energy technologies; lessons learned from Morocco; at the FES Conference on "The Energy Transition Phases"

Jamea, M. (2018) Energy transition and deployment of green energy technologies; lessons learned from Morocco; at the OSCE regional ministerial conference "good governance and economic connectivity – best practices within the OSCE region", Ashgabat, Turkmenistan

Jamea, M., Komendantova, N., Zejli, D., Gunay, C., (2017). Energy Transition in Tata and Transferability of Austrian Climate and Energy Model (CEM) regions to Moroccan context. The Arab American Symposium of Sciences, Engineering and Medicine. Casablanca, November 3, 2017

The results of the LINKS project were presented at the Union for the Mediterranean (UfM) meeting, which took place in Brussels in September 2018 and the second meeting, which took place in February 2019. The participating UfM partner-countries had an opportunity to discuss results and to comment on methodology for participatory governance and results on discourse analysis which were developed in frames of the project. The presentations were: Komendantova, N., (2019). Stakeholders engagement and participatory governance of contested policy interventions. Union for Mediterranean Meeting (UfM). Paris, France, February 26-28, 2019 and Komendantova, N., (2018). Energy transition and public

participation in decision-making processes. Union for Mediterranean. 1st Working Group Meeting. September 20-21, 2018, Brussels, Belgium.

The results of our field work on acceptance of energy transition in Morocco were presented at the 1st Meeting of the Mediterranean Contact Group of OSCE. The presentation was: Komendantova, N., (2018). Resilience of electricity transmission grids in light of energy transition in the Mediterranean region. 1st Meeting of the Mediterranean Contact Group. OSCE, Hofburg, March 19, 2018

In addition, the results of the LINKS project were presented during the workshop organized jointly by UNECE and UN ESCWA on promotion of renewable energy investments with the nexus approach and co-benefits across sectors. The goal of the workshop was to discuss water, energy and food security in the Arab region as well as to discuss the institutional setting for the implementation of the nexus approach. Further topics of discussion were to assess intersectoral links, trade-offs and benefits in managing water, energy and resources as well as the key role of the renewable energy development. The workshop was organized in parallel with the International Energy Forum, which was organized in Kiev in November 2018. The presentation was: Komendantova, N., (2018). Deployment of renewable energy sources in Austria: example of climate and energy model regions. Workshop on "Renewable Energy Prospects for South East Europe" organised by IRENA and UNECE. November 14, 2018, Kiev

Diese Projektbeschreibung wurde von der Fördernehmerin/dem Fördernehmer erstellt. Für die Richtigkeit, Vollständigkeit und Aktualität der Inhalte sowie die barrierefreie Gestaltung der Projektbeschreibung, übernimmt der Klima- und Energiefonds keine Haftung.

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