

science for global insight

Linking climate change mitigation, energy security and regional development in climate and energy model regions in Austria (LINKS)

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- 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?
- 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?
- 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?



- Implementation concepts of CEM regions (89) are assessed according to criteria of feasibility of energy independence
- Cluster analysis to identify three types of regions (rural, semi-rural and suburban) is conducted
- Complex Computable General Equilibrium (CGE) model was developed to estimate socio-economic impacts on CEM regions
- Three case study regions (Baden, Ebreichsdorf and Freistadt) are selected for deeper analysis of stakeholders structure and decision-making processes
- Participatory methods in these regions are classified according to the degree of decision-making power of inhabitants
- Analysis of stakeholders discourses in three case regions (Baden, Ebreichsdorf and Freistadt) is on-going
- Analysis of concerns, awareness and perceptions of inhabitants of two case regions (Freistadt and Amstetten) is ongoing
- Development of socio-technological imaginaries is ongoing

Data for research on participatory governance

- Scientific literature + media analysis, over 100 local and national newspaper articles (2008-2016)
- Stakeholders mapping, face-to-face in depth two-hour stakeholders interviews (over 20), observations of stakeholders events such as CEM management meetings, networking events of energy groups and public information events
- Survey in two case regions: Freistadt and Amstetten, 4.500 questionnaires sent out in Freistadt (7%) and 30.000 questionnaire in Amstetten (1.2%), questionnaires 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, beginning of January a task force of 5 people was in Freistadt and Amstetten 5 days each to conduct interviews

	Amstetten	Freistadt	Total
mail out	354	316	670
Web	240	322	562
face-to-face	207	162	369
Total	801	800	1601



CEM clusters in Austria



Source: 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

Concept of energy autarky found in implementation concept (left), specification of target (right)





No specific target

Source: 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

Stakeholders involved into energy transition

National level			
Austrian Federal Ministry for Transportation, Innovation and Technology	Austrian Federal Ministry of Agriculture, Forestry, Environment and Water Management		State level Regional development agencies and
Climate and Energy Fund Scientific Partner Universities		Scientific Partners, Universities	programs (RMOO, LEADER,) State of Upper e.g. Energy savings association
 CEM Region Freistadt / Energiebezirk Freistadt CEM management Board HELIOS Sonnenstrom Gmb 		reistadt Sonnenstrom GmbH	Chamber of Agriculture, Economic Chamber
			Lifergy supplier (e.g. Lift2 AO)
27 municipalities	residents	private Helios inves	stors
16 energy groups	Regional banks	Roofton providers f	for Helios
To energy groups	Regional energy supplie	rs	
	Bezirksabfallverband		
Local level	Partnership companies		

Source: Riegler, M., Vogler, C., Neumueller, S., Komendantova, N. (2017), Report on stakeholders' views of communication and participatory processes: lessons learned. Links Working Paper 1.3

Participation according to the Ladder of Arnstein

LEVEL OF PARTICIPATION	TOOLS/INSTITUTIONS
(ARNSTEIN 1969)	
THERAPY	Media campaigns
INFORMING	Climate schools, media campaigns, public information events
CONSULTATION	Exhibitions and excursions
PARTNERSHIP	Helios Sonnenstrom, energy groups

Source: Riegler, M., Vogler, C., Neumueller, S., Komendantova, N. (2017), Report on stakeholders' views of communication and participatory processes: lessons learned. Links Working Paper 1.3

Stakeholders discourse: municipality and national representatives, private sector and residents, energy speakers and CEM managers

- High level of awareness about climate change and energy transition
- Construction sector is the biggest challenge
- Mobility is the second big challenge
- Social acceptance of energy transition is given as far as it does not impact normal expenses and everyday life style
- Willingness to pay of 10% for renewable energies and additional 10% if renewable energies come from the region. Transparency is a key requirement
- Political process: big question who will pay for energy transition and distribution of costs
- Major concern that energy transition cannot be covered from regional funds

Source: Neumueller, S. and Komendantova, N. (in preparation)



Ebreichsdorf Egalitarians Freistadt Authoritarians

Public acceptance

- 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 endeavor
- Solar power is perceived as a preferable RES, followed by geothermal, hydro, biomass, wind and biogas
- Willingness to pay (WTP) for RES depends on the size of household
- The preferable WTP is between 5% and 10% with lowest WTP for unemployed and blue collar workers

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Research questions and methods

- Who takes decisions in Morocco and what structural factors (decision making processes, political system, central versus local administration, etc.) influence implementation of energy transition models (large versus small-scale)?
- What are the conditions for decentralized small-scale alternative energy production sites?
- Can Austrian models and experiences be tranferred to Tata and what can
 Austrian climate model regions learn from Morocco?
- Stakeholders forum (moderated debate on set topics among a broader group of stakeholders, a combination of focus group and participant observation) and open – ended stakeholders interviews
- Interpretative Policy Analysis



Data collection and stakeholders interactions 1. Field mission in April 2017 to Tata region: -Two focus group discussions with authorities of local and regional authorities, with informal leaders of tribes, with private sector and civil society - Interviews with 14 stakeholders including representatives of local SME, NGOs, local communities, and representatives of international development organizations

2. Still a way forwards... interviews in Morocco (09.2017), stakeholders forum in Tata (10.2017), focus group discussion with industry (participation of Austrian Chamber of Commerce) in Casablanca (10.2017) and stakeholders forum with CEM managers in Vienna (11.2017)







Preliminary results

- Moroccan energy policies reflect the highly centralized administrative system of the country
- Renewable energy production is central to the government's "Green Growth" vision for Morocco's development
- The government favours centralized large scale production models over decentralized small scale production as this is considered to be more effective and efficient
- The local population is hardly involved in decision making processes
- However, there is large interest on the local level (among local stakeholders as well as representatives of the central state) in decentralized small scale production
- There is huge interest in learning from the Austrian experiences which highlight the importance of citizen participation for sustainability



Source: Gruber, B., Günay, C., Rizvan, A., El Jamea, M., Zejli, D., Komendantova, N. (in preparation)



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