

The role of community building processes in sustainable energy projects - Experiences from Austria



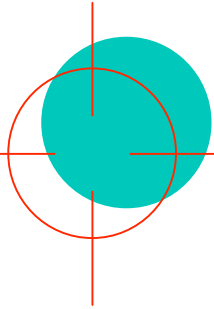
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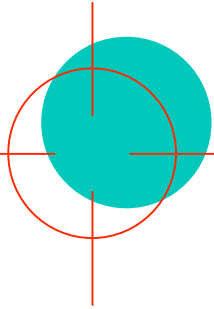




Outline

- Energy transitions and communities
- Three case studies
 - Solar collector self-building movement
 - Biomass district heating systems
 - Car-free settlement
- Conclusions

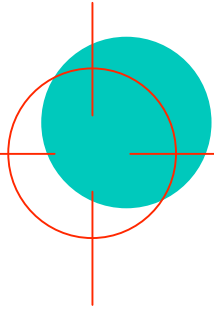




Energy transitions

- Transition to a low carbon society as long-term challenge
- Transformative changes to current energy systems
- Complex processes of change involving global, national, regional and local levels
- New systems of consumption and production had to be contextualised and translated to the community level

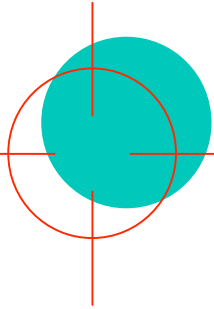




Community and community building

- Sociology: Gemeinschaft and Gesellschaft (F. Tönnies)
- Community: Association of individuals based on
 - Shared place
 - Shared beliefs
 - Blood relations
- Community building as ongoing process
- Communities of practice (E. Wenger)
 - Mutual engagement
 - Joint enterprise
 - Shared repertoire

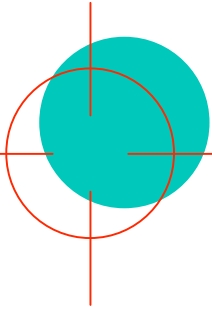




Case 1: Thermal solar technology in Austria

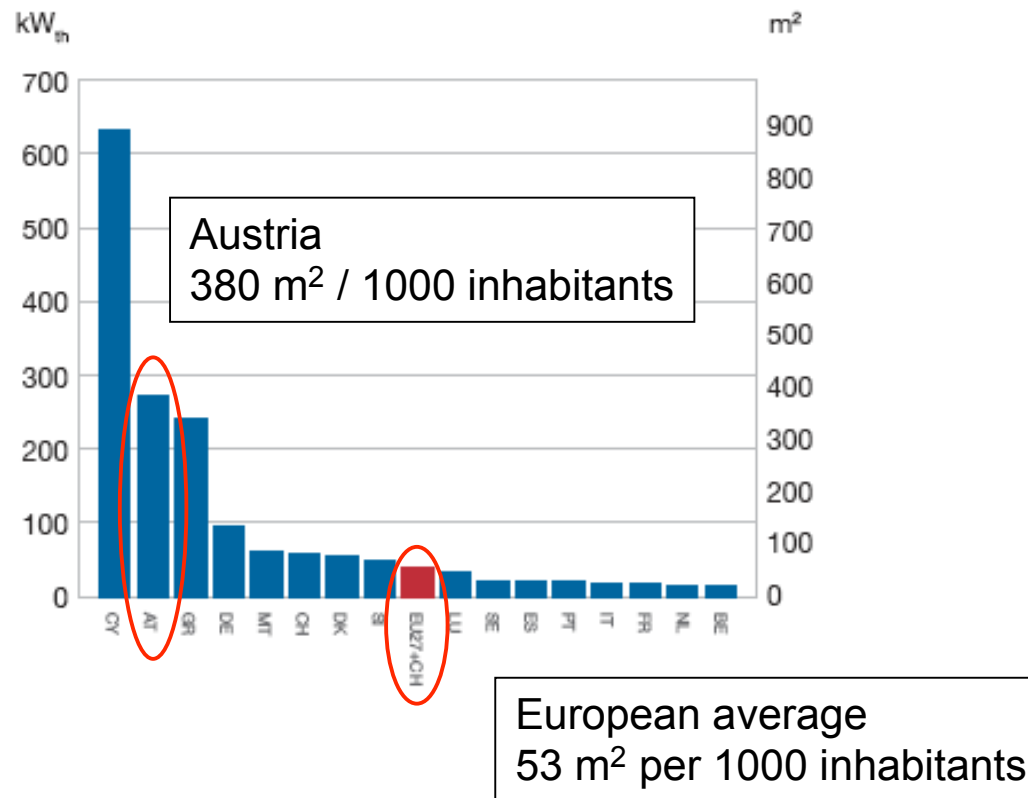
- Solar technology is very popular
- High rates of dissemination in the last 20 years
- > 20% of all single family houses are equipped with a solar heater system
- Austrian producers are market leader in Europe
- One out of three systems sold in EU-27 came from Austria (2008)
- 80% of domestic production is exported





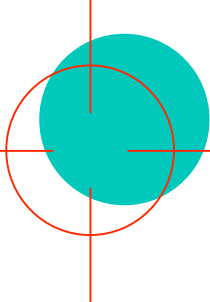
Solar thermal in operation

Solar thermal capacity in operation
per 1 000 inhabitants in 2008



Source: European Solar Thermal Industry Federation



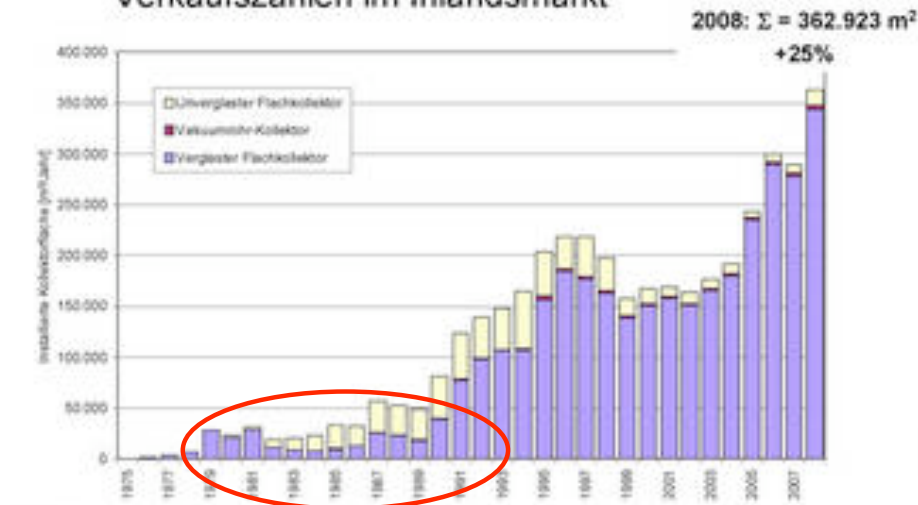


Austrian market, annual sales

Solarthermie Marktentwicklung in Österreich



Verkaufszahlen im Inlandsmarkt

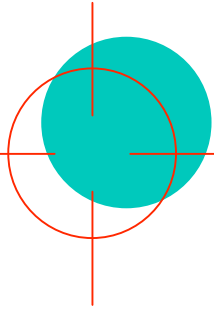


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Self-building activities

Source: P. Biermayr et al. 2009

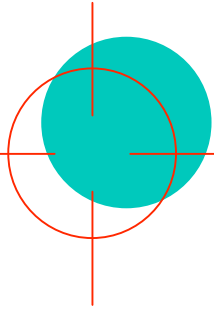




What happened in the 1980s?

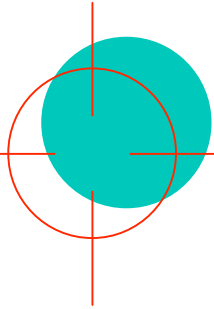
- A large number of do-it-yourself groups in rural areas
- More than 40.000 members
- 1980-1990: Market share of approx. 50%
- Important for market introduction of solar technology
- Two technical innovations by do-it-yourself groups
 - Roof-integrated collector
 - Solar heating system (small size combi-system)
- Both innovations taken over by companies





Roof-integrated collector



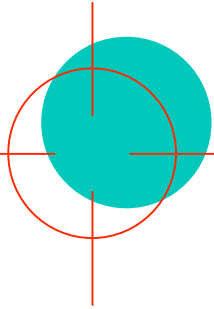


Examples: integrated collectors (roof and facade)



Source: Austria Solar

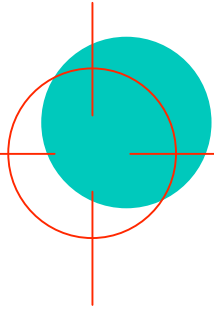




Community building processes in the solar case

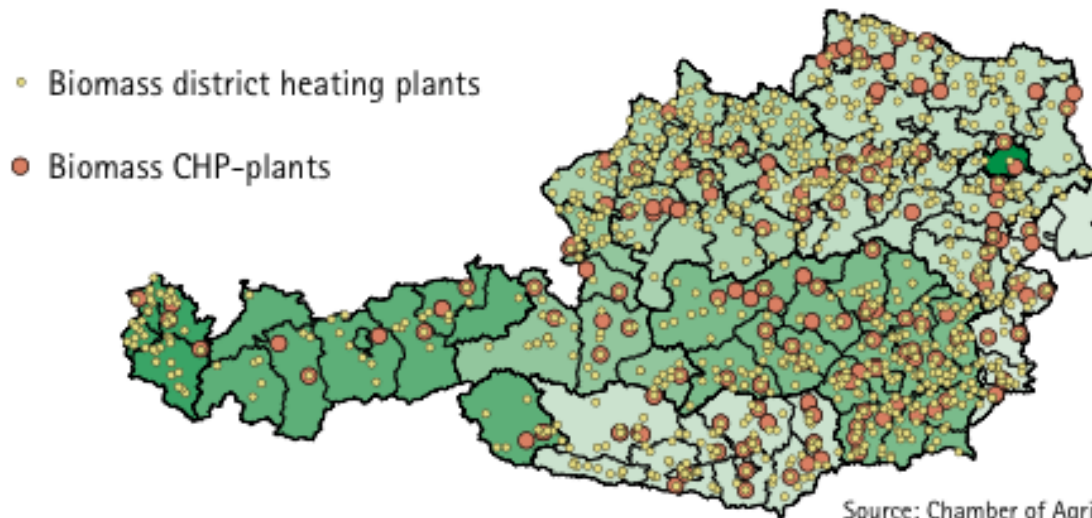
- Existing communities of place and practice as precondition
 - Neighbourly help
 - Shared practical skills
- Emerging and developing communities of practice as context of learning
 - Negotiation of (new) meanings
 - Produced and shared tools
 - Substantial changes of the design



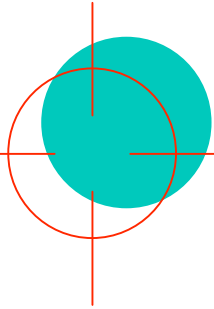


Case 2: Biomass district heating systems

- Biomass most important renewable source of energy
- More than 10,000 medium and large scale biomass heating system in Austria (2012)







Yearly installed systems

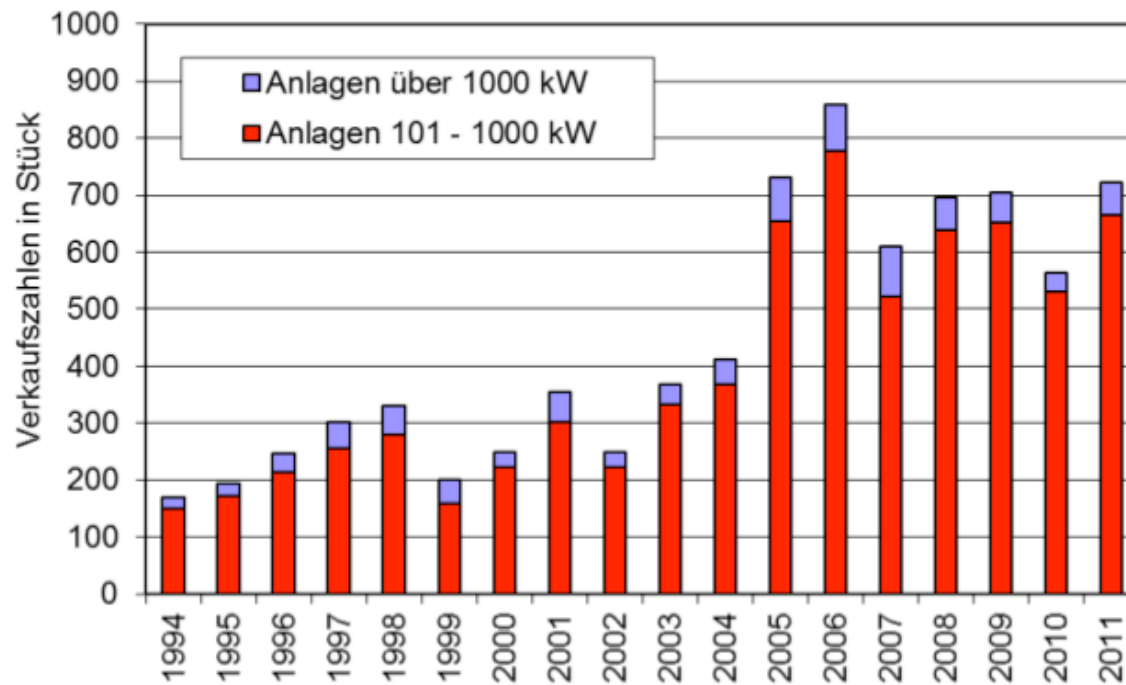
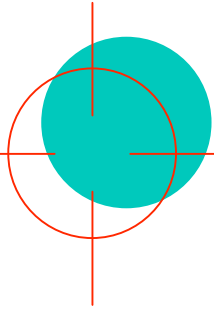


Abbildung 6.3: Jährlich in Österreich verkaufte Biomassekessel mittlerer und großer Leistung. Quelle: LK NÖ (2012a)



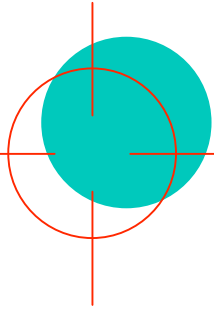


Study on barriers and driving forces

- Focus on early developments in the 1990s
- 90% of medium sized district heating projects run by farmer's co-operatives
- Special financial subsidies for agricultural initiatives
- Even so: early plants hardly profitable
- But: projects as “community building” initiatives
- Major preconditions for success
 - “active community life”
 - “local cultural initiatives”

Source: Rakos et al. 1995



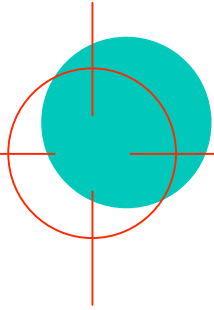


Case 3: Car-free settlement in Vienna

- First large-scale demonstration project for car-free housing in Austria
- Completed in 1999
- Housing complex with 244 apartments
- Social housing scheme
- Car-free status part of the tenancy agreement
- Participatory planning process
- Car-sharing location, several common areas and facilities



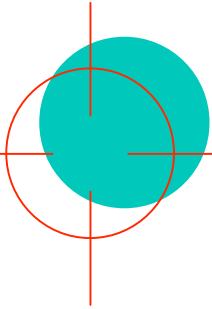




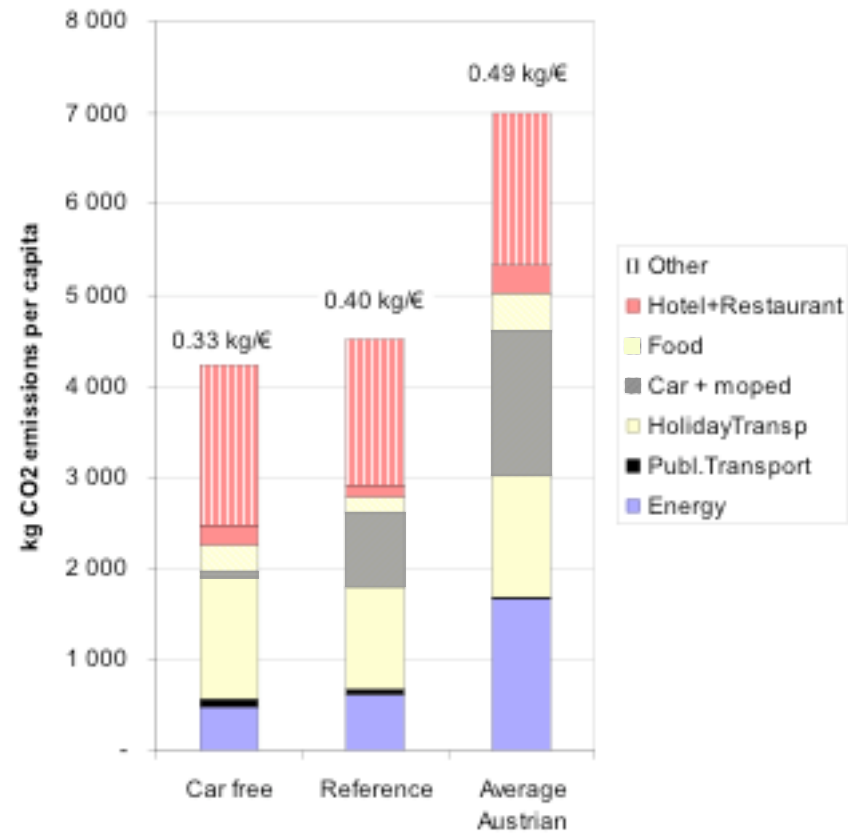
Case-control study

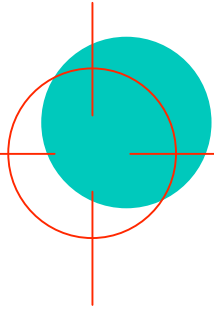
- Household Environmental Impact (HEI) assessment
- Car-free settlement and comparable housing project in Vienna
- Survey covering 88 (42/46) households
- Face-to-face interviews
- Interdisciplinary approach
 - Environmental effects and
 - Explanatory factors





Per capita CO₂ emissions

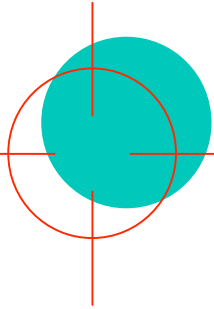




Role of community building processes

- High level of social cohesion in the car-free settlement
 - Number of personal contacts and friends
 - Communication within the settlement (face-to-face, internal mailing list)
 - Number of community activities (e.g. self-organised festivities, flea markets in the courtyard)
 - Strong identity as car-free community
- Community building activities stabilize the car-free practice
- Learning: focus should be on bicycle friendliness

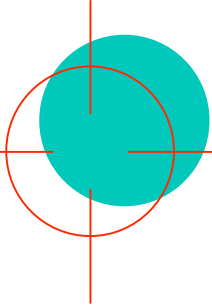




Conclusions

- Changes of energy practices involve community building processes
 - Behaviour of individual users is linked to communities of place, identity and practice
 - Local communities are a resource for change and learning
 - Energy projects may stimulate new forms of community building
- Looking on the bright side does not tell the problems
- Running energy projects on a community level means to engage with various forms of community building processes





Thank you for your attention!

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