FINANCING AND BUSINESS MODELS OF ENERGY COOPERATIVES AND OTHER COMMUNITY ENERGY COMPANIES

BMWi, Exportinitiative Energie, Informationsreise Polen – Energieautarke Gebiete & Energiegenossenschaften
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Agenda

— Intro: Current State & Discussions
— Community Energy in Germany
— Financing Community Energy Projects
— Business Models of Energy Coops
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—**Current State & Discussions**

— Community Energy in Germany
— Financing Community Energy Projects
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Why Community Energy?

PIONEERS:
Citizens participate

STAGNATION/LOSS OF ACCEPTANCE:
Enforce participation

ENERGY UNION:
Enable participation
Art. 22 RED (draft)

ENERGIEWENDE 2.0:
Preserve community energy (or diversity of actors)
EEG 2014, 2017

Lov om fremme af vedvarende energi
BüGembeteilG M-V

StromEG 1991
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Development of Community Energy in Germany - Types

**Electricity Cooperatives**
- Rural electrification in the 1st half of the 20th century
- Installation and operation of local distribution grids by citizens (and municipalities)

**Energy Supply Cooperatives**
- Oil price shocks => self-supply

**Community Energy “Boom”**
- Community wind (KG), community solar (GbR), PV coops (eG)

**Few “old electricity cooperatives” left** (end-1920s: >6,000)
“Boom” since mid-2000s, cooperatives since 2008/9
Highly diversified community energy sector since mid-2000s
Various mixed types / co-investments
From socio-technical niche (“pioneers”) to securing acceptance?

**Renewable Energy Pioneers**
- Pilot projects
- “trial and error”

Source: based on Holstenkamp (2012)
Development of Community Energy in Germany - Numbers

Source: Kahla et al. (2017)
Community Energy in Germany - Legal Structures

3 common forms

**Limited Liability Partnership**
(GmbH & Co. KG: Limited Partnership = Kommanditgesellschaft with LLC = Gesellschaft mit beschränkter Haftung (GmbH) as general partner)
- Wind & solar parks
- Large investments + co-ownership

**Registered Cooperative**
(eingetragene Genossenschaft, eG)
- Medium-to-large investments
- Often PV, also district heating
- Several projects, “develops over time”

**Civil Law Association**
(Gesellschaft bürgerlichen Rechts, GbR)
- Common for small or medium solar PV (rooftop) and pre-development
- Partly combined with solar club (e.V.)
Community Energy in the Auction System

—Create/use support structures?
  • Through this: become competitive/able to participate?
  • Most probably only few community energy companies

—Change of rules?
  • Problem: heterogeneity of sector
  • What is the core problem? How can this be targeted?

—Sidesteps: develop new business models in other segments
  • PV business models, storage, …
  • Heating sector
  • E-mobility
  • Integrator/facilitator
  • Rural development
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Financing Tools of Community Energy Companies

— Most important components of financing structure: equity + bank loans

— Different equity ratios
  • From 20% to >80% [Holstenkamp et al., 2018a; Debor, 2014; Yildiz et al., 2015]
  • Smaller in case of community wind/large-scale investments, larger for PV coops

— Bank loans:
  • Project finance (= cash-flow related, non/limited recourse) already for small loan volumes
  • Often local banks, some specialized larger banks in all three sectors (public, cooperative, private banks)
    => “co-evolution” of both sectors, banks as “enablers” [Hall et al., 2016]
  • Refinancing from KfW and Rentenbank

— Other “tools”:
  • Sub-ordinated loans (optimizing financing structure/tax effect, reduce risk, closer ties to specific projects)
  • District heating: grants
Financing Tools - Equity

— Return+ motivation: environmental protection, regional development, participation in “Energiewende”, …

— North-south differences: highly profitable onshore wind projects in the North; differences between EEG regimes: “PV boom” 2009-2012

— Availability differs locally: who can afford to participate? (discussion e.g. in federal states in the East)

— Be aware of financial market regulations!
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Two Dominating Business Models among Energy Coops

— Roof-top solar PV
  - Often on top of public buildings, feed-in tariff
  - Fast development, medium investment volumes, low risk – relatively high returns under EEG 2009
  - Many energy coops initiated or co-initiated by local cooperative banks
  - Alternative revenue models: local electricity label + market premium model, tenants’ electricity (“Mieterstrom”), contracting, sale & lease-back

— Biomass-fired district heating (“bioenergy villages”)
  - Grant-based financing
  - Local private or municipal initiative
  - Often use of heat from biogas power plant (alternatively or additionally: solid biomass)
Business Model Innovation Necessary

— Diversification of business models of recently founded energy coops
— Planned new business models:
  • often distribution/retail

— Challenges:
  • Complexity: changing legal environment, longer lead times and/or more intensive acquisition process
  • Human resources development: mostly older, well-educated men => right education/skills? succession?

— Qualification:
  • Gaps: especially marketing & sales
  • No compensation through complementary networks

— Cooperation strategies:
  • Cooperative of cooperatives, service cooperatives
  • External partners: ecopower companies, developers, municipal utilities
Contact

Leuphana University of Lüneburg
Institute of Finance and Accounting
Dipl.-Volkswirt Lars Holstenkamp
Universitätsallee 1
21335 Lüneburg
Germany

Fon +49 4131.677-1931
Fax +49 4131.677-2169
holstenkamp@uni.leuphana.de
» www.leuphana.de
References


