Social Innovation in Energy Transitions

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The SONNET project
SONNET project

*Co-creating a rich understanding of the diversity, processes, contributions, success and future potential of social innovation in the energy sector*

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Conceptual framework and research question
SONNET's definition of social innovation

Ideas, objects and/or activities that change social relations and involve new ways of doing, thinking about and organising energy.
SONNET research design: a multi-method approach
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Energy cooperatives as social innovation

e.g. citizens jointly own means of and participate in renewable energy production.

REScoop & International Co-operative Alliance principles:

i) concern for community

ii) voluntary and open membership

iii) democratic governance

iv) autonomy and independence
Research questions

• How do energy cooperatives and energy cooperative fields emerge, develop and institutionalize over time?

• How has this process been [co]shaped by the outside institutional environment?
Figure 1: Summary of overall visual conceptual map for WP3
Methodology
Embedded case study approach

Figure 6: Two illustrations of SONNET’s embedded case study design: Based on Yin’s (2003) visualisation (see left) and a SONNET ‘translation’ showing the relations between the subunits (see right)
3 countries

- France
- Germany
- Switzerland
Research steps

Fieldwork
• ~9 interviews per country
• Observation
• Documents
• Secondary sources

Case report
• Thematic analysis
• Innovation timeline

Cross-case analysis (ongoing)
France
Energy cooperatives in France: “Citizen energy” (Sebi & Vernay, 2020)

- 210 projects
- Local focus
- Non-speculation
- Democratic governance
- Ecology

Structured networks

Credit: Energie partagée
Switzerland
Energy cooperatives in Switzerland

• Cooperative (Genossenschaft) is well-established legal form corresponding to the ICA cooperative principles

• Cooperatives in the energy sector already engaged in electrification at beginning of 20th century (~100 still exist today as DSOs)

• 200 new energy cooperatives formed since 1985
  • initially shaped by anti-nuclear movement
  • mainly financing and operating roof-top photovoltaics
  • pursuing goals to expand renewable energy and to allow citizens to participate directly in energy decision-making and ownership at project level
**Energy Perspectives 2035**

- Constitutionalisation of energy provision as federal task (referendum)
- No to EMG (Referendum on full liberalisation of the electricity market)
- Introduction ‘Financing of additional costs’ MKF
- Introduction ‘Feed-in remuneration at cost’ KEV
- Introduction ‘One-off investment contributions’ (EIV)

**Energy Strategy 2050**

- De facto no prospect for KEV funding for new plants (waiting list too long)
- New energy law (incl. self-consumption communities)
- Amendments to energy law...

**Swiss Federal Energy Policy**

- Action program Energie 2000
- New energy law (incl. self-consumption communities)

**Intermediary org. with national scope**

- Formation SSES (1974)
- Formation SES (1976)
- Formation ADEV (1985)

**Local or regional fields/individual cooperatives**

- Formation Swissolar
- Formation cooperative federation Optima Solar
- Formation Energiegenossenschaft Schweiz
- Formation Energiegenossenschaft Basel
- Start Self-consumption community, housing cooperative Rossfeld
- Formation Association suisse pour l’énergie citoyenne ASEC
- Formation Cooperative Suisse

**Introduction**

- ‘Financing of additional costs’ MKF
- ‘Feed-in remuneration at cost’ KEV
- One-off investment contributions (EIV)

**Number of newly formed energy coops**

- Phase 1
- Tschernobyl (1986)
- Fukushima

**Timeline**

- 1990
- 2000
- 2002
- 2004
- 2006
- 2008
- 2010
- 2012
- 2014
- 2016
- 2018
- 2020

- 1. Federal energy law
- Formation ADEV (1985)
- Formation Swissolar
- Formation coopérative federation Optima Solar
- Formation Energiegenossenschaft Basel
- Formation Cooperative Suisse
- Formation Association suisse pour l’énergie citoyenne ASEC
- Formation Cooperative Suisse
Germany
Energy cooperatives in Germany

• EC already existed in the 20th century to provide the rural population with electricity (today only less than 50 of them still exist)
• The majority of energy cooperatives today was registered after 2006
• Main aims:
  • decentralisation of the energy transition
  • democratisation -> enable citizens to participate in the energy transition
  • to keep the revenues in the region
  • direct use of their own energy
Country comparison
## Cross-case comparison

<table>
<thead>
<tr>
<th>Institutional work VS Institutional structure</th>
<th>France</th>
<th>Switzerland</th>
<th>Germany</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Goals VS energy system</strong></td>
<td></td>
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<tr>
<td>• Electricity mix: 92% decarbonised (nuclear and hydro power)</td>
<td>Electricity mix: 56% hydro-power, 35% nuclear, 4% wind and solar power</td>
<td>Electricity mix: 54% conventional, 46% renewables</td>
<td></td>
</tr>
<tr>
<td>• Anti-nuclear motivation (early phases)</td>
<td>Anti-nuclear movement, then energy transition (RE expansion)</td>
<td>Goals of decentralisation, democratisation, local economic benefits, self-consumption</td>
<td></td>
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<tr>
<td>• Discourses emphasising local economic benefits and citizen participation</td>
<td>Focus on roof-top photovoltaics</td>
<td>Contribute to energy transition</td>
<td></td>
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<tr>
<td><strong>Cooperative organizing VS legal framework</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Social economy legal framework but limitations to apply it to energy</td>
<td>Well established cooperative statute</td>
<td>Organisational form of cooperatives regulated in the German cooperative law (Genossenschaftsgesetz)</td>
<td></td>
</tr>
<tr>
<td>• Use of coop statute + bricolage + advocacy to change laws</td>
<td>Widespread use of coop statute</td>
<td>Amendment to cooperative law</td>
<td></td>
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<tr>
<td><strong>Advocacy VS policies</strong></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>• National RE support, FET, pushing for tender procedures</td>
<td>National RE support, FET, then investment sub. Change sometimes compensated by municipalities or cooperation with local supplier</td>
<td>National RE support, shift towards tender procedures</td>
<td></td>
</tr>
<tr>
<td>• Support of intermediaries by ADEME national agency and some regions</td>
<td>Decisive conditions are set at the local level</td>
<td>Support of intermediaries by several federal states</td>
<td></td>
</tr>
<tr>
<td>• Gatekeeping and definition work to frame “citizen energy” as policy target</td>
<td>No explicit recognition of energy cooperatives (or similar concepts) at national policy level</td>
<td>Advocacy on the federal state level through intermediary organisations</td>
<td></td>
</tr>
<tr>
<td>• No specific energy coop national policy</td>
<td>Advocacy in local energy politics through personal linkages</td>
<td>Advocacy in local energy politics through personal linkages and simultaneous board membership in different organisations</td>
<td></td>
</tr>
<tr>
<td>Successful REScoop EU translocal advocacy</td>
<td>Advocacy at national level not for cooperative form, rather renewable energy advocacy</td>
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</tbody>
</table>

**Support scheme for RE is an enabling condition**

**Support scheme & liberalization degree condition business models**

**Adapted legal framework is an enabling condition**

**All coops emphasise citizen participations**

**Energy coops goals is context-dependent**
## Cross-case comparison

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<tr>
<td><strong>Intermediaries structuration VS government structuration</strong></td>
<td>Unitary government (deconcentration trend)</td>
<td>Federal government</td>
<td>Federal government</td>
</tr>
<tr>
<td></td>
<td>National network coordinating regional networks</td>
<td>Scattered regional and national networks without specific focus on energy cooperatives</td>
<td>National networks (not all exclusively for energy cooperatives)</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Several regional networks</td>
</tr>
<tr>
<td><strong>Relation with private actors VS energy market structure</strong></td>
<td>Liberalisation (2007), electricity supply oligopole (decreasing), concentration trend on RE generation side, national grid monopoly</td>
<td>Liberalisation (2009) for large-consumers only, 650 electricity providers with territorial supply monopolies (mostly in ownership of municipalities / cantons), big companies own majority of generation capacity</td>
<td>Liberalisation (1998), supply oligopole (decreasing)</td>
</tr>
<tr>
<td></td>
<td>Cooperation with small developers, negotiations ongoing with big ones</td>
<td>High dependence on providers due to pricing for fed-in electricity</td>
<td>Cooperation with project developers and companies</td>
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<td></td>
<td>Cooperative relationship between cooperative producers and cooperative supplier, sometime compensating absence of public support</td>
<td>Ambivalent relationships with electricity providers (conflicts &amp; collaboration)</td>
<td>Cooperation with independent renewable energy providers and solar installers</td>
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<td>Collective lobby with some other independent producers</td>
<td>Difficult relationship with the four big conventional energy suppliers</td>
</tr>
<tr>
<td><strong>Relation with public actors VS public actors competencies</strong></td>
<td>Progressive decentralisation of energy competencies to local authorities</td>
<td>Initially municipalities' responsibility; progressive engagement of federal level; still broad municipal autonomy in energy policy</td>
<td>Energy policies mainly at the national level, influence of federal state policies</td>
</tr>
<tr>
<td></td>
<td>Alliances with parapublic energy agencies, local governments, public energy companies</td>
<td>(Para)public suppliers have small scale</td>
<td>Strong linkages with municipalities (collaboration, membership of municipalities, personal links)</td>
</tr>
<tr>
<td></td>
<td>Difficult relationships with national government, administration and grid manager</td>
<td>Often strong (support)</td>
<td>Strong local support can slow field structuration, as there is less need for supra-local organisation and advocacy</td>
</tr>
</tbody>
</table>

- **Cooperative find allies in some government levels (local+EU) to change another (national)**
- **Support from para-public agencies is more stable than government support**
- **Intermediaries' structuration mirror states structures**
Process comparison

France

EMERGENCE: Few pioneers (citizen-based, anti-nuclear, or territorial integration)

STRUCTURATION of intermediaries

DEVELOPPEMENT of projects with support from intermediaries + advocacy

INSTITUIONNALIZATION through EU directive?

Switzerland

EMERGENCE: Pioneers (anti-nuclear)

RE-EMERGENCE: Second wave (energy transition)

DEVELOPPEMENT: Decentralized replication

(Scattered) STRUCTURATION of intermediaries in reaction to new obstacles

Germany

EMERGENCE: Pioneers

DEVELOPPEMENT: Decentralized replication

STRUCTURATION of intermediaries in reaction to new obstacles

Increased INSTITUIONNALIZATION through EU directive?

Intermediaries emerge to raise obstacles
Results of comparative analysis (development of theses)

• Necessary/enabling conditions
  • Favoured RE tariffs
  • Legal framework making cooperative organisation of energy possible (including citizen fundraising, engagement of local authorities, liberalized market...)

• Conditions triggering emergence of local projects
  • Ecologist militants (anti-nuclear or other...)
  • Local or remote inspiring example, or discourses
  • Local counter-example (private actor prospeacting)

• Conditions triggering emergence of intermediaries
  • Legal and administrative obstacles, or lacking support (need to lobby)
  • Access to funding
Future steps

• Continue comparative analysis
• Link with existing theories about social innovation processes
  • diffusion
  • scaling up
  • role of intermediaries
  • actors dynamics
  • ...
• Measurement of degree of institutionalisation?
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