Obduracy Challenges

Can local communities transform the energy system?
Overview

• Community energy: why?
  – EU-production of Renewable Energy

• Two theoretical lenses
  – New social movements
  – Actor-Network theory

• Community energy: How?
  – Open up energy system
  – Laboratory of prefigurative practices
  – Energy Covenant: a pact
Renewable Energy in the EU

Map shows the percentage of renewable energy in each EU country, with colors indicating different ranges:

- Red: < 5%
- Orange: 5-10%
- Yellow: 10-20%
- Green: 20-30%
- Light Green: 30-40%
- Medium Green: 40-50%
- Dark Green: > 50%

Data source: Eurostat, 2019
(New) Social Movements

- Touraine
- Melucci
- North

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The politics of climate activism in the UK: a social movement analysis

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According to Touraine, a social movement is a special type of social conflict, which presupposes a clear definition of opponents or competing actors and of the resources they are fighting for or negotiating to take control of.

Type 5 indicates a social conflict, whose stake is the social control of main cultural patterns, that is of the patterns through which our relationships with the environment are normatively organized. These cultural patterns are of three main kinds: a model of knowledge, a type of investment and ethical principles. These representations of truth, production and morality depend on the capacity of achievement, of self-production. (from Social Research, Vol. 52, no. 4)
A movement is an actor of mobilization (Melucci)

- “we find traditional forms of resistance to the impact of modernization coexisting with a religious fundamentalism that draws its renewed energy from the appeal to Nature, pressures for a new ethical code regulating humanity’s relationship with nature, and political demands for the democratic control of energy policies. All these elements are blended together, perhaps temporarily, in that concrete actor of mobilization that we call a movement”

  (Melucci)
Two poles: Latency and visibility (Melucci)

- ‘collective actors must preserve areas of autonomy from the system, areas in which they can undertake change. **This is the laboratory where formal models are created and which the movement fills with content addressed to specific goals**

- ‘When the small groups come out into the open, they do so in order to confront political authority on specific grounds. **Mobilization has a multi-layered symbolic function. It proclaims opposition against the logic that guides decision making with regard to a specific public policy**’
From anti-nuclear/CCS/coal/shalegas/… to pro-renewable initiatives

• So, is there a social conflict?
• And, is this a movement?
• Where can we find the laboratory?
• What is de logic that guides decision making regarding energy policy?
• Do energy communities provide a viable alternative to this logic?
Climate activism in the UK by Peter North

<table>
<thead>
<tr>
<th>Policy reform, developing prefigurative practices</th>
<th>Large-scale technological change</th>
<th>Smaller scale appropriate technologies</th>
</tr>
</thead>
<tbody>
<tr>
<td>NGO-led large scale demonstrations aimed at achieving policy reform, persuading elites to act</td>
<td>Carbon Rationing Action Groups, transition towns, low-carbon communities, prefigurative practices at climate camp</td>
<td></td>
</tr>
<tr>
<td>Challenge unsustainable practices</td>
<td>Large-scale demonstrations aimed at forcing elites to act through construction of a mass movement</td>
<td>Mass and elite direct action: climate camp, Plane Stupid, Leave it in the ground</td>
</tr>
</tbody>
</table>
Energy initiatives in the Netherlands

- Prosumers unite in local initiatives
- 500 citizen initiatives in NL
- Case studies:
  - Hooghalen
  - Franeker
  - Zuidhorn
  - Pekela
- Broad range of types, forms, visions
  - From informal groups to enterprises
  - From solar panels to low-carbon communities
Guiding visions

- Autarchy
- Smart grid
- Trias energetica

“religious fundamentalism that draws its renewed energy from the appeal to Nature” (Melucci)

“political demands for the democratic control of energy policies” (Melucci)
Energy Covenant: a pact?

- A relationship of this kind can only come about by establishing a pact (…) The pact – a circumscribed and reversible exchange with the institutions – simultaneously makes power visible. Power that is usually neutralized by procedures comes out into the open to take responsibility, that is, to exercise authority, in a pact. (Melucci, *What’s new in new social movements*)

- In the Netherlands the Energy Covenant is an example of such a pact
The role of technology

• Underestimated in SMT?
• New regulations (EU)
• New roles of consumers
• Possibilities to scale up to city or regional level
• New questions about governance and policy

• What about socio-technical networks?
Actor-Network Theory

- **Networks of heterogeneous actors**
- **Collective strategies**
- **Local socio-technical networks**
  - Human actors
  - Buildings
  - Energy technologies
  - Infrastructures
- **Obduracy**
Scripts

• Scripts are programs of action, embedded or inscripted in technological artefacts (Akrich)

• *Energy scripts* are embedded in built environment, they can
  – Invite energy use (buildings, infrastructure, spatial patterns)
  – Regulate energy use (pricing, taxes, feedback price)
  – Inhibit local production (regulation, fiscal policies, grid access, feedback price)
Designing new scripts

• Re-design of buildings & infrastructure
  – Lower energy use
  – Invite local energy production

• Conditions
  – New regulations
  – New technologies adapted to local production
  – New organisation patterns
Example: Groenkerk

- agriculture
- village hall
- local businesses
- farmers
- municipality
- infrastructure
- energy-advisors
- school
- super-market
- forestry
- sportclubs
- camping
- buildings

Energy Initiative
Energy in the village of Oenkerk

- Tool for scenario development
- Basis for design research

Image: Sjoerd van Soelen
Rerpetition in built environment

- No data
- Before 1920
- 1920 – 1959
- 1960 – 1972
- 1973 – 1987
- 1996 – 1997
- 1998 – 1999
- 2000 – 2005
- 2006 – 2010
- 2011 – 2014
- After 2015

Image: Sjoerd van Soelen
Potential for PV and heat collectors

- Potential PV collectors
- Realized PV collectors
- Realized heat collectors
- Uns suited for PV/heat collectors

Image: Sjoerd van Soelen
Comparison of theoretical lenses

- SMT provides view of social movement, opportunities for change, so we can understand agency
- ANT brings technology and human actors together, so we can understand obduracy and heterogeneity of networks
Can local communities transform the energy system?

• Open up energy system
  – By designing new scripts
  – By forging new connections

• Mobilize local communities
  – As a laboratory for prefigurative practices
  – By opposing the logic of decision making that guides energy policy

• Energy Covenant as a pact (Melucci)
Questions?
Prosumers

- From acceptance to engagement?
- Defining & performing new roles

Carbon reduction, ‘the public’ and renewable energy: engaging with socio-technical configurations

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Table 3 Public roles and renewable energy

<table>
<thead>
<tr>
<th>Roles</th>
<th>Description</th>
<th>Proximity to technology</th>
</tr>
</thead>
<tbody>
<tr>
<td>Captive consumers</td>
<td>Pay bills to established energy supplier.</td>
<td>End of wire. Distanced from the sources of renewable energy dispersed through national grid.</td>
</tr>
<tr>
<td>Active consumers</td>
<td>Actively choose between suppliers including green tariffs which partially or entirely involve renewable generation.</td>
<td>End of wire. Distanced from the sources of renewable energy dispersed through national grid.</td>
</tr>
<tr>
<td>Service users</td>
<td>Use the services (light, heat, motion etc.) provided by energy generated using renewable technologies, potentially in many different everyday settings and forms and function of building.</td>
<td>May not be spatially close to technologies, but are explicitly so in heat networks and household/community modes of implementation.</td>
</tr>
<tr>
<td>Financial investors</td>
<td>Invest in shareholding or interest earning arrangements relating to specific projects, to the broad financing of renewable energy projects or to the investment choices of particular companies.</td>
<td>Investment opportunities may be locally restricted (e.g. RECs backed projects in Wales); open to distant investors (e.g. JULES Greenpeace/NPower tariffs for North Hoyle?); or assistential. Benefits may be direct or explicitly tied spatially through community funds administered by local groups.</td>
</tr>
<tr>
<td>Local beneficiaries</td>
<td>Financial, infrastructural, educational, technological or intangible. Such benefits are increasingly negotiated in formal (planning) engagement.</td>
<td>While some campaign groups (e.g. Country Guardian) are not spatially linked, most protesters are focused on local projects.</td>
</tr>
<tr>
<td>Project protesters</td>
<td>Actively object to projects through for example organisation of a local protest group, attending meetings, writing to press, lobbying, signing petitions etc.</td>
<td>Linked to local projects, tend to overlap with participants. Campaign groups may be spatially distant (e.g. Yes2Wind). Explicitly linked to spatially-tied community or household modes.</td>
</tr>
<tr>
<td>Project supporters</td>
<td>Actively engage in similar actions to protesters, although support is typically less visibly organised and vocal.</td>
<td>Necessarily spatially linked.</td>
</tr>
<tr>
<td>Project participants</td>
<td>Get involved in community mode of implementation, includes membership of organising groups; attending meetings; or handing-on insulation or maintenance.</td>
<td>Necessarily spatially linked.</td>
</tr>
<tr>
<td>Technology hosts</td>
<td>Owners of buildings or land, but not the renewable energy technology itself.</td>
<td>Necessarily spatially linked.</td>
</tr>
<tr>
<td>Energy producers</td>
<td>Directly owns and operates generation technologies.</td>
<td>Normally proximate and part of household.</td>
</tr>
</tbody>
</table>

Level of awareness/active engagement with renewable energy

- All energy customers (unknowingly) consume some energy from renewable sources.
- Green tariff customers actively choose renewable energy supply.

The derivation of the energy services may be totally unknown to the user – or visibly, actively and deliberately promoted as being from renewable sources (e.g. in demonstration projects).

Investment in renewable energy, whether personally, locally or through companies’ portfolios is generally, but not exclusively, active and aware.

Such benefits may be visible and known to local people, or hidden and unknown.

Protest activity is by definition aware and actively engaged.

Supporter activity is by definition aware and actively engaged.

Theoretically any member of a community, in practice involvement is variable and participation can take different forms.

Intentionally through institutional arrangements (e.g. Windrottery) and ‘Company Driven’ micro-gen, but potentially less so (e.g. new owner of a ‘housing’ house).

Necessarily active and away, although may be acquired with house purchase rather than actively installed.

References:
- http://www.recc.co.uk/generalinfo.html
- http://www.countryguardian.net
- http://www.yes2wind.com
- http://provenenergy.co.uk/windrottery/
Multilevel Perspective

- Local initiatives as niches (Seyfang)
- Initiatives involve outside networks (intermediaries)
- Lobby for new regulation
- Stimulate innovation?
- Emergence of new ‘regime’
- Result: Change in socio-technical network