

4S/EASST 2012

Towards a sustainable electricity grid development?

Comparing Grid Development Regimes

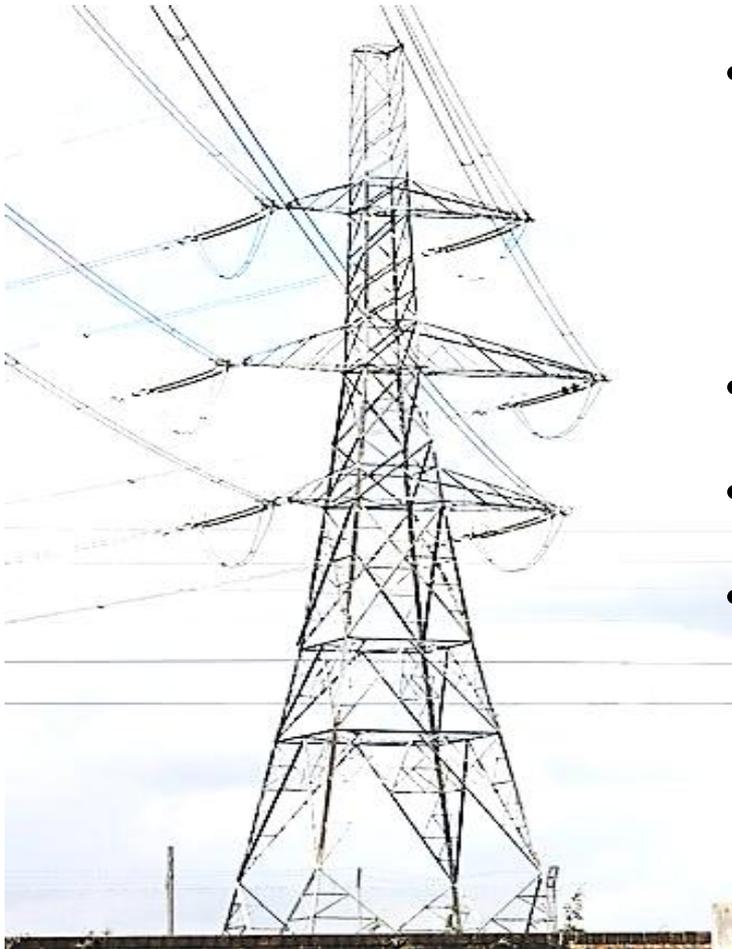
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&

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Re-designing electricity grids...



- International and European directives
 - 20% of renewable energy generation by 2020 (Kyoto Protocol, 1992; Renewables Directive, 2009);
- Security of supply;
- Ageing electricity infrastructures;
- Smartening the grid – at national and European levels:
 - *e.g.*, HVDC Norway-Great Britain, North Sea Offshore Grid Initiative

... re-designing relations



*The **value of thousands of houses** in the area will be dramatically reduced.* (Save Our Valley, 2012)

*Pylons are an ugly visual intrusion in any **landscape** - they make no effort to blend with the local landscape - they are industrial architecture...* (People against pylons, 2012)



(Bevar Hardanger, 2012)

- Need to understand electricity networks as socio-technical systems
- And economic, environmental and social impacts of electricity grids *per se*

SUSGRID – a revised design

- How to re-design, sustainably, **grid development regimes (GDR)**?
 - Including planning, design, siting, licensing, installation
 - Across economic, environmental and social dimensions
(Assefa & Frostell, 2007; Mitlin, 1992)
 - At international, national, regional and local levels



Contextual, historical and comparative analysis:

- England & Wales, Norway and Sweden - Which strengths and weaknesses for more sustainable GDR?
- How the design of GDRs impacts on public(s) responses to HVPL (and RET)?

1. Historical trajectories for grid development

	England and Wales	Norway	Sweden
Past Historical trajectory	Centralized and privatized	Decentralized, Locally anchored power plants	Central Development
Present Arguments for grid development	CC policy and new renewables	Security of supply	CC policy, Bottlenecks in the grid
'Model' for grid development	Streamlining	Expertise	Consultation
Future Sustainable?	Social dimension: Needs assessment & Public engagement		

2. Needs Assessment & Public engagement

England and Wales	Norway	Sweden
<i>Political - Streamlining</i>	<i>Expertise</i>	<i>Consultation</i>
National decisions:	National-regional decisions:	National-regional-local decisions
National Policy Statements	National Grid Development Plan & Regional Power System Reports	Consultation report – after consultation on location, size, EI,... ← Law
Grid company  National Infrastructure Directorate	<ul style="list-style-type: none"> • Grid and power companies • Notification to Norwegian Water Resources and Energy Directorate 	<ul style="list-style-type: none"> • Regional authorities • National HVPL or objection to the project = government makes decision
 Engagement only for specific routing and not performed by developer	 Very downstream engagement, few involvement of authorities and public	 Engagement throughout the whole process

3. Which strengths and weaknesses...?

England & Wales:

- + (Potentially) Streamlining; Amenity values (e.g., Pylon competition)
- Lack of deliberation, namely local (vs. Localism Act); Centralised System vs. Countryside

Norway:

- From decentralisation to delocalization of energy; Lack of transparency and accountability

Sweden

- + More deliberative process

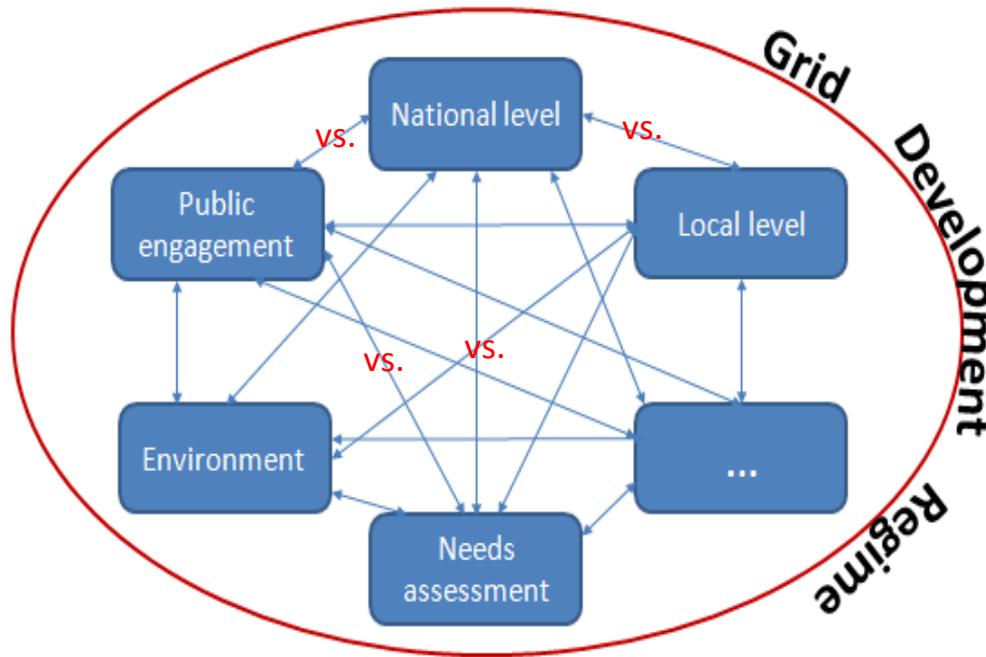
3. ... for more sustainable grid development?

- How the design of GDRs impacts on public(s) responses to HVPL (and RET), *i.e.*, on “resistance”?
 - Public and stakeholders perceptions of HVPL, but also of GDR’s



Public Perceptions on new energy grid designs: A cross-country comparison, by Oystein Aas and SUSGRID colleagues

4. Discussion and conclusions



- Contesting current representations of the electricity system?
- Socio-technical system approach
- Historical and comparative analysis

Resistance affects socio-technical activity (...) it is a signal that something is going wrong (...) it alters this activity in various ways to secure a sustainable future

(Bauer, 1995, p.3)

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