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New public management and adaptability to climate change in the energy sector

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PLAN kickoff-meeting

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Objectives

- Examine whether and how NPM-reforms have affected the capacity to adapt to climate change
 - The Norwegian and Swedish energy systems as cases
- Examine opportunities for learning across national energy systems



Research questions

- How vulnerable are the Norwegian and Swedish energy systems to climate change effects?
- What are the current status of adaptive capacity in the two national energy systems?
- What can explain anomalies in adaptive capacity?
- How have NPM-reforms affected adaptive capacity in the two national energy sectors?
- Have major weather events already affected adaptive capacity?
- Can adaptive capacity be improved, and how?

Adaptive capacity

- Ability of institutions, systems and individuals to:
 - Adjust to potential damage
 - Take the advantage of opportunities
 - Cope with the consequences



Adaptive capacity

- Capacity to collect and handle relevant information about expected weather-induced effects of climate change
- Capacity to co-ordinate and bring in existing knowledge on energy system vulnerabilities and opportunities
- Capacity to mobilise resources needed for action on reducing vulnerabilities/taking advantage of opportunities
- Capacity to act



Constraints on adaptive capacity

- Constraints on flow of scientific knowledge
- Constraints on interpreting scientific knowledge for national/local conditions (identification of national/local vulnerabilities and opportunities)
- Constraints on acting to reduce vulnerabilities/use opportunities
 - 'bounded rationality'
 - 'routines not adapted to new environmental conditions'
 - cultural norms (national and local)
 - technical constraints (national and local)



Adaptation in the energy sector

- Options for reducing vulnerability/utilising opportunities:
 - National level:
 - Increase national system flexibility (diversification of energy supply and demand technology options)
 - Reduce national system vulnerability (grid solutions, dams, other facilities)
 - Local level:
 - Increase sub-system flexibility (reduce impacts of transmission grid blackouts)
 - Off-grid (distributed energy solutions)
 - Reduce local system vulnerability (local grid and energy facility solutions)

NPM and adaptive capacity

- NPM-reforms in Norwegian and Swedish energy sectors:
 - Traditional NPM-hypotesis: NPM-reform of public sectors will increase cost-efficiency of public spending without causing negative side-effects on other objectives/considerations
- NPM-foci:
 - Cost-cutting
 - Rationalisation/outsourcing/privatisation
 - Disaggregation/fragmentation of financial and operational control - 'result units' - 'unbundling of functions'
- NPM-reforms heralded as a success by the energy industry:
 - Have reduced expensive investments in 'security of supply'
 - Have rationalised the industrial structure (larger units)
 - Removed the principle of cost-inefficient local 'self-support'



NPM and adaptive capacity

- Examine the effect of NPM reforms on climate adaptability, through the effects on:
 - Formulation and priority of goals for the energy sector
 - security of supply vs. shareholder rentability
 - Granting and allocation of financial and human resources to energy sector solutions
 - Grid solutions
 - Local energy supply solutions
 - Demand-side solutions
 - Changes in co-ordination between energy suppliers
 - Changes in co-ordination between energy supply and energy use systems
 - Public legitimacy of energy sector agents pre- and post-reform



Methodology

- Comparative case study (national and local)
 - Similar but not identical NPM-reforms
 - Different technical systems with similar elements
 - Similar political and cultural traditions
- Collection and analysis of data (preliminary)
 - Data needed to identify goal priorities, perception of vulnerabilities and opportunities, modes of co-ordination, resource allocation, etc.)
 - National level:
 - governmental policy papers, plans and regulatory measures
 - interviews with key system agents (national regulatory authorities, crisis management authority, national grid companies, national electricity industry associations, government-owned national electricity producers, electricity supply company owner association)
 - Local level:
 - municipal plans and policy papers as well as interviews with key system agents (energy suppliers and their municipal owners, grid owners and operators, key consumers)

