



Coordination in Strategic Energy Planning

Louise Krog Jensen

Aalborg University, department for Planning

Louise@plan.aau.dk



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- Danish goal to have a 100% renewable energy system in 2050
 - Smart energy systems (synergies between all energy sectors)

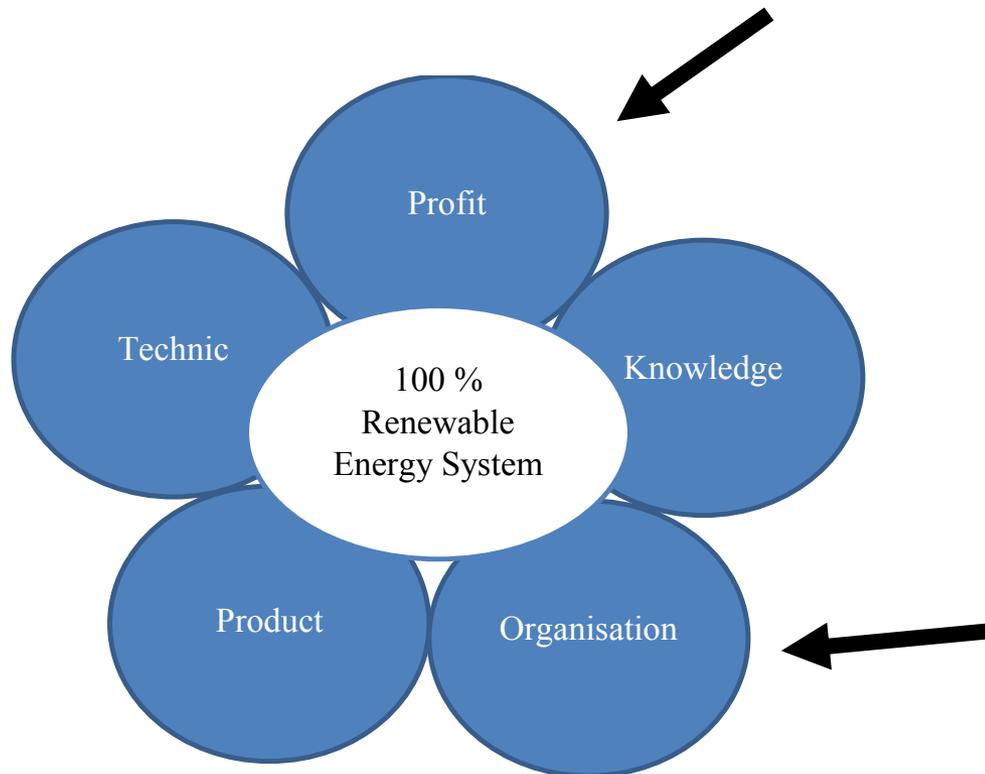


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- Currently, there are several technical scenarios
- A missing focus on the implementation

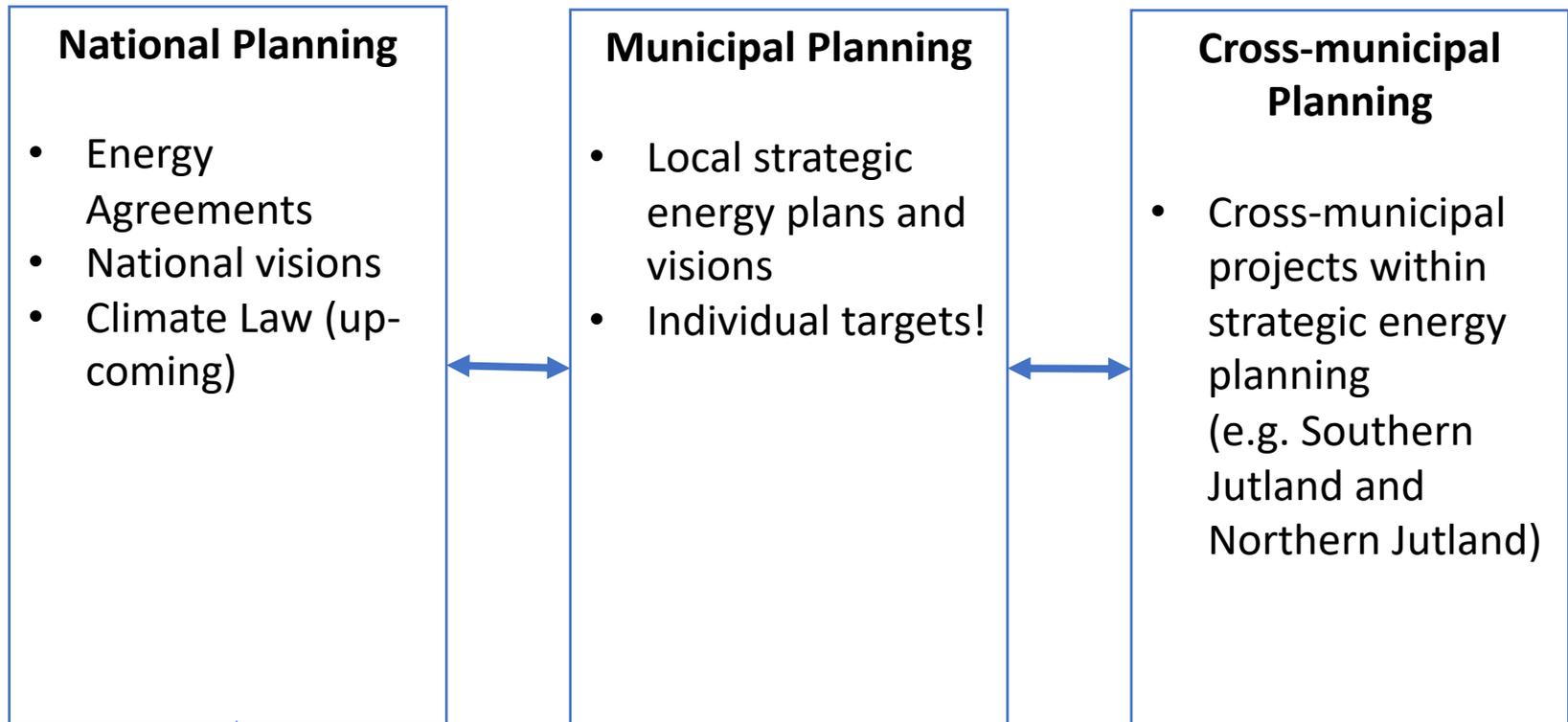


Local strategic energy planning could be a way to a smart 100% renewable energy system through municipal energy planning



Planning for 100% renewable energy systems

Three types of planning today



Strategic Energy Planning

100% Renewable Energy System

Smart Energy System

Danish Strategic Energy Planning

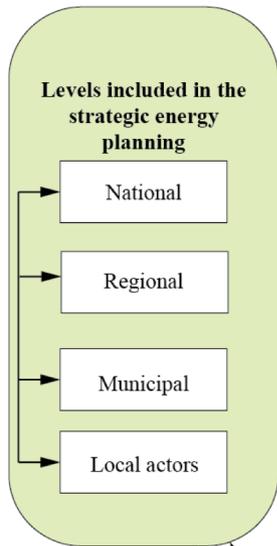
Step 1

Step 2

Step 3

Step 4

Step 5



Elements in strategic energy planning

- Flexible energy system
- Energy effective
- Renewable energy
- Security of supply
- Interplay between energy demand and supply
- Whole energy chain
- Local energy conditions
- Energy savings
- Short-term
- Mid-term
- Long-term
- Holistic
- Sustainable development
- Reduce end-use energy demand
- Community goals
- National goals
- Stakeholder involvement
- Improving welfare
- Reliability
- Cost structure of energy production
- Comprehensive energy system
- Interdisciplinary

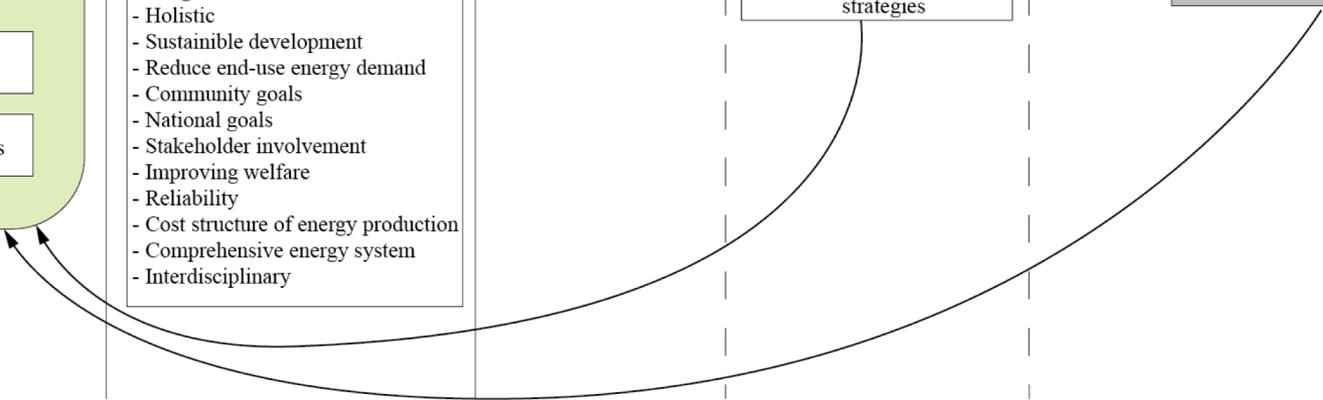
Different tools and methods

- Scenario analysis
- SWOT analysis
- GIS-based analysis
- Computer models
- Stakeholder involvement

Implementation tools

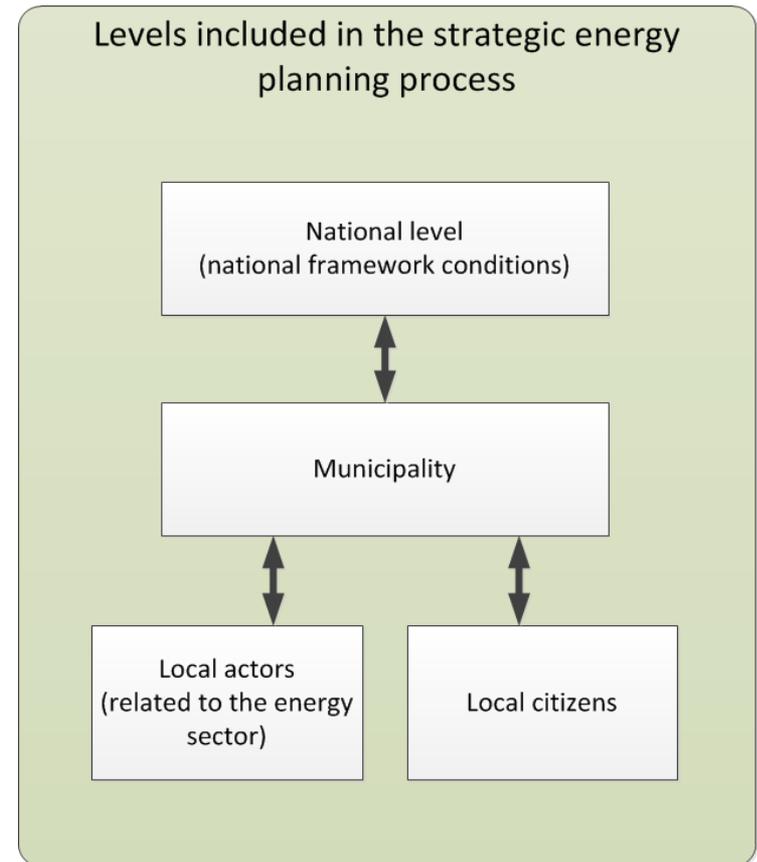
Strategic energy plans
Including implementation strategies

Implementation



Central elements in strategic energy planning

- **Communication** and **coordination** between the different levels and sectors in strategic energy planning
- Development of **scenarios**



Importance of coordination and scenarios

- To the coordination between local and national energy systems
 - Coordination of regulatory framework (between institutional levels)
 - Cities and municipalities do not have access to all energy resources and technologies (coordination of national and local energy systems)
 - Avoid sub-optimisation
- To show consequences of different possible scenarios
 - Important in the dialog with local actors
 - Development of scenarios where local actors and citizens can understand their role



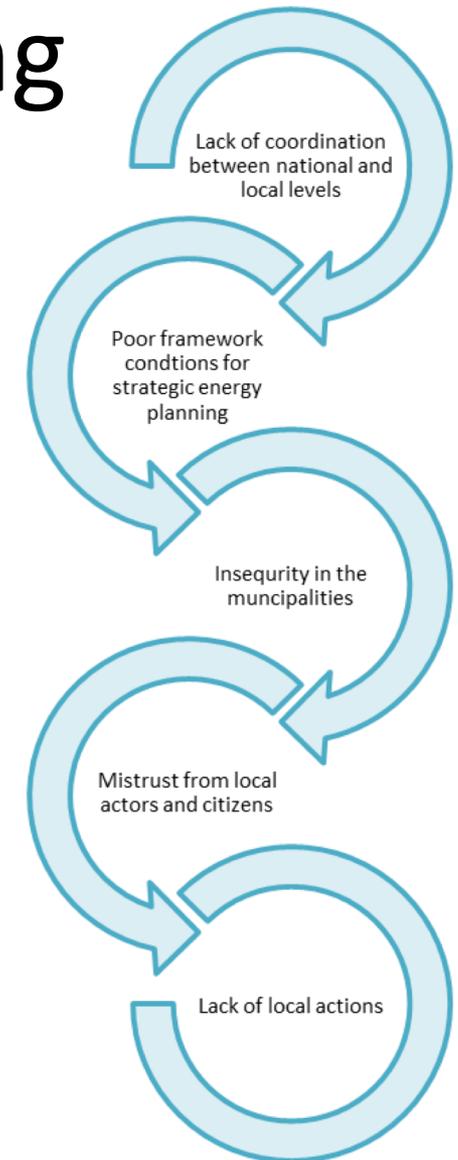
Barriers for successful strategic energy planning

Strategic barriers

- Lack of coordination between institutional levels
- Rapid changes in rules and regulations
- Lack of clear definition of national and local responsibilities

Practical barriers

- Coordination with local politicians
- Coordination with local actors



Recommendations

- How can we strengthen strategic energy planning

For the municipalities

- Communicate experiences
- Present a united front
- Knowledge of the political "game"
- Right competences
- **Focus on the overall energy system**
- **Technical scenarios**
- **Involvement of local actors**
- **Point out synergies**
- Facilitate ongoing dialog
- Revise the plan regularly

For the national Level

- **Transparent dialog**
- **Clearly defined roles**
- Mandatory task
- Rules and regulations should reflect the roles



Opportunity

- New Danish Government → 70% CO₂ reduction by 2030

A good time to start a transparent dialog regarding better regulatory and institutional conditions for local strategic energy planning.



Key Points

- Successful implementation is facilitated already in the beginning of the planning phase!
- The technical and societal aspects of energy planning need to be balanced.
- **Coordination is a key element**



Example of local involvement – Energy synchronisation

- Project where we try to motivate district heating consumers to participate in the transition to low temperature district heating – through;
 - Energy renovations
 - Behavioural changes

How;

- Collaboration with (Aalborg District heating company)
 - App that show the consumers their consumption
 - Other? (Talk the to consumers in order to understand their interest in their heating installations)



<https://www.brande-fiernvarme.dk/code-raad/om-fiernvarme/>



Thank you 😊

Louise@plan.aau .dk



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