

Challenges and opportunities of implementing 100% renewable energy in cities

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- Danish goal to have a 100% renewable energy system in 2050
 - Smart energy systems



<https://www.plan.aau.dk/forskningsgrupper/SEP/>

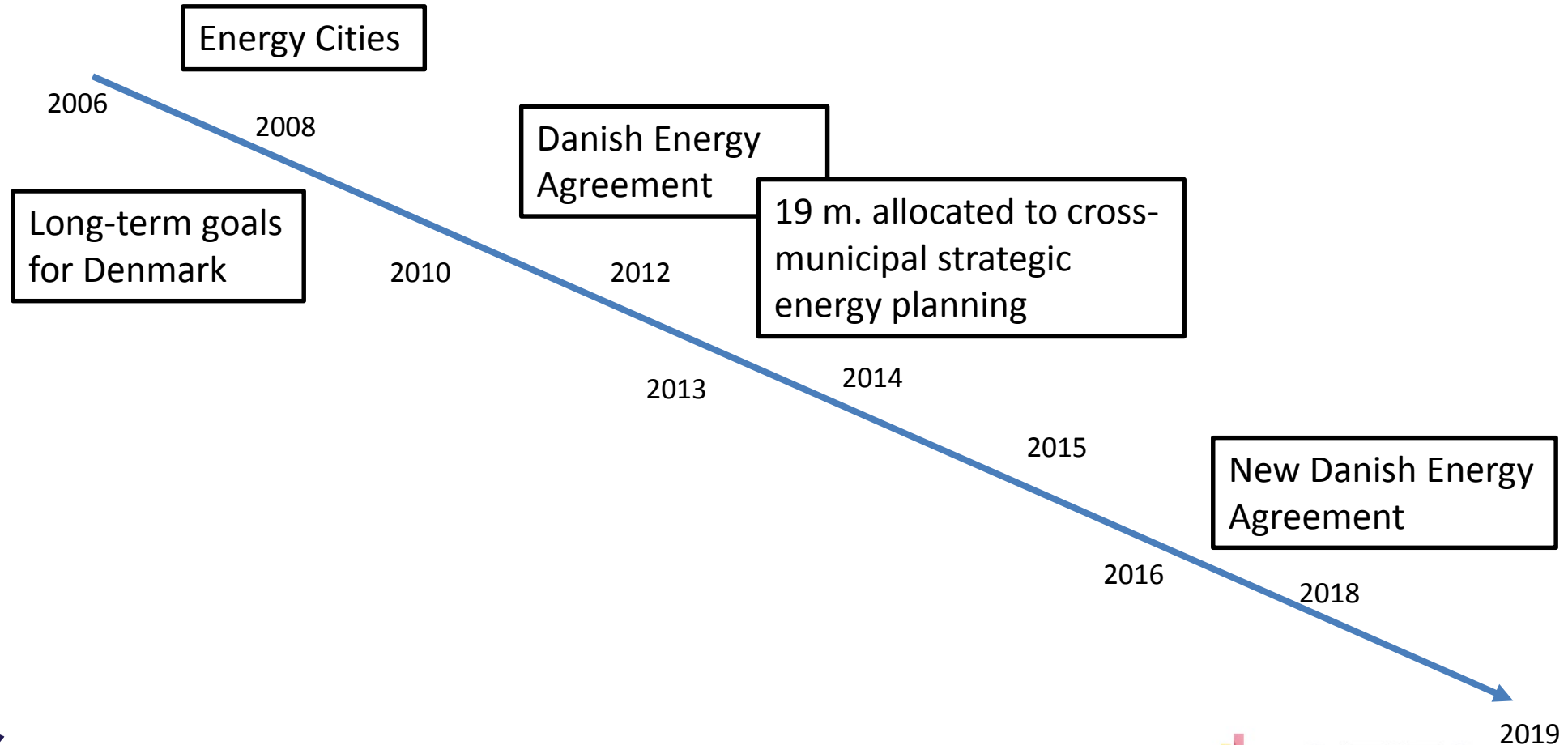


- Currently, there are several technical scenarios
- A missing focus on the implementation
- Strategic energy planning a way to a 100% renewable energy system through municipal energy planning



Strategic Energy Planning in a Danish context

The most important actions

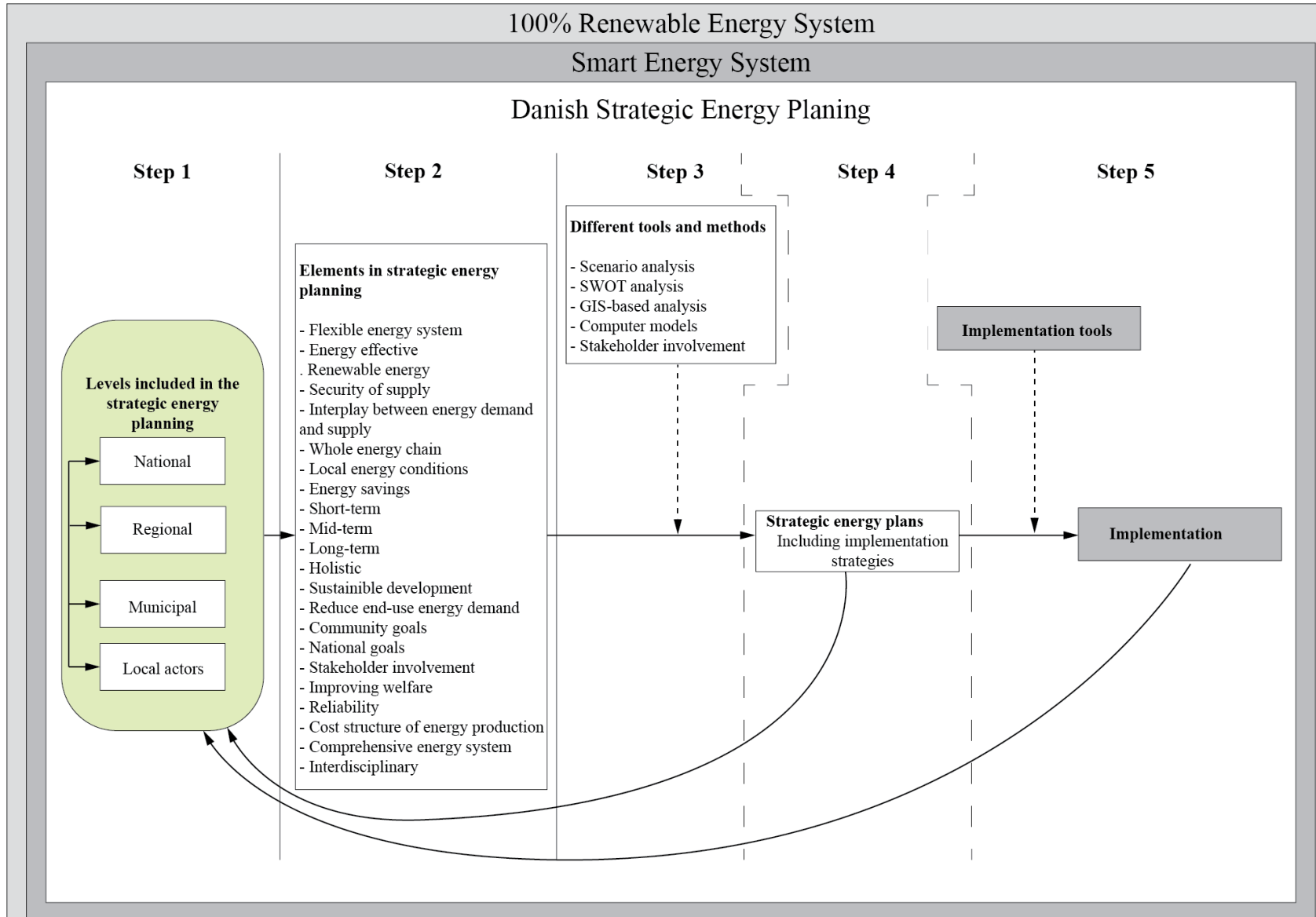


Planning for 100% renewable energy systems

Three types of planning today



Strategic Energy Planning



Central elements in strategic energy planning

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

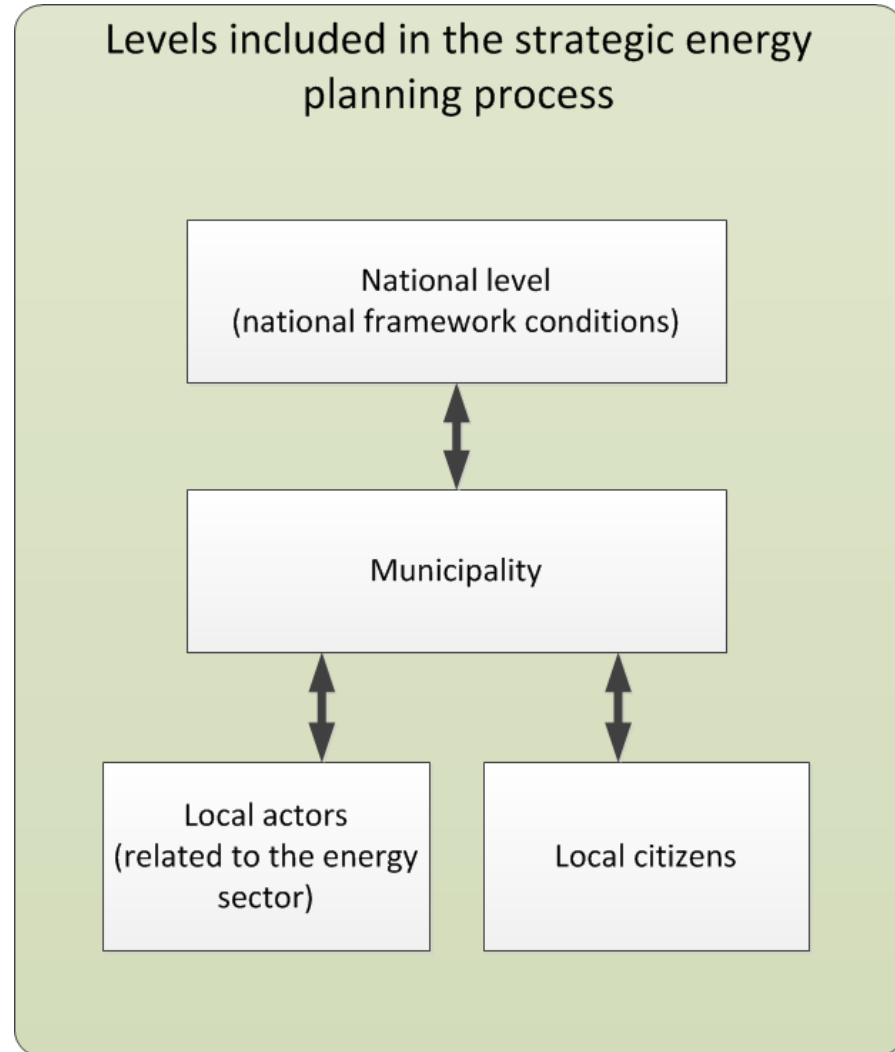


Importance of scenarios

- To the connection between local and national energy systems
 - Cities and municipalities do not have access to all energy resources and technologies
 - Avoid sub-optimisation
- To show consequences of different possible scenarios
 - Important in the dialog with local actors



Importance of coordination



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



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.



Things to consider in the planning to reach the national goals

- Allocated financial means for local energy and climate planning (including minimum requirements)
- Energy Agreement 2018 – regulatory free zones
 - Test of regulatory barriers for the coordination between energy sectors



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**



Thank you 😊

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