

# Integrating SDH in urban planning

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**HORSENS** KOMMUNE

## What's it all about

- Integrating SDH in Urban planning
  - The overall strategic energy planning in the municipality of Horsens (short version)
  - Background - Brædstrup District Heating (BDH) and their solar profile
  - The environmental assessment and planning process
  - Questions





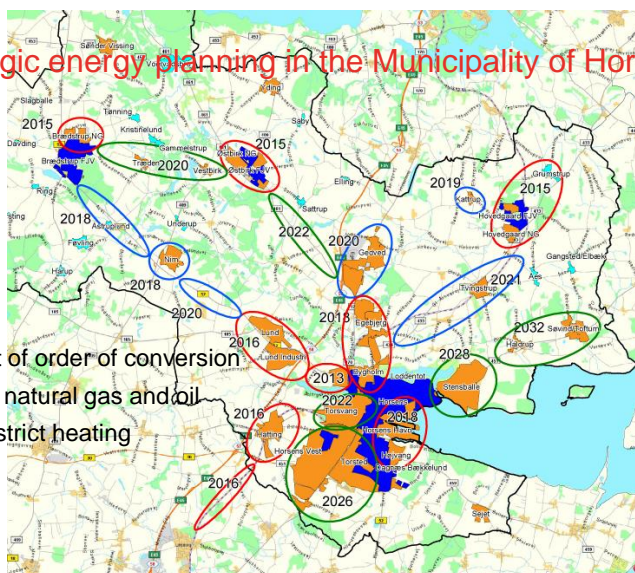
## Strategic energy planning in the Municipality of Horsens

- In the process of making a strategic energy plan
- The framework for the strategic energy plan is the National Danish energy- and climate goals (excerpts)
  - 30 % renewable energy in total by 2020 (will be 35 %)
  - 100 % renewable energy in electricity and **heat** by 2035
  - 100 % renewable energy in total by 2050
- And the fact, that
  - no new areas can use gas as collective heat supply by 1st januar 2013



## Strategic energy planning in the Municipality of Horsens

- Draft of order of conversion from natural gas and oil to district heating

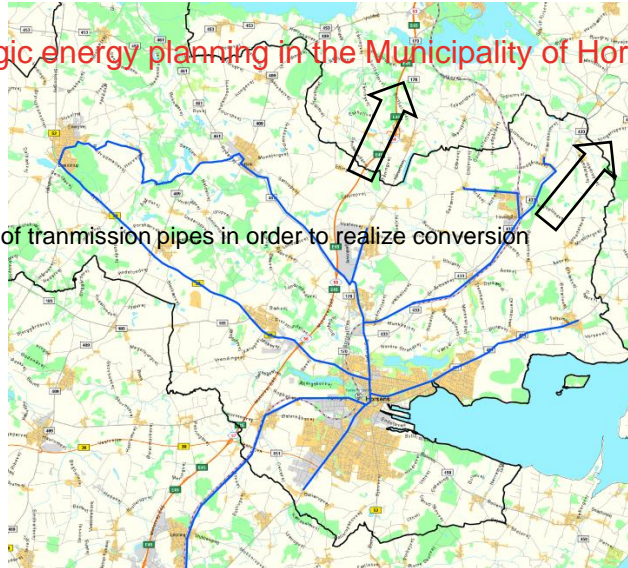


Signatur:  
■ Naturgas (25)  
■ Individuel forsyning (23)  
■ Fjernvarme (5)

Projektstart:  
■ 2013 - 2015  
■ 2016 - 2019  
■ 2020 - 2030



## Strategic energy planning in the Municipality of Horsens

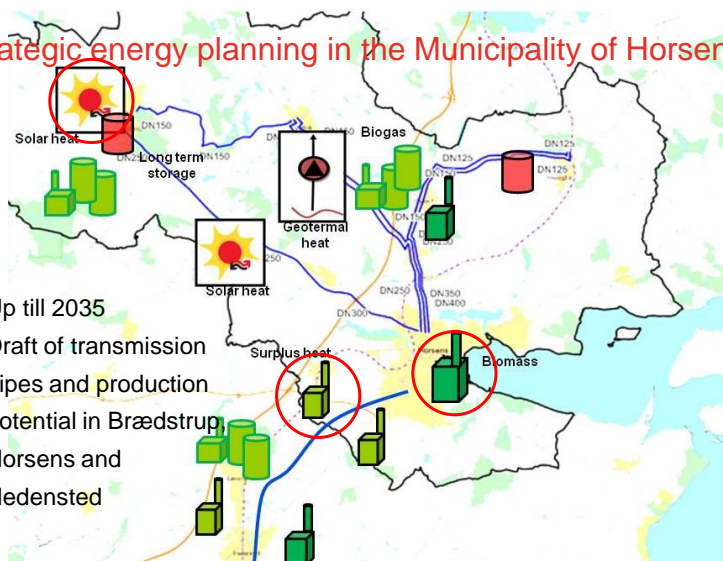


- Draft of transmission pipes in order to realize conversion

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## Strategic energy planning in the Municipality of Horsens



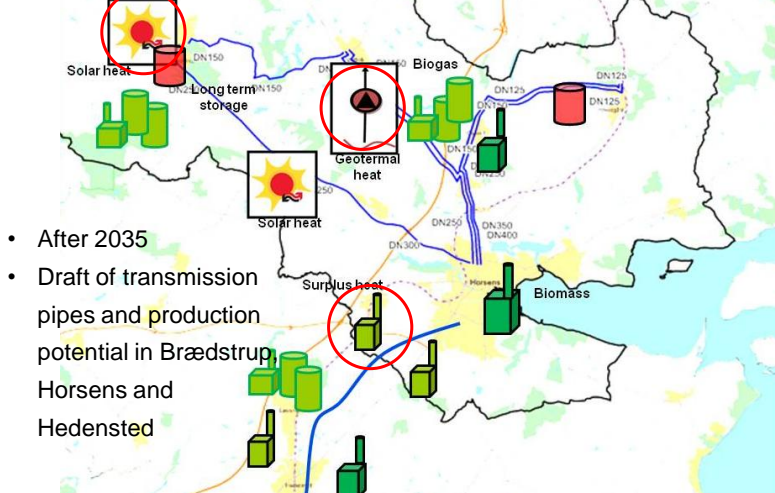
- Up till 2035
- Draft of transmission pipes and production potential in Brædstrup, Horsens and Hedensted

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## Strategic energy planning in the Municipality of Horsens



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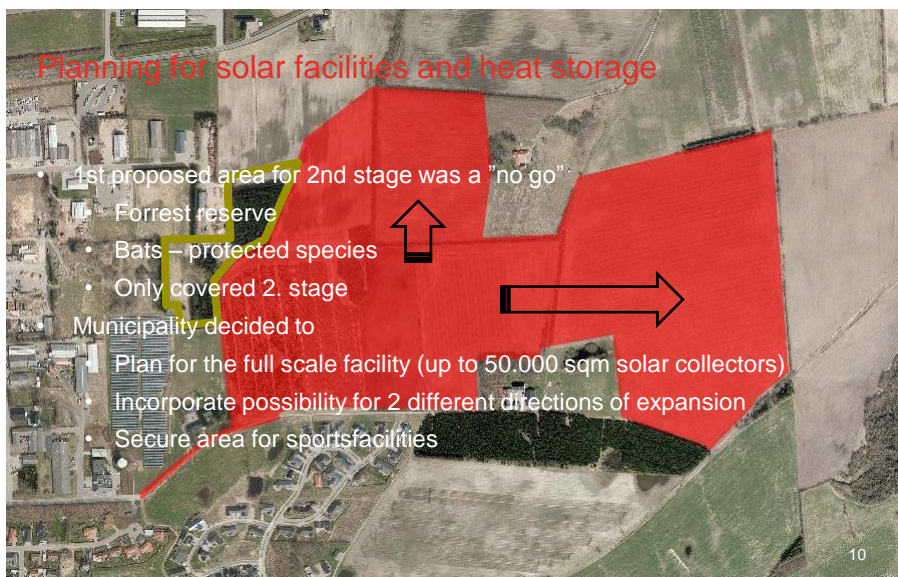
## Brædstrup District Heating



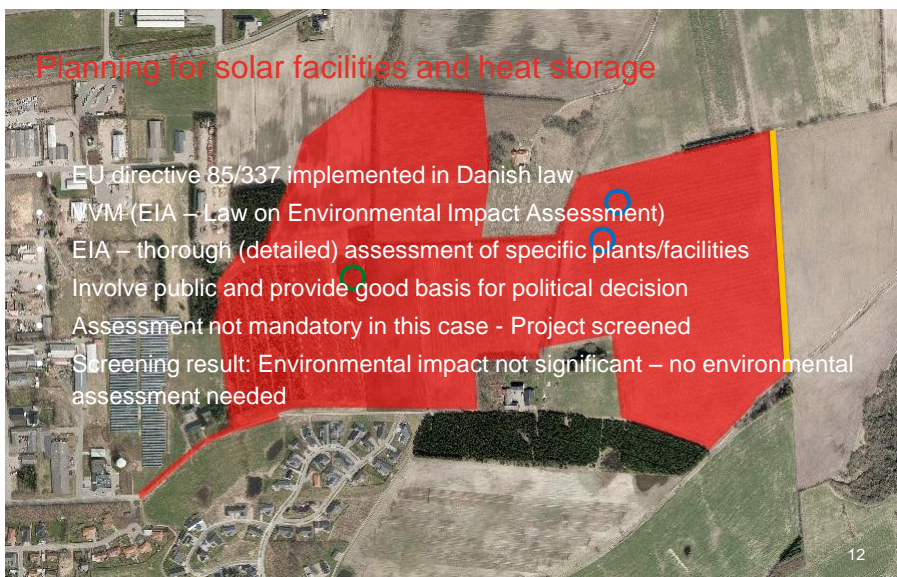
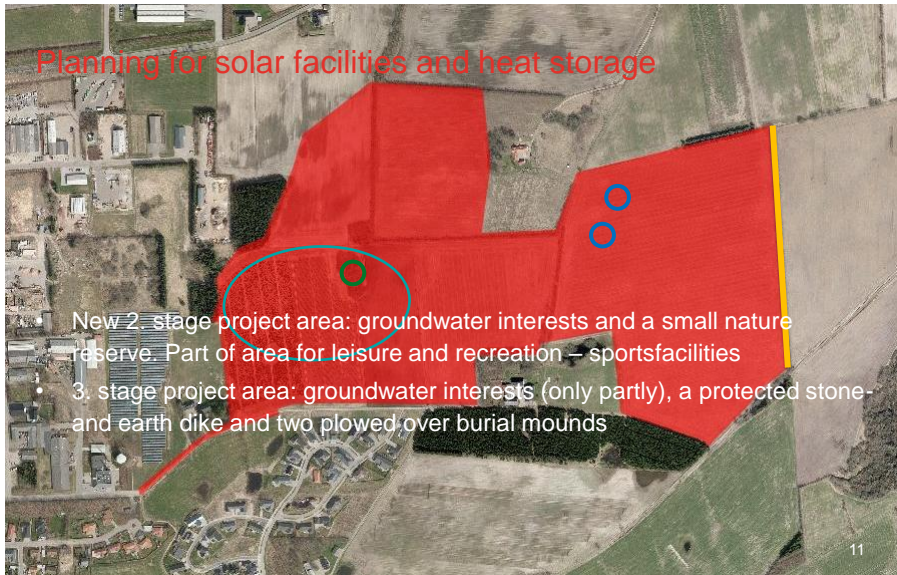
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- In march 2010 - request for an expansion including
  - 2nd stage of additional 10.600 sqm of solar collectors
  - A borehole for seasonal heat storage (summer production - winter use)
  - Vision for a 3. stage with a total solar collector facility of up to 50.000 sqm...
  - 2015?













## Planning for solar facilities and heat storage

- Conclusions from the environmental assessment (EAP):
  - Displace 9.000 ton CO<sub>2</sub> and produce 20.000 MWh (approx.)
  - 20-40 times the amount of energy pr. hectare compared to energy crop
  - Antifreeze considered environmentally harmless
  - Only decalcified water and bentonite (clay) used in seasonal heat storage
  - No significant visuel impact







## Planning for solar facilities and heat storage

- "Local plan" parallel to EAP
- The Local plan is a local "law" that
  - Defines the future use of the area
  - Defines provisions in relation to
    - Facilities - extends, heights, appearance etc.
    - Access - roads, paths etc.
    - Plantings - trees, hedge plantings etc.
    - Terrain modulation
    - Etc...



## Planning for solar facilities and heat storage

- Primary focuspoints for the plan for Brødstrup Sunpark
  - Secure planting of hedges
    - Reduce visibility of the facility
  - Determine species for heights, fauna and autumn colours
  - From terraced landscape to point-foundation following landscape topology
  - Preserving protected nature, stone- and earth dike and burial mounds
  - Securing public access and area for sportsfacilities
  - Anti reflex glass - lower visibility








### Planning for solar facilities and heat storage

- In the hearing procedure the municipality received 3 responses
  - New hedges
  - Optional hedges
  - Precision of access
- Finally the facility got
  - A permission to use the antifreeze on basis of EAP
    - Monitoring
  - Building permit
- Conclusion: Is it difficult to plan for solar facilities?



### Thank You!



Yesterday

today

Tomorrow?