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# Designing for the energy transition: bridging spatial and institutional design

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# Today

- 1| The issue
- 2| The answers
- 3| The conclusions
- 4| Questions & discussion





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# 1 | The issue





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# EO Weijers

Region: 'City Triangle' [Apeldoorn, Deventer, Zutphen]

415.000 inhabitants & 1100 km<sup>2</sup>

Energy Neutral in 2030





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# EO Weijers

A total of 24 consortia participated

Analyzed based on:

- Energy Neutrality
- Spatial Quality
- Business climate
- Governance
- Finances
- Innovation







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# Energy Neutrality

- An immense question!

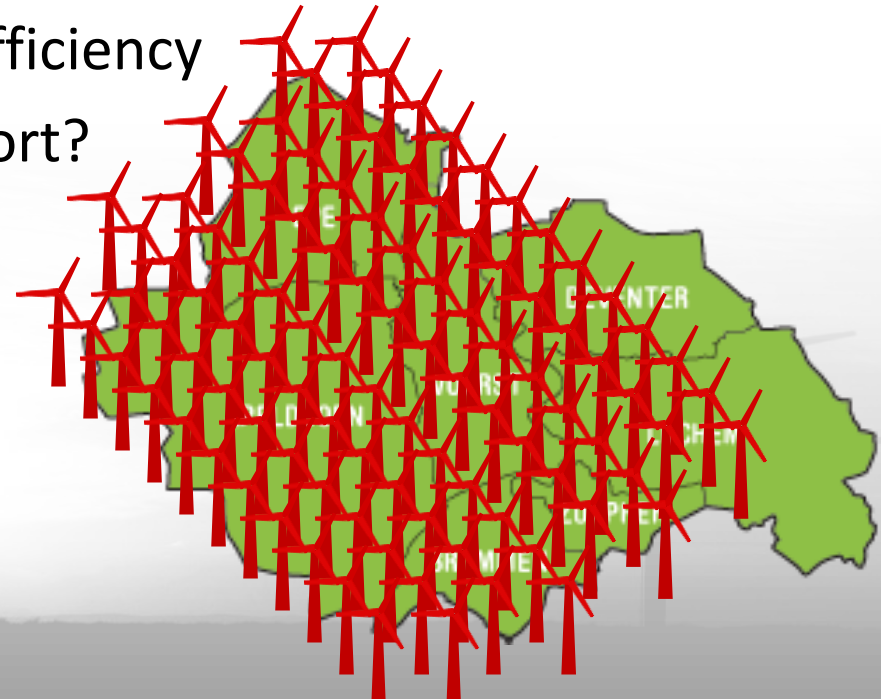




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# Energy Neutrality

- An immense question!
  - Roughly 60% of area full of biomass
  - Roughly 95% of area full of windturbines
- Or smart linkages & efficiency
- Or specialize and import?





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# Societal debates

- NIMBY (Not in my back yard)
- Social license to operate







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# Societal initiatives

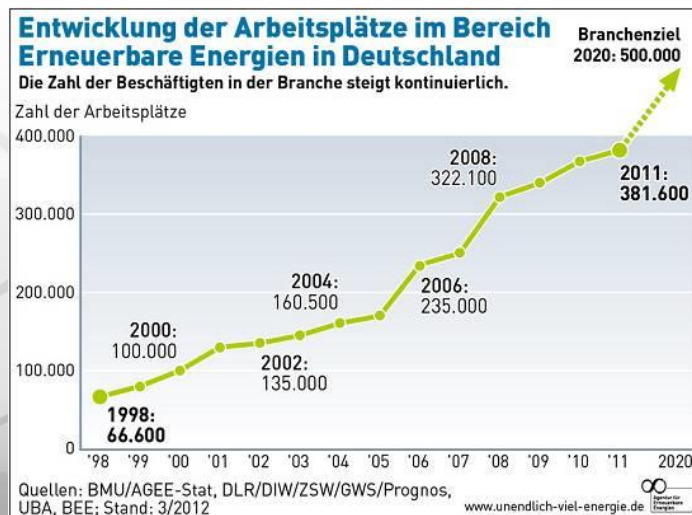




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# Societal potentials

- Synergies between alternative land uses and societal developments (ICT, Biobased economy, job market, demographics, climate change, etc.)
- Added value to local or regional development
- Combining alternative interests & local identity



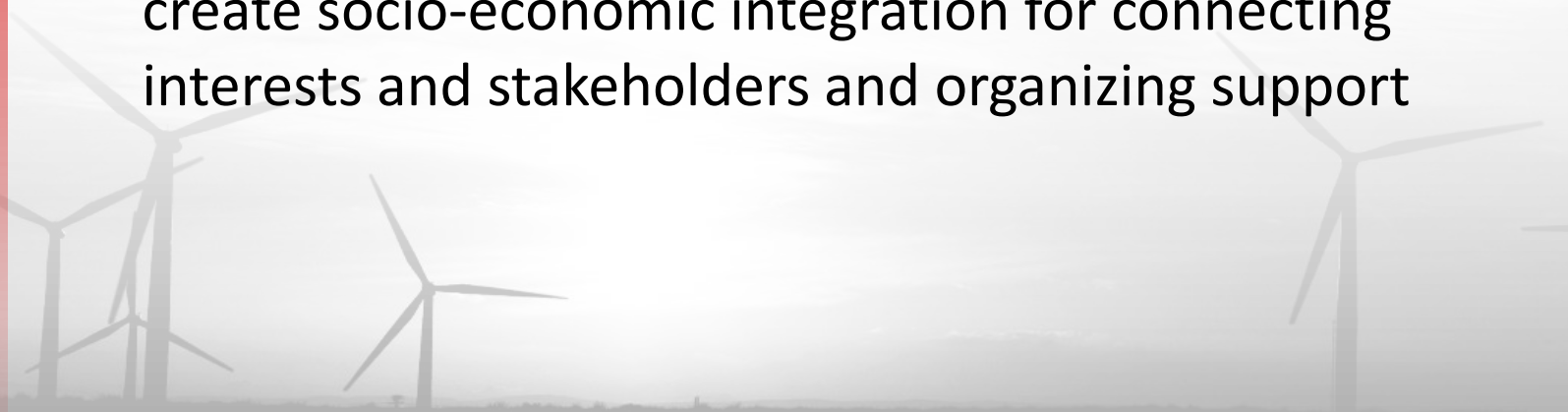


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# The energy transition is spatial

Understanding the energy system as embedded in the **physical** and **socio-economic** landscape

- Energy initiatives require spatial design: physical integration of functions and land uses
- Energy initiatives require institutional design: to create socio-economic integration for connecting interests and stakeholders and organizing support





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# Our Worry

Judith Innes [1995] 'planning is institutional design'

Dutch context:

- Rijksbouwmeester (state architect) [2006] 'institutional design is the design done by institutions'
- Outsourcing of design from government to consultants



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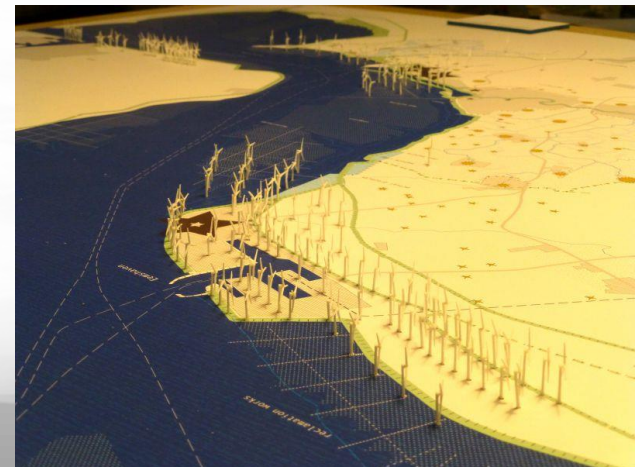
# Our questions

- Is spatial design as seen as an entry point to develop new institutional capacities by visioning and connecting stakeholders & interests?
- Is institutional design considered to assist in developing improved spatial designs



Energiewerkplaats Fryslân  
*MienskipsEnergie*

**IABR-2016-**  
**THE NEXT ECONOMY-**







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## 2 | The answers





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## Key lesson 1: Energy is unexplored

- Amount of energy needed was explicitly addressed by none of the consortia
  - Also, none of the consortia entered into a discussion whether the goals of energy neutrality was realistic
  - No discussions took place upon whether the spatial scale of the City Triangle was adequate for energy neutrality
- 
- While the data was available!
  - While some academic lit. is out there





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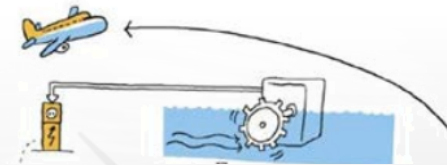
## Key lesson 1: **Energy is unexplored**

- Most focused on small scale ideas that would not produce more than a few percentage points or have a specific focus

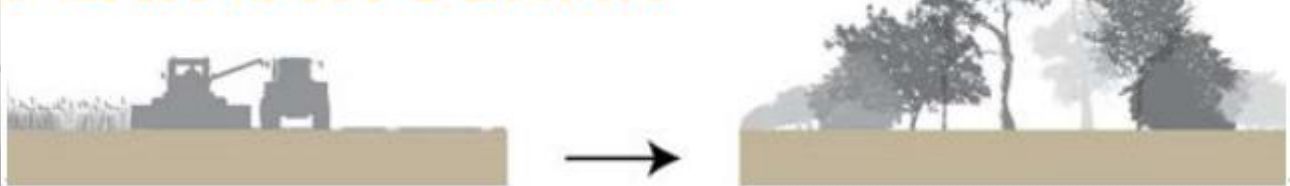
### LOVE ELECTRIC FESTIVAL



### CLEAN ENERGY IN AVIATION



### PLAN ORTOLAAN





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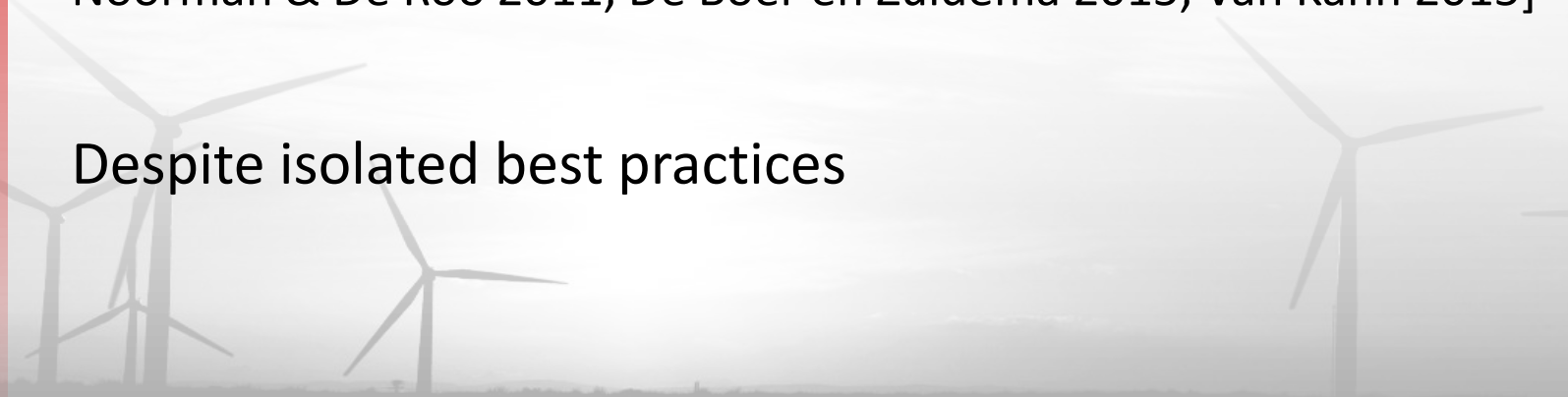
## Key lesson 1: **Energy is unexplored**

- Energy remains new and unexplored in spatial design (technical and size of challenge)
- We miss opportunities for synergies and new visions

Despite rising academic literature

[Pasqualetti 2001, Stremke & Van den Dobbelsteen 2012, Sijmons 2013, Noorman & De Roo 2011, De Boer en Zuidema 2015, Van Kann 2015]

Despite isolated best practices





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## Key lesson 2: **Energy is hardly integrated**

- Recognizing the specific qualities as a basis for energy generation occurred in only five cases
  - Waste heat from paper factory (Doorstromen, Schakelen)
  - IJssel river (Blauwe Kracht en Hanzestad Zutphen)
  - Use local land uses (Schakelen)
  - Combine production and consumption (De Groene Fabriek).







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## Key lesson 2: **Energy is hardly integrated**

- Only five out of 24 come even somewhat close to a more comprehensive vision of how energy might be integrated in and add value to the region





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## Key lesson 2: **Energy is hardly integrated**

- Focus is to avoid intrusion to existing landscape (limit visibility)
- Only few see it as added value (tourism, awareness, social)
- Real integration with local qualities is limited





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## Key lesson 2: **Energy is hardly integrated**

- Only few even addressed the impact on the job market
- Only few addressed linkages with existing economic and investment potentials
- The main financer is the government

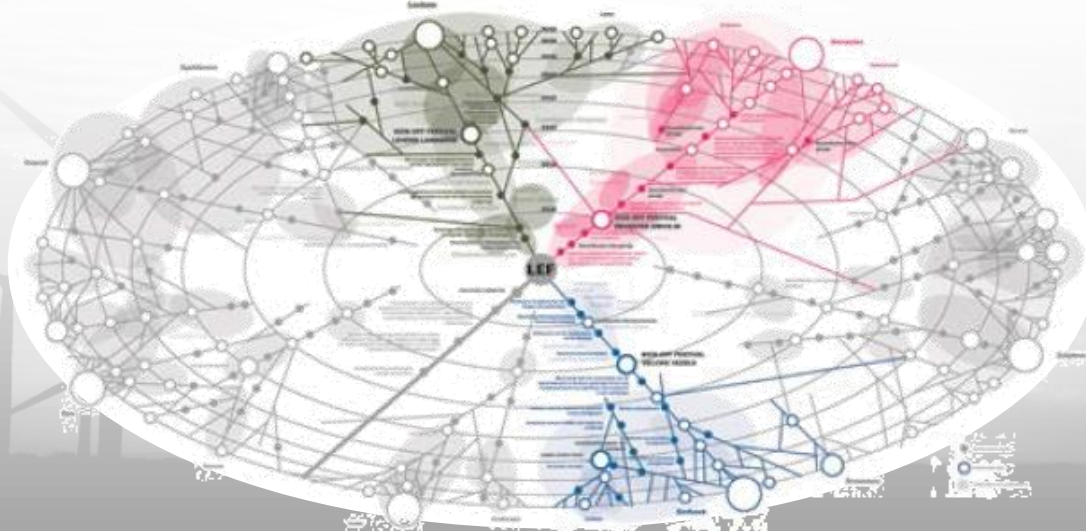




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## Key lesson 3: **Institut. design overlooked**

- Half confide in bottom-up self-organisation to do the work for us – visions on content not needed...
- And in almost all the cases this remains a ‘black box’, isolated from existing institutional structures
- Few do propose ideas, such as platforms of cooperatives or regional energyboards



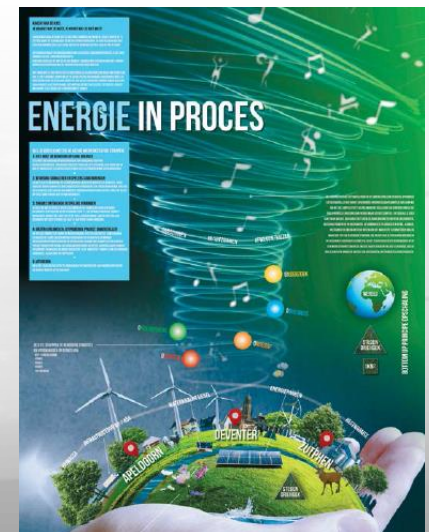




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## Key lesson 3: **Institut. design overlooked**

- A quarter does not even address governance or institutional issues! [solely spatial designs]
- Three others are only a process tool without spatial design
- Classic view of relationship government – civil society – companies in almost all examples







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## 3 | Conclusions





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# Main conclusions

- The community of planners and designers in the Netherlands is not connecting spatial and institutional design
- Energy is for most still difficult to envision, unexplored and underestimated
- The risk is that we fail to develop realistic visions and crucial social and spatial innovations for coping with the energy transition



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## 4 | Questions & Discussion



**Thank you for your attention!**