



Kennisactie  
programma  
Water

samen vernieuwend organiseren

## AMS Science for the City, Energy & Spatial Changes

*Nicolien van der Grijp, Vrije Universiteit Amsterdam, WP3 Leider: Verdeling van verantwoordelijkheden en risico's*

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### **Sven Stremke (WUR):**

National energy landscape. Spatial implications of energy provision. Energy infrastructure will come into our daily landscape. Currently, a low density of energy provision and resources. Still a lot of energy sources needed. 200 petajoules of solar energy will mean all hands on deck. Heat represents 30% of energy demand in the Netherlands. Lack of space in NL to sequester emitted CO<sub>2</sub>.

Energy consumption is very much related to economic growth and population growth. Cities ought to focus on energy demand reduction.

Urses plus programme - NOW, Shell, AMS, etc.

Storing energy in urban households locally - City-zen

Battery for energy storage:

- Maximizing individual autonomy from the grid
- Collective autonomy
- Collective action for public benefit
- Collective action for private benefit

Wind power makes noise, needs cohabitation strategies

### **Martin Bloemendaal:**

Thermal energy storage in aquifer, consisting of sandy layers with water. Challenge is optimal use of aquifer space. There is uncertainty about interactions in the subsurface. How can this uncertainty be reduced?

### **Andy van den Dobbelsteen:**

City-zen supports cities across Europe with the energy transition

### **Bob Mantel (municipality of Amsterdam):**

Role of the city in the energy transition - cities are mandated to act

### **Pauline Westerbos (02025):**

Wij krijgen kippen goes further under the name 02025. Its purpose is to have Amsterdam on clean energy in 2025. Challenge is to do interventions to accelerate the energy transition.

## Discussion: what is happening in Amsterdam?

**Bob Mantel:** in 2016 decision is taken to phase out gas. We should not exaggerate what this will mean in daily life.

**Pauline:** will be an effort including many stakeholders. There are already good examples at a small scale. Main technologies are there.

**Pallas:** Offers will be made by corporate world to consumers / citizens. Challenge will be how to be inclusive.

**Andy:** is working on a roadmap for Amsterdam. It is not going to be one technology by multiple ones. This routekaart towards 2050 is part of the City-zen project. Waste incineration is not very circular. High temperature heat should go to the historic city centre. The city should be directive what should happen at a bigger scale.

**Pauline:** we need to speed up and should work together with people in neighbourhoods on finding alternatives for heating houses. Most electricity will come from the wind parks in the sea.

**Eleanor van Kleef:** is busy with Gashouder project. Expects to get approval soon after waiting 5 years. I do not see the government of Amsterdam moving. Main problem is that nearly nothing is allowed in city centre. Should move to green gas in the city centre.

**Marko Broekman (Shell):** will need a mix of top down and bottom up technologies. Scenario's zoals grand design en maximaal decentraal. Superpolders with big energy production as an option. Ambition of 100% energy neutral is not realistic in 2040. Connecting to other issues is very important. Learn from best practices and frontrunners. For example the region of Sienna (or: Vienna?) is frontrunner. However, population density is low amounting to 100 inhabitants per km<sup>2</sup>. In comparison, Amsterdam has a high density of 5,000 inhabitants per km<sup>2</sup>.

**Leonie van Beuken (Port of Amsterdam):** is head of Spatial dept. Coal will be phased out in 13 years. This is a hard deadline. Refers to the creation of Haven-Stad, which will have the size of Haarlem or Maastricht. Are now working on the relocation of the clients of the port. Even solutions at sea will have implications on land.

**Marko:** the Netherlands will remain a net importer of energy.

**Sven:** in the end people will embrace interventions. Not only the sea but also the land will change prominently.

**Bob:** collection action for public benefit. People-focused ownership of the energy system.

**Pauline:** when are we going to build 4,000 windmills in the port area?

**Arjan van Timmeren:** integrated approach is needed. From NIMBY to IMBY. We should start to think in actions needed. Urgency is high.