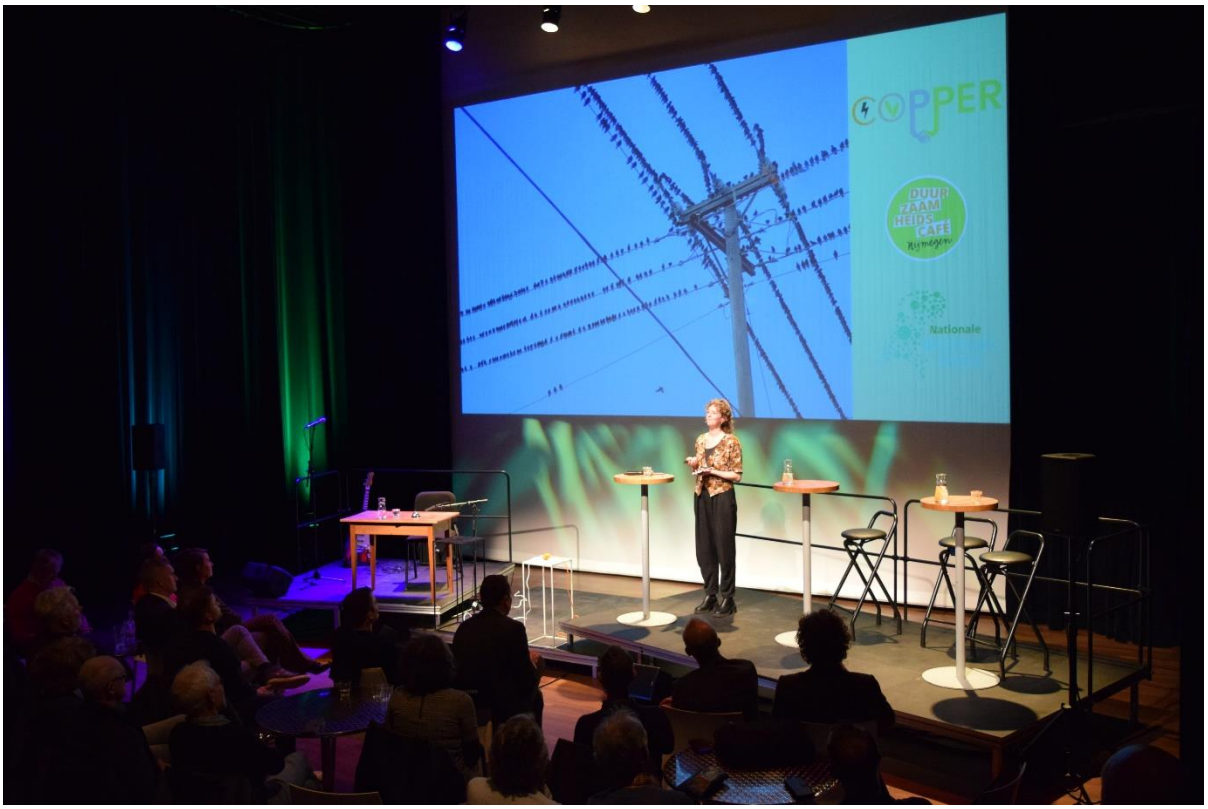
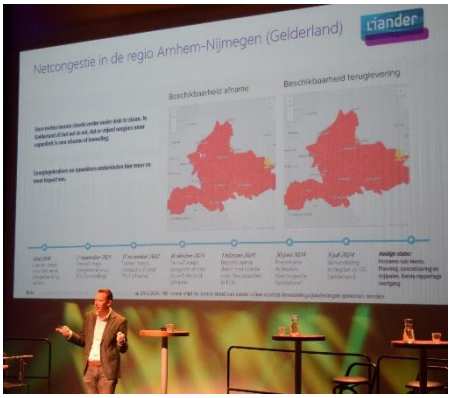


Report Sustainability Café 12-11-2024: “Help, the power grid is full. Now what?”

Text from: https://duurzaamaandewaal.nl/2024/duurzaamheidscafe-help-het-net-is-vol-en-nu/ (29 November 2024). Photos by Martijn Gerritsen.

What happens when the power grid gets overloaded? Our audience experienced it briefly: alderman Tobias van Elferen opened both this Sustainability Café and the Energy Four Days by plugging a power plug into a socket - after which all the lights went out. Climate mayor Volkert briefly told us what this now seven-day event organized by city residents is all about. Tonight's Sustainability Café, in collaboration with COPPER, is all about grid congestion: how an overcrowded power grid stands in the way of the energy transition.

Crash course on grid congestion



Casper Vogelaar of grid operator Liander gave a brief explanation of how the electricity grid works, supported by this video. The core of the problem is that we have started to generate and use more electricity faster than the grid can handle. This 'traffic jam on the grid' occurs because Liander and other grid operators cannot expand at the same pace. Personnel and equipment shortages make the situation even more difficult. Nijmegen-Noord was the first place in the Netherlands where grid congestion occurred.

Measures against grid congestion

What is already happening?

- Tennet (high-voltage grid).

  Tennet is working on the Gelderland Grid Congestion Action Plan, which is aimed at 2029. Goal: absorb a capacity shortfall of 100MW without burdening small consumers.

    - Public charging stations: prefer not to charge during rush hour.
    - Grid-efficient installations existing building: hybrid heat pumps and heat grids over heat pumps.
    - Grid-conscious housing construction: in new projects take more account of the load on the grid.

- Liander (low-voltage grid)

  Liander will have to double the number of transformer houses and is doing this in cooperation with the municipality through a neighborhood approach.

- What can you do yourself? Use energy when it is generated:
    - Wash during the day
    - Not charging the car directly when you get home from work (when everyone else does)
    - Use smart appliances

Issue for the municipality of Nijmegen

Joke Westra, lecturer in energy transition at Windesheim, was allowed to press the bell during the conversation between Liander and the alderman to ask questions or make an addition. The municipality of Nijmegen wants to become more sustainable, but is running into the limitations of the full power grid. Many companies want to become more sustainable, but cannot be connected. Taking neighborhoods off the gas is also proving difficult to achieve. Even Dar, Nijmegen's waste management company, cannot build a charging station for electric cars and therefore cannot drive cleanly.

Joke presses the bell! “More and more and less - explain, how is that possible? She emphasizes that it simply doesn't work to electrify all demand. So demand has to come down. Tobias van Elferen explains that Nijmegen is also working on this.

There is a long queue for new connections. Can we make choices locally? The alderman explains that social prioritization is possible, but that these priorities are made at the national level by the ACM. This makes it difficult to steer. “And that's not very democratic.”

Good example from Nijmegen: Smart Energy Hub in TPB West

The inland port area TPN West is developing a Smart Energy Hub to balance local energy generation and demand and create a local energy system - thus relieving the regular grid. Meanwhile, seven entrepreneurs are continuing to work toward this goal. They believe in an energy-neutral future, but encounter many obstacles as they pioneer new solutions. A wonderful initiative that deserves the Sustainable Relay baton!

Changing behavior for an energy positive neighborhood

Spatial planner Henk-Jan Kooij of Radboud University's COPPER research project investigates the spatial and social dilemmas of energy transition. He emphasizes the importance of good communication to citizens.

How do we stimulate behavioral change? A financial incentive seems effective. There was a discussion about the proposition: “Households that heavily tax the grid should pay more for their connection.” Opinions on this were divided; some felt that forerunners who were the first to put solar panels on their roofs should not be penalized, while others wanted large consumers to pay more.

The second proposition reads, “I like the idea: forming an energy company with my neighbors.” What if the neighborhood generates and stores energy together? The audience is divided. Joke Westra suggests “I wouldn't want to think about having to consult with my neighbors about their energy consumption”. Henk-Jan Kooij paints a more positive picture: “You can outsource the implementation to professionals.” Having your own energy community *does* offer the possibility of maintaining autonomy in the energy transition.

Plenty to talk about - around the Smart Grid table of the HAN University of Applied Science, where we can see for ourselves the effect of placing wind turbines, transformer stations, and solar panels on the grid.