

Residential Power

Designing for a Resilient Energy Future



The municipality of Eindhoven aims to create 40.000 new houses as a reaction to the housing shortage. However, Eindhoven is currently experiencing grid congestion which highly impacts the development of the city. The grid operator had to announce a connection stop, meaning new and upgraded connections will face significant delays until grid reinforcements are completed.

Grid congestion occurs when the electricity grid reaches its maximum capacity and cannot transport all the electricity that is being generated or consumed at a specific time and location. This mainly happens when many households and businesses use electricity simultaneously, for cooking, heating, washing, charging EV's, etc. or when large amounts of renewable energy, such as solar power, are fed into the grid.

As residents can play a major role in reducing peaks in shifting their energy consumption, we invite you to come with a meaningful and supportive solution that both will inform and motivate consumers to shift their energy usage.

How might we make local electricity availability visible and understandable for residents, and encourage them to adapt their energy use to the available supply?



Criteria

- **Focus** on one of the following scenarios:
 - **Year round** (4–7 pm shortage)
 - **Wintertime** (8–10 am shortage)
 - **Summertime** (11 am–2 pm surplus)
- Create a **physical prototype for the Genderbeemd neighbourhood**. This may be a technical product, digital tool, physical facility, activity service, or a combination of these.
- Your prototype must **demonstrate how the solution works, why residents would participate**, and approximately **how much peak load can be reduced**.
- The design can be **used or co-owned by everyone in the neighbourhood**, regardless of whether they own or rent their home.