



Opportunities for off-grid houses with hydrogen

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Agenda

- Introduction to off-grid energy systems
- Workshop



Reasons for off-grid systems

- When there is no grid or the grid is limiting.
 - Example: Gotland, the largest Swedish island, located in the Baltic Sea
 - Limited transmission capacity to the mainland and on the island's internal grid
 - Has reached a point of total stop for development of new wind and solar power.



Reasons for off-grid systems

- Example: Malmö
 - Problems with power peaks in the grid
 - The grid owner needs to turn establishments of new businesses down, since they can't secure delivery of electricity



Reasons for off-grid systems

- Example: outdoor cabins (no grid)
 - Cabins for hiking trails in the mountains
 - Emergency cabins
 - Autonomous weather stations
 - Etc.
- Example: Remote islands (no grid)



Reasons for off-grid systems

- To become self-sufficient in energy and not depend on an electricity supplier
 - Unique case in Gothenburg, Sweden
 - Hans-Olof Nilsson
 - Pioneer
 - Founder of a one stop shop for off-grid energy solutions





On the 19th of March 2015, one connection was cut



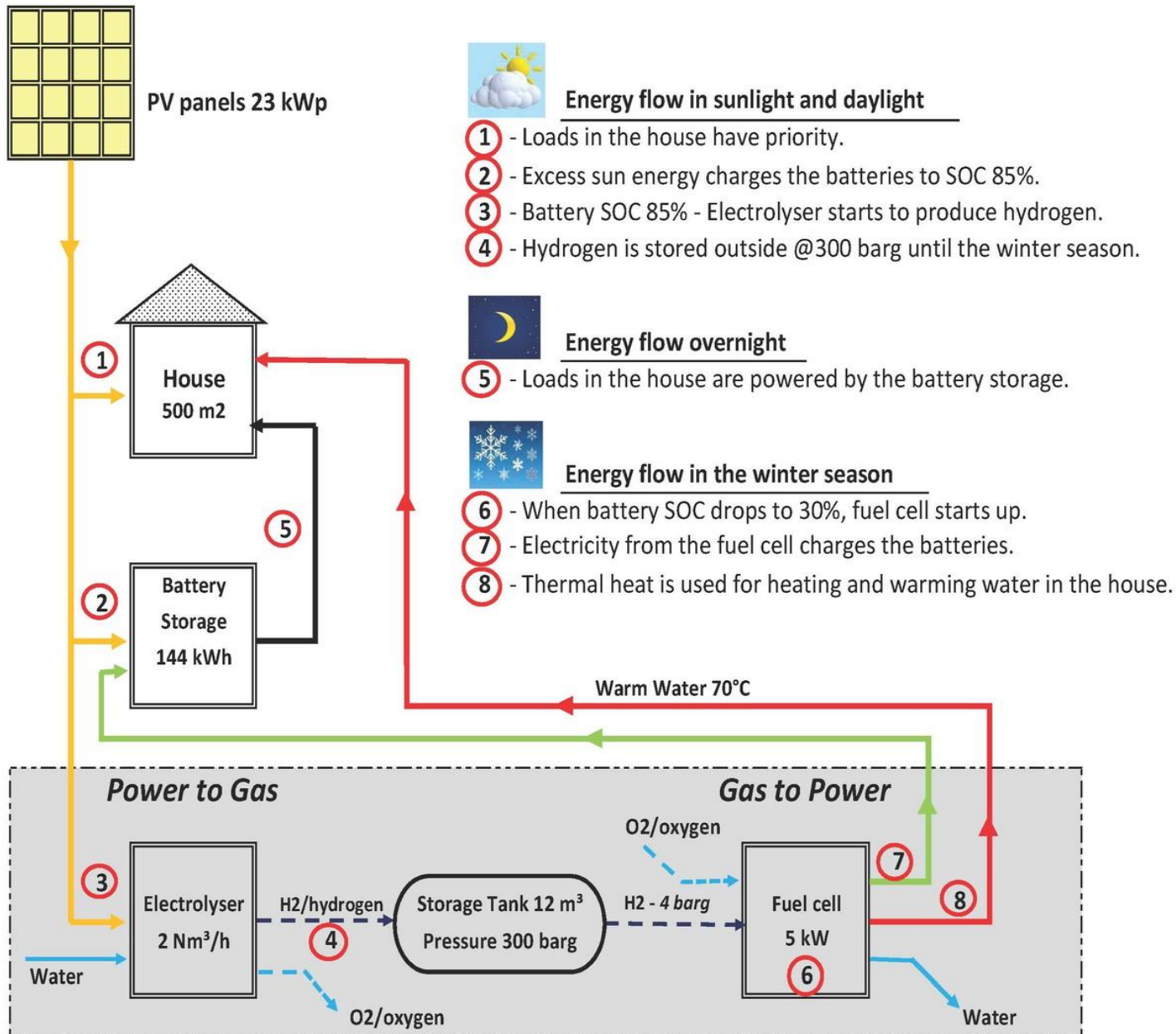
SELF SUFFICIENT YEAR ROUND WITH STORED SOLAR ENERGY



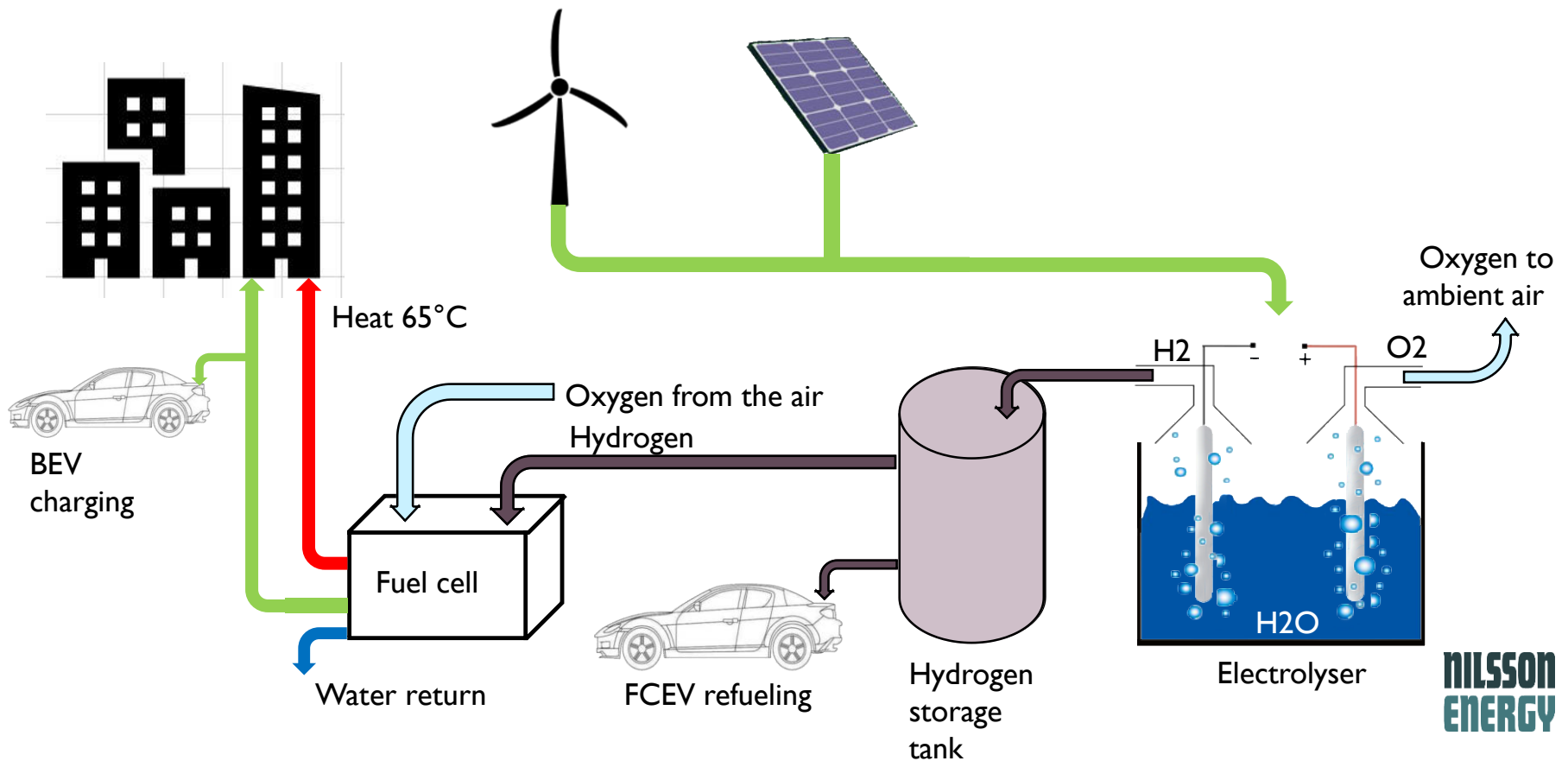
SURFACES FOR HARVESTING SOLAR ENERGY



Power to gas installation keeps a family home and their EV's running around the year



WIND & SOLAR ENERGY STORED IN HYDROGEN FROM WATER



EQUIPMENT FOR THE ENERGY SYSTEM



Electrolyser

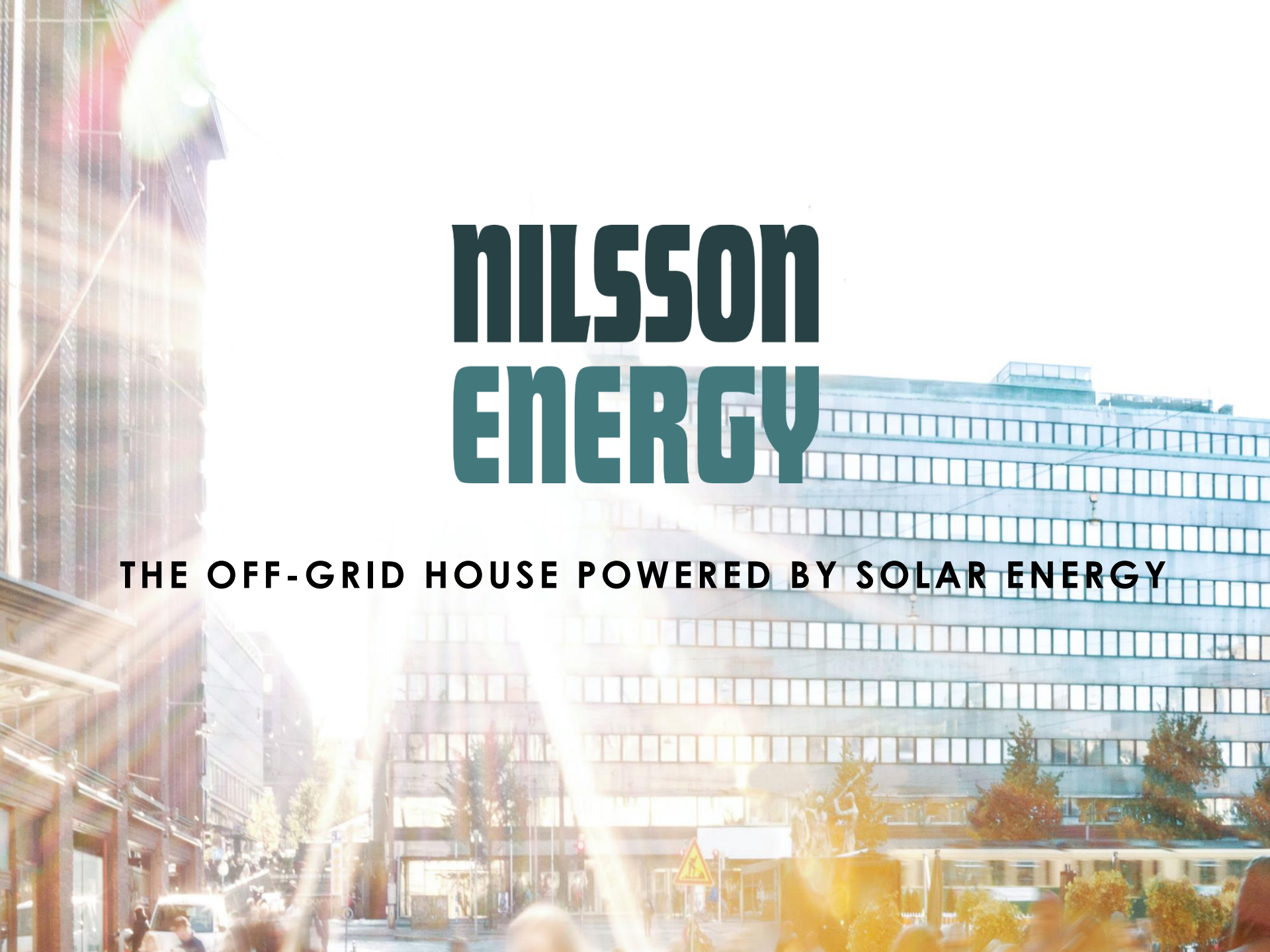


Microgrid control
system



Fuel cell system
and batteries

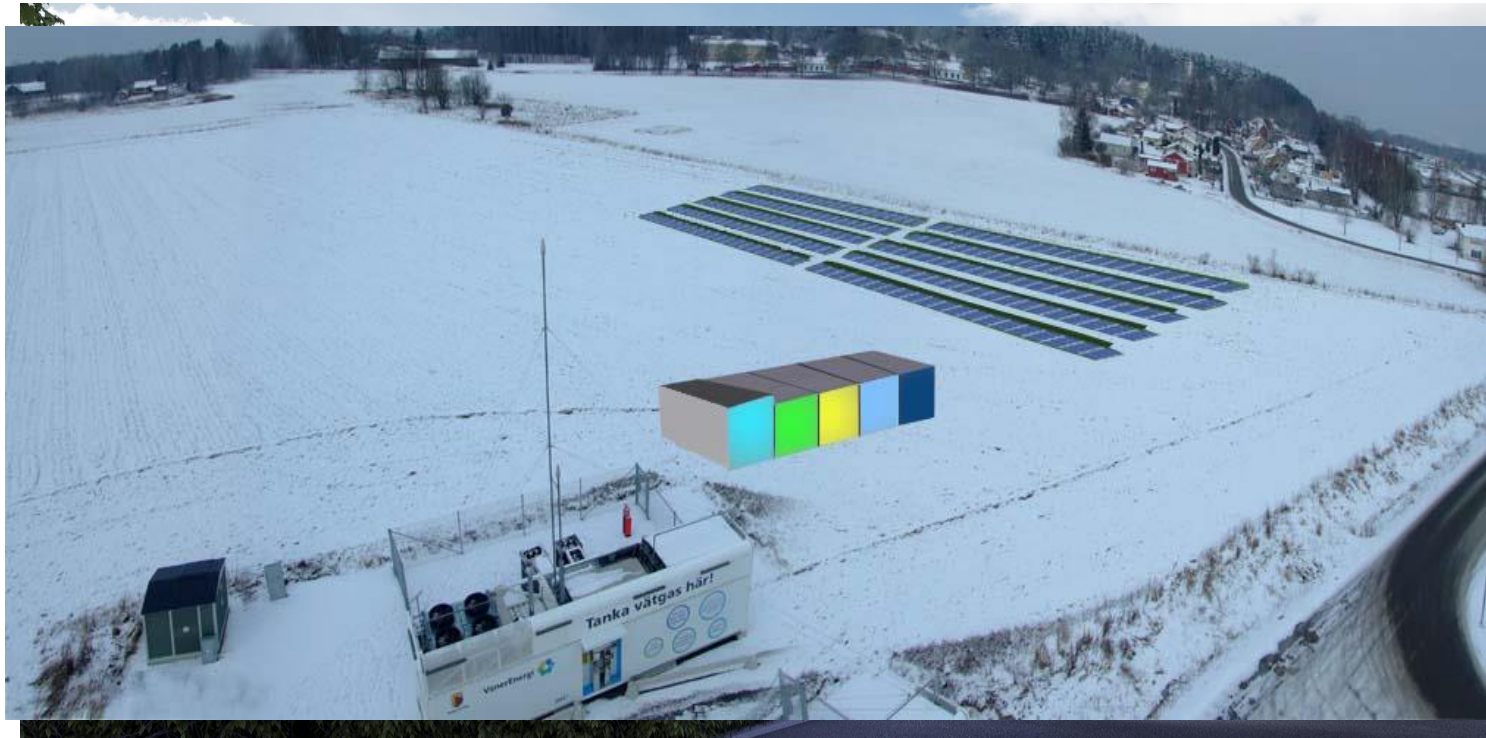
Hydrogen storage outside



NILSSON ENERGY

THE OFF-GRID HOUSE POWERED BY SOLAR ENERGY

OTHER OFF-GRID INSTALLATIONS BY NILSSON ENERGY





Workshop

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Questions for discussion

1. Who are the potential stakeholders for investing in off-grid systems?
2. How much (or how many percent of the house's value) would YOU be willing to pay for your house to be off-grid?
3. Do you know of any similar projects or cases, please list them.



Thank you!

Anna Alexandersson and Anna Cornander

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