

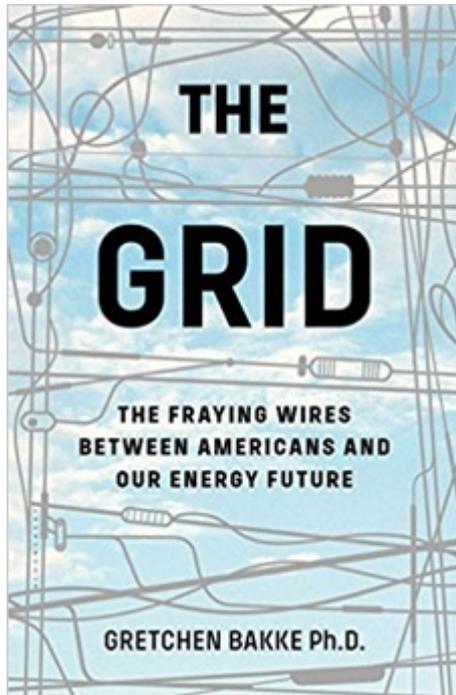


**HEIMDALL**  
POWER

MAX POWER  
MAX  
CONTROL

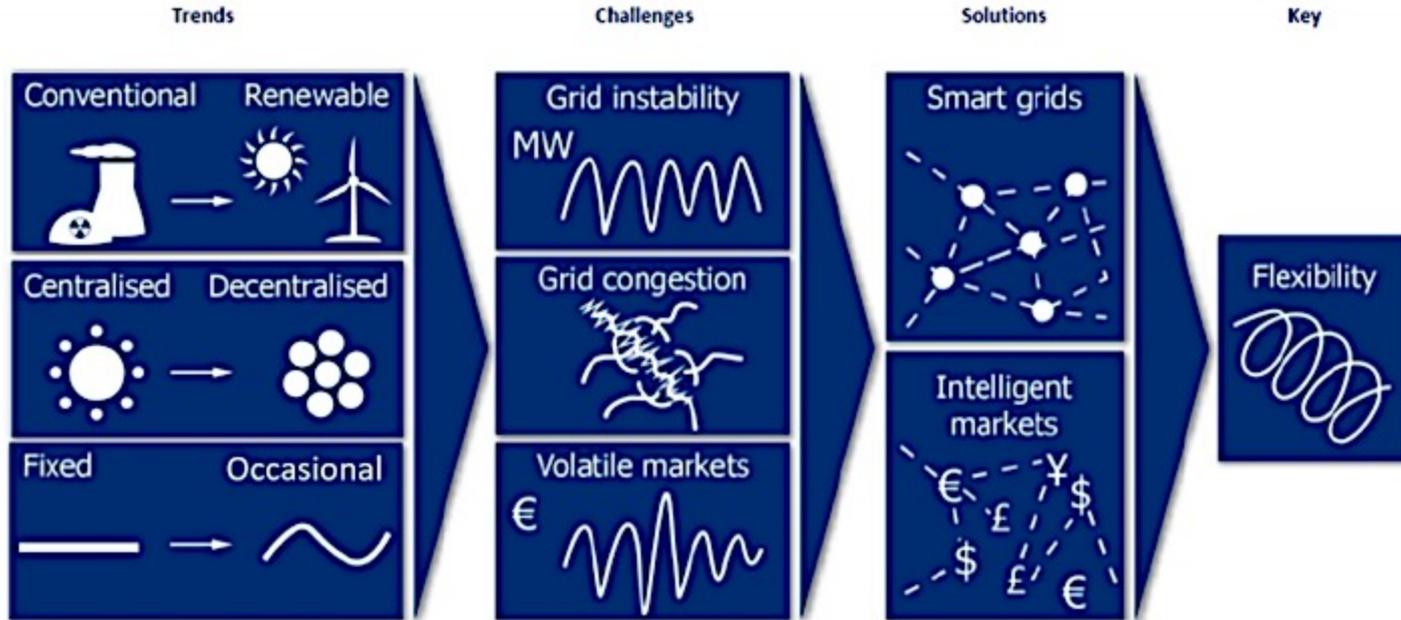
Brage W. Johansen, CEO  
February 2018

# The power grid has major challenges



"America's electrical grid, an engineering triumph of the twentieth century, is turning out to be a poor fit for the present. It's not just that the grid has grown old and is now in dire need of basic repair. Today, as we invest great hope in new energy sources--solar, wind, and other alternatives - **the grid is what stands most firmly in the way of a brighter energy future.** If we hope to realize this future, we need to re-imagine the grid according to 21st century values."

# The Utility and Grid System



# The future grid



Today

Static  
Slow  
Stupid  
Fossil  
Weak



Tomorrow

Dynamic  
Fast  
Smart  
Green  
Powerful

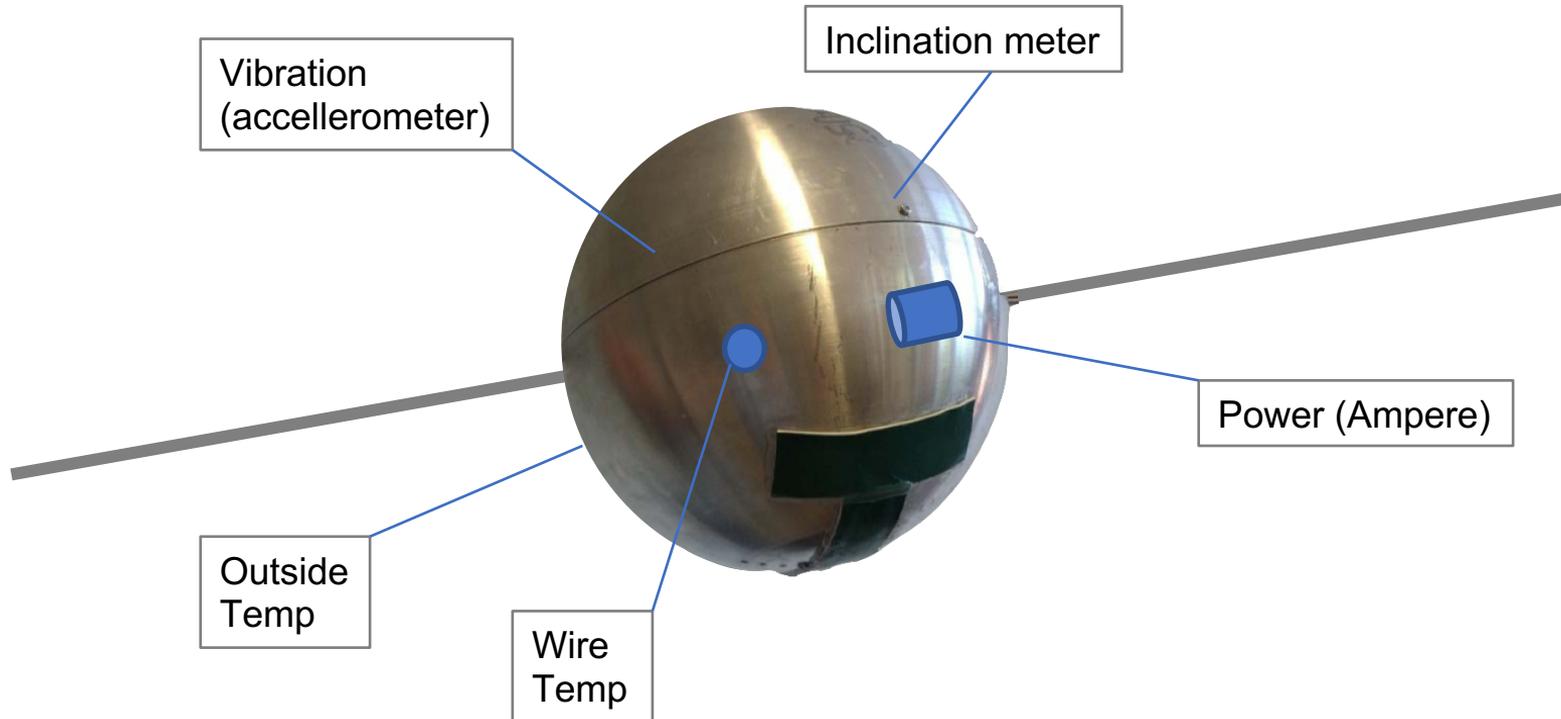
MAX POWER. MAX CONTROL. Max flexibility.

We put sensors on the grid  
and make the grid  
intelligent,  
Dynamic,  
Live longer,  
and Ready for the **green** shift.



**HEIMDALL**  
**POWER**

# The NEURON

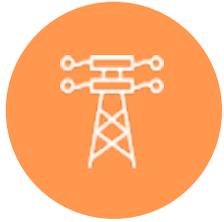


# Pilot system Installed

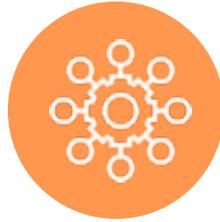
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# What grid owners can do with grid 2.0



reduce the electrical losses in the grid.



run the grid more dynamically, manage bottlenecks and optimize throughput



optimize investments in the grid.



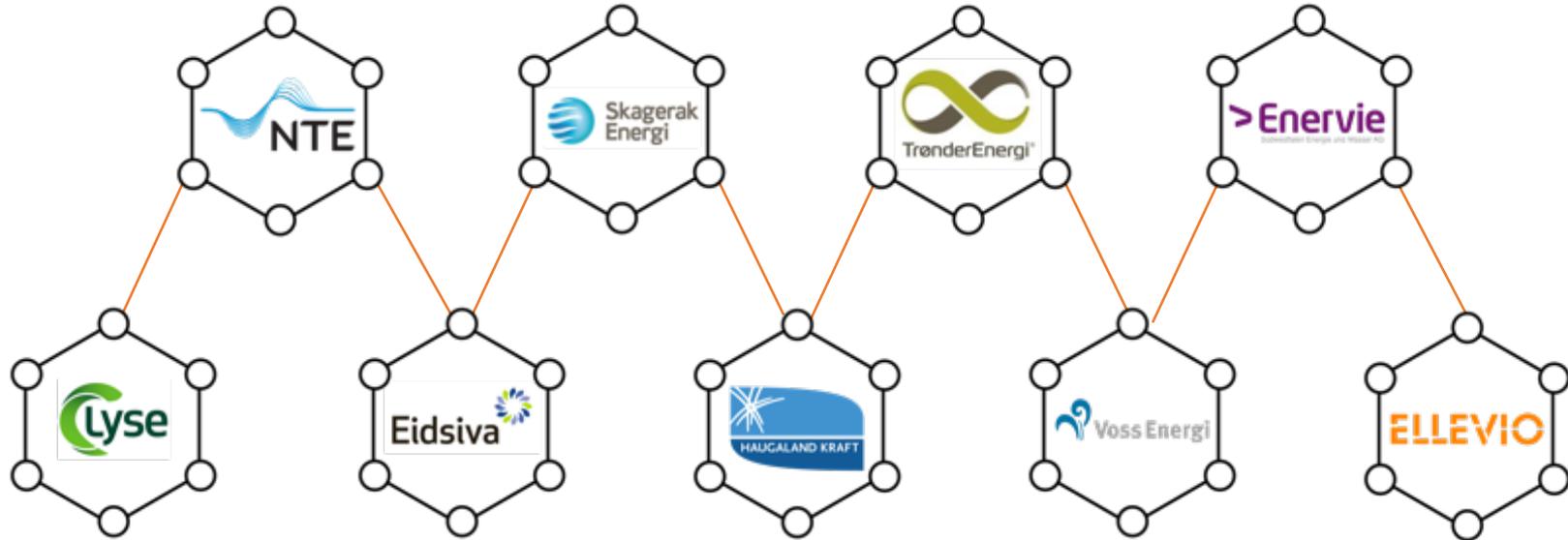
detect and locate errors in the grid instantly.



improve security of the supply to critical customers.

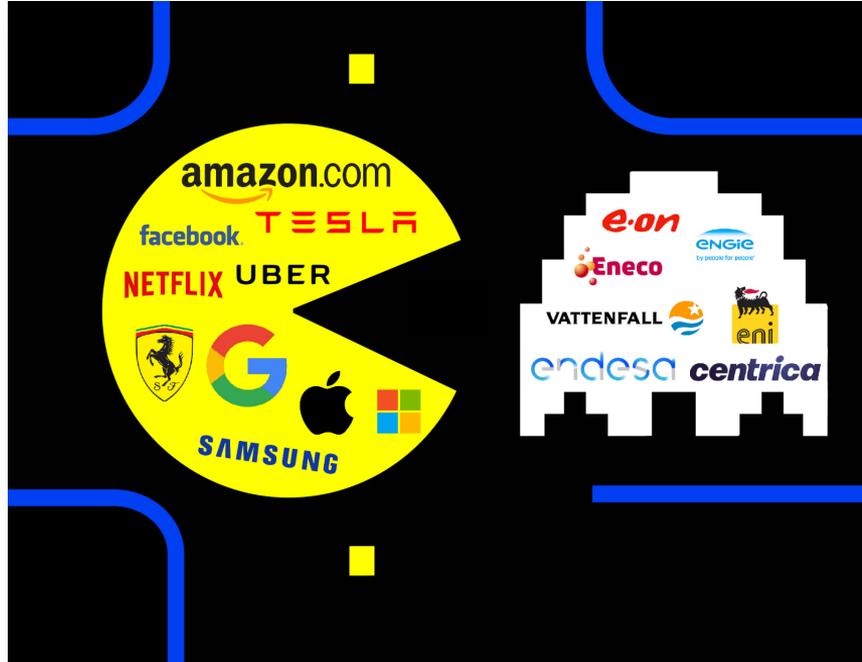
Which is also termed  
Thermal Management or  
DynamicLineRating

# signed partners/pilot customers



In dialogue with big utilities in Germany, France, Russia, India...

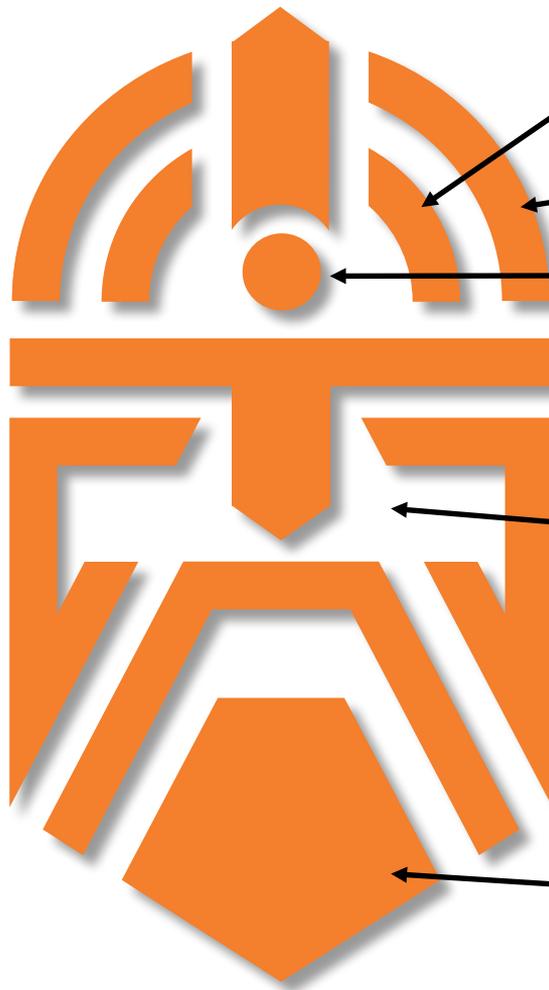
# The space invaders ?



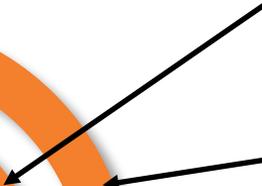
A logo with meaning



The face of Heimdall  
the Norse Viking God  
- The guardian of  
asgard.



Electromagnetic  
waves



Radio waves



Our core sensor: the  
Neuron



High Voltage  
Tower



"Block chin"

