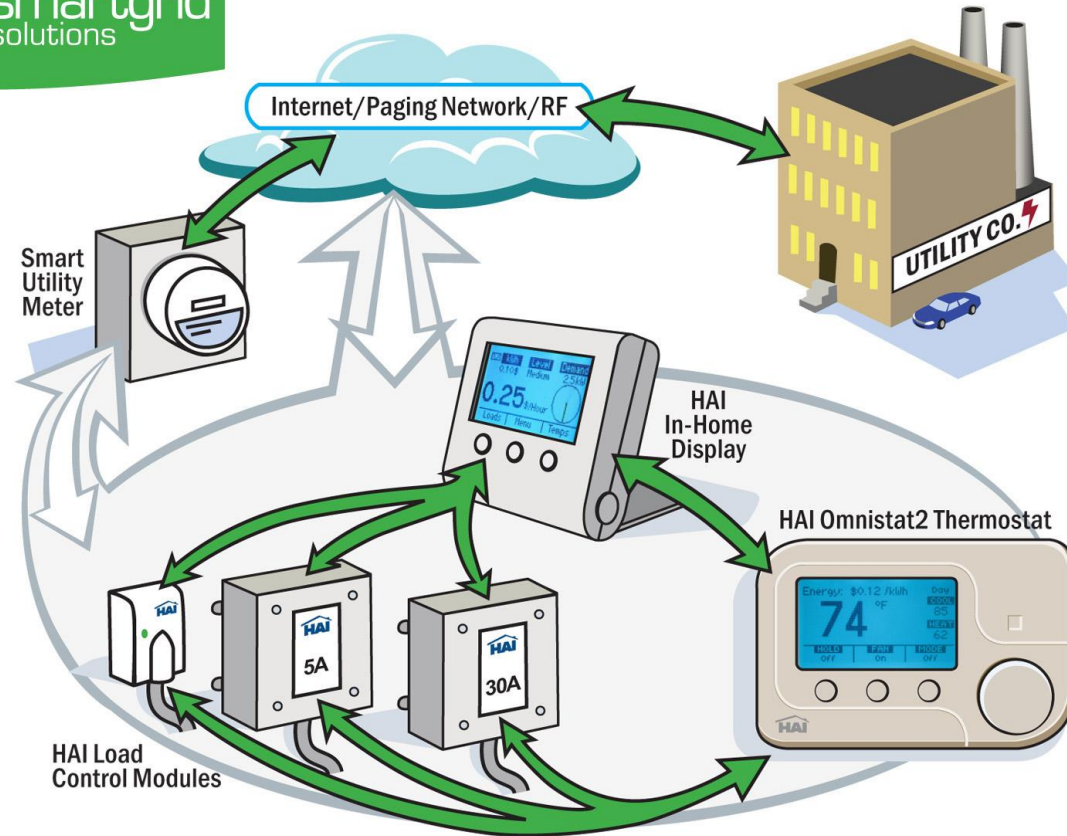


Smart Grid

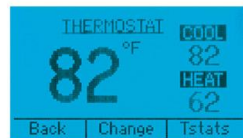
A new concept in energy conservation

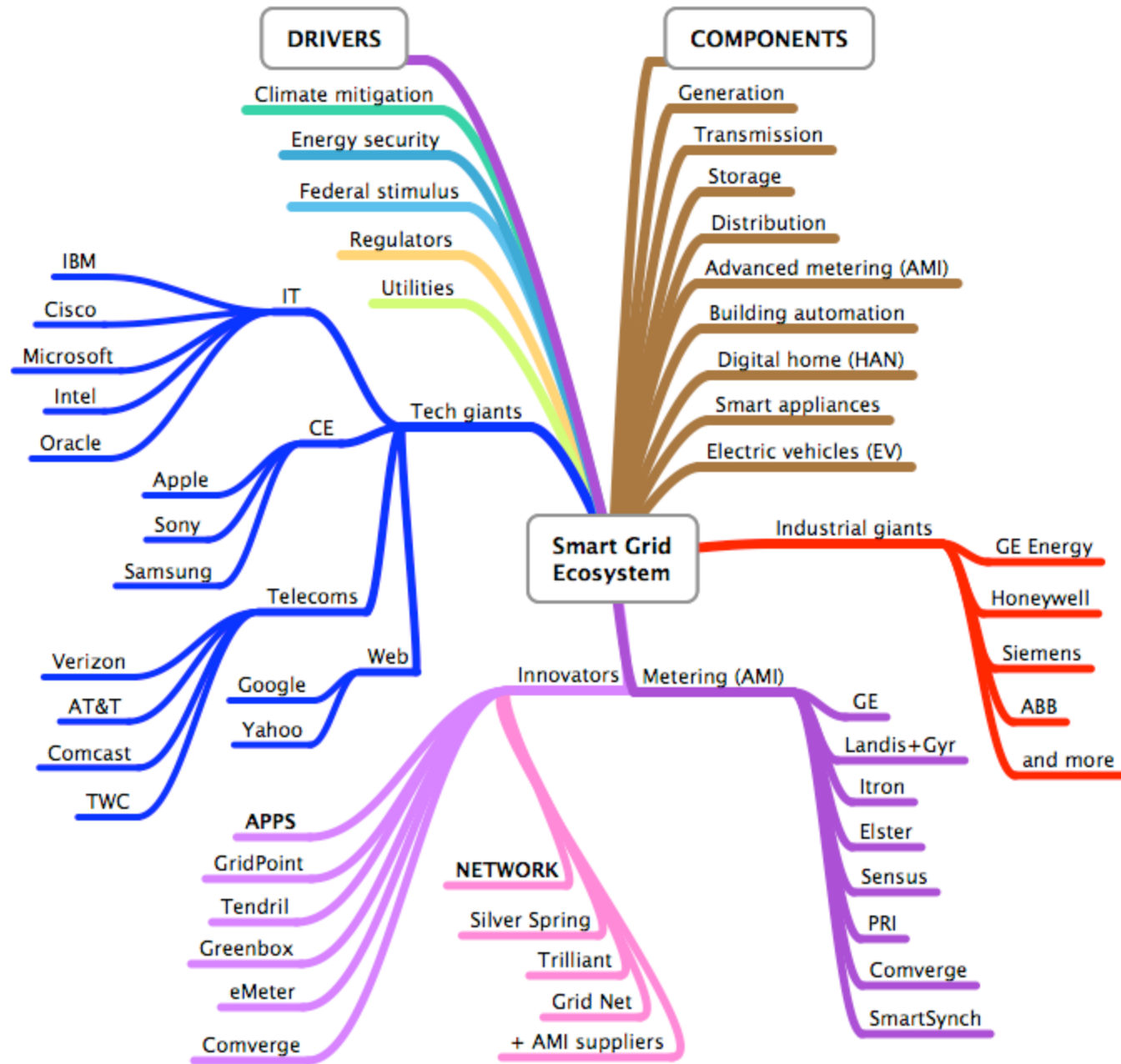




HAI's Smartgrid Solutions function as a complete network.

Multi-Function display changes color to show energy cost at a glance.





Smart Grid is estimated to save 60 to 211 million metric tons of CO2 per year in 2030.

Ensuring energy reliability to degrees never before possible.

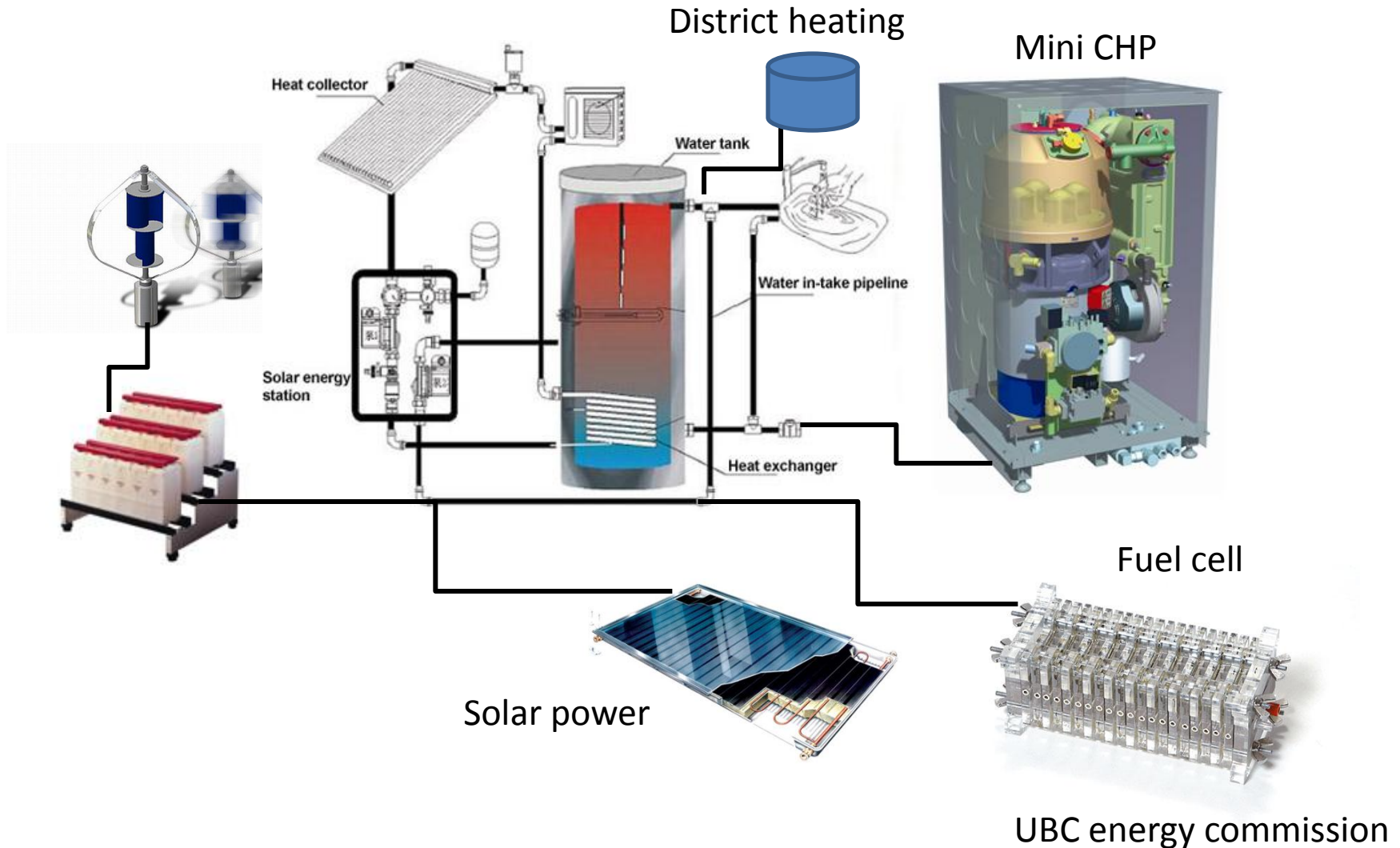
- Maintaining its affordability.
- Reinforcing global competitiveness.
- Fully accommodating renewable and traditional energy sources.
- Potentially reducing our carbon footprint.
- Introducing advancements and efficiencies yet to be envisioned.

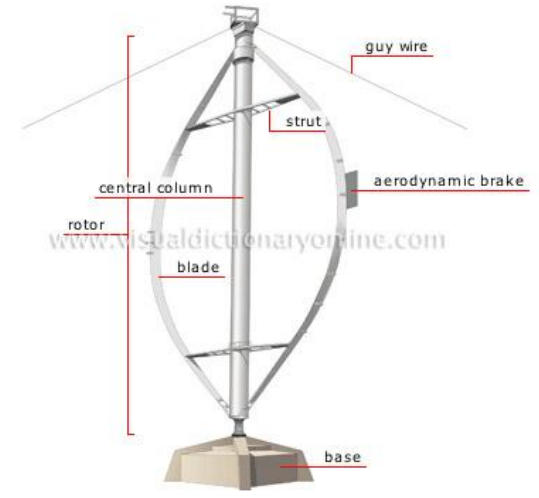


UBC energy commission

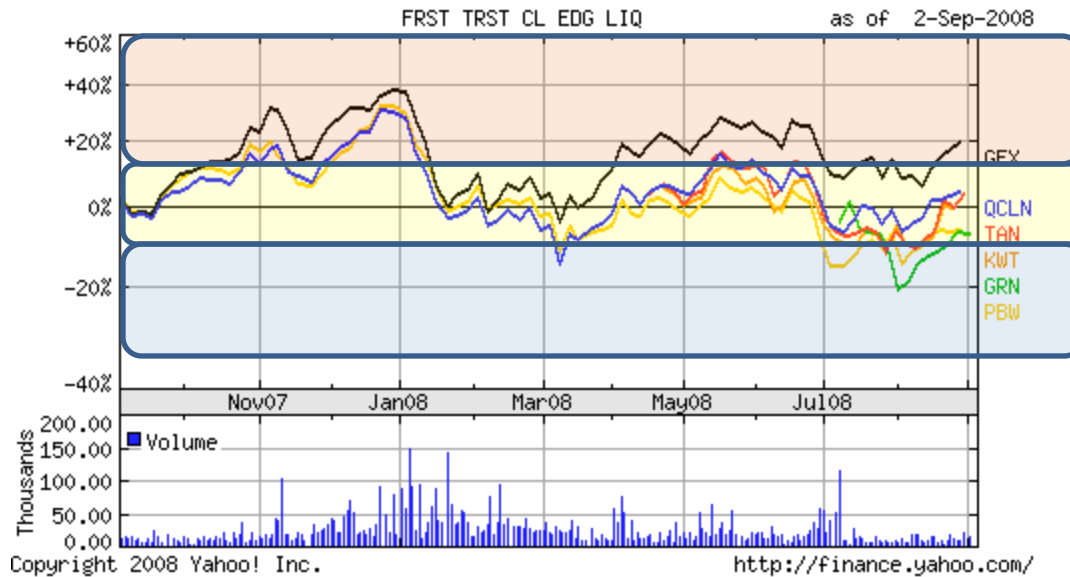
Microdot revolution

Consumers turn producers of small scale energy for sale on the grid
Million producers form a huge supply chain on local and regional markets.





When to sell and when to buy – your personal settings.



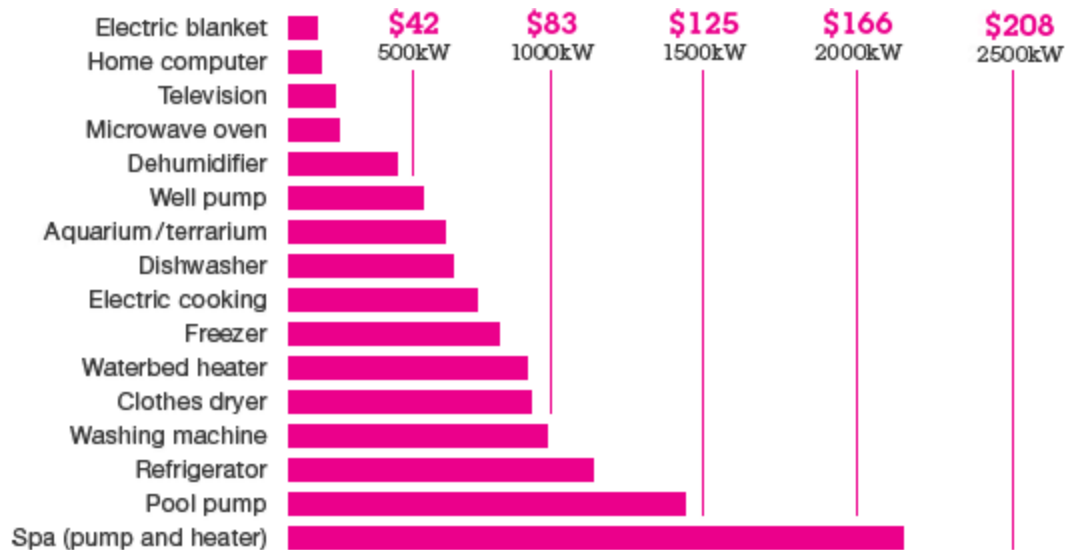
You sell

You are selfsufficient

You buy

Cost/Year

How much electricity do your appliances use?

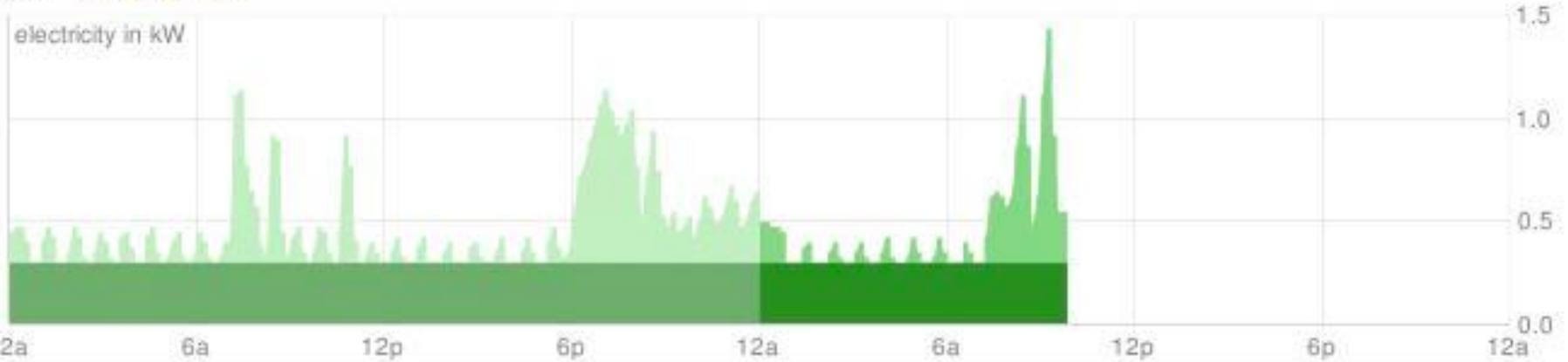


U.S. Department of Energy

UBC energy commission

Electricity used Oct 30–Oct 31

Day [Week](#) [Month](#)



Previous day

Friday Oct 30

11 kW·h used

■ Always on: 7.1 kW·h used

Saturday Oct 31

4.1 kW·h used

■ Always on: 2.8 kW·h used

Compared to others

Your usage
on Oct 31
4.1 kW·h



Compared to past usage

3% under expected usage so far today



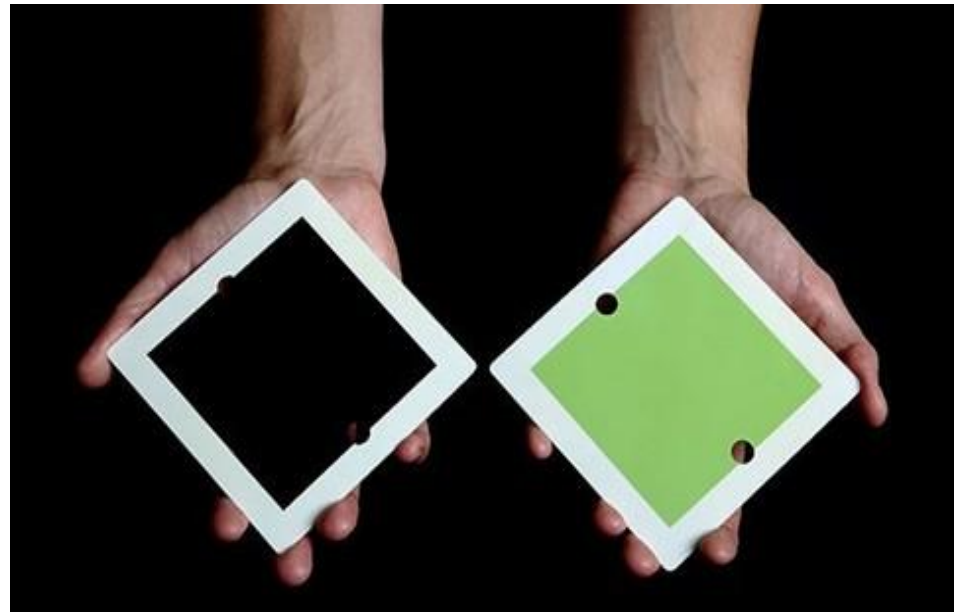
Google Apps



Bloom Box

The fuel cell powering a house

A dream or reality?

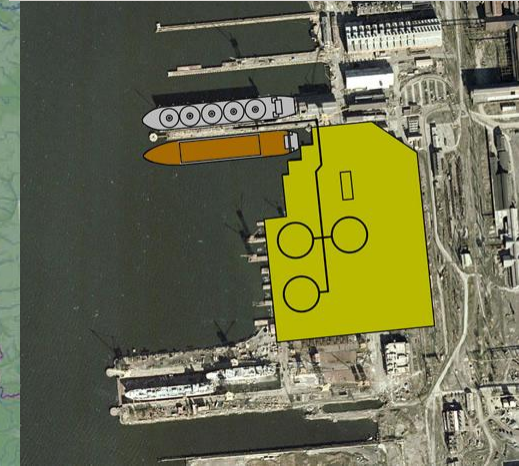
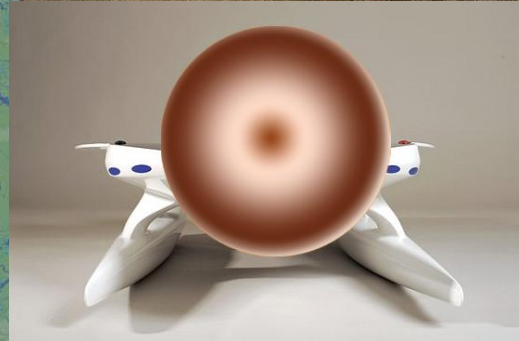
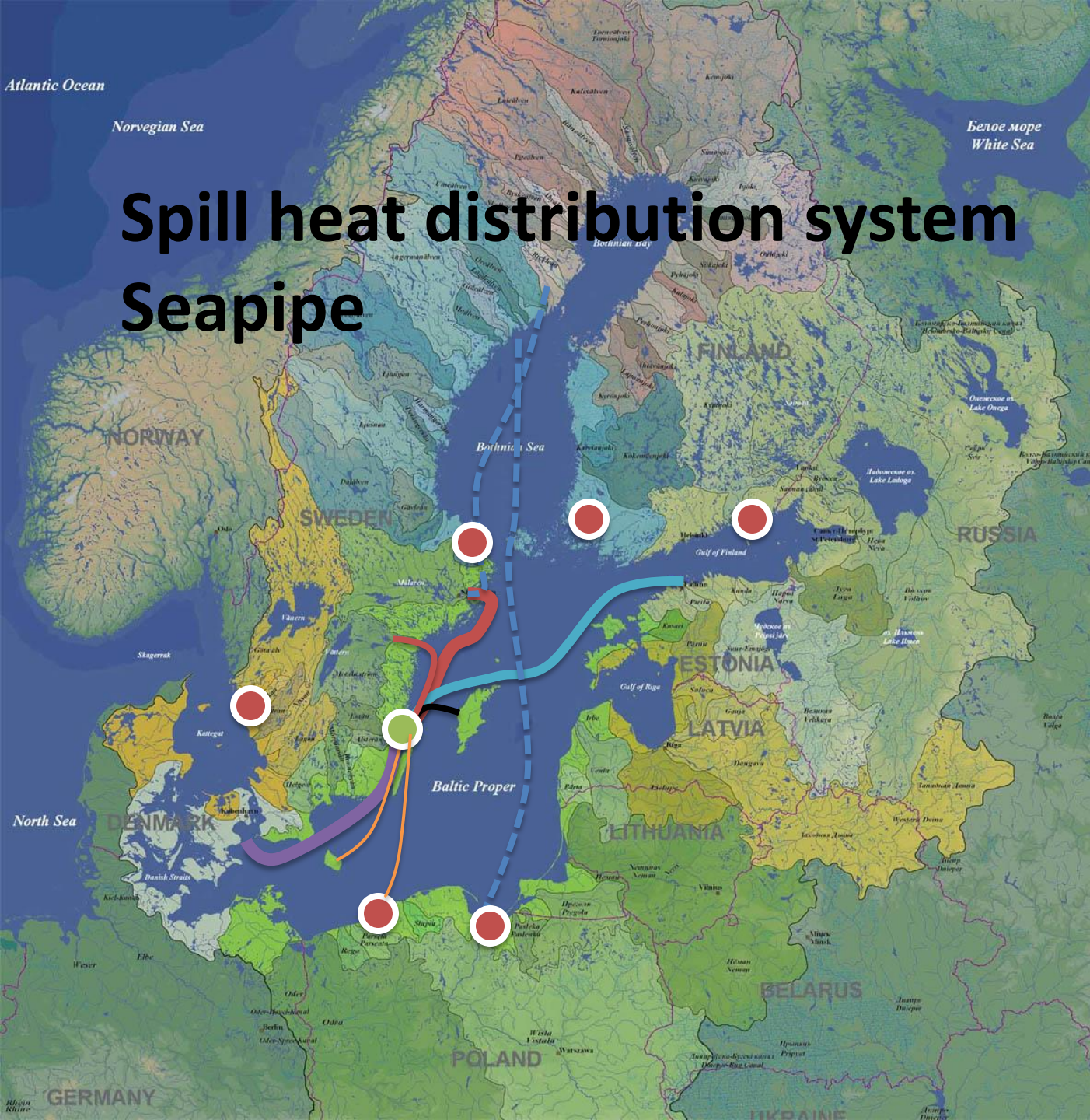


Green power

- An plug-in car or a tram car powered by electricity from oil is still a "black car" .
- Combined heat and power (CHP) generation from biomass is sustainable but would increase CO2 emissions for at least 30 years. How about 20/20 targets?
- Spill heat a untapped resource and it can be transported.
- Energy efficiency with electricity is the most important issue.
- Without proper grid system most new wind power generation is a waste of energy.
- Integrated Baltic sea regional power market can save the whole EU emission reduction
- The battle for 20/20/20 is on the won in the municipalities and the cities.

LNG driven ships
saves 68% CO2 and
92%Nox and 99% PM
compared with diesel.

Spill heat distribution system Seapipe



Self powerd LED street lamp for rural and off grid areas

Procurement of VAWT (Vertical Axis Wind Turbine)

Procurement genertor för VAWT

Procurement of Solar Wind battery charger

Procurement of LED lamp head

Battery pack from existing partner in project

Still to do

Procurement and specification of electronic control system
including light and motion sensor/radar

Procurement of Bluetooth and GSP transmitter for managment

