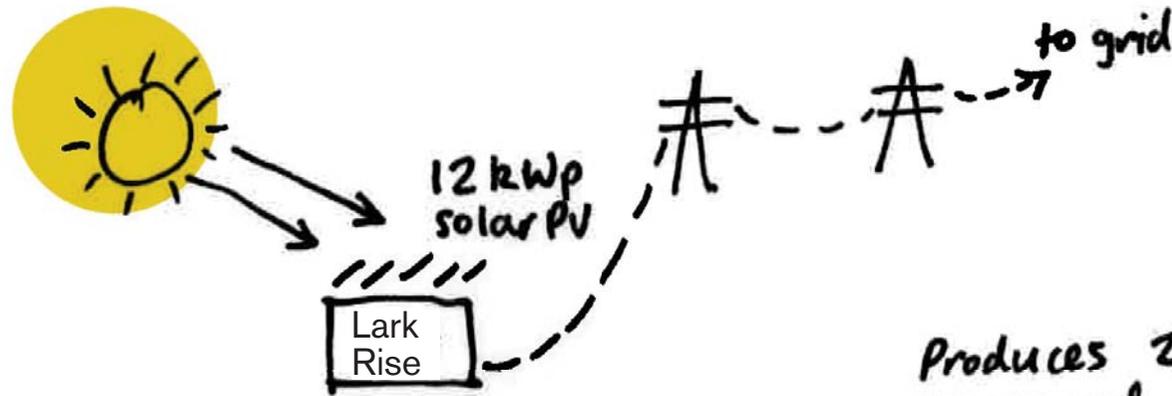


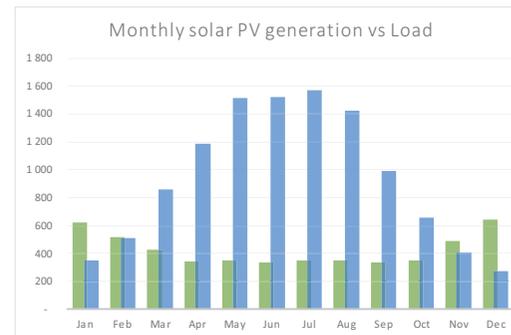


# Lark Rise

**bere:architects**

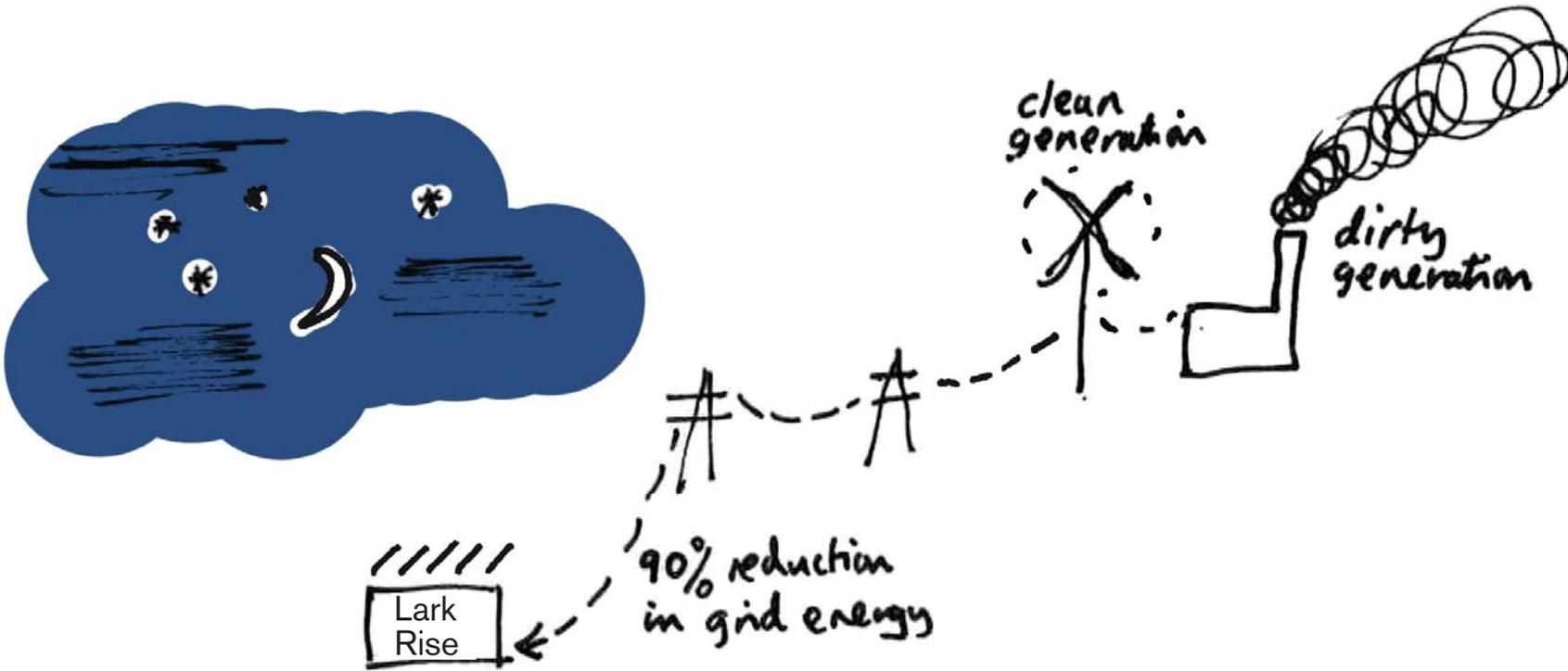


*Produces 2.5x the energy consumed on annual basis*

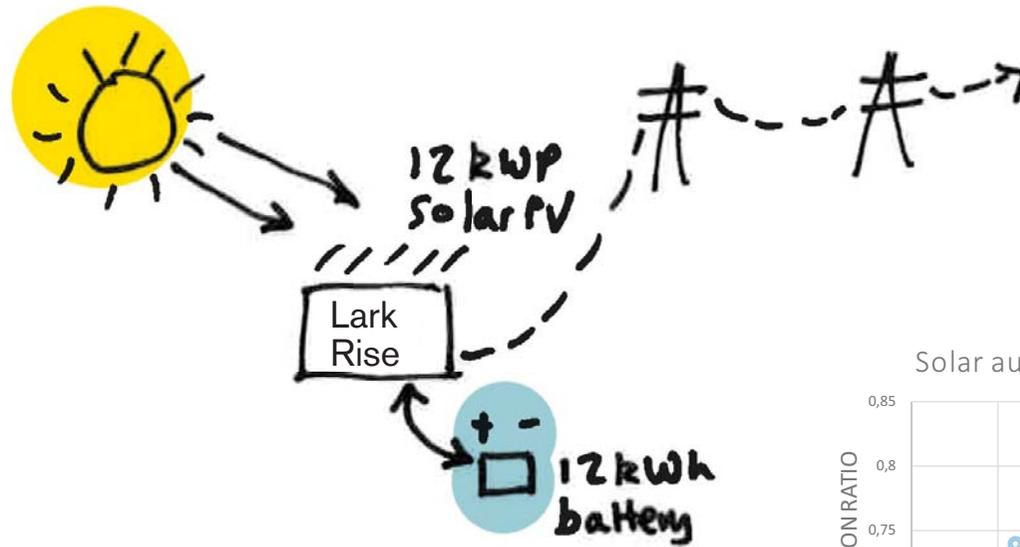


Monthly solar PV generation v load  
60% self-consumption.

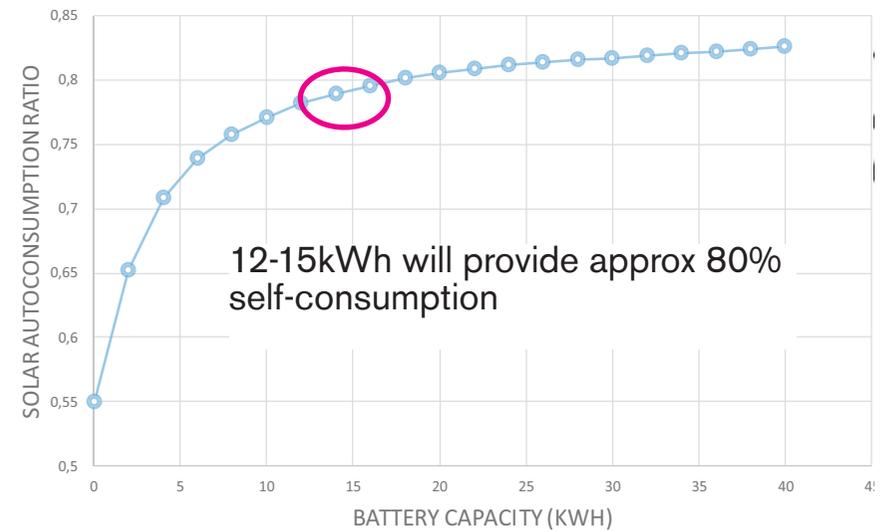
Lark Rise - current setup - day time



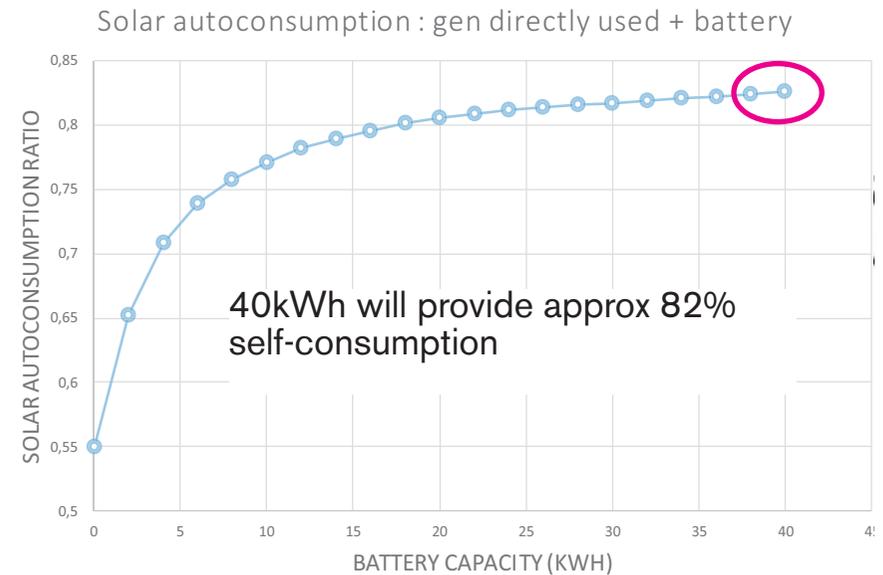
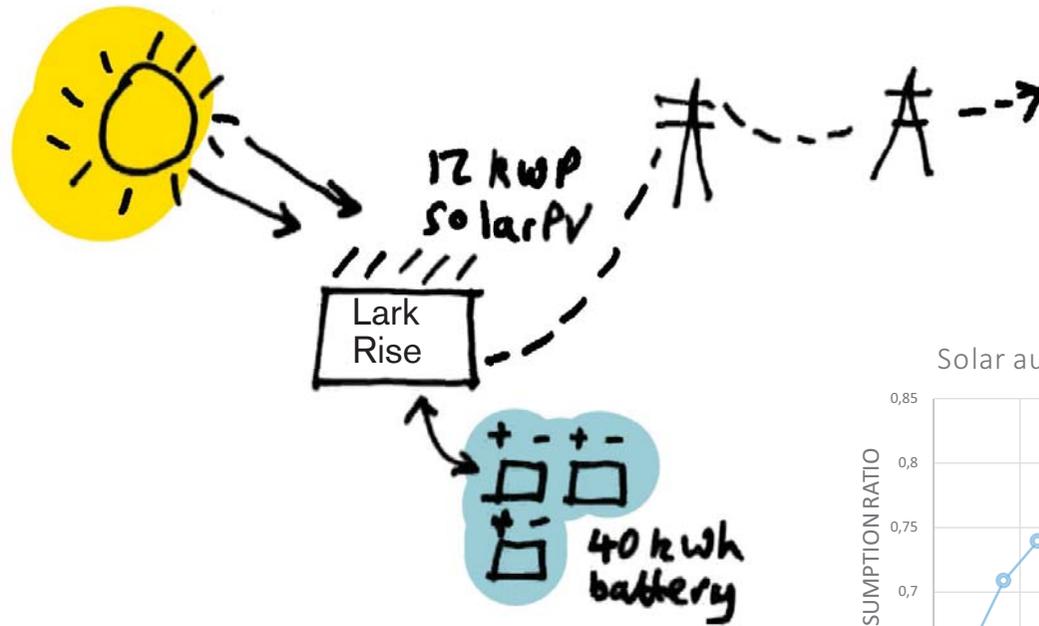
Lark Rise - current setup - night time (classic Passive House)



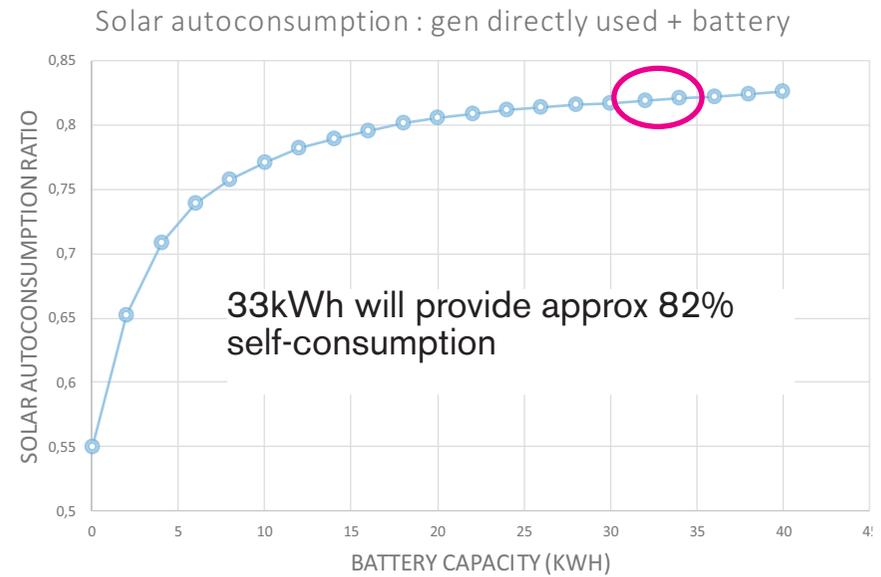
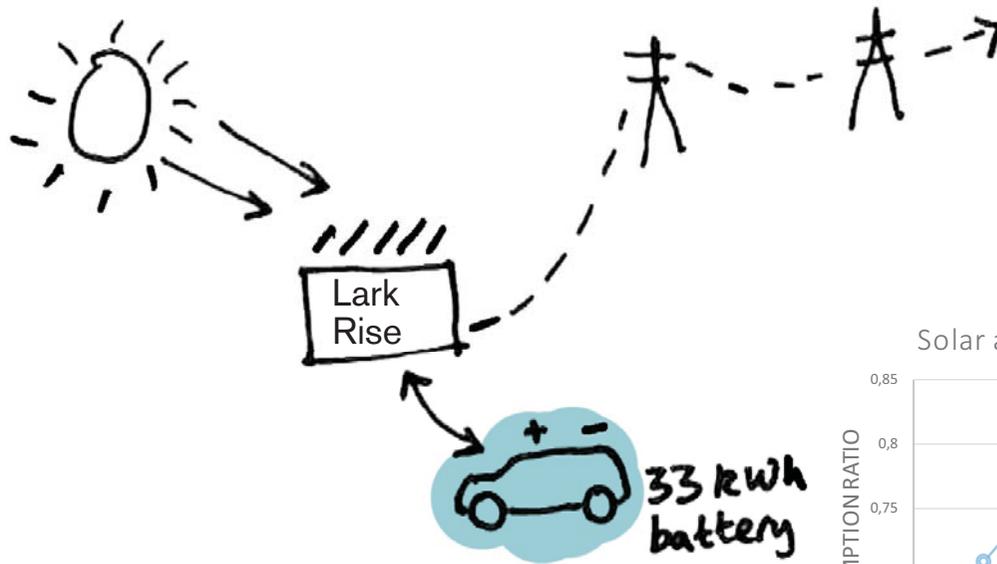
Solar autoconsumption : gen directly used + battery



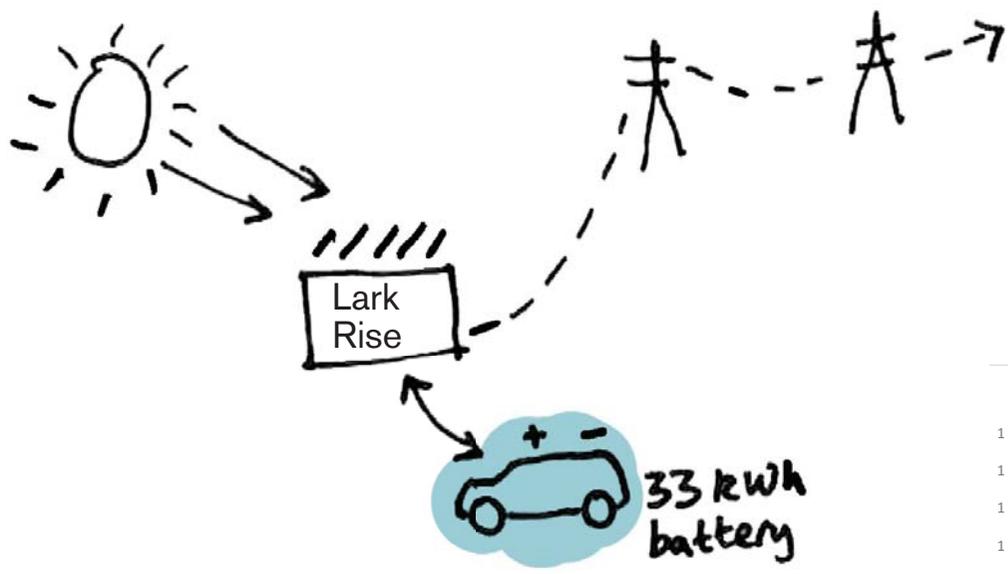
Lark Rise - 12kWh battery storage 'sweet spot'



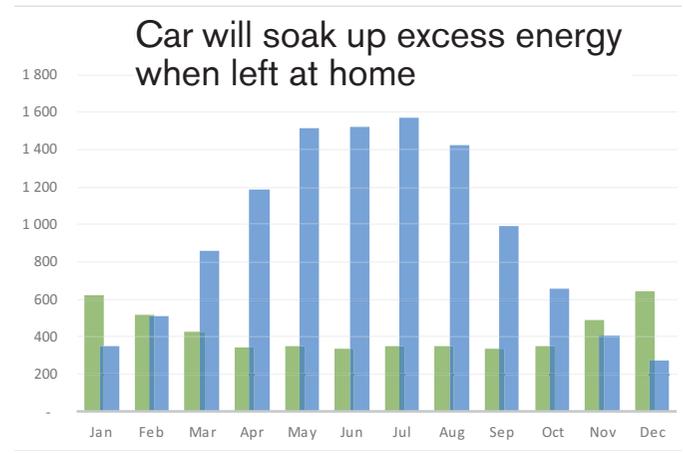
Lark Rise - diminishing returns above 12-15kWh battery storage



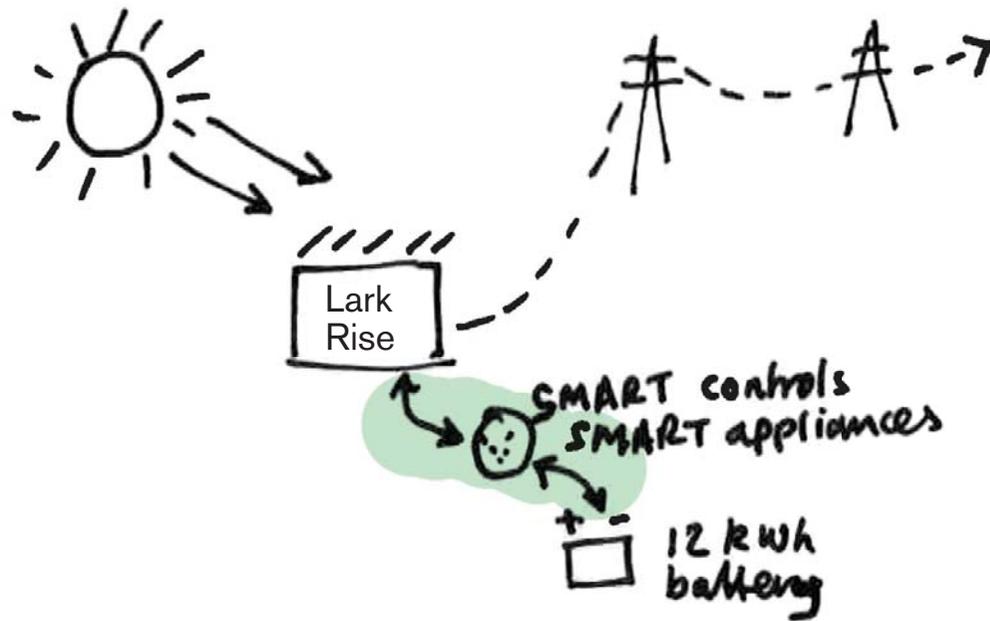
Lark Rise - theoretical potential for car battery as storage



Intelligent software will decide when to make car battery energy available for the house to use

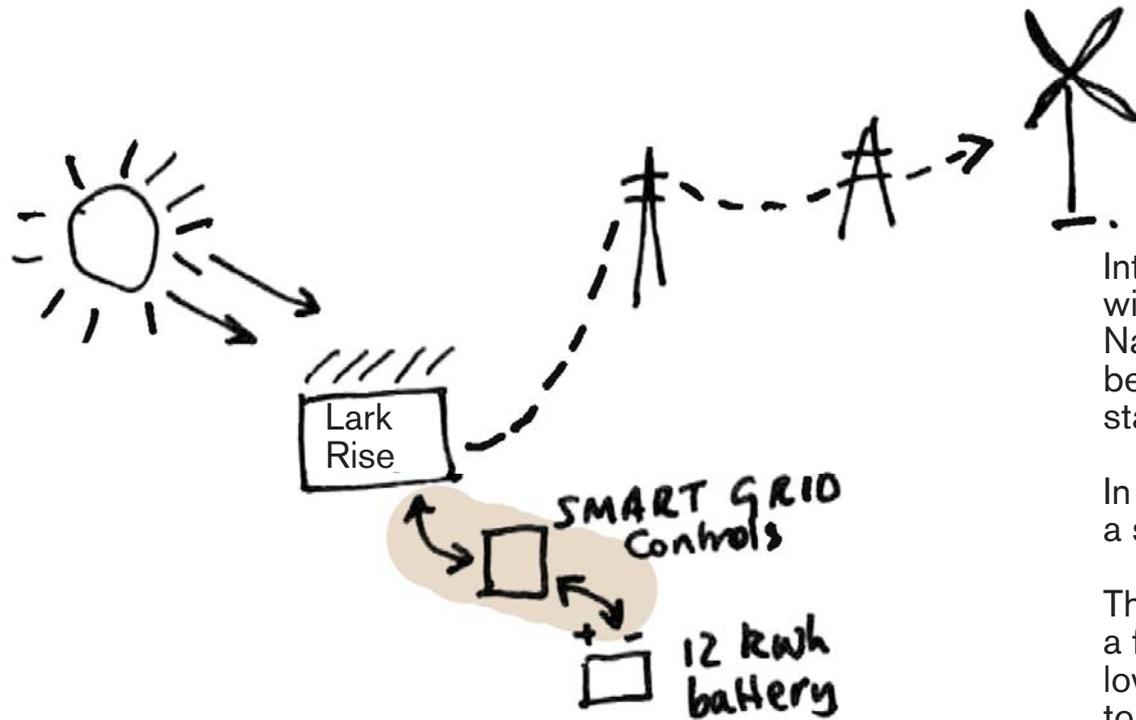


# Lark Rise - smart phone decision-making for car battery storage



Intelligent software will regulate appliance use according to weather forecast and other factors.

This may drive self-consumption above 80% more effectively than additional battery storage.

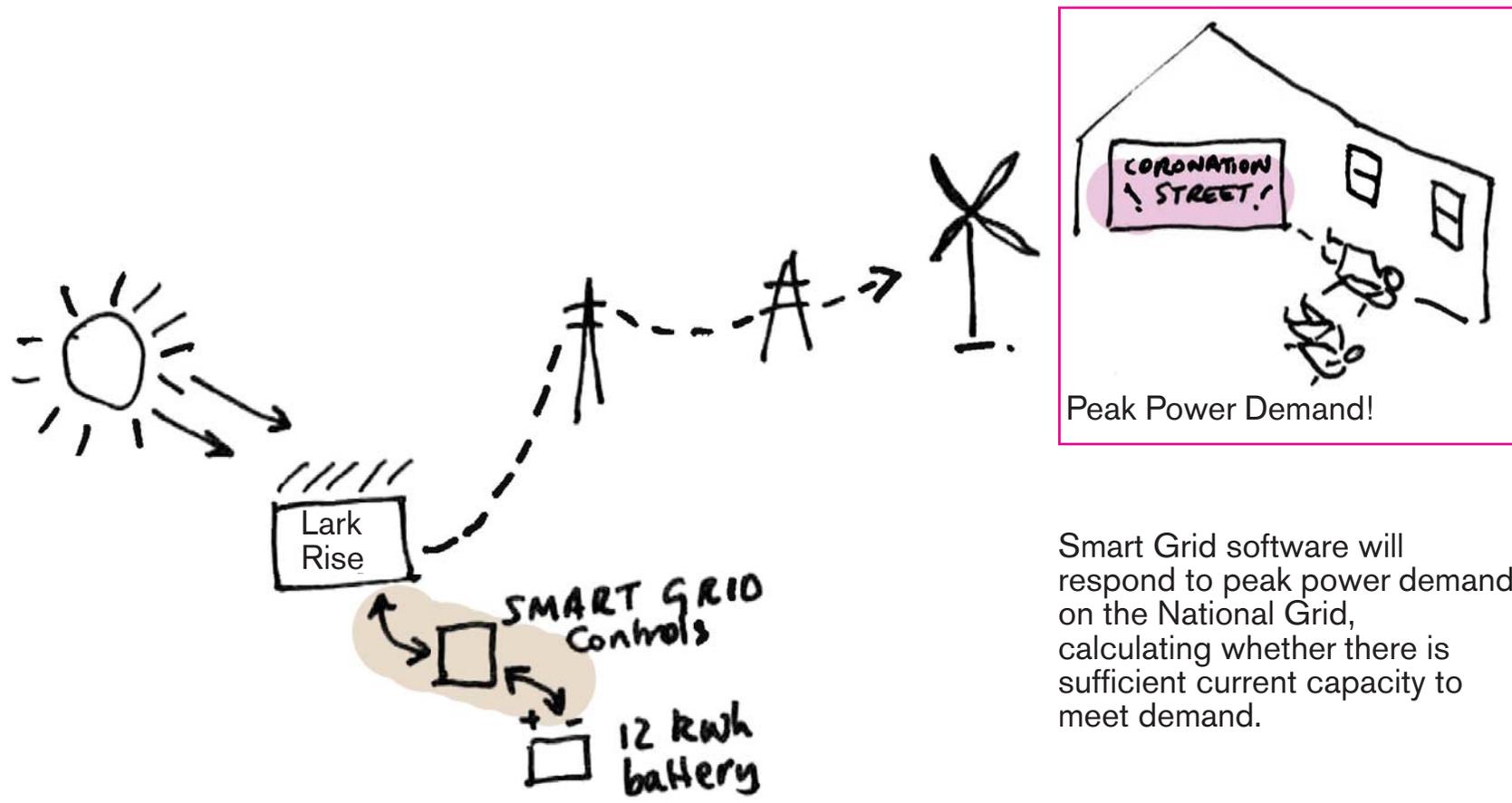


Intelligent Smart Grid software will communicate with the National Grid, so the house becomes part of a virtual power station network.

In this solution, the house serves a social benefit.

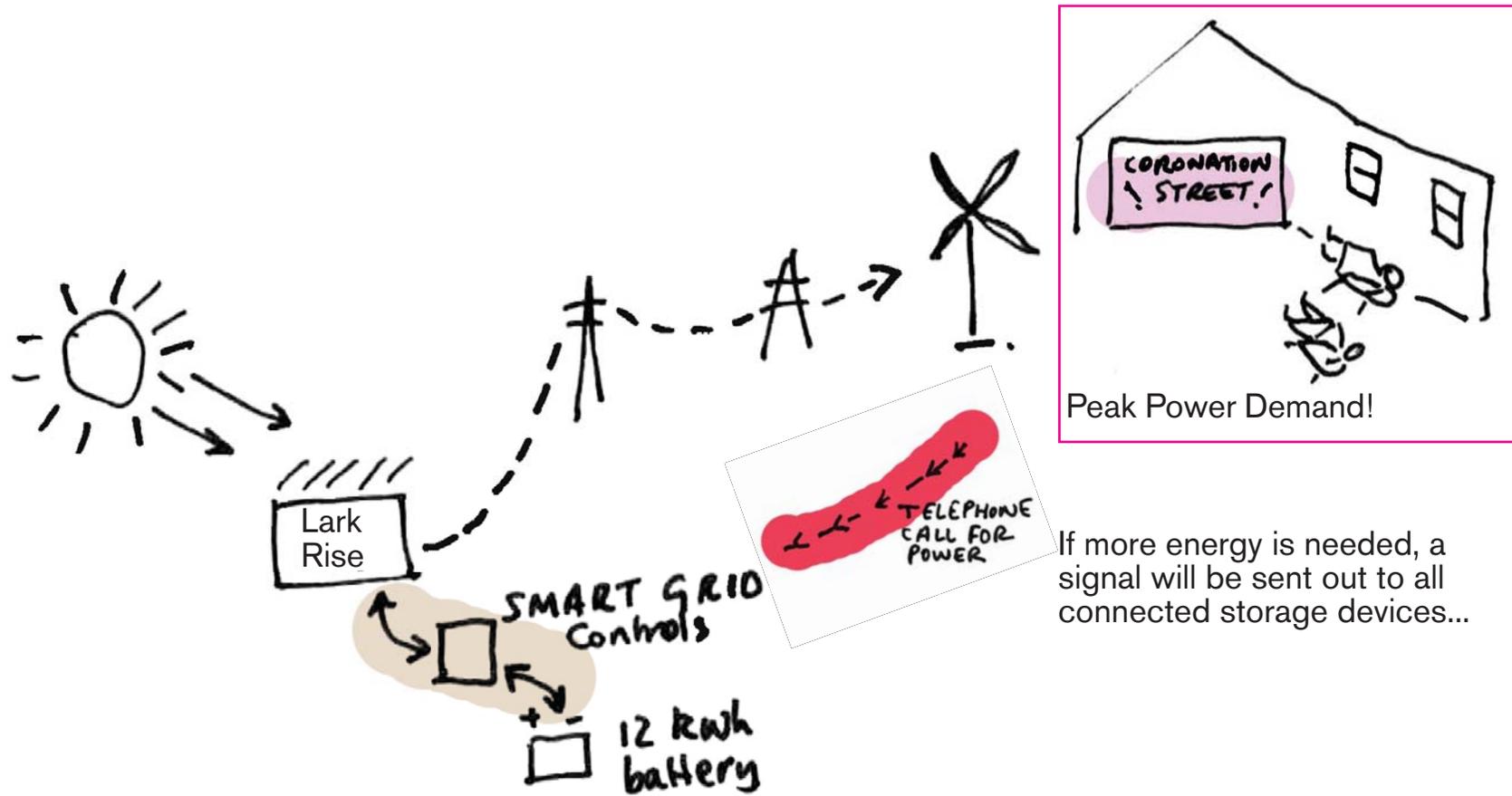
This concept offers the vision of a future of smart, flexible, local, low-voltage networks, linked to national and international networks, supporting a Europe-wide, 100% renewable grid.

Lark Rise - Smart Grid controls prototype, with Sharp Laboratories of Europe and the National Grid, to supply spare power to grid to reduce peak demand and thereby reduce need for new power stations.



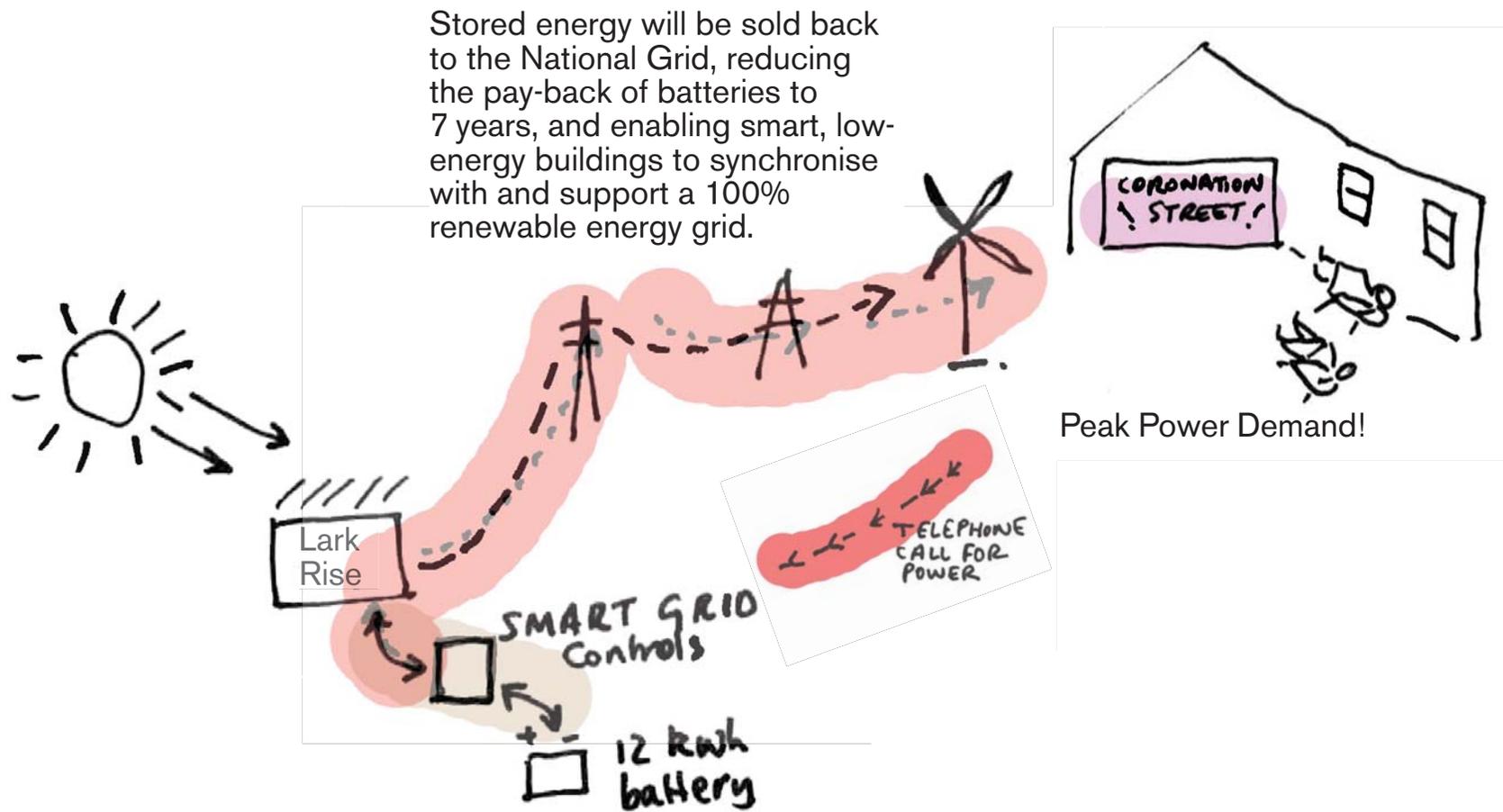
Smart Grid software will respond to peak power demand on the National Grid, calculating whether there is sufficient current capacity to meet demand.

Lark Rise - Smart Grid controls prototype, with Sharp Laboratories of Europe and the National Grid, to supply spare power to grid to reduce peak demand and thereby reduce need for new power stations.

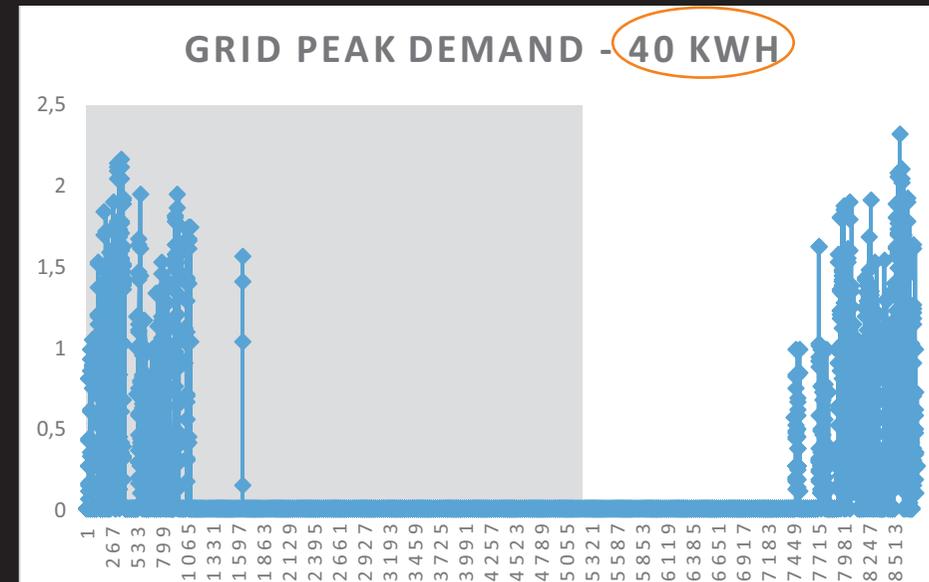
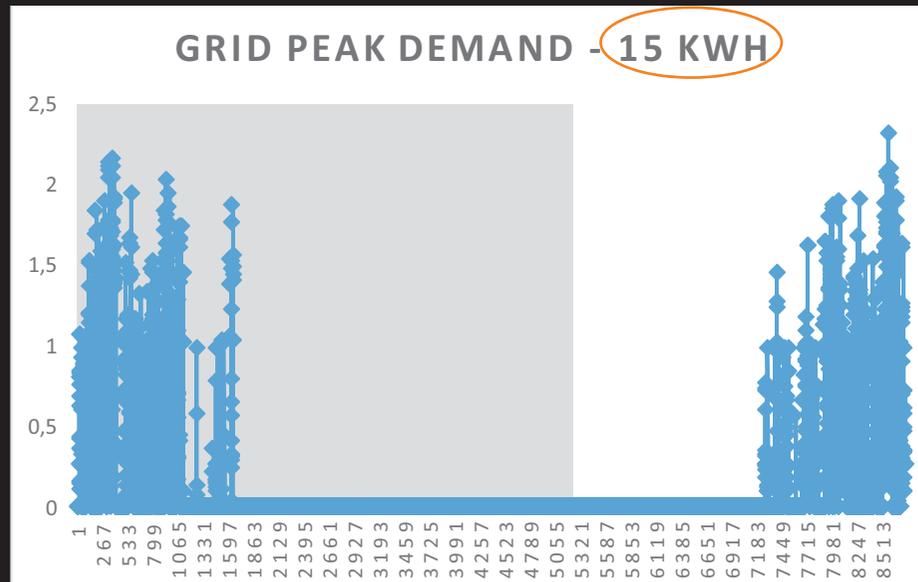
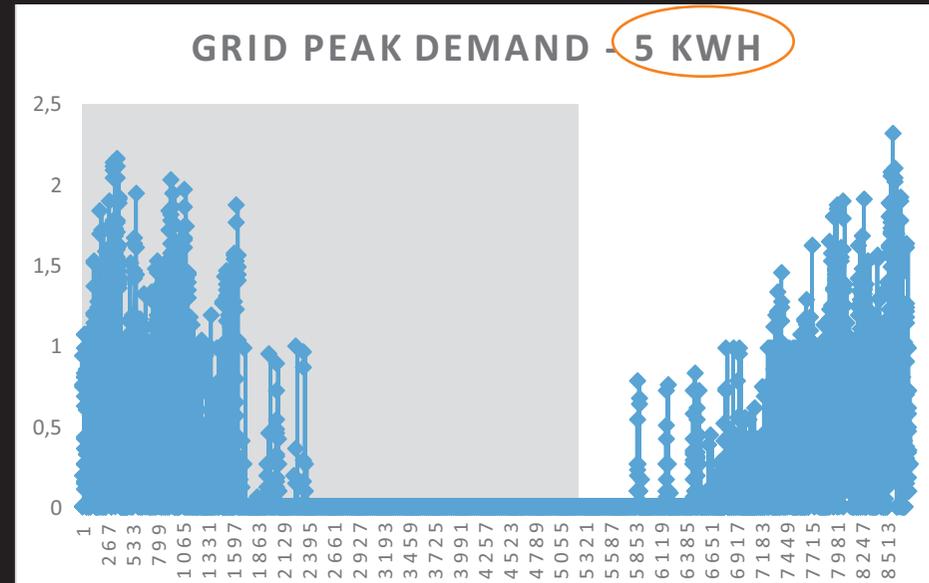
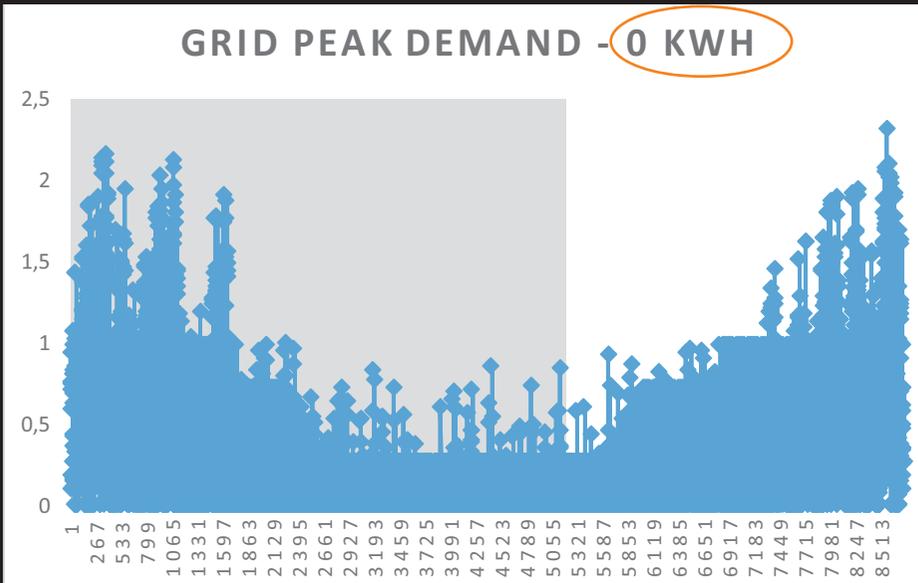


If more energy is needed, a signal will be sent out to all connected storage devices...

Lark Rise - Smart Grid controls prototype, with Sharp Laboratories of Europe and the National Grid, to supply spare power to grid to reduce peak demand and thereby reduce need for new power stations.

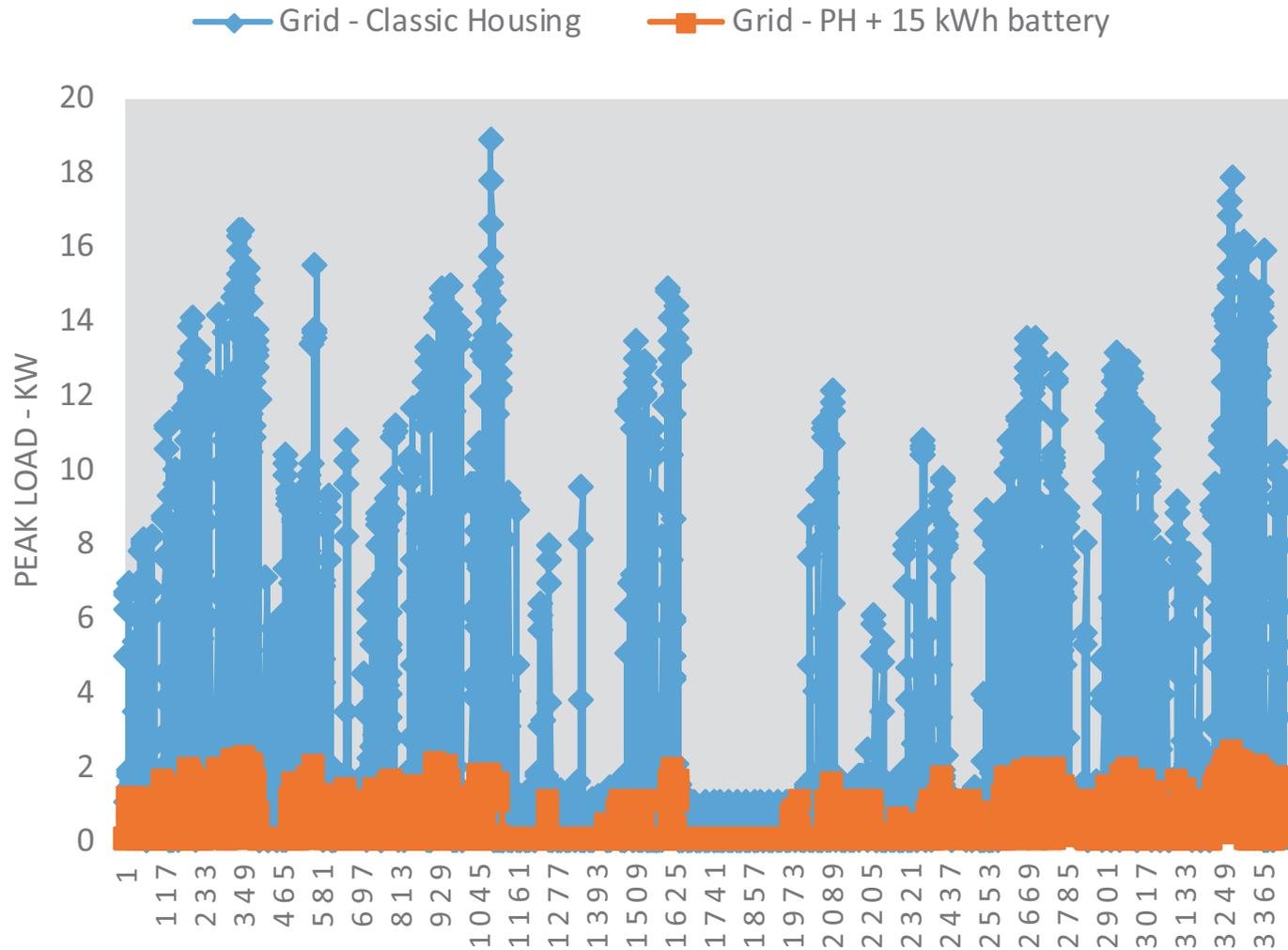


Lark Rise - Smart Grid controls prototype, with Sharp Laboratories of Europe and the National Grid, to supply spare power to grid to reduce peak demand and thereby reduce need for new power stations.



Lark Rise - reducing peak grid demand with Passive House performance and alternative battery storage options (one year in hours on horizontal axis of graphs).

# WINTER PERIOD



Ordinary house: typical winter energy demand

Lark Rise Passive House: typical winter energy demand with 15kWh battery

Lark Rise - reducing winter peak energy demand with Passive House performance and 15kWh battery storage, to help make a 100% renewable energy grid workable (one winter in hours on horizontal axis of graph).