



Moixa Technology

**Maslow:** energy storage system

**GridShare™:** VPP cloud platform

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Moixa Technology

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7th Smart Grids & Cleanpower 2016  
Cambridge 27-28 June

[www.cir-strategy.com/events](http://www.cir-strategy.com/events)



maslow.



# Moixa hardware and aggregation platform

Proprietary  
**Maslow**  
hardware



Software **GridShare**<sup>TM</sup>  
aggregation platform



Analysis and  
control tools



Trading to  
energy markets



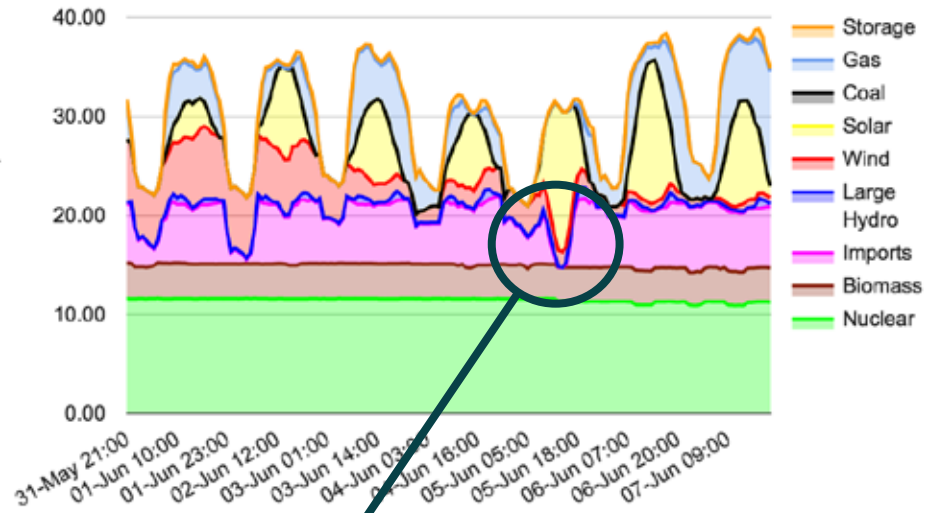
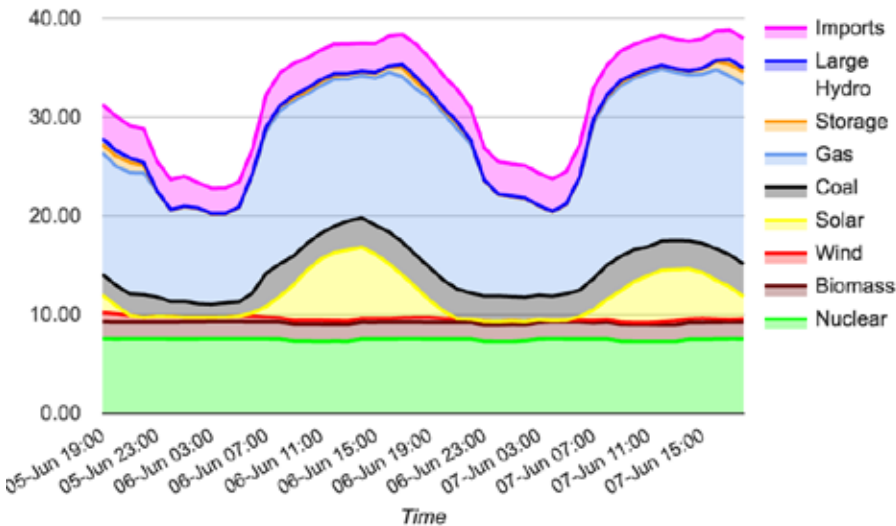
The Moixa Technology offering:

- The **Maslow** proprietary hardware, all-in-one energy-storage solution
- The **GridShare**<sup>TM</sup> SaaS platform that monitors and controls distributed energy resources in the field, and aggregates them into groups to trade on to the energy market.

# Solar UK: current and scenarios

Rapidly increasing distributed solar is already having a significant effect on the grid in the UK, and gov forecasts show the need for significant storage by 2025, the UK is ahead of this plan

## UK today



8GW Storage required



# Advantages of distributed storage

Currently most energy storage on the grid is large-scale - ie pumped hydro - but it will be hard to get to the 3x current capacity that is forecast to be needed using traditional technologies.

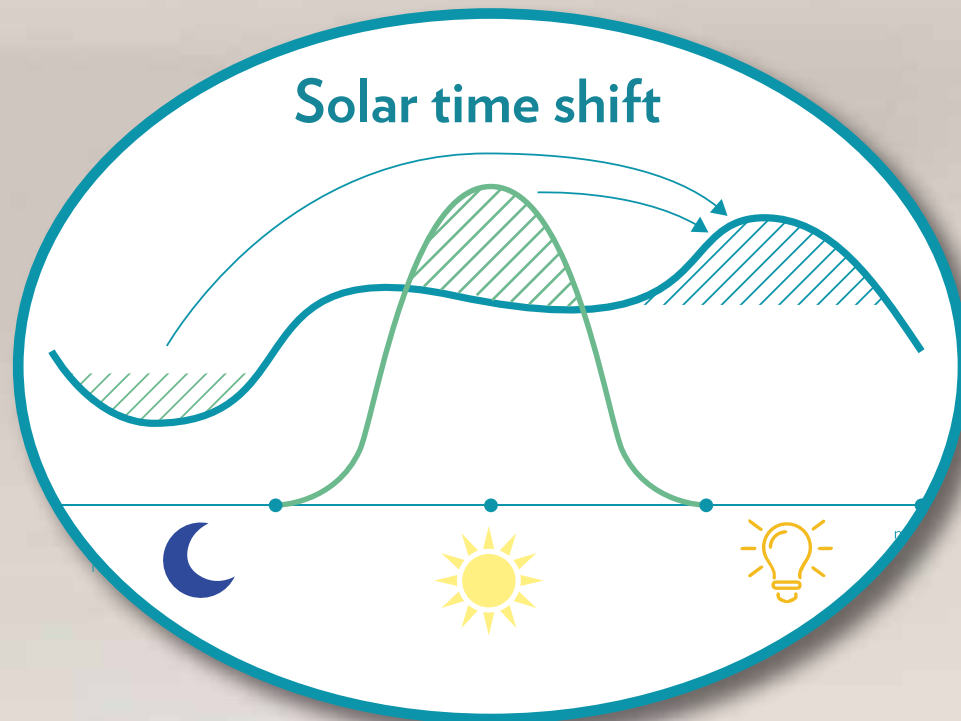


Moixa proposes a disruptive solution: small-scale storage in millions of homes, controlled in aggregate to provide a grid-scale solution.



# Moixa Maslow energy storage

Compact all-in-one smart system that increases solar payback and delivers services revenue

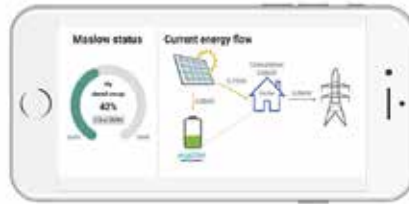


# GridShare™ VPP cloud platform

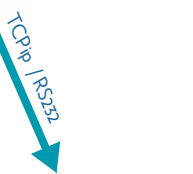
dashboards

Maslow systems

National Grid



GridShare™  
cloud software



HyperCat energy integration



analytics



3rd party systems integration

Bi-directional EV charge  
Chademo - Nissan





# Moixa: Pilots

**UK market leader**

**430 systems installed**

**US8849471**  
patent granted

**£0.9m**  
grant contracts awarded

**£1.03m**  
2015 income

**£1.5m**  
competitive storage DECC contract

**£2.8m**  
commercial development contract

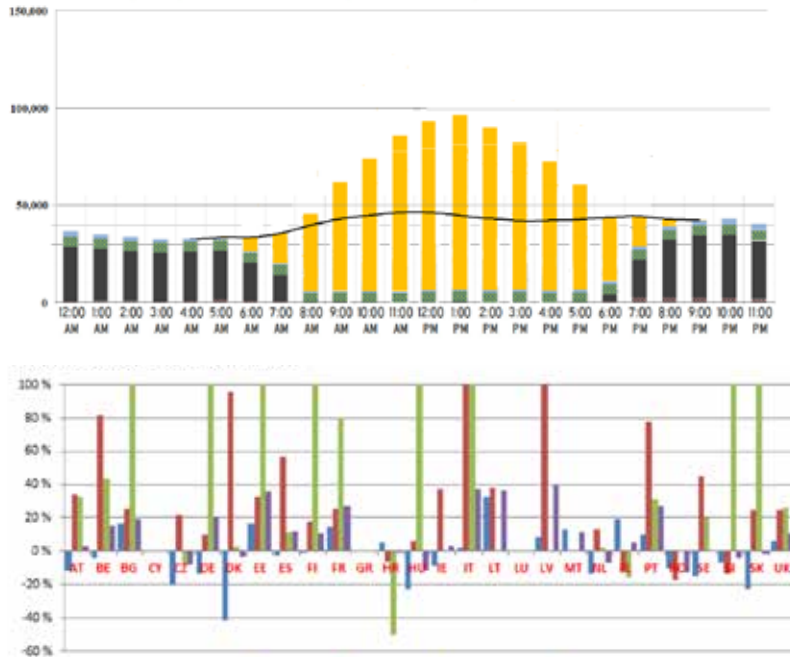
**~1MWh**  
storage deployed Q1 2016



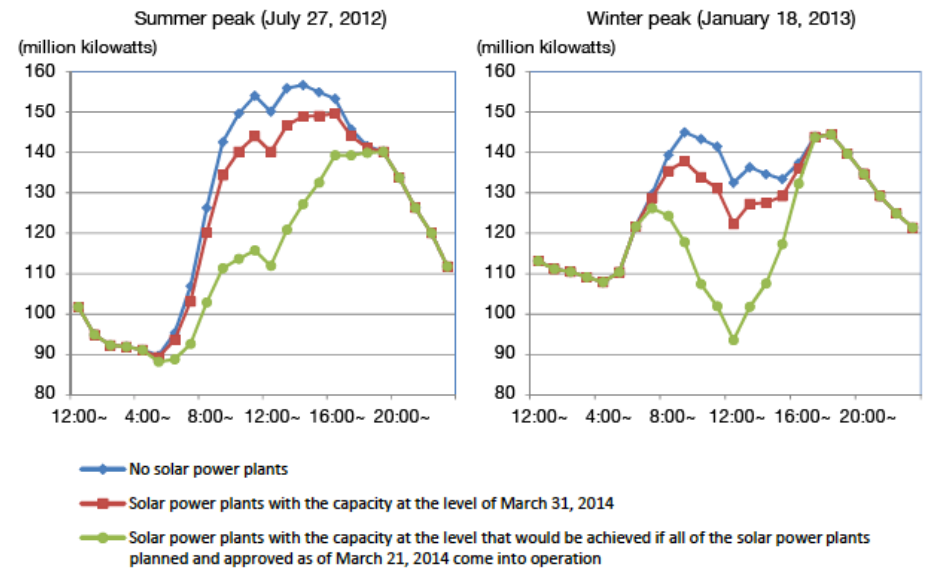
# Solar peak: changing business models

Increasing penetration of renewables on electricity grids is forcing changes in how the grid is balanced, and the financial viability of some thermal generation.

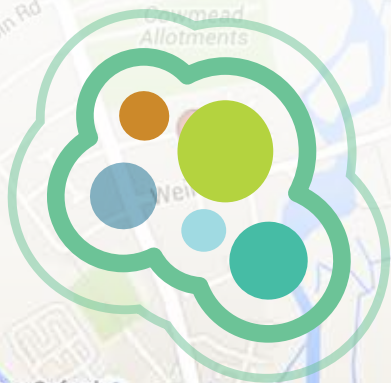
## Germany



## Japan

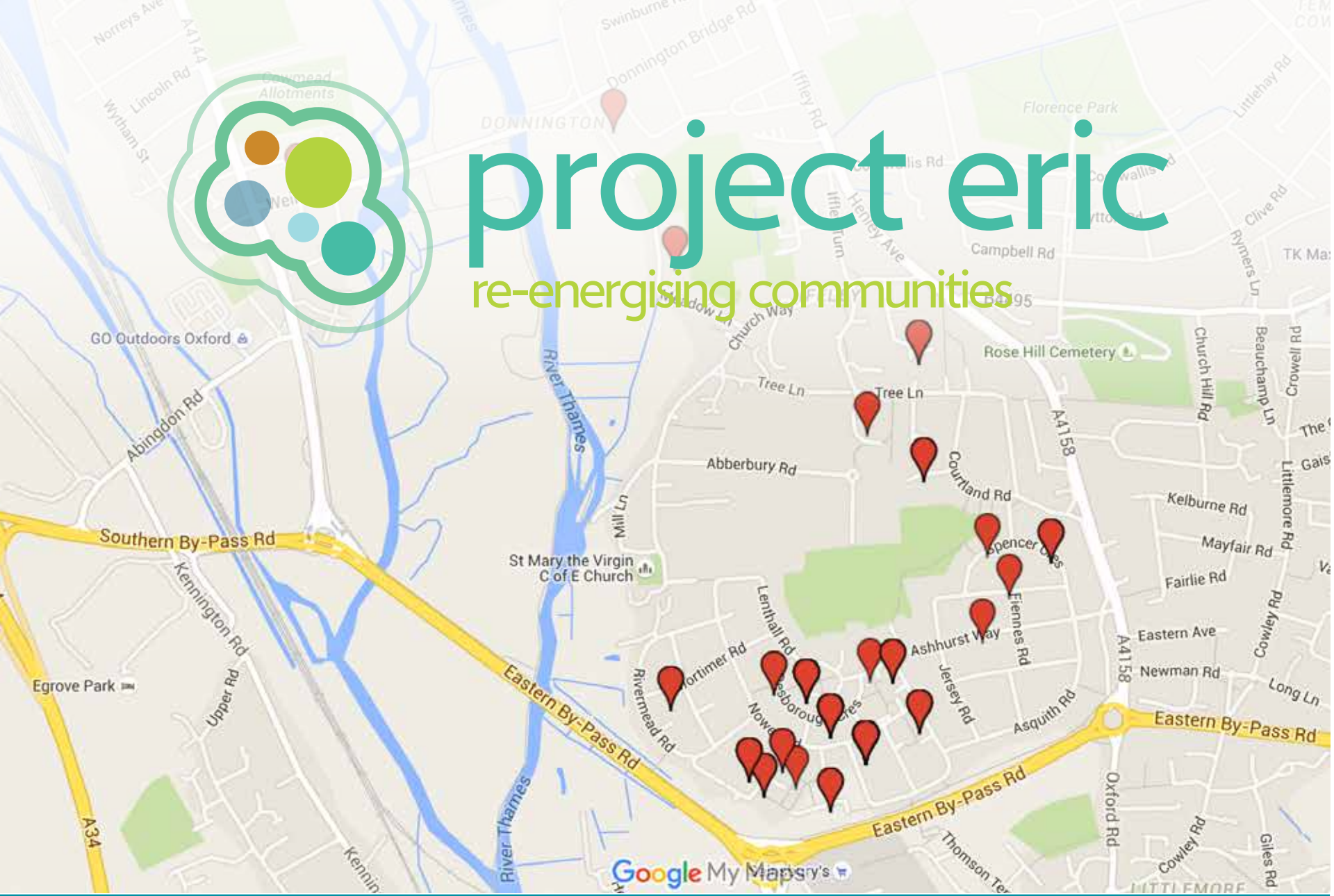




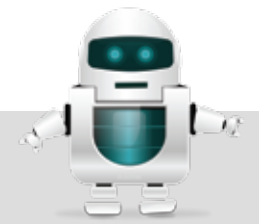
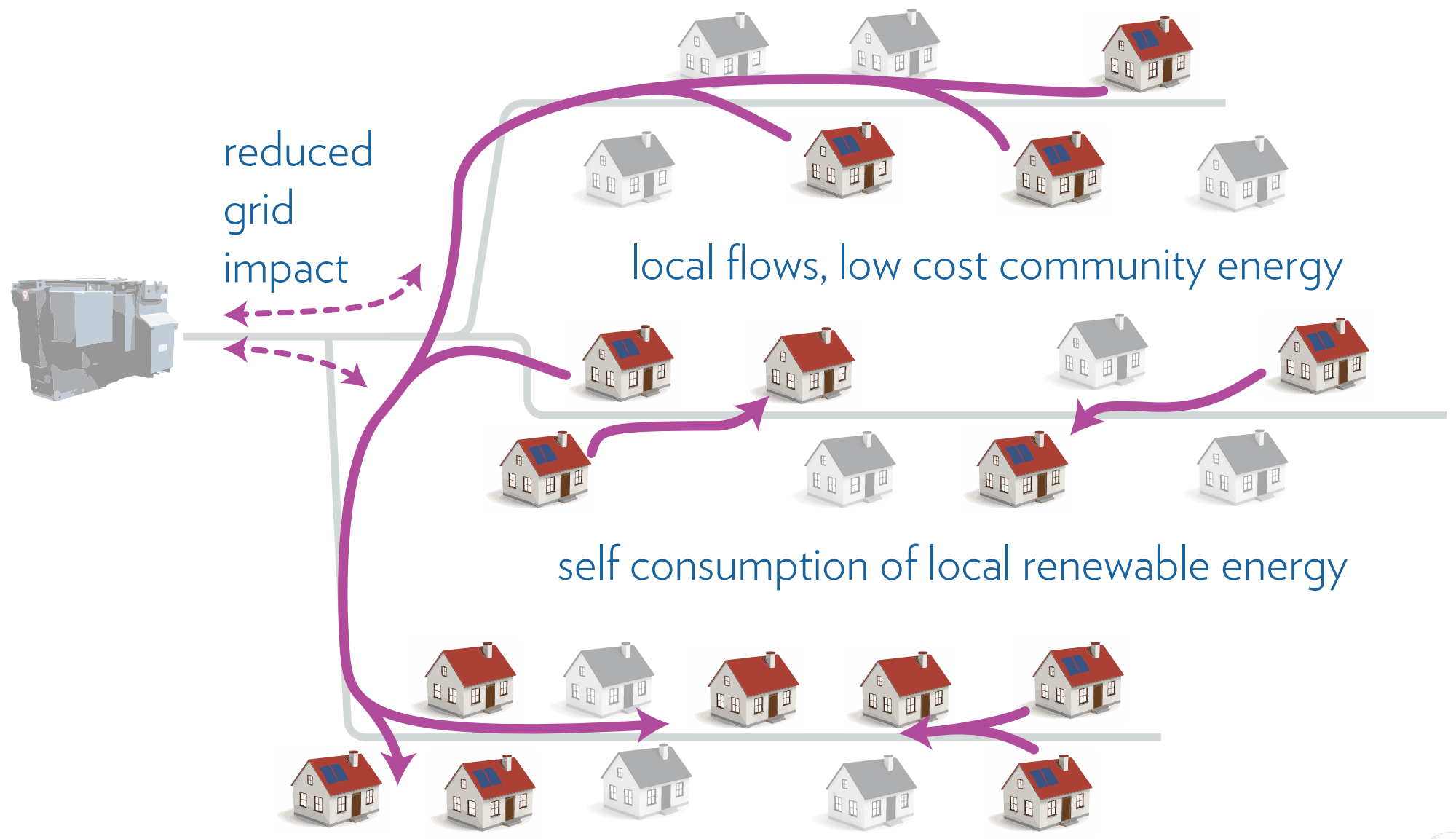


# project eric

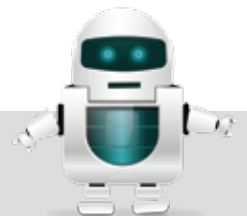
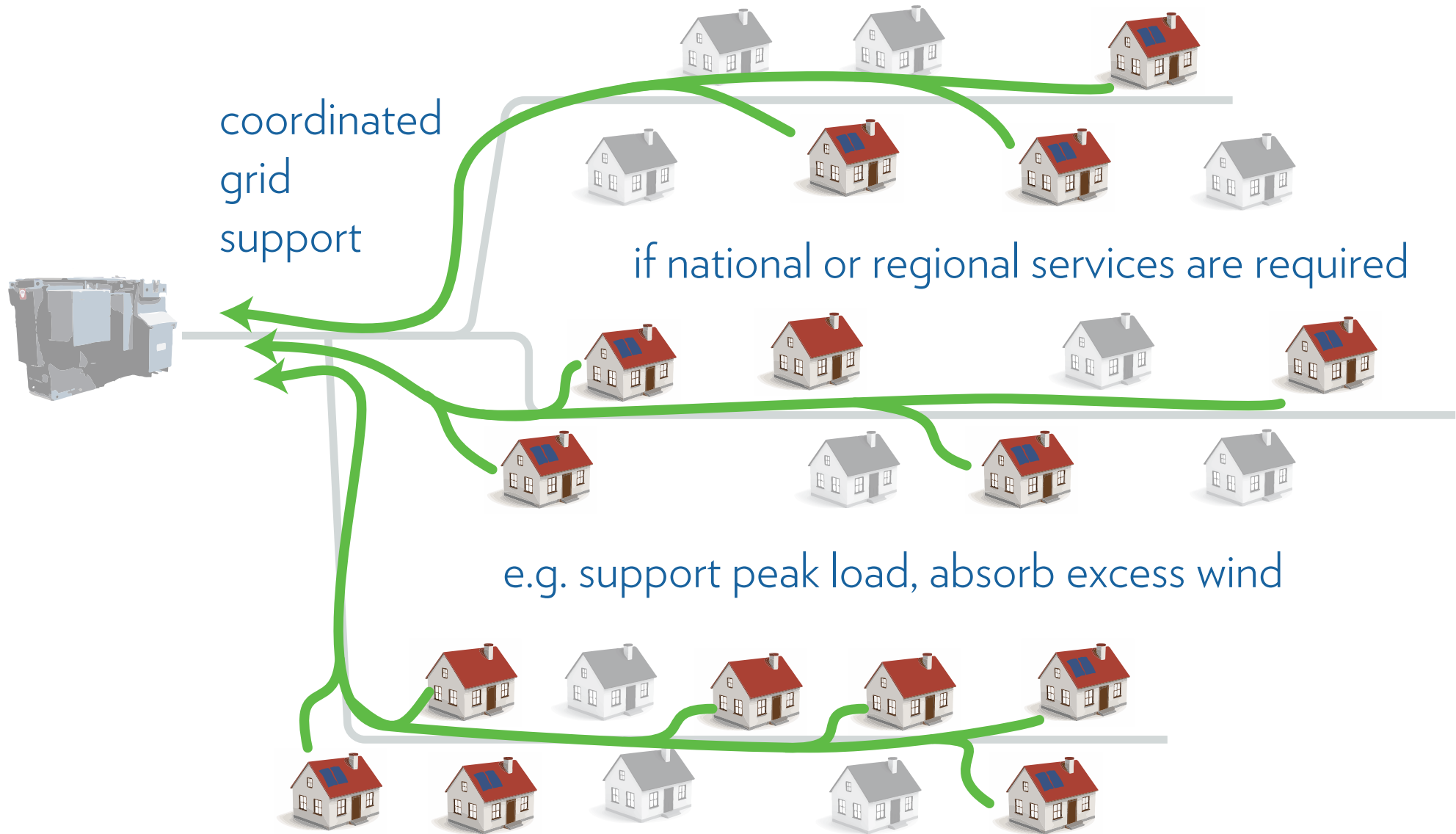
re-energising communities



# maslow. local energy flows, low cost energy.



# maslow. coordinated action to support grid



# Moixa Technology - project partners

DECC



ERIC



EFES



E Local



UNIVERSITY OF  
OXFORD



Sodium

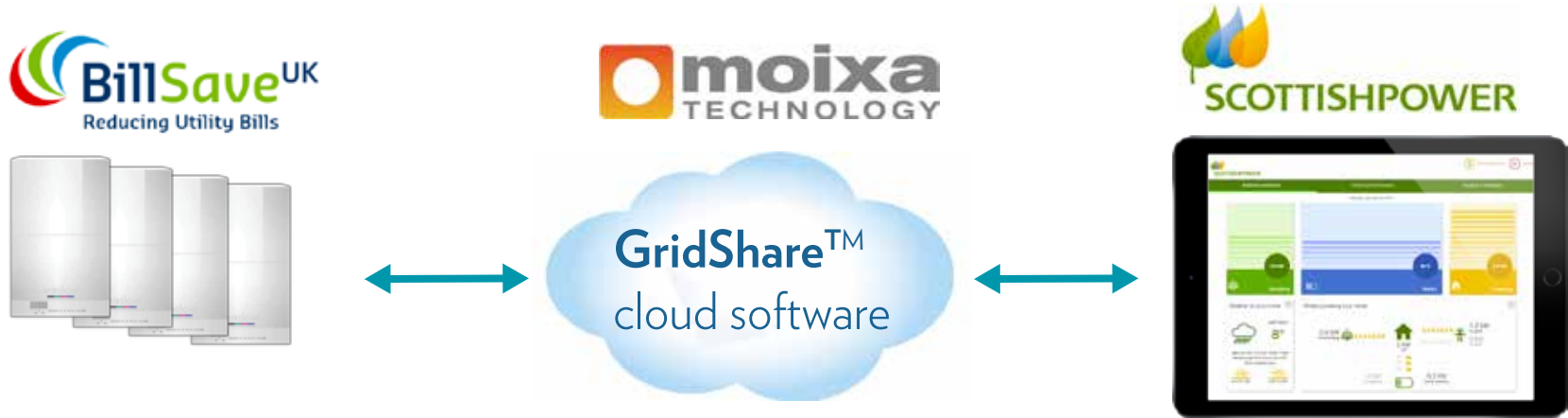


IOS





# ScottishPower energy storage pilot



BillSaveUK  
install partner  
47 **Maslows**  
in SP customer  
homes

All systems  
reporting and  
controlled through  
**GridShare™**

Scottish Power  
customer portal  
interfaces with  
**GridShare API**

My maslow

Groups

My Savings

Devices

Status

Control

Dispatch

Report

Alerts

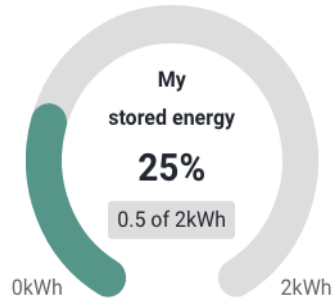
Admin

/eric/Eric ACTIVE Subset

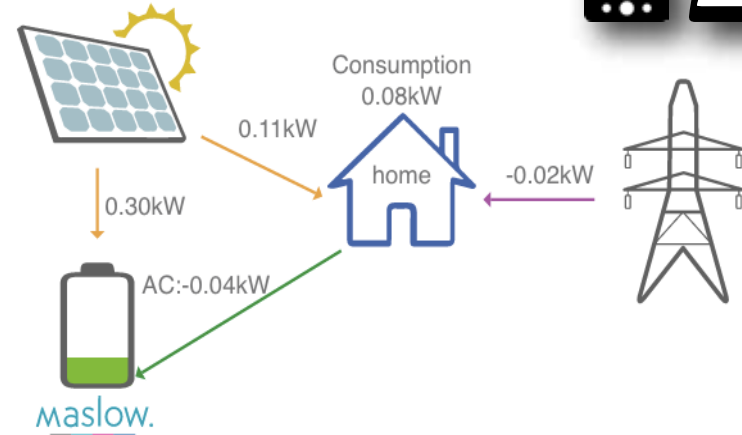
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## Maslow status



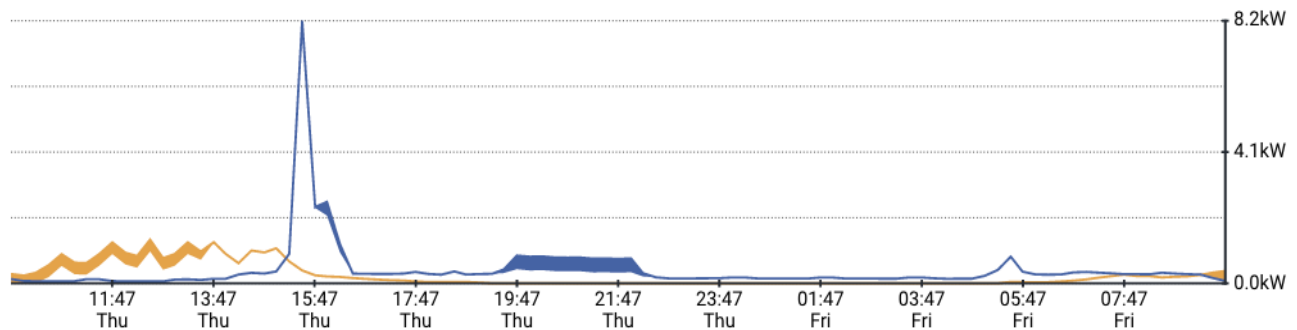
## Current energy flow



## Your stored energy

24h

7d



My maslow

Groups

My Savings

Devices

Status

Control

Dispatch

Report

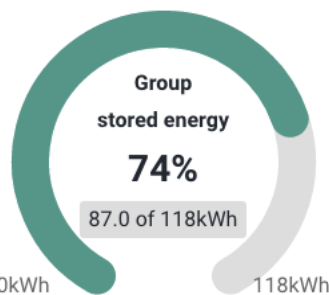
Alerts

Admin

/eric/Eric ACTIVE Subset

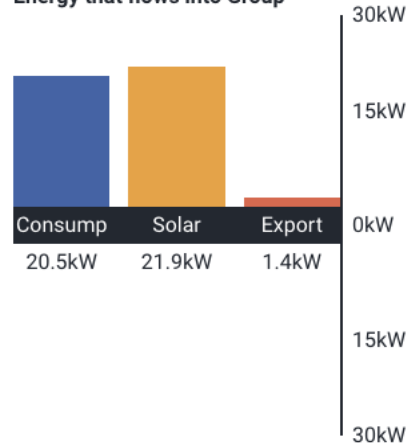
All

## Maslow status

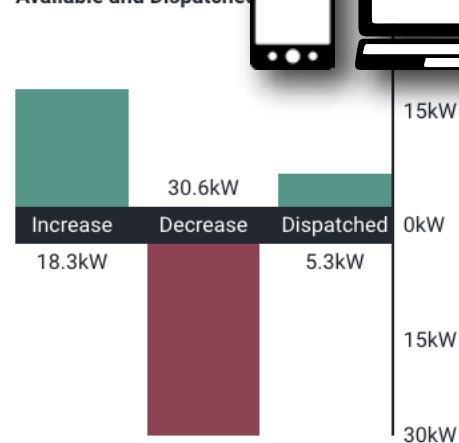


Number of devices **59**

## Energy that flows into Group

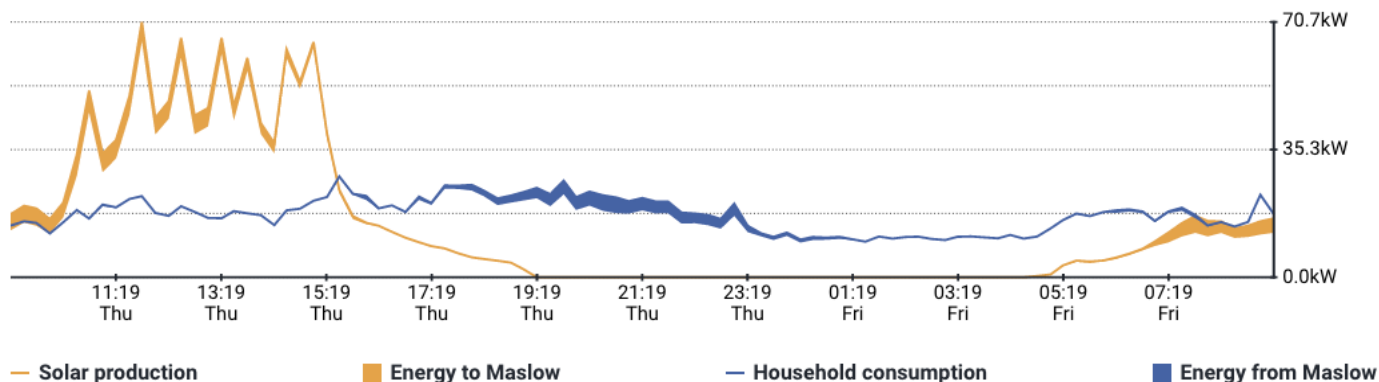


## Available and Dispatched



## Your stored energy

24h 7d



# User Dashboard: My Savings



/Maslow Units/b827ebe

all

## Total energy stored

So far today

**0.03**kWh

Yesterday

**1.58**kWh

Last Week

**9.62**kWh

Last Month

**40.64**kWh

## Savings

So far today

**£0.00**

Yesterday

**£0.24**

Last Week

**£1.44**

Last Month

**£6.10**

## Power import / export / store since yesterday





My maslow

Groups

My Savings

Devices

Status

Control

Dispatch

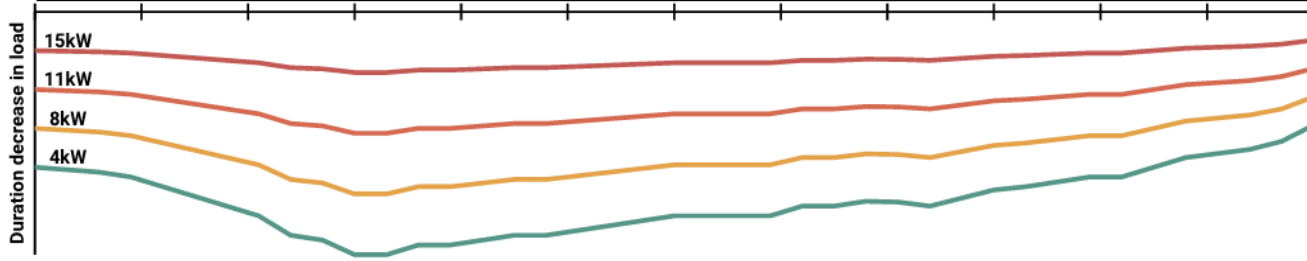
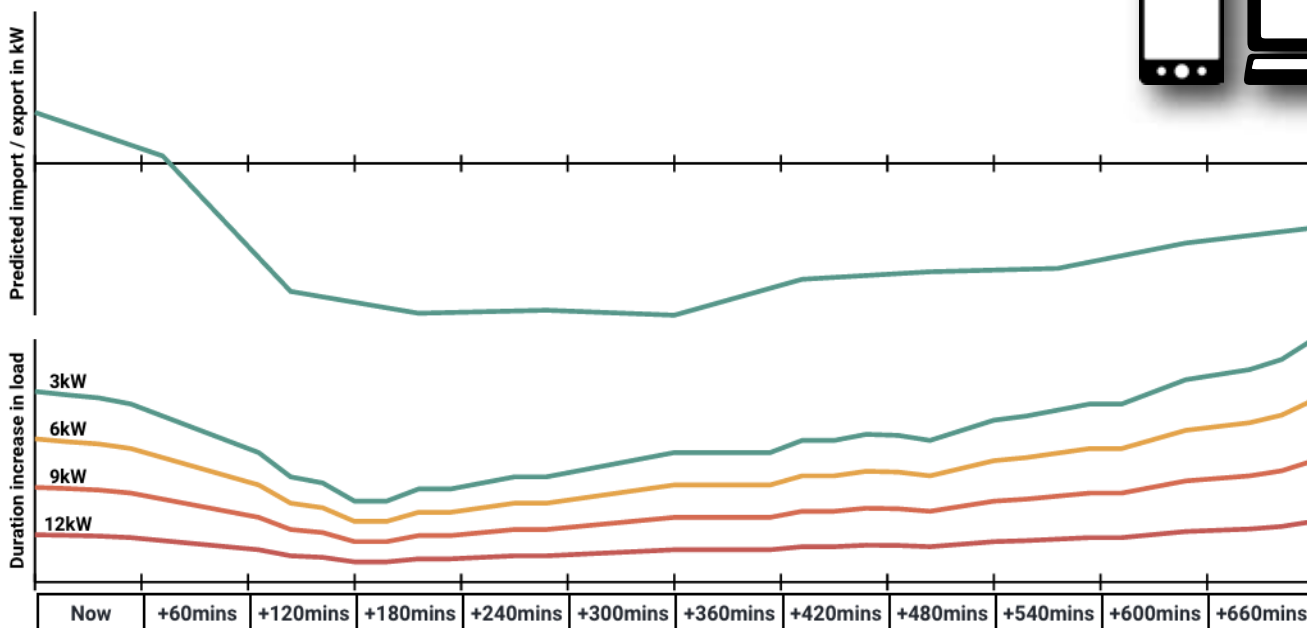
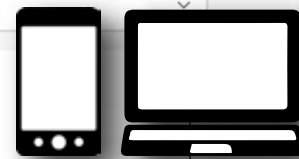
Report

Alerts

Admin

/eric/Eric All LIVE

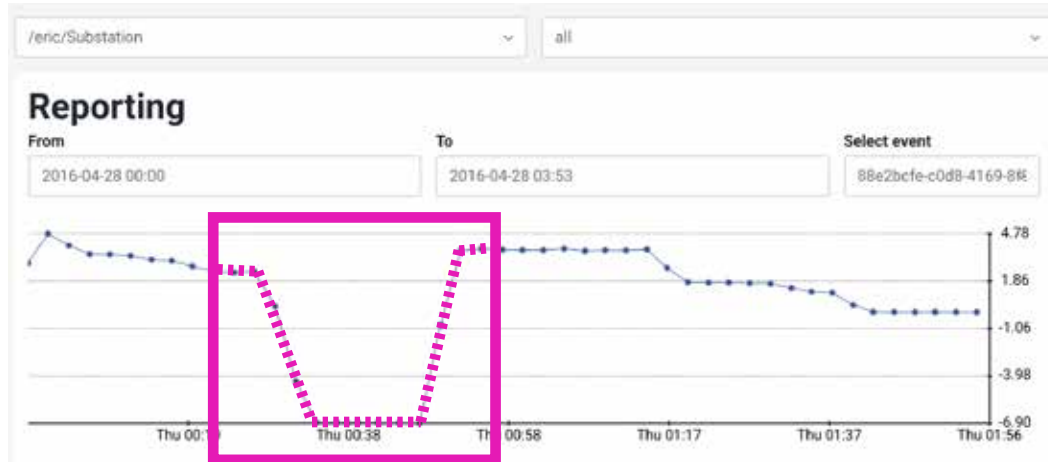
all



## Dispatch Request

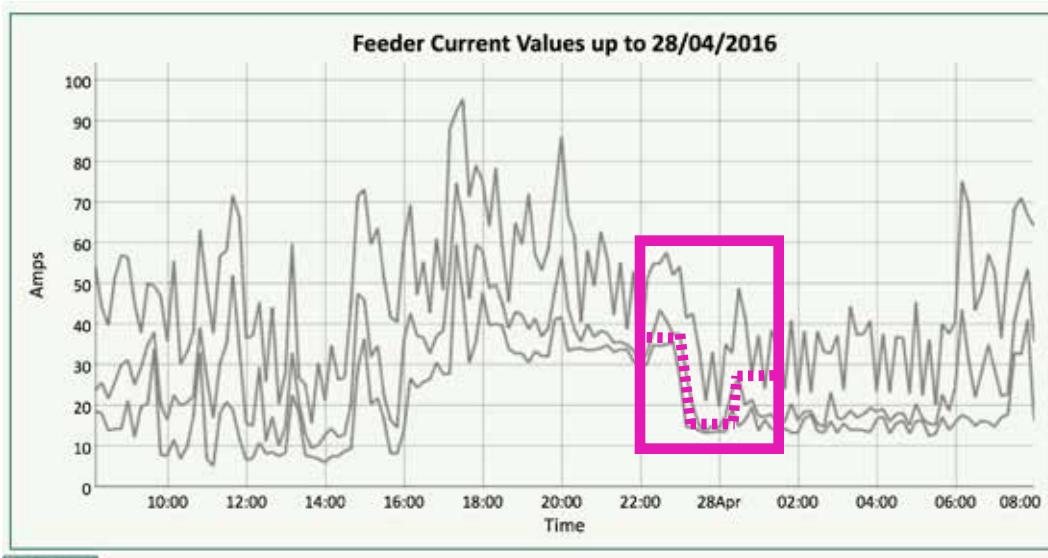
Assign Contract:  Event start:  Event end:  Shift request:

# Project Eric dispatch: Substation monitoring



Testing local grid effects:

28th April test dispatch of a small subset of 20 houses, 1hr dispatch event.



This is visible on the sub-station monitoring installed by SSE PD for the project.



# Proprietary and patented technology

Patents granted on the **Maslow** technology

Major tech companies reference Moixa's patents in their IP filing.

<p><b>US20100076615</b></p>  <p>2008 priority          - US8849471          - GB2476213          - Continuations ongoing          US20140159485</p>	<p>Cited by:</p>         	<p>US8219259 *          US8682498          US20100174418          US20110225593          US20140372597</p> <p>US8565928 *          US8621097          US8712595 *          US8726059          US8775848</p> <p>US8667132          US8671167          US8671191          US8676953</p> <p>US20120118989          *          DE10201003375          4A1 *</p>	          	<p>US20120301763          *</p> <p>US20120290144          *</p> <p>US20120310463          US8798834 *</p> <p>US20120089263          *</p> <p>US8423242 *          US20120123639          *</p> <p>US20130113413          *</p>	        	<p>US20140006329          *</p> <p>US20120278472          *</p> <p>US8638804 *          US8879568</p> <p>US20120065801          *</p> <p>US8970176 *</p>
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First patent filed 2008, and this date can be used for spun out derivatives & continuations based on this to cover specific new innovations



# The world just changed™



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