

# i-STUTE: WP1

Advisory Board Meeting #2

8<sup>th</sup> April 2014

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# WP1: Economics, Policy and Behaviour

- ◎ Support the Centre by aiding development of solutions that:
  - Appeal to people who would buy and use them (Behavioural Science)
  - Have business models likely to succeed in the market (Strategy with elements of Policy)
- ◎ Work in these areas combines:
  - Taking what other WPs are looking at and considering these factors for your solutions in your target markets
  - Analysing what's happened and happening in the market where similar products/propositions have been introduced

# Expressing WP1's research as questions:

- ⦿ What commercially viable business models are available to companies, working within appropriate and realistic policy frameworks?
- ⦿ What human factors must be considered to ensure the technology solutions fit within the current activities or lifestyle of the individual or organisation?
- ⦿ How can we ensure that users perceive the technology solution as involving minimal risk and responsibility?
- ⦿ What ancillary benefits will come from the technology, including enhanced reputation and self-esteem?
- ⦿ How can adopting the technology solutions be as straightforward a task as possible?

# WP1's Work Packages

- ◎ **WP1.1: Review and synthesis of existing activities.**
  - A review of how economic, policy and behavioural factors influence the adoption of new technologies relevant to heating/cooling technologies.
- ◎ **WP1.2: Business model typology.**
  - What are the existing business models adopted by energy service providers in the UK? What are the new alternatives are under consideration? How do they match the requirements for successful introduction identified in our review?
- ◎ **WP1.3: Behavioural Insights – Case studies.**
  - Case studies analysis of where business models succeed or fail to build their understanding of customer needs and behaviours, develop relationships with those customers and provide propositions that customers adopt.
- ◎ **WP1.4: Behavioural Insights – Experiments and focus groups.**
  - Focus groups & to provide converging evidence on a range of value propositions, zeroing in on features likely to lead to success or failure.

# Staffing

## ◎ Staffing

- David Elmes, Daniel Read & Victoria Haynes – in place
  - Less of David Elmes's time due to family illnesses
- RA involvement by Loughborough – Clare Lawton in place
- Post Doc at WBS – Dr Rebecca Hafner recruited
  - Started 1/4/14
  - PhD in Choice and Counterfactual Thinking at Plymouth
  - PDRA in Dept of Psychology at Bath on vehicle purchasing decisions
- Two PhDs supported by WBS:
  - Hala El Bilbaisi started October 2013
  - Candidates under consideration for second PhD starting October 2014

# Activities from AB1

## ● WP1.1: Review existing activities (CL/DE)

- Develop initial mapping
- Interview WP leads & **AB members**
- Define review areas (Q4 13)
- Systematic Reviews (Q1/2 14)

## ● WP1.2: Business model typology (DE/**PDRA**)

- Biz model concepts (Q4 13)
- Initial view of H&C market (Q1/2 14)

## ● WP1.4: Behavioural Insights (DR/**VH**)

- Onboarding PhD#1 (Q4 13)
- Agreeing experimental methods (Q1/2 14)



# WP1.1: Review existing activities

- ① Develop initial mapping (Q4 13)
  - iGuide prepared by Claire Lawton & Vicky Haynes
- ① Interview WP leads (Q4 13 – Q1 14)
  - An initial focus on domestic heat pumps with thermal storage
  - An initial focus on how presenting energy usage & efficiency prompts behavioural change
- ① Define review areas (Q4 13)
  - Factors influencing domestic units defined
- ① Systematic Reviews (Q1/2 14)
  - Ongoing – now with PDRA involvement

## I - GUIDE TO STORAGE, TRANSFORMATION AND UPGRADING OF THERMAL ENERGY

Clare Lawton and Victoria Haines  
Loughborough University



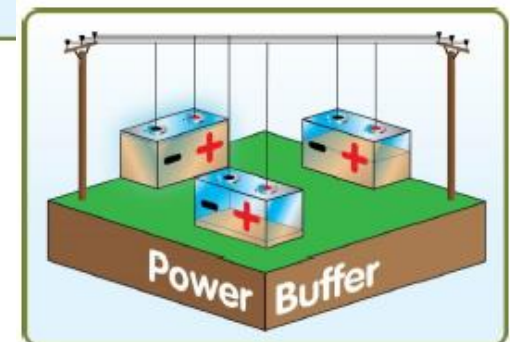
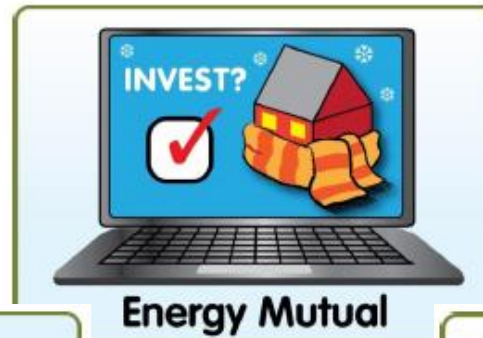
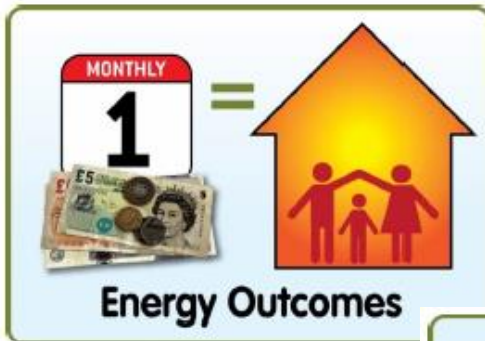
The Future of Heating:  
Meeting the challenge



March 2013

# WP1.2: Business model typology

- ◎ Biz model concepts (Q4 13)
- ◎ Initial view of H&C market (Q1/2 14)
- ◎ Both Objectives served by DE joining review panel of ETI's Smart Systems & Heat Project's Business Model Evaluation Tool





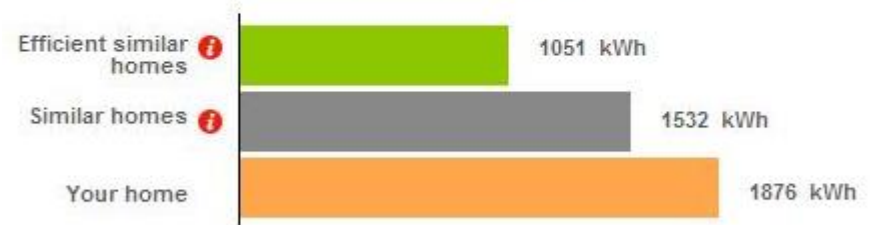
# Something to watch

- Opower's successful IPO on 4/4/14
- Business model that combines energy efficiency and utility customer engagement
  - Marries behavioural science with data analytics
  - Personalized reports that comparing use with neighbours
- Works within existing utility business models
  - White label offering
- Available to 32million households



Hi Mr David Elmes,

**How does your energy usage compare to other homes like yours?**



You are consuming 22 % more energy than similar homes in your area

# WP1.3/4: Behavioural Insights

- ◎ Onboarding PhD#1 (Q4 13)
  - Hala El Bilbaisi started October 2013
- ◎ Agreeing experimental methods (Q1/2 14)
  - Scoping experimental work on domestic heat pumps with thermal storage
    - Heat pump requirements from a householder's perspective – size, performance, response characteristics
    - Thermal storage requirements of the householder – size, location, type, installation process
    - Heating system issues – retrofit or new, pipework, delivery mechanism, data connectivity
    - Controls – type (zonal, remote access etc), design, usability, user experience
    - Heat emitters – type, fans, noise, power supply, air flow, radiant heat preferences
    - Behaviour and use – rebound, setback, demand-side management/response, variable pricing/tariffs, load shifting
    - Installation – retrofit, whole package
  - Initial experimental work on room energy display units
    - Room control units in Warwick's Sociology building

# Something to watch

- ◎ Ian Peters, MD British Gas Residential Energy
- ◎ “Putting customers back in control”
  - Analytics plus...
  - Display of information plus...
  - Users’ ability to control
- ◎ And then there’s Nest, acquired by Google
  - <https://www.youtube.com/watch?v=vAzvt-LkK2I>

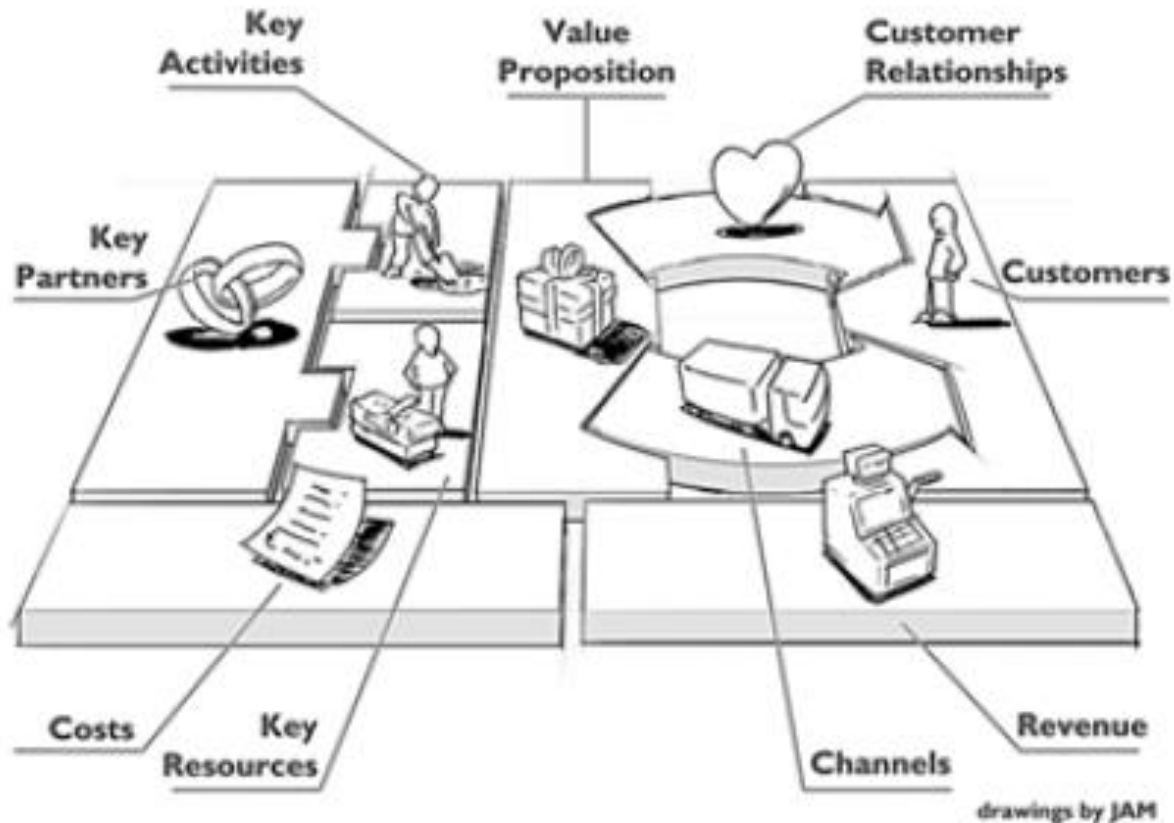


# Activities Ahead

- ⦿ WP1.1: Review existing activities (All)
  - Onboarding of PDRA (Q2 14)
  - Finalise review areas (Q2 14)
  - Systematic Reviews (Q2/3 14)
- ⦿ WP1.2: Business model typology (DE/RH)
  - Review Business model concepts with PDRA (Q2 14)
  - Recruit PhD #2 (Q2 14)
  - Initial business model library (Q2/3 14)
- ⦿ WP1.4: Behavioural Insights: Case Studies (DR/VH)
  - Agreeing experimental methods (Q1/2 14)
  - Use case for displays
- ⦿ WP1.4: Behavioural Insights: Experimental Design (DR/VH)
  - Agreeing experimental methods (Q1/2 14)
  - Scoping experimental work on domestic heat pumps with thermal storage (Q2/3)

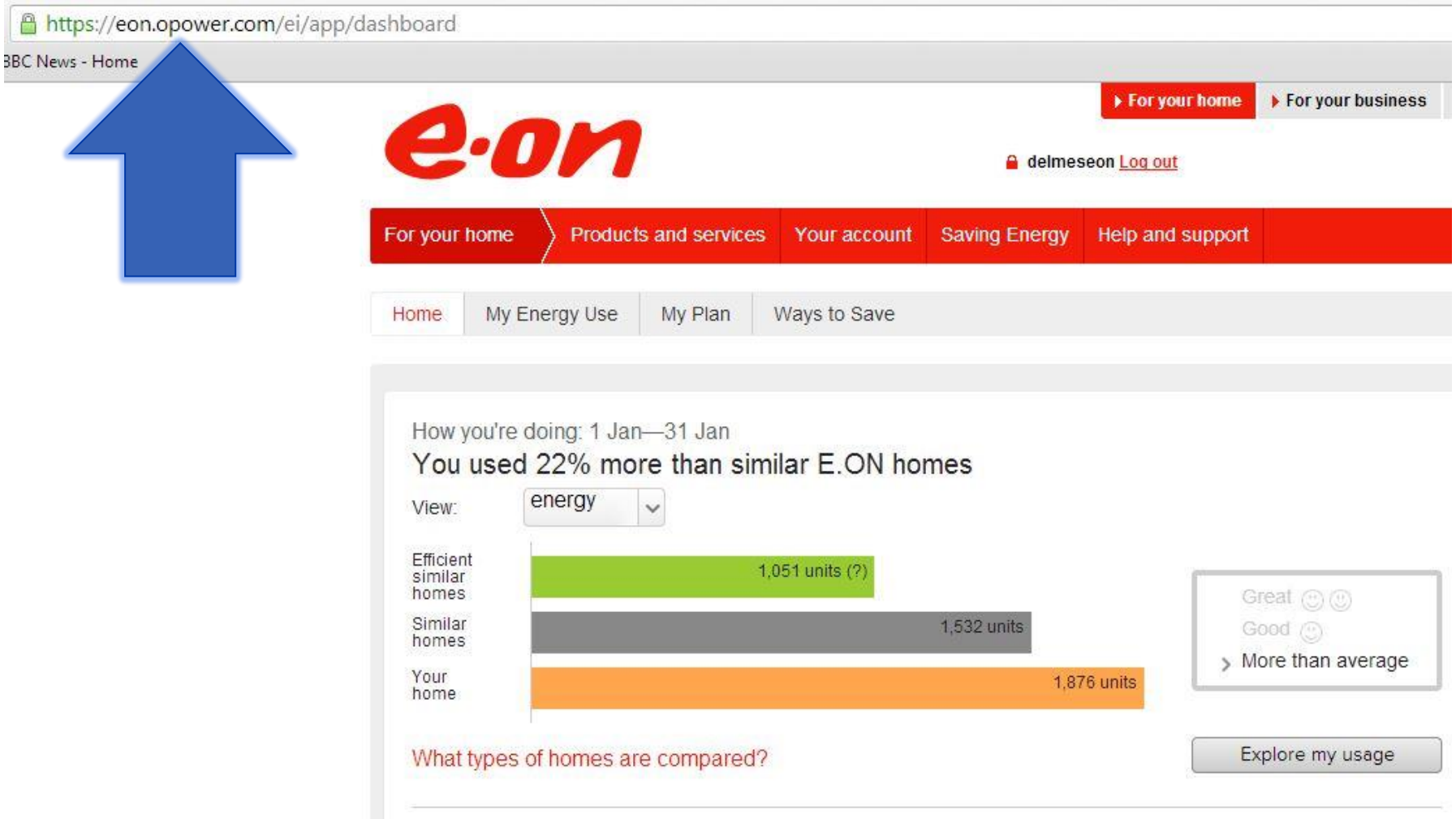
# Back-up slides

# Using a business model canvas



Source: Business model generation<sup>142</sup>

# Opower white label



https://eon.opower.com/ei/app/dashboard

BBC News - Home

**e.on**

delmeseon [Log out](#)

For your home | Products and services | Your account | Saving Energy | Help and support

Home | My Energy Use | My Plan | Ways to Save

How you're doing: 1 Jan—31 Jan  
You used 22% more than similar E.ON homes

View: energy

Category	Units
Efficient similar homes	1,051 units (?)
Similar homes	1,532 units
Your home	1,876 units

Great 😊 😊  
Good 😊  
> More than average

What types of homes are compared? [Explore my usage](#)

# Some Behavioural Science principles

- ⦿ Inertia: people like to do what they are doing
- ⦿ Excessive discounting/procrastination
- ⦿ Attention is fleeting
- ⦿ Small barriers create big hurdles
- ⦿ People like to do what others do
- ⦿ Framing matters
- ⦿ Pennies a day





# Some Strategy and Policy principles

- ◎ Policy frameworks can provide Incentives and/or Penalties
  - But our approach is *not* to see policy actions as the main lever for commercial success
- ◎ A business model articulates how a firm's intended strategic positioning and competitive advantage delivers performance
  - It articulates the value proposition
  - It identifies a market segment
  - It defines the structure of the value chain
  - It estimates the cost structure and profit potential
  - It describes the firm's position within the supply chain
  - It formulates the strategic logic by which the firm will gain and hold advantage