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Behaviour change and smart metering-related interventions

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Smart Metering Implementation Programme

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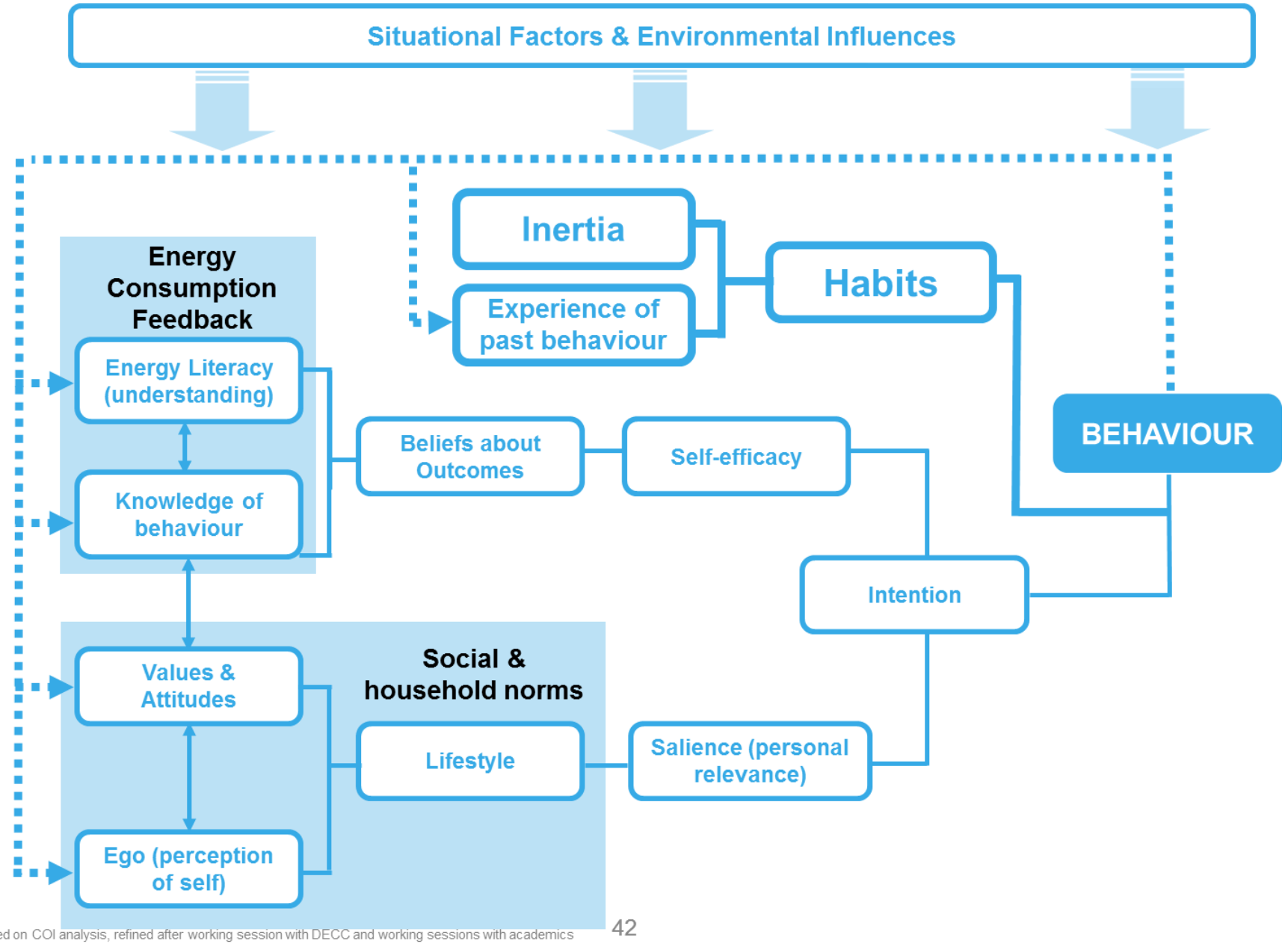
People and energy-related behaviour ….

- **Lack of salience of energy efficiency** (investments may only be made at points of crisis (their boiler breaking down) or points of change (moving house).
- **Lack of knowledge and understanding** to make the most energy efficient choices.
- **Barriers**: costs, hassle, risks and delays in realising benefits.
- **Creating new 'social norms'** and a shared commitment to energy efficiency and low carbon infrastructure.
- **Behaviour change**: how to influence the routines and rhythms of everyday life

Routine Behaviours Model



Based on COI analysis, refined after working session with DECC and working sessions with academics

Consumer Engagement Strategy 2012: interventions

These 6 categories seek to describe **types of intervention** – not who owns or delivers interventions

*Direct interventions**

Direct feedback on energy consumption →	Information on household energy consumption provided in real time
Indirect feedback on energy consumption →	Information on household energy consumption provided historically
Advice and guidance →	Provision of information, advice and guidance on energy reduction (delivered by paper, web, TV, mobile, face-to-face or by phone)
Motivational campaigns →	PR, marketing or advertising campaigns designed to drive consumer awareness of energy efficiency and motivation to reduce consumption
Consumer incentives or disincentives →	Financial or other incentives/disincentives targeted directly at the consumer and designed to drive a reduction in consumer energy usage

*Indirect Interventions***

Market (non-consumer) levers →	Levers, such as regulatory measures and financial or other incentives/disincentives, targeted at market actors and designed to indirectly reduce consumer energy usage

**Direct interventions aim to stimulate behaviour change by impacting directly on consumers*

***Indirect interventions encourage third parties to deliver direct interventions and thereby stimulate or facilitate consumer behaviour change*

Subcategories of intervention

Direct interventions ... *Indirect interventions*

Direct feedback

- In-home display (IHD)
- IHD + heating controller
- IHD + usage indicator alarm
- **IHD + visual usage indicator**
- IHD + appliance level feedback
- IHD in-built into appliance

- Real time feedback via TV, Web or mobile
  - Real time feedback via mobile + real time remote control

- Prepay smart meter

Indirect feedback

- Historic feedback on energy consumption (via bill, paper, TV or web)

- Comparative or normative feedback on energy consumption (via bill, paper, TV or web)

- Shared comparative feedback on energy consumption

- **Feedback on household energy loss (e.g. infrared photos)**

- Feedback on household temperature levels

Advice and guidance

General

- Provided on paper, web, TV, mobile, face to face (one-to-one or in a group), or by phone
- Single, independent source of accredited EE advice (multiple channels incl. phone, online)
- Independent list of accredited EE suppliers
- Product labelling schemes (EE rating or lifetime impact)
- Independent appliance energy consumption comparison website

Household-specific

- Provided on paper, web, TV, mobile, face to face (as above), or by phone
- **Household energy audit + tailored advice and guidance**
  - Based on physical survey or remote analysis of smart or other data
- Energy Performance Certificates

Motivational campaigns

- PR campaign
- Marketing and social marketing campaign
- Advertising campaign
- TV show placements

- Using trusted advocates, spokespeople and champions to promote low energy behaviours

- Demonstration households
  - EE behaviours
  - EE home improvements
  - EE technology

- Promotion of energy efficient public and private sector estates and workplaces

- **Making local or household energy use visible in the community**

Consumer incentives or disincentives

Financial

- Cash rewards or prizes (household or community)
- Tax credits, reductions or rebates (incl. VAT)
- Stamp duty reductions or rebates (EPC-linked)
- Council tax reductions or rebates
- Grants, loans, subsidies (incl. Green Deal etc)
- Disincentives (e.g. rising block tariffs; time of use tariff; penalties for not meeting EPC standards)
- Offers/discounts on EE or other products & services (incl. collective purchasing)

Non-financial

- Commitments or targets to reduce energy usage
- Non-cash rewards or prizes (hhold or cty)
- Free or subsidised services to remove barriers to EE measures (e.g. loft-clearing)
- Free or subsidised EE equipment, products or appliances
- Planning permission dependent on EE measures

Market (non-consumer) levers

- Minimum product standards (choice editing)

- Energy Company Obligation measures

- Market reforms aimed at incentivising suppliers and other parties to drive a reduction in domestic energy consumption (jncl. settlement reform)

- Tax credits, reductions or rebates (incl. VAT) and innovation funding aimed at stimulating development and distribution of EE/smart/automated products and associated services

- Incentives/disincentives aimed at key parties. e.g.
  - Tradespeople
  - Landlords
  - Estate agents
  - Local authorities

- Smart Energy Alliance (business + consumer groups)

- Advertising restrictions around non EE products

- Building regulations

Based on COI analysis, refined after workshop with DECC and academics and working session with DECC

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Early Learning Project

- What can we learn from Foundation installations of smart-type meters and IHDs?
- Focus is on how to maximise consumer benefits

- What are the **critical factors** for delivering consumer benefits, especially energy saving?
- What **changes to consumer engagement** may be needed, in order to optimise benefits?

Research outputs have been published at https://www.gov.uk/government/publications/smart-metering-early-learning-project-and-small-scale-behaviour-trials

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Quantitative survey findings

Comparisons were made between the survey responses provided by smart–type meter customers and a matched control group of legacy meter customers. This enabled us to assess whether or not a range of reported impacts can be attributed to smart-type meter installations.

Positive impacts identified *(based on self-reported actions)*

- Try to reduce energy use at home
- Frequently purchase more efficient appliances
- Installed loft/top-up insulation

- Less likely to have queried a bill

- Feel in control of gas use
- Know what uses most electricity in home

- Recently changed energy tariff
- Satisfied with energy supplier

- **Evidence suggests more scope for improving impacts in other areas including wider energy efficiency behaviours**
- **In order to improve these impacts consumers will need further support in a) using the IHD to its full potential and b) acting on the information it is giving them**

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Consumers need to know what to do to save energy

- **General awareness and intentions to manage energy better are not sufficient – consumers need tailored help to develop behavioural strategies and identify savings.**

- Range of evidence from ELP that consumers need specific advice and guidance to help them save energy.
- ELP highlights positive role of installers as agents of change – we need to harness this cost-effective opportunity.
- Advice and guidance may be best delivered in stages, pre, during and post installation.
- Scope for joining up with local organisations
- Links to other energy efficiency levers – increasing the material benefits of the roll-out to consumers

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Actors supporting innovation and behaviour change

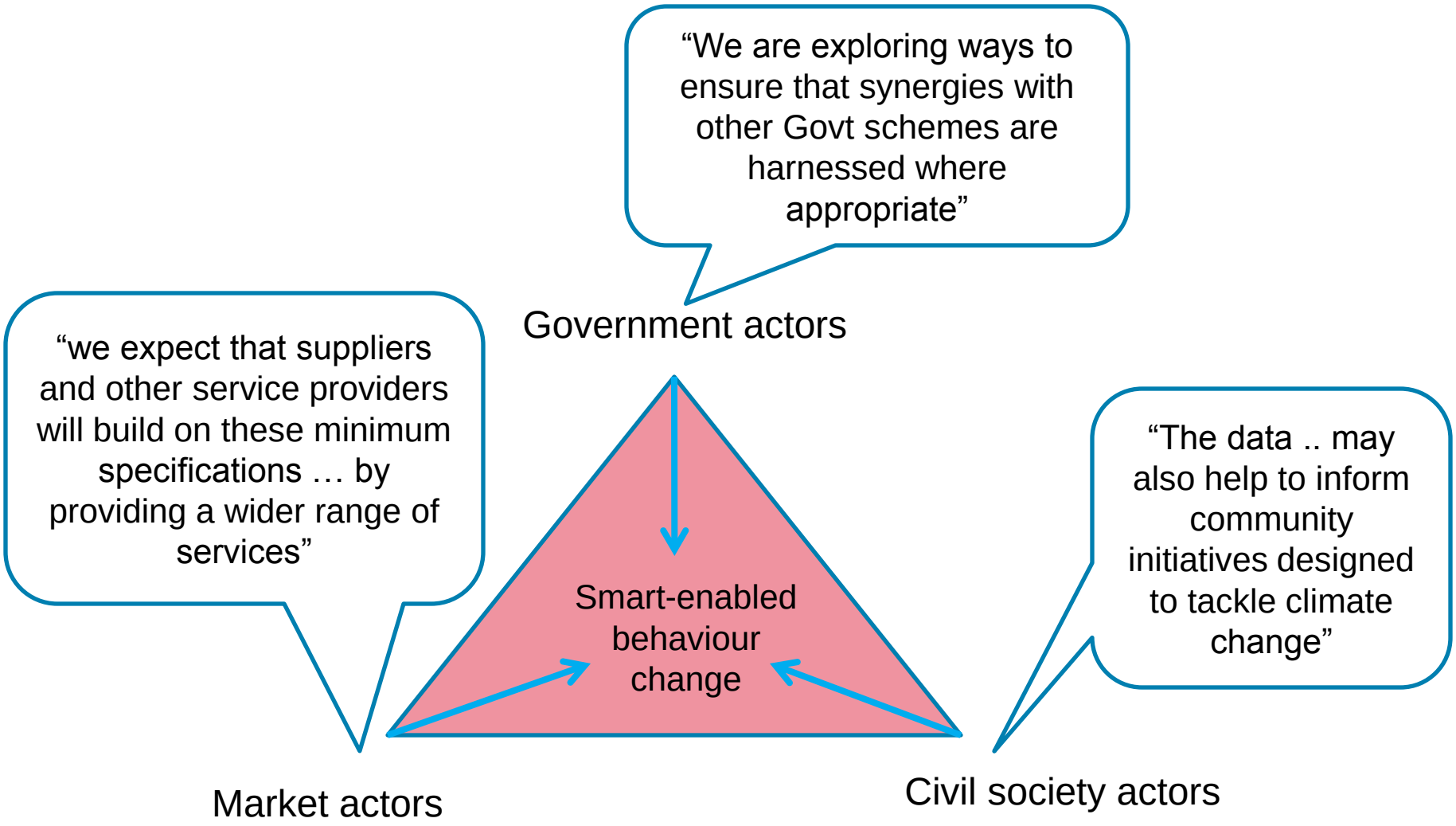

Diagram adapted from Jacquie Burgess & Tom Hargreaves – Transition Pathways Project

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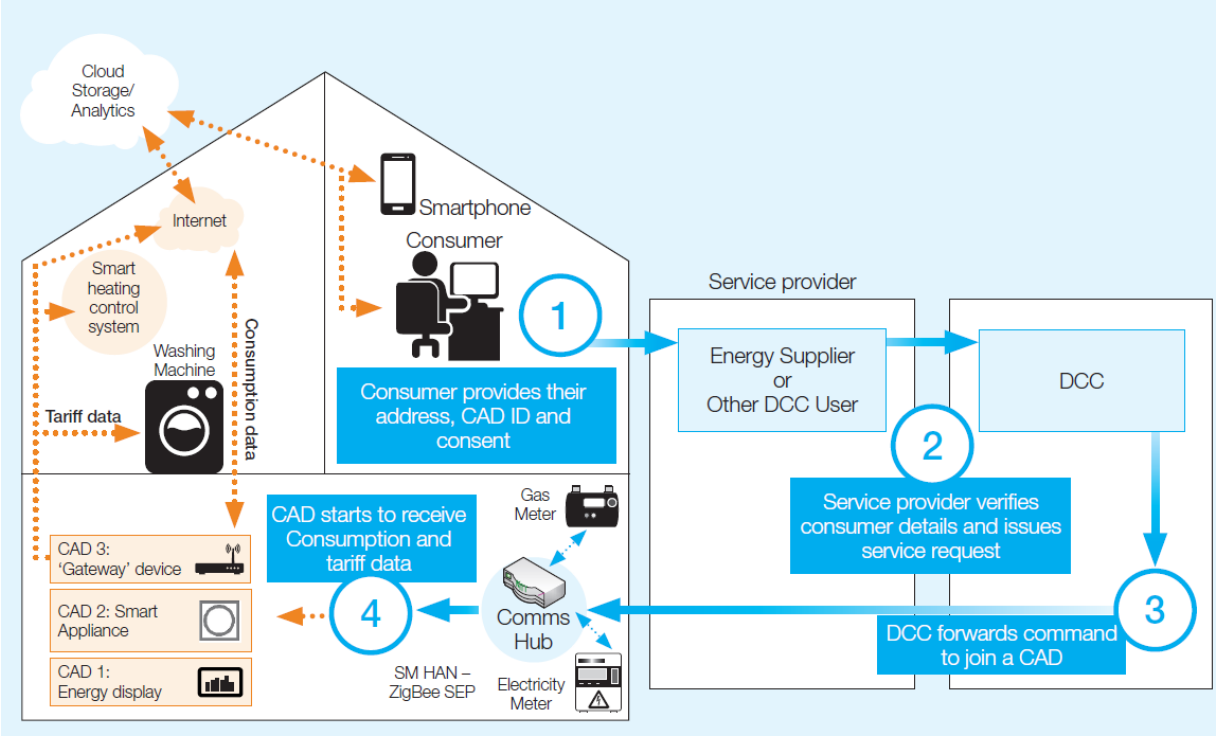
Smart Meters and innovation

A major platform for innovation in the energy data space – 53 million meters to be installed by the end of 2020:



- Consumers can allow companies to retrieve consumption and tariff data remotely from their meters;
- Consumers can connect gateways which receive data locally to control appliances or stream to the cloud;
- Energy supplier is not involved in either route to data;
- Level playing field between suppliers and others in market for energy data services.

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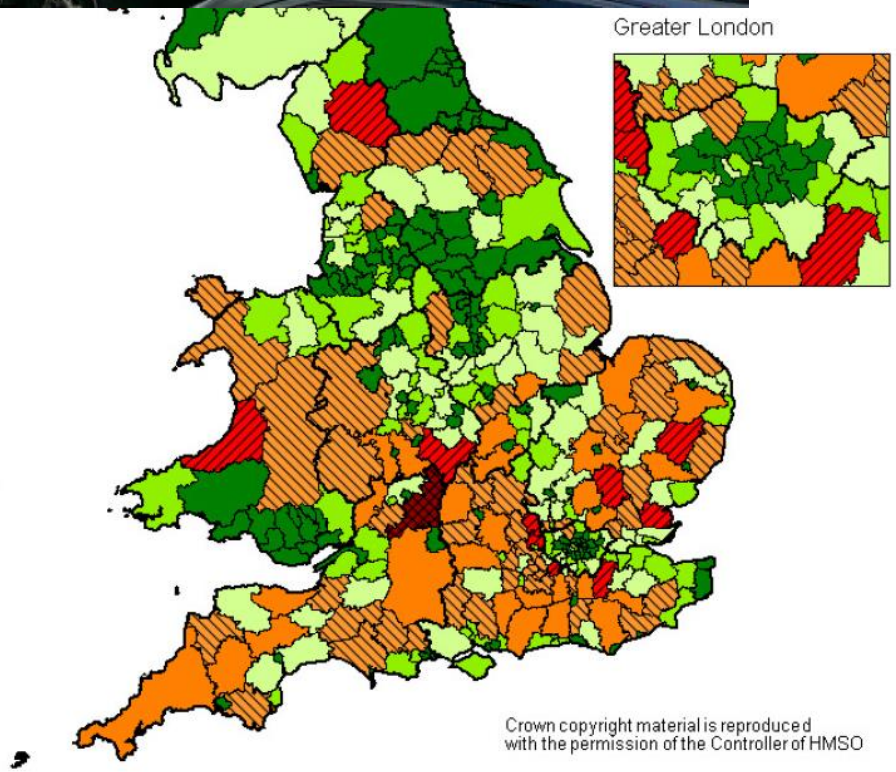

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Final thoughts

- Complexity and taking a “learning” approach (Cynefin: probe / sense / respond):
  - Need for ongoing experimentation, evaluation and feedback
  - Rich variety of potential pathways and actors
  - Enabling policies, and policies working in combination with each other
  - “The future is here. It’s just not widely distributed yet.” (William Gibson).