The development of a National Energy Efficiency Data-framework and its use in evaluating energy efficiency policies.

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In this session we will cover:

• Why and how we started to collect meterpoint energy data

• Incorporation energy efficiency deployment and other data

• Initial analysis

• Future use in policy evaluation

What's energy efficiency and how much can it help cut emissions?

theguardian

Cavity wall insulation

If your home was built after 1920, the chances are that its external walls are made of two layers with a gap or cavity between them. Cavity wall insulation fills that gap, keeping the warmth in to save energy. It can also help reduce condensation inside the house if this is a problem on your external walls.

Not sure whether you have cavity walls? Read our guide to working out what sort of walls you have.

→ How much could you save?
→ Is cavity wall insulation suitable for your home?
→ How is insulation installed?
→ What is the insulation made of?

How much could you save?

Measure	Annual saving	Installation cost	Payback time	Carbon dioxide saving per year
Cavity wall insulation	Up to £135	£100 - £350	Less than a year - 3 years	Around 550kg

energy saving trust

BBC NEWS

Turning off phone chargers 'a tiny gesture'

An adviser to the UK government has said the mantra of everyone "doing a little" to save energy was not enough to make a difference.

Prof David MacKay said people were being "duped" into believing actions such as remembering to turn off mobile phone chargers were sufficient.

His comments are carried in the latest edition of the Scottish Environment Protection Agency's magazine.

Prof MacKay advises the Department of Energy and Climate Change (DECC).

The University of Cambridge physics professor has written a book called Sustainable Energy - without the hot air.

It looks into energy consumption and production statistics and how they could be used to plan for a low-carbon future.

Turning off chargers for mobiles is a "tiny gesture", Prof MacKay says

Why did we collect meter point energy consumption data?

2003 Energy White Paper emphasised the importance of decision-making at local and regional level for energy policy.

Main obstacle to achieving this was the lack of available sub-national energy consumption data

This was needed by the local and regional bodies to monitor and target areas for further interventions.

The Approach taken….

Consultation outcomes

– Low cost approach required to gain support from the energy suppliers.

– Utilise the data that energy companies need for their own purposes.

– Timing considerations impact on accuracy (and IT availability).

What data would be provided for us to analyse?

– An audit run initially for "balancing and settlement" purposes.

– Annualised consumption data for c30million electricity customers and c25million gas customers included on the audit run.

The key players in the energy market we work with
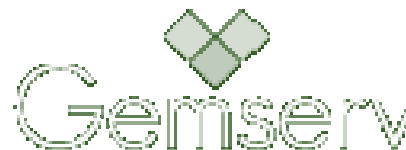
Barriers encountered

- Energy companies had always provided UK level data for statistical purposes, but had concerns about Government using their disaggregated data
  - Particular concerns related to other energy suppliers being able to target / "poach" their high using (profitable!) customers.

- UK Statistics Code of practice came in useful.

- Had to build up trust.

- Annual agreements obtaining permission to obtain and use the data for specific statistical purposes.

- Separate agreements would be sought if we wanted to use the data for anything else.
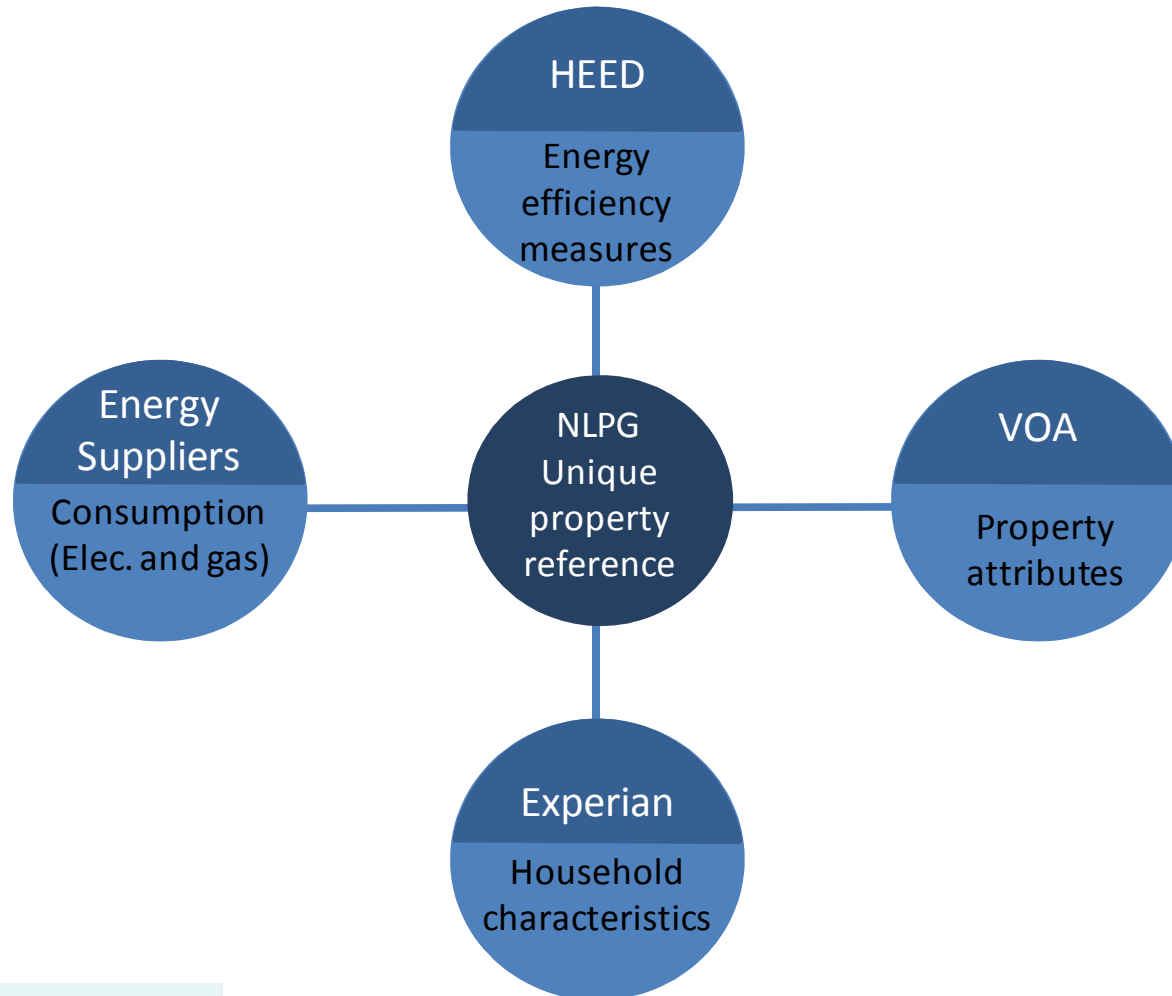
Summary of publication timetable

Sub-national geography	Type of consumption available	Years that the data are available for	Publsihed
Local authority	**Gas consumption** - Sales (GWh), number of consumers, sales per consumer - Domestic and non-domestic	Since 2004; 2005 onwards are National Statistics	December *y+1*
	Electricity consumption - Sales (GWh), number of MPANs, sales per consumer and sales per household - Domestic and non-domestic	Since 2004; 2005 onwards are National Statistics	December *y+1*
Middle Layer Super Output Area (MSOA) *- Approximately 2,000 households*	**Domestic gas**	Since 2004; 2005 onwards are National Statistics	End of March y+2
	Domestic electricity		
	Non-domestic gas		
	Non-domestic electricity (excluding half hourly consumers)		
Lower Layer Super Output Area (LSOA) *- Approximately 500 households*	**Domestic gas**	Since 2008	End of March y+2
	Domestic electricity		

Development of NEED

- Built on the availability of consumption data to link with other sources to create a National Energy Efficiency Data-framework

- Uses existing data sources (administrative and commercial) to match, at an individual address level, gas and electricity consumption data with information about energy efficiency measures installed.

- It also matches this with information about the property and with household/business characteristics.

Domestic NEED

HEED

Energy efficiency measures

Energy Suppliers

Consumption (Elec. and gas)

NLPG Unique property reference

VOA

Property attributes

Experian

Household characteristics

Also includes some additional data at neighbourhood level

Challenges

- Many challenges, for example
  - Getting permissions to use and link data from different sources
  - Complying with data protection
  - Secure transfer of data
  - Having IT infrastructure in place to store and analyse data
  - Matching data together via a unique identifier
  - Managing expectations

Data in NEED (at individual property level)

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Electricity and Gas meter point consumption data

- DECC award winning national statistics
- Annualised consumption
- Data available for 2004-2009
- Domestic - 23 million electricity and 19 million gas meters
- Non-domestic - approx 3 million
- Gas data weather corrected

Homes Energy Efficiency Database (HEED)

- Developed by Energy Saving Trust
- Records on energy efficiency and micro-generation installations
- Includes measures from EEC/CERT, fuel poverty programmes, Low Carbon Buildings Programme, CIGA, Corgi.
- Approximately 50% of homes in HEED

Experian data

- Modelled data on property attributes and household characteristics
- Based on data from reported sources such as, company directors, shareholders, Experian consumer survey
- Variables include income, age of head of household, length of residence
- Data not reliable at individual record level

Valuation Office Agency (VOA) data

- Administrative data collected to inform Council Tax band evaluation
- Property attribute data, including:
    - type of dwelling
    - number of bedrooms
    - floor area
- Also includes tenure, but less reliable
- Subject to strict access arrangements

Data matching results

Percentage of records matched against NLPG
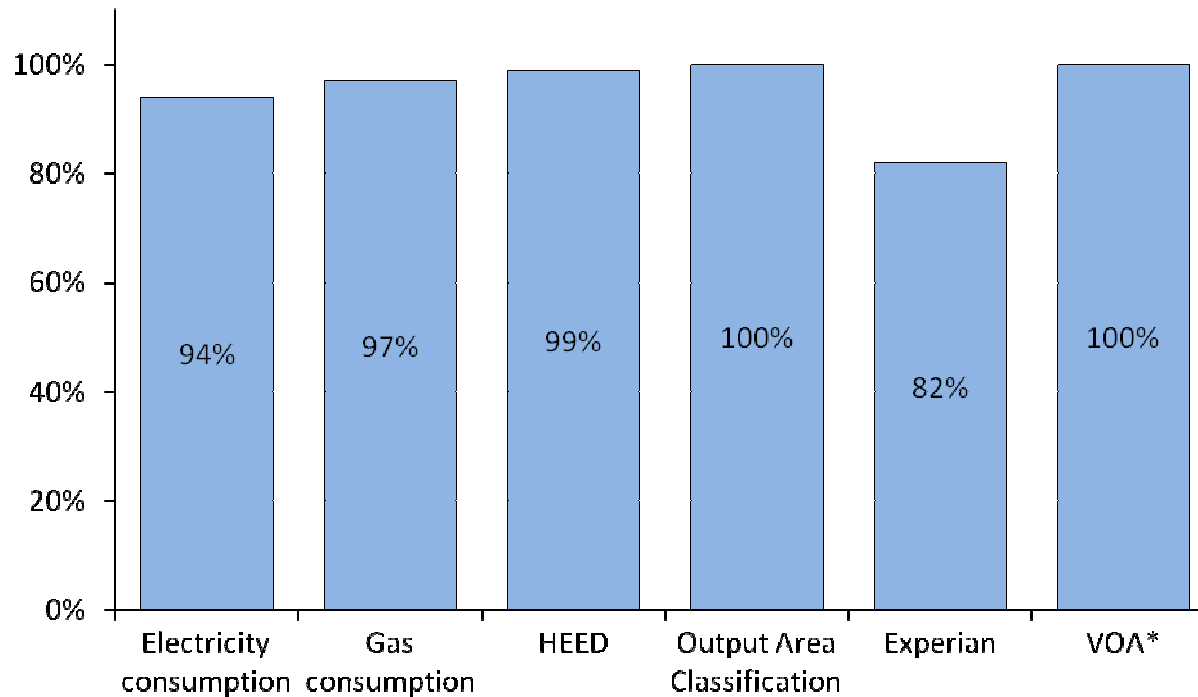
•A sample of 4 million was drawn from VOA so was fully matched with the NLPG.
•HEED records for flats have not been matched
• DECC purchased a 10% sample of Experian records within the VOA sample of 4m dwellings

# Why is NEED important?

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• provides the largest source of data available for analysis of energy consumption; previous evidence has been derived from surveys and small technical monitoring trials.

• forms an important element of UK energy policy evidence base and already plays a key role in development and evaluation of policies.

• NEED estimates of the savings from cavity wall insulation, loft insulation and condensing boilers have informed development of the Green Deal.

NEED should provide an evidence base to help the UK:
• develop, monitor and evaluate key policies (including the Green Deal).
• develop a greater understanding of the drivers of energy consumption; and
• gain a deeper understanding of the impacts of energy efficiency measures for households and businesses.

Results
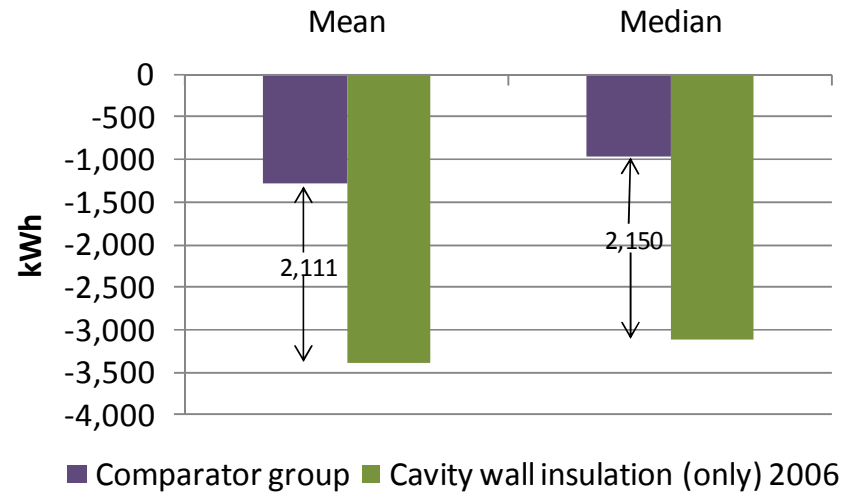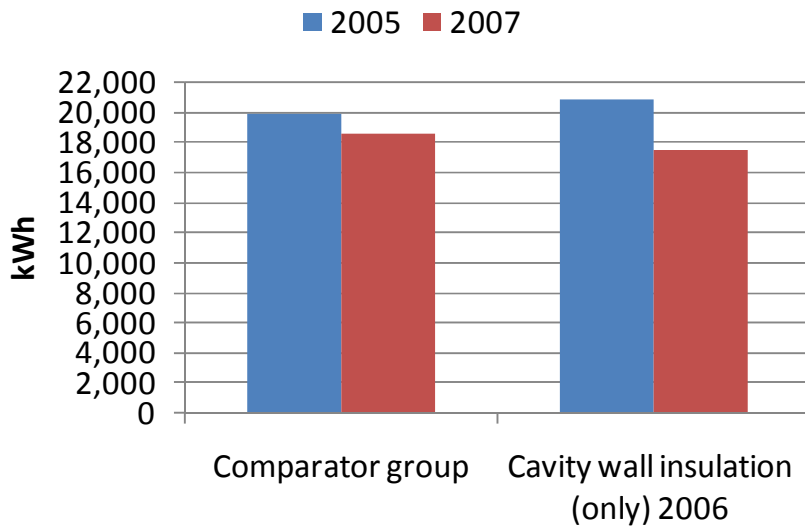
A typical house saved 2,150 kWh from the installation of cavity wall insulation.

Any questions?