



Department
of Energy &
Climate Change

Monetising the health benefits of energy efficiency measures

Presented by

Mark Ewins

19 April 2013

Aim of presentation:

1. Explain how UK energy efficiency policy accounts for health impact,
2. Introduce the HIDEEM model and share provisional results
3. Highlight what barriers remain to fully utilising our analysis.

This presentation covers each of these points in order

Current account of health in energy efficiency policy



Department
of Energy &
Climate Change

- Primarily discussed in context of fuel poverty policy
- Fuel poverty is distinct from income poverty due to its impact on health
- Vulnerable population are:
 - ☐ Elderly
 - ☐ Infants
 - ☐ Disabled
- Vulnerable population set the eligibility criteria for fuel poverty policies
 - ☐ Bill rebates
 - ☐ Subsidy for energy efficiency measures

Monetised impacts needed to systematically and comprehensively influence energy efficiency policies

Health Impacts of Domestic Energy Efficiency Measures (HIDEEM) Model



Department
of Energy &
Climate Change

- Commissioned by DECC and developed by University College London and London School of Hygiene and Tropical Medicine
- Aim: to quantify the indoor environmental conditions and monetise the health impact associated with energy efficiency changes in houses in Great Britain
- Outcomes: Quality Adjusted Life Years (QALY) and Net Present Value (NPV)
- Use in government
 - ☐ Analyse effectiveness of measures for impact on health
 - ☐ Impact Assessments

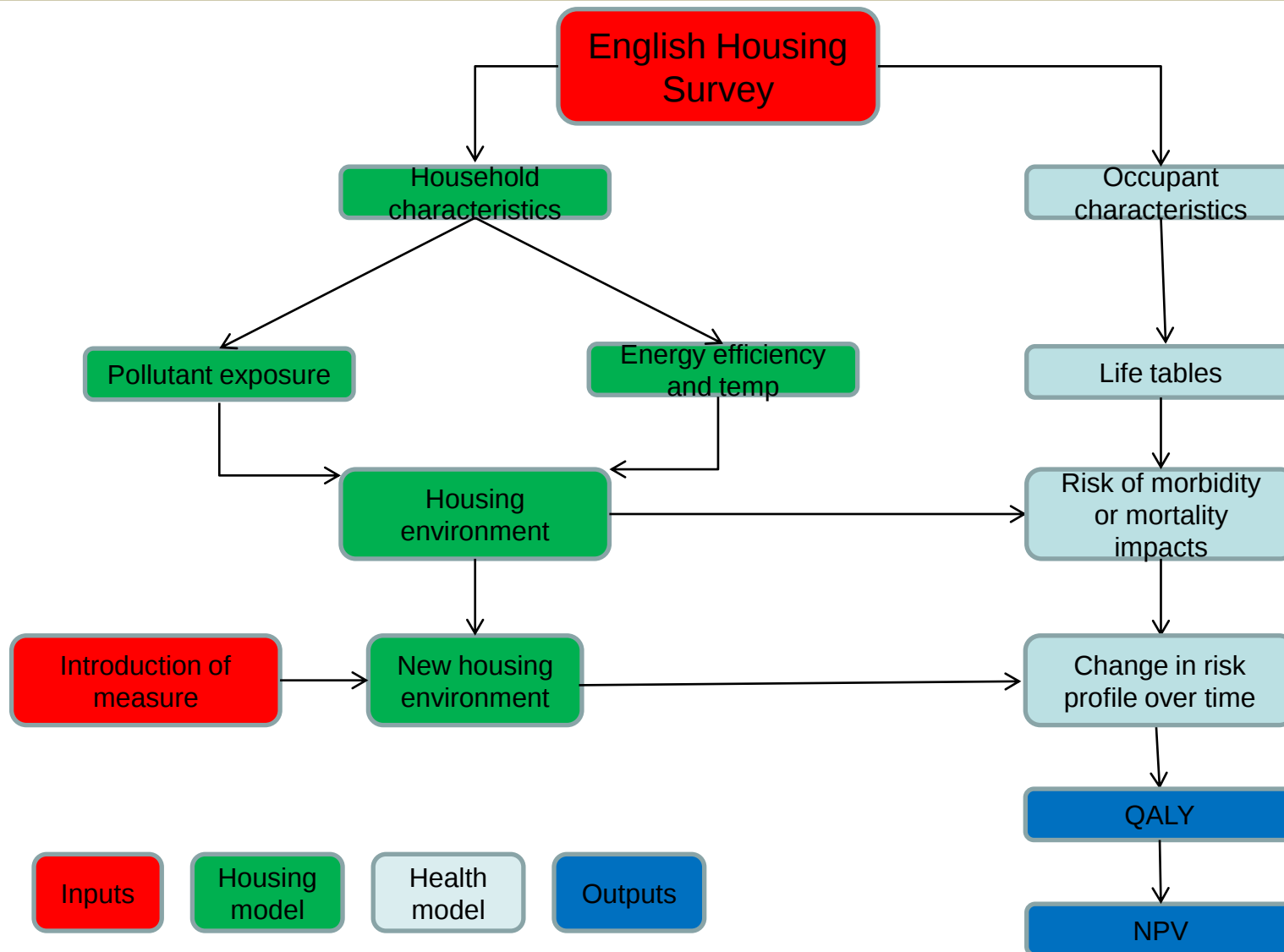
Results are provisional

- EHS: Dwelling characteristics:
 - ☐ Ventilation, heating and fabric thermal efficiency
 - ☐ Exposure to pollutants and cold temperatures
 - environmental tobacco smoke,
 - indoor PM2.5,
 - outdoor PM2.5,
 - radon gas and
 - mould growth
 - ☐ Risks to lung cancer, heart attack and causes of excess winter deaths e.g. respiratory and cardiovascular illnesses.
- EHS: Household characteristics:
 - ☐ Define vulnerability to health risks based on age
- Introduction of measure:
 - ☐ Change in exposure of pollutants and cold
 - ☐ Change in health risk
 - ☐ Leads to QALY and NPV

Schematic of model

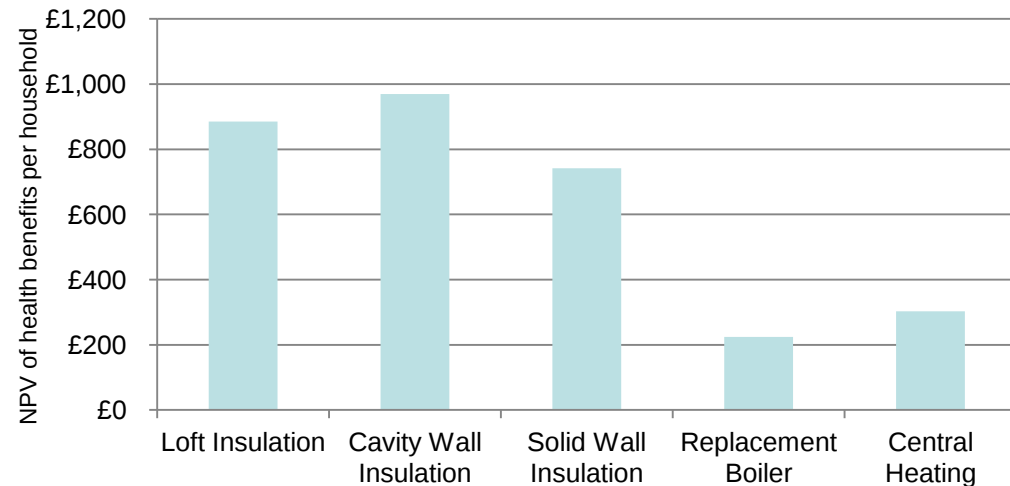


Department
of Energy &
Climate Change



Key outcomes

- Insulation measures have larger impacts than heating measures
- This is primarily due to timeframe
- Only cheap insulation measures are justified on purely health grounds



Measure	QALY per thousand measures	NPV per household	Cost per measure	Lifetime of impact (years)
Cavity Wall Insulation	49	£ 969	£500	47
Loft Insulation	45	£ 885	£300	47
Sold Wall Insulation	36	£ 742	£5,860	41
Central Heating	12	£ 303	£2,422	17
Replacement Boiler	9	£ 224	£2,043	17

Further results



Department
of Energy &
Climate Change

- Comparison to existing NPVs to show additional impacts
- Different target groups (housing tenure and income)

- Underlying data
 - ☐ Exposure to pollutants
 - ☐ Health impacts from pollutant exposures
- Overcoming existing assumptions
 - ☐ Ventilation installation
 - ☐ Duration of benefits
- Integrating with other NPV (comfort taking)
 - ☐ What are people paying for when they increase temperature following the installation of a measure: comfort and/or health?
- Integrate findings into government IA methodology