



Department
of Energy &
Climate Change

Incorporating health benefits into ex-ante project appraisal

Sam Jenkins | Fuel Poverty Programme | 20/04/2015



Outline

Policy Context

Methodology for estimating health impacts of energy efficiency

Modelling Results

Issues and Next Steps



Policy context

UK Government
decisions
underpinned by
cost-benefit analysis
/ project appraisal



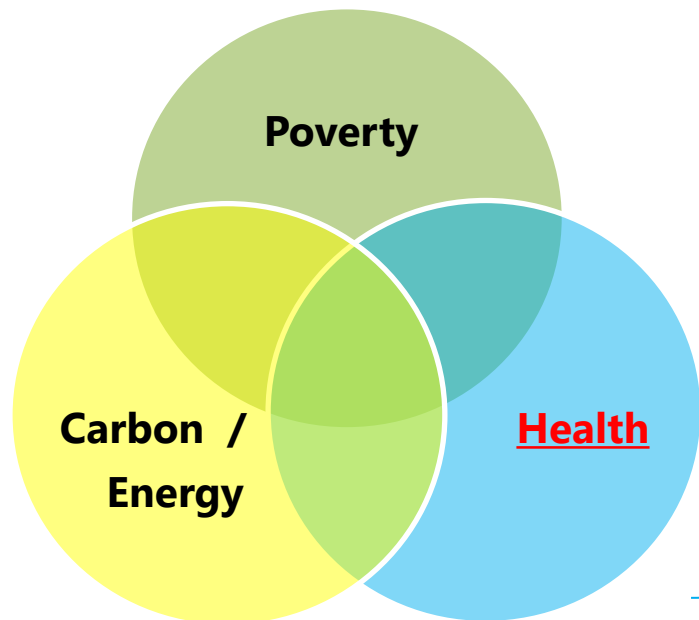
Typical quantified benefits:

- Value of energy saved
- Value of GHG reductions
- Value of better air quality
- Value of improved comfort



Gaps remain,
undervaluing energy
efficiency compared
to other carbon
reduction policies

Fuel Poverty:



- The health effects of living in cold homes = part of what makes fuel poverty a distinct problem from income poverty
- Quantifying and monetising the health effects of targeting particular socioeconomic groups can help steer interventions towards those who benefit the most from EE measures.



Methodology (1)

Health Impacts of Domestic Energy Efficiency Model (HIDEEM)

Joint project between DECC and University College London + London School of Hygiene and Tropical Medicine

Indoor Temperature + Ventilation Relationships with:

Risks of mortality / morbidity from:

- Cardiovascular events
- Cerebrovascular events
- Myocardial infarction
- Cardiopulmonary events
- Lung cancer
- Respiratory illnesses (e.g. Asthma)
- Common Mental Disorders

Energy efficiency interventions:

- Loft insulation
- Cavity Wall Insulation
- Solid Wall Insulation
- First Time Central Heating
- High efficiency boiler upgrade

And now looking to include direct energy cost subsidies



Methodology (2)

Simulate the effect
of installing energy
efficiency measure
on thermal
properties and air
flow in specific
dwellings

Change in internal
temperature

Change in
concentration of air
particulates

Change in relative risk
of developing
illness/disease for
individuals in the home

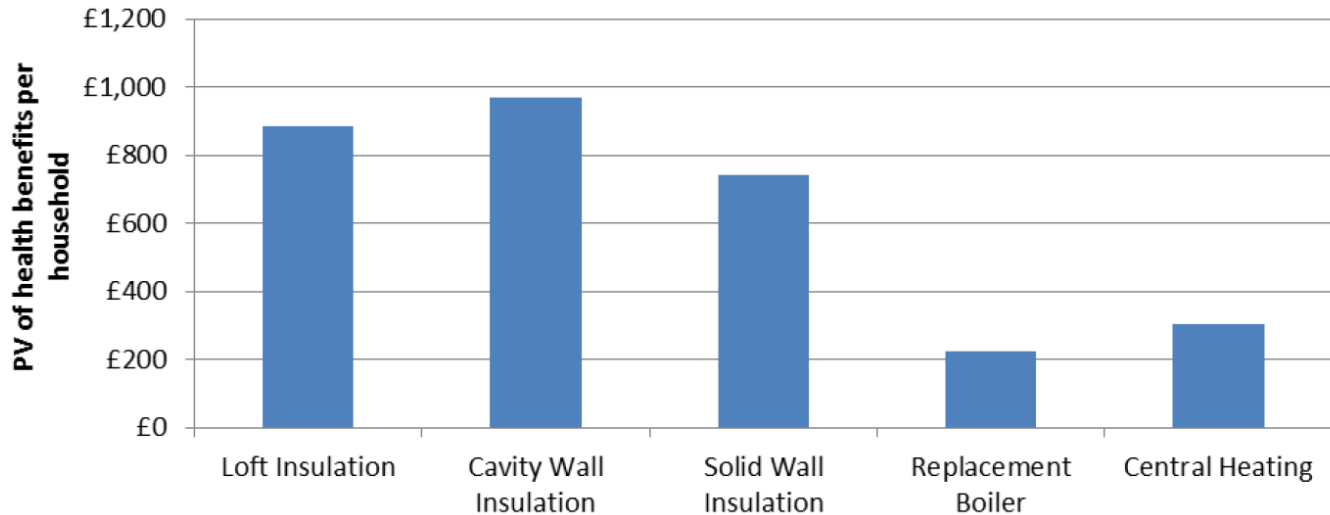
Quality
Adjusted
Life Years

Health
resource
costs

Monetised health impact
(£)



Results (QALY impacts only)



Some health measures have the potential to pay for themselves in social terms – e.g. loft insulation costs £300 - £400, improves health by £800

Energy Company Obligation

- Net Present Value excluding health: £896m
- Monetised Health Benefits: £225m

Private Rented Sector (domestic)

- Net Present Value excluding health: £32m
- Monetised Health Benefits: £102m

Some issues of overlap to resolve, but potential to make a big difference



Issues and next steps

Overlaps between benefits – can't yet add health impacts into NPV analysis

- Currently include “comfort taking” as a monetised benefit
- Unclear whether / how much of comfort taking is consciously motivated by health considerations
- Looking to resolve this in current phase of the project

Not yet clear what the net impacts of health service provision will be

- Able to estimate with relative confidence how use of health services will decline from improved health as a result of energy efficiency
- Unclear whether any extension of life will mean an increase in health service use for other health issues

Next steps

- Developing solutions to the overlaps and net health provision cost issues
- Evaluating front line health impacts to validate ex-ante modelling
- Look to expand the number of diseases covered by the model
- Systematically roll out use of health analysis in appraisal of domestic energy efficiency policies



Summary

- The evidence base for health impacts from energy efficiency in the UK is strong
- It has been possible to express health benefits in a way that works within existing Government decision-making frameworks (cost-benefit analysis)
- The potential difference that health benefits can make to project appraisal is substantial
- This work is already influencing policy decisions, even though there are issues to resolve to fully factor health impacts into full project appraisal
- We are approaching the point where we can systematically roll out the use of this tool in strategic analysis and impact assessments.



Thank you

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