



Infrastructure Business models, valuation and
Innovation for Local Delivery

**Motivation for energy efficiency policy:
Recognition of the benefits of energy efficient retrofit**

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1. Energy Efficient Retrofit of UK buildings
2. The wider benefits of energy efficiency and energy efficiency as an infrastructure investment
3. Government's valuation of Energy Efficient Retrofit
4. UK approach to EER policy valuation

UK Buildings and Energy Efficient Retrofit (EER)

Carbon emissions

- 40 – 50% of UK emissions result from energy use in buildings
- Ambition for a carbon neutral building stock by 2050
- Ambition for 2.2 million solid walls insulated by 2022

Energy affordability

- The ‘Cold man of Europe’
- Roughly 2.5 million people in fuel poverty
- £17.5 billion of investment needed to address fuel poverty

David Cameron: “we are in a global race and the countries that succeed in that race.....are those that are the most energy efficient”

IPPR: “Improving the energy efficiency of homes is the most cost-effective way to reduce emissions and tackle fuel poverty”

UK Energy Efficient Retrofit policy

Policy

1. Energy Company Obligation: subsidy/grant scheme funded by residential energy consumers
2. Green Deal: pay as you save loan scheme attached to energy bills
3. Minimum Standards for Private Rental: the most energy inefficient rental property's improved
4. Zero carbon homes from 2016: all new builds to be built to highest standard

Multiple benefits of Energy Efficiency

Conventional benefits

- Energy demand reduction and GHG emissions reduction

Wider benefits

Macroeconomic

- Economic performance
- Trade balances

Public budgets

- Net employment gain
- Improved public budgets

Health and Well-being

- Physical: asthma, leukaemia, excess winter deaths
- Mental: stress of cold homes and unaffordable energy bills

EER as Infrastructure

- EER of UK buildings should be an **infrastructure priority**
- Influential to other forms of **conventional infrastructure**
- “**High value for money**” investment compared to other infrastructure projects
- Where would money come from?

What does it mean?

EER as infrastructure: idea was accepted by many political parties in their manifestos; Labour, Liberal Democrats, SNP.....

CCC: suggest that the shortfall in funding for fuel poverty could be address from infrastructure funding

- Would level of support change?
- To what extent is EER currently valued?

UK EER policy ex-ante appraisal

Policy mechanism

- Grants and subsidies
- Funding levied from energy consumers
- £12.50 per capita/per annum

Policy valuation

- Social impact of energy demand reduction, comfort benefit, improved air quality, reduction in carbon emissions all quantified in a ex-ante cost best appraisal
- Net employment also estimated
- Health and well-being and Economic growth mentioned but their value not estimated

NZ EER policy ex-post evaluation

Policy mechanism

- Grant scheme
- From general taxation
- £10 per capita/per annum

Policy valuation

- Energy impacts: ex-post evaluation
- Health impacts: ex-post evaluation
- Industry and employment impacts: ex-post evaluation

German policy

Policy mechanism

- Low interest loans
- Taken from general taxation
- £ 38 per capita/per annum

Energy efficiency retrofit valuation

- Focus on protecting jobs and generating growth
- Energiewende: nuclear switch off by 2022
- Residential energy prices: much higher than in the UK

UK EER policy appraisal

Green Book

- Identify issue and outline objectives
- Informal consideration of the options
- Formal appraisal of the predicted cost and benefits

EER policy Impact Assessments

Positive Net Present Value: measures generally pre-defined

- CERT (extension): £2.4 billion
- Green Deal-ECO: £8.3 billion
- Minimum standards for private rental: £1.5 billion

Options considered: previous policy, chosen policy or no policy

What's the point?

Summary

- Calls for improved valuation of EER, in order to improve Government support
- Current UK funding £1 billion (from consumer levy)
- Calls for £3-4 billion (German level of funding – from general taxation)
- Government valuation is not straightforward
- Policy evaluation and appraisal only give some idea of full valuation

Questions.....?

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