Attitude is everything
The Application of Renewable Energy in the Alleviation of Fuel Poverty

Adrian Waddington
Alleviation of Fuel Poverty

- The Health Impacts of Cold Homes and Fuel Poverty
- Nationally & Internationally recognised sources
- Health Issues
- Rural Properties
- Healthy, Wealthy & Wise (alleviate fuel poverty)
- Resident, Provider & NHS Benefits
- Funding Options
The Marmot Review Team
Professor Sir Michael Marmot

Nationally & Internationally recognised sources
**General Health Issues**

(statements from The Marmot Review “associated with Fuel Poverty and Cold Housing”)

- Fuel poverty negatively affects dietary opportunities and choices.

- There is a strong relationship between cold temperatures, cardiovascular and respiratory diseases ..... 

- Children living in cold homes are more than twice as likely to suffer from a variety of respiratory problems than children living in warm homes.

- Mental health is negatively affected by fuel poverty and cold housing for any age group.

- Cold housing increases the level of minor illnesses such as colds and flu and exacerbates existing conditions such as arthritis and rheumatisms.

- Cold housing negatively affects children’s educational attainment, emotional wellbeing and resilience.

- Cold housing negatively affects dexterity and increases the risk of accidents and injuries in the home.
Health Issues by Age Group

- Children
  - Infants’ Weight Gain
  - Severity and Frequency of Asthmatic Symptoms
  - Developed Mental Status
  - Hospital Admission rates

- Adolescents
  - Mental Health
Health Issues by Age Group

- Adults
  - Physical Health
  - Wellbeing
  - Self assessed General Health
  - Vulnerable adults and those with Existing Health Conditions

- Older people
  - Higher Mortality risk
  - Physical Health
  - Mental Health
Rural Properties
(statements from The Marmot Review)

- Rural homes are likely to be more difficult and more expensive to heat.
- Access to mains gas is rare in most areas more than about 5 or 10 miles from an urban area.
- Many rural homes are heated by electric, oil or solid fuel, which tends to be more expensive and less efficient.
- Rural homes are more likely to have solid walls which are generally less well insulated.
- It is on average more difficult and more expensive to improve the energy efficiency of a rural home.

2006 Fuel Poverty Assessments
• Urban areas = 10%
• Suburban areas = 11%
• Rural areas = 21%
Solar PV

- Renewable & Free Energy Source
- Tried & Tested
- Minimal Resident disruption
- Minimal disturbance to the fabric of the building
- Free Electricity
- Feed in Tariff
- Export Bonus
Healthy, Wealthy & Wise

- **Wealthy** – use the Solar PV to create savings
- **Wise** – advice provided by several government organisations
- **Healthy** – reduce the affects of Fuel Poverty

**Solar PV**

- Unlimited use of the free electricity generated
- ‘Free Electricity’ to create the most savings possible
- Create a **Warm** and **Healthy** Lifestyle:-
Resident’s Benefits

**PV System Details**
- Postcode = ME
- Orientation = SE or SW
- Roof Pitch = 25 Degrees
- System Size = 2.5kWp

**Potential System Performance**
- MCS Guidelines suggest 1050kWh/kWp to generate 2625kWh/yr

**Potential Savings for the Residents**
- Based on 14p cost of electricity
- 25% use of free electricity = £91.88
- 50% use of free electricity = £183.75
- 75% use of free electricity = £275.63
- 90% use of free electricity = £330.75
Resident’s Benefits

Warm and Healthy Lifestyle

- Take advantage of healthy dietary opportunities and choices
- Heat your home effectively and safely
- Live a healthy lifestyle
- Stay Active
- Dress for the Weather

Solar PV and your home

A guide to staying warm in winter

Cold homes and your health

- With energy prices high, more and more people are choosing solar PV. By using solar PV, you can help keep your home warm, effective, and safe during the winter months.
- Lowered risk of respiratory conditions, such as cold and flu, and skin conditions.
- Reduced risk of heart disease and stroke.
- Reduced risk of depression and anxiety.
- Increased physical activity and social interaction.
- Increased mental and physical health and wellbeing, improved quality of life.

 Keeping warm with solar PV

Remember:
- Have a cold? Cold and flu medicines can help reduce the risk of cold and flu.
- Healthy food: Make healthy choices to keep you healthy.
- A guide to staying warm in winter: A guide to staying warm in winter and improving your health.

With solar PV, you can save electricity, save on your bills and reduce the costs to heat your home and better your health.
Potential Returns

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- System Size = 2.5kWp

Potential System Performance
- MCS Guidelines suggest 1050kWh/kWp

Headline Projections
- 250 Systems
- Investment = £718,250.00
- Return = £2,589,828.20
- Gross Profit = £1,808,578.20
- Monitor & FiT = £290,173.87
- Maintenance = £105,174.16
- Net Profit = £1,413,230.17

Figures based on residents using 50%

CO2 saved = 10672 tonnes

N.B. these are indicative numbers for comparison purposes only and do not represent a quote!
“The performance of solar PV systems is impossible to predict with certainty, due to the variability in the amount of solar radiation (sunlight) from location to location and from year to year.”
**Future Care Cost Savings**
(statements from The Marmot Review)

- NHS costs are associated mainly with morbidity (illness) rather than mortality.

- Department of Health in 2009 estimated that for every cold-related death there are eight non-fatal hospital admissions.

- The estimated annual cost to the NHS of cold related ill health is almost certainly in excess of **£1 billion**.

- This does not include additional spending by social services or economic loss through missed work.

- A recent study showed that investing **£1** in keeping homes warm saved the NHS **42 pence** in health costs ...” (Chief Medical Officer Report, 2009)
Community Benefits

Headline Projections

- Investment = £ 781,250.00
- Provider Returns = £1,413,230.17
- Resident Savings = £1,707,205.74
- NHS Future Care Savings = £ 717,026.41

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- Community Benefit = £3,837,462.32

Figures based on residents using 50%

- Health Benefits to all Age Groups
- 10672 tonnes of Carbon Reduction

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“The performance of solar PV systems is impossible to predict with certainty, due to the variability in the amount of solar radiation (sunlight) from location to location and from year to year.”
Funding Options

- Capital Expenditure
- Lease / Loan
- Free PV / Power Purchase Agreement
- Business Model Assessment
- Introduction to National & International Finance Providers
- C&K are not licensed to sell finance
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