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RENEWABLE ENERGY 4  
**DEVON**

# Installing Renewable Energy in New Buildings

## February 2008

Organised by:



Devon Sustainable  
Building Initiative  
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**FUTURE FOUNDATIONS**  
Building a better South West

Nisbet LLP

## Renewable Energy Technologies



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Background provided by Proven Energy Ltd

# Contractor Selection

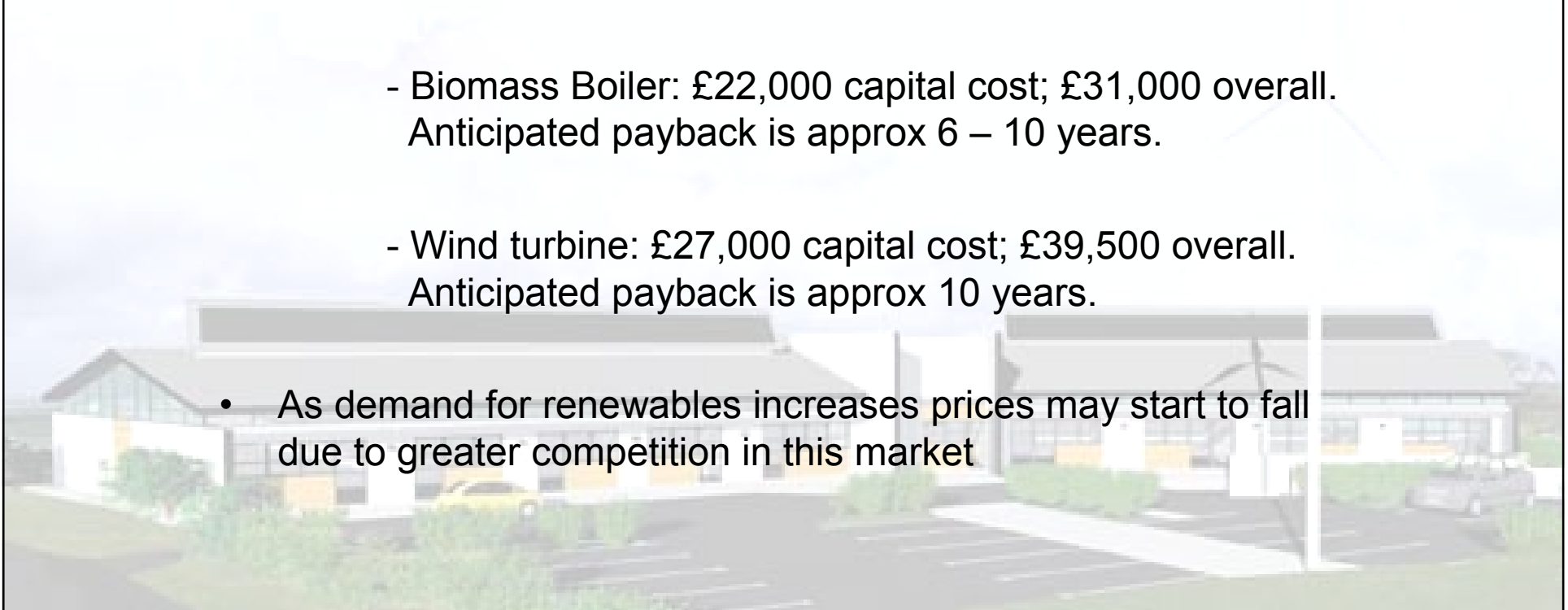


- OJEU – Expressions of Interest
- Pre Qualifying Questionnaire (PQQ) – Experience, Environmental Management Systems, Regional Manpower, Health and Safety Record
- Scoring of Returns – Team exercise to produce shortlist
- Tender – Assessed on price, quality submission and interview
- Contractor Selection



# Renewables

- Capital Costs (as at February 2007):
  - Photovoltaic's: £49,000 capital cost; £62,000 overall (including prelims, installation, fixings). Anticipated payback is approx 80 years.
  - Biomass Boiler: £22,000 capital cost; £31,000 overall. Anticipated payback is approx 6 – 10 years.
  - Wind turbine: £27,000 capital cost; £39,500 overall. Anticipated payback is approx 10 years.
- As demand for renewables increases prices may start to fall due to greater competition in this market



# BREEAM

- The building cost excluding any abnormalities, quality enhancements and renewables i.e. a Building Regulation compliant building equates to £1,657/m<sup>2</sup>
- The cost of the BREEAM items as well as the Renewables (these items somewhat overlap) adds £299/m<sup>2</sup> (£1,956/m<sup>2</sup>) which is an increase of 18% over the standard Building Regulation compliant building cost



# Carbon Neutral

- To go Carbon Neutral we would need to increase the size of the Biomass Boiler from 45kW to 60kW and to increase the size of the Wind Turbine from 6kW to circa 55kW;

- this would add £125/m<sup>2</sup> meaning a cost of £2,081/m<sup>2</sup> which is an increase of 25.6% above the Building Regulation compliant building cost

- However, it is not always possible to increase the size of the turbine therefore photovoltaics capable of supplying all of the electricity to the building would be needed:

- this would add £645/m<sup>2</sup> meaning a cost of £2,601/m<sup>2</sup> which is an increase of 56.9% above the Building Regulation compliant building cost



# Summary of Capital Cost Implications

	£ cost / m <sup>2</sup>
Building Regulations	1,657
BREEAM Excellent	1,956
Carbon Neutral Biomass	2,081
Carbon Neutral Photovoltaics	2,601

