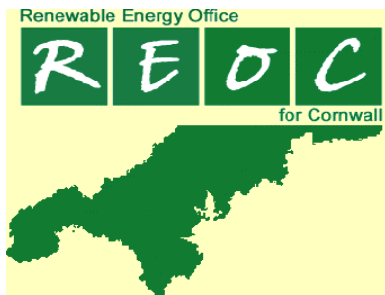


The market for microgeneration

Charmian Larke and Gage Williams
Renewable Energy Office for Cornwall
September 2008

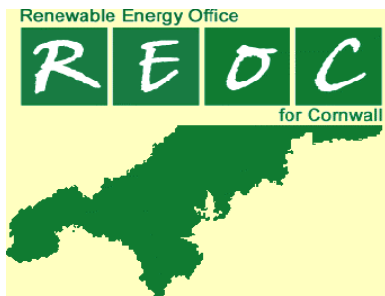




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1. The present situation
2. The need for microgeneration manufacture
3. The market
 - 3.1 Present
 - 3.2 Future market estimates
4. Projections for microgeneration uptake under differing policies
5. Conclusions



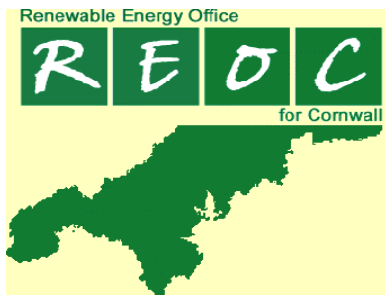


1 Present situation: energy in SW

- 29 million electricity customers in the UK
- UK = 25 million households
- South West has a high proportion of homes without access to mains gas (23%), almost twice the national average
- Southwest = 2.14 m households
- Cornwall = 218,000 households
- Approximately 102,000 of these are rural (47%)

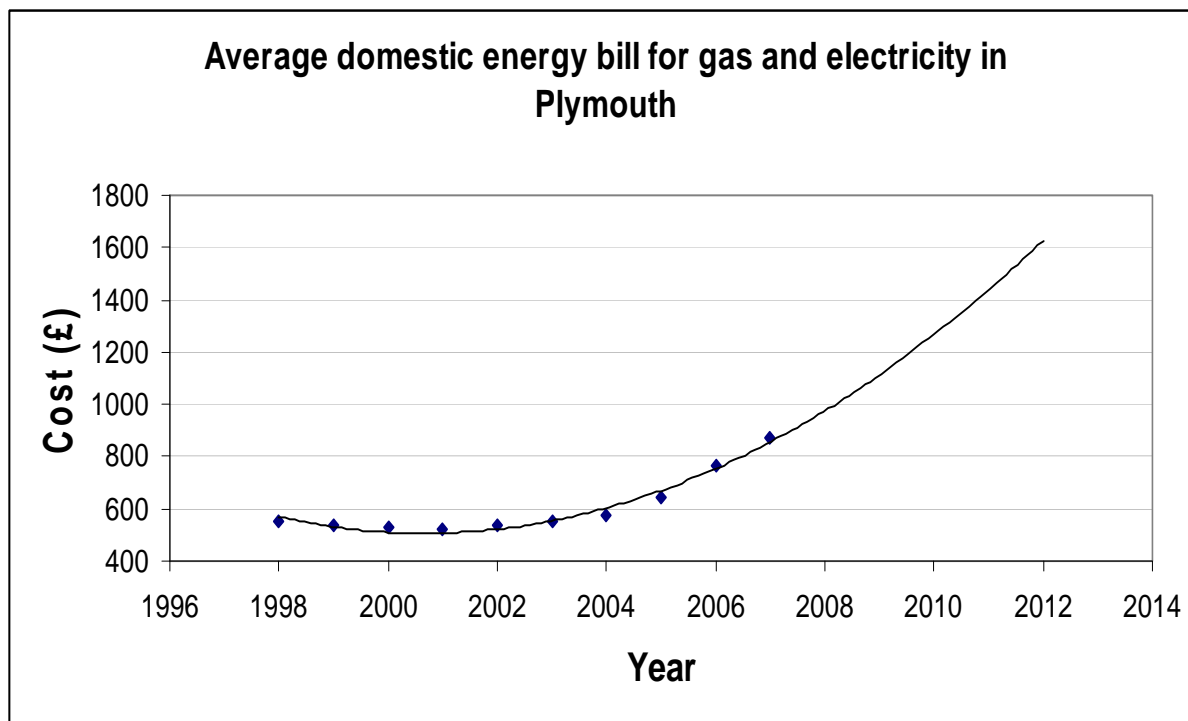
Source: Element Energy Ltd, 2008, ODPM, 2003, www.town-guides.org





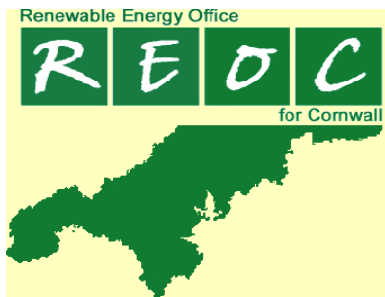
1 Present situation

Rising energy prices



Source: BERR quarterly energy prices March 2008



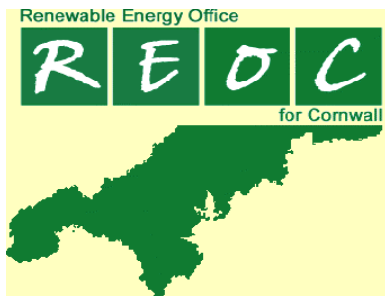


2 Need for microgeneration manufacturing

- 37 million houses in 2050
= **12 million extra**
- Primary heating systems will be replaced at least twice by 2050
- UK household sector accounts for 27% of total UK CO² emissions
- 30m tonnes of CO²/yr is saved

Source: Element Energy Ltd, *The Growth potential for Microgeneration in England, Wales and Scotland*, June 2008, report for Berr





2 Need for microgeneration manufacturing

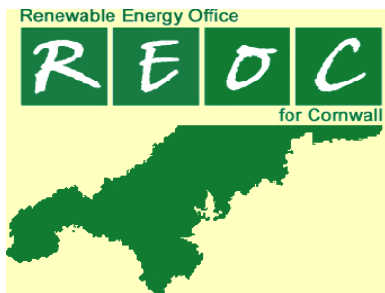
UK-European renewable energy target

- UK energy demand 1,800 TWh
- The EU - UK target 15% RE by 2020
 - or 310 TWh
- Present use 1.5% from RE
- Current policies 5% by 2020
 - **100 GWh**

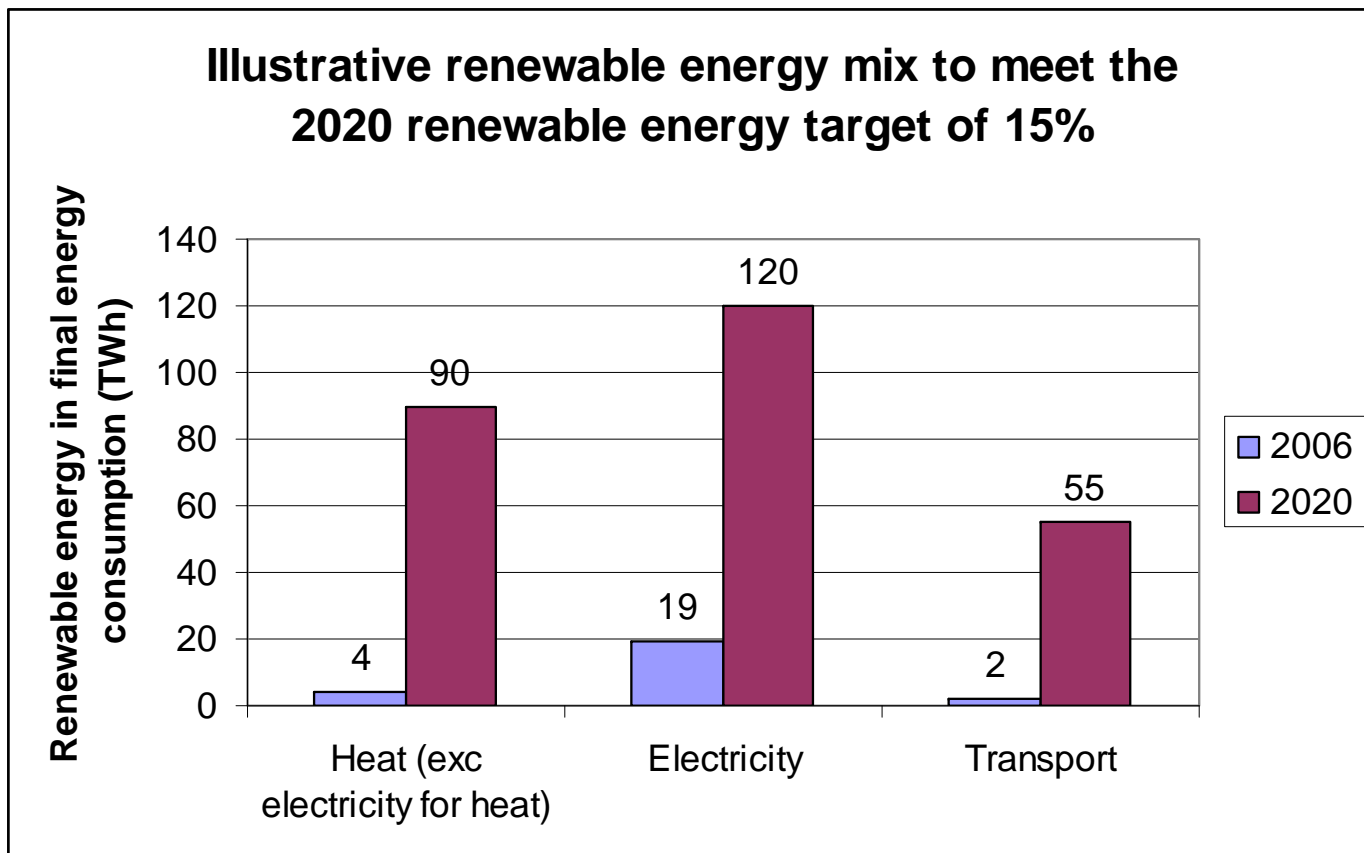
To meet the EU target, RE needs to

- increase 10 fold
- 3 times more than current policies



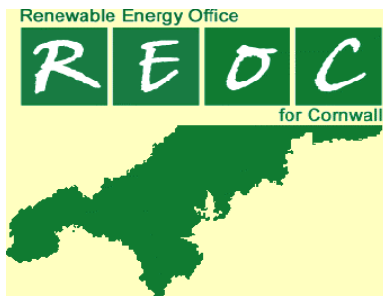


3 The market for microgeneration



Source: Poyry Consulting, August 2008, *Implication of the UK meeting it's 2020 renewable energy target.*





3.1 Present market UK present measures

- all new **homes** to be zero-carbon from **2016**
- all new **non-domestic buildings** by **2019**,
- all **schools** by **2016**

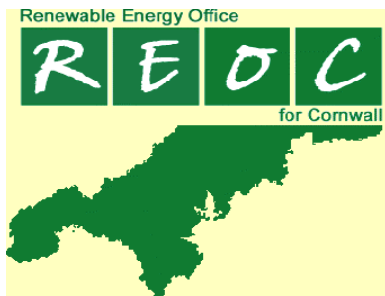
- In Spring 2009, the Government plan to outline the measures needed to meet the EU target

- BERR estimates that **30-40% of UK's electricity generation could be produced by micro-generation by 2050**, including 6% from small wind

Sources: Speech by Malcolm Wicks MP, Micropower Council Conference, 2008

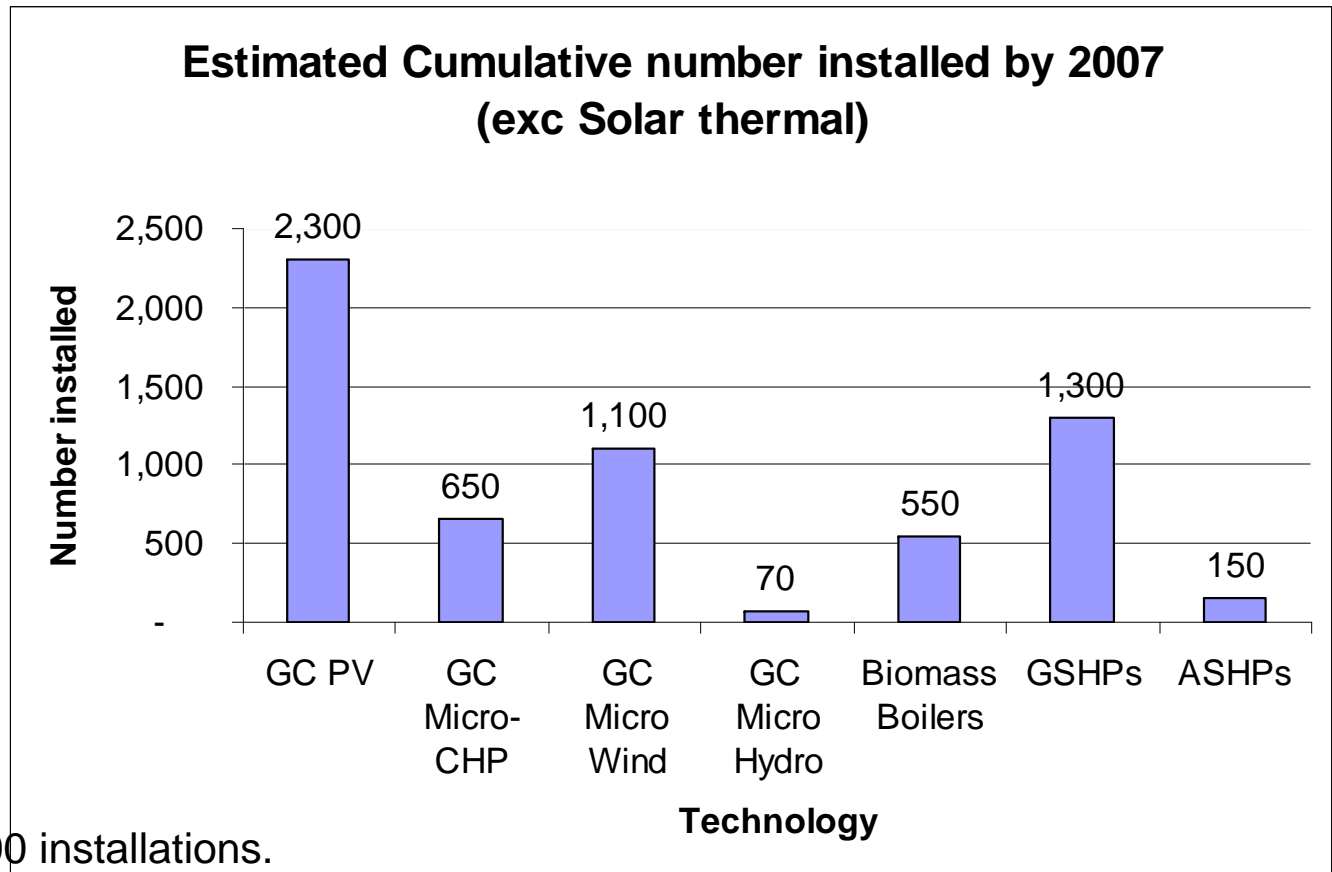
<http://www.igd.com/cir.asp?menuid=148&cirid=2359>





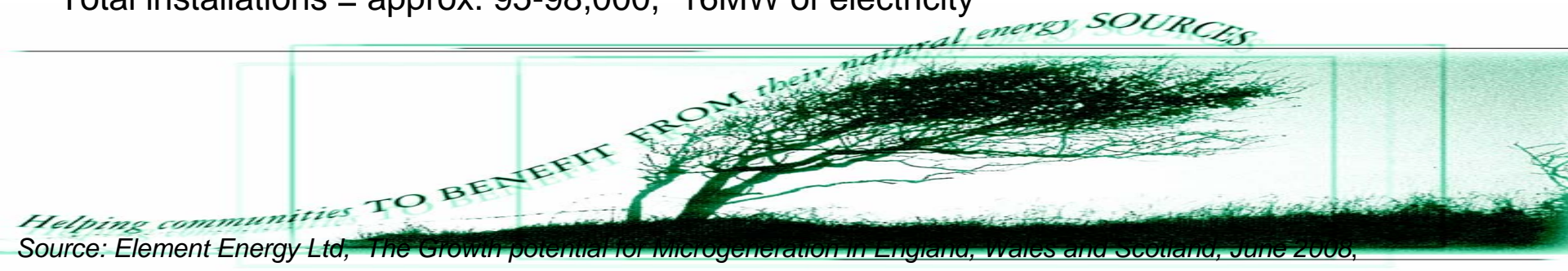
3.1 Present market for microgeneration

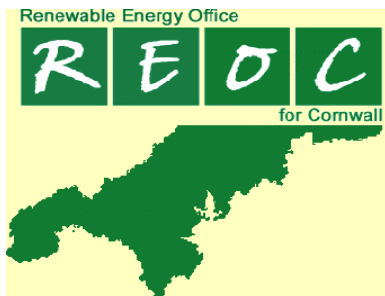
2007



Solar Thermal = 90,000 installations.

Total installations = approx. 95-98,000, 16MW of electricity

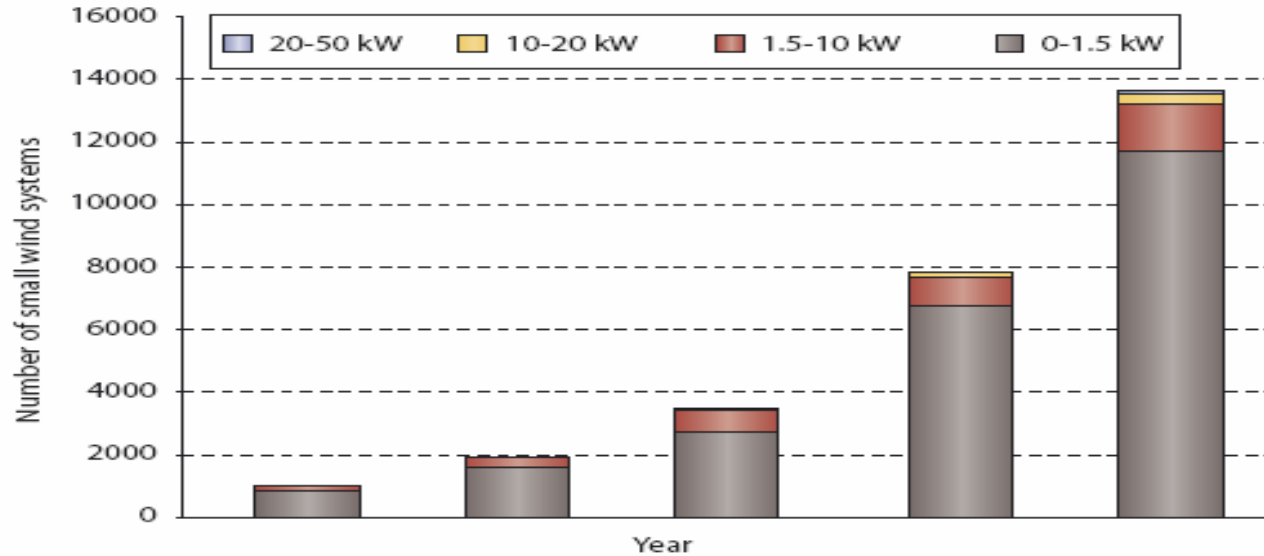




3.1 Present market for microgeneration

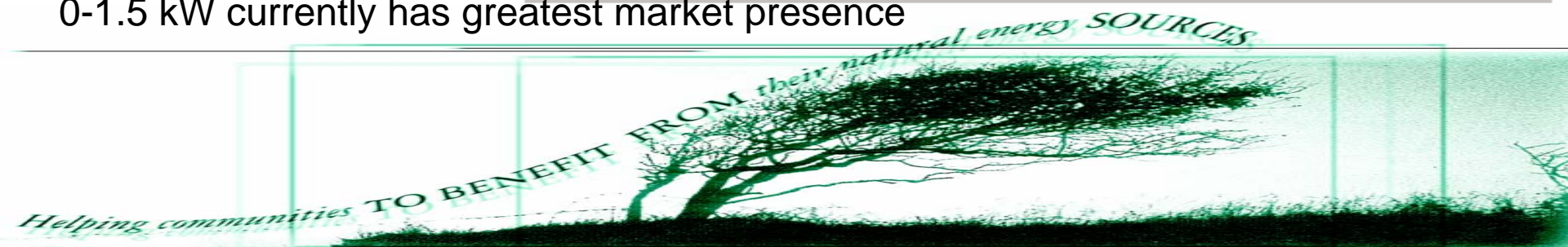
2009

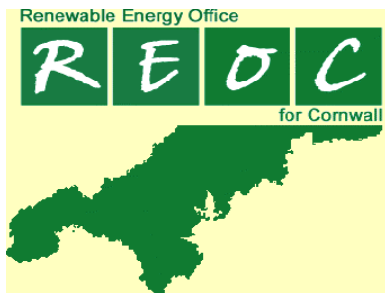
Annual deployed number of UK small wind systems



Unit size	2005	2006	2007	2008	2009
20-50 kW	3	1	14	29	56
10-20 kW	13	13	18	154	340
1.5-10 kW	155	271	677	911	1503
0-1.5 kW	862	1634	2750	6750	11712

0-1.5 kW currently has greatest market presence





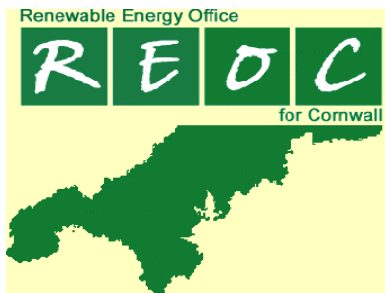
3.2 Future market estimates

Carbon Trust : small-scale wind potential UK.

- 41.3 TWh of electricity
- 23 GW installed capacity
- c £60 bn sales
- 17.8 Mt CO² pa savings
- 80% of potential in rural areas
- Some potential rural installations have costs of energy below 12p/kWh, competitive with grid electricity.

Source: Carbon Trust – Small Wind Policy August 2008

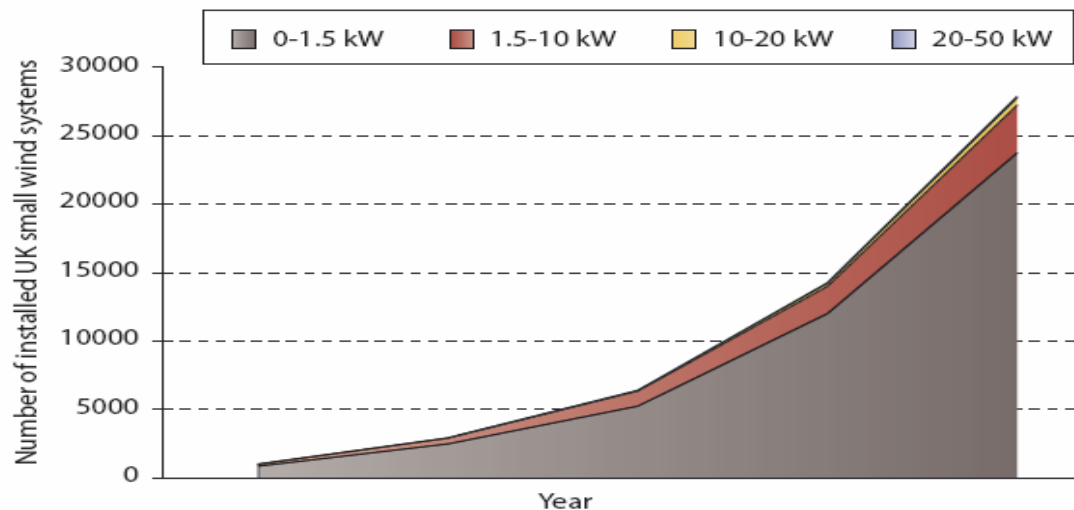




3.2 Future market estimates

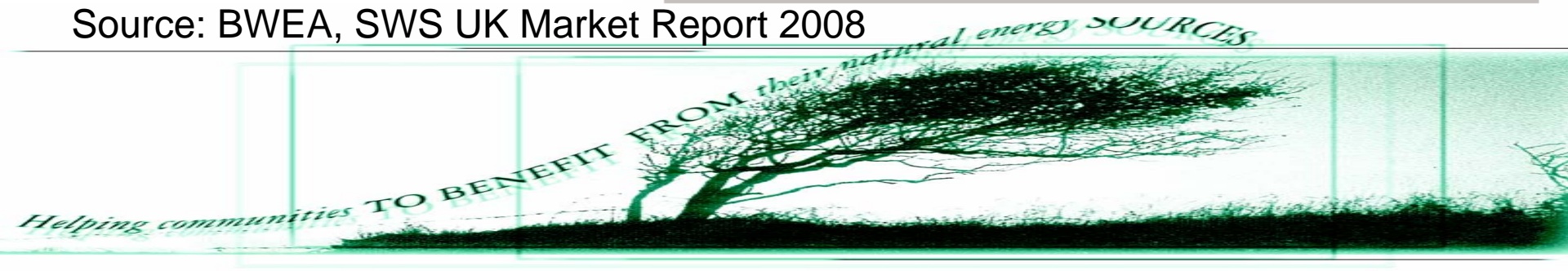
BWEA

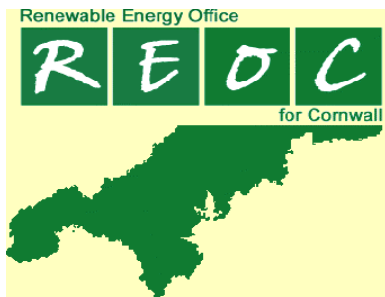
Cumulative number of installed UK small wind systems



Unit size	2005	2006	2007	2008	2009
0-1.5 kW	862	2496	5246	11996	23708
1.5-10 kW	155	426	1103	2014	3517
10-20 kW	13	26	44	198	538
20-50 kW	3	4	18	47	103

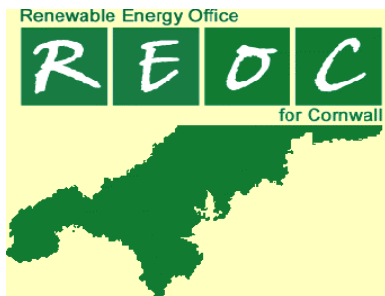
Source: BWEA, SWS UK Market Report 2008





12,000 predicted installations of 0-1.5 kW in 2009 – almost twice the number installed in 2008, a positive market outlook for the next decade.

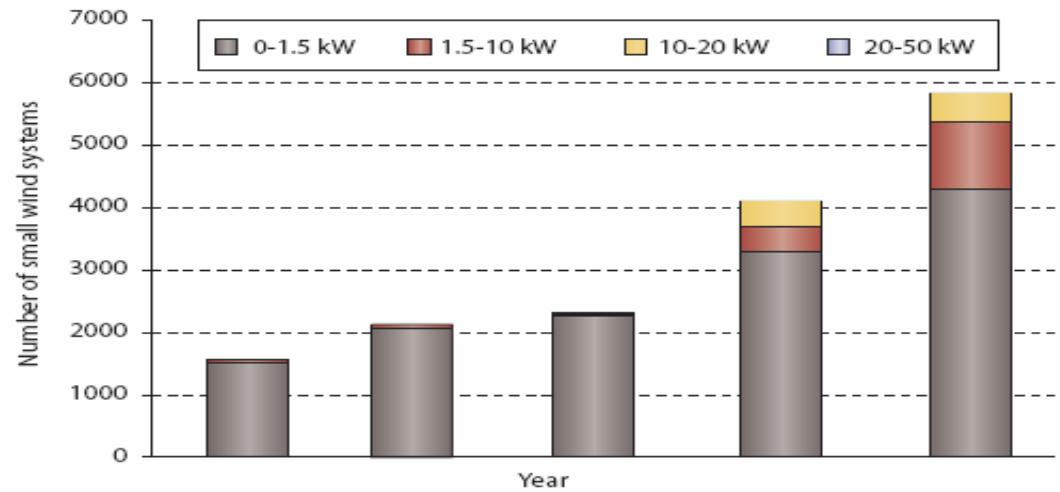




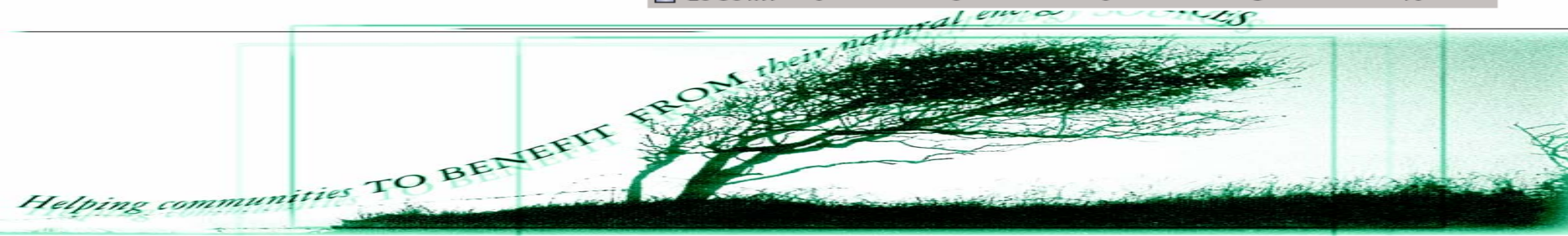
3.2 Future market estimates: exports

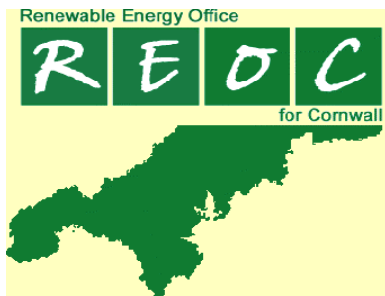
Annual number of exported small wind systems

Significant export growth in 2009 of 1.5-10kW machines



Unit size	2005	2006	2007	2008	2009
0-1.5 kW	1520	2064	2255	3301	4294
1.5-10 kW	38	61	45	396	1087
10-20 kW	4	1	10	410	455
20-50 kW	0	0	0	3	10

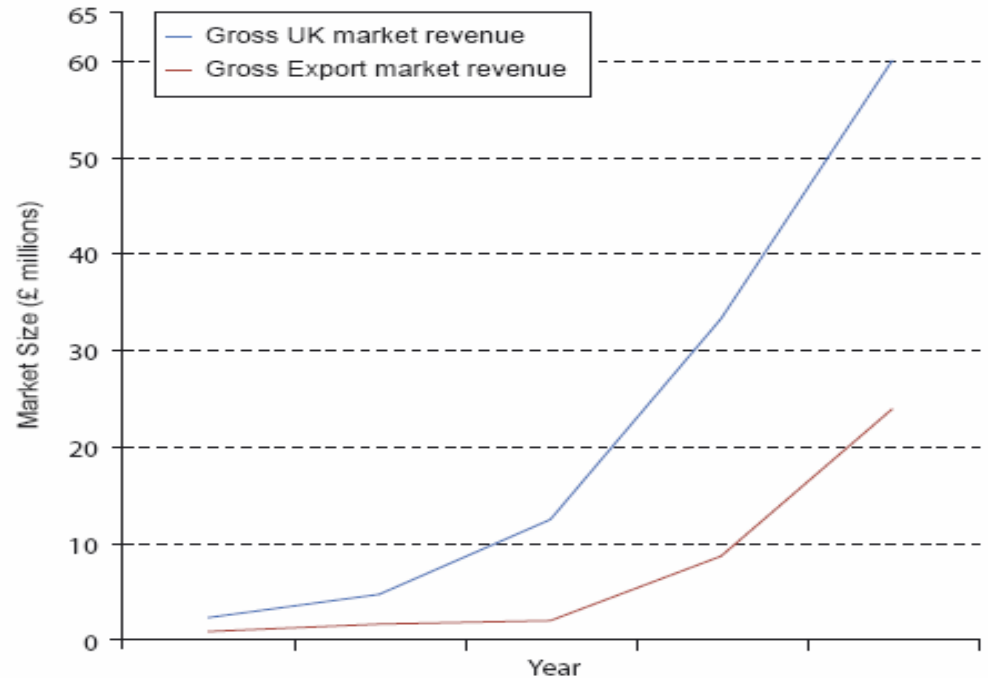




3.2 Future market estimates

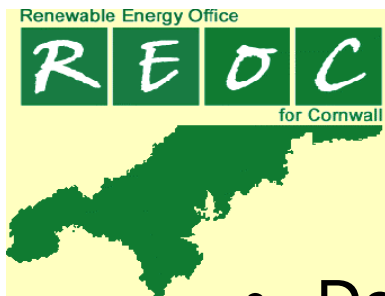
The size of the market is at least doubling on an annual basis – a major opportunity

Market size (UK, Export, £)



	2005	2006	2007	2008	2009
— Gross UK market revenue	2234620	4677249	12449033	33205317	59988215
— Gross Export market revenue	831430	1597000	1961500	8638025	23878830



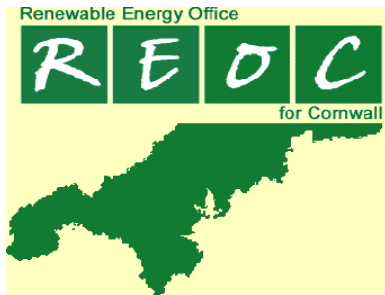


4 Projections for differing policies

- Doubling fossil fuel prices give uptake in 10 million homes by 2030
- Without any additional policy intervention, c. 1 m installations by 2020 and 3.3 million by 2030 ~approx 10% of homes
- With the right incentives, nearly 20% UK buildings would be generating enough power to be self-sufficient.
- With ambitious policy measures, 9 million microgeneration systems could be installed by 2020, producing as much energy as 5 nuclear power stations

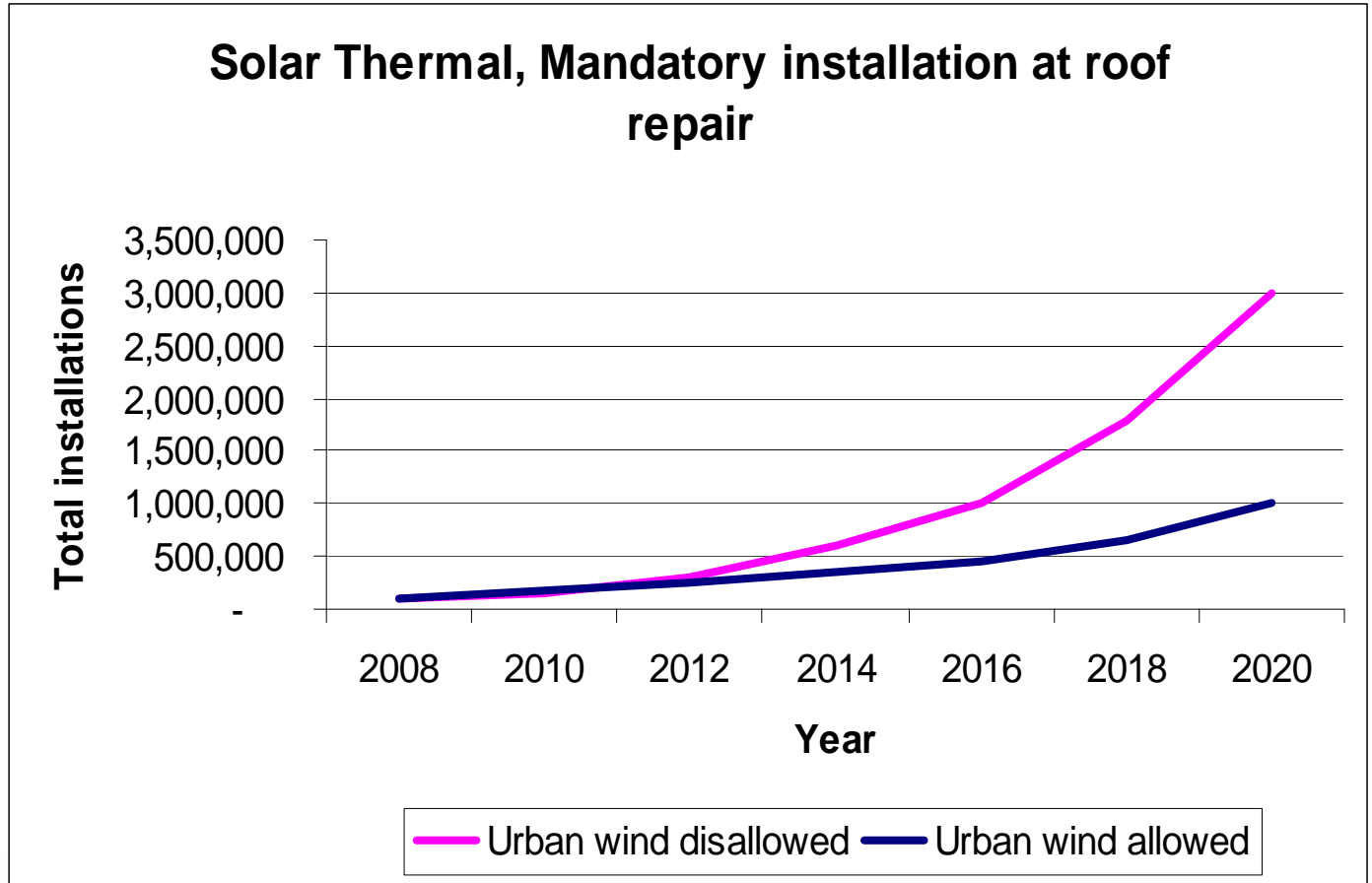
Source: Element Energy Ltd, *The Growth potential for Microgeneration in England, Wales and Scotland*, June 2008, report for Berr

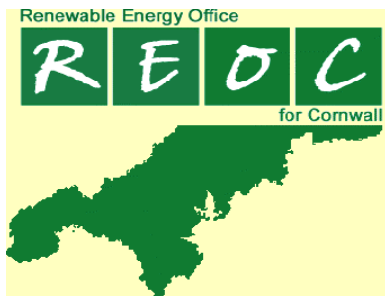




4 Projections for differing policies

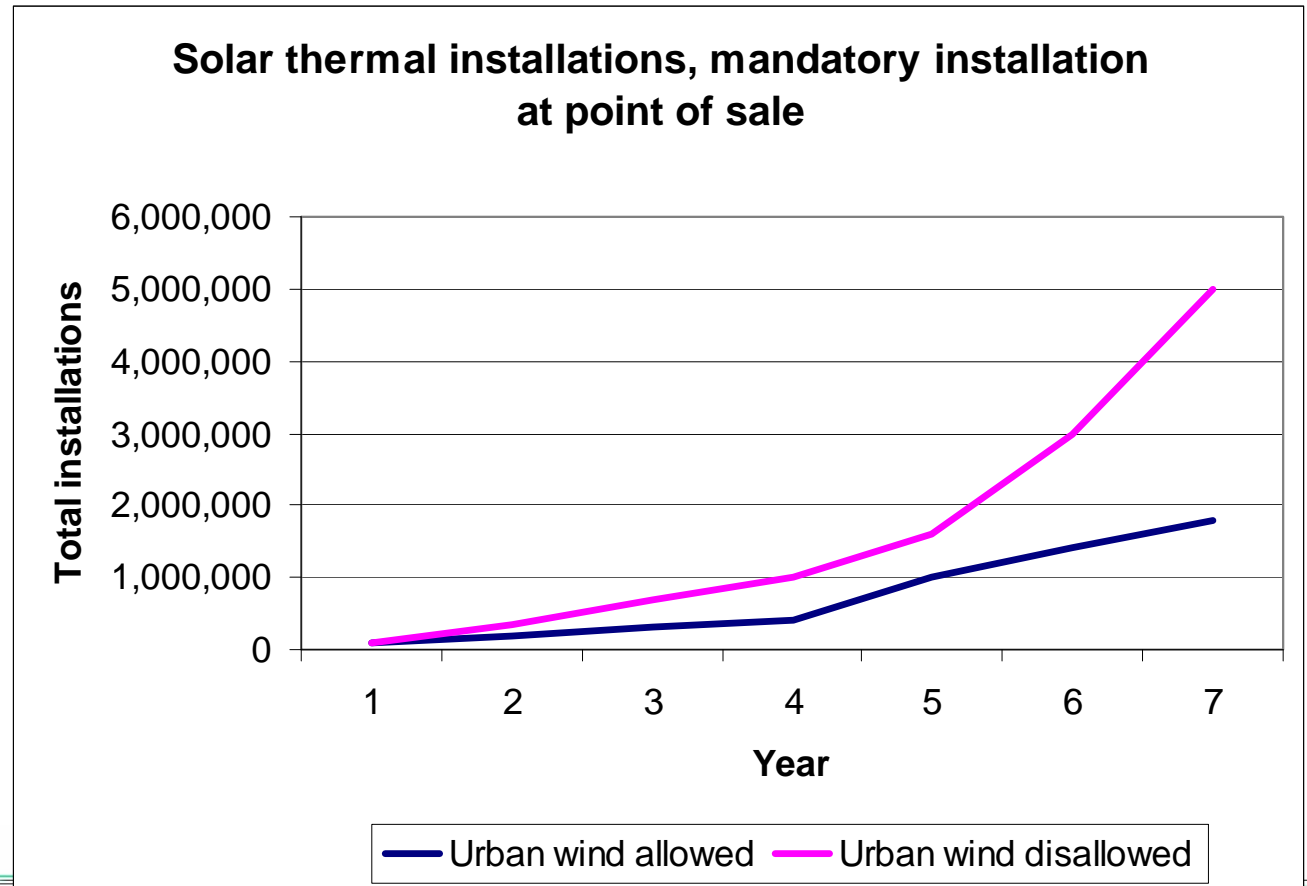
Solar thermal with stronger policy

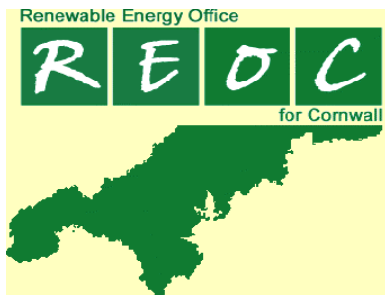




4 Projections for differing policies

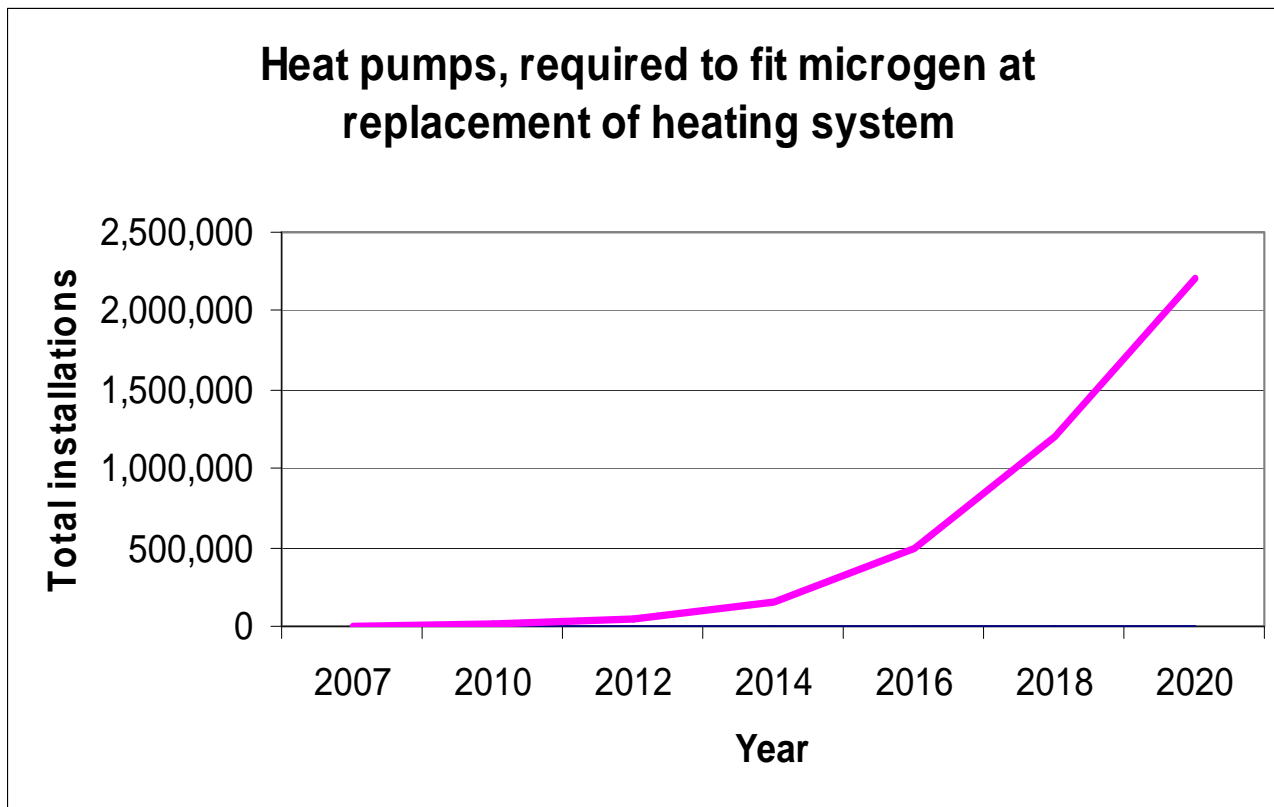
Solar thermal
very strong
policy

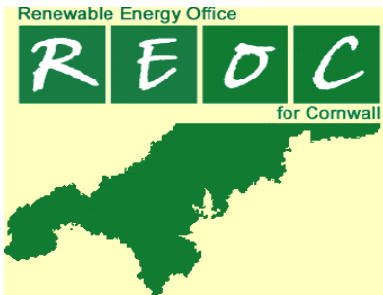




4 Projections for differing policies

Microgeneration
at replacement of
heating system

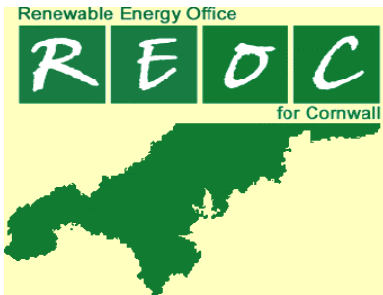




5 Conclusions

- All recent reports/scenarios show rapid growth of the microgeneration market
- Zero carbon buildings regulations are likely to have a large positive influence on the market
- Policy intervention is needed to increase the uptake of microgeneration



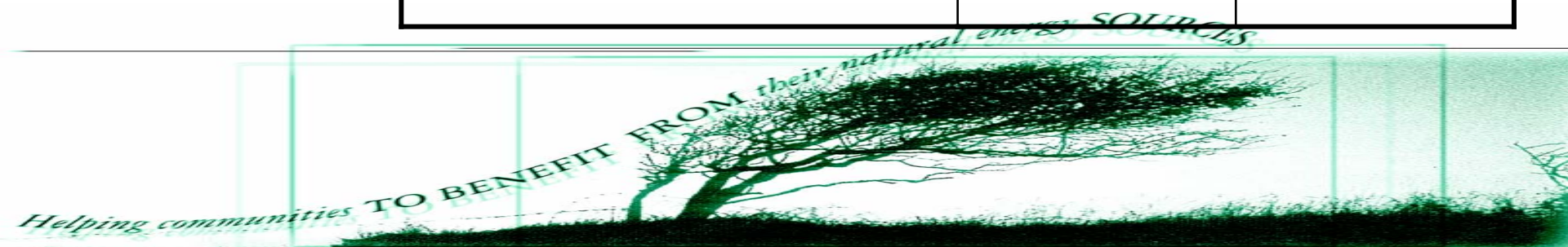


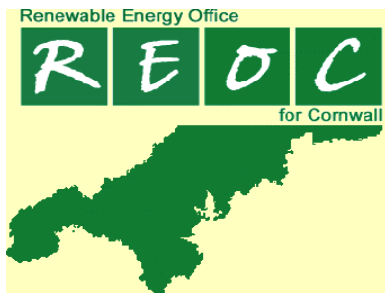
5 Conclusions

Expected microgen market size by 2025

Wind
annual
market

Technology		No pa	Market value £m pa
Wind	UK and export		
	Up to 1.5 kW	200,000	262
	1.5-10kW	27,500	475
	10-20kW	12,500	350
	20-50 kW	1,375	100
Totals		241,375	1,187





5 Conclusions

Expected microgen market size by 2025

Technology	Installations No pa	Market value £m pa
Solar thermal	300,000	900
Ground source heat pumps	400,000	1,600
Wind	241,375	1,187
Total three technologies	942,000	3,687

