

International Markets for Small Wind: Opportunities for UK Manufacturing

BWEA 30, October 2008

Lindsay Sugden

Consultant

Delta Energy & Environment

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Specialist **decentralised energy**
& **low carbon** consultancy

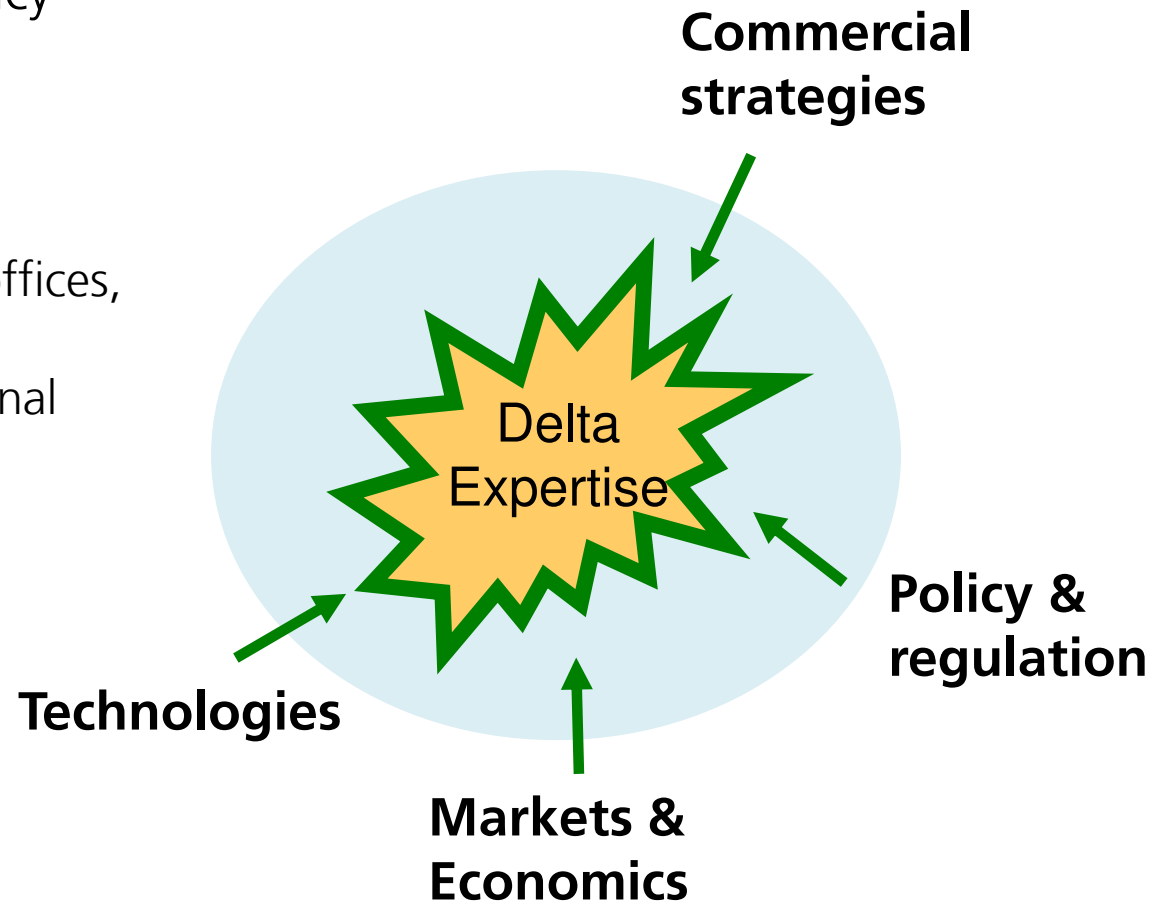
Small but specialised...

- Founded in 2004
- **UK** and **Belgium** offices, associate in **Japan**
- Excellent international networks

Small Wind work for...

Major UK utilities

Utilities in **Canada** and
the **US**



The UK: Small Wind Market Leaders?

Mass Market - ???

...to here?

*Bridging the gap
from **early sales** to
mass market*

*How do we get
from here...*

Wind Resources!



Technology



Demonstrations



Early sales: **Getting There . . .**

Learning from experience...



The UK could be a leader in small wind

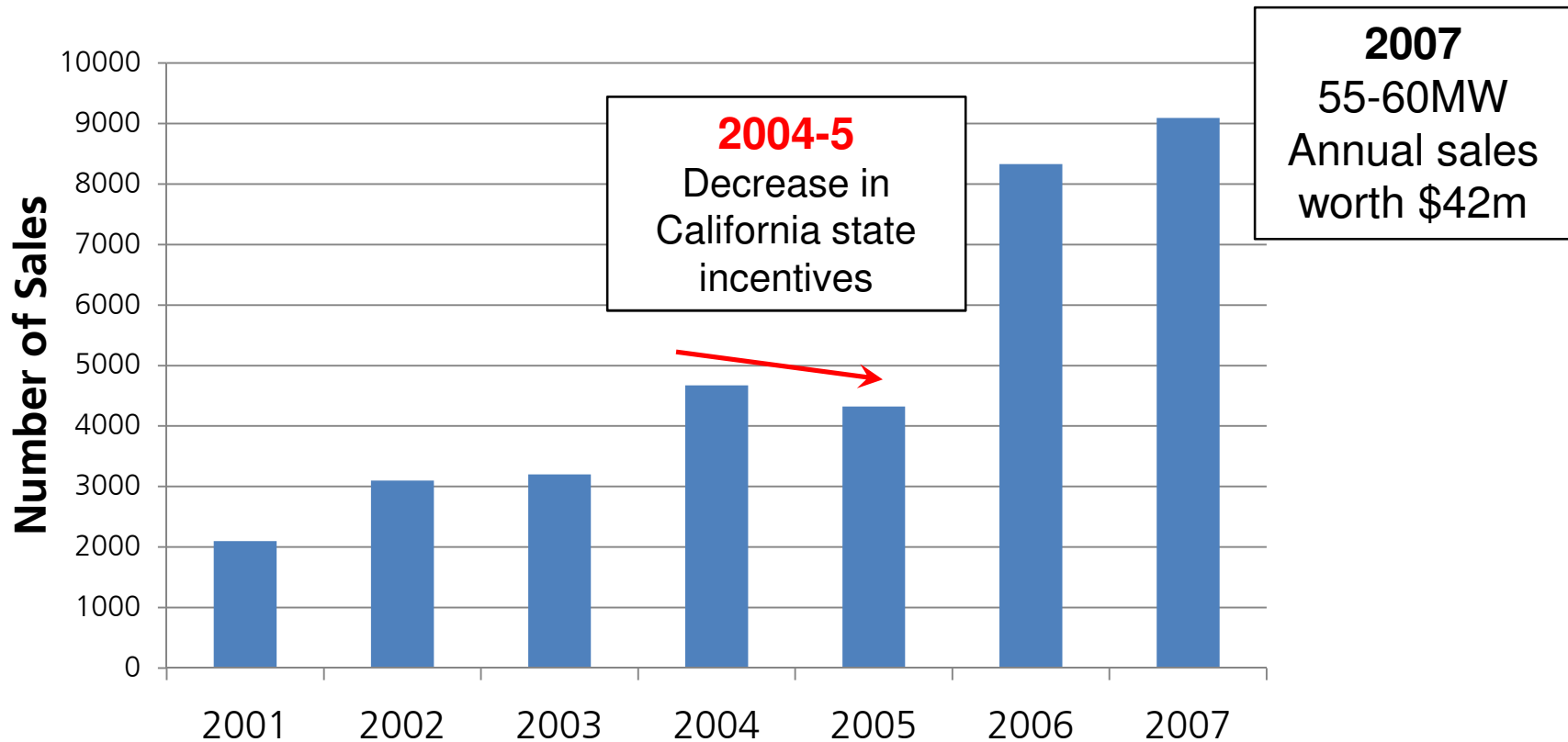
How to we bridge the gap to the mass market?

Lessons learned from international experience

- USA (wind, PV)
- Switzerland (Heat Pumps)
- Japan (wind, micro-CHP)

USA: Success in spite of no federal support

- Largest global small wind turbine market - 1/3 of global SWT manufacturing
- Some manufacturers reported doubling of annual sales in 2007
- 14 – 25% growth / year since 1990



USA: Success in spite of no federal support

Success is geographical: on a state-by-state basis
California, NY, Michigan, Massachusetts, NJ, Vermont...



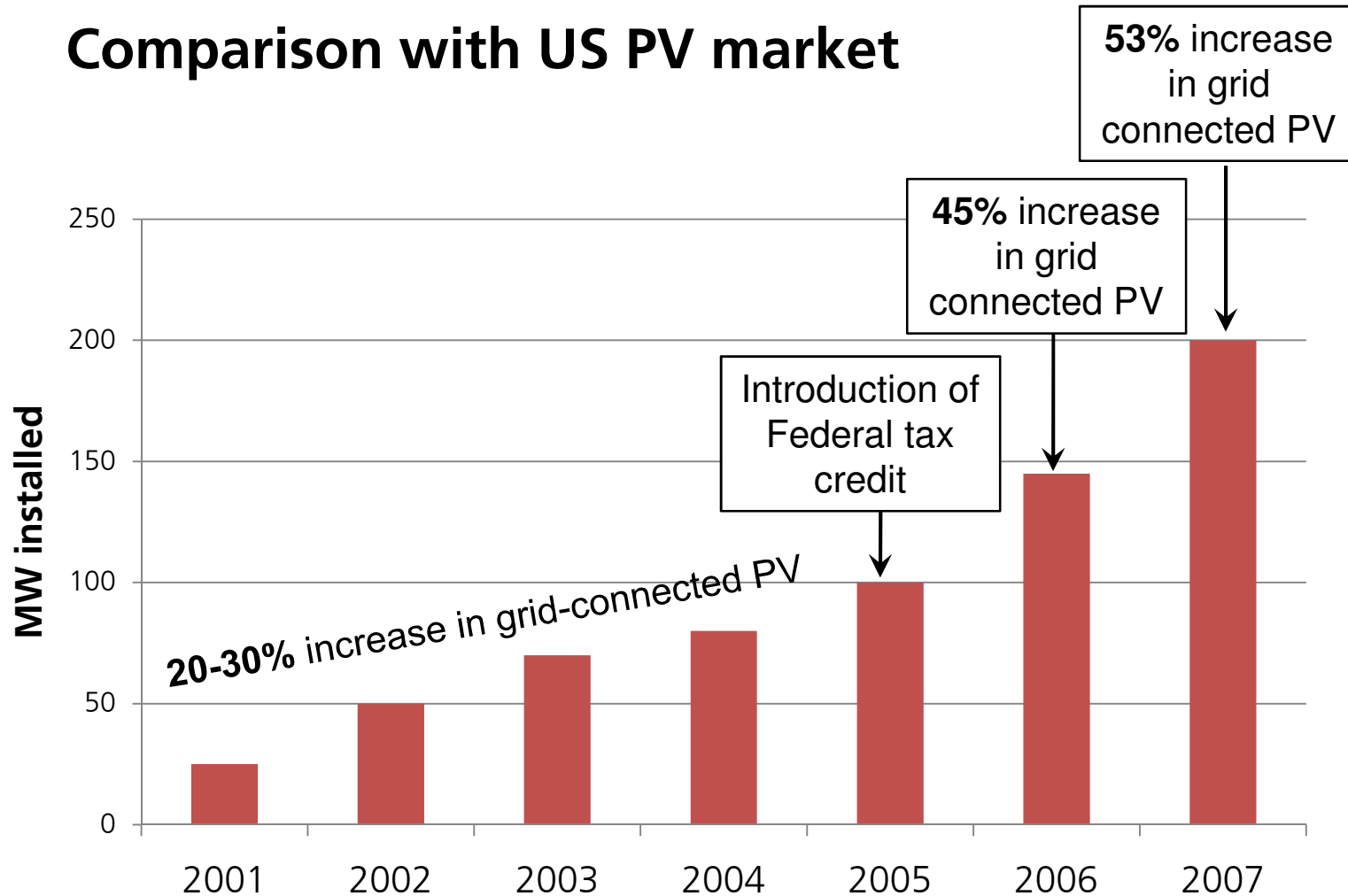
Utilicom

Success depends on...

- Removal of barriers
- Rebates, Feed-in Tariffs
- Relationships
- Demand

USA: Effects of federal support

Comparison with US PV market



USA: Success in spite of no federal support



Lessons Learned

- Can have some success without Federal policy or utility engagement, *but...*
- **State-level** support is essential to remove barriers and initiate growth
- **Federal support** could *double* the market, but it must be built on good foundations
- **Human relationships** are still important!

Swiss Heat Pumps: promotion, promotion, promotion

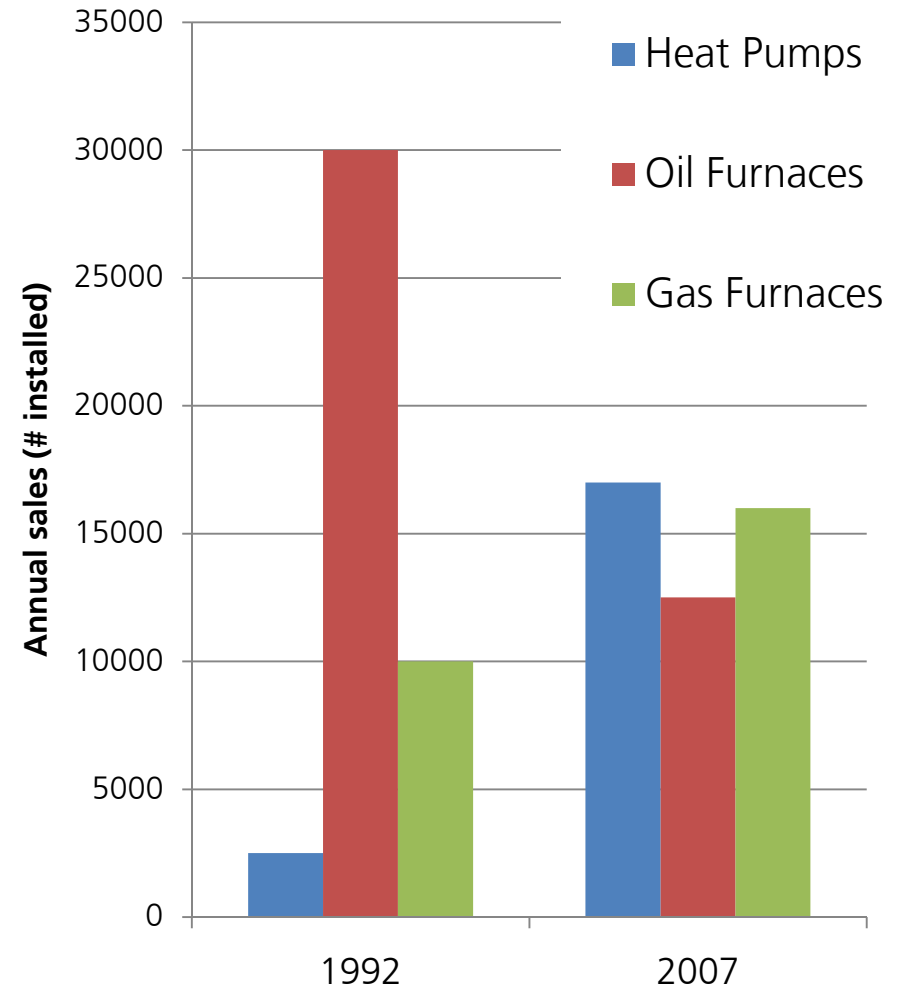
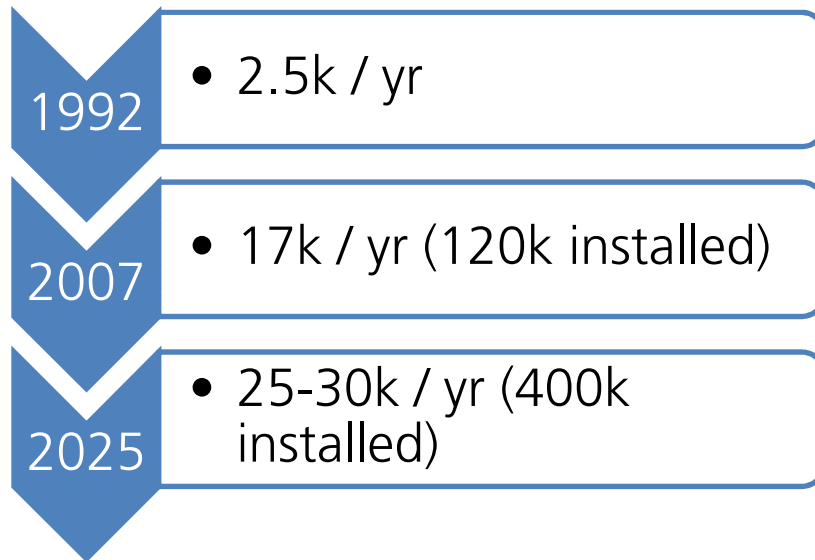
Pre-1990: Restricted Growth

1990-92: Emergence

1993-95: Bundling

1996-2000: Consolidation

2001- : Towards independence?



Swiss Heat Pumps: promotion, promotion, promotion

Lessons Learned

- Can succeed without significant financial incentives
- Need **long-term vision**
- Quality Assurance, Reliability & Training
- United stance by key players
- Promotion, communication & community involvement!



**Fördergemeinschaft
Wärmepumpen Schweiz FWS**

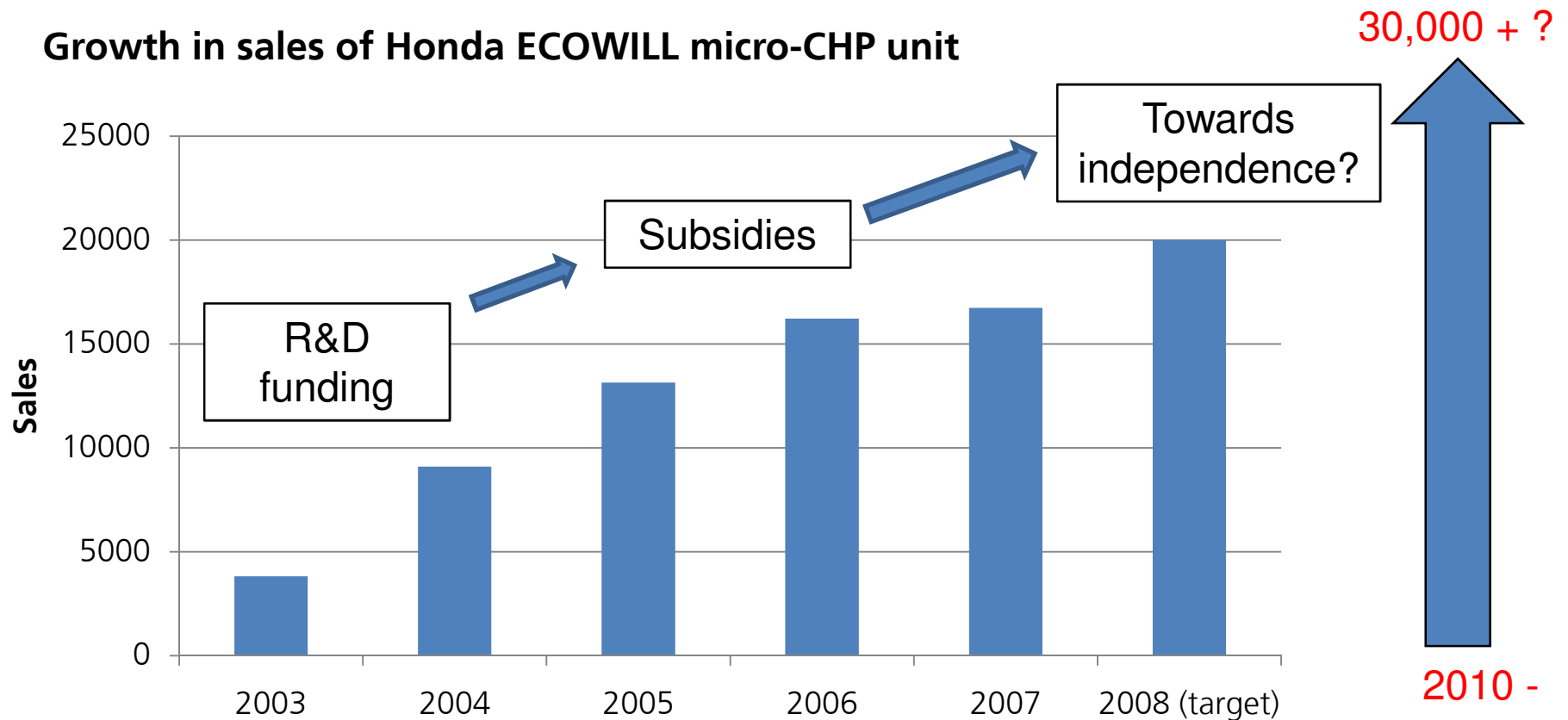


Swiss Association for the
Promotion of Heat Pumps

Japanese Micro-CHP: A long-term vision

- Forward thinking, long-term vision, from product development to commercialisation
- Manufacturers, gas companies & government united support

Growth in sales of Honda ECOWILL micro-CHP unit



Japanese Wind: Limited, patchy growth

In contrast . . .



Krei Kogyo

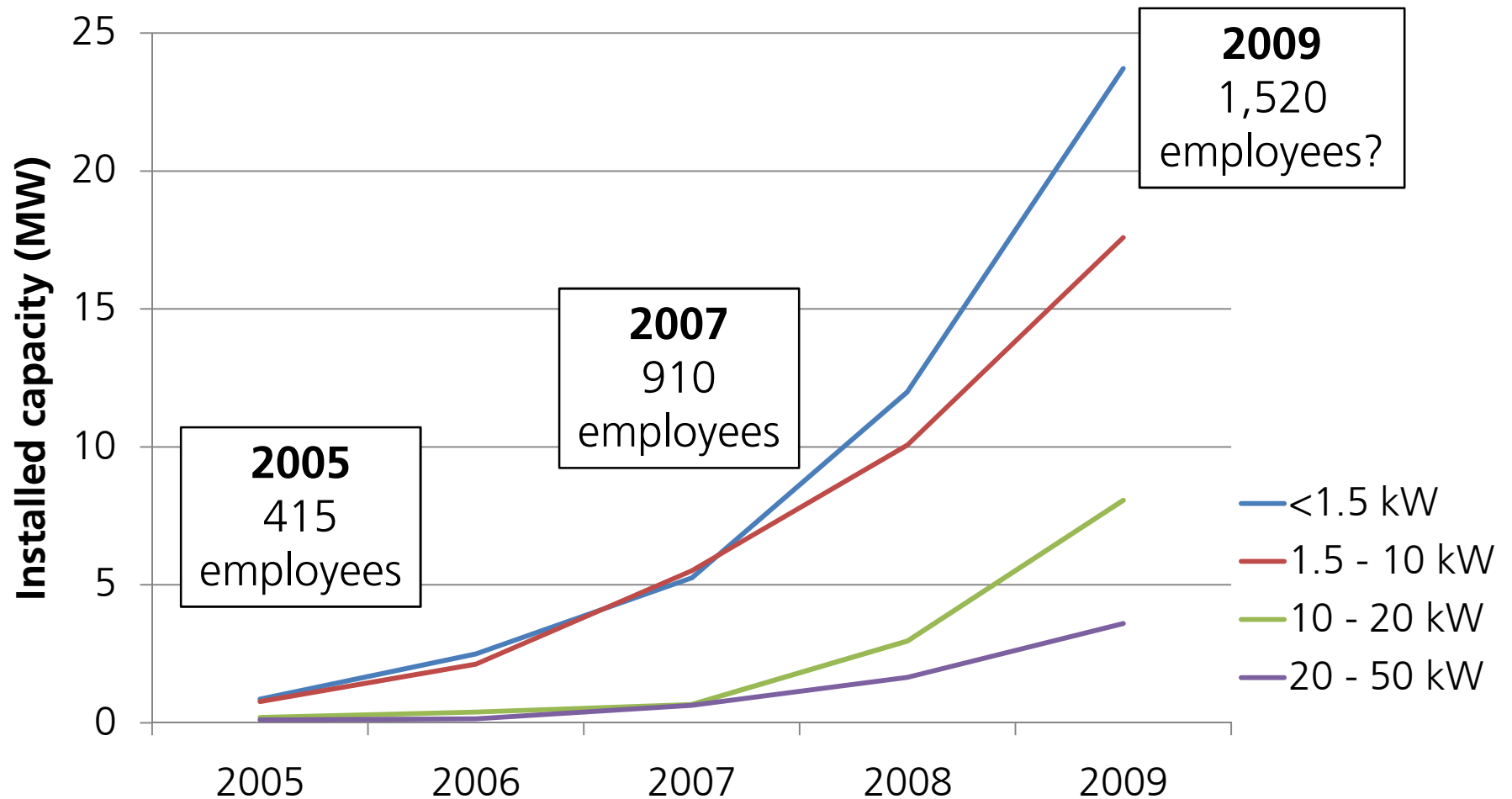
- Small wind viewed as *unreliable*
- Weak support
- Most rapid growth in <1kW market, *offgrid*, solar hybrids
- Driven by visual aspect rather than economics
- Some support for micro-wind in some municipalities
- Growth led by handful of manufacturers with global reputation

Lessons Learned

- Technologies do not develop solely as a result of government support . . .
- **Government support can emerge** from the strong united stance of key market players . . .
- **Need confidence to invest**
- **Quality & reliability** of product must be assured

The UK: Small Wind Market Leader?

BWEA market predictions . . . **Towards mass market**



The UK: Small Wind Market Leaders?

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Early sales: **Getting There . . .**

The UK: Small Wind Market Leader?

We have....

the wind ✓

the technology ✓

public demand ✓

some financial support ✓

Local Authority support ✓

We need...

? Removal of barriers (planning)

? Longer-term vision - united stance

? Promotion

? Uniformity & security of funding

THE FUTURE... Feed-In Tariffs, smart meters, permitting

A high-altitude mountain landscape with snow-covered peaks and a bright sun in a blue sky with scattered clouds. The scene is captured from an elevated position, looking down into a valley. The foreground shows a rocky outcrop with patches of snow. The middle ground is dominated by steep, snow-covered slopes and ridges. In the background, more mountain ranges are visible under a bright sky with some clouds. The sun is positioned in the upper right corner, creating a lens flare effect.

Thank you