Policy and Government

Impact of government policies on Small Wind Industry

- Gaia-Wind & Industry
- Feed in Tariff
- MCS
- Planning
- Customers
- Going forward

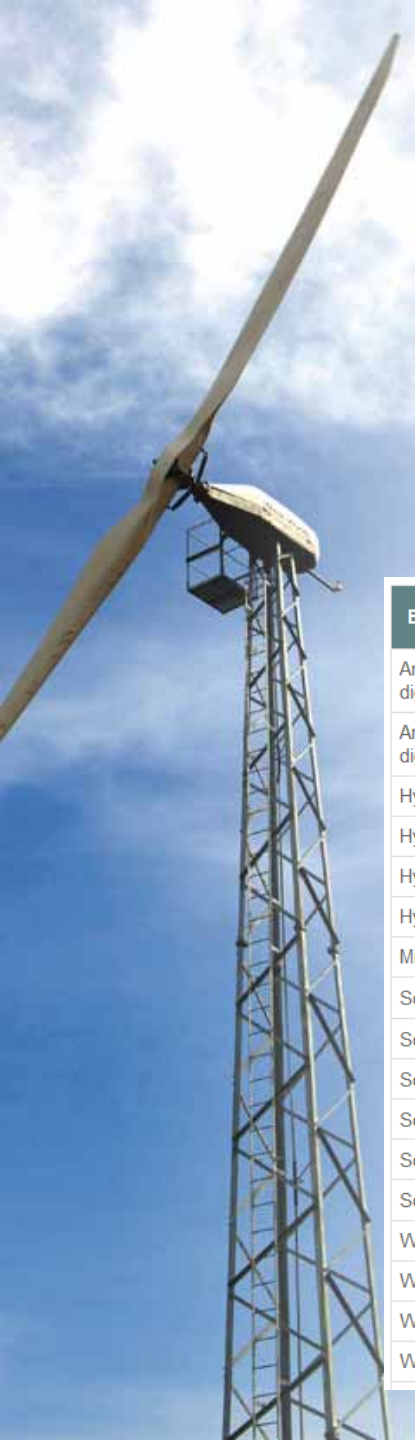
Gaia-Wind
GENERATING BETTER VALUE

Gaia-Wind & Industry

- Since 1993 in Denmark, 2007 in UK
- 200 turbines installed, 1000 yrs operational experience

- Moderate winds, Good performance due to large 13m diameter rotor
- 11 kW turbine, typical usage in farms

- Micro 0-1.5 kW, small 1.5-15 kW, medium 15 kW – 100 kW
- urban (micro) vs rural (small to medium)



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Feed In Tariff

Energy Source	Scale	Generation Tariff (p/kWh)[A]	Duration (years)
Anaerobic digestion	≤500kW	11.5	20
Anaerobic digestion	>500kW	9.0	20
Hydro	≤15 kW	19.9	20
Hydro	>15 - 100kW	17.8	20
Hydro	>100kW - 2MW	11.0	20
Hydro	>2kW - 5MW	4.5	20
Micro-CHP[B]	<2 kW	10.0	10
Solar PV	≤4 kW new[C]	36.1	25
Solar PV	≤4 kW retrofit[C]	41.3	25
Solar PV	>4-10kW	36.1	25
Solar PV	>10 - 100kW	31.4	25
Solar PV	>100kW - 5MW	29.3	25
Solar PV	Standalone[C]	29.3	25
Wind	≤1.5kW	34.5	20
Wind	>1.5 - 15kW	26.7	20
Wind	>15 - 100kW	24.1	20
Wind	>100 - 500kW	18.8	20

- Generation Tariff for all generated energy
- Export Tariff for excess
- Loans & Grants disappear
- Certification (MCS) required

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GENERATING BETTER VALUE

FITs are clever

- Level of Tariff (5-10 yrs payback) is good
- Expected installed capacity (100 GWh/yr in 2020) is realistic
- FITs based on energy production, performance
- Similar for Italian FITs & US NYSERDA and other grants
- Simpler than ROCs, which were far too complicated for micro/small

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Microgeneration Certification Scheme

- IEC 61400-2, Small Wind Turbine Standard and MCS form a good framework for ‘Quality Assurance’
- Important for level playing field, customer confidence and safety

- Testing facilities only now starting
- Transition a bit ‘rushed’
- International alignment

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Planning

- Not consistent / predictable;
  - Noise; 45 ... 30 dB(A)
  - Max. Height; 9m hub ... 20m tip
  - Next to property .... at least 100m away
- GPDO is great, however only for Micro, which does not generate a lot of energy
- Good guidelines for small turbines in rural areas would help

Planning

‘Applications’ are growing (68)

‘Passed’ grow slow (50%), should keep pace

Consistency of process

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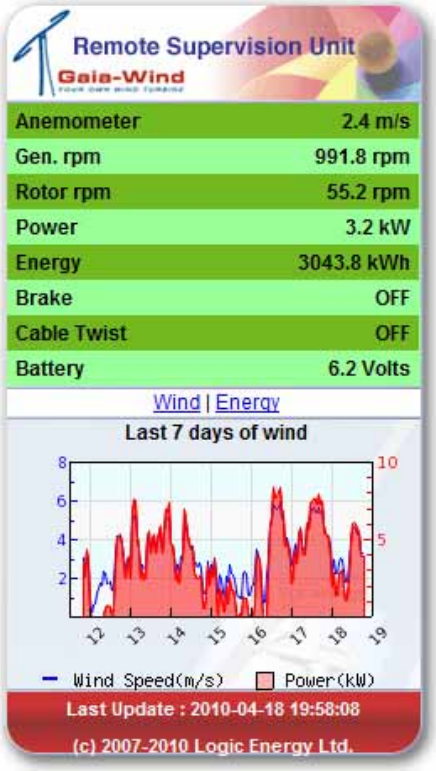
Customers

- Farmers, Rural businesses, private individuals
- Economics needed to drive growth of industry
- Customers deserve a Handsome Return
- Clarity about product performance



Gaia-Wind
GENERATING BETTER VALUE

Integrate Technologies

Graham Taylor, architect

Designed his own eco house & office

- Triple insulation
- Heat recovery ventilation
- Electric boiler with storage

His Gaia-Wind produces 29,000 kWh

House using 14,000 kWh

Going forward?
No ‘new schemes’ pls!

- ROCs to DoubleROCs to FITs
- Customers stop when policies are changed
- Targets for MicroGen are achievable and well supported
- Iron out wrinkles but leave policy intact
- Remaining Bottle Neck; Planning!
- Let the market do its work now!

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