

## Devon Green Tourism Business Network

# Green Financial Schemes – How can they work for your business?

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Regen SW



# About Regen SW



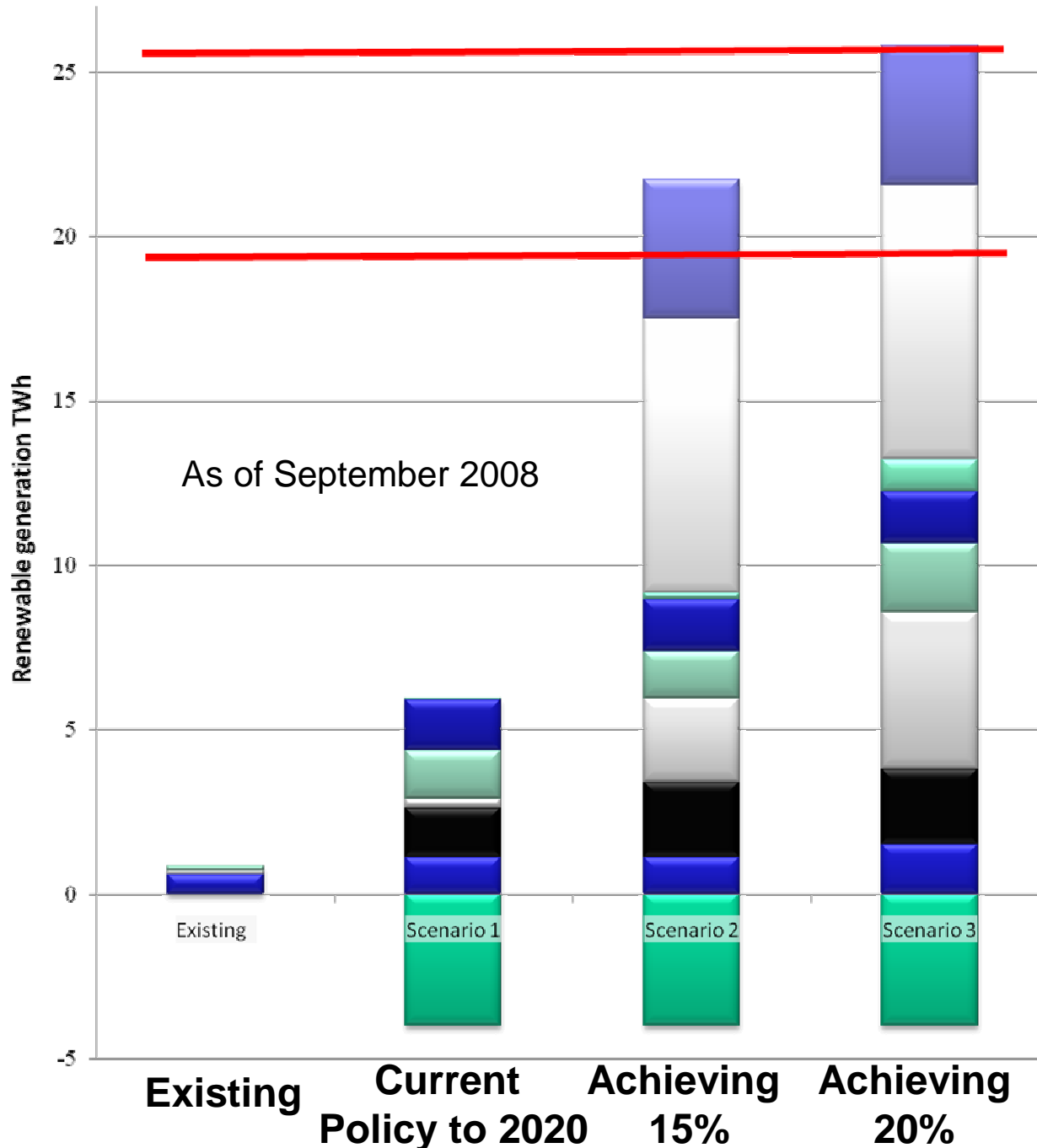
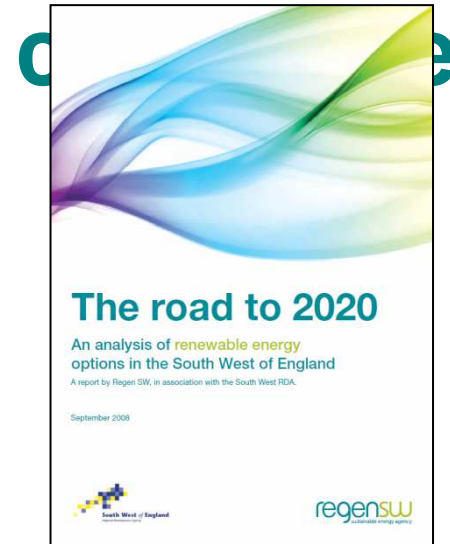
- Regen SW is a leading centre of sustainable energy expertise and pioneering project delivery.
- **Independent & not for profit** - established in **2003**
- **Regional & National** level **strategic** organisation
- Mission - **speed up transition** to **low carbon economy** in SW
  - **unlocking** sustainable energy business **opportunities**
  - **accelerating uptake** of region's renewable energy resources



# UK targets

- Legally binding targets to reduce CO<sub>2</sub> emissions at least 34% on 1990 levels by 2020 and 80% by 2050
- 15% of total UK energy from renewables by 2020
- All new buildings to be zero carbon within a decade – dwellings from 2016, public sector from 2018 & commercial from 2019
- Emissions from existing buildings approaching zero by 2050
- Reduce emissions from homes by 29% on 2008 levels by 2020

# The size of the



- Severn tidal
- offshore wind
- marine energy
- transport
- onshore wind
- built environment - existing
- built environment - new
- LfG, biomass, hydro, EfW, AD
- Energy efficiency and demand red'n

[www.regenSW.co.uk/downloads/RegenSW\\_210.pdf](http://www.regenSW.co.uk/downloads/RegenSW_210.pdf)

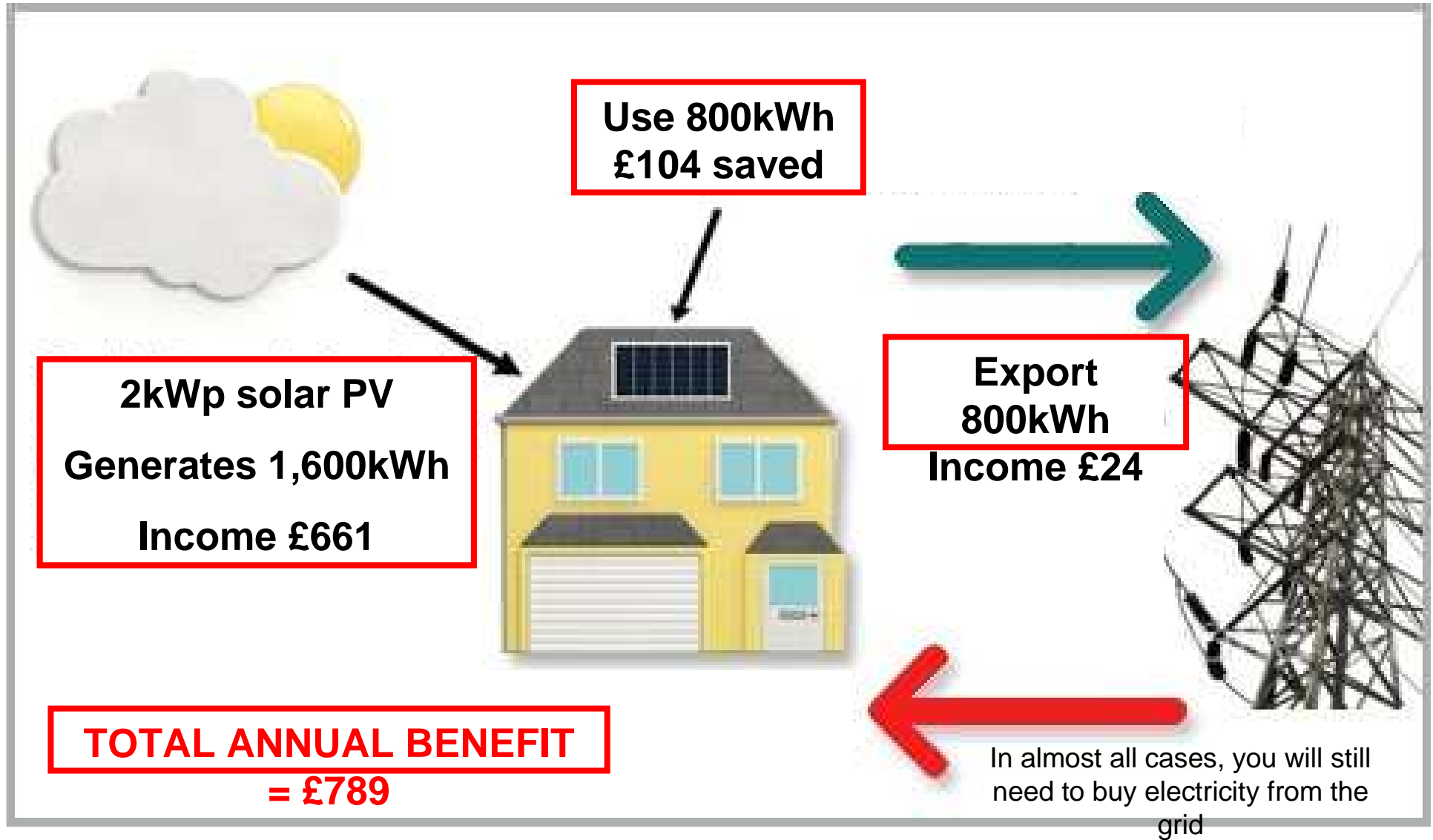
# Feed-in Tariffs (FITs)

- New Government financial incentive for renewable **electricity** up to 5MW - started 1 April 2010
- Generation tariff rather than a grant towards the capital cost
- Paid for all electricity generated & not just that exported to the grid
- 3p/kWh extra for electricity exported to the grid
- Designed to give 5-8% return on investment – ie you make a profit
- Guaranteed income for 10-25 years depending on type & scale of technology – index linked (& tax free for individuals)
- After 31 March 2013 FITs “will be refocused on the most cost effective technologies...unless higher than expected deployment requires an early review”
- Various eligibility criteria

# Feed-in Tariff levels until 31.3.13

Technology	Scale	Tariff level for new installations in period (p/kWh) [nb tariffs will be inflated annually]			Tariff lifetime (years)
		Year 1: 1/4/10- 31/3/11	Year 2: 1/4/11- 31/3/12	Year 3: 1/4/12- 31/3/13	
Anaerobic digestion	=500kW	11.5			20
	>500kW	9			
Hydro	=15 kW	19.9			20
	>15-100 kW	17.8			
	>100 kW-2 MW	11			
	>2 MW – 5 MW	4.5			
MicroCHP pilot	=2 kW	10			10
PV	=4 kW (new build)	36.1	33		25
	=4 kW (retrofit)	41.3	37.8		
	>4-10 kW	36.1	33		
	>10-100 kW	31.4	28.7		
	>100kW-5MW	29.3	26.8		
	Stand alone system	29.3	26.8		
Wind	=1.5kW	34.5	32.6		20
	>1.5-15kW	26.7	25.5		
	>15-100kW	24.1	23		
	>100-500kW	18.8			
	>500kW-1.5MW	9.4			
	>1.5MW-5MW	4.5			

# How the Feed-in Tariff works



# Financial benefits over 25 year FITs

## lifetime

Fuel bill savings

£3,200



Generation tariff

£20,475



Export tariff

£750

Total income = £21,225

System cost = £12,000

**PROFIT = £9,225**

Fuel bill savings =  
£3,200

**TOTAL BENEFIT =**

**£12,425**  
The total income & total benefit will be greater than those shown here because FITs is index-linked & energy costs are



In this & almost all cases, you will still need to buy electricity from the grid

# Renewable Heat Incentive (RHI)

- New Government financial incentive for renewable heat
- First country in the world to introduce
- Started 1 April 2011 for commercial – domestic receives ‘premium payment’ and tariff due to start October 2012
- Designed to generate 12% return on investment, apart from solar thermal (6%)
- Varying rates for different types and scales of technologies
- **Commercial rates have been agreed – Domestic rates currently under consultation**

# RHI levels - Commercial

Support for industrial and the commercial sector; the public sector; not-for-profit organisations and communities in England, Scotland and Wales

**(Support for households through the Renewable Heat Premium Payment in the first year of the scheme until the Green Deal is introduced in October when households will become eligible for RHI tariffs)**

Levels of support					
Tariff name	Eligible technology	Eligible sizes	Tariff rate (pence/kWh)	Tariff duration (Years)	Support calculation
Small biomass	Solid biomass; Municipal Solid Waste (incl. CHP)	Less than 200 kWth	Tier 1: 7.6	20	Metering Tier 1 applies annually up to the Tier Break, Tier 2 above the Tier Break. The Tier Break is: installed capacity x 1,314 peak load hours, i.e.: <b>kWth x 1,314</b>
			Tier 2: 1.9		
Medium biomass		200 kWth and above; less than 1,000 kWth	Tier 1: 4.7		
		Tier 2: 1.9			
Large biomass		1,000 kWth and above	2.6		Metering
Small ground source	Ground-source heat pumps; Water-source heat pumps; deep geothermal	Less than 100 kWth	4.3	20	Metering
Large ground source		100 kWth and above	3		
Solar thermal	Solar thermal	Less than 200 kWth	8.5	20	Metering
Biomethane	Biomethane injection and biogas combustion, except from landfill gas	Biomethane all scales, biogas combustion less than 200 kWth	6.5	20	Metering

# Selecting & installing renewable energy

- Calculate your electricity & heating demand
- Consider whether you can reduce your demand by energy efficiency measures such as additional insulation, low energy light bulbs, efficient appliances etc – this reduces the size & cost of any renewable energy system needed & is often very cost effective
- Identify any opportunities &/or constraints to renewable energy on your site or property
- Check with your local planning authority whether there are any planning issues
- Select appropriate renewable energy technology or technologies
- Get quotes from 3 installers (MCS if you want FITs/RHI)

# Renewable energy technologies

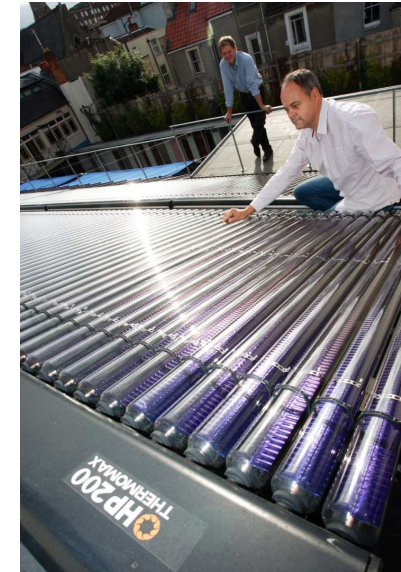
Heat		Electricity
Water heating	Space heating	
Solar thermal		Solar pv
	Heat pumps	Hydro
	Biomass	Wind
		Combined Heat & Power (CHP)

**RHI**

**FIT**

# Solar thermal

- Provide hot water from the sun
- Often well suited to tourism businesses, which have high hot water demand in the summer when the collectors are producing their greatest output
- Supplementary heat source such as a boiler or an immersion heater usually needed when output is low eg in the winter
- Can be used to heat swimming pools
- 2 main types - flat plate & evacuated tubes. Evacuated tubes are more efficient, but also more expensive.
- Must be correctly angled & orientated for best performance - can face between SE & SW at an angle of between 30 to 50 degrees
- Shading reduces performance & should be avoided
- Building's roof must be able to take the weight of the panel
- The heating system, particularly the hot water tank & boiler needs to be compatible
- Approx 25 years lifetime & require very little maintenance



# Heat pumps

- Use similar technology to fridges to extract heat from the air, ground or water
- Can provide space & water heating
- Require electricity to run & the CO<sub>2</sub> & financial cost of this needs to be considered
- The higher the CoP, the more efficient the heat pump is running, & the higher the CO<sub>2</sub> savings & the lower the running costs
- Provide a low-temperature heat output - best suited to meeting a low heat demand eg well insulated properties with underfloor heating
- If providing water heating, best to use it to pre-heat the water & then use another heat source to get the water to the necessary temperature
- Ground source heat pumps (GSHPs) require either horizontal trenches or vertical boreholes to be dug
- Air source heat pumps (ASHPs) & water source heat pumps (WSHPs) require less space than GSHPs but have lower CoP
- Noise may be an issue for ASHPs
- WSHPs may require approval from the Environment Agency



# Biomass

- Biomass stoves can provide space heating for individual rooms & water heating if they have a back boiler connected
- Biomass boilers provide space & water heating for whole buildings or a group of buildings
- Suitable for 'new build' or existing buildings
- Main fuels are woodchips, pellets, or logs
- Almost CO<sub>2</sub> neutral
- CO<sub>2</sub> & cost savings will depend on the fuel being replaced
- In general, work best with fairly constant heating demands
- Biomass boilers in particular most efficient when operating close to full load
- Sufficient space for the stove/boiler & for fuel storage is needed plus good access to the fuel store for deliveries
- Smoke control zones
- Require ash removal, although in general very small amounts produced



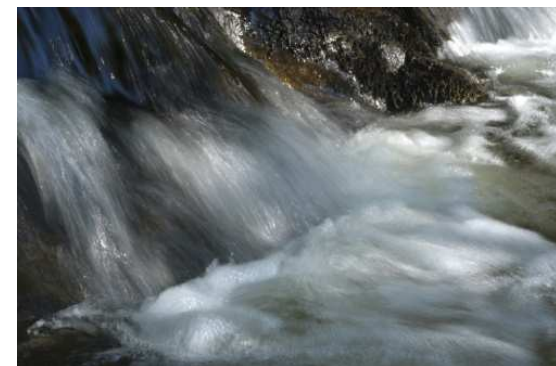
# Solar photovoltaic (PV)

- Generate electricity from daylight, although they produce most in direct sunlight
- The SW receives the highest levels of solar radiation in the UK & is well suited to solar PV
- Can be supplied as panels or tiles & can be built into the fabric of a building, bolted on afterwards or built on a frame on the ground
- 3 main types of PV panel varying in cost & efficiency
- Must be correctly angled & orientated for best performance, with the ideal position facing South at an angle of 30 degrees
- Variation from this will result in reduced performance, but facing between SE & SW at an angle of between 30 to 40 degrees is generally OK
- Shading dramatically reduces performance & should be avoided
- Building's roof must be able to take the weight of the panels



# Micro-hydro

- Generate electricity from running water
- Highly site specific
- Require a good year-round flow of water & preferably a good height difference, known as 'the head', between the top of the scheme & the turbine unless run-of-river scheme
- May require some civil works
- Licences & approval from the Environment Agency are required
- Mitigating measures such as a mesh screen & a fish ladder may need to be installed
- Noise may be an issue
- Annual service needed



# Small scale-wind

- Generate electricity from the wind
- Small-scale wind usually refers to turbines up to 20kW (around 15 metres in height)
- Can be stand-alone or building mounted
- Require a good average wind speed - A small difference in wind speed will make a large difference to the amount of electricity generated
- Advisable to monitor wind speeds at the site before deciding whether to install
- Local topography can significantly affect the wind speed – features such as trees & buildings can dramatically reduce wind speed
- Need to be carefully sited, especially in built-up areas, to be effective
- Noise & visual impact may need to be considered
- Generally speaking building-mounted turbines have considerably lower outputs than stand-alone turbines, due to turbulence from the building
- Building structure should be checked to see if it can cope with the additional stresses & vibration generated by the turbines
- Annual service needed



# !! Important !!



- To be eligible for the Feed-in Tariff (FITs) or the Renewable Heat Incentive (RHI) your installation must be installed by a Microgeneration Certification Scheme (MCS) approved installer using a MCS approved product
- List of SW based MCS installers, which is updated weekly, available from Regen SW or the MCS website

**MCS certified renewable energy installers in the South West**  
7 May 2010

This list provides details of all the renewable energy installers in the South West certified under the Microgeneration Certification Scheme (MCS). Microgeneration refers to small scale renewable energy, with the common definition being up to 50kW for electricity and up to 45 kW for heat.

The MCS is an independent scheme supported by the government and the renewable energy industry which is designed to give protection to consumers by certifying microgeneration installers and products against a set of robust and consistent criteria and standards. It is led by a stakeholder panel, comprised of representatives from certification bodies, government departments, renewable energy trade associations and other interested parties.

The MCS replaces previous schemes, such as Clear Skies. Both the installer and the microgeneration product have to be MCS certified for an installation to be eligible for Feed-in Tariffs (FITs), a new government financial incentive for renewable electricity which started on 1 April 2010. For renewable heat the government is currently proposing that both the installer and the microgeneration product have to be MCS certified or equivalent for an installation to be eligible for the Renewable Heat Incentive (RHI), which is currently being developed and is due to start in April 2011. MCS certified installers and products display the MCS approved mark. For more information about the MCS, including lists of MCS certified microgeneration products, see [www.microgenerationcertification.org](http://www.microgenerationcertification.org).

This list is based on the installer details provided on the MCS website and therefore the authors cannot assume any liability for any errors or omissions in the information from that website. The list is checked, and updated if required, weekly, in line with the weekly updates to the installer information on the MCS website. This list is provided because it is not possible to create a list of just South West based installers on the MCS website. Please send details of any errors or omissions in this list to [gwalton@regensw.co.uk](mailto:gwalton@regensw.co.uk).

This list is compiled by Regen SW ([www.regensw.co.uk](http://www.regensw.co.uk)), the sustainable energy agency for the South West, who are working together with the Energy Saving Trust ([www.energysavingtrust.org.uk](http://www.energysavingtrust.org.uk)) to help develop the microgeneration market in the region. Neither Regen SW nor the Energy Saving Trust is able to recommend any individual installer nor do we accept any liability for any work done by the installers on this list.

For more information  
If you want to install renewables on your house please contact the Energy Saving Trust on 0800 512 012 or visit [www.energysavingtrust.org.uk](http://www.energysavingtrust.org.uk).  
If you want to install renewables on business premises please contact the Carbon Trust on 0800 085 2005 or visit [www.carbontrust.co.uk](http://www.carbontrust.co.uk).  
If you are a South West renewable energy business please contact Gareth Walton at Regen SW on [gwalton@regensw.co.uk](mailto:gwalton@regensw.co.uk) or 01392 474329.

**MCS certified installers based in the South West** 7.5.2010

- There are currently no MSC certified micro-CHP installers based in the South West
- The hydro installer listed is Clear Skies registered rather than MCS certified because the MCS standards for hydro have not been finalised yet

COMPANY	ADDRESS	TOWN	COUNTY	POSTCODE	CONTACT DETAILS (Phone, email & website)	BIPHAS	HYD	HYDRO	SOLAR PV	SOLAR THERMAL	WIND
1 World Solar Ltd	35 Cobourg Road Montpelier,	Bristol		BS6 5HT	0117 941 4663 <a href="mailto:info@1worldsolar.co.uk">info@1worldsolar.co.uk</a> <a href="http://www.1worldsolar.co.uk">www.1worldsolar.co.uk</a>				PV	ST	
1 <sup>st</sup> Light Energy	20 Fitz Gilbert Court, Castledown	Ludgershall	Wiltshire	SP11 9FA	01453 570639 <a href="mailto:info@1stlightenergy.co.uk">info@1stlightenergy.co.uk</a> <a href="http://www.1stlightenergy.co.uk">www.1stlightenergy.co.uk</a>			HP		ST	
A J Buchan Ltd	Cotswold Efficient Energy Centre, Down Barn, Cherington	Tetbury	GloUCE	GL8 8DH	01235 844466 <a href="mailto:andrewjohn.buchan@tiscali.co.uk">andrewjohn.buchan@tiscali.co.uk</a> <a href="http://www.ajbenergy.com">www.ajbenergy.com</a>			HP	PV	ST	
A Mackmurdie Ltd	Hillingdon House, South Street	Torrington	Devon	EX30 8AB	01390 422588 <a href="mailto:amackmurdie@aol.com">amackmurdie@aol.com</a> No website listed	B				ST	
A Stephens Plumbing, Heating and Renewable Technologies Ltd	Unit 27, Sina Park, Estover Road	Plymouth	Devon	PL6 7AE	01752 692180 <a href="mailto:stephens@stephensplumbing.co.uk">stephens@stephensplumbing.co.uk</a> No website listed			HP		ST	
Abacus Renewable Energy Ltd	Dairy House, Lower Severalls	Crewkerne	Somerset	TA13 7NX	01480 73512 <a href="mailto:info@abacus-renewable-energy.com">info@abacus-renewable-energy.com</a> <a href="http://www.abacus-renewable-energy.com">www.abacus-renewable-energy.com</a>				PV		
Acaster Plumbing & Heating Ltd trading as Acasters	Unit 1 Plot 15 Newport Industrial Estate	Launceston	Cornwall	PL13 8EX	01566 779655 <a href="mailto:info@acasters.co.uk">info@acasters.co.uk</a> <a href="http://www.acasters.co.uk">www.acasters.co.uk</a>			HP		ST	
Ace Plumbing & Heating	144 High Street	Shaftesbury	Dorset	SP7 8JG	01747 595852 <a href="mailto:ace_plumbing@btconnect.com">ace_plumbing@btconnect.com</a> <a href="http://www.aceplumbing-energy.com">www.aceplumbing-energy.com</a>			HP	PV	ST	
Aeolis Power Limited	Poohole Farm, Pining Street	Pining	GloUCE	BS33 4JJ	01454 93133 <a href="mailto:contact@aeolispower.co.uk">contact@aeolispower.co.uk</a> <a href="http://www.aeolispower.co.uk">www.aeolispower.co.uk</a>						W
Aeolis Renewable Energy	Unit 13 Fleetbridge Business Centre, Upton Road	Poole	Dorset	BH17 7AF	01202 863200 <a href="mailto:sales@aeolis-re.com">sales@aeolis-re.com</a> <a href="http://www.aeolis-re.com">www.aeolis-re.com</a>				PV		
Apollo Renewables Ltd	Unit 01 Wagon Yard	Marlborough	Wiltshire	SN6 2JH	01472 512111 <a href="mailto:info@apollorenewables.co.uk">info@apollorenewables.co.uk</a> <a href="http://www.apollorenewables.co.uk">www.apollorenewables.co.uk</a>				PV		
Atlantic Plumbing and Solar	Unit 27, South Hams Business Park, Churchstowe	Nr Kingsbridge	Devon	TQ7 3DU	01548 858836 <a href="mailto:info@atlanticplumbingandsolar.co.uk">info@atlanticplumbingandsolar.co.uk</a> <a href="http://www.atlanticplumbingandsolar.co.uk">www.atlanticplumbingandsolar.co.uk</a>			HP		ST	
Becosolar trading as Becosolar & Cholwell Wind Energy	Unit 1, 2 & 3 The Alpha Centre, Millage Road	Totnes	Devon	TD9 5JA	01309 566129 <a href="mailto:info@becosolar.com">info@becosolar.com</a> <a href="http://www.becosolar.com">www.becosolar.com</a>				PV		W

# Thank you

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