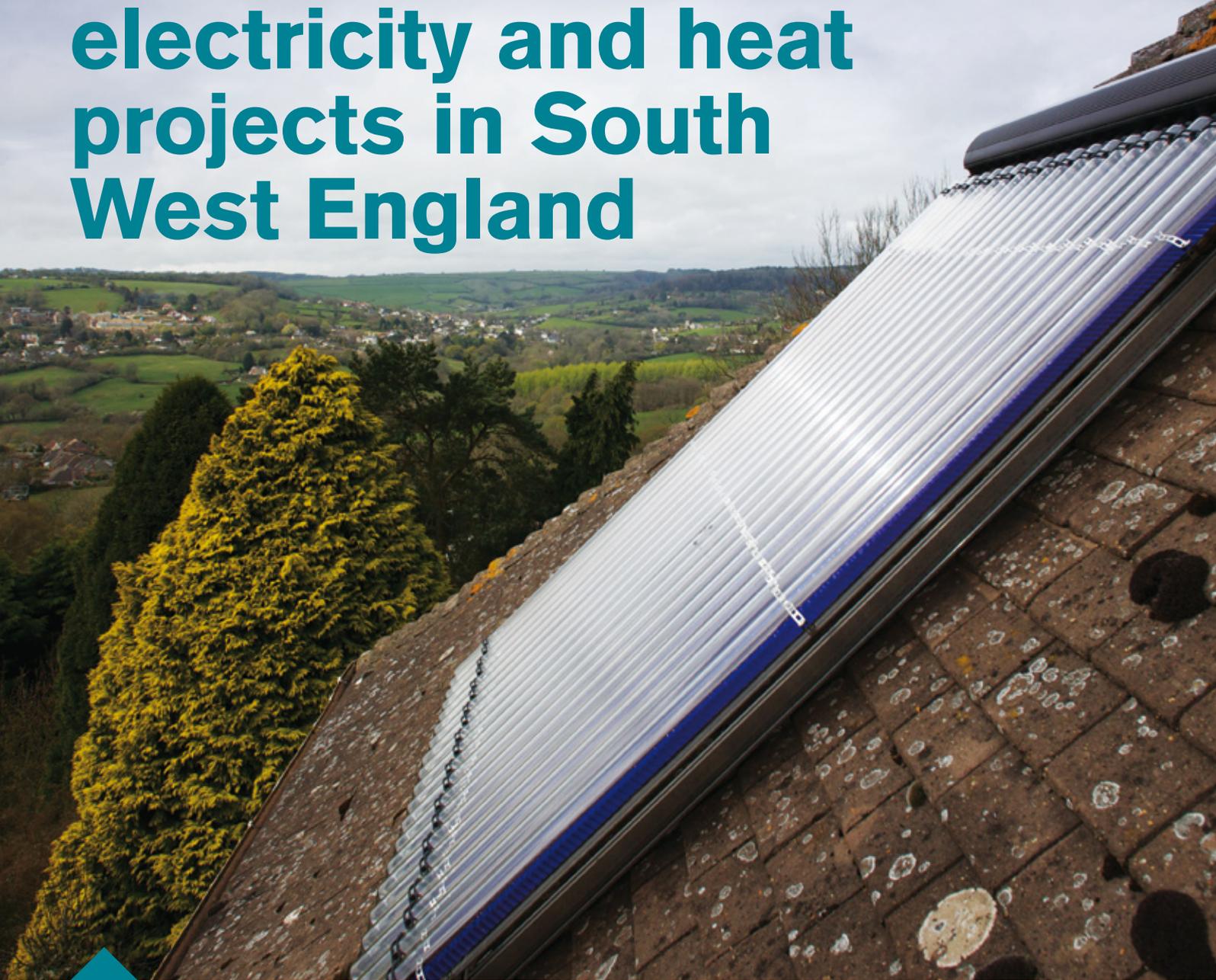


2009

Survey of renewable electricity and heat projects in South West England



Solar thermal panel in Lyme Regis, **Dorset**, fitted by **Jim Shearman**.
Jim has fitted 16 panels in 2008/9.



Pupils at Hardenhuish School in Chippenham, Wiltshire monitoring the output of the **6 kW wind turbine** and a **10 kW solar PV array**.

Contents

Overview of renewable energy in the region **03**

Renewable electricity **05**

Renewable heat **08**

Former Avon **12**

Cornwall & the Isles of Scilly **14**

Devon **16**

Dorset **18**

Gloucestershire **20**

Somerset **22**

Wiltshire **24**

Overview of renewable energy in the region

In the past 12 months the south west's renewable energy capacity has grown by 10 per cent, rising from 191 megawatts (MW) in the 2008 survey to 211 MW. For the first time since the survey was carried out five years ago, renewable heat – with annual growth of 37 per cent (14.6 MW) – has recorded a bigger annual increase than renewable electricity at just two per cent growth (2.89 MW).**

Renewables grow rapidly with the right support

The increase in renewable heat is very encouraging news and a significant endorsement for Regen SW's South West Bioheat Programme, which has been a major driver in helping to get many projects off the ground and raising the profile of renewable heat in the region. Projects such as the Lanoyce Nurseries' boiler show how quickly we can get megawatts on the ground with the right support. We expect to see even bigger rises in next year's survey as further large schemes are commissioned through the South West Bioheat Programme.

Biomass is leading technology

Biomass installations made the greatest impact in terms of capacity, with 57 new installations, adding 11.55 MW. This is an increase of over 70 per cent in the region's total biomass capacity. Despite these encouraging results, Regen SW's Road to 2020 document estimates that the region needs 1,850 MW of renewable heat to meet its 2020 target; therefore much more still needs to be done to support and drive forward the sector.

Slow growth of renewable electricity

The low increase in the region's renewable electricity capacity indicates that approval times for large projects are still too long and it will still be some time until we see the impact of schemes approved over the past couple of years. It's essential that the region moves more quickly when deciding upon and building large renewable electricity projects, so that results can be seen much earlier.

Significant approval of renewable electricity schemes

A significant number of approvals (171.65 MW) are in the pipeline and waiting to be built. Of this, 71.75 MW has been approved in the past 12 months (66.5 MW of wind, and 5.25 MW of landfill gas).

Five wind farms approved by councillors

Five of the seven new wind farm projects that went through this year were approved by councillors. The Goonhilly repower project had majority support by councillors too, but was referred to the Government Office for the South West (GOSW) as it is in an area of natural beauty. Also, Torrridge District Council approved Galsworthy wind farm, recording the region's first rural wind farm approval at a committee for over ten years. Despite this more positive trend, councillors have recently refused three wind farms at Carland Cross repower (Carrick District Council), Dunsland Cross (Torrridge District Council), and Goverton (South Hams).

Role of microgeneration**

The number of microgeneration projects has continued to rise sharply, with 618 new renewable electricity and heat installations in the past 12 months, adding 0.67 MW and 11.66 MW respectively.

Step-change needed to meet 2020 targets

Despite some encouraging trends, the total installed renewable energy capacity of 211 MW is still relatively low. Regen SW's Road to 2020 report estimates the south west needs to install over 7,000 MW to reach a 15 per cent target by 2020, and the region has only reached one per cent of this at present.

This is a major challenge, but it's also a major opportunity for the south west, which is rich in the natural resources and entrepreneurial spirit needed to achieve the 15 per cent target. The region must move quickly and decisively when making decisions on whether to approve renewable energy schemes, particularly with respect to major projects.

* figures for 2009 have been compared against a revised total for 2008 of 151.97 MW (as opposed to the 150.72 MW, cited in the published 2008 survey), as corrections in the data has highlighted duplications in the 2008 survey, and identified additional projects that were not previously included.

**Microgeneraion projects are onsite projects under 50kW.

Counties' performance

- Somerset was the only county to record over 1MW of new electricity installations in 2008/9, due to the installation of an 1.8 MW wind farm at Shooters Bottom
- Cornwall is the best performing county, both in terms of renewable electricity and renewable heat, with over 70 MW of renewable energy
- Former Avon, Dorset, Gloucestershire and Wiltshire all added less than 0.1 MW of installed capacity to their renewable electricity totals in the past year, but Former Avon saw three large wind projects approved by councillors, totaling 25 MW and 5.25 MW of landfill gas
- Devon added the greatest amount to its installed heat capacity with 4.58MW, closing the gap between it and leading county Cornwall
- Wiltshire saw the greatest percentage increase in renewable heat (starting from a low base) by more than doubling its installed renewable heat capacity
- Somerset added the least amount to its installed renewable heat capacity, and was the only county to add less than 1 MW
- Gloucestershire had a high number of new microgeneration installations, with 103 new heat projects (second behind Cornwall) and 17 new electricity projects (third behind Cornwall and Devon), due in part to the availability of Gloucestershire Renewable Energy Grants



This year, **renewable heat**, with **annual growth of 36 per cent** and **14.6 MW**, has **grown more strongly** than **renewable electricity**, which has **experienced just two per cent growth (2.89 MW)**.



Solar installation at
Fivepenny Farm,
near Wootton Fitzpaine,
Dorset.

Renewable electricity

Total renewable electricity capacity recorded in the region is now 154.84 MW, including 2.89 MW since last year's survey. This increase is comparatively low, as no large-scale schemes have been built, and only one single-turbine wind farm has been commissioned. Nevertheless, renewable electricity schemes in the region are now producing enough electricity to power the equivalent of 155,160 homes, avoiding the production of 415,870 tonnes of CO₂.

72 MW approved

72 MW of renewable electricity capacity was approved in 2008/9 – including seven large wind projects (66.5 MW). This means that there is currently 165.7 MW of approved capacity in the region waiting to be built.

470 grid-connected projects

470 grid-connected electricity projects were identified through the project, with 95 of them installed in the last year. The majority of the 2.89 MW increase is from the commissioning of the 1.8 MW wind farm at Shooters Bottom in Somerset and the operation of a landfill gas plant at Lean Quarry in Cornwall, which added 0.46 MW to the region's total.

Growth of solar PV continues

Over half of the new installations for 2008/9 were solar PV installations, with 26 out of 51 installed in public or community buildings and 22 in domestic buildings. These new solar PV projects added 0.28 MW to the region's total installed capacity, which is equal to 0.1 per cent of the region's total capacity. There are now 215 solar PV installations recorded in the region.

55 MW of wind

Onshore wind now contributes just over 55 MW to the region's installed capacity, through 143 projects. This is 35.8 per cent of the region's total. As well as the Shooter's Bottom turbine, 38 new small and micro-wind installations were identified this year, adding 0.31 MW to the region's total. Of the region's wind projects:

- only 12 are 0.5 MW or greater in size, and these constitute over 98 per cent of the region's total onshore wind capacity
- two per cent of installed capacity comes from 131 small and micro-wind turbines

Small growth of small hydro

Small hydro contributes around 8.87 MW to the region's total installed capacity, with 61 projects. This is 5.7 per cent of the region's total renewable electricity capacity. In 2008/9, four small hydro installations added 0.03 MW.

Landfill gas is biggest contributor

Landfill gas remains the technology with the largest installed renewable electricity capacity, with 74.76 MW, which accounts for 48 per cent of the region's total. This is a net increase of 1.9 MW on the previous year. At six sites, the installed capacity decreased this year due to the age of the site.

Advanced waste treatment

Advanced waste treatment accounts for 3.37 MW and 2.2 per cent of the region's renewable electricity capacity, though no new projects were commissioned this year. These figures include two electricity generating anaerobic digestion plants, and Compact Power's pyrolysis project at Avonmouth.

Sewage gas CHP

Sewage gas CHP contributes 11.09 MW of electricity capacity, which is 7.2 per cent of the region's installed capacity, and a marginal decrease on last year's figure. In all, technologies using waste as fuels make up 78 per cent of the region's installed renewable electricity capacity.

Cornwall is the leading county

Cornwall is once again the leading county in the region in terms of installed capacity, with 37 per cent of the region's total. Devon stays in second place, with 21 per cent, recording the most new installations (27) in this year's survey. Somerset experienced the largest gross increase in capacity, due to the commissioning of the 1.8 MW wind farm at Shooters Bottom.

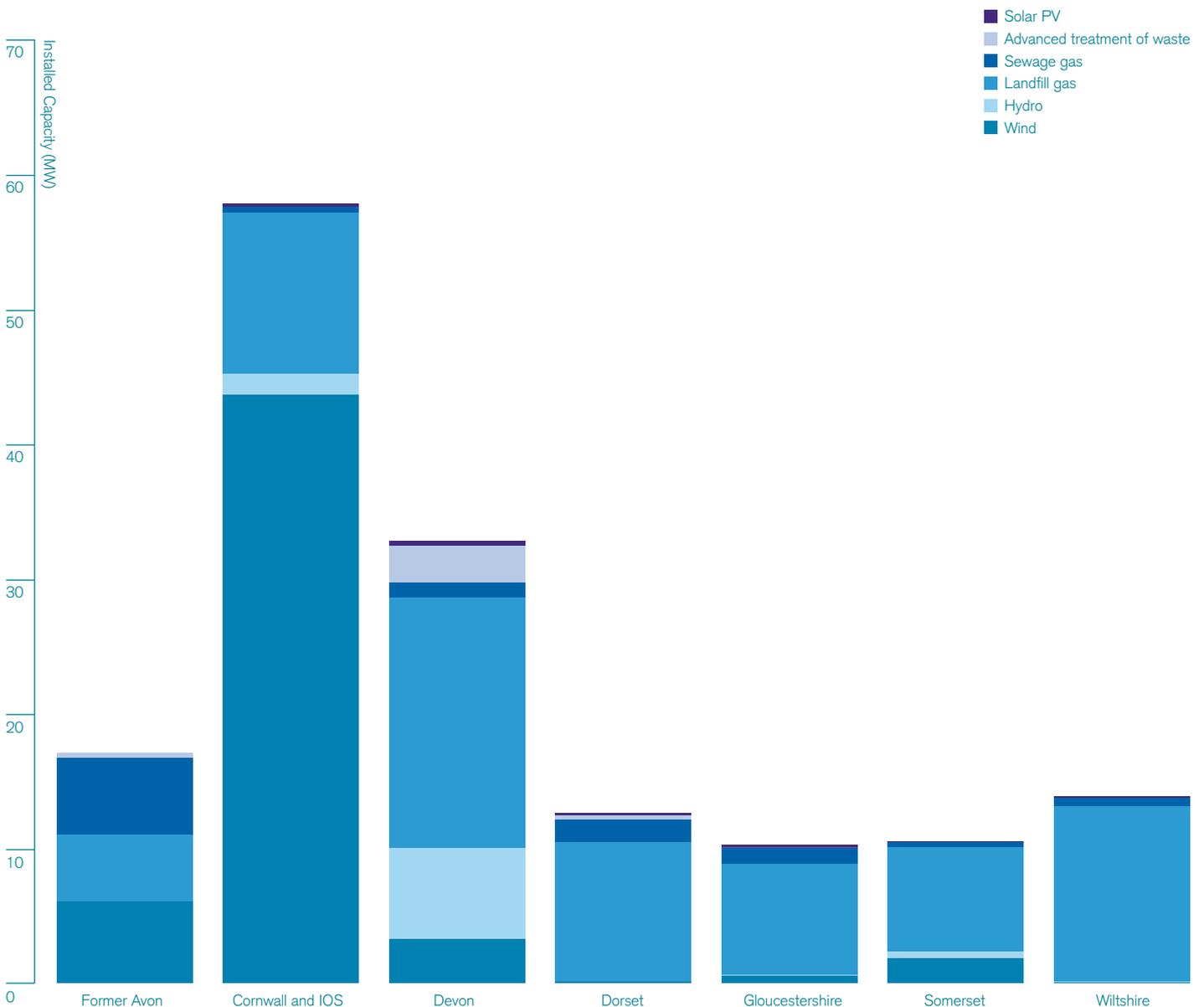
Energy generated has been estimated using the following capacity factors for different renewable energy technologies: LFG 80%; wind 30%; sewage gas 60%; small hydro 25%; advanced treatment of waste 80%; and solar PV 30%. The number of equivalent homes powered is based on the assumption that an average house in the south west consumes 4,991 kWh of energy per year (source: BERR Regional and local authority electricity consumption statistics: 2005, 2006 and 2007) Carbon emissions avoided are calculated using BERR's five year rolling average figure for the electricity grid mix (0.53702 kg CO₂ per kWh) (source: www.defra.gov.uk/environment/business/envrpf/pdf/ghg-cf-guidelines-annexes2008.pdf)

* The 2008 survey total was 151.32 MW. However, this figure included some duplicates. Also, some projects identified in this 2009 survey were installed prior to the 2008 survey, therefore they cannot be considered as 'new' for this year.

Renewable electricity capacity

County	Number of projects	Wind	Hydro	Landfill gas	Sewage gas	Advanced treatment of waste	Solar PV	Installed renewable electricity capacity (MW)	% of regional total by county area
Former Avon	22	6.04	0.01	4.91	5.75	0.33	0.04	17.08	11.03
Cornwall and IOS	123	43.60	1.59	11.94	0.40	0	0.28	57.80	37.33
Devon	152	3.26	6.71	18.59	1.13	2.7	0.42	32.80	21.19
Dorset	64	0.09	0.01	10.32	1.66	0.34	0.15	12.57	8.12
Gloucestershire	40	0.52	0.04	8.25	1.21	0	0.23	10.24	6.61
Somerset	43	1.85	0.44	7.79	0.34	0	0.09	10.51	6.79
Wiltshire	26	0.02	0.08	12.97	0.62	0	0.15	13.83	8.93
Totals	470	55.39	8.87	74.76	11.09	3.37	1.35	154.84	100
% of total capacity		35.77	5.73	48.28	7.16	2.18	0.87	100	

South west of England installed renewable electricity capacity (MW)



Renewable heat

2008/9 has seen a much stronger growth in renewable heat than in renewable electricity, with 14.63 MW of additional capacity installed in 2008/9. This is a net increase of 35.6 per cent on the 2008 total*, taking the installed capacity of renewable heat to 55.79 MW.

521 new installations

521 new renewable heat projects were installed in 2008/9, which is an increase of more than a 50 per cent on the previous total**. 78.7 per cent of the total renewable heat projects in the region are domestic installations.

Biomass has biggest impact

As with last year's survey, biomass installations made the greatest impact in terms of capacity, with 57 new installations**, adding 11.57 MW to the region's total. This represents over 60 per cent of the region's total increase in renewable electricity and heat capacity.

Biomass now makes up 53.7 per cent of the region's renewable heat capacity, with 240 installations in a variety of settings, ranging from military barracks and plant nurseries to primary schools and houses.

Biomass set to grow further in coming years

Biomass installations look set to grow further, as the remaining 40-50 MW of projects in the South West Bioheat Programme are installed over the next two years.

Strong contribution from sewage gas CHP

Sewage gas CHP continues to make a strong contribution to the region's renewable heat installed capacity, with 11.33 MW. This is 20 per cent of the renewable heat total and a slight decrease from the 2008 figures.

Heat pumps grow in popularity

2008/9 saw the installation of 54 heat pump projects, which has added 1.24 MW to the region's total. 24 of these installations were in Gloucestershire. There are now 359 heat pump installations across the region, which account for 9.1 MW or 16.3 per cent of installed renewable electricity capacity.

Small amount of heat from waste

Only 0.02 MW of heat from advanced waste treatment was recorded by the survey. This is from one anaerobic digestion plant that runs on food waste.

Solar thermal is big business

The number of solar thermal projects has almost doubled in the past year, with 410 new installations taking the total to 902. This represents 5.39 MW of capacity and is 60 per cent of the total number of renewable heat installations.

Cornwall still leading the counties

Cornwall and the Isles of Scilly remains the leading county, with 25.6 per cent of the region's installed renewable heat capacity. Devon is a close second with 24.7 per cent, with the largest increase in 2008/9, adding 4.58 MW to its total.

Wiltshire is the county with the lowest installed capacity of renewable heat at 1.76 MW. However, this represents growth that has more than doubled this year (an increase of 129 per cent).

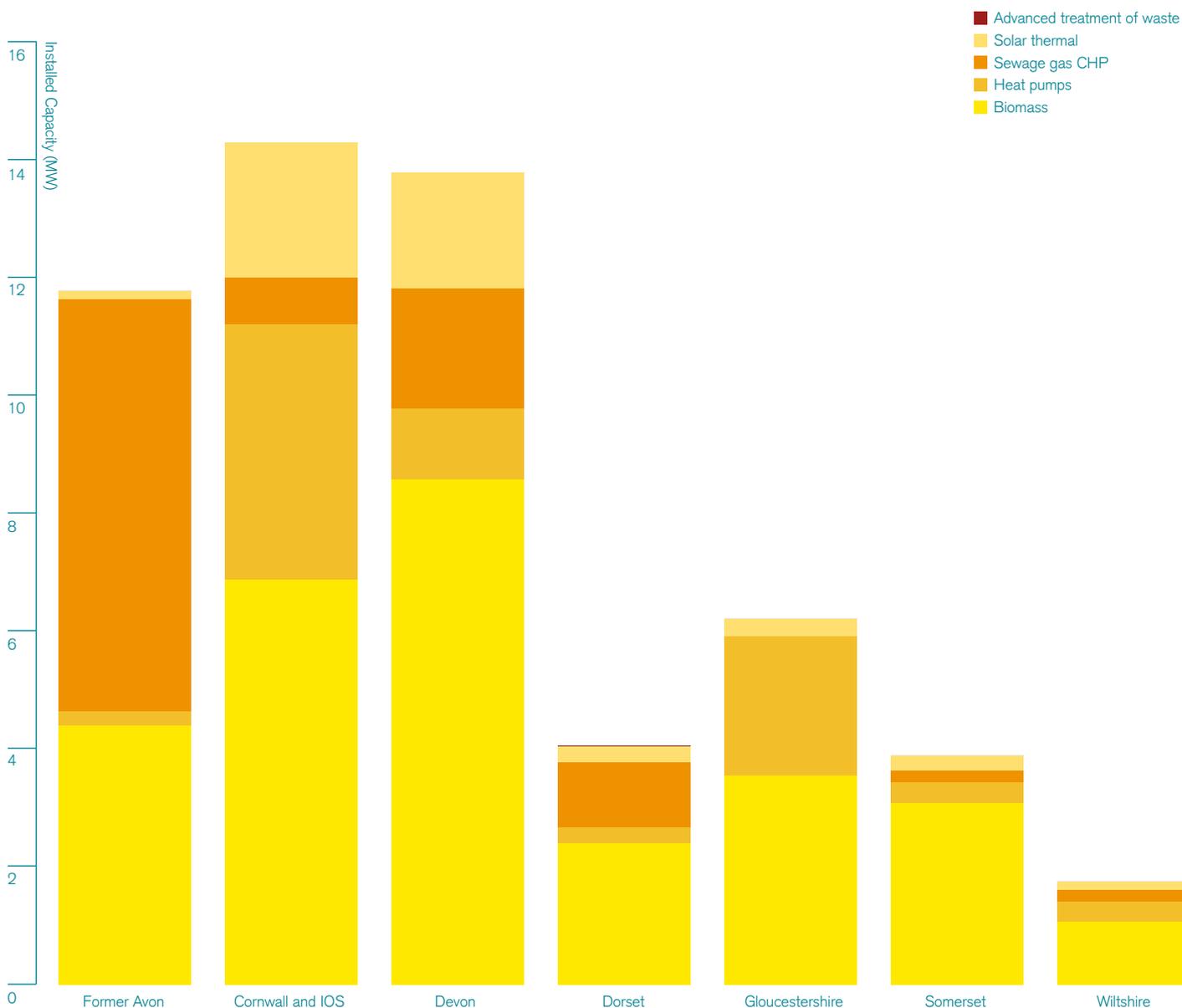
* The 2008 survey total was 39.67MW. However, this figure included some duplicates, which have now been identified and removed as a result of better reporting and recording. Also, some projects identified in this 2009 survey were installed prior to the 2008 survey, therefore they cannot be considered as 'new' for this year.

** In addition, one installer did not include data of individual installations, therefore the total number of installations may be considerably higher.

Renewable heat capacity

County	Number of projects	Advanced treatment of waste	Biomass thermal	Heat pumps	Sewage gas CHP	Solar thermal	Installed renewable heat capacity (MW)	% of regional total by county area
Former Avon	78	0	4.40	0.23	7	0.15	11.78	21.11
Cornwall and IOS	462	0	6.86	4.34	0.79	2.28	14.29	25.61
Devon	461	0	8.57	1.21	2.04	1.97	13.79	24.71
Dorset	122	0.02	2.39	0.28	1.1	0.27	4.06	7.28
Gloucestershire	159	0	3.55	2.35	0	0.31	6.22	11.14
Somerset	147	0	3.08	0.36	0.2	0.26	3.90	6.98
Wiltshire	75	0	1.08	0.33	0.2	0.16	1.76	3.16
Totals	1504	0.02	29.94	9.10	11.33	5.39	55.79	100
% of total capacity		0.04	53.67	16.32	20.31	9.66	100	

South west of England installed renewable heat capacity (MW)







The new **woodchip boiler system** at Lanoyce Horticultural Nurseries, Cornwall, was the **first boiler** to be fitted as part of the **£3 million South West Bioheat Programme**.

Former Avon

Renewable electricity

Total capacity: 17.06 MW, New capacity: 0.04 MW. *
Total projects: 22, New projects: 9.

Former Avon has recorded nine new renewable electricity projects in this year's survey, totaling 0.04 MW.

In addition:

- the county's largest capacity installations are sewage gas CHP at Avonmouth, wind turbines at Bristol port, and landfill gas
- Former Avon is the county with the third highest renewable electricity capacity (11 per cent of the region's total), but there is a large gap between it and the second best performer, Devon
- three wind farms have been approved this year. These are a 6 MW wind farm at Bristol City, a 12 MW wind farm at Wessex Water (Avonmouth), and a 6.9 MW wind farm at Alveston, South Gloucestershire
- Bristol City Council remains the top ranking local authority in former Avon with over 12 MW and eight projects installed
- Bath and North East Somerset is the local authority area with the lowest installed capacity of renewable energy (0.01 MW and two installations), but this is the first year it has registered electricity results
- South Gloucestershire had the highest number of new installations in the area (five) but these only added 0.02 MW to the total

* Former Avon's installed capacity has gone down due to a decrease in capacity at a landfill gas site.

Renewable heat

Total capacity: 11.78 MW, New capacity: 2.07 MW
Total projects: 78, New projects: 52

The county sits in third place in the south west in terms of its renewable heat capacity, with 11.78 MW and 21 per cent of the region's total. The majority of its new capacity comes from biomass (1.96 MW), though 42 out of its 52 new projects were solar thermal.

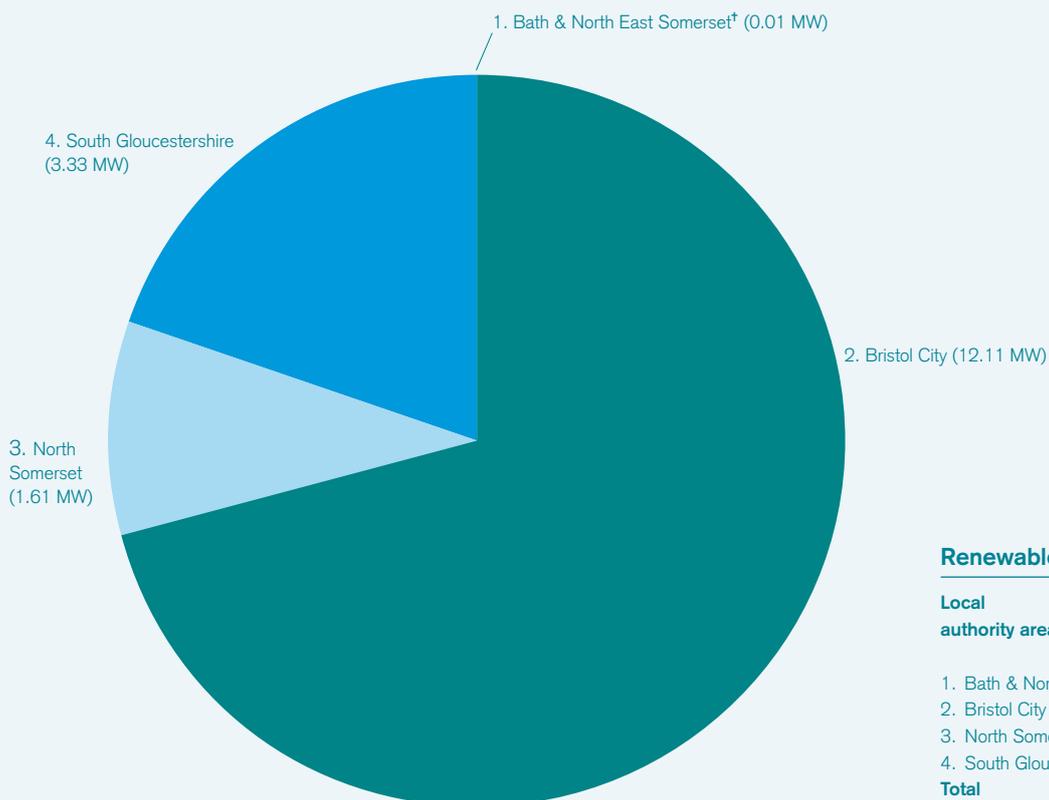
In addition:

- Former Avon's heat figures have grown significantly, both as a result of new installations and also as a result of old projects being added to our database
- 7 MW of the county's capacity come from a sewage gas CHP plant
- South Gloucestershire installed nearly 1 MW of renewable heat in 2008/9, but Bristol City Council remains the top performer, with 9.83 MW of installed capacity. However, only two new projects were recorded in Bristol City in this survey
- North Somerset, with 0.5 MW, and Bath and North East Somerset, with 0.25 MW, are the worst performers in Former Avon with only two new installations in each area in 2008/9



The Wessex Water **Acid Phase Digester (APD)** at its **Avonmouth sewage sludge processing plant**, which **treats** around **33,000 tonnes of sewage sludge per annum**. The results of the new APD process and technology have **resulted in energy production increasing by around 65 per cent** from **14.3 GWh per annum to 23.6 GWh per annum**.

Total installed capacity for renewable electricity for Former Avon (MW)

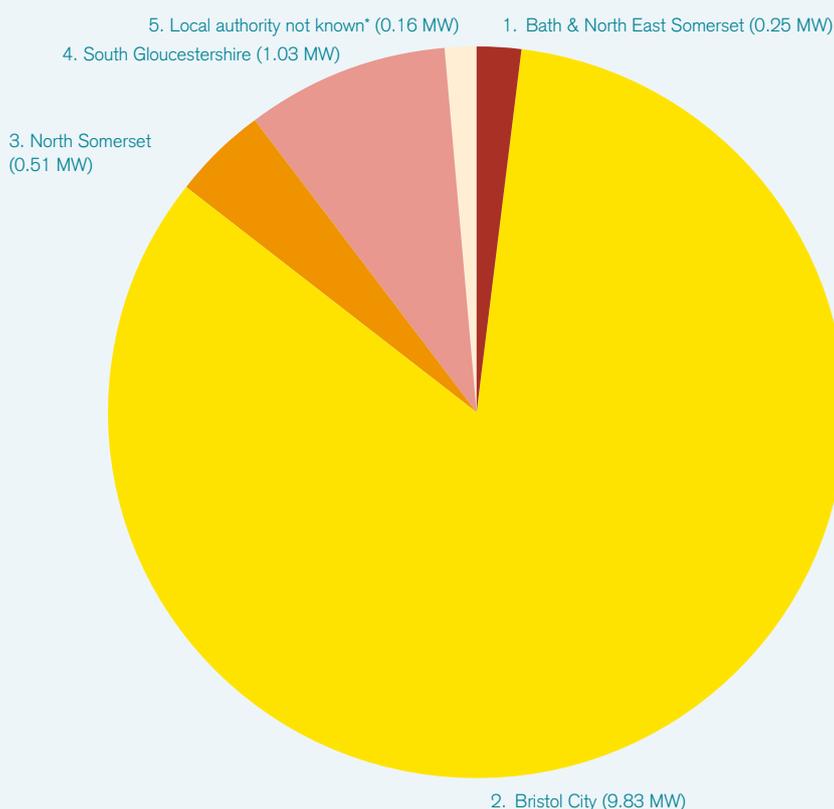


Renewable electricity projects

Local authority area	No. of projects	Installed capacity (MW)
1. Bath & North East Somerset	2	0.01
2. Bristol City	8	12.11
3. North Somerset	4	1.61
4. South Gloucestershire	8	3.33
Total	22	17.06

†Please note data for this segment is proportionally too small to appear on the chart.

Total installed capacity for renewable heat for Former Avon (MW)



Renewable heat projects

Local authority area	No. of projects	Installed capacity (MW)
1. Bath & North East Somerset	9	0.25
2. Bristol City	13	9.83
3. North Somerset	9	0.51
4. South Gloucestershire	46	1.03
5. Local authority not known*	1	0.16
Total	78	11.78

* Refers collectively to information provided by one installer – the specific number of their installations is unknown

Cornwall and The Isles of Scilly

Renewable electricity

Total capacity: 57.8 MW, New capacity: 0.69 MW
Total projects: 123, New projects: 24

Cornwall and the Isles of Scilly remains the top performing county in the south west for renewable electricity, with around 37 per cent of the region's total. The county's schemes are now producing enough electricity to power the equivalent of 40,980 homes.

In addition:

- the majority of the county's renewable electricity capacity is made up by 43.6 MW of installed wind and 11.94 MW of landfill gas
- the county has the second highest new installed capacity for the past 12 months (behind Somerset), which, at 0.69 MW, is still a small amount
- three significant wind farms have been approved in Cornwall this year. These are a 3.9 MW installation at Crimp (North Cornwall), an extra 5.6 MW at Goonhilly (Kerrier), and an extra 9.5 MW at Delabole (North Cornwall)
- the Carland Cross repower, which would increase its current provision from 6 MW to 20 MW, was refused by Carrick District Council.
- North Cornwall continues to be the top performing district in Cornwall with 25.91 MW (44.8 per cent of the county's total)
- Penwith and Restormel have only around 0.5 MW of installed renewable electricity each and the Isles of Scilly is yet to register any

Renewable heat

Total capacity: 14.29 MW, New capacity: 2.67 MW
Total projects: 462, New projects: 156

Cornwall and the Isles of Scilly also ranks as the top county for renewable heat, with just over a quarter of the region's installed capacity.

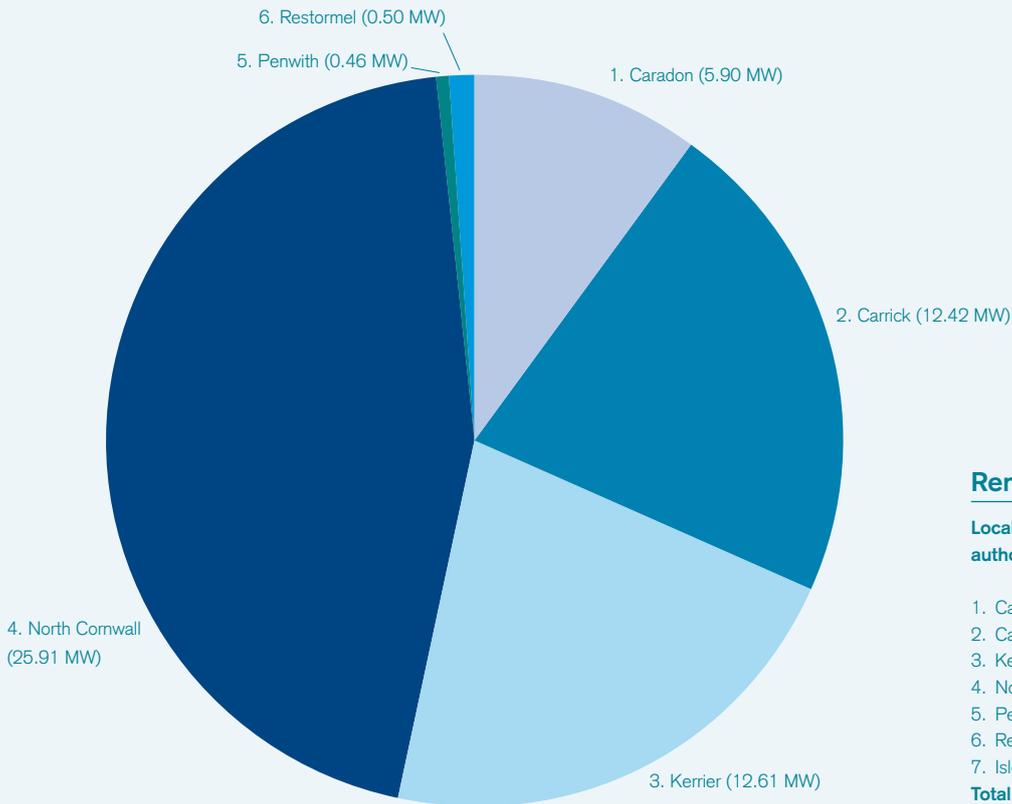
In addition:

- 156 new projects were installed in the past year, amounting to an increase of 2.67MW
- The majority of new heat projects installed are solar thermal, though there are some heat pumps. A small number of biomass projects add approximately half of the new 1.35 MW capacity
- Cornwall and the IOS has the largest recorded installed capacity of heat pumps in the region, with 4.34 MW and 162 projects
- Carrick, with 4.05 MW of renewable heat, overtook Caradon, as the leading district in Cornwall for renewable heat installations
- The worst performers were the Isles of Scilly, which did not add anything to its 2008 total, and Restormel, which added 36 new projects but still has less than 0.8 MW installed



Lanoyce Horticultural Nurseries, based near Saltash in Cornwall, **grows cut-flowers in greenhouses**, mainly for UK supermarkets such as Sainsbury's and Waitrose. **In November 2008**, they **installed a 500kW woodchip boiler** to replace their oil-fired boilers. The new woodchip boiler system is expected to **save around 685 tonnes of CO₂ a year**, and **reduce their heating costs by over £45,000 annually**.

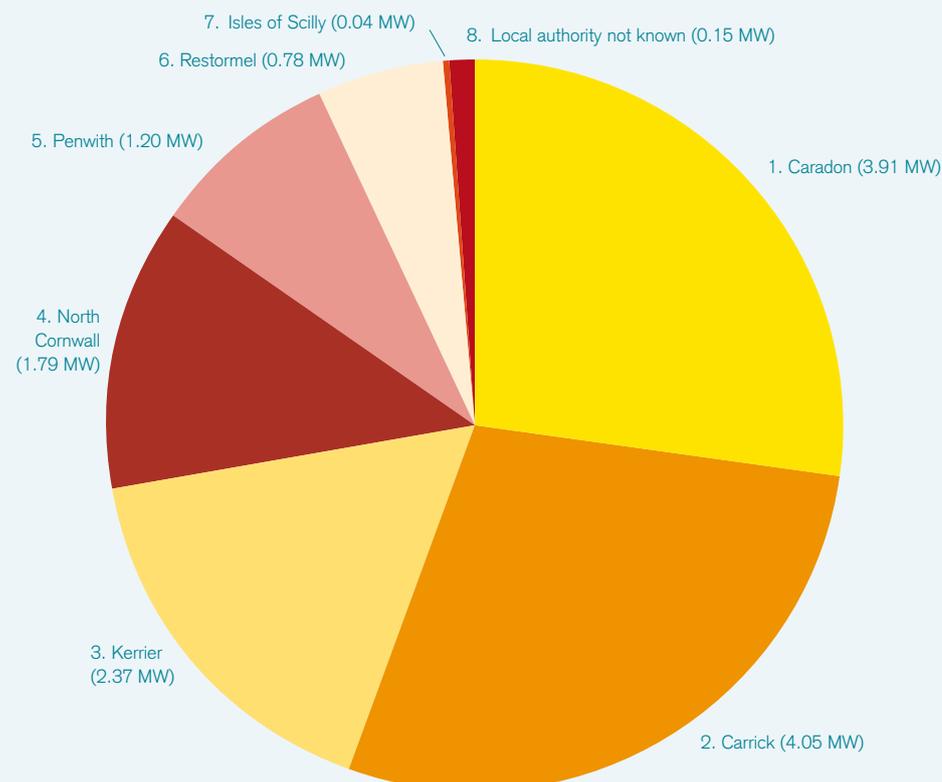
Total installed capacity for renewable electricity for Cornwall & Isles of Scilly (MW)



Renewable electricity projects

Local authority area	No. of projects	Installed capacity (MW)
1. Caradon	13	5.90
2. Carrick	17	12.42
3. Kerrier	27	12.61
4. North Cornwall	25	25.91
5. Penwith	29	0.46
6. Restormel	12	0.50
7. Isles of Scilly	0	0
Total	123	57.80

Total installed capacity for renewable heat for Cornwall & Isles of Scilly (MW)



Renewable heat projects

Local authority area	No. of projects	Installed capacity (MW)
1. Caradon	42	3.91
2. Carrick	135	4.05
3. Kerrier	78	2.37
4. North Cornwall	97	1.79
5. Penwith	65	1.20
6. Restormel	36	0.78
7. Isles of Scilly	2	0.04
8. Local authority not known	7	0.15
Total	462	14.29

Devon

Renewable electricity

Total capacity: 32.80 MW, New capacity: 0.21 MW
Total projects: 152, New projects: 27

Devon remains in second place in the region in terms of installed capacity with 32.80 MW, Although it recorded the highest number of new electricity projects (27) in this year's survey, these amounted to only 0.21 MW.

In addition:

- Devon has one 3 MW wind farm at Bradworthy. However, it has 79 MW approved that are not yet built at Fullabrook (66 MW), Higher Darracot (3.9 MW) and Galsworthy (9.2 MW)
- Devon has also been active in terms of wind farm applications, including:
 - refusal for Bolsterstone's 10 MW wind farm application at Dunsland Cross, both in the Torridge district
 - appeals for non-determination at Bickham Moor (12 MW, Mid Devon) and Three Moors (18 MW, North Devon)
 - a public enquiry at Den Brook (18 MW)
 - a refusal at appeal for Beech Tree Farm (2 MW, South Hams)

Renewable heat

Total capacity: 13.79 MW, New capacity: 4.58 MW
Total projects: 461, New projects: 96

Devon is level with Cornwall in terms of the number of renewable heat projects installed, and it closely follows Cornwall in terms of its capacity, with 25 per cent of the region's total.

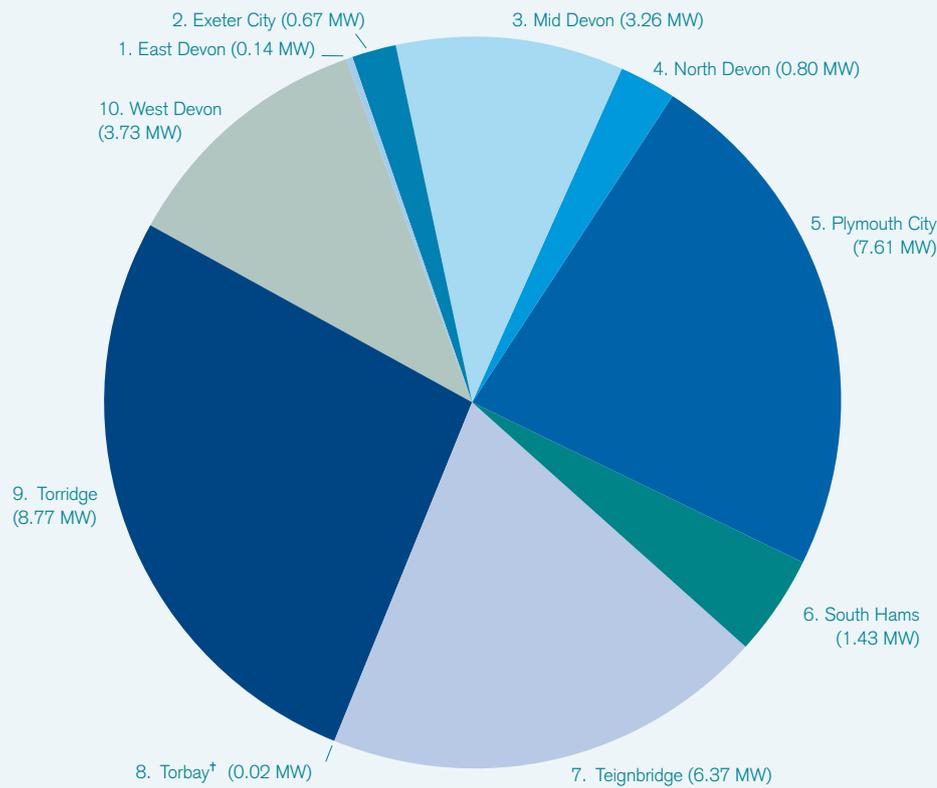
In addition:

- Devon had the largest increase in capacity in 2008/9, with 4.58 MW of new installations. The majority of these were domestic or small-scale community installations, mainly biomass (4.08 MW)
- Exeter City has overtaken Mid Devon as the district with the most installed capacity, with 2.23 MW. 840kW of this can be attributed to a biomass boiler at Devon County Council
- East Devon added the highest number of new projects (21), while North Devon has the greatest total number of projects (92). Torbay and Plymouth City are the districts with the lowest installed capacities



The Okehampton Business Centre is **accredited** with both **BREEAM** and **CEEQUAL excellent awards**. **Renewable energy** for the centre is generated from a **45 kW biomass boiler**, a **6kW wind turbine** and a **50 m² photovoltaic array**, which will offset **55 to 90 per cent** of the building's **annual carbon dioxide emissions**. The building also **incorporates a wealth of sustainability and energy efficiency measures**.

Total installed capacity for renewable electricity for Devon (MW)

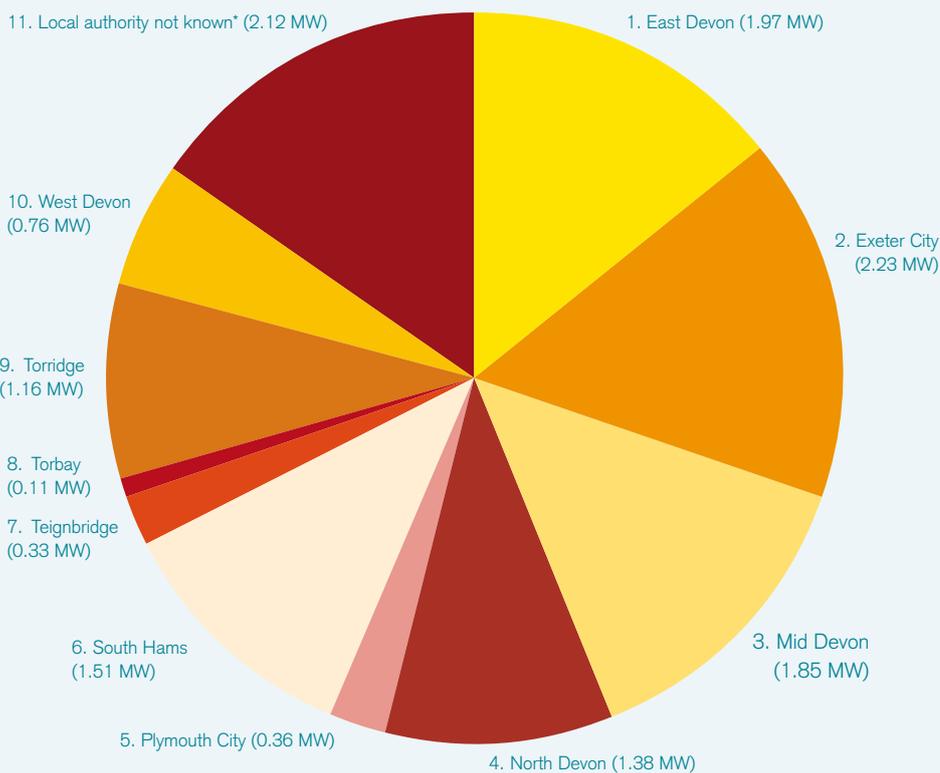


Renewable electricity projects

Local authority district	No. of projects	Installed capacity (MW)
1. East Devon	9	0.14
2. Exeter City	5	0.67
3. Mid Devon	14	3.26
4. North Devon	23	0.80
5. Plymouth City	9	7.61
6. South Hams	35	1.43
7. Teignbridge	15	6.37
8. Torbay	5	0.02
9. Torridge	20	8.77
10. West Devon	17	3.73
Total	152	32.80

†Please note data for this segment is proportionally too small to appear on the chart.

Total installed capacity for renewable heat for Devon (MW)



Renewable heat projects

Local authority district	No. of projects	Installed capacity (MW)
1. East Devon	58	1.97
2. Exeter City	13	2.23
3. Mid Devon	63	1.85
4. North Devon	92	1.38
5. Plymouth City	6	0.36
6. South Hams	68	1.51
7. Teignbridge	22	0.33
8. Torbay	6	0.11
9. Torridge	79	1.16
10. West Devon	51	0.76
11. Local authority not known*	3	2.12
Total	461	13.79

* Refers to a collective number of solar thermal installations from Devon county council, an individual solar thermal scheme, and a collective number of installations by one installer – the specific number of total installations is unknown.

Dorset

Renewable electricity

Total capacity: 12.57 MW, New capacity: 0.05 MW
Total projects: 64, New projects: 9

Dorset has 8.1 per cent of the region's installed electricity capacity, with 12.6 MW, and remains in the bottom four performing counties. The vast majority (95 per cent) of this is made up by landfill gas and sewage gas CHP installations.

In addition:

- Dorset experienced a very low increase in installed renewable electricity capacity this year (0.05 MW), attributable to just nine solar PV and micro-wind projects in the public sector
- the split of projects across the districts remains roughly the same, with the new projects spread evenly across the area. Christchurch and East Dorset, however, had no new projects registered
- the Borough of Poole has the largest installed capacity, but this is largely due to one landfill gas installation
- the proposed 9.2 MW wind farm at Alaska (Purbeck District Council) and 12 MW wind farm at Silton (North Dorset), have the capacity to increase Dorset's total by over 160 per cent

Renewable heat

Total capacity: 4.06 MW, New capacity: 1.89 MW
Total projects: 122, New projects: 31

1.89 MW of renewable heat was installed in Dorset in 2008/9, taking its total to 4.06 MW. This is 7.3 per cent of the region's total, making Dorset the third lowest performing south west county.

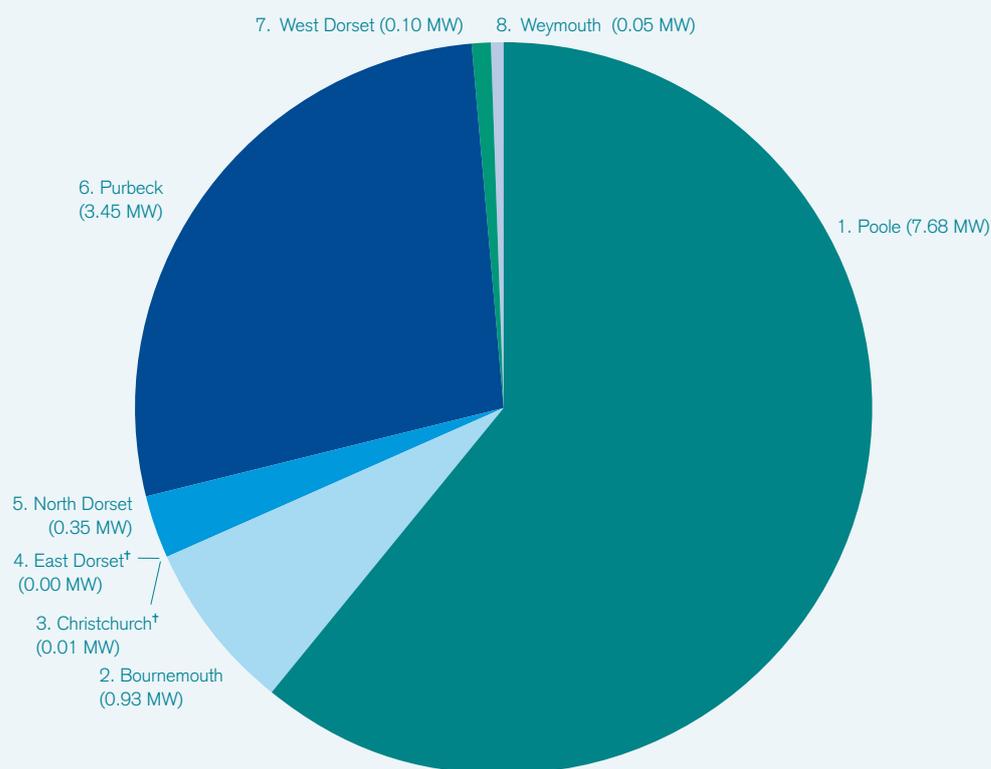
In addition:

- Biomass made up the majority of the new renewable heat installations. It added 1.78 MW, with one project in Poole adding 0.5 MW to the county's total
- Of 31 new projects in the county, nearly 75 per cent were solar thermal installations
- Bournemouth is once again the area with the largest installed capacity at 1.41 MW. This is mainly due to one sewage gas CHP installation
- West Dorset was the area with the highest number of new renewable heat installations, with 19 projects (17 of which were solar thermal), increasing its total to 45



Solar thermal installation at Fivepenny Farm, Near Wootton Fitzpaine, Dorset. Fitted by installer Jim Shearman, who has **16 entries recorded in the 2009 survey**, which range between **1.6 kW and 6.2 kW**. This is the **highest number of single projects fitted** by any installer in Dorset.

Total installed capacity for renewable electricity for Dorset (MW)



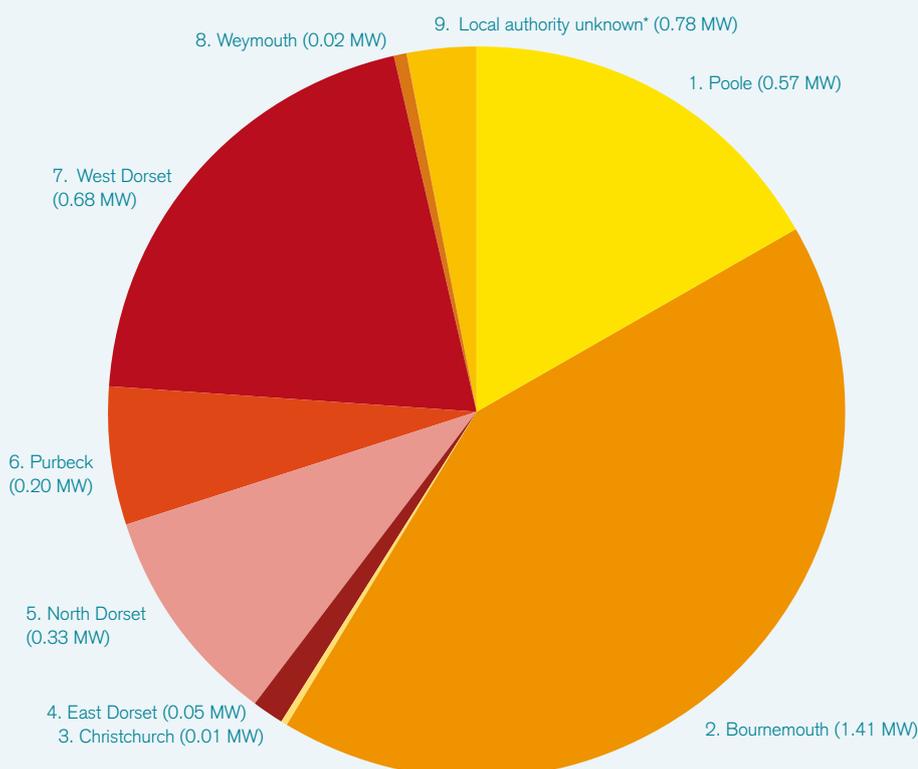
Renewable electricity projects

Local authority district	No. of projects	Installed capacity (MW)
1. Poole	4	7.68
2. Bournemouth	7	0.93
3. Christchurch	5	0.01
4. East Dorset ^{††}	4	0.00
5. North Dorset	4	0.35
6. Purbeck	6	3.45
7. West Dorset	26	0.10
8. Weymouth	8	0.05
Total	64	12.57

[†]Please note data for this segment is proportionally too small to appear on the chart.

^{††}We've received information on these projects, but the installed capacity was too small to register in the table.

Total installed capacity for renewable heat for Dorset (MW)



Renewable heat projects

Local authority district	No. of projects	Installed capacity (MW)
1. Poole	12	0.57
2. Bournemouth	8	1.41
3. Christchurch	3	0.01
4. East Dorset	17	0.05
5. North Dorset	20	0.33
6. Purbeck	8	0.20
7. West Dorset	45	0.68
8. Weymouth	7	0.02
9. Local authority not known [*]	2	0.78
Total	122	4.06

^{*} Refers to one individual solar thermal installations, and a collective number of installations by one installer – the specific number of total installations is unknown.

Gloucestershire

Renewable electricity

Total capacity: 10.24 MW, New capacity: 0.06 MW
Total projects: 40, New projects: 17

Gloucestershire is the lowest-ranked county in the south west in terms of renewable electricity installed capacity, and its increase in renewable electricity capacity over the past 12 months is just 0.06 MW. This is made up of 17 new projects, 12 of which are solar PV.

In addition:

- 9.45 MW (92.2 per cent) of Gloucestershire's renewable electricity comes from landfill and sewage gas, with the remaining 0.81 MW coming from small and micro wind, solar PV and small hydro
- Stroud has seen the greatest increase over the past 12 months in renewable electricity capacity (0.03 MW) and numbers of projects (7)
- Cheltenham is the worst performing district, with no electricity projects recorded, followed by the Forest of Dean (0.03 MW)
- there are currently no electricity projects over 1 MW in planning in Gloucestershire

Renewable heat

Total capacity: 6.22 MW, New capacity: 1.71 MW
Total projects: 159, New projects: 103

Gloucestershire has seen a huge increase in the number of renewable heat installations over the past 12 months, with more than 100 new installations. This represents a 27 per cent increase in capacity.

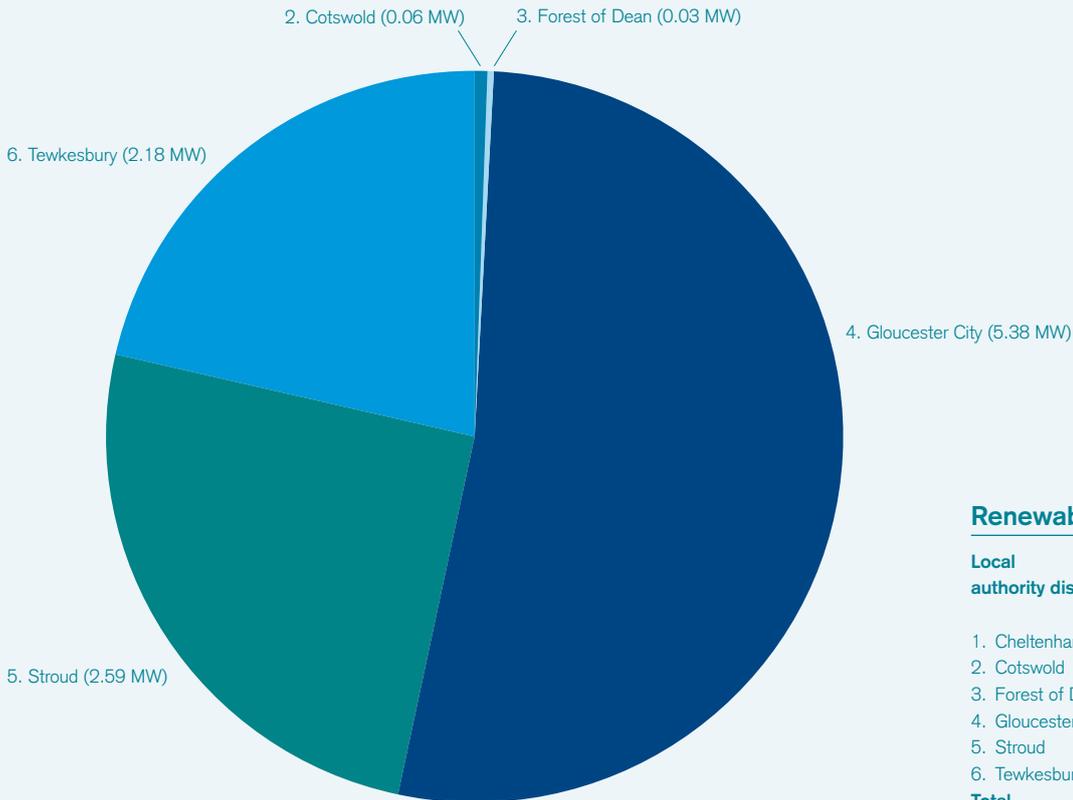
In addition:

- 73 of the new projects were solar thermal installations, adding 0.28 MW to the county's total installed capacity
- Gloucestershire has the second highest installed capacity of heat pumps in the region after Cornwall, with 2.36 MW. 0.49 MW of this was added through 24 projects in 2008/9
- Stroud recorded the highest increase in installed renewable heat capacity of the Gloucestershire districts, with 0.61 MW added
- Tewkesbury is the worst performing district in Gloucestershire, with just 0.1 MW of renewable heat through 14 projects. This is a 0.04 MW increase from last year



With support from the local community, Randwick Village Hall, near Stroud, has installed both a ground source heat pump and a solar PV array. In addition, it has fitted double glazing, upgraded roof insulation, and low-energy automatic lighting, while being used as an information point for villagers interested in sustainable energy.

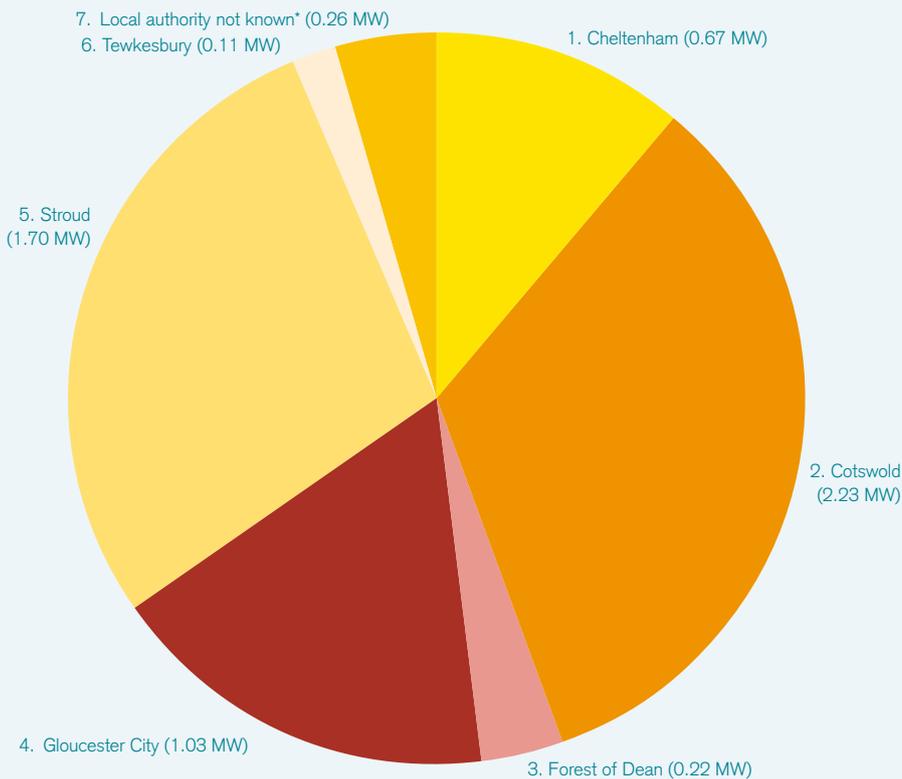
Total installed capacity for renewable electricity for Gloucestershire (MW)



Renewable electricity projects

Local authority district	No. of projects	Installed capacity (MW)
1. Cheltenham	0	0
2. Cotswold	6	0.06
3. Forest of Dean	7	0.03
4. Gloucester City	7	5.38
5. Stroud	17	2.59
6. Tewkesbury	3	2.18
Total	40	10.24

Total installed capacity for renewable heat for Gloucestershire (MW)



Renewable heat projects

Local authority district	No. of projects	Installed capacity (MW)
1. Cheltenham	9	0.67
2. Cotswold	21	2.23
3. Forest of Dean	15	0.22
4. Gloucester City	11	1.03
5. Stroud	86	1.70
6. Tewkesbury	14	0.11
7. Local authority not known*	3	0.26
Total	159	6.22

* Refers to two individual ground source heat pump installations, and a collective number of installations by one installer – the specific number of total installations is unknown.

Somerset

Renewable electricity

Total capacity: 10.52 MW, New capacity: 1.82 MW
Total projects: 43, New projects: 4

Somerset recorded 1.82 MW of additional renewable electricity capacity in 2008/9, which is the largest increase for any county in the region this year. This is mainly due to the 1.8 MW wind farm installed at Shooters Bottom in the Mendip district, which is Somerset's first wind farm. However, the county is still back in sixth place in the region in terms of its total installed capacity.

In addition:

- the majority of installed renewable electricity capacity in Somerset is landfill gas (7.79 MW), which decreased in line with the age of the plants
- only four renewable electricity projects were installed in 2008/9
- South Somerset remains the district with the highest installed renewable electricity capacity at 4.38 MW, although this has reduced since the 2008 survey due to lower capacity at the landfill gas sites in the district. West Somerset continues to be the worst performing district in Somerset, with only one grid-connected project

Renewable heat

Total capacity: 3.9 MW, New capacity: 0.66 MW
Total projects: 147, New projects: 30

Somerset has 3.9 MW of installed renewable heat capacity. This is seven per cent of the regional total, ranking it fifth in the region. Over the past 12 months 0.66 MW has been added to the county's renewable heat, which is the lowest capacity increase in the region.

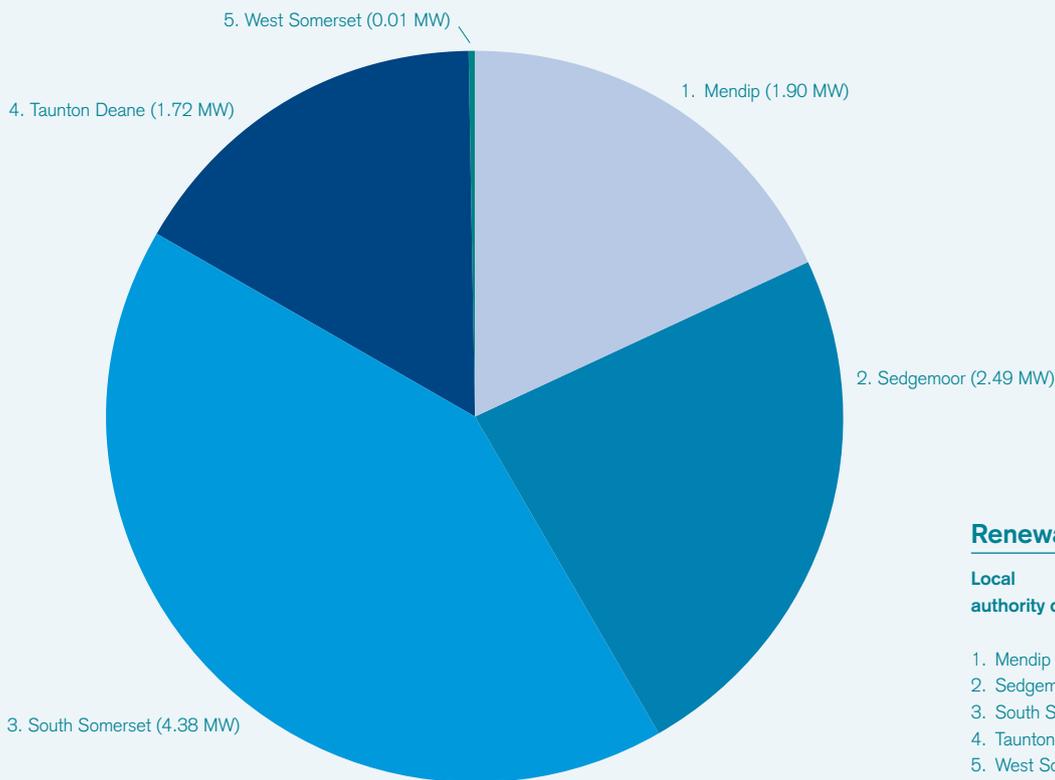
In addition:

- Mendip continues to be the best performing district in Somerset, with 1.04 MW of installed capacity
- West Somerset had the greatest increase in the number of projects, with 14 new installations, the majority of which were solar thermal due in part to the top-up grants provided by West Somerset Council
- Sedgemoor had marginally more MW of renewable heat installed this year, with two domestic biomass boilers installed through the Woodland Renaissance scheme, (0.11 MW). However, it still remains Somerset's worst performer, with just 0.37 MW



The **1.8 MW wind farm at Shooters Bottom**, built by **Ecotricity**, is the **first wind farm in Somerset**. It accounts for **62 per cent** of the total **2.89 MW** that has been added to the region's renewable electricity capacity this year.

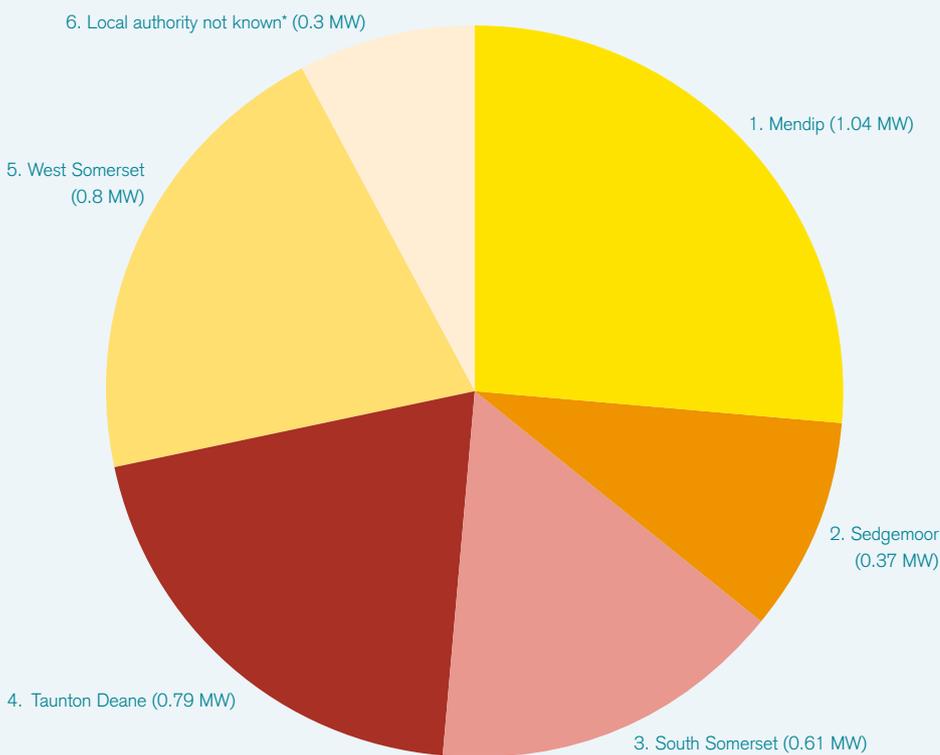
Total installed capacity for renewable electricity for Somerset (MW)



Renewable electricity projects

Local authority district	No. of projects	Installed capacity (MW)
1. Mendip	10	1.90
2. Sedgemoor	7	2.49
3. South Somerset	10	4.38
4. Taunton Deane	15	1.72
5. West Somerset	1	0.01
Total	43	10.51

Total installed capacity for renewable heat for Somerset (MW)



Renewable heat projects

Local authority district	No. of projects	Installed capacity (MW)
1. Mendip	22	1.04
2. Sedgemoor	21	0.37
3. South Somerset	29	0.61
4. Taunton Deane	31	0.79
5. West Somerset	43	0.8
6. Local authority not known*	1	0.3
Total	147	3.9

* Refers collectively to information provided by one installer – the specific number of their installations is unknown.

Wiltshire

Renewable electricity

Total capacity: 13.83 MW, New capacity: 0.02 MW
Total projects: 26, New projects: 5

Wiltshire has recorded just five new renewable electricity projects over the past 12 months, totaling 0.02 MW. Three of these were solar PV and two were micro wind installations.

In addition:

- 98 per cent (13.59 MW) of the county's total installed capacity is landfill gas and sewage gas
- Wiltshire's net installed capacity decreased from 14 MW to 13.83 MW due to lower capacity at the landfill sites in the county.
- North Wiltshire remains the best performing district in Wiltshire with 5.09 MW of installed capacity
- Kennet is the lowest ranked district in Wiltshire, with just one micro-wind turbine installed
- there are currently no large electricity projects in the planning system for Wiltshire

Renewable heat

Total capacity: 1.76 MW, New capacity: 1.07 MW
Total projects: 75, New projects: 53

Wiltshire is the lowest ranked county in the region for renewable heat, with 1.76 MW of installed capacity and 3.2 per cent of the regional total. However, it had the largest percentage increase for 2007. With limited sewage gas CHP in the county (0.2 MW in Salisbury and West Wiltshire combined), Wiltshire's renewable heat installed capacity is predominately made up of biomass projects (1.08 MW), 0.81 MW of which was installed this year.

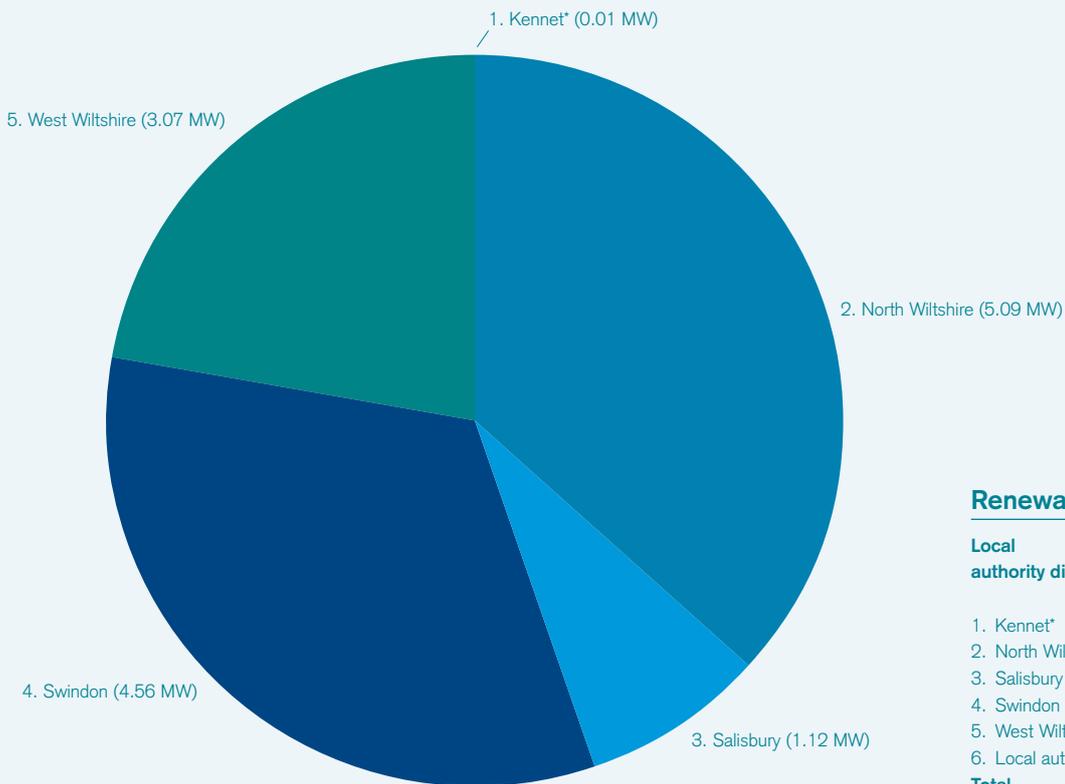
In addition:

- Wiltshire added just over 1 MW of installed capacity (the second smallest addition in the region). This was through 53 new projects, almost tripling the number in the county
- 43 of Wiltshire's new renewable heat installations were solar thermal.
- North Wiltshire, which added nearly 0.5 MW to its installed capacity in 2008/9, overtook West Wiltshire and Salisbury to become the best performing district in the county
- additional projects in Kennet mean that it is no longer the lowest ranked district. Swindon fell to the bottom of the table as a result with just 0.11 MW



Hardenhuish School in Chippenham has fitted a **6 kW wind turbine** and a **10 kW solar PV array** as part of a project to **reduce the school's carbon footprint**. It is expected that together the two technologies will **generate 19,776 kW hours of electricity per year** and **displace 11 tonnes of CO₂**. The **sustainable energy project** is part of the wider aim of the school to **become more sustainable and active in environmental education**.

Total installed capacity for renewable electricity for Wiltshire (MW)



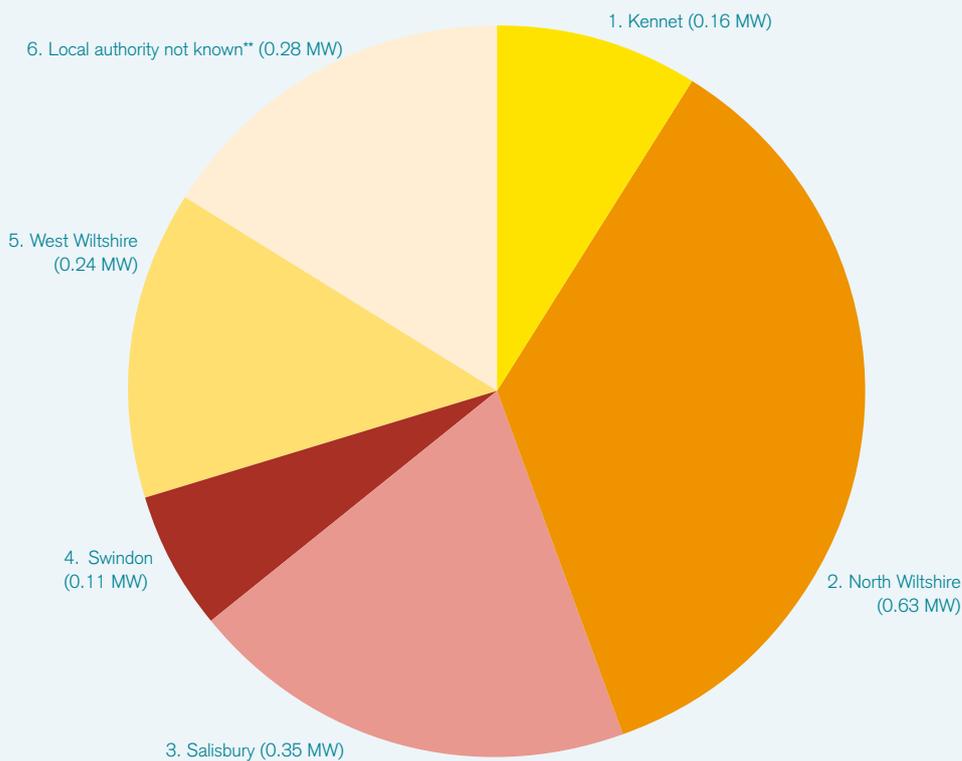
Renewable electricity projects

Local authority district	No. of projects	Installed capacity (MW)
1. Kennet*	1	0.01
2. North Wiltshire	9	5.09
3. Salisbury	2	1.12
4. Swindon	10	4.56
5. West Wiltshire	2	3.07
6. Local authority not known**	2	0.00
Total	26	13.83

*Please note data for this segment is proportionally too small to appear on the chart.

**We've received information on these projects, but have no details of their exact locations or installed capacities.

Total installed capacity for renewable heat for Wiltshire (MW)



Renewable heat projects

Local authority district	No. of projects	Installed capacity (MW)
1. Kennet	11	0.16
2. North Wiltshire	17	0.63
3. Salisbury	32	0.35
4. Swindon	6	0.11
5. West Wiltshire	8	0.24
6. Local authority not known**	1	0.28
Total	26	1.76

* Refers collectively to information provided by one installer – the specific number of their installations is unknown.





Control panel for the Wessex Water Acid Phase Digester (APD) at its Avonmouth sewage sludge processing plant.

Regen SW would like to thank the following companies that provided information for this survey.

A.J. Buchan Ltd.	Ecovision Systems Green Earth Energy Ltd.	Segen Ltd.
Aeolus Power	Elite Heating	Semplice Energy Ltd.
Alvesta	Equinox Renewable Energy Ltd.	Smart Energy UK Ltd.
Ashwell Engineering Services Ltd.	Fred Olsen Renewables	Solar Microgeneration Ltd.
Atkins	Freesource Energy Ltd.	Solar Technologies
Barum Solarheat	Geothermal International Ltd.	Solar Thermal Ltd.
Beco Solar	Green Earth Energy	Solarsense UK Ltd.
Boost Energy Systems Ltd.	Green Electrician Ltd.	Solcentric Ltd.
Ampair	Greenshop Solar Ltd.	Soltrac Ltd.
Bowler Solar Energy Ltd.	Gregor Heating & Renewable Energy	South West Water Ltd.
Celtic Solar Ltd.	Hicks Heating & Plumbing	Southern Solar
Community Windpower Ltd.	Instatherm Combustion Services Ltd.	Stride Treglown Management Ltd.
Danfoss Heat Pumps	Jim Shearman	Sundog Energy Ltd.
Dartmouth Wave Energy Ltd.	Kingspan Ltd.	Sustainable Energy Installations
Devon Wind Power Ltd.	Llani Solar	TK Refrigeration
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Earth Energy Ltd.	Natural Generation	Wessex Water Services Ltd.
Eco ² Solar Ltd.	Naturalwatt Ltd.	White Design
Eco-Exmoor Ltd.	Orecon Ltd.	Wind and Sun Ltd.
Econergy Limited	Plug Into The Sun	Wood Energy Ltd.
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