



Cornwall County Council & Cornwall and
Isles of Scilly Economic Forum

CORNWALL AND ISLES OF SCILLY SECTOR
PROFILE:

ENVIRONMENTAL TECHNOLOGY

December 2008

This research has been undertaken to update the previous sector profiles that had been requested by Cornwall Enterprise to stimulate a better understanding of their 10 priority sectors. This work will provide additional detail to underpin *Strategy and Action* in order to help to inform future decisions on the kind of support that is provided for local businesses and economic development projects.

"There are exciting times ahead for the newly formed Environmental Technology Sector (ETS) within Cornwall. Finally it has been accepted as a sector in its own right and no longer perceived as being integrated with other sectors. It is now regarded as one of the fastest and important emerging sectors as environmental and sustainability issues are moved up the agenda. Consequently, within Cornwall, the ETS is a significant employer with a very high skilled workforce employing approximately 2000 people mostly within SMEs.

The ETS comprises of many organisations with expertise in a variety of environmental disciplines and many organisations operating in more than one discipline and sub-sector. As the ETS is a very diverse sector it also overlaps into other sectors. This sector will continue to grow and be driven by stringent environmental legislations." Nicola Pengelly, ReZolve Kernow Ltd.

The Sector

Environmental technology is a 'new sector' with links to a range of diverse activities. One element is derived from the treatment of water and waste water, another is associated with recycling activities. Other categories within this sector are linked to renewable energy, though these may not be captured using traditional SIC code analysis.

Headline facts

- The environmental technology sector employs 2,000 people in Cornwall, equal to 1% of all employees.
- In 2006, the sector contributed £27 million to GVA in Cornwall, which represents 0.4% of Cornwall's total GVA.
- Though a small sector, it has grown substantially between 1999 and 2006, in employment terms by 83% and in GVA terms by 15.2% per annum.
- Earnings at the sector level are only available at a UK level (median gross weekly for all employees). Earnings in this sector are above average for most of the categories.

Overview

- There are different interpretations of what constitutes the environmental technology sector, therefore comparison with other reports and research is problematical.
- 'The UK environmental goods and services industry is diverse, with its roots in some long established sectors, notably in the areas of drinking water supply, waste water treatment, and solid waste management. Today's industry has helped to deal with the legacy of pollution from Britain's industrial past, providing practical and effective solutions to a wide range of environmental problems.' (BERR, 2008).
- 'The UK has a rapidly growing (but still limited) skills base for environmental technologies. The UK is also strong in areas such as hydro engineering, landfill gas utilisation, biofuel/biomass development.' (Selwyn and Leverett, 2006),
- 'The EGS sector is not adequately covered by UK SIC codes', (DTI and UK Forum for Environmental Industries, 2006), hence some activities deemed to be environmental may be excluded from any analysis.
- 'The global Environmental Goods and Services sector is expected to grow by 45% by 2015'. (Selwyn and Leverett, 2006).
- 'The environmental industry is multifaceted, and inextricably interwoven with mainstream industry. The environmental industry supplies, services and works alongside, or shares technology with every sector of mainstream industry. In many cases EGS companies are owned by, or spun off from, mainstream companies, or are indeed divisions or departments of them.' (Selwyn and Leverett, 2006).
- Although there is a legislative framework that encourages the use of more environmentally friendly technology, much of the impetus behind the growth and development of the sector arises from higher commodity prices together with increasing scarcity of some resources. These two factors combined with purchasing pressure exerted by consumers have increased the market for this sector.
- 'The sector includes many highly innovative companies and employs a large number of highly skilled graduates and post-graduates. Such science and innovation-intensive industries contribute disproportionately to productivity growth and wealth creation in the economy, including significant export opportunities.' (DTI/Defra, 2006).

Employment

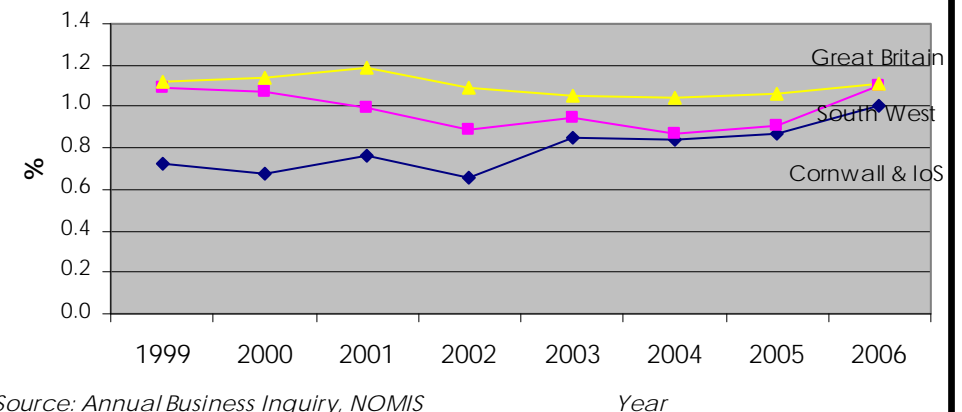
- 2000 jobs in Cornwall are in the environmental technology sector.
- Table 1 shows that between 1999 and 2006, employment in the environmental technology sector in Cornwall has increased by 900; this is an increase of 83%, compared to 12% in the South West and 5% across GB.
- Of the new jobs in the sector in Cornwall 83% have been full-time, although the level of growth in part-time employment has been twice the rate of full-time (155% to 78%).
- Figure 1 shows that employment in the sector as a percent of all employment in Cornwall has remained below both the South West and GB levels, though the gap has narrowed considerably.
- In 2006, employment in the environmental technology sector in Cornwall equalled 1%, compared to 1.1% across both the SW and GB.
- Though not the fastest category for growth, the sewage and refuse disposal, sanitation and similar activities accounted for 57% of total growth in jobs.

Table 1

Changes in employment - Cornwall and Isles of Scilly

	Total
1999	1,100
2000	1,100
2001	1,300
2002	1,200
2003	1,500
2004	1,500
2005	1,600
2006	2,000
Change	900

Fig. 1 Environmental Technology contribution to employment

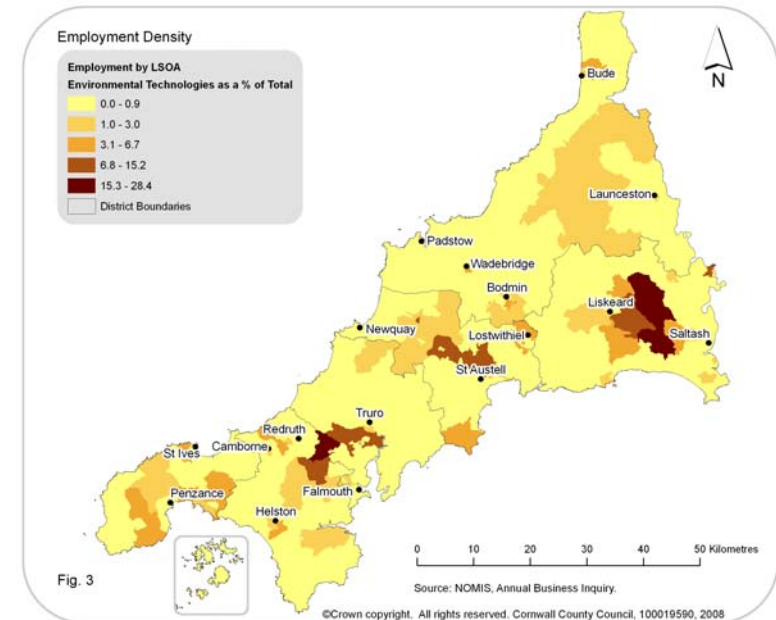
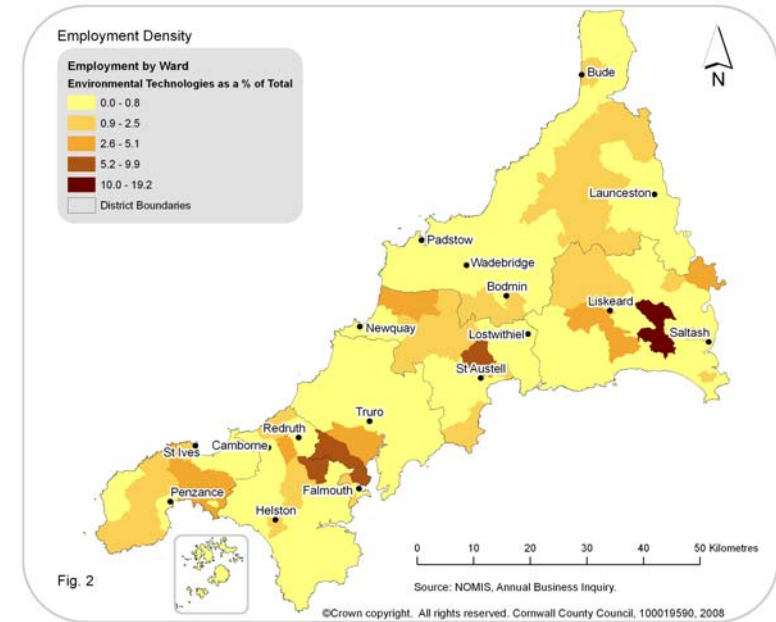


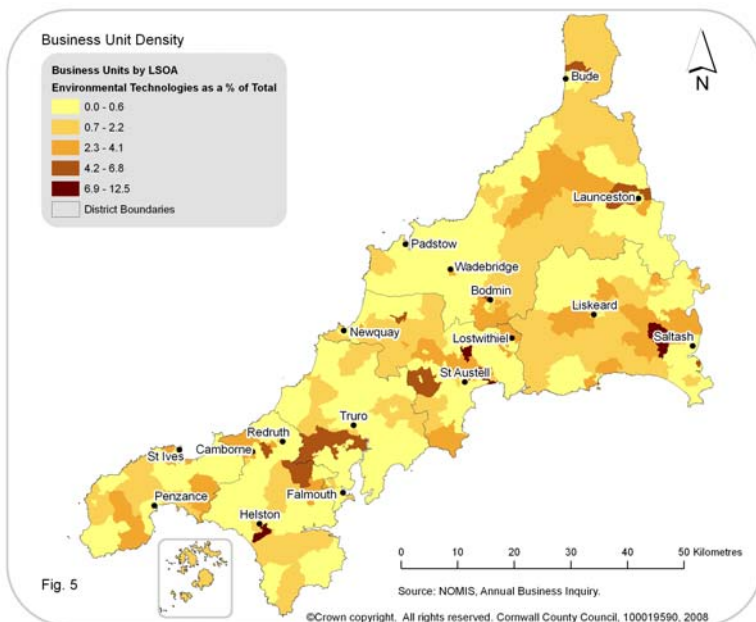
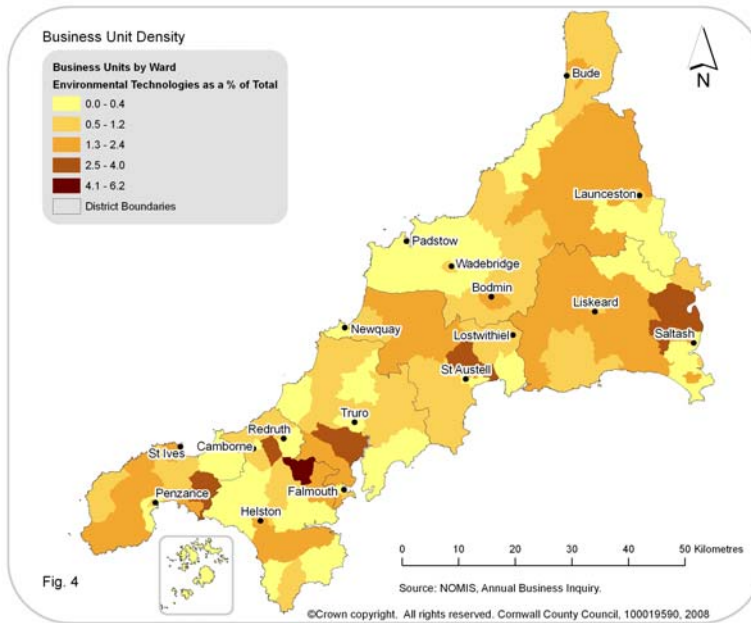
Business units

- There are 200 business units recorded in the environmental technology sector in Cornwall in 2006.
- The number of units in the sector in Cornwall has increased by 31% since 1999, below the rate across the South West (46%) but above the 27% rise across Britain.
- The sector is dominated by units employing 10 or fewer employees (76%), close to the SW (75%) and GB (77%) rates.
- Whereas 60% of employees across GB and 50% across the SW are employed in units employing 50 plus employees, the figure for Cornwall is 35%.
- On average each business unit in the sector in Cornwall employs 10.3 employees, compared to the average of 8.9 per unit across the Cornish economy.
- Business units in this sector in Cornwall make up 0.6% of total units. The figures for the South West and Great Britain are both 0.8%.

Spatial distribution

- The four figures below (Figures 2, 3, 4 and 5) map the employment and business unit (i.e. premises) density for the environmental technology sector (NB. The scales are different for each map).
- A third of employees are based in just 4 wards - : Menheniot and St Ives, Illogan South, Bodmin St Petroc, and Truro Boscawen.
- LSOAs with 100 or more employees include Pensilva and St Ives, Pool West and Tregajorran, Menheniot, Truro Boscawen Ward South East.
- The highest concentration in terms of employment in the sector is found in Menheniot and St. Ives and St. Germans wards, at 20% and 19% respectively.
- There are 9 LSOAs where 10% or more of employees work in this sector - Pensilva and St Ives; St Germans; Gwennap, Cusgarne and Crofthandy; Gunnislake West; St Austell Bethel Ward Central; Menheniot; St Dennis North East, Enniscaven and White moor; Penwithick East and Rescorla; and Devoran, Playing Place and Kea Rural.
- Wards with a high percentage of business units in the sector are Stithians (6.2%), S. Blaise (4%), and St. Erth and St. Hilary (3.5%).
- A quarter of all units in the sector are found in 8 wards - Illogan South; St Blaise; Feock and Kea; Mylor; Penryn; Bodmin St Petroc; Callington; Launceston.
- The sector constitutes 7.5% or more of all units in six LSOAs - St Austell Bethel Ward Central, Newquay Edgcumbe North Ward South East, Penwithick East and Rescorla, Landrake, Helston South Ward South East and St Blazey Gate and Biscovey.





GVA

- The environmental technology sector accounted for 0.4% of Cornwall's GVA in 2006 or £27.4 million.
- Annual growth in GVA of 15.2% has been above the average of 7.9% for the Cornish economy.
- The sector in Cornwall contributed £10.2 million in 1999 and 27.4 million in 2006.

Productivity

- Productivity, measured by GVA per worker, equalled £26,700 in 2006, equal to 97% of the average per worker in Cornwall.
- Productivity per Full Time Equivalent (FTE) equalled £28,300 in 2006., 17% below the average for FTE in Cornwall.

Earnings

- In 2007 median earnings for employees in this sector were above the average (£375) for those engaged in manufacturing, collection, purification and distribution of water (£474), insulation work activities (£512), demolition and wrecking of buildings and earth moving (£484) and sewage and refuse disposal, sanitation and similar activities (£434), but just below average in the recycling category (£366).

NB Earnings data by employment sector only available at a UK level.

Caveats:

The size of the sector in this profile may differ to other research as each sector is made up by aggregating a number of other "subsectors" (see notes for employment SIC sectors incorporated in this profile). Other studies may use a broader or narrower definition.

Totals from each profile should not be added as data included within one profile may also be included within another profile. For example, 3220 - Manufacture of television and radio transmitters... and 3230 - Manufacture of television and radio receivers ..., are included in both the ICT sector profile and the Creative Industries (Broad) sector profile. Fish processing is included in both food and drink and fishing.

This profile only analyses the *economic* value of a sector. The social, cultural and environmental value of a sector should also be thoroughly considered.

Sector definitions used in this profile may vary slightly between GVA and employment as the GVA data does not have such a detailed sector breakdown. This is because calculating GVA on a local level relies upon numerous data sources, some of which are only available at a broad sector level. For this reason, it has not been possible to include GVA data for some of

the more specific or cross-cutting sectors without further extensive research. In addition, the national accounting system's classification limits the way in which we can understand the economy, for example, for the marine profile surf shops and wetsuit manufacturing cannot be drawn from the current structure, they are included in retail and rubber manufacturing, respectively. Again, further extensive research would be required to penetrate this detail.

All data in this profile refers to workplace.

Business units

Business units, in this publication, refer to business premises and/or head offices. This is the most comprehensive measure of activity as it incorporates counts of individual branches or sites – this is more useful than mapping the enterprise or business alone as this would only provide a count of the location of each head office.

The source of the business units data is the Inter-Departmental Business Register. This register is produced by the Office for National Statistics using VAT (value added tax) and PAYE (pay as you earn) records, therefore, it captures all businesses that either trade over the VAT threshold – for 2006 a turnover of 61,000, and/or are PAYE registered – employ at least one member of staff who earns more than £94/week, or £408/month.

Annual Business Inquiry (ABI) - Employee Analysis, Workplace Analysis

Data source: NOMIS. Based on a sample.

Discontinuities in 2003 and 2006 make comparisons difficult over a period of time. The 2006 discontinuity means that comparisons of the 2006 ABI employment estimates with earlier years do not provide a reliable comparison.

Elements contributing to the discontinuity include:

1. Change in reference date from December to September.
2. Use of Business Register Survey data within the ABI/1 results.
3. Change to the Minimum Domain Methodology.

NOMIS state that *'It is not possible to measure the impact of the changes made precisely, however the scale of the overall discontinuity between the 2005 and 2006 ABI/1 is estimated to be in the range of 150,000 to 350,000 (0.6 to 1.3 per cent of the total number of employees) in a downward direction.'*

All employment data from the ABI employee analysis has been rounded to the nearest 100 in line with release of data rules.

Geographical anomalies

Data from different sources differs in its geographical coverage. The ABI covers Great Britain, ASHE data covers the United Kingdom.

Earnings data

Earnings data by employment sector is only available at a UK level. Earnings levels in Cornwall are substantially lower and although it is expected that the difference applies

across all sectors, the exact relationship is unknown, therefore care should be taken in interpreting the data.

Data:

Employment

The employment figures in this profile refer to the number of jobs in the environmental technology sector. Figure 1 uses the total figure, thus incorporating both part and full time work.

Environmental technology sector - employees

Cornwall and Isles of Scilly	Full Time Workers	Part Time Workers	Total
1999	1,000	100	1,100
2000	1,000	100	1,100
2001	1,200	100	1,300
2002	1,100	100	1,200
2003	1,400	100	1,500
2004	1,400	100	1,500
2005	1,500	100	1,600
2006	1,800	200	2,000

Source: NOMIS, Annual Business Inquiry © Crown Copyright

Environmental technology employment as a % of total

	Cornwall	SW	GB
1999	0.7	1.1	1.1
2000	0.7	1.1	1.1
2001	0.8	1.0	1.2
2002	0.7	0.9	1.1
2003	0.8	0.9	1.1
2004	0.8	0.9	1.0
2005	0.9	0.9	1.1
2006	1.0	1.1	1.1

Source: NOMIS, Annual Business Inquiry © Crown Copyright

Data units

Environmental technology sector – data units comparative figures

	Cornwall and Isles of Scilly	South West	Great Britain
1999	0.5	0.6	0.7
2000	0.5	0.6	0.7
2001	0.5	0.6	0.7
2002	0.5	0.6	0.7
2003	0.8	0.7	0.7
2004	0.8	0.8	0.8
2005	0.9	0.8	0.8
2006	0.9	0.8	0.8

Source: NOMIS, Annual Business Inquiry © Crown Copyright

GVA

GVA Cornwall

	Emillion	%
1999	10.1	0.3
2000	13.7	0.3
2001	15.9	0.3
2002	15.6	0.3
2003	20.2	0.3
2004	16.9	0.3
2005	21.3	0.3
2006	27.4	0.4

Source: Owen Nankivell, (2008) *Local GVA model*. [NB only includes sanitary category].

Earnings

Employee weekly pay – environmental technology sector [NB Earnings data by employment sector only available at a UK level].

Weekly pay - Gross (£) - For all employee jobs: United Kingdom, 2007

Description	Code	Median	As % of all
ALL EMPLOYEES		374.9	100.0
Manufacture of non-domestic cooling and ventilation equipment	2923	460.2	122.8
Manufacture of electricity distribution and control apparatus	3120	433.0	115.5
Recycling	37	365.8	97.6
Recycling of metal waste and scrap	3710	354.3	94.5
Recycling of non-metal waste and scrap	3720	363.4	96.9
Collection, purification and distribution of water	4100	474.3	126.5
Demolition and wrecking of buildings; earth moving	4511	483.5	129.0
Construction of water projects	4524	x	na
Insulation work activities	4532	511.5	136.4
Technical testing and analysis	7430	459.2	122.5
Sewage and refuse disposal, sanitation and similar activities	900	434.0	115.8
Collection and treatment of sewage	9001	468.1	124.9
Collection and treatment of other waste	9002	422.4	112.7
Sanitation, remediation and similar activities	9003	406.1	108.3

Source: ASHE, (2007), Table 16.1a Weekly pay - Gross (£) - For all employee jobs: United Kingdom, 2007

Comparative earnings data

The table below shows earnings levels in Cornwall compared to both the South West and Great Britain. All data for 2007.

Median Earnings by workplace 2007

Area	All		All Full-time		All Part-time	
	£	%	£	%	£	%
Cornwall	304.9	81.3	373.3	81.7	140.4	97.6
South West	349.2	93.1	427.8	93.7	144.7	100.6
United Kingdom	374.9	100	456.7	100	143.9	100
Area	Male		Male full-time		Male part-time	
	£	%	£	%	£	%
Cornwall	358.9	77.3	399	80.1	149.7	108.6
South West	441.4	95	476.5	95.6	147.9	107.3
United Kingdom	464.5	100	498.3	100	137.8	100
Area	Female		Female Full-time		Female Part-time	
	£	%	£	%	£	%
Cornwall	239	83.1	344.4	87.4	138.7	95.3
South West	267	92.9	363.3	92.2	144	98.9
United Kingdom	287.5	100	394	100	145.6	100

Source: Annual Survey of Hours and Earnings, (2007). Table 7.1a Weekly pay - Gross (£) - For all employee jobs: United Kingdom, 2007.

References

The Cultural Policy and Planning Research Unit at Nottingham Trent University and Perfect Moment, (2002), *Creative Value, The Economic Significance of the Creative Industries in Cornwall*.

Culture SW (2003), *Joining the Dots*.

Perfect Moment, (2007), *Counting on Creativity, An assessment of the impact of Objective One funding on Creative Industries enterprises in Cornwall 2000 – 2006*.

BERR, (2008), Environmental Industries, Market Intelligence, <http://www.berr.gov.uk/sectors/environmental/Market%20Intelligence/page42448.html>

DTI and UK Forum for Environmental Industries (2006), *UK Government Guide to Mapping the Environmental Goods & Services Sector*.

DTI/Defra (2006), Bridging the gap between environmental necessity and economic opportunity, First Report of the Environmental Innovations Advisory Group.

Office for National Statistics, (2007), Annual Survey of Hours and Earnings - 2007, Weekly pay - Gross (£) - For all employee jobs.

Selwyn, J., and Leverett, B. (2006), Emerging Markets In the Environmental Industries Sector, Prepared for: Department of Trade and Industry, Environmental Industries Unit by UK CEED

South West RDA (2008), Environmental Technologies., <http://www.southwestrda.org.uk/sectors/et/index.shtml>

Notes:

Spatial distribution

The maps indicating the spatial distribution of employment and business units use both ward and Lower Super Output Areas. The wards are those used for District Council elections. Super output areas are a new geographical hierarchy designed to improve the reporting of small level statistics. They are now used in preference to administrative boundaries such as wards as they are of roughly equal population levels and are based on the area's characteristics, not historical events. The lower super output areas have a mean population size of 1,500.

Gross Value Added (GVA)

What is Gross Value Added?

GVA measures the contribution each sector, industry or producer makes to the economy, and when added, the total value of economic activity in a particular area. It is used as an indicator of the value of economic activity that takes place within a sector, or area.

Environmental Technologies in this profile refers to the following SIC(2003) activities:

2923 Manufacture of non-domestic cooling and ventilation equipment
3120 Manufacture of electricity distribution and control apparatus
3710 Recycling of metal waste and scrap
3720 Recycling of non-metal waste and scrap
4100 Collection, purification and distribution of water
4511 Demolition and wrecking of buildings; earth moving
4524 Construction of water projects
4532 Insulation work activities
7430 Technical testing and analysis
9001 Collection and treatment of sewage
9002 Collection and treatment of other waste
9003 Sanitation, remediation

The SW RDA list of categories within the sector includes:

- Air Pollution Control
- Environmental Consultancy Services
- Water Treatment (including wastewater)
- Energy Management
- Renewable Energy
- Noise & Vibration Control
- Waste Management / Recovery & Recycling
- Marine Pollution Control
- Contaminated Land Remediation
- Environmental Monitoring & Analysis
- Technology for Sustainable Land Use & Management

South West RDA (2008), Environmental Technologies.,
<http://www.southwestrda.org.uk/sectors/et/index.shtm>

Sector profiles in this format:

Advanced Engineering
Agriculture & forestry
Agri-food
Creative industries
Environmental Technology
Fishing
Food and Drink
Information & communication technology
Manufacturing
Marine
Medical & health
Tourism
Voluntary

For further information about this or the other profiles in the series please contact Peter Wills, Corporate Economy and Europe Unit, Cornwall County Council: 01872 322520, pwills@cornwall.gov.uk