

Centre for Sustainable Energy

capability statement



The Centre for Sustainable Energy (CSE) is an independent national charity working to tackle the threat of climate change and to end the misery of cold homes. We began life in Bristol in 1979, pioneering approaches to sustainable energy and advice which have relevance for people across society. Our 40 staff deliver advice, refurbishment, community, technical, research and training projects, including a blend of pan-UK programmes and initiatives within our local area. We often use local schemes as a test bed for national policy advice and ideas.

The majority of CSE staff hold a higher education degree in engineering or science, with many holding energy and environmental special qualifications.

As well as providing sustainable energy consultancy services to public and private sector organisations, CSE also regularly provides technical and policy analysis to national Government, including Department for Energy and Climate Change and the energy regulator Ofgem.

Our services are applicable across public, private and voluntary sectors. These include:

- Technical energy efficiency advice for standard and hard-to-treat buildings, energy modelling for new and existing buildings, insulation scheme management and assisting developers in meeting building standards, codes and decentralised energy supply targets.
- Advice on energy management and supporting behaviour change programmes.
- Feasibility studies for small- and medium-scale renewable and low carbon energy generation.
- Resources, training, technical support and advice to assist communities engaging with low carbon developments in their area, including community-led renewable energy.
- Resource mapping and data analysis for low carbon technologies (particularly wind and biomass) to develop an evidence base for policy for regions and specific sites.

- Support for local authorities and planners in developing planning policies and design briefs for new developments which encourage low carbon buildings and decentralised energy generation.
- Training for planners, community groups, energy advisers, local authority officers, councillors and tenants, including energy efficiency and management, renewable energy, energy champion training and low carbon energy in planning.

CSE has built up a wealth of experience over our 30 year history. Some examples of our past and current projects are outlined below.

SECTION 1)

Technical audits, feasibility studies and energy management

Energy auditing

61 public buildings for Mendip District Council and its Local Strategic Partnership (2008); eight public buildings for East Cambridgeshire District Council (2004); 13 public buildings for Fenland District Council (2003); buildings managed by 12 public sector members of Bath and NE Somerset Local Strategic Partnership (2005-09); eight farms forming part of Devon County Council's estates (2003); Goring Heath Alms Houses (2009); Redland Quaker Meeting House (2009); Postwick Village Hall (2009); and monitoring heat pump performance for Aster Housing (2011-present).

Renewable energy feasibility

12 feasibility studies as an approved consultant to the Lottery's Community Sustainable Energy Programme (CSEP), including New Druitt Community Centre (2010), Bishops Lydeard Village Hall (2010) and Two Moors Primary School (2009); medium- to large-scale biomass feasibility for 32 sites, including schools, colleges, farms and businesses, and with early successful installations at Castle Drogo, Lanoyce Nurseries and the Royal Cornwall Hospital (Southwest Bioheat, 2007-09); supporting 24 small-scale biomass

installations (almost 1.3MWth) across the South West through telephone advice, onsite feasibility studies and capital grant management (Coordinated Woodfuel Initiative, 2006-08); holistic support with all project aspects for community renewable energy projects in Somerset (2010-present); individual clients including Yeo Valley's Wills Barn Education Centre (2006), Symes Avenue Community Building (2004), Goblin Combe Environment Centre (2003), Sandford Housing Cooperative (2005), Avon Wildlife Trust's Folly Farm wind study (2005), Little Dartmouth Farm (2007), Brislington Park & Ride (2004), Scout Enterprises (2009) and Mendip Mills hydro study for 15 historic mills (2003-04); and solar water heating assessments and small grant management for caravan and camping sites in the South West, enabling 12 installations totalling 43kW capacity (Pitching for Solar, 2003-05). Pitching for Solar project was shortlisted for a prestigious Ashden Award for Sustainable Energy in 2005.

Combined energy auditing and renewables feasibility

Five smallholdings as part of the Isle of Anglesey County Council's estates (2011); 24 sheltered housing bungalows for Flourish Homes (2010); Oldfield School (2010); the Tudor Trust's offices (2009-10); Horfield Health Centre (2009); Helios Medical Centre (2009); Blakesley Village Hall (2009); Warminster Rugby Club (2009); Almondsbury Sports and Social Club (2008); and technical support to further community groups as an expert for the national Green Communities programme, which CSE also created and coordinated on behalf of the Energy Saving Trust (2001-11).

Hard-to-treat housing

Managing retrofit programmes for hard-to-treat properties, including solid wall insulation, for Somerset West councils and Bath and NE Somerset Council (2010-present).

Behaviour change

Delivering support to public sector members of the Bath and NE Somerset Local Strategic Partnership, including the provision of training to staff energy champions and achieving a 10% energy reduction through behaviour and technical change; working with Sanford Housing Cooperative in Lewisham to provide a programme of tenant awareness training alongside a refurbishment programme which together achieved a 60% reduction in emissions from the 144 residents (Carbon 60, 2004-06); providing advice on behaviour, consumer choices, insulation, draught-

proofing and renewable energy to domestic consumers as part of the National Energy Advice Service (formerly known as the ESTAC or EEAC network for the Energy Saving Trust) (2001-present).

SECTION 2)

Data analysis, modelling and resource assessment

Heat mapping

Developing resource assessments to assist local authorities with strategic planning, using heat mapping to help identify district heating opportunities. CSE has produced heat maps for London (including a detailed extension for Westminster), the East Midlands and the South West (2009-2010), and is currently producing a national heat map for the Department of Energy and Climate Change (2011-present).

Statistical data modelling

Building a detailed model of options available to reduce emissions from the UK's existing housing stock for WWF, including a further in-depth analysis into achieving 60% and 80% carbon reduction in the residential sector by 2050 (How Low? 2007-08); investigating non-traditionally constructed homes and identifying the risk of fuel poverty for residents for the Energy Efficiency Partnership for Homes (2004-05); undertaking advanced modelling of the distributional impacts of energy policies across society through major projects for the Department of Energy and Climate Change, Joseph Rowntree Foundation and eaga Charitable Trust (2009-present); creating a resource that will enable policy makers to assess the impact of potential energy efficiency improvements on the housing stock on behalf of a raft of public and charitable funders (Improvement Prophet, ongoing).

Renewable energy resource assessment

Creating a methodology for carbon saving, climate change adaptation and energy resilience which can be replicated by local authorities through the Local Carbon Framework Pilot programme on behalf of Bristol City Council, developing an initial pilot with Avonmouth and Severnside as a case study (2011-present); generating locally-specific evidence of sustainable energy resource to inform renewable energy and sustainable construction policies in the Teignbridge Local Planning Authority Area (2010); producing evidence on sustainable energy potential to support Local Development Framework policies in five

councils in West Sussex (2009); undertaking a Bristol citywide energy study to inform Bristol's Core Strategy policies on sustainable energy (2009); spatial analysis of low carbon options for the city centre and Derriford areas of Plymouth (2008-09); renewable energy resource assessment for Plymouth including GIS mapping and analysis of major planned developments (2006-07); Devon biomass resource assessment for Devon Wildlife Trust (2007); and an analysis of woodfuel supply and demand in Dorset (2009).

SECTION 3)

Planning, policy and strategy

Engaging communities in planning

Designing and delivering PlanLoCaL, a major three-year national programme through the Department for Communities and Local Government's Empowerment Fund to support communities to get involved in low carbon planning in their local area (2009-present).

Policy work

Reviewing implications of renewable and low carbon energy developments for land use planning for the Welsh Assembly Government (2009-10); providing an evidence base for community benefits from wind power to the Department for Trade and Industry and the Renewables Advisory Board (2005); and creating a framework for engaging the public in wind energy proposals in the South West (2004-07). Our Chief Executive Simon Roberts is an experienced policy advisor to Government and is currently a member of Ofgem's Consumer Challenge Group and the Green Deal Consumer Advisory Panel for the Department of Energy and Climate Change.

Local and regional strategy support

Renewable energy resource assessments and heat mapping in Section 2 have fed into strategy development, e.g. for Bristol and West Sussex councils. Other work includes: working with Bath and NE Somerset Council to engage the local community in Core Strategy consultation as part of PlanLoCaL (2009); undertaking a detailed study with the Bath Preservation Trust to explore appropriate solutions to combine low carbon and heritage priorities (2010-11); undertaking a strategic project to develop regional renewable energy targets for the South West for 2010 and 2020 (REvision 2010 and REvision 2020, 2004-05); supporting Islington Climate Change Partnership by undertaking a baseline study of the borough's energy use, including subsequent annual monitoring (2007-

present); producing guidance for the London Energy Partnership to stimulate zero-carbon developments in London boroughs (2006); and producing guidance for the London Energy Partnership to assist London boroughs in understanding zero-carbon buildings, locating appropriate sites and working in partnership to create zero-carbon developments (2006).

SECTION 4)

Training, resources and tools

Major training programmes

Managing and delivering a major national programme of training on technical, planning and community issues around renewable energy for the planning community on behalf of the Department of Energy and Climate Change and other Government departments (2004-10); creating and delivering training on community engagement with low carbon planning through the PlanLoCaL project (2009-present), including work with Action for Rural Communities in England and providing councillor training on behalf of Urban Forum; and delivering extensive training to community groups through the national Green Communities programme (formerly CAFE), which CSE also created and managed for the Energy Saving Trust, supporting a network of over 4,000 members.

Bespoke training courses

Energy champion training to help staff work together to promote energy efficiency at work for various clients including Wates Construction (2010), Chardon Hospitality Management (2010) and Cleveland Fire Brigade (2010); energy awareness training for ITS Ltd (2010); input into the Planning Advisory Service's leadership training on low carbon and communities (2010-11); developing Lantra Awards accredited courses on short rotation coppice (SRC) and miscanthus (2008); renewable energy training for planning inspectors, focused particularly on wind energy developments and the planning issues associated with these, on behalf of the Planning Inspectorate (2007); and training for Western Power Distribution customer services staff to handle enquiries from customers concerning renewable energy and distributed network connection (2010).

Open access training courses

CSE periodically delivers open access courses, including: Renewable Energy Essentials – a one-day course in household and community-scale renewable

energy systems (solar, biomass, heat pumps, wind, small-scale hydro and combined heat and power); Energy Champions – a half-day course that focuses on the actions Energy Champions can take to reduce energy use in their workplace and to motivate other staff, helping to save money and reduce carbon emissions; Energy Awareness at Work – a two-hour course that looks at simple actions all members of staff can take to reduce energy use, including energy saving tips to take home; Energy Awareness at Home – a half-day course that looks at domestic energy efficiency, treating heat loss and damp, and a basic introduction to renewable technology; Energy Awareness for Tenants – a one-day course that looks at energy efficiency, saving money and reducing carbon emissions for tenants wishing to take action in their own homes; Home Energy Advisor training – a half-day course designed to help energy advisers make their home visits as effective as possible, focusing on face-to-face energy advice, preparing and planning home energy visits and avoiding danger and risk when out on visits; Home Energy Basics for CERT Assessors – a one-day course that covers all the basics required in order to conduct door to door surveys for householders who may be entitled to receive free or discounted energy efficiency grants through CERT (or similar) schemes; and Energy Awareness (City and Guilds 6176) – a three-day domestic energy efficiency course on behalf of National Energy Action, covering energy efficiency, insulation, heating systems, metering, bills, tariffs and damp problems. These courses can be delivered as bespoke programmes, e.g. when no open access session is scheduled.

Younger audiences

Enabling school-aged children to participate in Bath and NE Somerset's Core Strategy review (PlanLoCaL, 2010); engaging sixth formers in active citizenship through investigating plans in their local authority area to address climate change (Climate Change Challenge, 2005 and 2007); training for teachers and education workshops for pupils (Energy in the Countryside, 2008-09); and bespoke schools workshops on renewable energy and energy efficiency, including wind energy workshops for 15 primary schools for Garrad Hassan (2009). CSE's education materials have been used in over 1,000 schools nationally; past programmes include Energy Matters (2000-03), which focused on home energy efficiency and reached 14,500 pupils; and Plan It Cool

(2003-04) which trained energy champions to promote energy efficiency at school.

Material resources

Creating an advanced resource pack for community groups to engage in planning and to establish community-owned renewables, including over 40 short films on technologies, case studies and project management and an in-depth resources pack, all available online at www.planlocal.org.uk (PlanLoCaL, 2011-present); developing the Planning Renewables website to support local authority planners and councillors with renewable energy information on behalf of the Department of Energy and Climate Change and the Department for Communities and Local Government (2008-present), available at www.planningrenewables.org.uk; creating advice leaflets on renewable energy and distribution network connection issues for Western Power Distribution customers (2010); researching and writing numerous case studies for the national Green Communities (formerly CAFE) programme (2001-10); creating the Renewable Energy Handbook, a 200-page detailed technical resource used to train Energy Saving Trust advice centre staff across England, Scotland and Wales (2002); developing content for the "Make a difference" booklet series for Action Renewables (2007); and producing a website and numerous communications materials as part of the major behaviour change campaign under the Our Big Energy Challenge project (2007-07), available at www.bigenergychallenge.org.

Tools for energy audits and renewables

Creating an online PPS1 toolkit for planners on behalf of RegenSW (2009); developing an online greenhouse gas self-assessment tool for farmers on behalf of Dairy Crest Direct (including energy, land use and farming practices) which underpinned a measuring and monitoring system to enable comparison across farms (2007-08); reviewing the Energy Saving Trust's web-based Microgeneration Diagnostic tool (2009); co-creating the TRACE carbon performance tool for local authorities (2008-09).

FURTHER INFORMATION

Ruth Cole, Senior Development Manager
0117 934 1440 | ruth.cole@cse.org.uk

www.cse.org.uk