

A GIS map of local energy businesses in the UK

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The EnergyREV Business and Finance Research Team, with the technical support of researchers based at the University of Strathclyde, have built a GIS map of local energy businesses in the UK which is available here.

Geographical and non-geographical information have been collected for 699 legally-constituted companies working in energy sector in the UK which is stored in a database. This database is based around information provided by Bureau van Dijk through its FAME database. The EnergyREV team have manually collected and integrated more information, where available, from additional sources, including specialised/sectoral websites, company websites, notes to the financial statements on UK Companies House website, media articles and other online sources from Google search engine.

The map illustrates how “how local” energy businesses using a qualitative scale. Three elements of “localism” have been used to create this local scale: businesses with relationships to local stakeholders, local involvement in decision-making, and (some) local ownership of assets. All companies on the map address at least one of these elements. This is an exploratory approach to classifying businesses as local and will be further developed.

Information shown in this map includes:

- **Location:** latitude, longitude, address, and postcode of registered offices of companies.
- **Legal form:** according to UK legislation.
- **Registered accounts type:** according to UK legislation.
- **Purpose:** all companies (including stand-alone entities) are classified according to the following criteria.
 - » First: the term core business refers to any entity directly running energy services, regardless of overall corporate structure (e.g. holding, investment vehicle or stand-alone entity).
 - » Second: an investment vehicle is any company which is part of a corporate structure with a parent company and other dependent companies.
 - » Third: a holding is any company that contains other dependent companies without having a parent entity.

- **Size based on average assets:** Companies House company accounts is used as a guidance threshold as a proxy to determine the size of each company, for the time interval between years 2010 and 2018 (where applicable), as follows:

- » Micro entity: average assets are less than £316,000;
- » Small company: average assets are between £316,001 and £5,100,000;
- » Medium company: average assets are between £5,100,001 and £18,000,000;
- » Large company: average assets are greater than £18,000,000.

- **Ownership:** using the following classifications:

- » Private: privately-owned;
- » Municipally-owned: to local authority-owned;
- » Trust/foundation/community: owned by community(-oriented), such as trusts, foundations, or community groups (sometimes via bencoms, development trusts or charities);
- » Community interest: to Community interest companies (CIC), mostly privately-owned or owned by other CICs, not included in the above classification Trust/foundation/community;
- » University-owned: owned by universities.

- **Direct benefits for communities:** shows the companies from whom information on (direct) benefits for communities was available. This information also recognises the role of other related companies and legal nature of businesses in such benefits provision; e.g. CICs are assumed to deliver benefits by virtue of their legal nature.

- Estimates of localism and smartness: an assessment of how local and how smart energy businesses are. This is based on the following qualitative scale:

Localism

- » Level 0 – Aloneness: No links or involvement with the community and/or other stakeholders can be found.

- » Level 1 – Participation: Participation in specific initiatives with communities and/or stakeholders, in terms of participation in the project, decision-making or asset ownership, but these are diffuse, isolated, not clear, or not part of an institutionalised policy. Only one element (out of 3) is usually present.
- » Level 2 – Involvement: There is (a degree of) involvement with communities and/or stakeholders in terms of participation in projects, decision making or asset ownership. A combination of two elements (out of 3) are present as part of local commitment.
- » Level 3 – Engagement: There is a deeper engagement with communities and/or stakeholders in terms of participation in projects, decision-making, and asset ownership. All elements of localism are present in the business.

Smartness

- » Level 0 – Inferior: The level of information and communication technologies is minimum or under development. Data are not gathered and used in real or near real time.
- » Level 1 – Acceptable: The level of information and communication technologies allows collection and use of data in real or near real time and used in business decision-making .
- » Level 2 – Improved: In addition to presence of information and communication technologies, the business can respond to its environment by (automatically or semi-automatically) adjusting its operation to optimise service provision.
- » Level 3 – Advanced: In addition to collection and use of data in real time, and automatic adjustment of operations, the business is able to generate and use data to engage people in decision-making, planning, and/or governance.
- » Level 4 – Smart: The business is capable of collecting and using data in real time, automatically adjusting its operation to provide an optimal service, and effectively engaging people, by having some degree of machine learning or AI embedded.

- A combined rating of localism and smartness **are used to categorise** companies as follows:
 - » An assessment of localism of Level 0 – Aloneness, combined with any assessment of smartness up to Level 1 – Acceptable, catalogues companies as “Energy Systems”.
 - » Any assessment of localism between Level 1 – Participation and Level 3 – Engagement, combined with any assessment of smartness up to Level 1 – Acceptable, catalogues companies as “Local Energy Systems”.
 - » Any assessment of localism between Level 0 – Aloneness and Level 3 – Engagement, combined with an assessment of smartness of Level 2 – Improved, catalogues companies as “Transition”.
 - » Any assessment of localism between Level 0 – Aloneness and Level 2 – Involvement, combined with any assessment of smartness between Level 3 – Advanced and Level 4 – Smart, catalogues companies as “Smart Energy Systems”.
 - » An assessment of localism of Level 3 – Engagement, combined with any assessment of smartness between Level 3 – Advanced and Level 4 – Smart, catalogues companies as “Smart and Local Energy Systems”.
- **Business activities (revenue sources):** activities or revenues which the companies rely on.
- **Estimated installed capacity and technology:** estimated energy sources/technologies and corresponding installed capacities used by the companies in our database.
- **Assets, Shareholders Funds, and Turnover:** basic financial information about companies based on their accounts/financial statements.
- Report – [Exploring the financial condition of the UK Local Energy Business Sector](#)
- Report – [Describing a local energy business sector in the United Kingdom](#)
- Academic paper and supplementary material – [Characterising a local energy business sector in the United Kingdom: participants, revenue sources, and estimates of localism and smartness](#)
- Working Paper – [Local energy businesses in the United Kingdom: clusters and localism determinants based on financial ratios](#)

Further information

For further information on the map, data sources and the Energy REV research on Business and Financing Practices contact Fabian Fuentes Gonzalez, Postdoctoral Research Fellow at the University of Edinburgh: fabian.fuentes@ed.ac.uk

About EnergyREV

EnergyREV was established in 2018 (December) under the UK’s Industrial Strategy Challenge Fund Prospering from the Energy Revolution programme. It brings together a team of over 50 people across 22 UK universities to help drive forward research and innovation in Smart Local Energy Systems.

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The map uses visualisation filters for energy technologies, size (based on average assets), ownership, benefits to communities, and localism. Companies can also be visualised as clusters or individually. More details can be found in: