Tier 1 Data gathering – energy, transport and natural resources data

1.1   Overview

You'll need to figure out a baseline of energy-use in your local area. A baseline view of energy-use in a community is calculated from total energy-use over a selected 12-month period. The baseline looks at how this total energy demand varies by season/month. It also shows the individual contributions to this total from domestic, non-domestic and transport energy-use. The relevant data available for your community will vary in its detail.

The point is to get a snapshot of existing demand for energy (electricity and heat) and transport to use as a baseline. It needs to include known proposed changes within the area that will impact future energy/transport demands. For example, a major housing development or an extensive business expansion earmarked in the Local Development Plan.

It's useful to include as much detail as you can, but remember its primary function is to help understand the scale of impact any changes to energy supply or use in your area will have. You'll need to make a judgement about how much data you can gather in a sensible timeframe, rather than trying to gather every tiny piece of information you can and delaying progress of the LEP.

1.2   What do we mean by Tier 1?

You'll be able to find data relevant to energy and transport requirements in your local area in various formats and levels of detail. It's useful to think about the data-collection process in a series of tiers.

Tier 1

Tier 1 data will typically be publicly available, collected as part of national statistics. It will provide information about specific topics relevant to different geographic areas. You shouldn't need to pay for access to any of this data.

For example:

Heat Demand – Scotland's Heat Map enables you to select a specific geographic area. You'll be able to find a total annual heat-demand figure, a summary of the selected area (in km^2), and the proportion of this heat demand made up by public sources (local authority buildings, etc.).

Electricity Demand – Aggregate consumption within a postcode area is available from UK Government. It includes mean-average and median-average figures for consumption per electricity meter.

Demographic Profile – Scottish Census Data provides a wealth of information, including a percentage breakdown of age profiles for a prescribed set of age ranges in a given area.

These examples illustrate how datasets typically provide a summary or aggregate number, and may cover a larger area than the boundary of the LEP.

Tier 2

Tier 2 datasets offer more detail in support of Tier 1 data.

For example:

Local Authority Buildings – Summary figures for typical annual energy consumption of all buildings operated by the local authority in the LEP area.

Registered Social Landlord – Annual energy consumption figures for offices and communal areas within housing developments operated by the RSL.

Scottish Water – Details of the capacity and typical wastewater volumes for water supply works operating in the LEP area.

Energy Saving Trust – Details from Energy Performance Certificates (EPCs) and other surveys collected for individual residential addresses.

You'll need to request this information from the organisations that hold it, as it's of a more sensitive nature. In some instances this may require a data agreement to be put in place, or restrictions on how the data is reported.

For example, it may be necessary to avoid using meter readings for a large business in the area, if it's obvious which business they would be from and could lead to a competitive disadvantage if disclosed in the LEP.

Similarly, details of individual houses should be aggregated (or anonymised) to ensure individual addresses and energy data are not readily linked. This will avoid any data protection and management issues.

Tier 3

Tier 3 datasets are the most detailed. They will typically be provided by individual building operators or renewable energy generators. Data will be provided with monthly breakdowns across the 12-month period.

You may be able to request or create weekly or daily demand profiles, depending on the relevance to the LEP development.

You'll need to request this data from specific organisations or individuals. You'll also need to agree at the start how the data will be used and how much will be made public in documents for the community.

For example:

Electricity consumption – A large school will have meter data recorded on a half-hourly basis. A 24-hour profile for a given day in each season will provide a snapshot of how the demand profile will change throughout the year.

Value to LEP: This can be useful when thinking about how to match the output from local renewable energy generation with local energy demand.

Heating demand – Monthly outputs from a biomass combined heat and power (CHP) plant operating at a local health centre.

Value to LEP: This information indicates whether there's any surplus heat or power that the CHP could supply to neighbouring buildings.

1.3   Tier 1 – sources of information

There are several publicly available datasets that can be used to begin to characterise the study area. These data sources, and how they contribute to understanding of local energy needs, are shown below.

Table 1   Tier 1 – Initial sources of data and information

Details	Data Sources	Existing Energy Needs	Future Energy Needs
Community characteristics	Scottish Census Data Local authority development plans Local Place Plan	The local population in the study area, its demographic and broad nature, and scale of employment and associated travel requirements	Population trends and known development proposed in future
Environmental resource and designations	HES Local authority SNH Renewable energy assessment tools	Estimated local resource (wind, solar, hydro) Existing environmental and cultural designations, sensitive habitats	Estimated local resource (wind, solar, hydro) Proposed designations (e.g. National Park)
Overview of buildings	Scottish Census Data Local authority Local Place Plan	Number of domestic buildings, age, efficiency and fuel used for heating Number of non-domestic buildings and use	Proposed scale of domestic or non-domestic development
Energy demand	UK and Scottish Government Scotland's Heat Map	Electricity consumption data for domestic and non-domestic properties Other fuel consumption data for domestic and non-domestic properties Indicative heat demand for domestic and non-domestic properties	Additional energy demands from proposed developments
Energy generation	FiT/RHI registration Local authority Local community	Existing energy generation capacity	Any proposed local community generation
Supporting infrastructure	Utility companies Local authority Public agencies Local Place Plan	Transport links, electrical grid infrastructure, water supply and treatment, and waste management. Active travel networks and infrastructure	Proposed upgrades or changes to any of the supporting infrastructure
Transport	Scottish Census Data UK and Scottish Government Local authority	Vehicles owned by residents Active travel plans	Known future changes (alternative fuel changes or other changes)

Note: This list is not exhaustive. You can find more information in the Tier 1 Data Sources Summary and Data Collection Template.