Powys Public Services Board

Well-being Assessment 2017

Environment Key Findings

Powys Public Services Board September 2017

Contents

Environment

This section below describes the seven key findings in detail and the data and analysis that was used to evidence our findings.

We rated the impact of each key finding against the 7 well-being goals and whether they are having a positive or negative affect on well-being (see key below)

Key	
	Negative - Critical
	Negative - Substantial
	Negative - Moderate
	No current impact on well-being
	Positive - Moderate
	Positive - Substantial
	Positive - Critical
☆	Negative - Critical (if no intervention)
	No Score Given

Renewable energy

Prosperous Powys	Resilient Powys	Healthier Powys	Equal Powys	Cohesive Powys	Vibrant Powys	Globally Responsible Powys

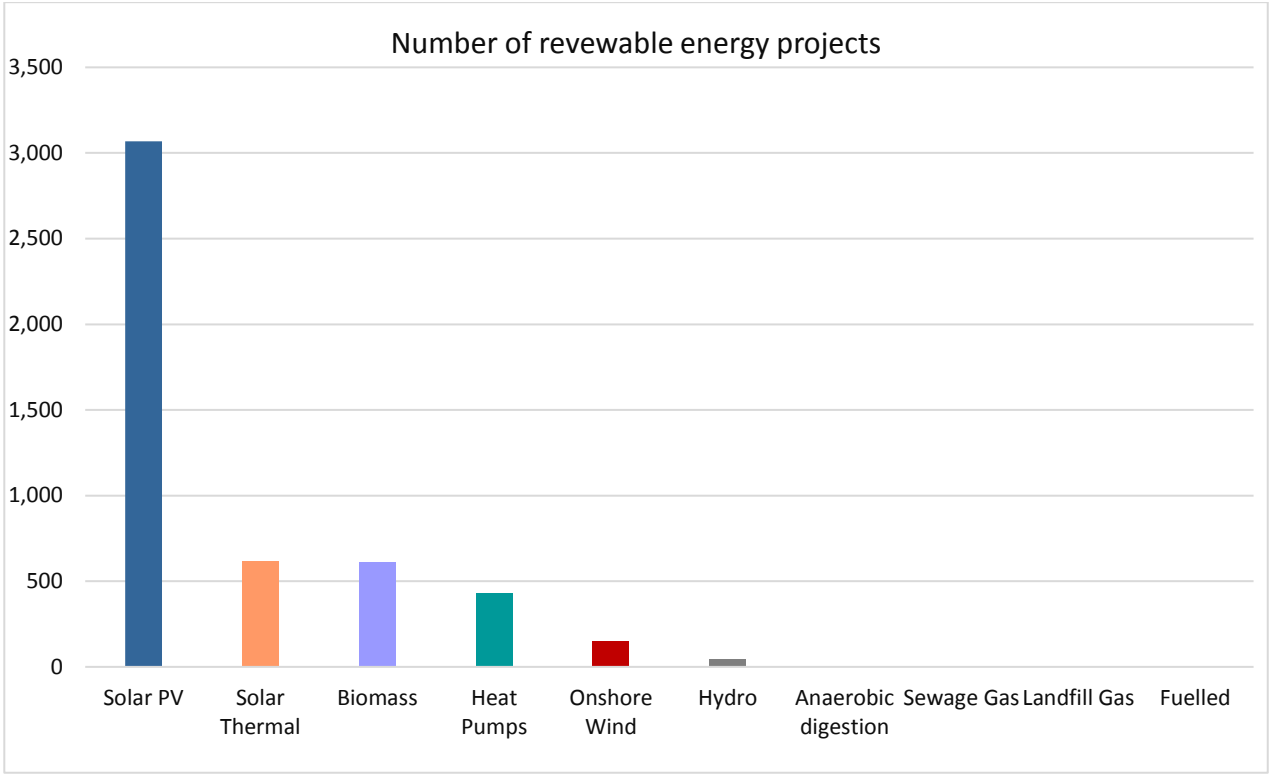
What are the key findings?

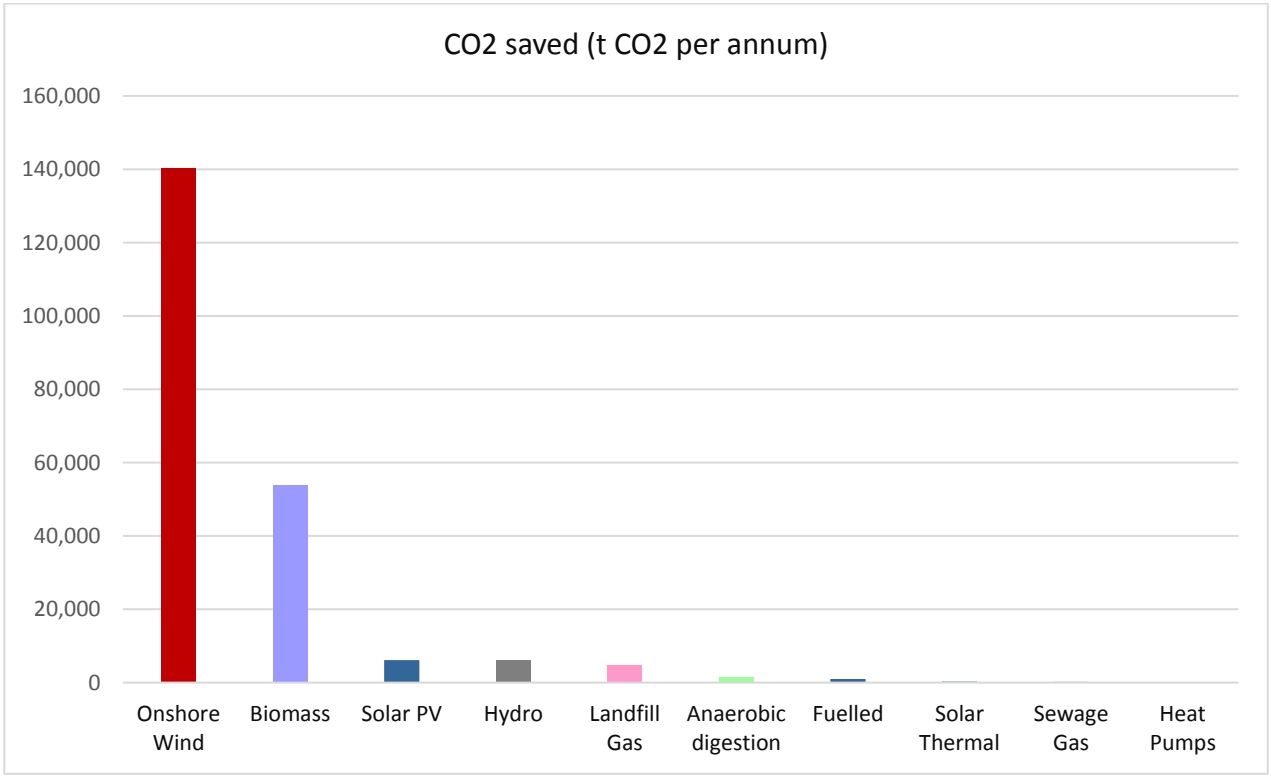
Powys maintains at present a large number of renewable energy projects. The majority of these are made up of solar photovoltaic (solar PV) installations. This is followed by thermal based solar power installations (for the purpose of water heating) and biomass energy generation sites (PCC, 2016). Powys is the largest generator of renewable energy in the areas of biomass, onshore wind, and thermal based solar energy (PCC, 2016). The use of onshore wind farms in Powys represents the greatest saving of CO2 in the county (PCC, 2016). However, despite this, it is possible that there will be a noticeable energy gap as older, fossil fuelled power stations are decommissioned.

What does the data tell us?

The most common renewable energy projects in Powys is the use of photovoltaic solar cells. This makes up a total of 60% of all renewable energy projects in Powys (PCC, 2016). This is far in advance of the next most common source, with thermal solar installations and biomass projects both at 12% of all current projects. However, the use of onshore wind represents the largest saving of CO2 in Powys, with wind farms delivering 65% of all CO2 saved by renewable energy projects, with

biomass being the next largest at 25% of the total (PCC, 2016). Powys is also the largest low carbon generator in Wales in the biomass, onshore wind, and solar thermal sectors. Discounting the effects of offshore wind installations and saving gained from nuclear energy sites, Powys saves the largest amount of CO2 from the use of renewable generation installations in Wales (PCC, 2016).





Are there any specific locality differences?

There has been no research on the specific location of renewable installations within Powys, the data provided is only based on a Powys wide dataset. Extensive work has been undertaken as part of the Local Development Plan (LDP) 2011-2016 process to identify the best locations for renewable technology, however this data is for future installations and not existing.

What do citizens say?

Despite the issues surrounding renewable energy projects, there is limited quantitative data on the views of our citizens on Renewable Energy. In response to the LDP 2011-2026 consultation only 20 of the recorded 1091 responses to the LDP were concerned with the proposed Renewable Energy planning policy. We do not have the ability to provide a balanced and fair representation of citizens' attitude to Renewable Energy generation. Note: The responses include the June 2015 consultation and Jan 2016 consultations to the LDP.

What do staff say?

This information was not available, but has been identified as a data gap.

What does the third sector/private sector say?

This information was not available, but has been identified as a data gap.

Are there any preventative measures associated with this data?

This information was not available, but has been identified as a data gap.

What we don't yet know?

Locations of renewable energy projects within Powys and people's attitudes to renewable technology in Powys.

National Trends

The greatest increase in the number of renewable generation projects in Wales occurred in Powys between 2012 and 2014. Powys has the highest low carbon energy generation percentage in Wales, 12.9% (excluding generation from offshore wind and nuclear power generation).

Powys had the largest increase in low carbon projects in 2013 & 2014, 11.2% of total projects.

Scenario

Short Term

This information was not available, but has been identified as a data gap.

Medium Term

Within the LDP a figure of 599MW of electric renewable generation and 29.5MW of thermal renewable energy generation has been set to meet the maximum potential installed capacity until 2026.

Long Term

This information was not available, but has been identified as a data gap.

How do services currently contribute?

Renewable energy projects can be encouraged through the planning (LDP) process, but more importantly through National government financial support such as Feed in Tariffs and the Renewable Heat Incentive.

Is need being sufficiently met?

Although Powys is the leading authority in the number of projects there still a need for renewable energy projects to be delivered to meet the LDP target and the energy gap as older power stations are decommissioned.

Energy in housing

Prosperous Powys	Resilient Powys	Healthier Powys	Equal Powys	Cohesive Powys	Vibrant Powys	Globally Responsible Powys
	☆		☆			☆

What are the key findings?

Energy Performance Certificates (EPCs) are needed whenever a property is built, sold and rented. Based on Energy Performance Certificate ratings of the properties which have been assessed, Powys has a low percentage of energy efficient homes (A-C rating) and a relatively high percentage of inefficient homes (F and G rating) (Centre for Sustainable Energy, 2015). The majority of homes in Powys are also not connected to the gas network due to Powys' rural nature. These homes are likely to rely on other, more carbon intensive and expensive forms of heating, such as oil, liquid petroleum gas, and coal (Office for National Statistics, 2011). Powys' average household electricity consumption is significantly higher than the Welsh average as well as the UK average. The average domestic gas consumption per meter is lower than both the Welsh and the UK average (Department for Energy and Climate Change, 2013). In light of rising energy prices, more and more residents are finding it difficult to heat their homes to an adequate standard, and this trend is expected to continue over the next 5 to 10 years.

What does the data tell us?

Energy Performance Certificates (EPCs) show how efficiently a home uses energy, the cost of running a home and recommendations of how to improve the energy efficiency of the property. EPCs are produced when properties are sold, rented, to measure performance of Landlords properties, and are a requirement under some financial incentives. Properties are given an A-G energy efficiency rating with 'A' being the most efficient and 'G' being the least efficient.

The green map above shows where the greatest percentages of energy efficient (A-C bands) properties are in the UK, of the properties which have been assessed. Powys has a low percentage of energy efficient properties.

The red map above shows where the highest percentage of the least efficient properties are in the UK (bands F and G) of the properties which have been assessed. Powys has a relatively high percentage of inefficient properties.

The energy hierarchy states that organisations and individuals should pursue energy issues in the following order:

1. Reduce the need for energy

2. Use energy more efficiently

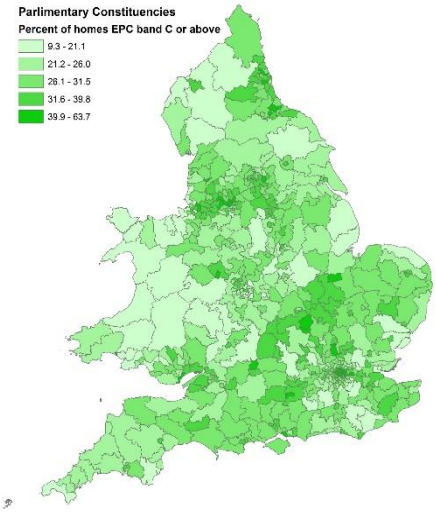
3. Use renewable energy

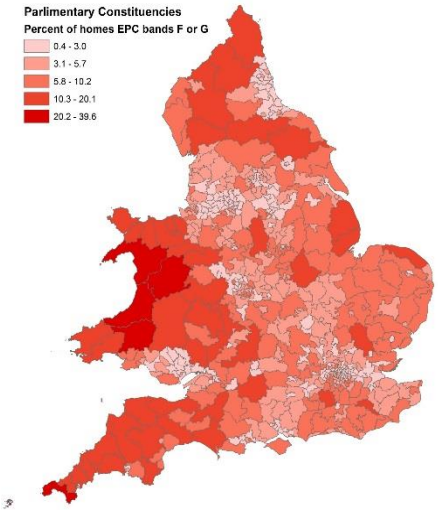
4. Any continuing use of fossil fuels should be clean and efficient.

Mains gas is one of the most controllable, affordable forms of heating. Approximately 53% (31,000) properties in Powys are not connected to the gas network (Department for Business, Energy and Industrial Strategy, 2016), this is the greater than the figure for Wales (15%). Properties which are not connected to the gas network are likely to rely on alternative, more carbon intensive forms of heating, such as oil, LPG and night-time storage heaters. Estimates of the number of properties not connected to the gas network vary, with one source estimating that 43,000 properties in Powys are not connected to the gas network (ONS, 2011).

The average domestic electricity consumption for 2015 in Powys is 4316 kWh per annum, which is higher than both the Wales average (3656 kWh/annum) and the UK average (4021 kWh/annum) (ONS, 2011).

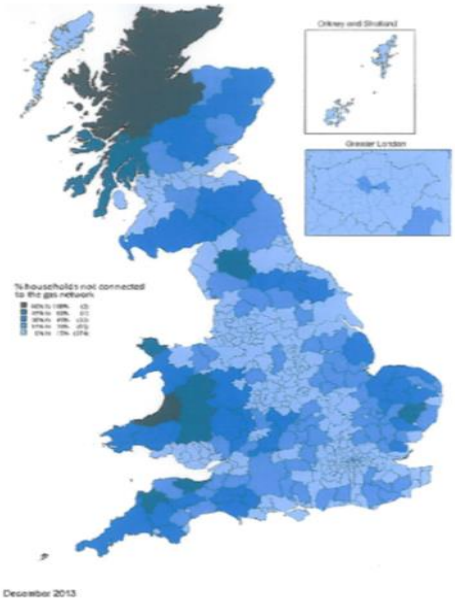
The average domestic gas consumption per meter in Powys is 11,995kWh/annum which is lower than both the Welsh average (12,264kWh/annum) and the UK average (13,202 kWh/annum) (ONS, 2011).

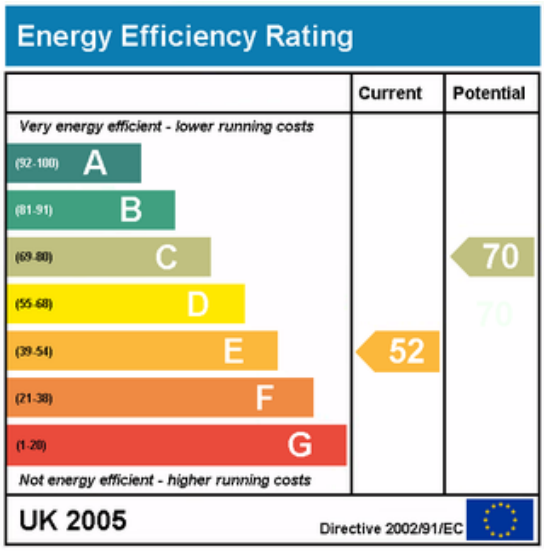


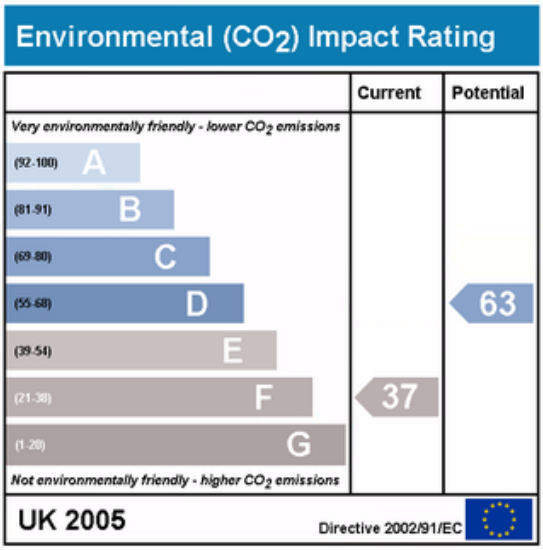


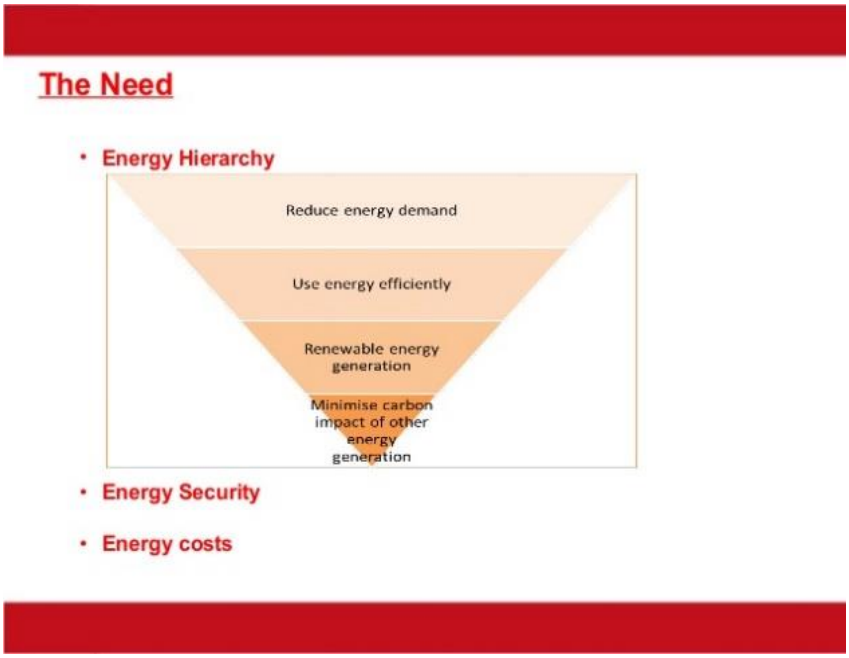
Proportion of properties without a gas meter by local authority

(DECC sun-national estimates)









Are there any specific locality differences?

The data for Montgomeryshire shows that it has a higher percentage of inefficient properties than Brecknockshire and Radnorshire, of the properties which have been assessed. Older, hard to treat properties, which have solid walls and do not have access to mains gas are generally less energy efficient than modern, well insulted properties which are on the gas network. Rural properties more likely to rely on carbon intensive forms of heating, such as oil, LPG or night-time storage heaters.

The Vyrnwy MSOA area has the highest percentage of 'off gas' properties of 99%. Newtown and Brecon have the greatest percentages of properties on the gas network. There are four communal LPG networks in the UK, two of which are located in in Powys, one in Llanfyllin and one in Llanwrtyd Wells.

The Brecon (MSOA Powys 017) has the lowest average domestic electricity consumption of 3325 kWh per annum. The Ffridd Faldwyn MSOA area (Powys 005) of Berriew, Forden, Kingswood, Montgomery and Trewern has the highest average domestic electricity consumption of 5616 kWh/annum.

What do citizens say?

11% of Residents say it is likely that they would need to have make a choice between heating their house and buying food.

What do staff say?

People often struggle with budgeting for the high upfront payment required paying for oil heating.

The large area that Powys covers can make it difficult to raise awareness of different schemes and support available. Some of the schemes are designed with the majority in mind (on gas properties), and the improvement measures proposed for 'off gas' properties don't always address rural fuel poverty as well as they could do.

Powys only has a few areas featuring in the top 20% of income deprivation which can make it difficult to attract investment through area based schemes.

What does the third sector/private sector say?

This information was not available, but has been identified as a data gap.

Are there any preventative measures associated with this data?

There are various legislation and schemes designed to identify and improve the energy efficiency of homes in Powys, these include, but are not limited to:

- The Welsh Housing Quality Standard requires all social landlords to improve their housing stock to an acceptable level by 2020 (a SAP rating of 65, equivalent to a 'D' rating).

- Welsh Government Warm Homes Programmes, which includes the ARBED and Nest schemes, which provide funding for energy efficiency improvements to low income households and those living in deprived communities across Wales. The Nest scheme provides householders living in Wales with access to free advice and support to help them reduce their energy bills. Those meeting Nest's eligibility criteria can access a free package of energy efficiency measures. The Welsh Governments Warm Homes ARBED scheme is an area based scheme designed to target areas of fuel poverty.

- The Energy Act 2011 will require privately rented properties to have a minimum EPC rating of an 'E' from 2018 onwards.

- The Energy Performance in Buildings Directive (EPBD)

- The Energy Company Obligation (ECO).

- Financial incentives for low carbon technologies (e.g. Feed in tariffs, the renewable heat incentive).

- Home improvement loans are available which are designed to improve the condition of a residential property.

- Gas connection vouchers are available to people who meet certain eligibility criteria.

The uptake of low carbon technologies in Powys has been strong, and there are a large number of domestic photovoltaic installations, generating electricity which will offset the domestic electrical consumption (see renewable energy information).

What we don't yet know?

Where the pockets with the highest levels of fuel poverty, and the lowest levels of income deprivation are, on an estate by estate basis.

Where the least efficient properties are, and what improvement measures are required to bring them up to a comparable standard of energy efficiency.

Strategic need gas infill assessment required to identify opportunities for gas infill projects.

Why the average Powys households electricity consumption is higher than the UK average or Welsh average.

National Trends

The maps show that the highest percentages of energy efficient properties and the lowest percentage of inefficient properties are located in urban areas. Areas which have had major regeneration schemes and high percentages of new build will have a greater percentage of energy efficient properties.

In Great Britain, 10% of properties are not connected to the gas network. In Wales, 15% of properties are not connected to the gas network. In Powys, 53% of properties are not connected to the gas network.

The average domestic gas consumption per meter in Powys is 11,995kWh/annum which is lower than both the Welsh average (12,264kWh/annum) and the UK average (13,202 kWh/annum). Mean domestic gas consumption per meter in Great Britain decreased by 30.6 per cent between 2005 and 2015. There are a number of factors which may have contributed to the reductions in consumption, including; weather conditions, energy efficiency improvements, such as increased levels of insulation, new boilers and more energy efficient appliances; increased prices and the recession; and changes in the building stock and household composition. Building Regulations have required substantial improvements to the energy efficiency of properties during recent years to achieve compliance.

The average domestic electricity consumption is 4564 kWh per annum for Powys, which is higher than the Welsh average (3930 kWh/annum) and higher than the UK average (4092 kWh/annum). Mean domestic electricity consumption per meter in Great Britain has decreased by 15.4 per cent between 2005 and 2015. There are a number of factors which may have contributed to these reductions in consumption, including; weather conditions, energy efficiency improvements, such as increased levels of insulation, new boilers and more energy efficient appliances, increased prices, the recession, changes in the building stock and household composition.

Scenario

Short Term

Householders on the lowest incomes will struggle to pay their energy bills. People will rely on more carbon intensive forms of heating to heat their home, and some will be unable to afford to heat their home. Some Powys residents will struggle to pay their electricity bills, resulting in energy debt and more prepayment meters.

Medium Term

Energy prices may continue to rise, there is uncertainty over oil prices in 'off gas' areas. If levels of investment are greater in urban areas than rural areas, the gap in carbon emissions and fuel bills will increase.

Long Term

Powys continues to have some of the largest percentage of energy inefficient properties in the UK. As energy prices continue to rise, more people will struggle to heat their home to an adequate standard.

How do services currently contribute?

Improvement works to Council owned properties are currently being undertaken to comply with the Welsh Housing Quality Standard, which include heating, glazing and insulation improvement works. There has been a substantial amount of investment in Council owned stock housing during recent years to achieve this, and this work is ongoing.

We work with our Welsh Government Warm Homes Nest Partnership Development manager to raise awareness of the Nest scheme designed to target individuals in fuel poverty, and have increased the number of referrals from 347 in 2014/2015 to 913 in 2015/2016 for Powys.

We are working on bids for the Welsh Government Warm Homes ARBED funding to try to secure funding, and have recently completed insulation improvement works to 250 properties in Newtown.

We are delivering low/zero interest home improvement loans for property improvements and energy efficiency measures.

We work with partners such as Citizens Advice Energy Advisers, the Energy Saving Trust and colleagues in Income and Awards and housing to try to ensure that front line workers are aware of what schemes and support are available.

Is need being sufficiently met?

No. Whilst we are making progress, there are opportunities for doing more. Covering a large geographical area it is challenging to make residents aware of what schemes and support are available. Also Powys has few areas which are eligible for area based fuel poverty schemes because the levels of income deprivation are not low enough. Although there are schemes in place for improving the energy efficiency of the social housing stock, the private rented sector has the highest levels of fuel poverty, but has limited schemes for improving the energy efficiency of properties. There are approximately 58,000 households in Powys, so the scale of the challenge for improving energy efficiency of the housing stock is vast with many different facets to the challenge.

Your Local Environment

Prosperous Powys	Resilient Powys	Healthier Powys	Equal Powys	Cohesive Powys	Vibrant Powys	Globally Responsible Powys

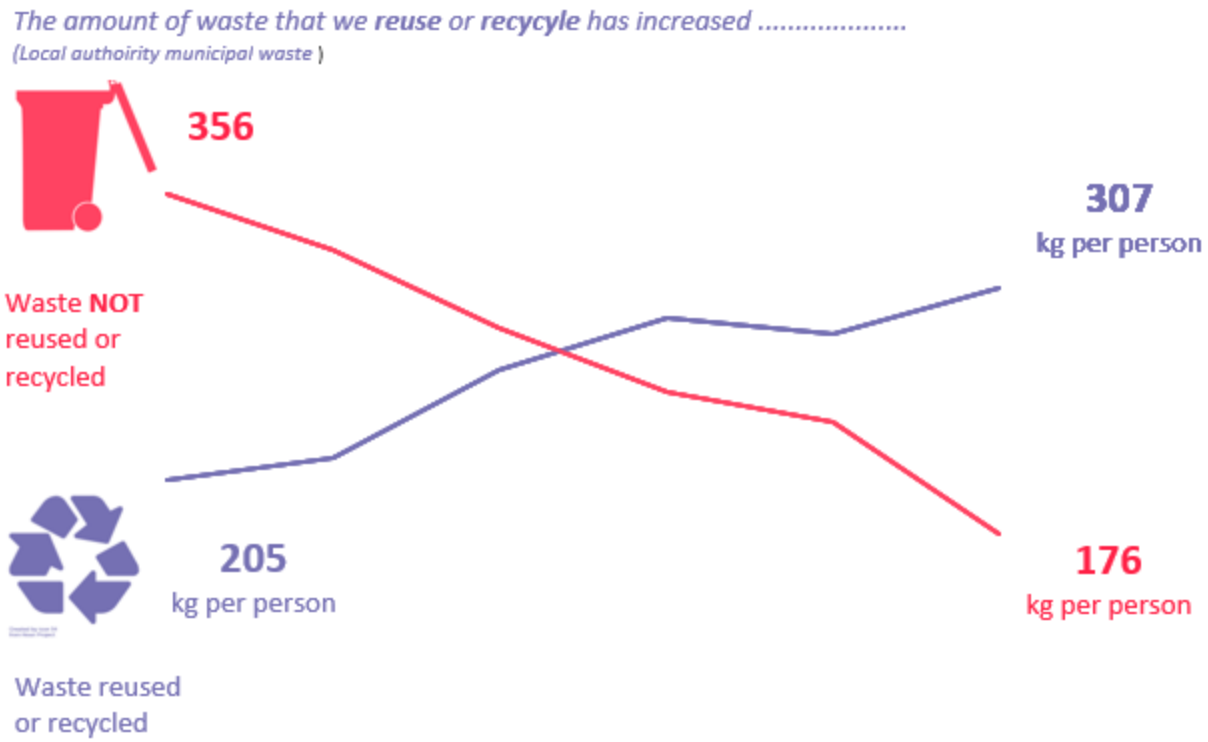
What are the key findings?

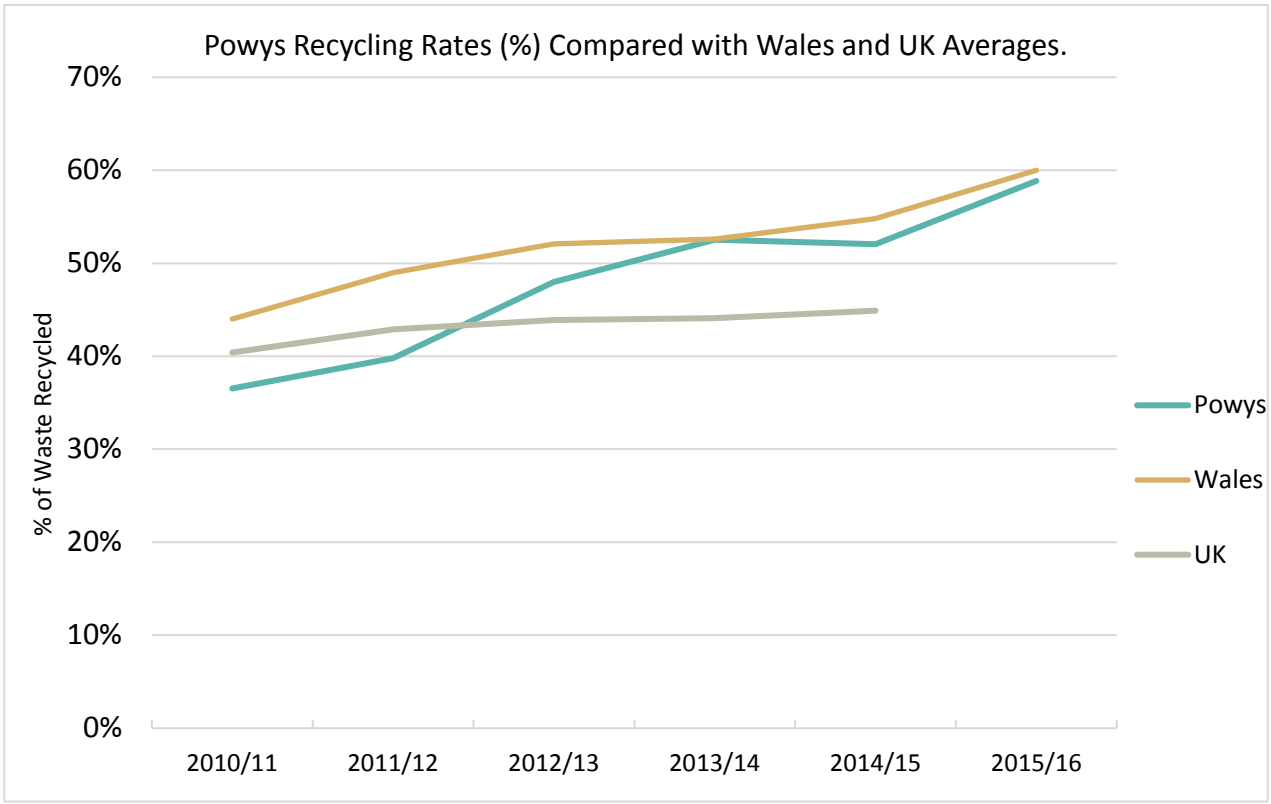
The amount of recycling in Powys has been increasing since 2010 with the amount of material being sent to landfill at its lowest level yet (Welsh Government, 2015). This is due to improvements in recycling facilities and community and household involvement in recycling programmes. Despite a slight increase in fly tipping incidents since 2012 it is still lower than the Welsh average (Welsh Government, 2015).

In terms of some aspects of street scene, such as highway cleanliness, dog fouling, and graffiti, Powys is consistently seeing a steadily reduced score year on year and is beginning to slip below the Welsh average, although there are indications that these trends may be reversing (PCC, 2015). These issues will become more challenging in the future with further austerity and reduced funding combined with increased recycling targets. However, as Powys' elderly population grows and fewer and fewer families remain in the county, pressure is likely to ease as less waste overall is produced.

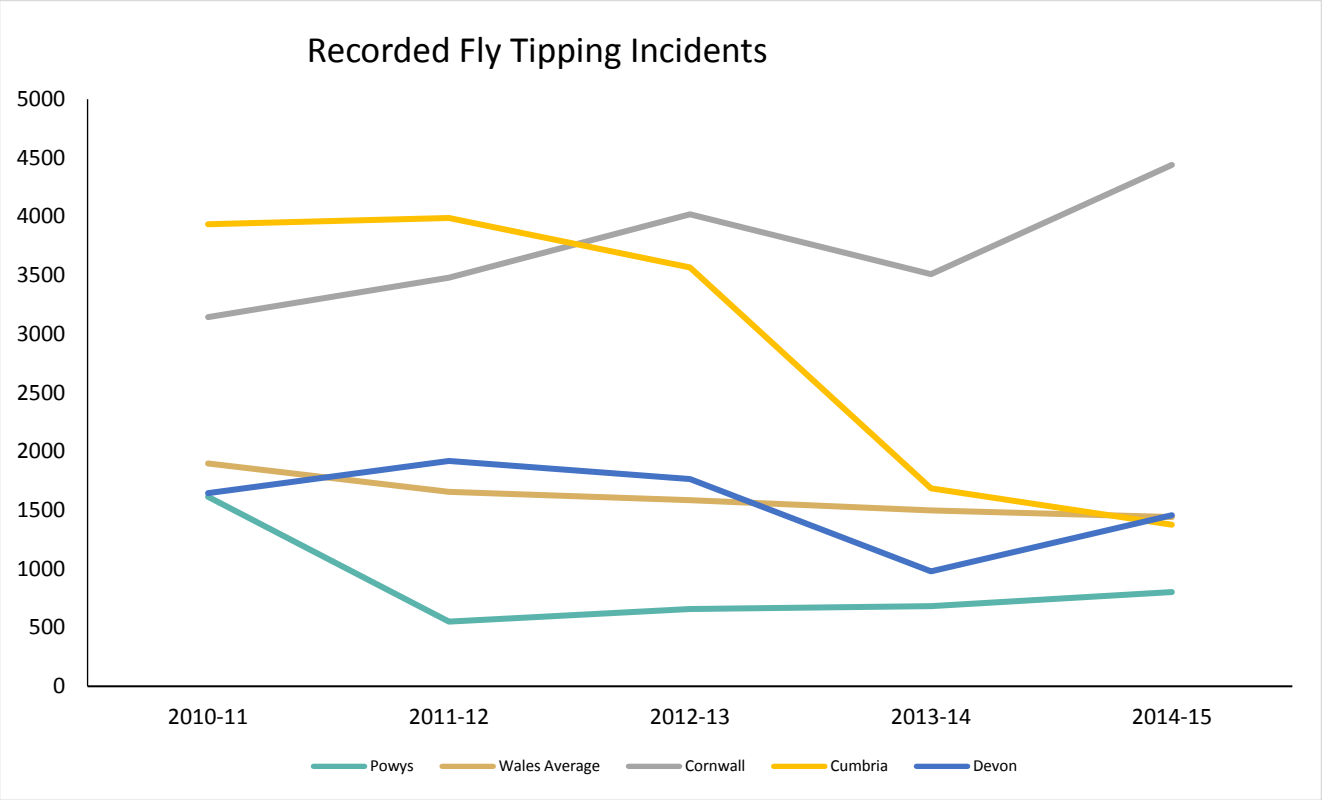
What does the data tell us?

In Powys, the amount of waste not reused or recycled has been falling since 2010. The recycling rate has also been increasing each year, despite a slight dip in 2013 and 2014, caused by changes in the regulations about recycling windfall leaves (Welsh Government, 2015). Regardless, Powys' recycling rate increase over the past five years has outpaced Wales and the UK, with a rate of 200%. Powys currently operates 60 bring sites covering 7 material streams, as well as collecting 4 streams at the kerbside. Additionally, less and less biodegradable waste is being sent to landfill (Department for Environment, food, and Rural Affairs, 2016). In addition to improving recycling rates, the number of fly tipping incidents has also decreased since 2010, although there has been evidence of a slight upward trend since 2012, though this is still below the Welsh average (Welsh Government, 2015). Since 2012, Powys score for street cleanliness has continued to drop at a steady pace, and has now dropped below the Welsh average of 68.4. This has been attributed to issues such as dog fouling and graffiti (PCC, 2015).




Powys Recycling Rates (%) Compared with Wales and UK Averages.
70%
60%
50%
40%
30%
20%
10%
0%
% of Waste Recycled
2010/11
2011/12
2012/13
2013/14
2014/15
2015/16
Powys
Wales
UK


PRODUCT (NON-WASTE)
PREVENTION
WASTE
PREPARING FOR RE-USE
RECYCLING
RECOVERY
DISPOSAL


Recorded Fly Tipping Incidents
5000
4500
4000
3500
3000
2500
2000
1500
1000
500
0
2010-11
2011-12
2012-13
2013-14
2014-15
Powys
Wales Average
Cornwall
Cumbria
Devon

Are there any specific locality differences?

This information was not available, but has been identified as a data gap.

What do citizens say?

Residents definitely concerned over collection frequencies for kerbside refuse, however project has run successfully and has continued landfill reductions and increased recycling rates.

What do staff say?

Population Assessment Staff Questionnaire: Waste: 'Are there any unmet needs in your area, if there are, what are these unmet needs or gaps in provision?': "Isolated properties or elderly residents with limited transport facilities and restricted physical ability, not being served due to various essential policy. Residents with carers not willing to deal with waste. The enforcement of penalties for the incorrect disposal of waste."

Isolated properties and Elderly/Disabled Residents

We already provide assisted collections for those who meet the criteria. However, we understand that this only helps those who reside close to a highway. Unfortunately, we cannot send recycling or refuse crews up private lanes to isolated properties. This would render it impossible to service all households in Powys within the current timeframe given our resources. Also, there is the issue of potential altercations surrounding damage to vehicles from poorly managed lanes, or vice versa, around damage to private property from our vehicles. Although the Waste department may not provide a perfect service in every case, we will and do still collect the waste/recycling from all Powys households from designated collection points. Perhaps a formal working partnership with social care teams could bridge the gap between resident and collection point in these cases.

Enforcement

We are aware that previously our enforcement action has been limited. However this was due to a lack of resources to follow up on incidents. Following a restructure of the Waste Awareness and Enforcement team over the past year, we are rectifying this and have, since April, been pursuing enforcement keenly across Powys.

What does the third sector/private sector say?

This information was not available, but has been identified as a data gap.

Are there any preventative measures associated with this data?

Links to other departments/issues as previously discussed: Climate change, Circular economy, Protecting enjoying landscapes (fly-tipping, reduction in landfill sites).

What we don't yet know?

- Data gap: cannot accurately narrow down recycling rates by area currently. Looking to improve this.

- Fly-tipping incidents now logged against region (North, Mid and South), but do not have a complete year of data until end of 2016/17 financial year.

National Trends

Recycling rates in Powys have increased quicker than Wales & UK averages. Overall Recycling rates currently higher than UK average but lower than Wales's average. Fly-tipping incidents per 1000 people in Powys are fewer than Wales's average, as well as many other similarly rural and low population density Authorities. Biodegradable waste sent to landfill in Powys is 40% lower than the Welsh Government Landfill Allowance Scheme limit, directly in line with Wales as a whole.

Scenario

Short Term

Budget constraints will make it harder to maintain recycling rates over the coming few years, especially with the ongoing Household Waste Recycling Centre review. These facilities provide an effective way to manage the separation of waste without expensive investment in Material Recovery Facilities.

Increased enforcement activity should help to reduce the impact of fly-tipping in Powys over the next few years. Continued investment (in both budget and staffing) is required to maintain this, however.

Medium Term

With austerity set to continue, budget constraints are likely to continue. Welsh government targets for recycling rates will have increased again, and budget shrinkage will make these more challenging to achieve.

Long Term

The population projections suggest that our elderly population will grow in this time frame, yet our overall population is likely to shrink slightly. For waste, this has the potential to reduce the amount of waste produced in the County, as elderly couples produce less than young families with children. This could reduce the pressure on recycling rate targets. However, the recycling industry is rapidly evolving, as are technologies to deal with waste. Over this time frame, this could provide more efficient means of recycling waste and additionally reduce pressure.

How do services currently contribute?

By successfully achieving the recycling rates set out in the Wales Waste Measure 2010, the Waste and Recycling department have prevented the Authority being fined by Welsh Government. By coming on average 40% under the Landfill Allowance Scheme Limit on biodegradable waste sent to landfill, Powys has directly reduced its contribution to greenhouse gas emissions and the subsequent impacts on climate change. By increasing the amount of material re-used or recycled in Powys by strong margins, coupled with the majority of its primary reprocessing occurring in Powys or Wales, Powys is building a stronger circular economy for the County and Wales as a whole. The increased recycling of material also reduces climate change impacts through lower energy requirement and carbon footprint associated with secondary processing or materials compared with primary resource extraction/processing.

Is need being sufficiently met?

This information was not available, but has been identified as a data gap.

Climate Change

Prosperous Powys	Resilient Powys	Healthier Powys	Equal Powys	Cohesive Powys	Vibrant Powys	Globally Responsible Powys
	☆					☆

What are the key findings?

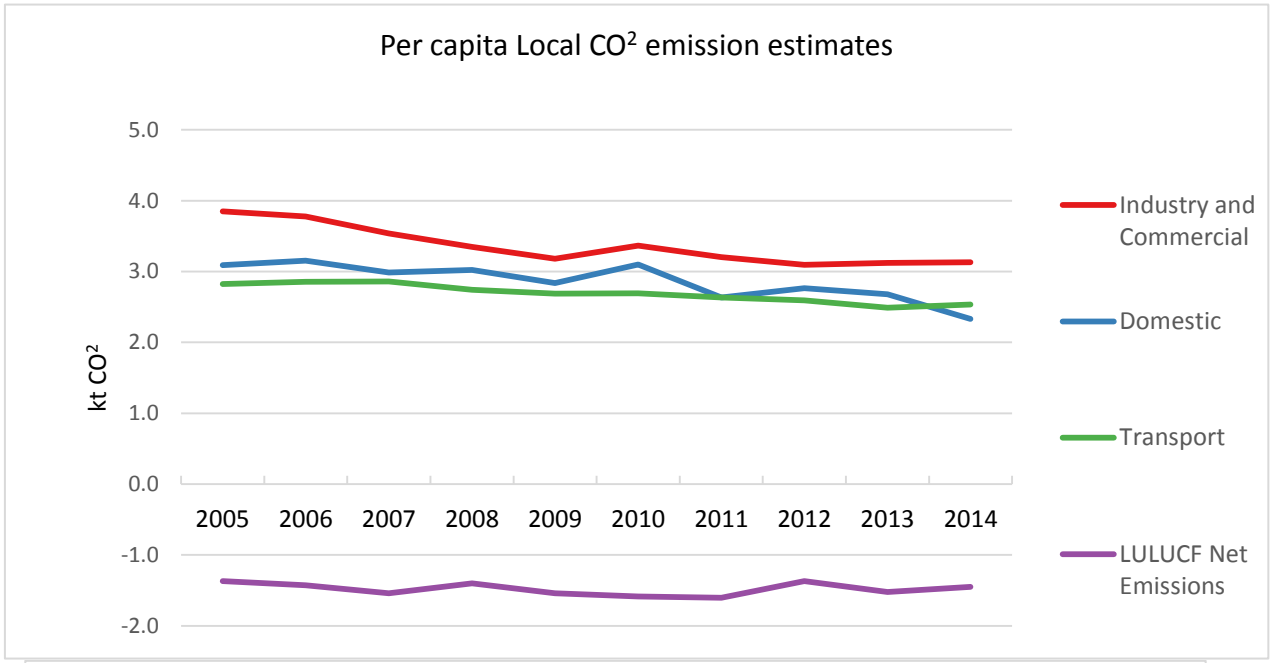
The global climate is changing, with greenhouse gas emissions from human activity the dominant cause. The global increase in temperature of 0.85°C since 1880 is mirrored in the UK climate, with higher average temperatures and some evidence of more extreme weather events (Department for Energy and Climate Change, 2016). With current global policies we can expect to see annual global temperature rises of 3-4 degrees centigrade this century. The changes this will bring will affect every aspect of our daily lives and the natural environment.

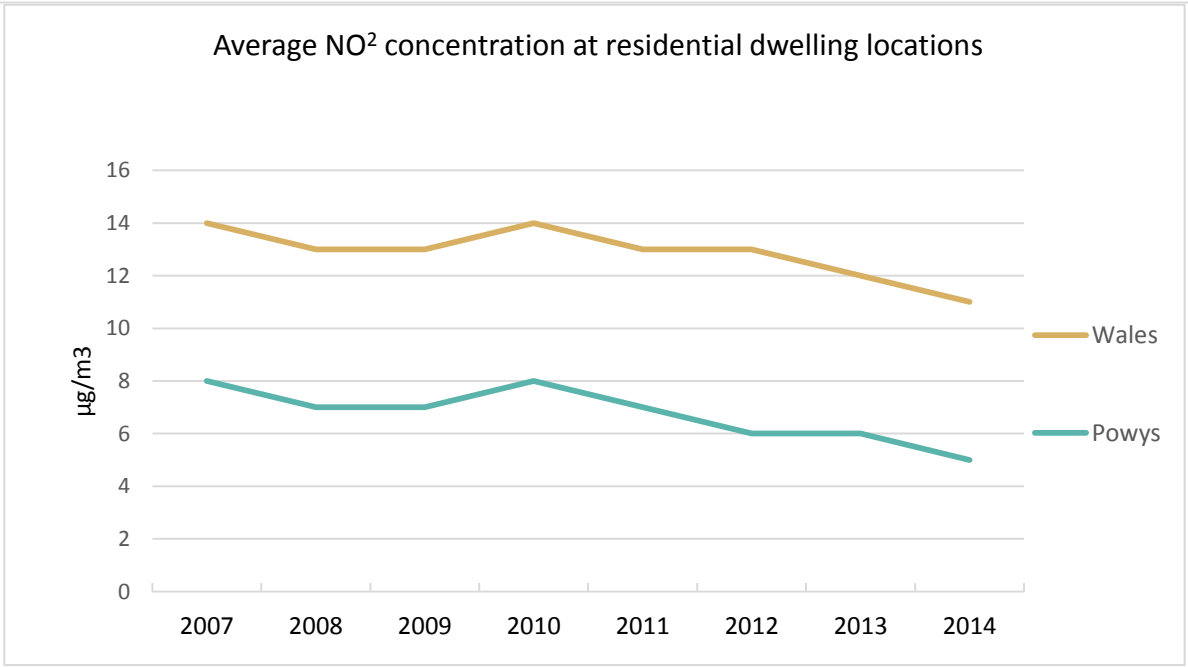
What does the data tell us?

Annual UK temperatures have increased, resulting in milder winters and hotter summers in the recent decades. Since 1900, sea levels have risen by between 15 and 20 centimetres (Natural Resources Wales, 2016). Of the 22 Welsh local authorities,

17 reduced their carbon dioxide emissions between 2005 and 2010 (ONS, 2014). Powys overall decreased its CO2 emissions from 1,093.1 kt to 868.7 kt, which is in line with the Welsh average (DEFRA, 2016). Levels of NO2 (Nitrogen Dioxide) have also fallen between 2007 and 2014, from 8 µg/m3 to 5 µg/m3, a decrease of 38% (DEFRA, 2016). However, this decrease is below the Welsh average.

N.B The LULUCF sector covers emissions and removals of greenhouse gases resulting from direct human-induced land use, land-use change and forestry activities

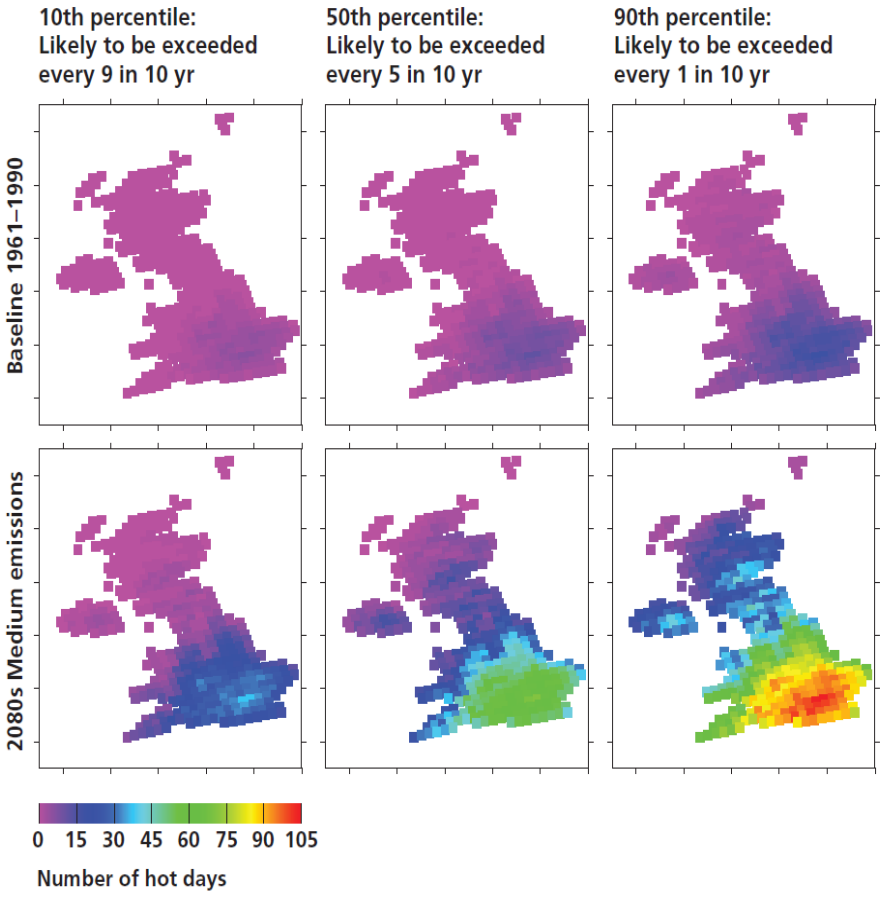




Flooding and coastal change risks to communities, businesses and infrastructure (Ch3, Ch4 **Ch5**, Ch6)	**MORE ACTION NEEDED**
Risks to health, well-being and productivity from high temperatures (**Ch5**, Ch6)	
Risk of shortages in the public water supply, and for agriculture, energy generation and industry (Ch3, **Ch4**, Ch5, Ch6)	
Risks to natural capital, including terrestrial, coastal, marine and freshwater ecosystems, soils and biodiversity (**Ch3**)	
Risks to domestic and international food production and trade (Ch3, Ch6, **Ch7**)	
New and emerging pests and diseases, and invasive non-native species, affecting people, plants and anmals (Ch3, **Ch5**, Ch7)	**RESEARCH PRIORITY**
NOW ----→ RISK MAGNITUDE ----→ **FUTURE** — LOW / MEDIUM / HIGH	

Note: Future magnitude is based on a combination of climate change and other drivers of risk (e.g. demographic change), taking account of how current adaptation policies and plans across the UK are likely to reduce risks. The urgency categories are defined as follows:

- ***More action needed:*** New, stronger or different government policies or implementation activities – over and above those already planned – are needed to reduce long-term vulnerability to climate change.
- ***Research priority:*** Research is needed to fill significant evidence gaps or reduce the uncertainty in the current level of understanding in order to assess the need for additional action.
- ***Sustain current action:*** Current or planned levels of activity are appropriate, but continued implementation of these policies or plans is needed to ensure that the risk continues to be managed in the future. This includes any existing plans to increase or change the current level of activity.
- ***Watching brief:*** The evidence in these areas should be kept under review, with long-term monitoring of risk levels and adaptation activity so that further action can be taken if necessary.



Are there any specific locality differences?

Climate change is a global issue and the impact is being measured at an all-Wales level, rather than a local authority area level.

What do citizens say?

• During Stakeholder consultation as part of the NRW led 'Dyfi' Natural Resource Management trial in 2016 - members of the public were aware of and concerned about climate change & felt that we needed to do more to adapt

• Issues captured at Stand-up for Mental Health networks meetings. "People being at a loss about how best to adapt to the progressive impacts of climate change (many)"

What do staff say?

Public sector staff are responsible for delivering the Welsh Governments 'Climate Change Strategy for Wales' and associated delivery plan. This plan set targets to reduce greenhouse gas emissions in Wales by 3% every year and achieve at least a 40% reduction by 2020 compared to figures from 1990. Staff are supportive of measures to combat climate change such as energy efficiency, waste reduction, renewable energy and habitat restoration.

What does the third sector/private sector say?

Third sector organisations, particularly environmental organizations such as RSPB, National Trust and Woodland trust are supportive of measures to combat climate change such as energy efficiency, waste reduction, renewable energy and habitat restoration and often lobby government on these issues. For example, RSPB say 'The effects of climate change on the wildlife and wild places we know and love can already be seen'

Are there any preventative measures associated with this data?

- It is generally accepted that, as a society, we need to reduce our carbon emissions. We need, for example, to: make our offices more energy efficient; reduce the need to travel and travel in more fuel efficient vehicles (be they trains, buses or small cars).
- We need to prepare for the effects of climate change that are already happening by, for example, ensuring new developments can deal with surface water flooding.
- We need to continue to invest in energy efficient homes & renewable energy.
- Regarding Climate Change Adaptation, the first step is to improve our resilience to current weather extremes (such as surface water flooding). "Working with Nature" to build resilience through this period of rapid transition will be a key priority.

What we don't yet know?

Though we have a good indication Surface Water Flooding has been identified by the group as a data gap. We are awaiting input from the Senior Land

National Trends

The UKCP09 projections provide an overview of the situation with regard to climate change in the UK. In Wales, we can expect to see more intense rainfall, more flooding in low-lying coastal areas as well as hotter, drier summers. The projections also foresee more extremely warm days, milder and wetter winters, less snowfall and frost as well as lower groundwater levels.

Scenario

Short term, medium term and long term

The table below sums up the short, medium and long term scenarios and severity.

Figure 1: Top six areas of inter-related climate change risks for the United Kingdom

Note: Future magnitude is based on a combination of climate change and other drivers of risk (e.g. demographic change), taking account of how current adaptation policies and plans across the UK are likely to reduce risks. The urgency categories are defined as follows:

- ***More action needed:*** New, stronger or different government policies or implementation activities – over and above those already planned – are needed to reduce long-term vulnerability to climate change.
- ***Research priority:*** Research is needed to fill significant evidence gaps or reduce the uncertainty in the current level of understanding in order to assess the need for additional action.
- ***Sustain current action:*** Current or planned levels of activity are appropriate, but continued implementation of these policies or plans is needed to ensure that the risk continues to be managed in the future. This includes any existing plans to increase or change the current level of activity.
- ***Watching brief:*** The evidence in these areas should be kept under review, with long-term monitoring of risk levels and adaptation activity so that further action can be taken if necessary.

How do services currently contribute?

Various agencies & the government are encouraging low carbon domestic & commercial energy generation through grant and tariff schemes. Agri-

environment schemes continue to support carbon capture & storage through grants for activities such as peatland restoration, tree planting etc.

Is need being sufficiently met?

No. Global emissions will need to peak soon and then decline rapidly for the Paris Agreement goals to be feasible. Even in this scenario the uncertain sensitivity of the climate to greenhouse gases means there would remain at least a small chance of 4°C or more of warming by 2100. It is therefore prudent to prepare for further warming whilst pursuing more stringent emission reductions as part of the global effort.

Resilient Environment

Prosperous Powys	Resilient Powys	Healthier Powys	Equal Powys	Cohesive Powys	Vibrant Powys	Globally Responsible Powys
	☆					☆

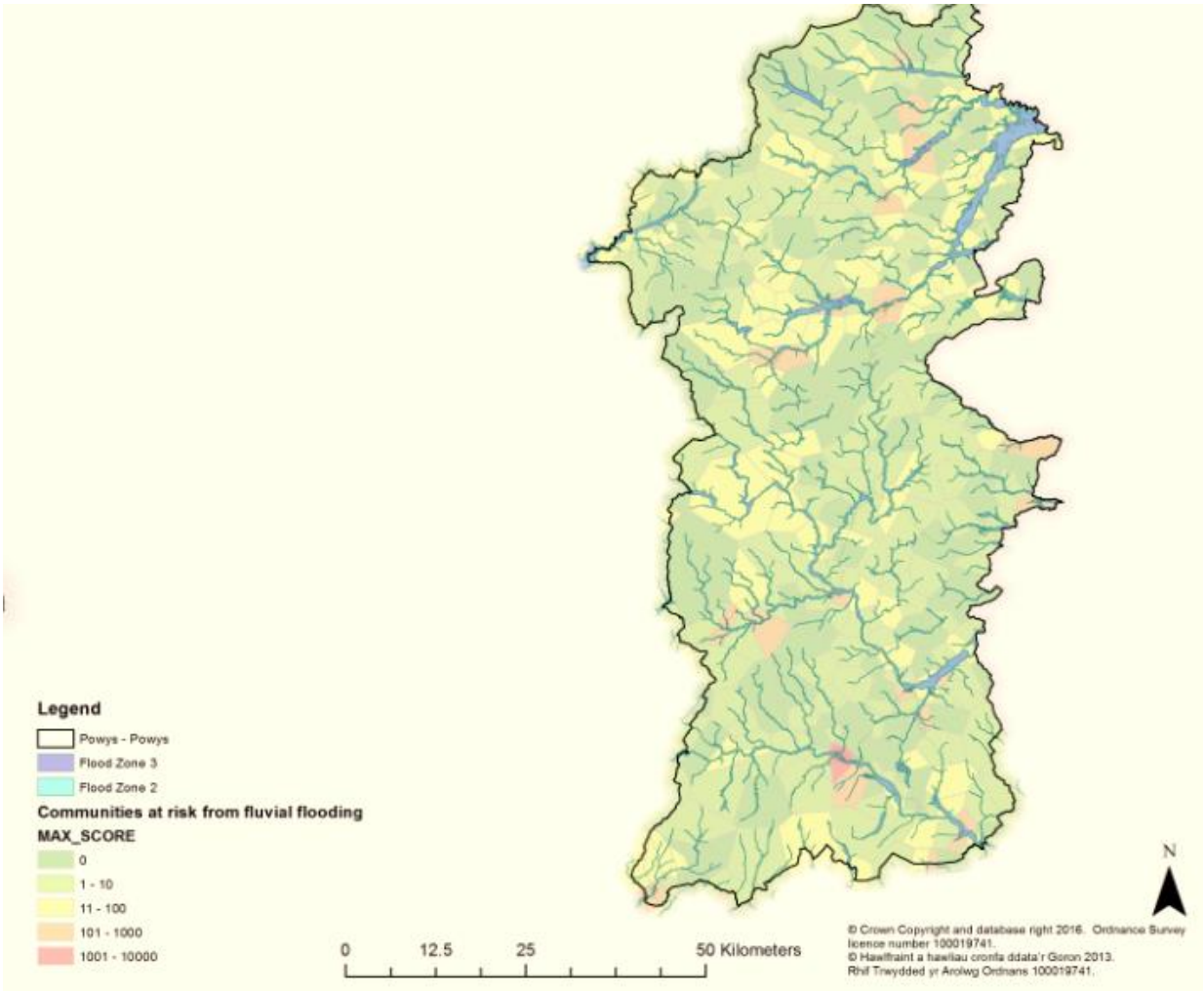
What are the key findings?

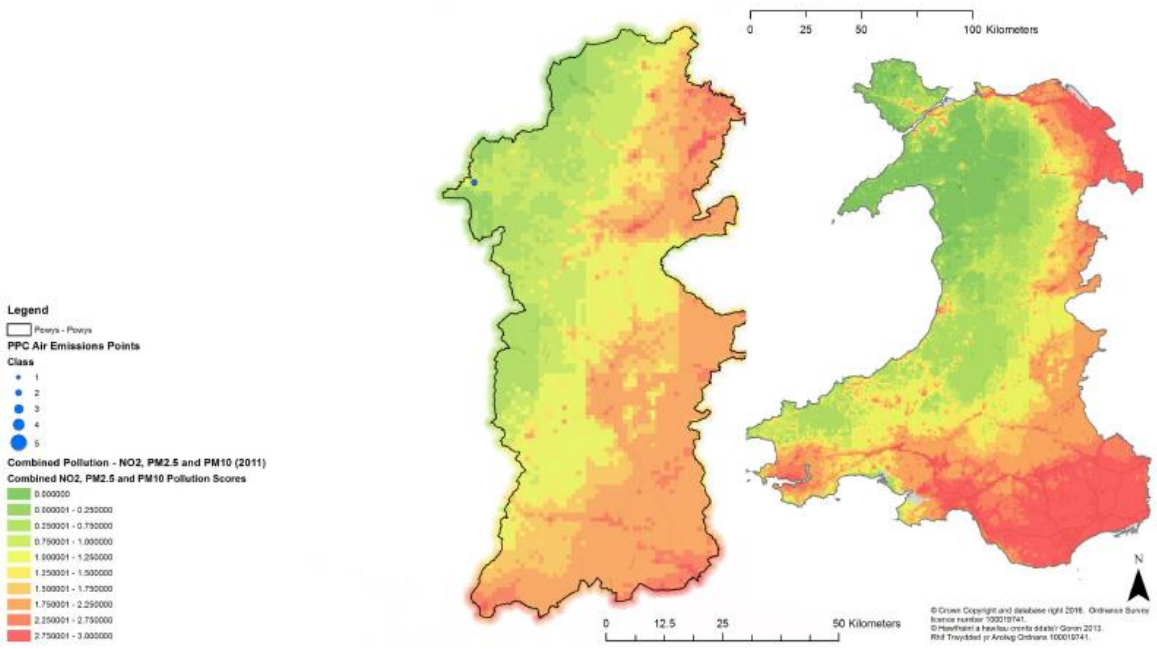
The natural environment and natural resources of Powys provide us with our basic needs. They provide clean air and water; help protect us from flooding; provide us with food, timber minerals and a landscape that both residents and visitors can enjoy. A healthy, resilient environment creates the conditions for a thriving and sustainable society. However, evidence shows that our natural environment continues to be put under pressure from a variety of sources such as climate change, new pests and diseases, pollution, overuse and development pressure. At present, several water sources in Powys are contaminated with pollutants (NRW, 2016). There is also an impact on water quality resulting from disused mines in Powys, in some cases contaminating underground water flows with metal run off (NRW, 2016). This in turn is affecting water quality, wildlife and animal health for many miles downstream. Large, isolated areas of Powys are also noticeably prone to flooding, particularly agricultural areas (Welsh Government, 2008). The size of Powys' total woodland is slightly above the Welsh average and contributes to Welsh timber industry. However, for a largely rural county, woodland cover is relatively low (under 15%) compared to a European average of 37% (NRW, 2016). Powys also maintains a large number of site of special scientific interest (SSSI) as well as nature reserves though these sites are generally small and scattered. Some of these sites are also in poor condition. Powys also has several peat bog areas, though at present many are in poor condition and not realising their potential in terms of use for carbon storage (this reflects insufficient resources). Biodiversity across the area is steadily decreasing in line with the rest of Wales and interventions are either not taking place or are insufficient. There are real opportunities to build the resilience of natural resources to support the social, economic and cultural well-being of the people of Wales. We must seize the initiative to position Wales as a leading

economy, building the resilience and health of our natural resources and people (SoNaRR, 2016).

What does the data tell us?

At present in Powys, a total of 6,650 homes are deemed to be at risk from flooding (Welsh Government, 2008). Due to a number of low lying roads, large areas and major infrastructure can be affected by relatively localised flooding. Woodlands cover 14.9% of the county, slightly above the 14% Welsh average (NRW, 2016). These forest produce over 200,000 tonnes of timber each year (NRW, 2016). In addition, forests help provide clean air, store carbon, and reduce the risk of flooding. Some areas of semi-natural ancient woodland are currently threatened by overgrazing. The recent rapid expansion of chicken farms in Powys (of which there are currently 789 registered sites (PCC, 2016)) has the potential to affect water quality and will need to be carefully managed to avoid these issues in future.




Legend
Powys - Powys
PPC Air Emissions Points
Class
1
2
3
4
5
Combined Pollution - NO2, PM2.5 and PM10 (2011)
Combined NO2, PM2.5 and PM10 Pollution Scores
0.000000
0.000001 - 0.250000
0.250001 - 0.750000
0.750001 - 1.000000
1.000001 - 1.250000
1.250001 - 1.500000
1.500001 - 1.750000
1.750001 - 2.250000
2.250001 - 2.750000
2.750001 - 3.000000
0
25
50
100 Kilometers
0
12.5
25
50 Kilometers
N
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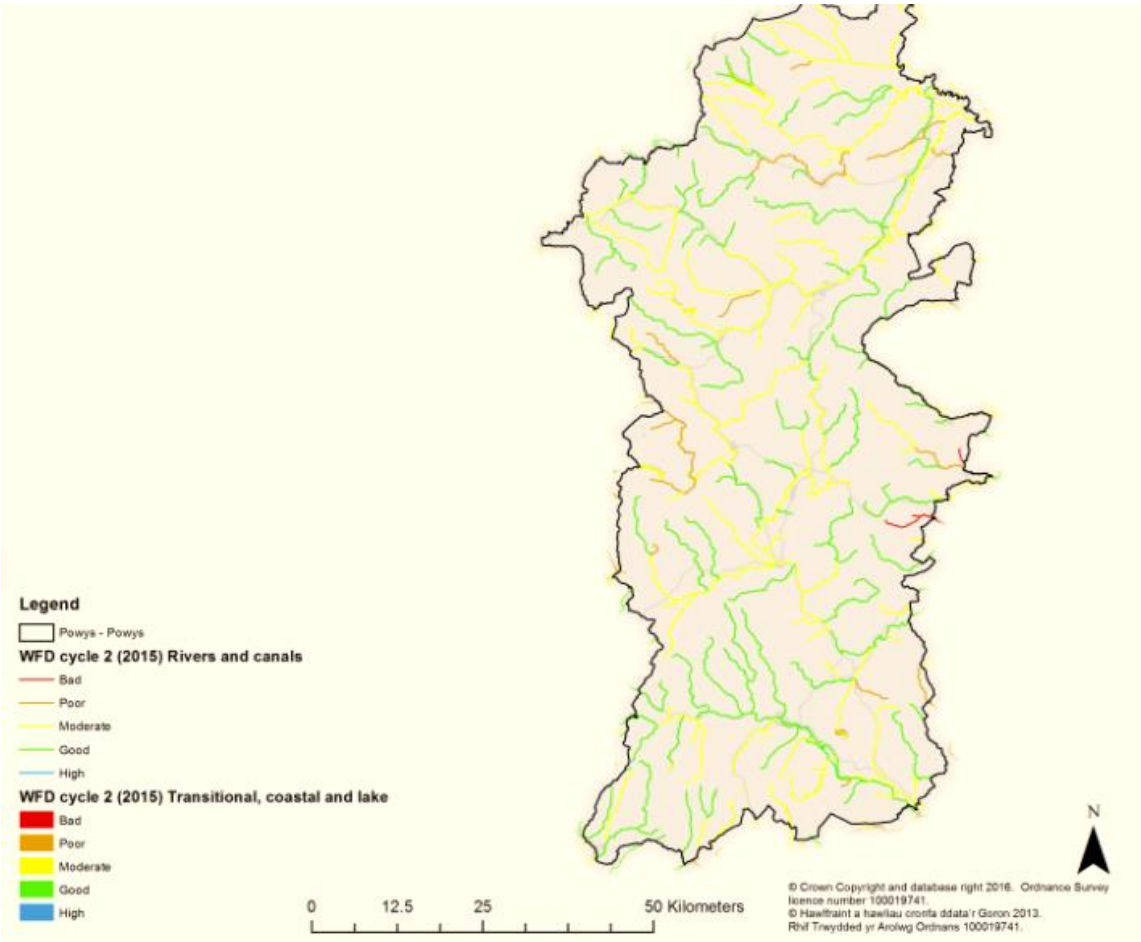
Legend
Powys - Powys
WFD cycle 2 (2015) Rivers and canals
Bad
Poor
Moderate
Good
High
WFD cycle 2 (2015) Transitional, coastal and lake
Bad
Poor
Moderate
Good
High
0
12.5
25
50 Kilometers
N
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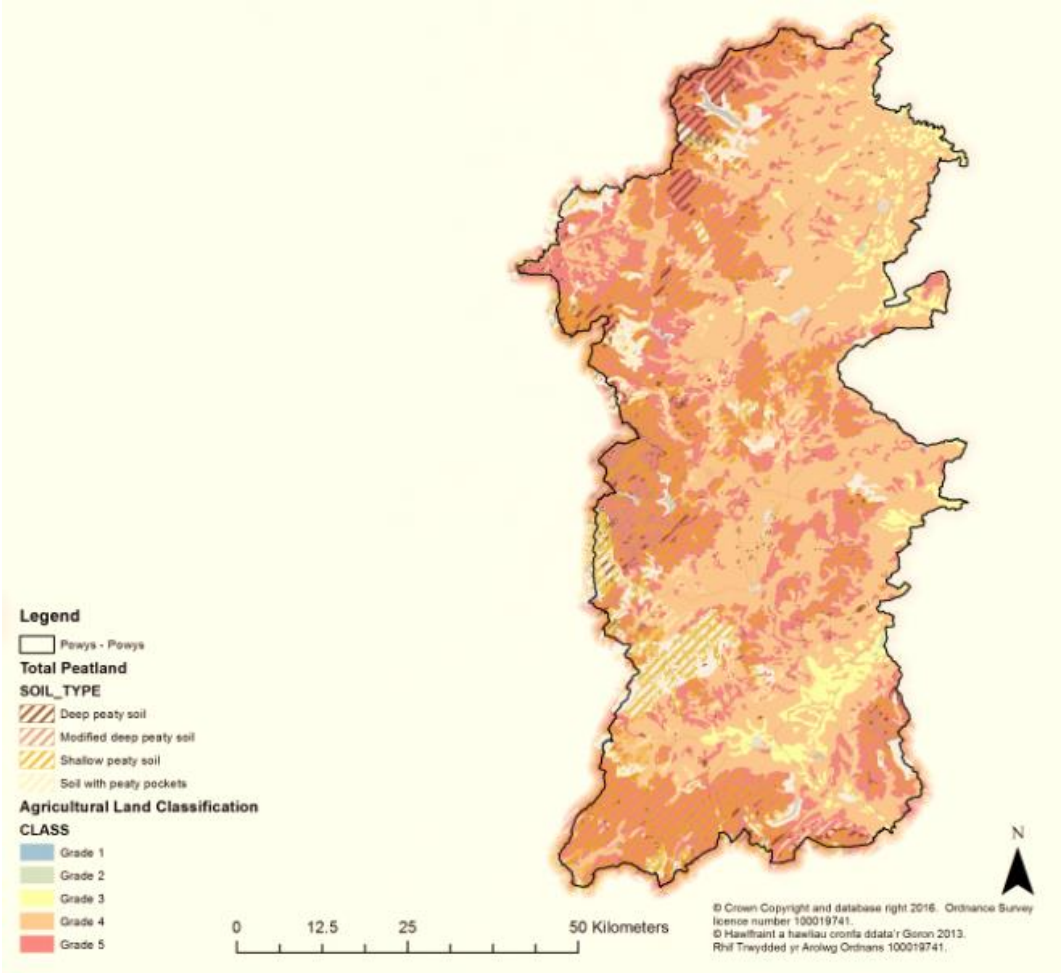


Are there any specific locality differences?

Peat is widespread in the upland blanket bogs of Berwyn, Carnedd Wen, the Cambrians, Carno plateaux and the BBNP while purple moor grass (Molina) is mainly an issue of the Cambrian Mountains. Erosion is a local, but severe, issue for blanket peat, especially in the BBNP area. Other semi natural habitat, such as semi improved grassland and broadleaved woodland is generally small & scattered within the agricultural landscape. Recent protection measures for the rivers Wye and Usk protect water flows to ensure that too much water is not abstracted. This also supports designated species and habitats.

What do citizens say?

Though no figures exist for Powys alone, one in ten adults in the UK are members of landscape/ conservation groups and the general public are generally supportive of conservation and environment measures.

What do staff say?

Public sector staff in Powys are supportive of policies to enhance and improve the environment.

What does the third sector/private sector say?

Large & prominent environmental/landscape third sector organisations such as the National trust, RSPB, Woodland Trust and others are strong advocates of a resilient environment.

Are there any preventative measures associated with this data?

There are three main actions that can build a resilient environment include:

- Reduce/ re-design bad practice – such as polluting the environment and habitat removal.
- Improve the condition and increase the extent of natural habitats so that they are able to help store carbon; contribute to reducing flood risk; safeguard soils; improve air quality; reduce noise; and regulate pests and diseases.
- Educate and inform people the public so that they care for and carefully manage the environment.

What we don't yet know?

We do not know the condition of some habitats in Powys and whether it can be successfully restored.

National Trends

The number of houses in Wales at significant or moderate risk of flooding has fallen noticeably between 2010 and 2012. Powys has a slightly higher than average amount of land used for forestry compared to the Wales average.

Scenario

Short and medium term

At current levels of intervention, biodiversity is likely to continue to decline with existing habitats becoming less resilient to climate change and other

Long Term

Regulation - (such as the Water framework directive) & incentive schemes - (such as the Glastir Agri-environment schemes and other grant schemes) all contribute to a more resilient environment.

How do services currently contribute?

Regulation - (such as the Water framework directive) & incentive schemes - (such as the Glastir Agri-environment schemes and other grant schemes) all contribute to a more resilient environment.

Is need being sufficiently met?

No. We need to do more to reduce rural diffuse pollution in particular, help reduce flooding, restore wildlife habitat - particularly peatlands and consider more tree planting.

Enjoying the Environment

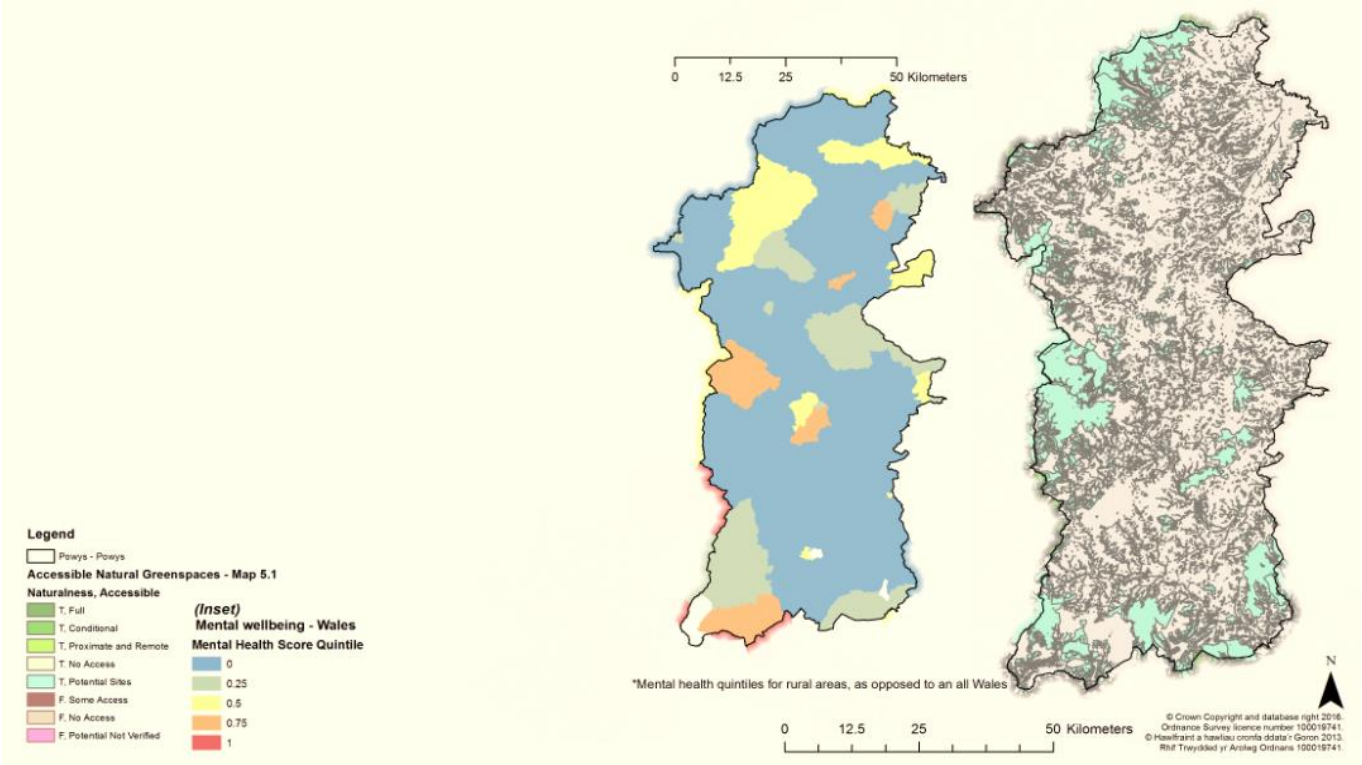
Prosperous Powys	Resilient Powys	Healthier Powys	Equal Powys	Cohesive Powys	Vibrant Powys	Globally Responsible Powys

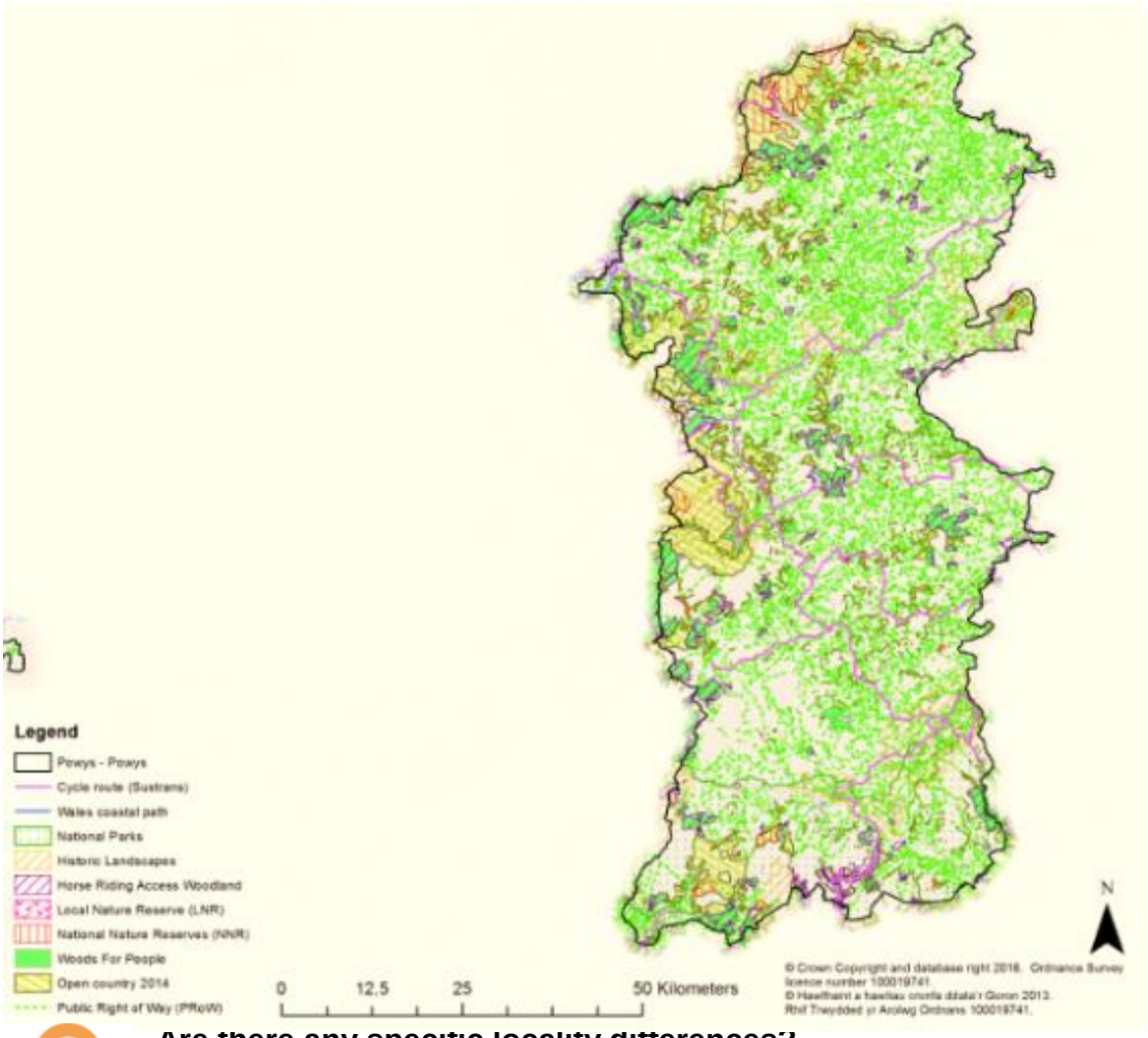
What are the key findings?

The natural environment of Powys - our mountains, rivers, lakes and lowland landscapes give us a fantastic environment in which to live, work and recreate. They provide a backdrop for the tourist industry and help us lead healthier and better lives. A healthy resilient environment creates the conditions for a thriving and sustainable society. However, we are not maximising the benefits from our natural environment that could help residents lead healthier lives; encourage outdoor and other forms of tourism; and support the prosperity of the county. People who are active and enjoy the outdoors are more likely to live longer, healthier and happier lives. There is also strong evidence linking poor environmental quality (air quality, Water quality etc) with poor public health.

What does the data tell us?

Powys has a large network of Rights of Way and cycle routes, including footpaths and bridle paths. Issues relating to these include the maintenance of these paths, accommodating the needs of multiple users, and increasing demand for access (Welsh Government, 2011). Outdoor recreation can make a large contribution to physical health and the mental well-being of the population, while using these routes for regular travel can cut down on carbon emissions. Rivers, such as the Wye, can also play a key part in recreation, but also requires significant maintenance as a result (NRW, 2014). Other rivers, such as the Severn, experience issues relating to pubic rights of navigation. Despite living in a county with large areas of green space, not all resident have access to them.





Are there any specific locality differences?

According to the Powys Residents satisfaction Survey, 60% of residents are satisfied with Rights of Way in the County. This does not include open access that is approximately one third of the total Wales provision.

What do citizens say?

Within the Dyfi Natural Resources trial (which covers part of Powys) – residents and stakeholders identified Connecting people with the outdoors as one of 6 key priorities. According to the Powys Residents satisfaction Survey, 60% of residents are satisfied with Rights of Way in the County (this does not include open access that is approximately one third of the total Wales provision).

What do staff say?

Staff are supportive of and involved in the development of green infrastructure/ green play and active travel projects. Staff are also involved in ensuring public rights of way remain open.

What does the third sector/private sector say?

Non-Governmental Organisations are supportive of access & enjoyment of the countryside. For example, the National Trust policy is to ensure that the countryside retains characteristics which afford the widest range of experiences and enable people to enjoy access to its properties.

Are there any preventative measures associated with this data?

Even in our 'green' county, not everyone has access to the green space required to maintain physical health and mental well-being. Path networks, urban woodlands and other green infrastructure aimed at enhancing the quality and accessibility of the local environment can all play an important role in improving the health and well-being of people in Powys. But these are not always located near to the people that would benefit from them most, or are not managed in ways which make them.
There are many opportunities to better utilise our natural resources to: improve the recreation, access, landscape & heritage resource to support healthy lifestyles, improve the county as a place to live and work and improve the tourist offer.

What we don't yet know?

Providing true customer satisfaction by asking whether the public rights of way meets the users' needs, although useful is not really a good figure for measuring performance.

National Trends

Wales has a higher percentage of public rights of way that are easier to access (55%) compared to Powys (50%). Powys also has 60% of adults who are overweight/ obese which is below the Wales average (still relatively high).

Scenario

Short Term

This information was not available, but has been identified as a data gap.

Medium Term

This information was not available, but has been identified as a data gap.

Long Term

This information was not available, but has been identified as a data gap.

How do services currently contribute?

Local authorities currently have a remit to improve Rights of Way and NRW & WG both have recreation & education strategies

Currently the Service has over 3000 outstanding reports to resolve on the public rights of way network, and the situation is deteriorating.

Is need being sufficiently met?

There is much unrealised potential for more and better outdoor recreation opportunities in Powys that will help drive tourism and improve the health and well-being of the population.

Travelling around Powys

Prosperous Powys	Resilient Powys	Healthier Powys	Equal Powys	Cohesive Powys	Vibrant Powys	Globally Responsible Powys
		☆	☆			

What is the key findings?

For the past decade, across Wales, there has been a sharp increase in the use of railways. However, from 2014 onwards, this trend has reversed in Powys, with rail travel numbers dropping markedly, while Wales as a whole continues to see an increasing trend (ORR, 2013). Powys has two railway lines (The Cambrian Line running through Welshpool and Newtown towards Aberystwyth, and The Heart of Wales lines running from Craven Arms to Llanelli) carrying 110,000 passengers a year.

Bus services are also seeing very limited use. Despite the majority of these services operating through council subsidy, as they would otherwise be running at a loss, only 1% of the population of the county use public buses for regular travel (PCC, 2012). The majority instead use their own vehicles or walk, and report being dissatisfied with the service. Powys has some of the poorest maintained roads in Wales, with the exception of A roads, and even these are falling into a state of severe disrepair in places (Department for Transport, 2015). Despite this however, road deaths and injuries have decreased across Powys, with a 24% reduction since 2004 (Welsh Government, 2015). Over the next few years, these factors are expected to result in further social isolation for Powys' ageing population, as well as causing people to leave the county. This reduction in the

size of communities will make new developments less likely, as well as forcing away existing business. In addition, the deteriorating road network will make it even harder for emergency services to meet their current response targets.

What does the data tell us?

Between 2002 and 2012, there was large increase in the use of the rail network, with passenger numbers rising from 66,541 to 119,283, in line with national trends (ORR, 2013). Over the last two years however, while national trends have continued to increase, Powys has seen a reversal with dropping passenger numbers. Powys Bus Service, which contracts 27 companies, subsidising 25 of them, has one of the highest levels of subsidy per passenger in Wales. Despite this, only 1% of the population of Powys regularly use the bus to travel to work (PCC, 2012). The majority of residents (58%) used their own cars or travelled on foot (11%) (PCC, 2014). Powys has 5,500km of roads, with 1.49 billion kilometres of road traffic in 2015 and has relatively low traffic congestion. Powys has some of the poorest maintained roads in Wales, with only A roads being in a condition above the Welsh average. Powys has a higher than average number of B roads in poor condition, with 67% of B roads in Powys identified as being in poor condition, compared to a Welsh average of 5%. Powys is also the worst in Wales in terms of conditions of C roads, with 27% in poor condition, compared to a Welsh average of 17% (Welsh Government, 2014). In in 2014, there were a total of 582 casualties on Powys' roads. This marks a total reduction of 24% compared to figures from 2004 (Welsh Government, 2015).

Are there any specific locality differences?

This information was not available, but has been identified as a data gap.

What do citizens say?

When Powys Residents Survey Participants were asked if they were satisfied with Public Transport, nearly half of all respondents (45%) are satisfied with the standard of public transport followed by 37% being dissatisfied.

Those residents that might tend to be more reliant on public transport (elderly, low income households) are slightly more likely to be satisfied with the service, but figures are generally low across the board. Only one in three residents that have recently moved to the county is satisfied with public transport.

The clear views for dissatisfaction with public transport were mainly Number of buses and frequency of services,

Complaints received due to the condition of the highway. Insurance claims from unmaintained highway. Complaints received due to work completed by third parties (Water, Gas & BT).

What do staff say?

People accept that they travel further to come to work. May struggle to recruit in the future due to travel distances involved. The Increase in flexible working arrangements, reduced opportunity to share transport. Technology has a role to play to reduce the need to travel, such as agile working. Local Authority introduced a programme to limit the number of business miles travelled to reduce the year on year costs.

What does the third sector/private sector say?

The length of the highway has major logistical issues when delivering services i.e. attendance at hospital appointments - long distances to travel. Blue light services have difficulty hitting targets due to remote rural location. (Ambulance 8 minutes, Fire 20 Minutes) Private sector - disadvantaged, lack of access to major networks.

Are there any preventative measures associated with this data?

This information was not available, but has been identified as a data gap.

What we don't yet know?

Access to more sustainable modes of transport. Future studies to identify partnership opportunities to share resources.

National Trends

Rail Travel - Increased consistency over the last 10 years.

Road Condition - 11.9% of wales roads are in poor condition.

Road Casualties – 8,208 road casualties in Wales in 2014

Scenario

Short Term

Social isolation, families move out of the area, condition of road deteriorates (Won't improve). Increased insurance claims/pay-outs.

Medium Term

As above, less attractive for development if communities reduce in size. School number start to drop, educational standards may be affected. More businesses close and move.

Increase demand on healthcare, less opportunity to visit G.P, personnel in crisis. Higher intervention from statutory services.

Long Term

As above, nothing in the middle of Wales due to reduced investment in our infrastructure. Natural decline in social well-being. Skilled workers move away due to limited opportunities.

How do services currently contribute?

Network Rail - Arriva trains Wales operating rail service. 22 supported local bus services, 19 community transport schemes, 2 car clubs, 260 school coaches, 40 mini busses, 70 taxis transporting 7500 pupils to educational establishments. Voluntary transport vehicles (Hospital transportation) Private taxis, Welshpool airport, Air ambulance, Highways maintenance, road safety teams, engineering projects/improvements. WG trunk road agency. Active travel Act - encourage sustainable travel.

Is need being sufficiently met?

Services not necessarily being deliver by demand, different users want to travel around the county at different times of the day & night. 'Some people feel unsafe on the bus, especially if it's just them and the driver' (Final feedback report from the public transport public engagement and consultation exercise, June 2015). The changes to services will therefore have a disproportionately adverse impact on young people in Powys. It can be forecasted that as a consequence young people will be:

• Less able to travel to work than other age groups;

• Less able to take up education and training opportunities than other age groups;

• Less able to take up leisure opportunities e.g. sporting or arts activities, or visit friends and relatives.

Complaints being received along with insurance claims (Increasing)