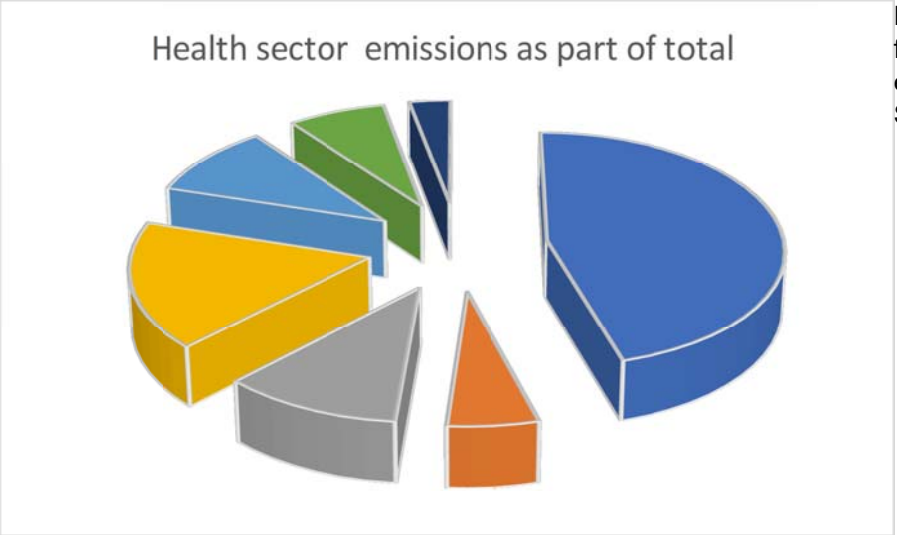
ZCSP Report – Buildings

WORK IN PROGRESS - This document may be incomplete and not peer reviewed.

Comments and corrections are welcome.

Building- Health (B4) Sub Report

A/ Current situation



Health sector buildings account for 11%of total carbon emissions from buildings across Shropshire

Health sector

There are nine significant health sector sites in Shropshire representing a significant contribution to total carbon emissions. These site account for :

Fuel	MW h	tonnes CO2
Imported electricity (net)	12,558	2,928
On site gas use	83,224	15,302
On site oil use	315	84.34

These main site are served by on site CHP plants which in effect reduce imported electricity but increase gas demand. Although providing a net energy benefit he future validity of these systems from the point of view of carbon emissions must be re-evaluated.

Looking ahead, the eventual replacement or part re- purposing of the main Telford and Shrewsbury sites and the building of a wholly new hospital complex will transform these emissions.

How beneficial this change will be is dependent on the planning and energy conscious design of the buildings involved.

The assumed total health sector energy use within the overall baseline figures is :

MWh/year	t Co2	%
895,000	192,951	11%

It is assessed that at least 97,000 tonnes could be saved by moving away from fossil fuels. Across the entire sector. However, since the major health sector sites have a particular issue in their use of CHP systems this shift is not as simple as replacing boiler plant.

Existing providers plans and policies are being evaluated with active carbon reduction plans in place by many. A key next step is to ensure all sites have an understanding of their carbon emissions and actions they can take to eliminate them.

B/ Potential reductions

1. If all reach DEC A or B , overall energy reduction assessed as 25%
2. If balance of heat from non fossil carbon reduction assessed as 12% at current carbon emission factors
3. Review viability of existing CHP in carb on terms

Routes to energy reduction and potential

1. LED
2. Controls
3. Space utilisation
4. Thermal insulation and draft proofing
5. Controlled ventilation
6. New build and disposals

Routes to non fossil fuel operations

1. Heat pumps
2. Hydrogen
3. Heat networks- benefits of combining mixed use buildings load profiles

C/ Timescales

Define priorities and possible/ necessary timelines

D/ Funding mechanisms

Commercial finance, grants and loans , SALIX

E/ Barriers

1. Funding
2. Motivation
3. Skills

F/ References

The following references provide further reading.