

Hearing Session 15 – Renewable Energy

Council's Response to Action Points

Appendix 3

HS15/AP4 - PCC to submit methodology for developers assessing viability of potential district heating networks.

Council Response

The methodology is laid out below (and see worked examples).

All that is required for developers to calculate the Heat Demand Density is the density of dwellings, per hectare, that they are proposing for their site. This figure should then be entered into box 1 of the methodology (see over).

Multiplying this by 100 will then produce a density per square kilometre, which should be entered into box 2.

The figure of 7,477 is the average number of Kilowatt Hours that the average dwelling unit in the UK requires in order to heat it. Therefore the figure from box 2 needs to be multiplied by 7,477 to arrive at the Consumption Density, which is to be entered into box 3. This then represents the amount of heat required to heat the proposed density of housing were that density to cover a whole square kilometre.

Dividing the figure from box 3 by 1000 translates the figure from box 3 into Mega Watt hours required to heat the proposed density of housing were that density to cover a whole square kilometre. This figure should be entered into box 4.

Finally the figure in box 4 needs to be divided by the number of hours in a year (8760) to arrive at the final figure to be entered into box 5. This is the Demand Density that is referred to in Policy DM15. It is this figure that should be used to understand whether the proposed development crosses the 3 Megawatts per square kilometre threshold.

Beneath the equation are two worked examples followed by a discussion of the outcomes that each one yields.

**Proposed
Housing
Density of
site (units
per
hectare)**

**Housing
Density
per km²**

**Consumption
Density
(kWh/km²)**

**Consumption
Density
(MWh/km²)**

**Demand
Density
(MW/Km²)**

X 100 =

X 7,477 =

÷ by 1000 =

÷ by 8760 =

1

2

3

4

5

Worked Example 1. ;

**Proposed
Housing
Density of
site (units
per
hectare)**

**Housing
Density
per km²**

**Consumption
Density
(kWh/km²)**

**Consumption
Density
(MWh/km²)**

**Demand
Density
(MW/Km²)**

X 100 =

X 7,477 =

÷ by 1000 =

÷ by 8760 =

1

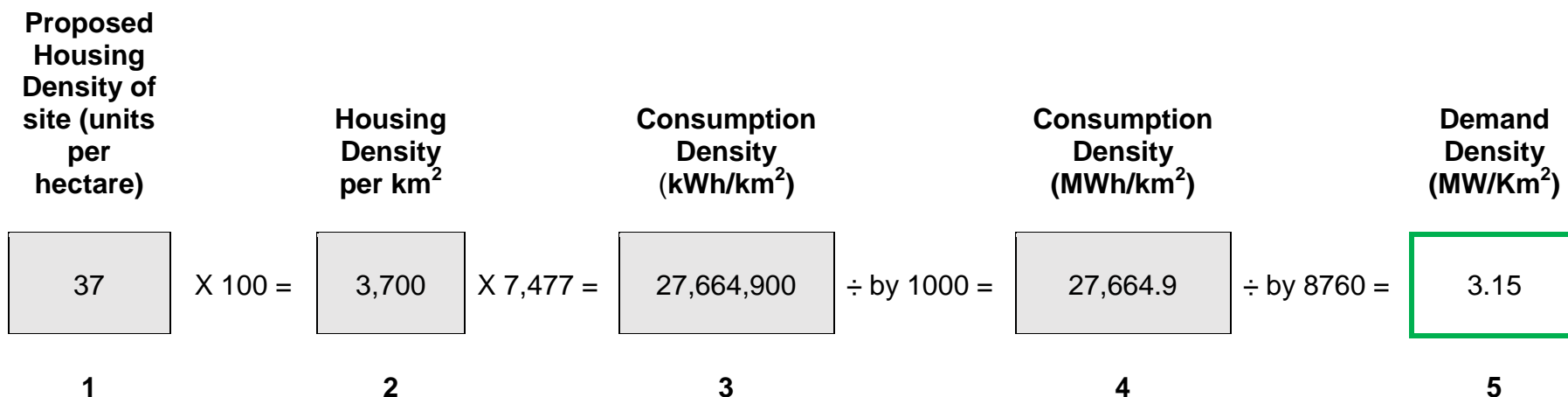
2

3

4

5

Worked Example 2. ;



In Worked Example 1. the methodology has been applied to a development with a proposed density of 24 units per hectare. This has yielded a Heat Demand Density 'score' of 2.04 MW/Km². In this example the score is below the threshold of 3MW/Km² therefore the developer would not be required to take any further action towards investigating the feasibility of using a district heating network.

In Worked Example 2. however the same methodology has been applied to a development with a proposed housing density of 37 units per hectare. This time the Heat Demand Density 'score' is 3.15 MW/Km² which is over the 3MW/Km² threshold. As a result the developer in this instance will now need to undertake a more detailed investigation into the feasibility of using some kind of District Heating Network. As stated previously, the results of that feasibility study will reveal information that the developer will be able to use to decide whether or not they wish to proceed. For instance if the result is that a DHN is viable then it may well be in the best interests of the developer to proceed with that approach. If it is not viable then they would obviously not wish to proceed. In any case the developer is not required to use a DHN whatever the result of the investigation yields.