CER/11/189: Certification Process for High Efficiency CHP Consultation Paper Response

Dalkia Limited
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Background

Dalkia, as part of the Veolia Environnement group, is the leading European Energy Services Company (ESCo) with a turnover of €8.6bn and employing 53,457 energy and service delivery professionals in 42 countries. Dalkia operates in areas such as industrial energy efficiency, heating & cooling networks, global building energy management, biomass and energy conversion efficiency such as combined heat and power.

In Ireland, Dalkia has approx 450 full time employees with a turnover of €85m identifying implementing and operating utilities and energy efficiency opportunities in the healthcare, pharmaceutical, public, hi-tech, food & beverage and industrial sectors through the delivery of operation & maintenance, utilities and energy services. Dalkia, through its majority-owned, joint venture company Dalkia Alternative Energy, is the largest owner and operator of CHP fleet on the island of Ireland.

Dalkia International Experience

As Europe's largest energy services company, Dalkia successfully operate a diverse range of CHP applications in various jurisdictions, including the UK, which has proven to work very effectively in reducing carbon emissions, enhancing security of supply and building local energy industries.

Dalkia and our sister companies, Veolia Environmental Services and Veolia Water, have built and currently operate hundreds of CHP biomass, biogas and bioenergy plants worldwide, for example using waster energy streams from production processes, and we are seen firsthand the widespread energy, socio economic and environmental benefits that such plants bring to national economies.

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1. Comments on "Economically Justifiable Demand"

Having regard to the definition of Economically Justifiable Demand outlined in 2004/8/EC, Article 3 (c) as demand *which would otherwise be satisfied at market conditions by energy generation processes other than cogeneration*, Dalkia consider that the approach being proposed under CER/11/189 (i.e. that CHP supplied heat be evaluated on a stand-alone basis to determine its economic justification) is overly restrictive and counterproductive to the aims of the directive for the following reasons:

- It goes beyond the interpretation of other jurisdictions such as the UK, which, while it seeks to ensure that fiscal benefits of the heat are maintained (CHPQA: GN11.11), is less restrictive than that proposed by the CER in relation to a stand-alone evaluation;

- Well established CHP applications such as District Heating Schemes (DHS), of which Dalkia is Europe's largest independent operator, reply on the supply of low cost energy from CHP. There is a symbiotic relationship between the CHP heat production and the investment in DHS infrastructure and network systems, i.e. one could not function and operate without the other. CHP can thus be seen as a technology which enables DHS to exist;

- The application of CER/11/189 as proposed may have the effect of limiting certain technologies such as anaerobic digestion and gasification where an interdependent relationship between the heat and electrical use exists, and is counterproductive to the intent of directive 2004/8/EC in terms of promoting CHP deployment within the European Union. Under the UK CHPQA scheme, heat inputs to anaerobic digestion and gasification are considered as useful;

- In addition there are significant opportunities for the REFIT to promote projects which make use of industrial waste streams – one possible application would be using spent grains from the brewing and distilling sectors. Another example would be milk processing waste streams from the dairy sector utilising anaerobic digestion. CHP generation and heat use are integral to these processes and the most economical and least carbon intensive way of drying these fuels is to use recycled heat from the CHP plant; and

- It will make the implementation of the forthcoming Energy Efficiency Directive, currently in draft form more difficult, in particular reference to the obligations of member states to develop and implement national CHP action plans.

2. Dalkia Comments on Recycled Heat

Dalkia has considered the implications of Approach 1 and 2 presented under section 3.3. The distinction made between the two approaches is whether recycled heat is considered useful (Approach 1), or whether it is not considered as useful (Approach 2). Dalkia is of the view that the *boundary* considered by the CER in considering useful heat under both Approach 1 and Approach 2 needs to be clarified in order to ensure that it is consistent with the definitions in the legislation, as outlined below.

Firstly under 2008/952/EC clause 5.6, useful heat is confined to one or other of:

- Process heating (or cooling)
- Space heating (or cooling)
- Drying (direct or indirect)

Dalkia are of the view that any thermal use which does not meet the above criteria should be considered as non-useful heat, which is consistent with the first list of non-useful heat examples[1] given in 2008/952/EC clause 5.7.

Secondly, heat which is consumed within the boundary of the CHP process, being the second list of examples[2] given in 2008/952/EC clause 5.7, is also considered as non-useful. An additional example of heat consumed within the CHP boundary is steam injection into a Gas Turbine in a combined cycle configuration, which would therefore also be defined as non-useful heat.

Thirdly, under 2008/952/EC section II, clause 2 (Cogeneration System Boundaries), the CHP boundary must be:

- Distinctly metered at the boundaries
- Be defined by the points at which (a) fuel enters the boundary; (b) electricity exits the boundary; and (c) heat exits the boundary
- Be separate from the "Consumer Area", where heat is consumed

Considering the above, Dalkia considers that there are two cases of CHP boundary considerations which are consistent with the legislation which the CER should consider for adoption as follows:

Case 1: Where drying or heating of the fuel is performed within the Consumer Area (*see Figure 1 below*), which is permissible under the legislation provided that the CHP boundary is defined by metering, and provided that the Fuel input is measured (for HE CHP calculation) after the drying / heating. Examples of this process would be anaerobic digestion and biomass fuel drying / heating

Case 2: Where no drying or heating of the fuel is performed within the Consumer Area (*see Figure 2 below*), which is permissible under the legislation under the same conditions above.

3. Additional Comments

Dalkia agree with the CER proposal that a case by case review of each HE CHP application is necessary, considering the complex application of useful heat definition.

4. Conclusion

In conclusion, Dalkia is in broad agreement with the Approach 1 proposed, with the comments as above in relation to the boundary definition and economically justifiable demand.

5. Further Contact

For further information or discussion, please contact either of the following:

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[1] 2008/952/EU clause 5.7 – "Heat lost from chimneys or exhausts; heat rejected in equipment such as condensers or heat-dump radiators"

[2] 2008/952/EU clause 5.7 – "heat used internally for de-aeration, condensate heating, make-up water and boiler feed-water heating used in the operation of boilers within the boundaries of the cogeneration unit, such as heat recovery boilers"

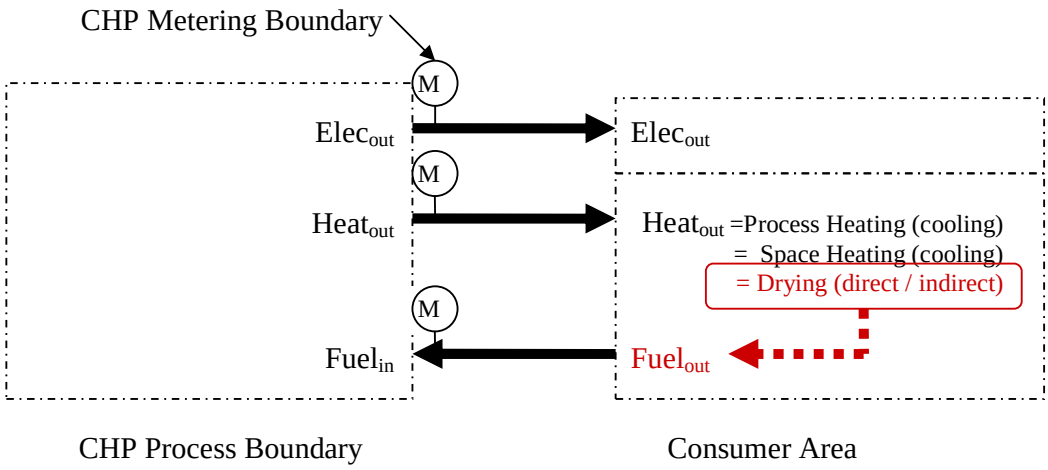

Fig 1: Fuel Drying / Heating within Consumer Area

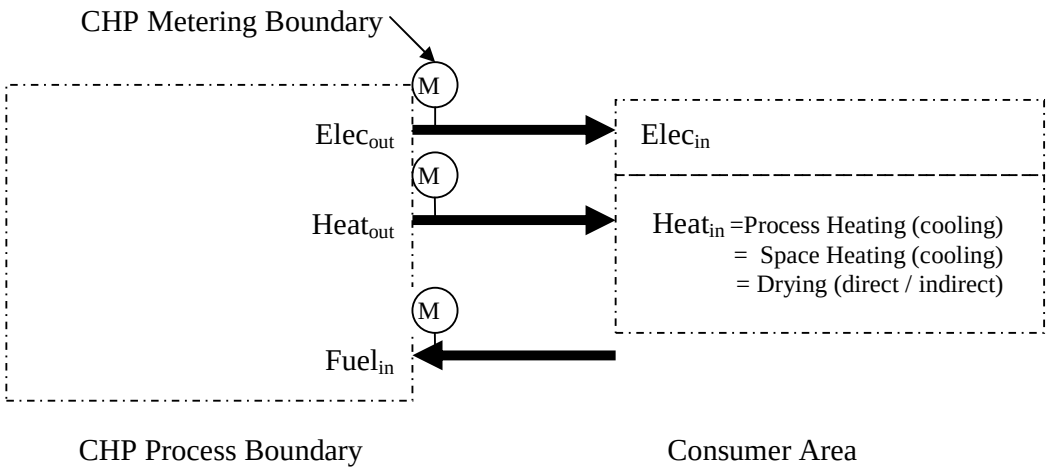

Fig 2: No Fuel Drying / Heating Inside Consumer Area