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Reference: EON_TNP_Citigen

Dear Richard,

In your e-mail of 31st May, 2012, you asked E.ON to set out why we consider Citigen CHP to constitute a “district heating scheme” for the purposes of compliance with the Industrial Emissions Directive (IED).

I attach a tabulated response laying out our interpretation of the conditions in Article 35 of the IED and how the Citigen CHP scheme meets each of these. I hope you will agree with our interpretation but if you do not, please let us know and we can consider our position or provide you with further evidence.

Your note also makes it clear that E.ON will have to decide whether it wishes to make use of the provisions of Article 35, which would exempt the plant from compliance with the emission limit values (ELVs) contained in Annex V of the Directive until 31st December 2022, or whether it wishes to follow the Transitional National Plan (TNP) compliance pathway. It is helpful that you have laid this out and we agree with your interpretation that this is a decision for us as the operator.

While the delayed implementation of ELVs allowed by Article 35 is certainly worthy of consideration, we have submitted an expression of interest for Citigen in joining the TNP as we have some concerns that the revision of Best Available Technique (BAT) standards taking place at a European-level may trigger the application of ELVs to the plant during the period 2016 – 2022 that are either stricter than the plant’s current ELVs or that exceed any minimum standards laid down in Annex V. Maintaining a TNP option for this plant therefore provides us with some level of comfort that we have not closed off a future compliance pathway which may be needed to allow continued operation until any necessary plant upgrades could be completed. I would be grateful if you confirm whether

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this is a valid concern or whether you consider the provisions of Article 35 would extend to a delayed implementation of any new BAT standards to the plant until 2023.

Notwithstanding your views on this point, our preference would therefore be to make a decision on which compliance pathway is most appropriate for Citigen only once we are clear on what level of emissions performance will be expected under each option and at what date. I hope this is acceptable to DEFRA.

[Redacted signature block]

Qualification of Citigen CHP as a "district heating scheme"

The Citigen CHP installation consists of

- two 15.5MWe Wartsila 18V46GD compression ignition engines, fired on natural gas and a small amount of gas oil for ignition support; and
- three dual fuel standby boilers.

The engines produce mechanical power, which in turn is used to generate electricity.

Waste heat from exhaust gases, the engine cooling system, the turbocharger cooling system and lubricating oil is recovered by a heat exchanger system to produce up to 28 MWth of hot and chilled water for buildings around the City of London.

Article 35
District heating plants

Until 31 December 2022, a combustion plant may be exempted from compliance with the emission limit values referred to in Article 30(2) and the rates of desulphurisation referred to in Article 31 provided that the following conditions are fulfilled:

Article 35 condition	How does Citigen CHP meet this condition?
(a) the total rated thermal input of the combustion plant does not exceed 200 MW;	<p>Total rated thermal input of the two engines is 78 MWth. These vent through a common windshield.</p> <p>Total rated thermal input of the three boilers is 9 MWth. These vent through separate individual flues, not as part of the common windshield.</p> <p>The total rated thermal input of the combustion plant therefore does not exceed 200 MW.</p>
(b) the plant was granted a first permit before 27 November 2002 or the operator of that plant had submitted a complete application for a permit before that date, provided that it was put into operation no later than 27 November 2003;	<p>First IPC authorisation issued 18/05/1992 (reference AB7221)</p> <p>The plant was constructed by a British Gas joint venture. Commercial operation is believed to have commenced during 1996. Ownership passed to TXU Europe in 1998/99 and to E.ON in 2002.</p>
(c) at least 50 % of the useful heat production of the plant, as a rolling average over a period of 5 years, is delivered in the form of steam or hot water to a public network for district heating; and	<p>Our interpretation of this condition is that 'useful heat' represents the heat produced as steam and hot water. As Citigen has no internal use of heat, 100% of the produced steam and hot water is available to the district heating system. This does not take account of electricity generation since only useful heat production is mentioned in this article.</p> <p>We have based this interpretation on a FAQ on the EC website (http://ec.europa.eu/environment/air/pollutants/stationary/ied/faq.htm).</p> <p>This is attached as an appendix to this response.ⁱ</p> <p>E.ON supplies heat to premises belonging to the Corporation of London, including the Barbican Art Centre, Guildhall, Bastion House and London Central Markets, as well as other major commercial customers. We consider this to meet the definition of a "public network for district heating".</p>
(d) the emission limit values for sulphur dioxide, nitrogen oxides and dust set out in its permit applicable on 31 December 2015, pursuant in particular to the requirements of Directives 2001/80/EC and 2008/1/EC, are at least maintained until 31 December 2022.	<p>Citigen was exempted from LCPD under Article 2(7) : <i>"Plants powered by diesel, petrol and gas engines shall not be covered by this Directive."</i></p> <p>Emissions from the common windshield are therefore emission limits established as BAT by the Environment Agency for NOx, CO, particulate matter and ammonia. There is not currently an emission limit for SO₂ as emissions are controlled through management of the input fuel (use of natural gas and gas oil regulated under Sulphur Content of Liquid Fuel Regulations).</p>

ⁱ **What should be the interpretation of the terms “useful heat”, “public network” and “district heating” in Article 35(1)(c).**

The intention of article 35 of 2010/75/EU is to provide certain district heating plants with the flexibility to comply only from 1 January 2023 on (instead of 1 January 2016) with the emission limit values (article 30(2)) and desulphurisation rates (article 31) set out in Annex V. This flexibility is conditional on meeting the conditions laid out in sub-paragraphs a) to d) of article 35(1).

Article 35(1)(c) says in full that: "at least 50 % of the useful heat production of the plant, as a rolling average over a period of 5 years, is delivered in the form of steam or hot water to a public network for district heating". These phrases are understood to mean:

- **'useful heat'**: The reference to 'useful heat production' recognises that part of the heat output from combustion plants may be used for internal purposes and therefore will be unavailable for beneficial use by the end users.
- **'public network'**: The intention of the wording 'public network' is to make a distinction from 'private' networks. In a 'private network' industrial operators choose to meet their own electricity and/or heating needs. In private networks the use of electricity and heat is solely within the boundary of the site and there is no wider public utility.

A 'public network' for district heating therefore requires that the network does not (solely) serve the needs of private companies owning the plant or network.

- **'district heating'**: This term is not defined in the IED, but we can refer to Article 2(g) of Directive 2009/28/EC (on the promotion of the use of energy from renewable sources): which says that "'district heating' or 'district cooling' means the distribution of thermal energy in the form of steam, hot water or chilled liquids, from a central source of production through a network to multiple buildings or sites, for the use of space or process heating or cooling".

District heating therefore should be understood as implying the beneficial use of heat for space or water heating beyond the site boundary. This could include e.g. the use by individual homes and blocks of flats; hospitals, churches, schools, shops, markets, companies which use network heat for their offices or production halls.

In order to assess whether at least 50% of the useful heat production is delivered to a public network for district heating, one needs to consider the ratio of the amount of steam and hot water heat delivery to the public network for district heating, to the total amount of useful heat produced by the plant concerned