



Department
of Energy &
Climate Change



CHP Outreach Workshops

Programme: Reducing Energy Costs with Combined Heat & Power

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Department
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Energy Efficiency Directive Update

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EED Article 14(5-8)

Cost-benefit assessment for combustion installations



Article 14(5-8)

- *Member States shall ensure that a **cost-benefit analysis** in accordance with Part 2 of Annex IX is carried out when, after 5 June 2014:*
- a) **A new thermal electricity generation installation** with a total thermal input exceeding **20 MW** is planned, in order to assess the cost and benefits of providing for the operation of the installation as a high-efficiency cogeneration installation;*
 - b) **An existing thermal electricity generation installation** with a total thermal input exceeding **20 MW** is substantially refurbished, in order to assess the cost and benefits of converting it to high-efficiency cogeneration;*



Article 14(5-8) cont.

- c) **An industrial installation** with a total thermal input exceeding **20 MW** generating **waste heat** at a useful temperature level is planned or substantially refurbished, in order to assess the cost and benefits of utilising the waste heat to satisfy economically justified demand, including through cogeneration, and of the connection of that installation to a district heating and cooling network;
- d) **A new district heating and cooling network** is planned or in an existing district heating or cooling network a new energy production installation with a total thermal input exceeding **20 MW** is planned or an existing such installation is to be substantially refurbished, in order to assess the cost and benefits of utilising the waste heat from nearby industrial installations.



What Article 14(5-8) means for Local Authorities

- Local Authorities will issue permits for installations satisfying the above definitions in the range:

$20 \text{ MW} \leq \text{Thermal Input} < 50 \text{ MW}$

- Environment Agency, NRW, SEPA or NIEA will issue permits for installations satisfying the above definitions in the range:

$\text{Thermal Input} \geq 50 \text{ MW}$



What Articles 14(5-8) means for Local Authorities

- The operator of the installation will approach the appropriate regulator (Local Authority/EA/NRW/SEPA/NIEA) with their permit application.
- The regulator must decide whether the installation is exempt from the Cost Benefit Analysis (CBA) or is subject to it.
- Exempted installations may include:
 - i. Electricity generation installations acting as peak load or back-up which are planned to operate less than 1,500 hours per year;
 - ii. Nuclear power installations;
 - iii. Installations that need to be located close to a CO₂ geological storage site.
- If the installation is subject to the CBA requirement, then the **operator** must undertake the CBA.



What Article 14(5-8) means for Local Authorities

- The regulator will then review the results of the CBA as part of the installation's permit application process.
- Installations may also be exempt from the CBA if:
 - i. The distance between it and a heat user or a waste heat source is greater than a certain threshold value;
 - ii. The quantity of heat demanded by a heat user is below a certain threshold value;
 - iii. The quantity of waste heat available for recovery at an installation is below a certain threshold value.

The values and methodology used in determining these thresholds, were described in the DEFRA public consultation on Article 14 of the Directive:

https://consult.defra.gov.uk/atmosphere-local-environment-team/eed_consultation



Relevance of Article 14(5-8) for operators of installations

- The CBA will be based upon a life-cycle cost analysis (i.e. Discounted Cash Flow) and not simple payback.
- Installations not exempt from the CBA will have to fill out a CBA spread-sheet collecting information on costs and benefits associated with the modification to be scrutinised by the permitting body.
- Modifications to existing installations and planned new installations found to have a Net Present Value (NPV) greater than zero, will be expected to proceed in the way identified by the CBA.



Transposition into UK Law

- Will be via amendment to the Environmental Permitting (England and Wales) Regulations 2010, and equivalents for Scotland and Northern Ireland
- Amendment Regulations not yet finalised
- Environment Agency draft guidance for consultation (March 2014):

https://consult.environment-agency.gov.uk/portal/ho/ep/h2energyefficiency/h2_energy_efficiency



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EED Articles 9 to 11

Heat Metering and Billing



EED Articles 9 to 11

- The EED introduces new requirements on the metering and billing of heating, cooling and hot water services provided via district and communal heat networks.
- Articles 9(1) & 9(3) concern requirements for metering at building and individual final consumer levels for existing schemes, and new and refurbished buildings connecting to district heating.
- Articles 10 and 11 are concerned with requirements for billing and billing information of heating, cooling and hot water provided to consumers connected to district and communal networks.



Transposition into UK Law

- *The Heat Network (Metering and Billing) Regulations 2014 (SI 2014 No. 3120)*
- The **National Measurement Office (NMO)** is the enforcement authority for the Regulations across the UK.
- The Regulations put legal obligations on **“heat suppliers”**
- *“heat supplier” means a person who supplies and charges for the supply of heating, cooling or hot water to a final customer, through-*
 - (a) *communal heating; or*
 - (b) *a district heating network.*

Communal heating means distribution to a single multiple-occupied building, i.e. 1 building and at least 2 final customers.

District heating means distribution to multiple buildings or sites, i.e. at least 2 buildings and at least 1 final customer.



Heat suppliers' obligations

Duty to notify (regulation 3)

- **Must** submit a notification to the NMO **before 30th April 2015**, or for new systems on or before the first date of operation.
- Notifications require:
 - Name and business address of heat supplier
 - Location of the district heating (DH) or communal heating (CH) system
 - Installed heating capacity, heat generated and heat supplied
 - Number and types of buildings supplied
 - Number and type of meters or heat cost allocators installed
 - Number of final customers
 - Details of any analysis undertaken of the cost effectiveness or technical feasibility of meters/heat cost allocators and actions taken.
 - Frequency and content of billing information provided to final customers
- Updated notifications are required **at least every four years** following the first notification.



Heat suppliers' obligations

Duty to install meters/HCAs (regulations 4, 5 and 6)

- For district heating, block-level meters **must** be installed for the supplies to each building with more than one final customer.
- For DH and CH, individual meters **must** be installed to measure the supplies to each customer, **unless** it is not cost effective or technically feasible to do so. Temperature control devices must be installed where meters are installed.
- In buildings with more than one final customer, where individual customer meters are not cost effective or technically feasible, then heat cost allocators, TRVs and a hot water meter **must** be installed, **unless** it is not cost effective or technically feasible to do so.



Heat suppliers' obligations

Duty to install meters/HCAs (regulations 4, 5 and 6) (continued)

- The requirements for the determination of **cost effectiveness** and **technical feasibility** are set out in Schedule 1 to the regulations. DECC has also developed a spreadsheet based heat metering viability tool that can be used.
- Meters must **accurately** measure, memorise and display the consumption of heating, cooling or hot water by a final customer.
- Where the installed meter has been approved under the **Measuring Instruments Directive (MID)**, and the error limits in the MID are being applied, the NMO will generally accept this route for approval of the meter.



Heat suppliers' obligations

Replacement of existing meters, new buildings and major renovations (regulation 7)

- When replaced, existing meters in DH or CH systems **must** meet the requirements of the regulations, **unless** it would be technically impossible to do so or the estimated cost would be unreasonable.
- Where a connection is made in a newly constructed building supplied by a DH network, or where a building supplied by DH undergoes major renovations that relate to the technical services of the building, the heat supplier **must** install sufficient meters to measure consumption by each final customer.
- Major renovation is defined as costing greater than 25% of the value of the building, excluding land.



Heat suppliers' obligations

Billing (regulation 9)

- **If** technically possible and economically justified (costs \leq £70 per customer pa), **must** ensure that bills and billing information for the consumption of heating, cooling or hot water are:
 - Accurate
 - Based on actual consumption
 - Compliant with minimum requirements in Schedule 2 of the regulations
- **Must** not make a specific charge to a final customer for the provision of a bill or billing information, other than supply of additional copies.
- The heat supplier's costs of providing bills and billing information can only be passed on to final customers on a **non-profit basis**.
- Where a third party is engaged to provide bills and billing information, **reasonable costs** may be passed on to final customers.



Conclusion

If your organisation is a “heat supplier” in respect of one or more communal or district heating systems then:

- Consult further information (next slide).
- You **must** notify the NMO before 30th April 2015.
- The notification **should** include the results of any metering viability assessments undertaken.
- However, the reporting of individual meter/HCAs viability and any subsequent installations (for buildings with more than one final customer) should be undertaken by 31st December 2016.



Further Information

www.gov.uk/heat-networks

Includes links to:

- The legislation
- Guidance
- Notification template
- Heat metering viability tool
- On-line enquiry system