

AGFW-Statement

concerning the public consultation on

"Generation adequacy, capacity mechanisms and the
internal market in electricity"

Or

Frankfurt on the Main, 05 February 2013

The central request

A possible framework for the challenges of delivering generation adequacy has to pay attention to the specific needs and the technical and economical framework of operating CHP and district heating and cooling installations, which deliver energy efficiency to the whole energy system. Such a framework must deliver incentives to invest in such installations to reach the 20/20/20 targets and specific goals set inter alia by the Energy Efficiency Directive (2012/27/EU).

On AGFW

AGFW (registration number: 88403261302-20) is an international district heating and cooling and combined heat and power (CHP) association representing over 450 member companies, comprising of district heating utilities, industrial members and other stakeholders such as universities from different European countries.

District heating and cooling and CHP are very energy efficient technologies that satisfy local heat demand utilising resources that would otherwise be wasted. The underlying principle of a combined heat and power (CHP) plant is an exceptionally efficient energy conversion. CHP plants systematically use the heat potential that results from the production of mechanical energy through fuel combustion. When heat and power are produced separately additional primary energy is needed to cover a similar heat demand. The possible primary energy savings of a CHP plant are affected by its design and operation but account for up to one third in comparison to the separate production of heat and power.¹ Primary energy savings also lead to a reduction of CO₂ and other emissions. CHP is a very flexible energy efficiency technology that can be used with different fuels, ranging from natural gas to biogenic fuels such as wood and biogas.

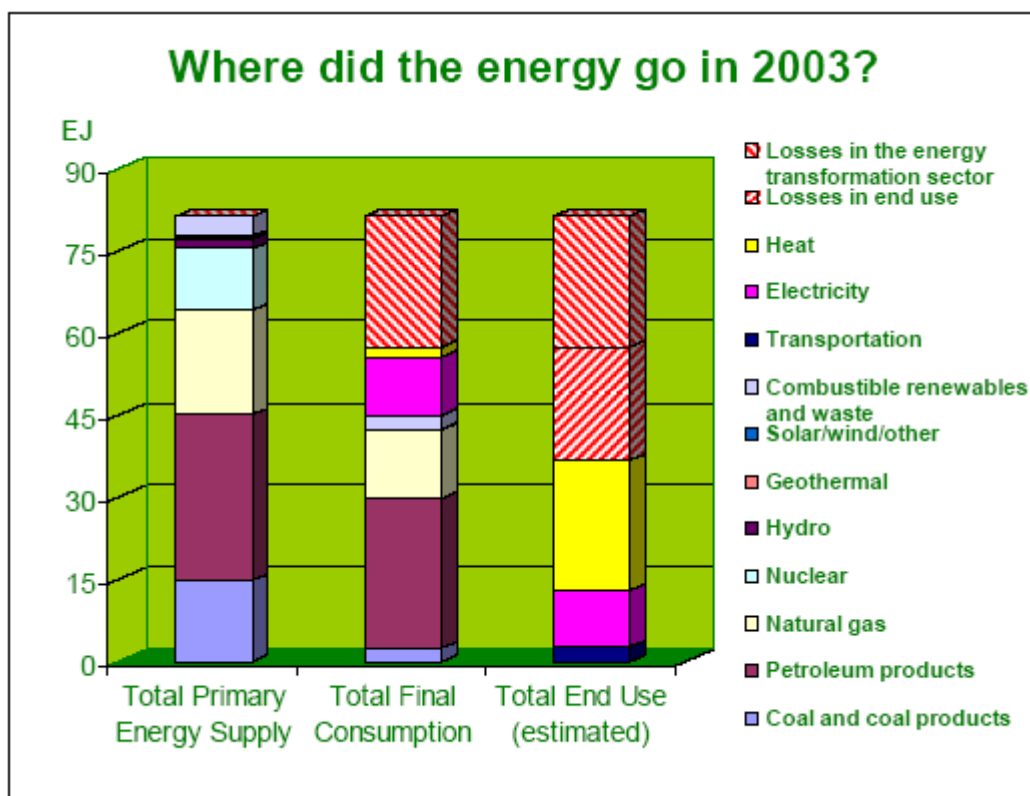
District heating and cooling is an energy efficiency service providing ready-to-use heat or cold, using a distribution network and utilising a plethora of possible heat sources, for example CHP, surplus heat from industrial processes and renewable energy sources such as geothermal energy.

¹ Schmitz/Schaumann, Kraft-Wärme-Kopplung, 3rd print run Berlin 2005, p. 6.

On the benefits of CHP and district heating

The CO₂ savings of CHP alone are about 100 Mt per annum in EU27 and as an energy saving technology CHP contributes 2 % towards the 20 % annual primary energy savings objective of the European Union for 2020.²

The climatic advantages and the potential of CHP and district heating and cooling is subject of the ECOHEATCOOL study.³ This study was supported by the Intelligent Energy Europe program of the European Commission and analyses resource efficiency in the heating and cooling sector of 32 European countries. These countries consist of the former EU25, ACC4 and the EFTA3 countries.



Source: ECOHEATCOOL, 2005/2006, Results, p. 7.

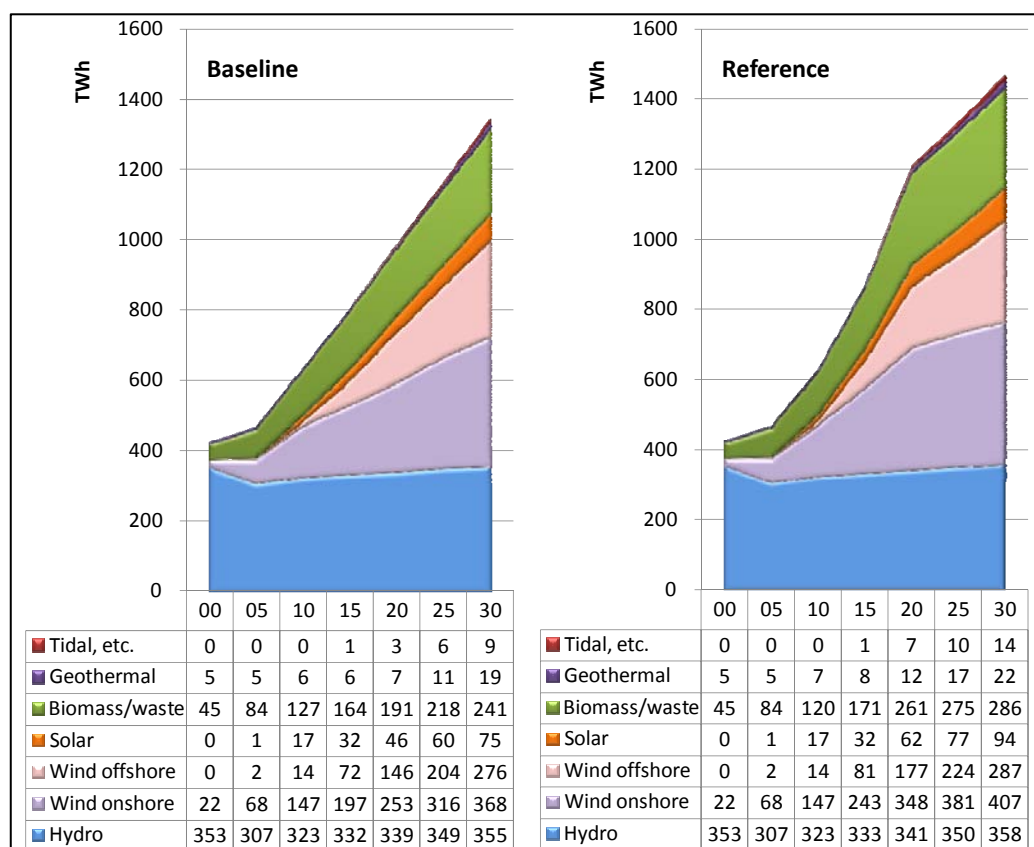
The study shows that Europe wastes more heat than it consumes. CHP and district heating and cooling contribute to using surplus heat that would otherwise be wasted and thus help

² Commission Communication COM2008 771 final „Europe can save more energy by combined heat and power generation”, p. 3.

³ All project deliverables can be downloaded at <http://www.ecoheatcool.org>.

saving primary energy and reducing CO₂ emissions as stated in the Energy Efficiency Directive (2012/27/EU).

Furthermore, CHP and district heating and cooling are the only energy efficiency technologies that can supply heat and electricity from renewable energy sources on a large scale and cost efficiently. A large share of electricity from renewable energy sources is expected to originate from biomass and waste, as numerous studies and analyses show.



Source: European Commission.

CHP and district heating and cooling are the only ways of saving these precious resources when putting them to use. When utilising resources such as biomass and waste they have to be used in the most efficient way possible, preferably in CHP and district heating and cooling.

Views on the consultation document

As assessed in the consultation document the discussion on “generation adequacy, capacity mechanisms and the internal market in electricity” has lots of different elements to it and the situation is both complex and complicated.

“A framework for generation adequacy must take into account energy efficiency technologies”

From the perspective of the energy efficiency technologies CHP and district heating and cooling the central request is that possible solutions pay attention to the specific needs and the technical and economical framework of operating such installations. It is imperative that the efficiency both CHP and district heating and cooling can deliver to the energy system as a whole is not compromised by a framework that does not grant the benefits corresponding with this efficiency gain. On the contrary, such a framework must deliver incentives to invest in such installations to reach the 20/20/20 targets and specific goals set inter alia by the Energy Efficiency Directive (2012/27/EU).

Otherwise such a framework might prove detrimental to the necessary development of these energy efficiency technologies. This applies for instance to the European Union’s Emissions Trading System (ETS), which puts district heating and cooling and CHP at a disadvantage compared to the competitors in the heating market. The ETS aims to reduce emissions by setting an emission cap and lowering the cap over time. In general market based quantity instruments such as the ETS are based on the principle that in functioning markets, scarce goods will be utilised in the economically most feasible way. In other words, emissions should, in such a system, be reduced where abatement costs are the lowest and thus incorporate the least economic impact. If there was a fully functioning market, CHP would in theory and following this principle, benefit heavily from the ETS. This is due to the fact that this technology reduces emissions at very low abatement costs in comparison to other solutions. But only the combustion of fuels in installations with a total rated thermal input exceeding 20 MW is an activity which is part of the ETS. As a result individual heat only boilers, as the major players in Europe’s heating market are not covered by the scope of the ETS, while most of the CHP and heat plants are. It is true that the heating side of CHP installations can receive free allocation in the third trading period, however the allocation decreases each subsequent year with a view to reaching no free allocation in 2027. So in conclusion CHP and district heating do not benefit from the efficiency gains they deliver on the heating side. When

just comparing the electricity side, decoupling of heat requires additional primary energy, however when evaluating the whole installation this is being outweighed significantly by the efficiency gains due to displacing other means of heat production. As mentioned above due to the system boundaries of the ETS there is no benefit for the heating side of CHP installations, meaning that the efficiency gains of CHP can not be brought fruition within the current system of the ETS.

This context should be kept in mind when discussing a possible framework for generation adequacy.

“The targets and provisions of the Energy Efficiency Directive have to be considered”

Furthermore it has to be taken into account that Article 14 paragraph 4 of the Energy Efficiency Directive for instance obliges Member States to “take adequate measures for efficient district heating and cooling infrastructure to be developed and/or to accommodate the development of high-efficiency cogeneration and the use of heating and cooling from waste heat and renewable energy sources” when they have identified “a potential for the application of high-efficiency cogeneration and/or efficient district heating and cooling whose benefits exceed the costs”. In order to not put this potential at risk and ensure an accelerated development of these energy efficiency technologies, which are necessary to achieve the European Union’s target of saving 20 % of its primary energy consumption by 2020, the special challenges and needs have to be taken into account.

Article 15 paragraph 1 of the Energy Efficiency Directive obliges Member States to ensure “that national energy regulatory authorities pay due regard to energy efficiency [...] regarding their decisions on the operation of the gas and electricity infrastructure.”, making a coherent approach including implications for energy efficiency technologies such as CHP an absolute necessity when discussing a framework for generation adequacy and the electricity market.

This demonstrates the need to broaden this discussion not only to the challenge of ensuring sufficient capacity but also to ensure that the framework ensures and incentivizes investments in flexible and energy efficient resources.

“Focus also on quality criteria for generation capacity”

Whereas the consultation document reveals that ENTSO-E considers generation adequacy “is ensured [...] in most situations [...] of the forecast period”, it also reveals that its generation adequacy assessment currently does not focus on the flexibility of the system. And consequently it does not take into account other quality criteria of generation resources such as energy efficiency. On the other hand this is the type of generation resource which is needed in order to enhance the energy system and reach the energy policy targets.

The archetype for a flexible, energy efficient and environmental friendly installation is a combined cycle CHP plant feeding a district heating grid. However marginal costs for such a plant are relatively high due to the associated fuel costs.

As the consultation document reveals, wholesale electricity-only markets broadly sets prices based on marginal costs. On the electricity side CHP installations compete with conventional condensing power plants, which depending on the fuel being utilized have considerably lower marginal costs and can therefore operate during more hours at a profit margin. This spread between spot market price and marginal costs needs to generate fixed costs and profit.

The increased use of wind and solar power, with low or zero operating costs, drives wholesale prices down and accelerates this process. Investments in such installations are therefore not favoured by current market conditions and framework.

“The current situation prevents investments in generation capacity with the needed quality criteria”

Following the above, the current situation prevents investments in the generation capacity with the needed quality criteria. Following current market and framework analysis lignite fired condensing power plants are the last power plants to go off line and not efficient combined cycle natural gas fired power plants.

A possible framework for the challenges of delivering generation adequacy has to pay attention to the specific needs and the technical and economical framework of operating CHP and district heating and cooling installations, which deliver energy efficiency to the whole energy system. Such a framework must deliver incentives to invest in such installations to reach the 20/20/20 targets and specific goals set inter alia by the Energy Efficiency Directive (2012/27/EU).

Issued by:

AGFW | Der Energieeffizienzverband für Wärme, Kälte und KWK e.V.

Stresemannallee 30, D-60596 Frankfurt am Main
Postfach 70 01 08, D-60551 Frankfurt am Main

Telefon: +49 69 6304-1
Telefax: +49 69 6304-391
E-Mail: info@agfw.de
Internet: www.agfw.de

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