

REPORT FROM THE GERMAN GOVERNMENT PURSUANT TO ARTICLE 6(3) AND  
ARTICLE 10(2) OF DIRECTIVE 2004/8/EC OF THE EUROPEAN PARLIAMENT AND  
OF THE COUNCIL ON THE PROMOTION OF COGENERATION BASED ON A  
USEFUL HEAT DEMAND IN THE INTERNAL ENERGY MARKET AND AMENDING  
DIRECTIVE 92/42/EEC

**Subject: EU-Pilot 3148/12/ENER**

## **1. Implementation of Directive 2004/8/EC**

In Germany Directive 2004/8/EC was transposed into German law in 2009 through the amendment of the Cogeneration Act (*KraftWärme-Kopplungsgesetz*, KWKG)<sup>1</sup>. The Act promotes electricity generation in combined heat and power (CHP) plants through temporary subsidies topping up the market price for electricity, financed through levies. High-efficiency requirements on the subsidised plants as well as the rules on guarantee of origin for electricity generated through high-efficiency cogeneration were included in the Act at the time of transposition. As regards the high-efficiency requirements to be met by the plants, the Act refers to the latest applicable European standards. Implementation takes place by decision of the Federal Office for Economics and Export Control (*Bundesamt für Wirtschaft und Ausfuhrkontrolle*, BAFA) to include plants in the scheme.

## **2. Potential increase of the share of high-efficiency cogeneration**

As part of the interim review of cogeneration subsidies prescribed by law, independent experts at PROGROS AG and the Berlin Energy Agency have analysed developments in the field of cogeneration (see <http://www.bmwi.de/BMWi/Navigation/Energie/kraftwerke.html>).

According to this study, net CHP electricity generation increased by 14 TWh, from around 76 TWh to approximately 90 TWh between 2002 and 2010. The CHP share of total net electricity generation thus increased by 1.5 % to currently 15.4 %.

Of the total generated, i.e. approx. 90 TWh, around 53 TWh was generated by general supply plants. In industry, net CHP electricity generation increased from 23 TWh to around 27 TWh. The CHP share of electricity generation by plants supplying industry thus increased by 9 % to 62 %. CHP plants of less than 1 MW and biogenic CHP plants had the most dynamic growth. Electricity generation in small conventional CHP plants increased by 1.6 TWh to 3.5 TWh between 2002 and 2010. The contribution of biogenic CHP plants receiving aid under the Renewable Energies Act (*Erneubare-Energien-Gesetz*, EEG) increased from virtually nil in 2004 to 5.9 TWh. Among plants receiving subsidies since 2002, small CHP plants of up to 2 MWel predominate in terms of numbers, but contribute only around 4 % to total net CHP electricity generation.

The study predicts an increase in annual CHP electricity generation of 10-23 TWh by 2020. This means that total CHP electricity generation will then be in the order of 99-112 TWh annually. Thus, if the level of subsidies remains the same, by 2020 cogeneration could attain a

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<sup>1</sup> Cogeneration Act of 19 March 2002 (Federal Law Gazette I, p. 1092), as last amended by Article 11 of the Act of 28 July 2011 (Federal Law Gazette I, p. 1634).

share of more than 20 % of net electricity generation in Germany. Accordingly, in 2020 installed CHP capacity could reach around 48 GW, compared to around 41 GW in 2009. This prognosis is based on assumptions regarding the finalisation of large CHP plants currently under construction, the extension of small CHP plants and the modernisation of plants. New and modernised CHP plants with a capacity of more than 2 MW will account for the majority of the additional CHP electricity generation. Due to the accelerated phase-out of nuclear energy, investment conditions for large CHP plants have generally improved and the experts expect a boost in expansion and modernising activity as a result.

### **3. Obstacles to high-efficiency cogeneration**

Over the past few years the pace of investment in large CHP plants has been sluggish. This is linked, in particular, to the current political framework, but also to the future arrangements for emissions trading and the particularly volatile economic and energy situation (above all as regards price trends for fuel and plants). After all, operators of CHP plants must, like all conventional energy producers, also take account of the prospect of falling utilisation rates in the light of increased expansion of renewable energies and the consequences of this for the plants' economic viability (in this regard, see the debate on a future electricity market, <http://www.bmwi.de/BMWi/Navigation/Energie/kraftwerke.html>).

The German Government has set itself the objective of increasing the share of electricity generated by CHP plants to 25 % of total electricity generation by 2020. To help achieve this objective the Cogeneration Act is currently being reviewed. The resulting amendment is due to be adopted, through parliamentary procedure, by summer 2012 (to consult the state of play of the procedure and the content of the amendment, see <http://www.bmwi.de/BMWi/Navigation/Energie/kraftwerke.html>).

### **4. Guarantee of origin and subsidy rules**

The EU provisions on the guarantee of origin for CHP electricity are transposed in Section 9a of the Cogeneration Act. So far, however, this option has hardly been exercised.

Electricity generation in high-efficiency CHP plants is currently promoted in the framework of the Cogeneration Act through a subsidy scheme financed by levies where the market price for electricity is topped up in the case of modernisation and building of new plants (subsidies amounting to between 5.11 and 1.5 ct/kWh, depending on the size of the plant). The subsidy scheme is limited in time (ranging from a fixed period of 10 years to a maximum of 30 000 operating hours, depending on the category of plant). Like plants supported on the basis of the Renewable Energies Act, CHP plants are also entitled to priority access to the network and, for as long as they receive subsidies, to distribution of its electricity by the network operator. Moreover, since 2009 the construction of new and extension of existing heating networks have also been promoted through the scheme financed by levies under the Cogeneration Act.

The costs of the scheme are borne by electricity consumers. Since 2009 the total amount has been capped at €750 million per year, of which €150 million per year for network development. This limit has not been reached since, however, as the 'evolution' of older, large plants led to a constant decrease in the scheme's costs in the past couple of years. Meanwhile the construction of new plants followed a downward trend.

According to the study carried out for the interim review, subsidy payments under the Cogeneration Act will drop from currently €384 million (2010) to €159 million (2011). The reason for this is the expiry of subsidies for modernised CHP plants as well as for plants with a capacity of 50 KW to 2 MW that came into operation between 2002 and 2008. As a result, in 2011 subsidy payments for CHP electricity will decrease from currently around €342

million to €109 million. On the other hand, subsidy payments to heating networks will increase from €42 million to €50 million in the same period.

Based on the assumption that subsidy payments to heating networks will remain stable at €50 million per year, the experts estimate that, due to the expected expansion of CHP generation, total subsidy payments will nevertheless increase to a level of about €630 million by 2017 and thereafter decrease to about €560 million by 2020.

The changes introduced by the current amendment to the Cogeneration Act could lead to additional subsidy costs of €20-100 million per year.