



THE INTERNATIONAL STATISTICAL LEGISLATION APPLIED IN BULGARIA

**The EP and Council Regulation 1099/2008 on energy
statistics and the EP and Council Directive 2004/8 for
cogeneration**

Study tour on Energy statistics and Energy balances
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Ivanka Tzvetkova



Part 1

REGULATION (EC) No 1099/2008 OF THE
EUROPEAN PARLIAMENT AND OF THE
COUNCIL of 22 October 2008 on energy
statistics

Regulation on Energy statistics

Reasons for adoption of the Regulation:

- ✓ The Community need to have precise and timely data on energy quantities, their forms, sources, generation, supply, transformation and consumption, for the purpose of monitoring the impact and consequences of its policy work on energy.
- ✓ In the coming years, greater attention should be paid to the security of supply of the most important fuels and more timely and more accurate data at EU level is needed to anticipate and coordinate EU solutions to possible supply crises.
- ✓ The liberalization of the energy market and its growing complexity make it increasingly difficult to obtain reliable, timely energy data in the absence, in particular, of a legal basis concerning the provision of such data.

Regulation on energy statistics

History

- ✓ The idea for legal act on energy statistics was promoted at the meeting of “Energy statistics committee” in May 2004
- ✓ Concrete proposal was discussed at the meeting in May 2005
- ✓ Project with the statistical annexes was disseminated in February 2006 and after consultations with Commission experts many changes were made
- ✓ The proposal was adopted at the meeting of Statistical program Committee in May 2006
- ✓ Comitology procedure
- ✓ The Regulation (EC) №1099/2008 of the European Parliament and of the Council on energy statistics was adopted on 22 October 2008
- ✓ Published in the Official Journal L 304, page 1, on 14 November 2008



Regulation on Energy statistics

Data sources

- Member States shall compile data concerning energy products and their aggregates in the Community from the following sources:
 - specific statistical surveys addressed to the primary and transformed energy producers and traders, distributors and transporters, importers and exporters of energy products
 - other statistical surveys addressed to final energy users in the sectors of manufacturing industry, transport, and other sectors, including households
 - other statistical estimation procedures or other sources, including administrative sources, such as regulators of the electricity and gas markets.
- Member States shall lay down the detailed rules concerning the reporting of the data needed for the national statistics as specified in Article 4 by undertakings and other sources.



Regulation on Energy statistics

Aggregates, energy products

The Regulation covers all energy products.

The national statistics reported are set out in four Annexes.

Annex A - Clarifications of terminology

- Geographical notes
- Aggregates
 - supply and transformation sector
 - energy sector and final consumption
 - energy end-use specification
- Other terms



Regulation on Energy statistics

Annex B - Annual energy statistics

- Solid fuels
- Natural gas
- Electricity and heat
- Oil and petroleum products
- Renewables and wastes

Annex C – Monthly energy statistics

- Solid fuels
- Electricity
- Oil and petroleum products
- Natural gas

Annex D - Short-term monthly energy statistics

- Natural gas
- Electricity
- Oil and petroleum products

Regulation on Energy statistics

Transmission and dissemination

- Member States transmit to the Commission (Eurostat) the national statistics referred in Annexes as follows:

Annual statistics – 11 months after the reference year

Monthly statistics – 55 days after the reference month (for Oil and petroleum products and Natural gas) and 3 months after the reference month (for Electricity and Solid fuels)

Short-term monthly statistics - 1 month after the reference month (for Natural gas and Electricity) and 25 days after the reference month for Oil and petroleum products

- **Bulgaria does not have any derogations** for reporting of all questionnaires on energy statistics, covered by the Regulation

Regulation on Energy statistics

Quality assessment and reports

Member States shall ensure the quality of the data transmitted.

For the purposes of this Regulation, the following quality assessment dimensions shall apply to the data to be transmitted:

- relevance
- accuracy
- timeliness
- punctuality
- accessibility and clarity
- comparability
- coherence

Every five years, Member States shall provide the Commission (Eurostat) with a report on the quality of the data transmitted as well as on any methodological changes that have been made.

Regulation on Energy statistics

Evolution of the Energy Statistics Regulation

The **basic legal act** is Regulation (EC) No [1099/2008](http://eurlex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2008:304:0001:0062:EN:PDF) on energy statistics (<http://eurlex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2008:304:0001:0062:EN:PDF>). It consists of 4 Annexes A, B, C and D which together contain the statistical scope.

The **first Comitology act** was Commission Regulation (EU) No [844/2010](http://eurlex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2010:258:0001:0055:EN:PDF) (<http://eurlex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2010:258:0001:0055:EN:PDF>) that established a set of annual nuclear statistics and adapted the methodological references according to NACE Rev.2. It replaced Annexes A and B of the basic legal act – Regulation (EC) No 1099/2008.



Regulation on Energy statistics

Evolution of the Energy Statistics Regulation

The **second Comitology act** was Commission Regulation (EU) No [147/2013](http://eurlex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2013:050:0001:0058:EN:PDF) (<http://eurlex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2013:050:0001:0058:EN:PDF>) that implemented updates for the monthly and annual energy statistics. It replaced all 4 Annexes of the basic legal act – Regulation (EC) No 1099/2008 – and therefore repealed Commission Regulation (EU) No 844/2010.

The **current procedure** is adoption of the DRAFT Commission Regulation amending Regulation (EC) No 1099/2008 of the European Parliament and of the Council on energy statistics, as regards **the implementation of annual statistics on energy consumption in households** - Residential, of which: for Space heating, Space cooling, Water heating, Cooking, Other end uses. The current proposal affects only Annexes A and B, but not C and D. Therefore this draft Commission Regulation does not repeal the most recent Commission Regulation (EU) No 147/2013 which is already integrated in the basic act.



Part 2

DIRECTIVE 2004/8/EC OF THE EUROPEAN
PARLIAMENT AND OF THE COUNCIL of
11 February 2004 on the promotion of
cogeneration based on a useful heat
demand in the internal energy market

History of CHP statistics

Eurostat started collecting CHP statistics through pilot projects in 1991 for 15 countries.

In 2002 10 new Member states and Candidate countries started to submit data. The methodology used was agreed by the Member states.

The Directive to promote CHP in the EU was adopted by the Council on 11 February 2004 with the obligation for the Member States to submit annual CHP statistics to the Commission.

The Directive was published in Official Journal L52 on 21 February 2004.

Commission adopted Decision establishing detailed guidelines for the implementation and application of the Annex II to CHP Directive on 18 November 2008.

The collection of the CHP statistics is carried out as an integral part of the Joint IEA/ESTAT/UNECE annual electricity and heat questionnaire.

The deadline for submitting the CHP statistics is by the end of November after the reference year.

CHP Directive

What the cogeneration means?

The Combined Heat and Power (CHP) production, or cogeneration, is defined as simultaneous generation of electrical and/or mechanical energy and useful heat.

The objective of the Directive is to establish a transparent common framework to promote and facilitate the installation of high-efficiency cogeneration plants where demand for useful heat exists or is anticipated. This overall objective translates into two specific aims:

- in the short term, the Directive should make it possible to consolidate existing cogeneration installations and promote new plants;
- in the medium to long term, the Directive should serve as a means to create the necessary framework for further high efficiency cogeneration, aimed at reducing emissions of CO₂ contributing to global warming.

CHP Directive

CHP Directive contains 4 Annexes:

Annex 1 - Cogeneration technologies covered by CHP Directive are:

- Combined cycle gas turbine with heat recovery
- Steam backpressure turbine
- Steam condensing extraction turbine
- Gas turbine with heat recovery
- Internal combustion engine
- Microturbines
- Stirling engines
- Fuel cells
- Steam engines
- Organic Rankine cycles
- Any other type of technology or combination

CHP Directive

Annex 2 – Calculation of electricity from cogeneration

- If the cogeneration units have an annual overall efficiency, set by Member states, at a level of at least 75 %, and at least 80 % for combined cycle turbine and steam condensing extraction turbine, then the electricity production from cogeneration shall be considered equal to total annual electricity production of the unit.

- In cogeneration units with an annual overall efficiency below the threshold, cogeneration is calculated according to the following formula:

$$E_{\text{CHP}} = H_{\text{CHP}} \cdot C$$

where:

E_{CHP} is the amount of electricity from cogeneration

C is the power to heat ratio

H_{CHP} is the amount of useful heat from cogeneration

- The calculation of electricity from cogeneration must be based on the actual power to heat ratio. If the actual power to heat ratio of a cogeneration unit is not known, default values may be used.

CHP Directive

Annex 3 – Methodology for determining the efficiency of the cogeneration process

For the purpose of this Directive high-efficiency cogeneration shall fulfill the following criteria:

- cogeneration production from cogeneration units shall provide primary energy savings of at least 10 % compared with the references for separate production of heat and electricity
- production from small scale and micro cogeneration units providing primary energy savings may qualify as high-efficiency cogeneration.

Calculation of primary energy savings according to the formula:

$$PES = \{1 - 1 / [(CHP H / Ref H) + (CHP E / Ref E)]\} \times 100\%, \quad \text{where}$$

PES is primary energy savings;

CHP H is the heat efficiency of the cogeneration production defined as annual useful heat output divided by the fuel input used to produce the sum of useful heat output and electricity from cogeneration;

Ref H is the efficiency reference value for separate heat production;

CHP E is the electrical efficiency of the cogeneration production defined as annual electricity from cogeneration divided by the fuel input used to produce the sum of useful heat output and electricity from cogeneration ;

Ref E is the efficiency reference value for separate electricity production.

CHP Directive

Annex 4 – Criteria for analysis of national potentials for high-efficiency cogeneration. The considerations include:

- the type of fuels that are likely to be used to realize the cogeneration potentials;
- the type of cogeneration technologies that are likely to be used to realize the national potential;
- the type of separate production of heat and electricity or, where feasible, mechanical energy that high-efficiency cogeneration is likely to substitute;
- a division of the potential into modernization of existing capacity and construction of new capacity.

The analysis will assess the cost effectiveness - in terms of primary energy savings - of increasing the share of high-efficiency cogeneration. The analysis will also take into account national commitments such as the Kyoto Protocol.

The analysis of the national cogeneration potential will specify the potentials in relation to the timeframes 2010, 2015 and 2020 and include, where feasible, appropriate cost estimates for each of the timeframes.

CHP Directive

The joint IEA/ESTAT/UNECE annual electricity questionnaire includes two tables for collecting the CHP data

Tables are included as a CHP supplementary reporting for European Union countries under the EU Directive 2008/8/EC:

- Table EU-1: Electricity and heat production by CHP units
- Table EU-2: Operational CHP units fuel input

CHP Directive

Table EU-1: Electricity and heat production by CHP units

Completely CHP Units (Efficiency $\geq 75\%$)									
Type of cycle		Maximum capacity			Production			Fuel for CHP	Number of Units
		Electricity		Heat	Electricity		Heat		
		CHP	Gross	Net	CHP	Gross	CHP	TJ (NCV)	n
		MW	MW	MW	GWh	GWh	TJ	H	I
Combined cycle (eff $\geq 80\%$)	1								
Gas turbine with heat recovery	2								
Internal Combustion engine	3								
Steam: backpressure turbine	4								
Steam: condensing turbine (eff $\geq 80\%$)	5								
Others	6								
Subtotal (1+2+3+4+5+6)	7								
Units with a non-CHP component (Efficiency $< 75\%$)									
Type of cycle		Maximum capacity			Production			Fuel for CHP	Number of Units
		Electricity		Heat	Electricity		Heat		
		CHP	Gross	Net	CHP	Gross	CHP	TJ (NCV)	n
		MW	MW	MW	GWh	GWh	TJ	H	I
Combined cycle (eff $\geq 80\%$)	8								
Gas turbine with heat recovery	9								
Internal Combustion engine	10								
Steam: backpressure turbine	11								
Steam: condensing turbine (eff $\geq 80\%$)	12								
Others	13								
Subtotal (8+9+10+11+12+13)	14								
Total (7+14)	15								
<i>of which Autoproducers</i>	16								

CHP Directive

Table EU-2: Operational CHP units fuel used for CHP production

		Units	MAIN ACTIVITY PRODUCER PLANTS	AUTOPRODUCERS PLANTS	TOTAL
HARD COAL	1	10 ³ t			
	2	TJ (NCV)			
SUB-BITUMINOUS COAL	3	10 ³ t			
	4	TJ (NCV)			
BROWN COAL	5	10 ³ t			
	6	TJ (NCV)			
PEAT	7	10 ³ t			
	8	TJ (NCV)			
COKE OVEN GAS	9	TJ (GCV)			
	10	TJ (NCV)			
BLAST FURNACE AND OXYGEN STEEL FURNACE GAS	11	TJ (GCV)			
	12	TJ (NCV)			
OTHER COAL PRODUCTS (SOLID)	13	10 ³ t			
	14	TJ (NCV)			
RESIDUAL FUEL OIL	15	10 ³ t			
	16	TJ (NCV)			
REFINERY GAS	17	10 ³ t			
	18	TJ (NCV)			
OTHER LIQUID FOSSIL FUELS	19	10 ³ t			
	20	TJ (NCV)			
NATURAL GAS AND GAS WORKS GAS	21	TJ (GCV)			
	22	TJ (NCV)			
SOLID BIOMASS	23	TJ (NCV)			
INDUSTRIAL WASTE	24	TJ (NCV)			
MUNICIPAL WASTE (RENEWABLE)	25	TJ (NCV)			
MUNICIPAL WASTE (NON-RENEWABLE)	26	TJ (NCV)			
BIOGAS	27	TJ (NCV)			
OTHER RENEWABLES AND WASTES	28	10 ³ t			
	29	TJ (NCV)			
NUCLEAR HEAT	30	TJ (NCV)			
TOTAL	31	TJ (NCV)			

**DIRECTIVE 2012/27/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL
of 25 October 2012 on energy efficiency, amending Directives 2009/125/EC and
2010/30/EU and repealing Directives 2004/8/EC and 2006/32/EC**

The Annex XV contains Correlation table between the new and old Directives.

The new Directive 2012/27/EU has several annexes concerning CHP:

Annex I - General Principles for the Calculation of Electricity from Cogeneration

Annex II - Methodology for Determining the Efficiency of the Cogeneration Process

Annex VIII - Potential for Efficiency in Heating and Cooling

**DIRECTIVE 2012/27/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL
of 25 October 2012 on energy efficiency, amending Directives 2009/125/EC and
2010/30/EU and repealing Directives 2004/8/EC and 2006/32/EC**

Yearly the NSI collects data from all plants with issued licenses for cogeneration.

The State Energy and Water Regulatory Commission (SEWRC) of Bulgaria issues licenses and certificates to the electricity generators about the origin of electricity generated from high efficiency cogeneration.

For the verification data obtained are compared with the decisions of the SEWRC for high efficiency cogeneration.

The correct data are accumulated at national level and were provided in worksheets EU1 and EU2 of the Annual electricity and heat questionnaire. For 2012 year the CHP tables are not anymore part of the Annual Electricity and heat questionnaire. The NSI will sent these two tables via eDAMIS to Eurostat.



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www.nsi.bg

Thank you for your attention!

For further questions, please contact at:

ITzvetkova@nsi.bg