

# IENE Workshop: Energy and Geopolitics Roundtable

## Cogeneration Observatory and Dissemination Europe - CODE2



COGENERATION OBSERVATORY  
AND DISSEMINATION EUROPE



## ROADMAP FOR COGENERATION OF HEAT & POWER FOR BULGARIA



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# Introduction to CODE2

CODE2 project is jointly funded by the IEE and industry, as it:

- develops the first clear plan of action for CHP in each EU M-S.
- gathers all the interested experts and forms information networks around cogeneration.
- reviews existing published data and presents conclusions.
- introduces in details the new EED and assesses with national stakeholders what the impact will be.
- does the first specifically micro-CHP and bio-energy CHP analysis.

CODE2 mobilises effort in each of the 27 EU M-S for the promotion of **Cogeneration of Heat and Power**.

# Expected results

- A further strengthening of the previous CODE Regional Network.
- 27 National **Cogeneration Roadmaps** and one European Cogeneration Roadmap with concrete proposals for policy improvement, expansion in key industry sectors and awareness raising.
- Identification of micro-CHP and bio-energy CHP potentials
- Workshops in pilot countries where draft Roadmaps are discussed.
- Establishment of CHP Coalitions in 27 EU Member States involving industry, policy-makers and interest groups.
- Practical “How-to” guides for key sectors (paper, food, hotels, SMEs).
- Best practice cases on cogeneration in target sectors.

# Partners & contact details

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- **Partner responsible for Eastern Europe region:** Stane Merše, Jožef Stefan Institute (JSI), [stane.merse@ijs.si](mailto:stane.merse@ijs.si)  
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Countries: France, Italy, Luxembourg, Malta, Portugal, Spain

# The Roadmap for CHP for the Republic of Bulgaria



# General Energy Data for Bulgaria

- Bulgaria **imports** almost **70%** of its energy supplies.
- Very **small oil and gas** reserves, but **considerable reserves of lignite and sub-bituminous coal**.
- Lignite cannot be easily exploited due to several geological constraints<sup>1</sup>.
- Uses **nuclear power** in order to cover its energy needs.
- According to Eurostat, **Energy dependence was 36,6%** for 2011 much lower than the average of EU of 27 (53,8%).
- Bulgaria also has extensive **district heating** infrastructures, some with CHP, serving in 2011 the **17% of its citizens**<sup>2</sup>.
- The **CHP** share of total **heat generation** reached in 2009 at **26,7%**<sup>3</sup>.

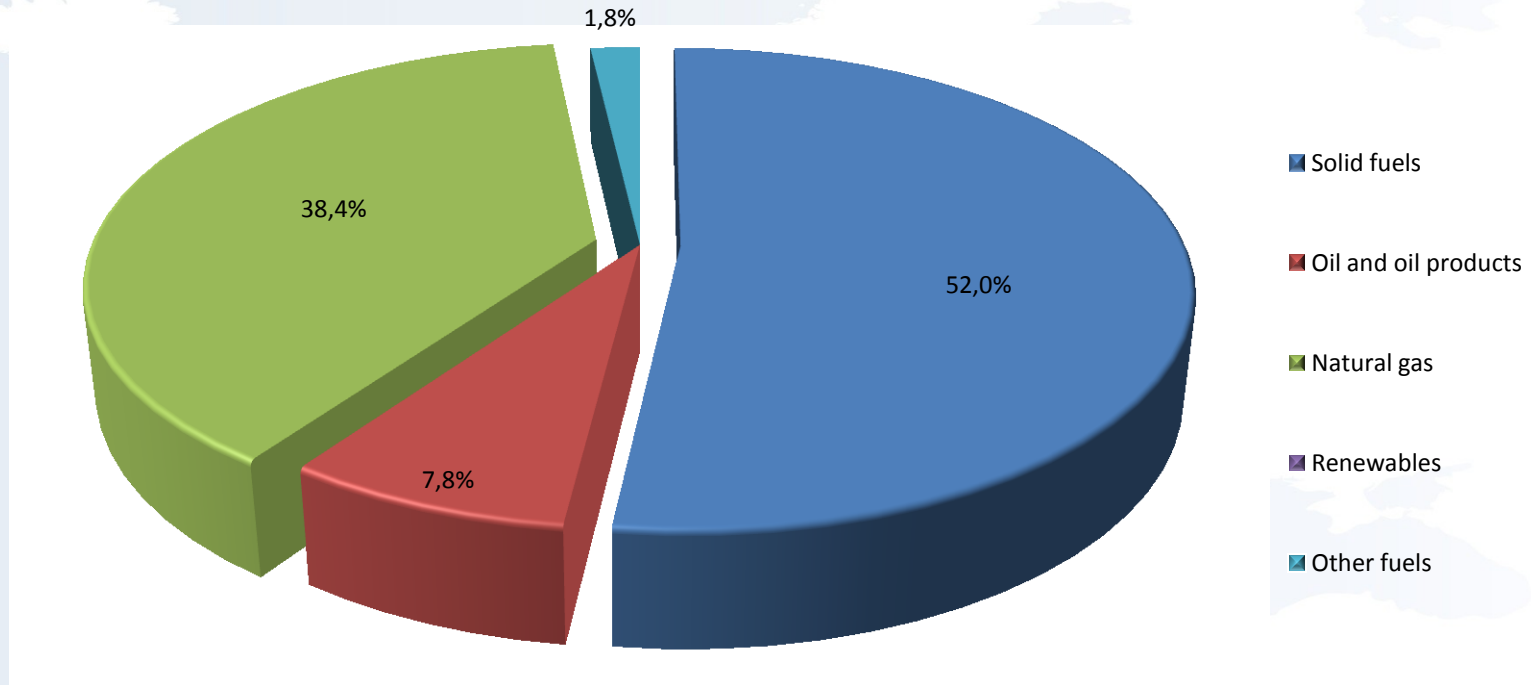
<sup>1</sup>"South East Europe Energy Outlook", IENE, 2011

<sup>2</sup> <http://www.euroheat.org/Bulgaria-187.aspx>

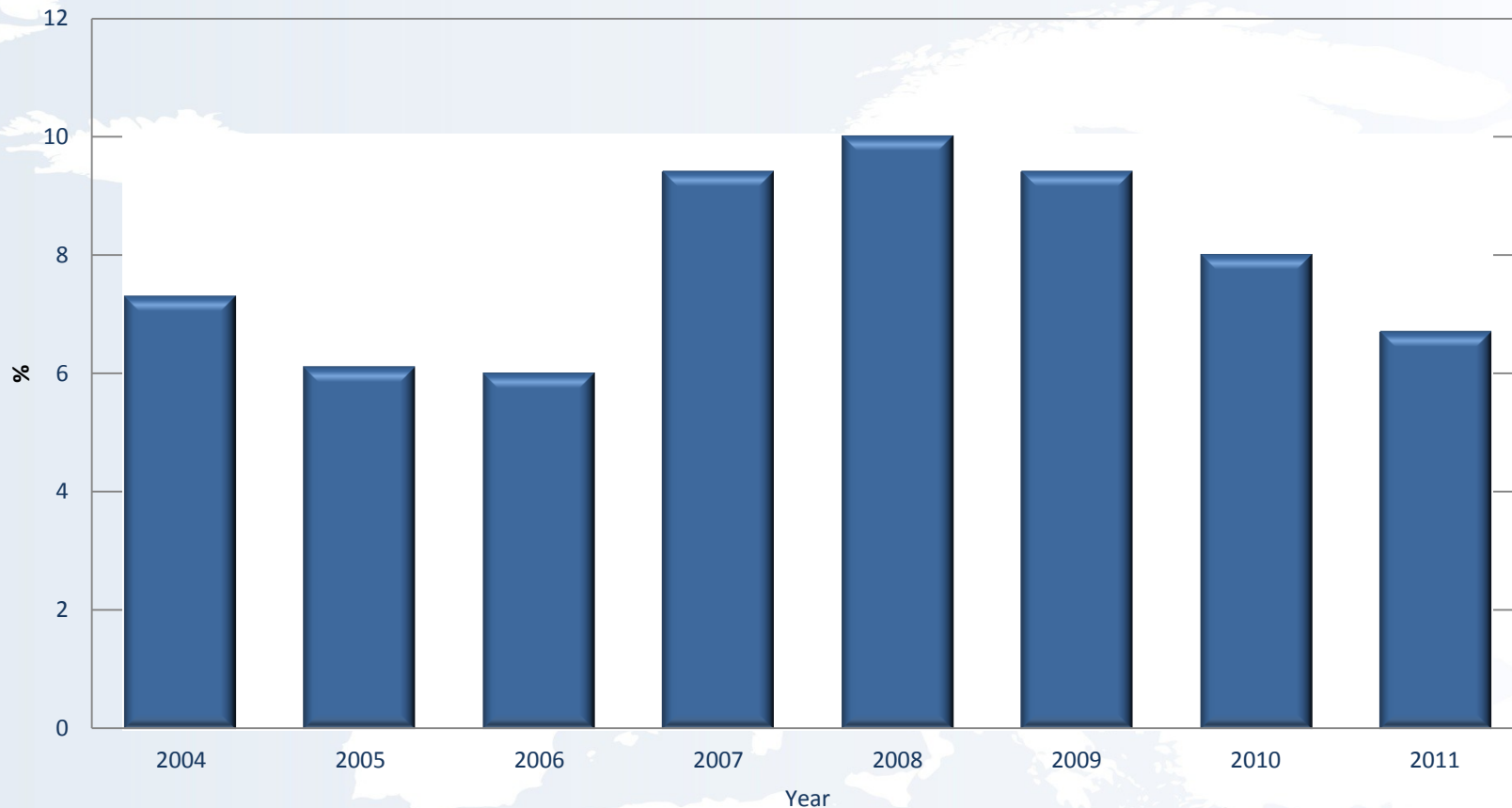
<sup>3</sup>"Combined heat and power (CHP) (ENER 020) - Assessment published Apr 2012", European Environment Agency



# Bulgaria CHP Fuel share 2009 <sup>4</sup>



# CHP share of gross electricity generation<sup>5</sup>



<sup>5</sup> Eurostat

[www.cogeneurope.eu](http://www.cogeneurope.eu)





# Legal framework

- **Energy Act of Bulgaria** promulgated in 2003 (promotes the installation CHP systems and mentions the surcharge price in cogenerated electricity)
- **Law on Energy Efficiency**, which is in force from 14 November 2008 (sets the framework of Energy efficiency National Strategy and action plans)
- **Energy from Renewable Sources Act** promulgated in 2011 (promotes the operation and installation of CHP)
- **Bulletin on the state and development of the energy sector** (prepared pursuant to Article 4, paragraph 2, point 17 of the Energy Act, describes the energy status)
- **Second National Energy Efficiency Action Plan 2011-2013**, published in 2011 (describes the support mechanisms, the importance and provide suggestions for the development of CHP)
- **Energy Strategy of Republic of Bulgaria till 2020** for reliable, efficient and cleaner energy, published in 2011 (fundamental document of the national energy policy that is approved by the Council of Ministers and passed by the National Assembly of the Republic of Bulgaria, reflects the political vision of the Government of European Development of Bulgaria pursuant to the up-to-date European energy policy framework and the global trends in the development of energy technologies)



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# Legal framework

## Important points in EED 2012/27/EU

- The obligation of a CBA for installations with total thermal input exceeding 20MW
- The development of network tariffs and regulations
- Priority or guaranteed access to the grid of electricity from high-efficiency CHP
- Capability of connection to the grid system of electricity produced from high-efficiency cogeneration from micro-cogeneration units
- Simplification and shortening of authorization procedures
- High-efficiency cogeneration will be encouraged to be sited close to areas of demand by reducing the connection and use-of- system charges
- Provision of incentives for auto-producers to connect to the grid and sell their surplus electricity production
- Specific target establishment
- Annual saving of energy consumed by 1.5% starting at 1/1/2014 till 31/12/2020
- Training and education, including energy advisory programs, that lead to the application of energy- efficient technology or techniques and have the effect of reducing end-use energy consumption
- Mandatory Energy audits



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# Support available for Cogeneration

## *Current support schemes*

- **Incentive feed-in tariffs and mandatory off-take of electricity** produced by modern high-efficiency co-generation plants
- **Provision of grants** for the implementation of energy saving technologies and RES, small-scale co-generation installations for own needs for large enterprises
- In case of a declared demand for heat, **new plants with a capacity exceeding 5 MW and using natural gas as fuel** shall be constructed for co-generation (Energy Act)
- The transmission company and the distribution companies shall perform **priority connection** of all power plants generating electricity using high-efficiency combined generation, having installed capacity **up to 10 MWe**, to the transmission, and the distribution network, respectively.
- There are **two funds supporting cogeneration** projects: one set up by the Bulgarian state and a second one is called the Energy Efficiency Fund and the main donor is the World Bank.



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# Support available for Cogeneration

## Future support mechanisms

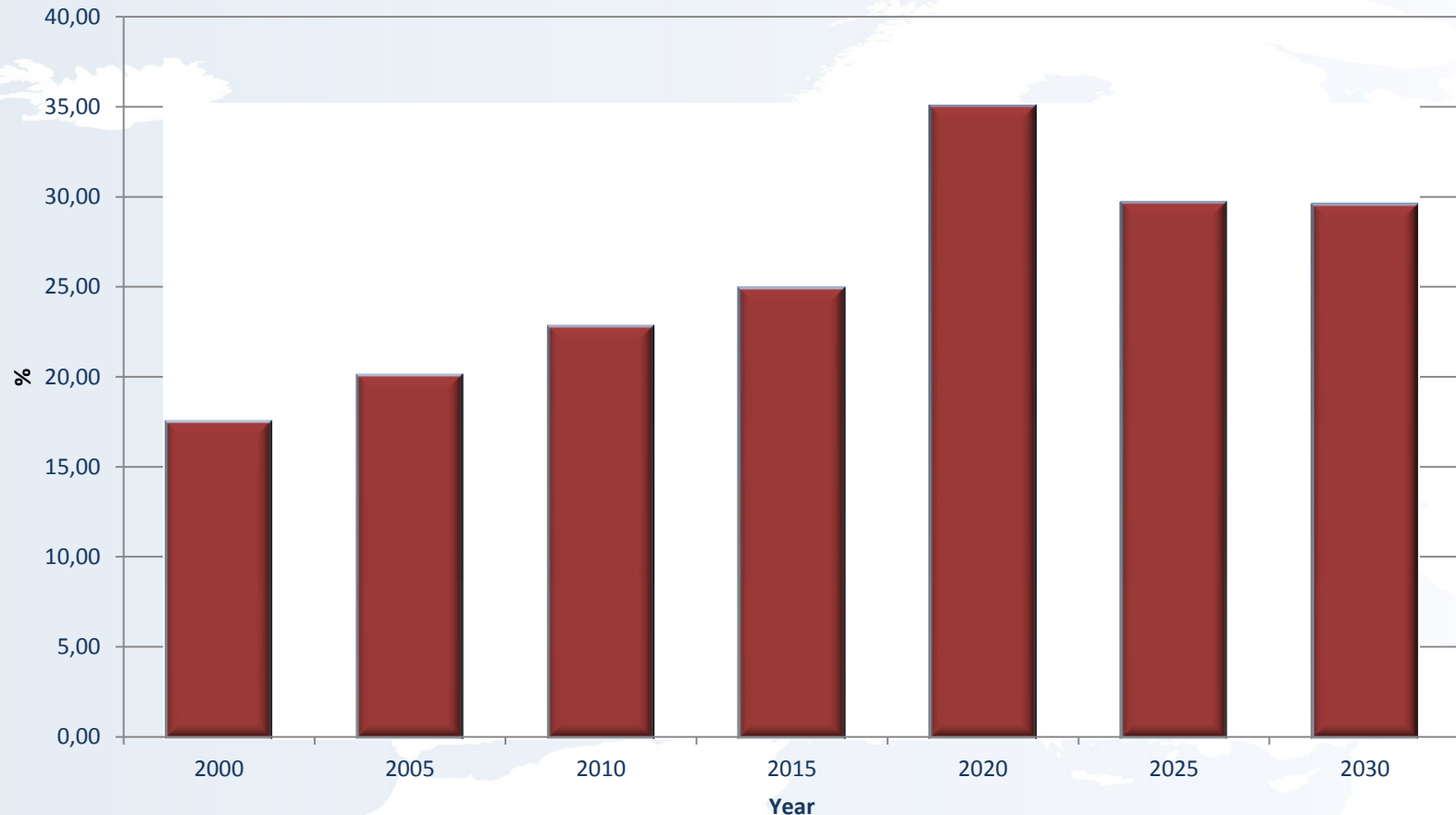
- Preservation of the centralized district heating also remains a priority, in which case the companies shall be technically modernized and financially stabilized. The methods for **highly efficient co-generation** of heat and electric power will be **actively supported**. For that purpose, a program for stabilization and development of the heating sector will be developed and adopted.
- The methods for **highly efficient co-generation** of heat and electricity with emphasis on technologies **using RES, including waste biomass, vegetable and animal waste**, will be **actively supported**.
- **Extension beyond 2015** of the deadline for application of **preferential purchase prices and mandatory buying-out of the electric power** produced from renewable sources, including that generated by co-generation power plants operating with renewable sources.
- Providing **loans combined with grants** for the development of decentralized energy production, including micro CHP and tri-generation.



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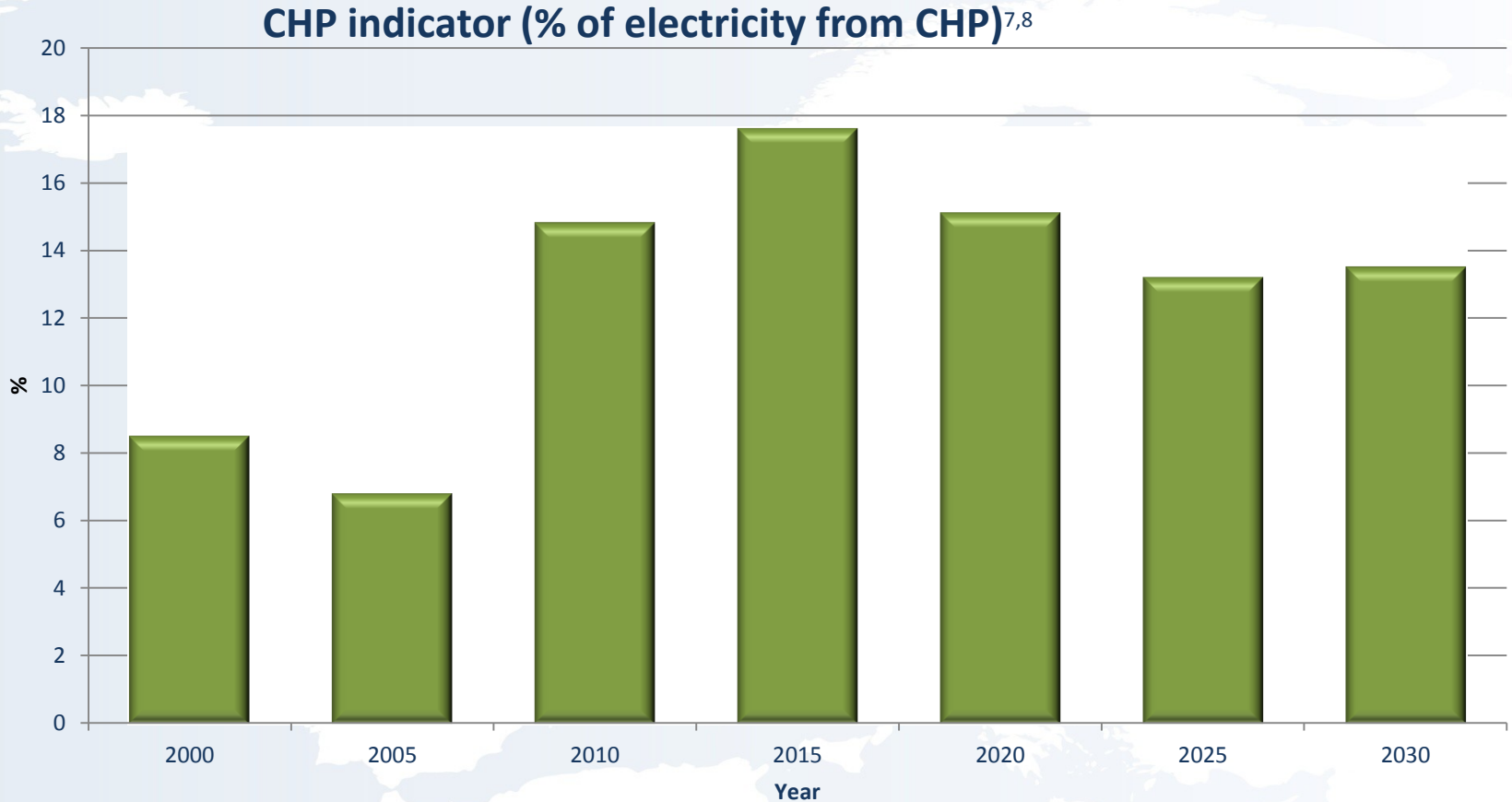
# Potential for Cogeneration

Share of cogeneration units on thermal power<sup>6</sup>



<sup>6</sup>“EU energy trends to 2030 — UPDATE 2009”, EUROPEAN COMMISSION Directorate-General for Energy in collaboration with Climate Action DG and Mobility and Transport DG

# Potential for Cogeneration



<sup>7</sup>“Energy Strategy of Republic of Bulgaria till 2020 for reliable, efficient and cleaner energy”, June 2011

<sup>8</sup>“EU energy trends to 2030 — UPDATE 2009”, EUROPEAN COMMISSION Directorate-General for Energy in collaboration with Climate Action DG and Mobility and Transport DG

# Barriers

- ❖ Unfavorable energy prices – especially the price for Heat
- ❖ Non-stable political situation in Bulgaria
- ❖ Inconsistency in the policy for biomass sector and for the RES sector, in general
- ❖ Bureaucracy

# Market outlook

- There have been some **major steps** the past years concerning the **clarification of legal framework**.
- **National policy** is moving towards the **development of CHP**
- The sectors that will probably show a higher degree of **development** are **industry and district heating**.
- There is an ongoing **raise of interest** towards **biomass, biogas and biofuels** in CHP installations.
- Solid biofuels show favourable potentials, their cultivation is not widespread causing a **supply difficulty**.
- **Micro-CHP** due to its **high purchase cost** for private investors seems that the next few years will not show any notable growth.



# For those interested to **comment** on the “Roadmap for CHP in Bulgaria”

- Are you a policy-maker?
- Are you working in industry?
- Are you from a civil energy society?
- Are you interested in **CODE 2** project?

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[hachp@hachp.gr](mailto:hachp@hachp.gr) AND  
**GET INVOLVED!**