

Cogeneration Roadmap for the Czech Republic

SUMMARY

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The Czech Republic (CR) is one of the leading cogeneration member states in the EU with a long cogeneration tradition, a rather broad awareness of cogeneration's advantages, growing CHP electricity generation, an incentive support framework for new small scale CHP investments and powerful domestic CHP manufacturers and project providers. Cogeneration fits well into the key national energy policy goals to increase energy efficiency and decrease greenhouse gases emissions, especially by the necessary retrofit and replacement of existing old CHP plants in district heating systems by modern CHP units. CHP electricity generation could increase by up to 30% over the 2010 level until 2030 and provide more than 25% of the final electricity demand becoming an important sustainable pillar of the electricity supply in the Czech Republic alongside nuclear energy and other renewable generation.

The CHP roadmap path would deliver 9 TWh/a of primary energy saving (PES) under the EED methodology until 2030. Considering the likely implementation path of such a roadmap up to 12 TWh/a PES and 6 Million tonnes of CO₂/a reductions are achievable in practice until 2030. Implementation could contribute more than 35% of the national indicative energy saving target (13 TWh) till 2020 resulting in huge benefits for the national economy. Establishing a stable long term support framework for cogeneration and for the energy retrofit of district heating systems, along with the removal key barriers are prerequisite conditions for achieving these results. Conscientious implementation of the European Energy Efficiency Directive (EED) could significantly contribute to a significant future CHP role in sustainable energy supply for the Czech Republic and for the implementation of this roadmap.

1. Where we are now

The Czech Republic (CR) is one of the leading cogeneration member states in the EU with long cogeneration tradition and relatively stable capacity and production in the last years and in 2010 reached 14% share in total gross electricity generation. 4,7 GWe of the installed CHP capacity with the prevailing 95% share of steam turbines produced 11 TWh of electricity and close to 34 TWh of heat in the year 2011.

2. Energy and climate strategy

Cogeneration fits well to the objectives of the revised State energy concept where increase of nuclear power generation (from 16% to about 35% by 2040) and economically viable RES and natural gas power generation (balancing energy and cogeneration) to gradually replace current predominant role of domestic coal. Maximising energy efficiency and the reduction of pollutant and GHG emissions are one of the key energy policy goals for the Czech Republic with ambitious targets to reduce total aggregate CO₂ emissions by 25 % by the year 2020 compared to the year 2000.

3. Cogeneration awareness

A long CHP tradition in industry and district heating and a well-developed CHP market with domestic manufacturers and technology providers are key drivers for a reasonably high level of CHP awareness in the Czech Republic. A proper awareness of other market links like supportive energy policy, a positive attitude of financial institutions, ESCOs, energy companies, sector organisations and research, are very much key drivers for the stable volume of CHP investments.

4. Key observed existing barriers

An unreliable long term perspective of the support framework for CHP is the key risk and barrier for new CHP investment in the Czech Republic, in spite of current favourable conditions for CHP projects. Weak support for the increase of competitiveness of existing district heating systems is a threat for the future development of these systems where majority of existing CHP plants are located.

5. Cogeneration potential

The evident economical CHP potential which exists in the Czech Republic should be re-assessed within the Energy Efficiency Directive prescribed comprehensive assessment. 2,8 GW or 5,6 TWh of additional CHP generation was earmarked as additional economic CHP potential up to the year 2020 in the National potential study from 2006, and this should be reconfirmed. Additionally the growing role for bio and micro CHP potential was proved by recent CODE2 analysis highlights additional opportunities.

6. The roadmap

Establishing a long term stable and predictable legal incentive framework for cogeneration is a key priority necessary for the future CHP development in the Czech Republic. Intensifying the support instruments for increasing the efficiency and competitiveness of district heating systems is crucial for their future economic operation and preserving the majority of current CHP generation. EED implementation should be used as an important tool for putting CHP policy in place and to push for an increase of the efficiency in heat supply where simplification of administrative procedures and grid connection is one of the important issues.

CHP could contribute more than 25% of final electricity demand and become the sustainable pillar of electricity supply in the Czech Republic through establishing a long term stable and incentive legal framework for cogeneration and district heating systems proposed in CHP road map implementation. By necessary replacement of ¼ of existing CHP capacities by 2,3 GWe of modern CHP plants and 40% implementation of economic potential or 0,9 GWe of new CHP units current CHP electricity generation could be increased for 30% to 16 TWh till the year 2030 as shown in the following figure.

The Potential CHP primary energy savings could contribute more than 35% of the indicative national target of energy savings till the year 2020 and reduce CO₂ emissions for up to 6 million tons of CO₂ till the year 2030.

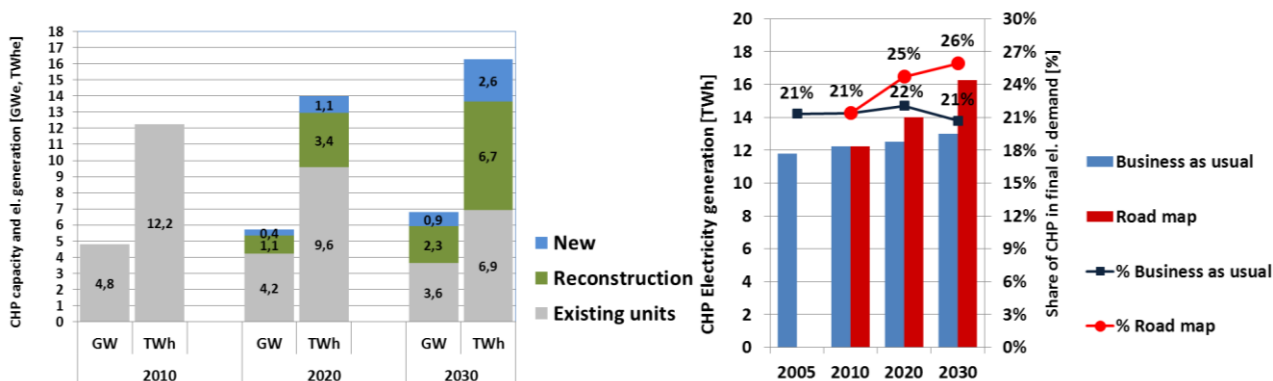


Figure 1: CHP Roadmap target path to CHP growth till the year 2030

For more detailed information about the Cogeneration Roadmap for the Czech Republic please refer to the complete document available at the www.code2-project.eu.

About CODE2 project:

This roadmap has been developed in the frame of the CODE2 project, which is co-funded by the European Commission (Intelligent Energy Europe – IEE) and will launch and structure an important market consultation for developing 27 National Cogeneration Roadmaps and one European Cogeneration Roadmap. These roadmaps are built on the experience of the previous CODE project (www.code-project.eu) and in close interaction with the policy-makers, industry and civil society through research and workshops.

The project aims to provide a better understanding of key markets, policy interactions around cogeneration and acceleration of cogeneration penetration into industry. By adding a bio-energy CHP and micro-CHP analysis to the Member State projections for cogeneration to 2020, the project consortium is proposing a concrete route to realise Europe's cogeneration potential.

