

# Combined Heat and Power Programme:

An International Energy Agency Initiative to Improve Energy Supply Efficiency

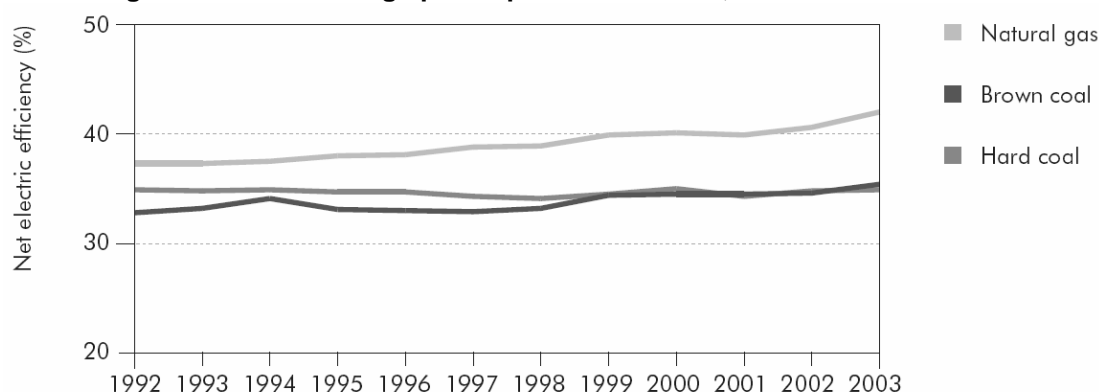


## Background

It is becoming increasingly clear that the world is not on a course for a sustainable energy future. Despite important steps taken by government and industry to mitigate greenhouse gas (GHG) emissions, carbon dioxide (CO<sub>2</sub>) emissions have increased by over 20% over the past decade. IEA recently published a new report that concludes that the carbon intensity of the world's economy will increase dramatically due to greater reliance on coal for power generation. As a result, CO<sub>2</sub> emissions are forecast to be almost two and a half times the current level by 2050 (*Energy Technology Perspectives*, IEA (2006)).

This alarming outlook can, however, be changed, with a portfolio of existing and emerging technologies. In particular, energy supply efficiency improvements offer tremendous promise. The average global efficiency of fossil-fueled power generation has remained stagnant for decades at 35-37% (see Figure 1), and recent gains in natural gas plant efficiency threaten to be overtaken by a return to coal-fired power plants.

**Figure 1: Global average power plant efficiencies, 1992-2003**



Source: *Energy Technology Perspectives*, IEA (2006).

To improve energy supply efficiency, many countries have enacted policies and measures to encourage combined heat and power (CHP) and district heating and cooling (DHC). The European Union has estimated that CHP will provide the EU with 40 million tonnes of oil equivalent in energy savings by 2020. The United States has a goal of doubling CHP capacity by 2010; other countries like Japan and Canada have growing CHP initiatives. Yet despite this activity, there remain substantial barriers to deploying CHP/DHC, including a lack of accurate, transparent data that prevents robust analyses to verify the benefits that these plants can deliver.

## IEA's CHP Programme: Planned Activities

IEA plans to expand its current portfolio of analytical and networking activities to help address these barriers. IEA will assist by building on its existing international heat data collection efforts to improve CHP/DHC data quality and availability, conducting analyses to verify claimed benefits, and highlighting best practice policies and approaches. IEA also plans to assist by transferring proven models for CHP/DHC advancement to key countries like China and the economies in transition of the former Soviet Union.

Important milestones and deliverables for this effort include:

- **February 2007** – host a kick-off meeting with Partners and key collaborators which will generate an agreed-upon set of priorities and milestones.
- **Summer 2007** – conduct CHP/DHC global scenarios in IEA’s Energy Technology Perspectives (ETP) and World Energy Outlook models to verify economic and environmental benefits of increased CHP/DHC.
- **Winter 2007** – identify and publish best practice policies that are being used to advance CHP/DHC, including interconnection standards, power purchase mandates, grid planning, air regulatory treatment, and incentive programs.
- **Spring 2008** – host international CHP/DHC event to highlight analyses, promote policy models, and engage industrial users and other investors.
- **Summer 2008** – publish advanced CHP/DHC scenarios as part of new ETP publication that is part of the G8 Plan of Action.
- **Ongoing** – collect and make available improved CHP/DHC global data.

## Join Us

IEA is interested in engaging government, industry and collaborator organisations who can bring useful analytical, policy and outreach insights to this initiative. Consider joining us. The benefits of participating in this initiative include:

- Input into IEA analyses and scenarios that verify the benefits of more aggressive CHP/DHC investments by governments and industry.
- Collaboration with a set of global CHP/DHC experts in government and industry through sharing analytical approaches, data and policy models.
- Enhanced availability and quality of international CHP/DHC data.
- Input into IEA publications on best practice policies and measures for advancing CHP/DHC.

## For More Information

This effort builds from a base of existing IEA work on CHP/DHC, including IEA Implementing Agreements, analysis and publications, including:

IEA District Heating and Cooling/CHP Implementing Agreement, [www.iea-dhc.org/](http://www.iea-dhc.org/)

IEA Electricity Networks Analysis, Research and Development (ENARD) Implementing Agreement, (contact Janet O’Callaghan at [Janet.O'Callaghan@eatechnology.com](mailto:Janet.O'Callaghan@eatechnology.com))

*“Coming in from the Cold: Improving District Heating Policy in Transition Economies”*  
[www.iea.org/Textbase/publications/free\\_new\\_Desc.asp?PUBS\\_ID=1342](http://www.iea.org/Textbase/publications/free_new_Desc.asp?PUBS_ID=1342)

**For more information about IEA’s CHP/DHC Programme, contact:**

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