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CHP/DHC Country Scorecards

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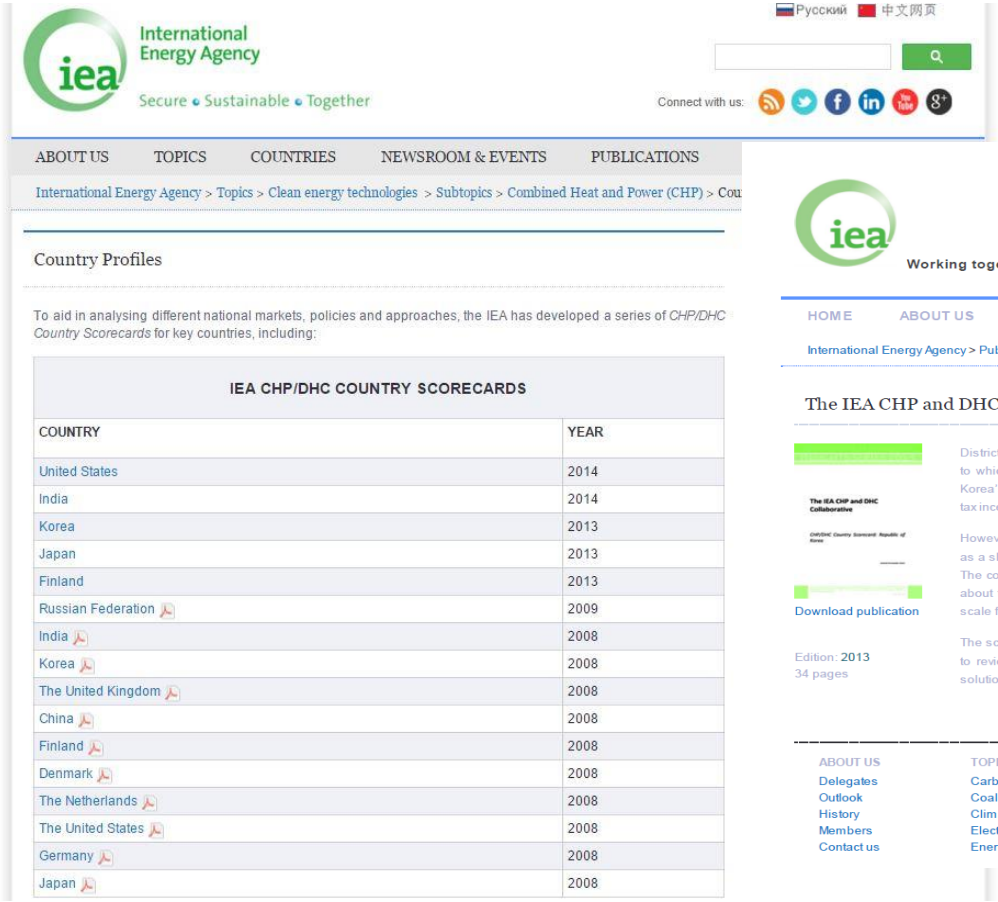
www.iea.org

CHP/DHC Country Scorecards series

Each country scorecard aims to:

- ✓ Provide additional data on CHP and DHC at the country level
  - ✓ CHP average performance, CHP capacity breakdown by size and technology, DHC energy supply mix
- ✓ Discuss current status of CHP/DHC in national context
- ✓ Outline policy efforts and identify strengths and weaknesses
- ✓ Evaluate potential for additional deployment
- ✓ Identify country-specific challenges to CHP and DHC
- ✓ Recommend solutions to help overcome barriers in market and policy frameworks

All published scorecards are available for free download on the IEA website: www.iea.org/chp/countryscorecards



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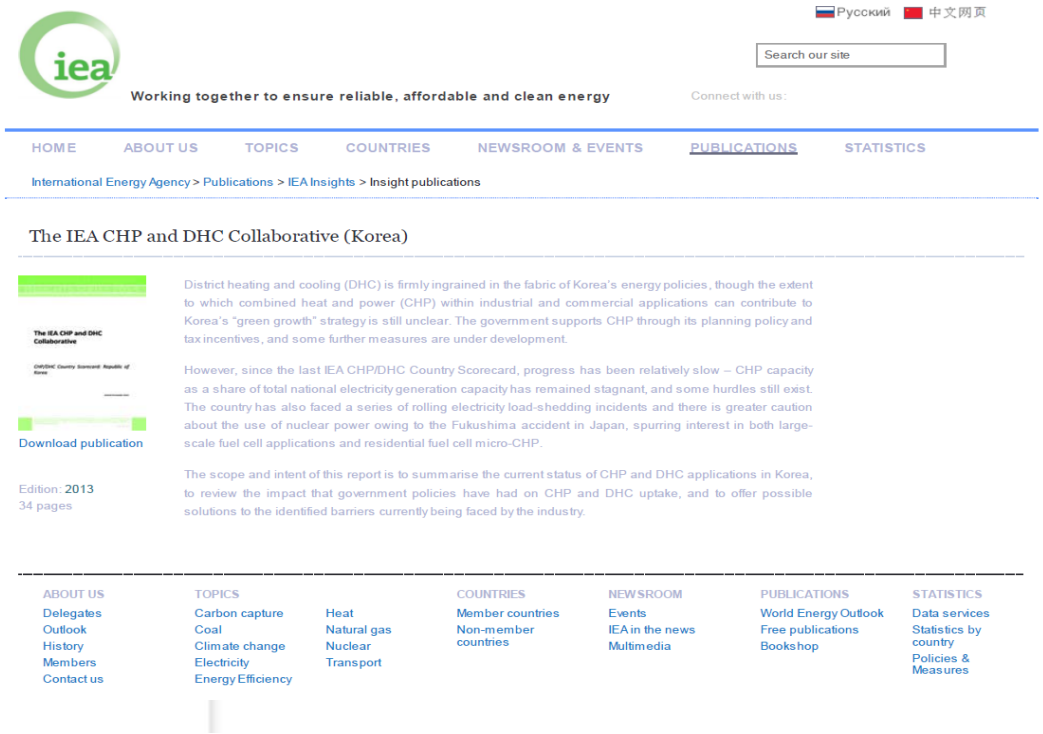
Country Profiles

To aid in analysing different national markets, policies and approaches, the IEA has developed a series of *CHP/DHC Country Scorecards* for key countries, including:

IEA CHP/DHC COUNTRY SCORECARDS

COUNTRY	YEAR
United States	2014
India	2014
Korea	2013
Japan	2013
Finland	2013
Russian Federation	2009
India	2008
Korea	2008
The United Kingdom	2008
China	2008
Finland	2008
Denmark	2008
The Netherlands	2008
The United States	2008
Germany	2008
Japan	2008



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The IEA CHP and DHC Collaborative (Korea)

Download publication

Edition: 2013
34 pages

District heating and cooling (DHC) is firmly ingrained in the fabric of Korea's energy policies, though the extent to which combined heat and power (CHP) within industrial and commercial applications can contribute to Korea's "green growth" strategy is still unclear. The government supports CHP through its planning policy and tax incentives, and some further measures are under development.

However, since the last IEA CHP/DHC Country Scorecard, progress has been relatively slow – CHP capacity as a share of total national electricity generation capacity has remained stagnant, and some hurdles still exist. The country has also faced a series of rolling electricity load-shedding incidents and there is greater caution about the use of nuclear power owing to the Fukushima accident in Japan, spurring interest in both large-scale fuel cell applications and residential fuel cell micro-CHP.

The scope and intent of this report is to summarise the current status of CHP and DHC applications in Korea, to review the impact that government policies have had on CHP and DHC uptake, and to offer possible solutions to the identified barriers currently being faced by the industry.

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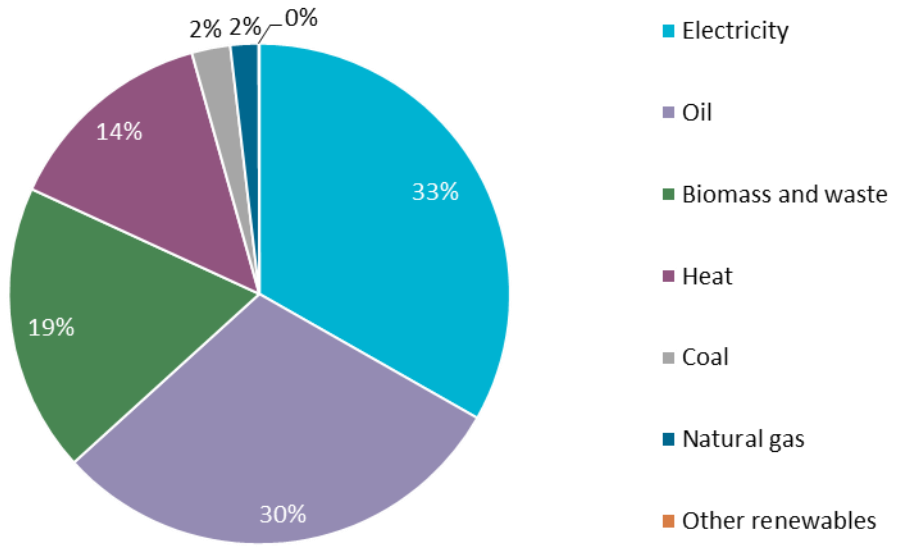
Sweden – Setting the Scene

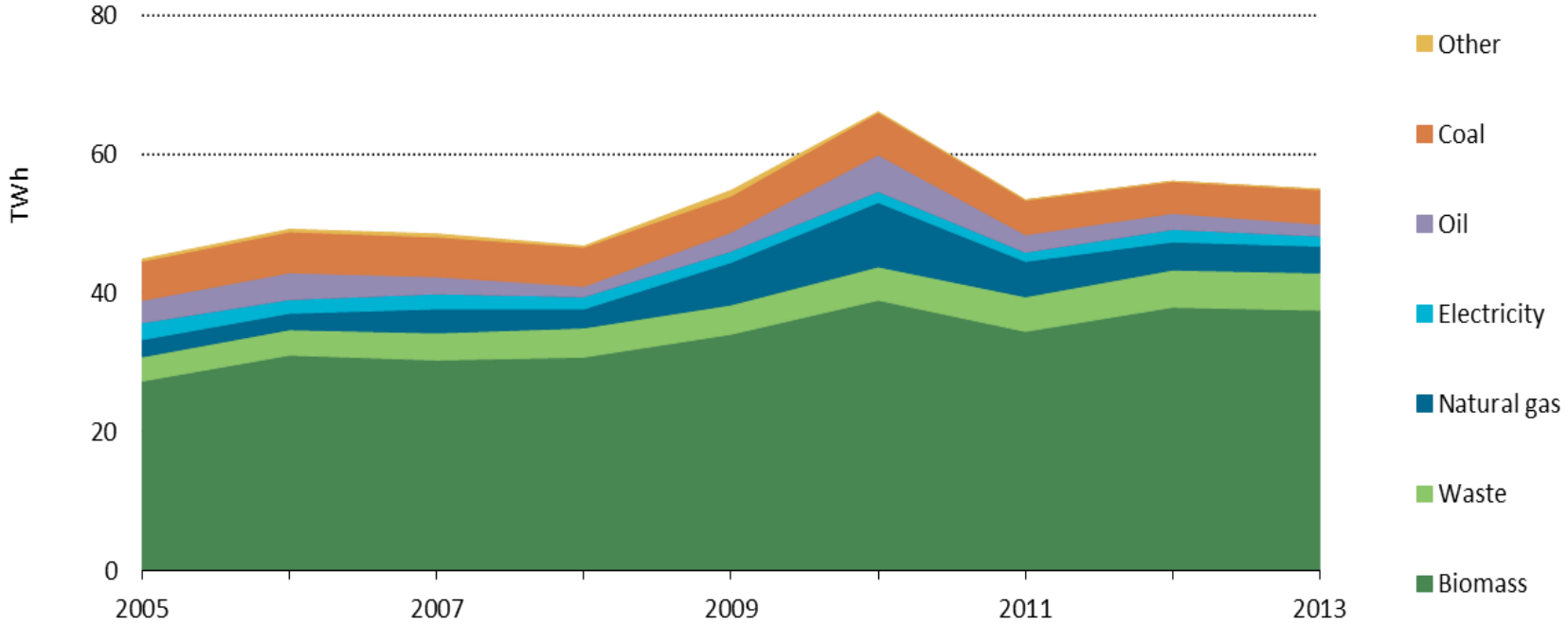
Total final energy consumption, 2013



- More than half the population is served by DH networks, and DH accounts for 72% of total national heat production
- CHP generates 10% of national electricity
- Renewable electricity certificate programme supports biomass-based CHP

Sweden – DH status

Input energy for district heat production, 2005-2013



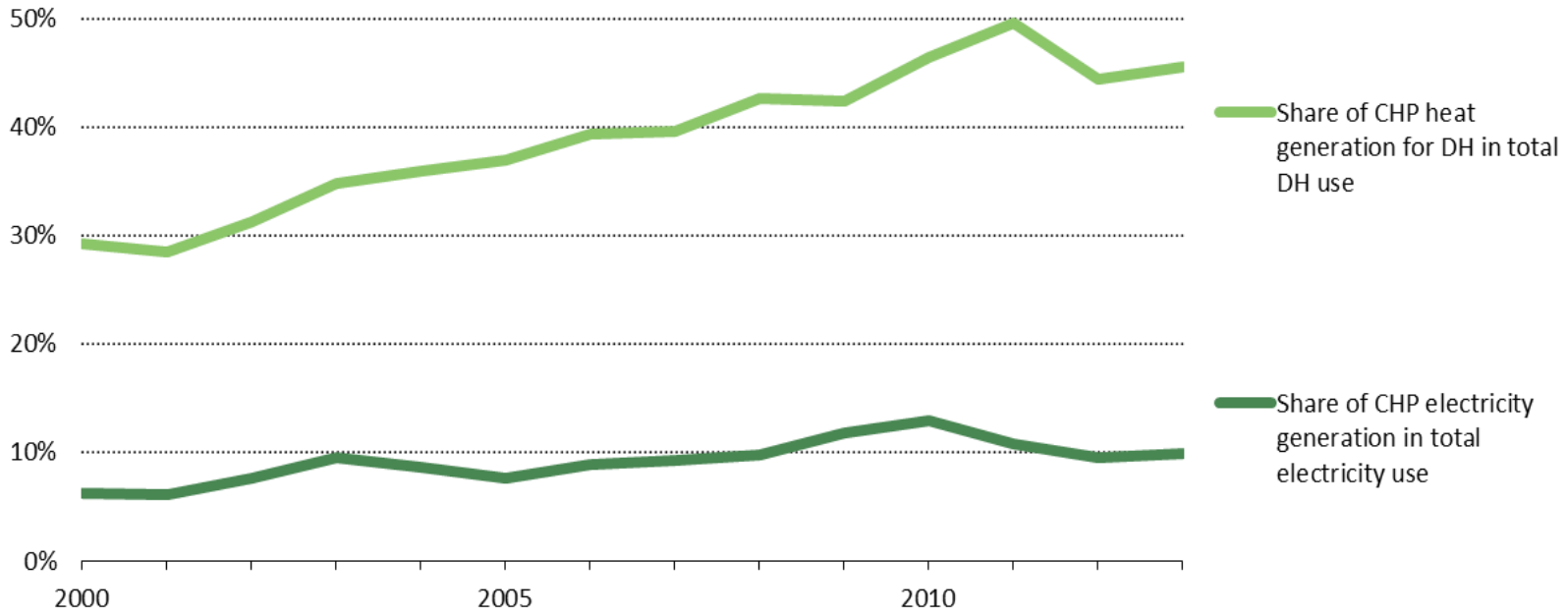
- First DH network in Sweden was built in 1948
- Fossil fuels play a limited role in Sweden's DH networks
- Most of heating energy for multidwelling and commercial buildings comes from DH

Note: Biomass also includes the part of waste incineration that is renewable. Coal includes peat. Industrial excess heat also contributes, but is not shown here.

Source: Swedish Energy Agency (Energimyndigheten) (2015), "Energy in Sweden: Facts and Figures 2015" (Energiläget i siffror 2015).

Sweden – CHP status

Shares of CHP electricity and heat production, 2000-2013



- CHP has gained in share of DH production since 2000
- CHP power generation peaked in 2010 as some plants began to be phased out of the electricity certificate programme
- Industrial CHP is concentrated in the pulp and paper sector

Note: Includes transmission losses. Total heat generation is not fully reported; for autoproducers, only the portion of heat that is sold is reported, and on-site use is not included.

Source: Swedish Energy Agency (Energimyndigheten) (2015b), "Energy Indicators 2015: Monitoring Sweden's Energy Policy Objectives" (Energiindikatorer 2015: Uppföljning av Sveriges energipolitiska mål).

Sweden – Key findings

- **Challenges**
  - DH demand projected to decrease due to buildings energy efficiency and competition from alternative technologies if electricity prices remain low
  - Low electricity prices could also limit new CHP deployment
- **Potentials**
  - Fjärrsyn Regional Waste Heat Cooperation study identified ten clusters where mapping heat sources and existing DH networks showed potential for regional cooperation
  - Open DH model encourages utilisation of excess heat for DH
  - Upgrading to 4th generation low temperature DH networks would improve competitiveness and efficiency
  - DH development could drive further deployment of CHP

Future scorecards and next steps

- **Pre-requisites for scorecard development**
  - In-kind support/voluntary contribution from partner(s)
  - **Engagement from relevant stakeholders, including national government/energy ministry**
  - Possibility of gathering additional, more detailed data on CHP/DHC
- **Timeline**
  - ~1 year, depending on resource allocation and partner support
- **Process**
  - Contact John Dulac/Kira West
- **Sweden scorecard**
  - Produced in partnership with Swedish Energy Agency
  - Will be sent for review by Collaborative members next week
  - Expected to be released by May 2016
- **Ongoing discussions on possible China scorecard collaboration (2017)**

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Thanks!

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