

CHP Markets - Which Way from Here?

This Delta Research Brief gives a glimpse of the prospects for future CHP markets in seven European countries:

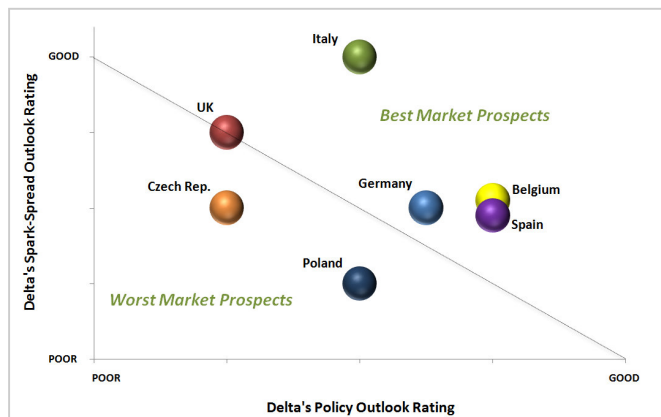
- *Belgium*
- *Czech Republic*
- *Germany*
- *Italy*
- *Poland*
- *Spain*
- *United Kingdom*

June 2008
Delta Energy & Environment
www.delta-ee.com

Delta's CHP Policy and Markets Team has rated the **prospects for CHP development in European countries** in the next five years.

Belgium, Germany, Italy and Spain have scored highest in Delta's spark-spread and policy outlook rating (Figure 1).

Figure 1
DELTA'S SPARK-SPREAD & POLICY OUTLOOK RATING FOR THE NEXT FIVE YEARS



Delta's CHP Policy and Market Service rates the countries according to a range of criteria including:

- Spark-spread (difference between fuel and power prices),
- Internal rate of return (IRR),
- Payback period,
- Government attitude towards CHP,
- Stability of government support.

A summary of Delta's analyses is given in the following pages.



"Delta's CHP Policy and Market reports provide valuable insight that help us determine strategic direction in international markets"

Robert Hegger
from UTC
Power

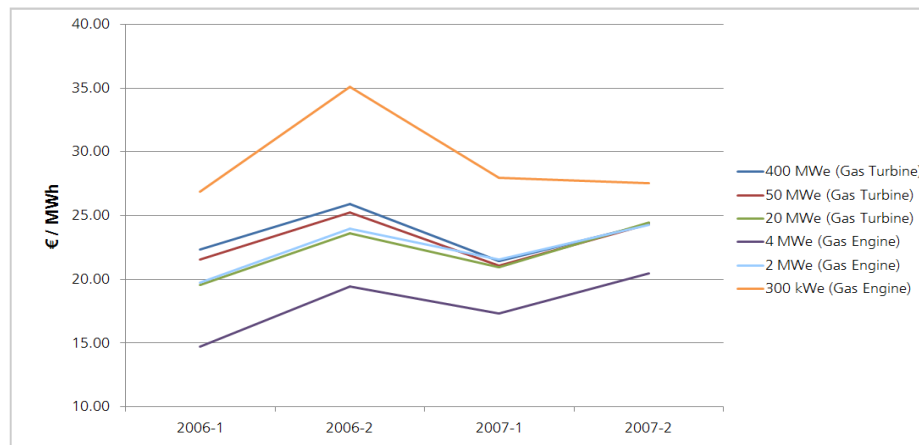
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Belgium:

- Regional **CHP incentives** ensure attractive investment returns and long-term stability.
- According to Delta's economic modelling, in Flanders a 15 MWe gas turbine has a simple payback period of 1 year with policy incentives. Without incentives, the payback period would be 20 years.
- **Spark-spreads are low** and unable to drive projects on their own (Figure 2). Delta does not expect them to improve significantly in the next 5 years.

Figure 2
CHP SPARK-SPREADS IN BELGIUM FROM 2006 TO 2007 (2008 DATA AVAILABLE TO PMS SUBSCRIBERS FROM JULY 2008)



Czech Republic:

- Currently, CHP policy support is effective for small units but the future level of support is uncertain.
- **Spark-spreads are on the rise** and reaching the turning point at which projects become profitable without support.
- **The IRRs and paybacks are generally good**, especially for gas engines below 5 MWe.

Germany:

- Delta expects the **new CHP law** to make the CHP market bloom by offering incentives to all size CHP ranges starting from 2009. The target is to double electricity generation from CHP by 2020.
- The main incentive - a **bonus price** paid on top of electricity market prices for qualifying CHP.
- Spark-spreads are reasonable but insufficient to trigger investment for 5 MWe projects that do not qualify for incentives under the current regime (Table 1).

Table 1
IRR AND SIMPLE PAYBACK FOR CHP IN GERMANY

Technology	Capacity	IRR with 2002 CHP Law (%)	IRR with 2008 CHP Law (%)
Gas Engine	300 kWe	16%	26%
Gas Turbine	5 MWe	3%	14%
	400 MWe	18%	29%

“The information provided by the CHP Market and Policy Service was exceptionally useful.”

*Joe Knowles
from Peter
Brotherhood
Ltd.*

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Italy:

- **A spark-spread driven CHP market**, with some of the highest electricity prices in Europe .
- We expect sparks-spreads to remain very attractive for the next 2 to 5 years.
- **Policy support mechanisms are complex** and make little difference to the paybacks as shown in Table 2.

Table 2
SIMPLE PAYBACK FOR CHP IN ITALY

Technology	Capacity	Simple Payback without Support (Yrs)	Simple Payback with Support (Yrs)
Gas Engine	300 kWe	4.1	3.0
Gas Turbine	40 MWe	4.1	2.7

Poland:

- Delta believes this is a **promising CHP market**. There are **plenty of opportunities** for new investment but the availability of natural gas at competitive prices needs improvement.
- The government introduced support for CHP in 2007, and a new white certificate scheme will follow in 2009. Delta anticipates these will be highly effective.
- **Spark-spreads are low** and we expect them to remain so. As a result, **IRRs are generally poor**.

United Kingdom:

- Existing **CHP policy support is inadequate** and we do not expect this to improve as the government has a poor track record of policy delivery.
- The main 2 incentives available are an exemption from the **Climate Change Levy** on both fuel input and electricity output and **Enhanced Capital Allowances** on CHP investment.
- **Spark-spreads** are, however, **on the rise** overriding the poor policy environment and leading some CHP sectors firmly into economic reckoning. Consequently, CHP paybacks today generally range from 3 to 6 years.

Spain:

- **Government support is vital** for CHP deployment as spark-spreads are low and we do not expect them to improve.
- **The CHP owner can chose between tariffs** that are available for CHP below 100 MWe.
- The tariff incentive alone can easily enable paybacks of less than 4 years.

Delta has deep and wide ranging relationships with key CHP market players and influencers

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Coming Soon - The Next Country Reports

Hungary, China, India, Russia and South Korea will be the next Country Reports published by Delta's experienced CHP Policy and Markets Team (available by August 2008).

The **Delta CHP Policy and Markets Service** includes a comprehensive report on each country plus analysis and updates of major changes in the CHP market, throughout the year.

For more information visit our [website](#), Delta's new [CHP Policy and Market Service Brochure](#) and Delta's article on [Market Prospects for the CHP equipment industry](#) in the Cogeneration and On-Site Power Production magazine.

Please contact [Sytze Dijkstra](#) (+44 131 476 4259) for further information on this service.

