

# Trading Up

## Improving Prospects for CHP in the EU Emissions Trading Scheme

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**The EU Emissions Trading Scheme is the crown jewel of the European policy response to climate change. Up to now, its impact has been limited but its role will certainly increase in both scope and impact in the next few years. This Research Brief explores those aspects of the Scheme that will shape future CHP market development.**

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Recent research by Delta indicates that the overall prospects for CHP projects during the 2008 – 2012 Phase II period of the EU Emissions Trading Scheme (ETS) look likely to improve compared to Phase I (2005 – 2007). This is a potentially promising sign for short- and medium-term market development of CHP plants covered by the scheme (those with thermal input exceeding 20 MW, equivalent to a 7 MWe plant with electrical efficiency of 35%).

The main reason for this brighter outlook is that the allowance allocation arrangements for the Phase II National Allocation Plans (NAPs) appear in many cases to be more CHP-friendly than for Phase I. The treatment of existing and new entrant CHP plants in the NAPs is emerging as an important issue for the commercial performance of some projects. For example, a NAP that leaves a CHP project short of allowances can raise project costs significantly, or prevent a new project going forward.

### **The treatment of CHP is becoming increasingly diverse and complex**

While final arrangements for Phase II allocation have yet to be finalised, our research of the Member State NAPs also suggests that there is an increasingly diverse variety of mechanisms used by Member States to reflect the efficiency of CHP. This is in part because, in the absence of any guidance from the European Commission on how CHP should be handled, there is no standard treatment for CHP. Thus the patchwork of CHP allocation regimes across Europe is becoming more complex – and so a growing challenge for CHP owners and developers to track.

Delta's research compared the treatment of CHP in both Phases I and II of the ETS and identified some of the most favourable NAPs. Our key findings include greater use of various pro-CHP measures:

- 'Double benchmarking' where the separate heat and electricity outputs of CHP are allocated allowances based on emissions from reference power plants and boilers. In this way, allocation is based on

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that which would apply to less efficient separate generation and so rewards CHP directly for the efficiency gains.

- Creation of a specific sector for qualifying CHP plants instead of their more usual inclusion in separate industrial or energy sectors. This enables favourable allocation arrangements to be specifically targeted at CHP projects in order to reflect their carbon savings.
- More generous use of 'compliance factors' (CF) for CHP. This mechanism is used to determine the extent to which emissions of plants must be reduced over time, with CHP plants sometimes being given more generous CFs and therefore having less stringent reduction targets (a CF of 1 requires no reduction; a CF of less than 1 requires some reduction, with the level of reduction increasing as the CF value decreases).
- The use of a 'CHP bonus' in permit allocation formulae which provides additional allowances to CHP plant according to their energy output.
- The increasing use of a CHP definition in some of the pro-CHP measures to ensure that greatest benefit is attributed to the most efficient CHP projects.

#### Increased use of double benchmarking

Countries applying double benchmarking in Phase II include Italy, Germany and the Netherlands. As an example, in Italy, while the Phase I NAP for CHP was deemed unhelpful, the Phase II NAP proposal includes a combination of double benchmarking and favourable compliance factor treatment to incentivise CHP. For existing plants:

- The electricity benchmark is fixed at 358 tCO<sub>2</sub> per GWh for both CHP and non-CHP natural gas plants (equivalent to power plant efficiency of just over 50%).
- For CHP plants, the heat benchmark is set at 350 tCO<sub>2</sub> per GWh (equivalent to boiler efficiency of 51.4%). This is a very generous benchmark for CHP; to compensate for this, the overall allocation is reduced by 15%.
- For non-CHP plant, the CF is reduced year on year but remains at 1 for CHP plant.

The UK is a second example of a better deal for CHP in Phase II. The UK Phase I NAP was also widely perceived to be of little or no benefit for CHP. The proposed Phase II NAP, however, will create a specific new sector for CHP projects that provides the opportunity for some pro-CHP measures to be targeted at plants that achieve certain efficiency standards. The main mechanism used will again be a generous CF for CHP plant compared to non-CHP plant. This incentive, however, looks likely to be neutralised in part by basing the allocation formulae on unrealistically low standardised load factors.

#### In summary:

- In general, allocation arrangements for CHP plants, both existing and new entrant projects, look likely to be better under Phase II of the ETS than they are under Phase I. Where the NAP arrangements are most CHP-friendly, we expect this to have a material impact on the commercial performance of new and existing CHP projects.
- The overall pattern for treatment of CHP under the ETS is becoming increasingly diverse between Member States.
- The greater use of definitions for high efficiency CHP, and the application of support to such schemes, suggests an increasing integration between the ETS and the EU CHP Directive.
- While the role of the ETS allowance allocation arrangements is steadily increasing in EU and Member State energy and climate policy, spark spread fundamentals remain a key driver of CHP markets. We expect these, however, to be also increasingly influenced by the Phase II ETS through its knock-on impacts on wholesale electricity prices.
- Operators and owners of both existing and planned CHP plants need to fully understand NAP arrangements for CHP in order to make a complete assessment of the