Price Forecasting in Carbon Markets

ICIS/ BPMR Mission
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Younghun Choi
About ICIS

- Over **28,000 employees** serving customers in over **180 countries**
- **Revenues £6b**, Net profit £1b

- **3,900 employees worldwide** including London, Amsterdam, Chicago, Atlanta and Shanghai

- **800 employees worldwide**
- **25 carbon market analysts** and **6 carbon market journalists**
- Carbon team covers **EU, California, RGGI** and **Chinese Pilot ETS’s**
Supply and Demand in the South Korean ETS are the starting point of any analysis.

- **Supply** = Allowances in the market
- **Demand** = Yearly Emissions

### Graph

- **Y-axis:** Million tonnes CO2-eq
- **X-axis:** 2013 to 2017
- **Bars:**
  - Orange: Emissions
  - Blue: Supply

- **Values:**
  - 2013: -573
  - 2014: -571
  - 2015: -569
  - 2016: -580
  - 2017: -591
Supply is Defined by the Structure of the Scheme

- Supply needs to be divided into:
  - Allocation
  - Market Reserve Volumes
- Additional supply can come through offsets
Balance between Emissions and Allowances

- Market Balance with and without offset

The first compliance period is fundamentally balanced mainly by offsets.

**BUT:** Is demand only defined by yearly emissions? And how is the price developing?
Behaviour and timing in carbon market

- Two major behaviours observed throughout global ETS’s
  - Rather long than short
  - Hedging behaviour

- Entities with long position (allocation > emissions):
  - Either bank, or
  - Sell during/ after year of long position

- Entities with short position (allocation < emissions):
  - Align with fuel procurement strategy
  - Buy allowances for the future production hedge the risks coming from allowance price development
  - Companies with a short position open penalised by earnings volatility

- In the end, demand comes earlier than supply
Hedging behaviour and timing mismatch

Traded (t-4)  Traded (t-3)  Traded (t-2)  Traded (t-1)  Traded (t)  Fundamental (t)  Banked (t)

- Short Utilities
- Short Industry & Aviation
- Long Utilities
- Long Industry & Aviation

Values in an absolute scale

Source: Tschach Solutions
Behaviour and timing within Korean ETS

- Compliance Companies that are *short*:
  - Mainly the power sector is short
  - Their buying strategy will depend on the emissions compensation mechanism
  - Rather-long-than-short behaviour expected which is incentivised by accounting rules
- Compliance companies that are *long*:
  - Price expectations from long entities seem high
  - They likely will not sell soon

⇒ To forecast the price in the next years, the behaviour has to be quantified.
  - Market demand and supply has to be estimated based on assumptions on behaviour of market participants
  - The price development will depend on the balance between market demand and supply
Contact Us

Younghun Choi
Analyst South Korean Carbon Market
Email: younghun.choi@icis.com
Tel: +49 (0) 157 5476 3346
Mobile: +49 (0) 721 205 9629 21

ICIS
Tschach Solutions GmbH
Steinhäuserstrasse 9
76135 Karlsruhe, Germany

For more detailed information on South Korea ETS, please refer to research outcome and analytics database at:
http://analytics.icis.com