



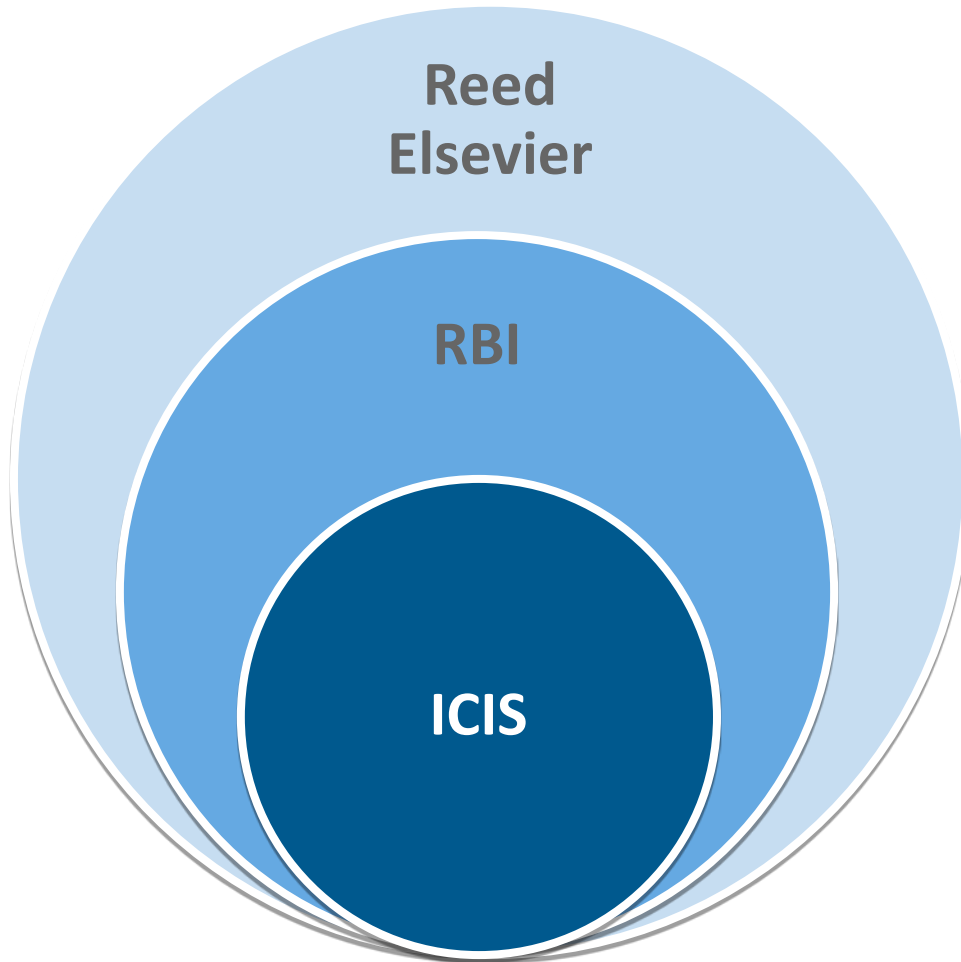
Price Forecasting in Carbon Markets

ICIS/ BPMR Mission

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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**

About ICIS

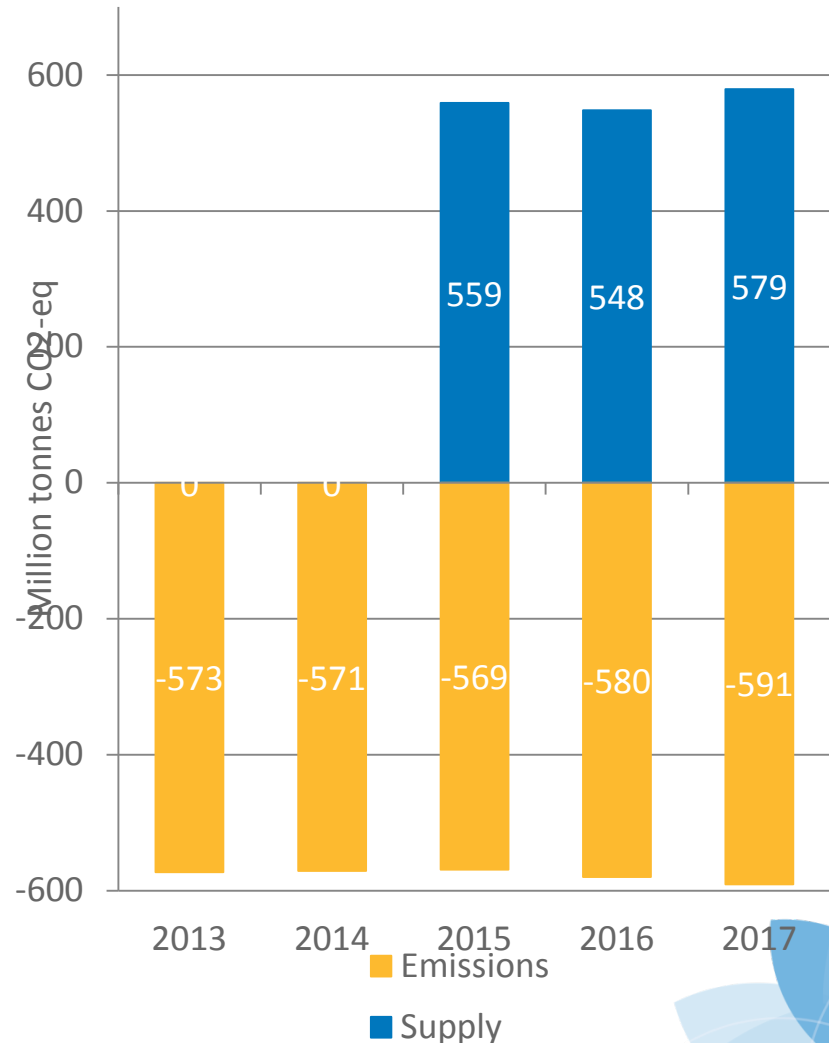




Starting Point of Forecasting

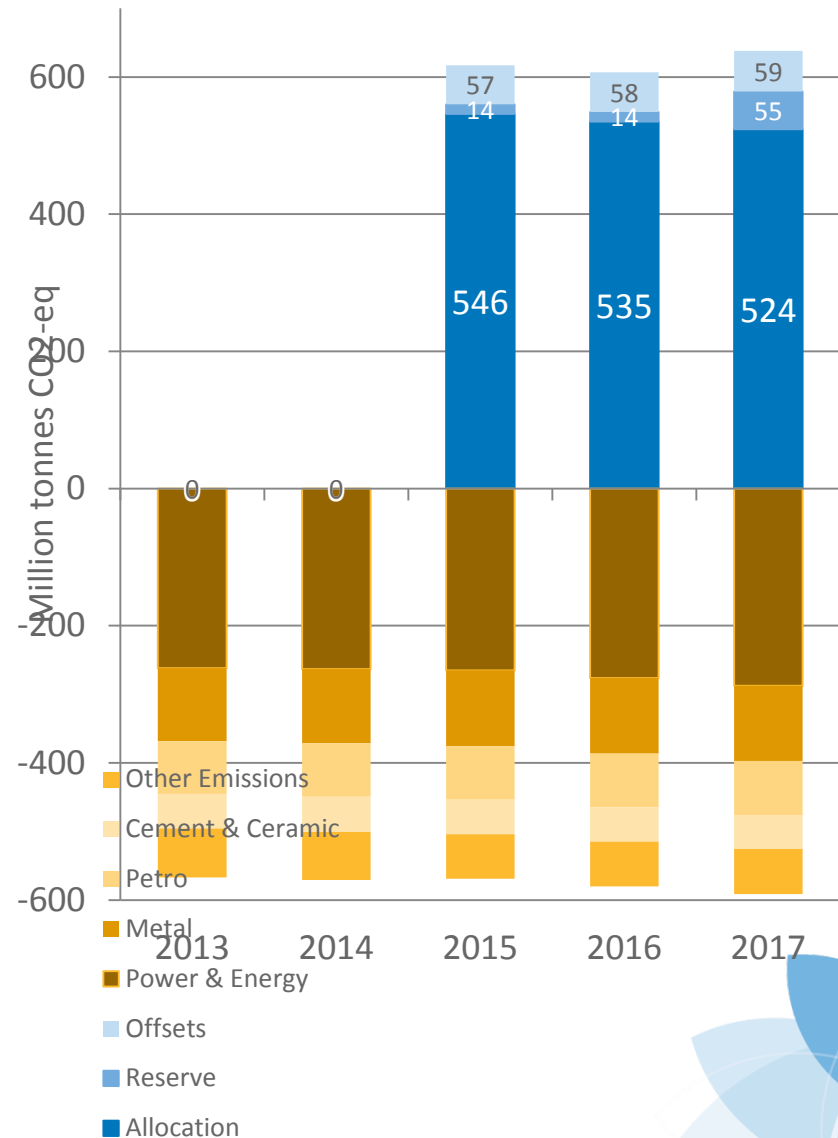
Supply and Demand in the South Korean ETS are the starting point of any analysis.

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



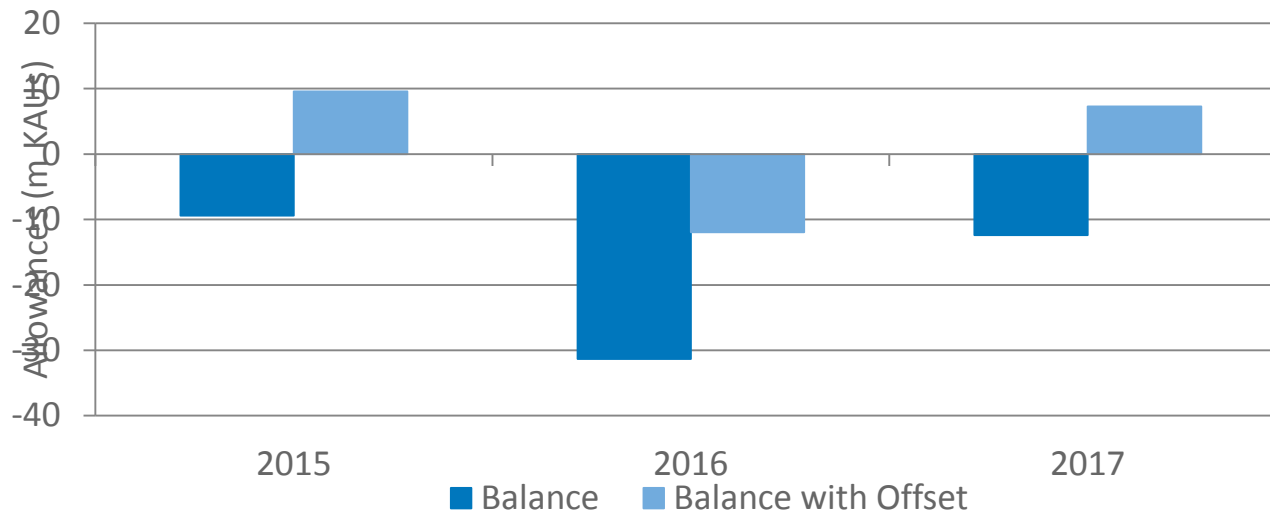
Supply is Defined by the Structure of the Scheme

- 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?**



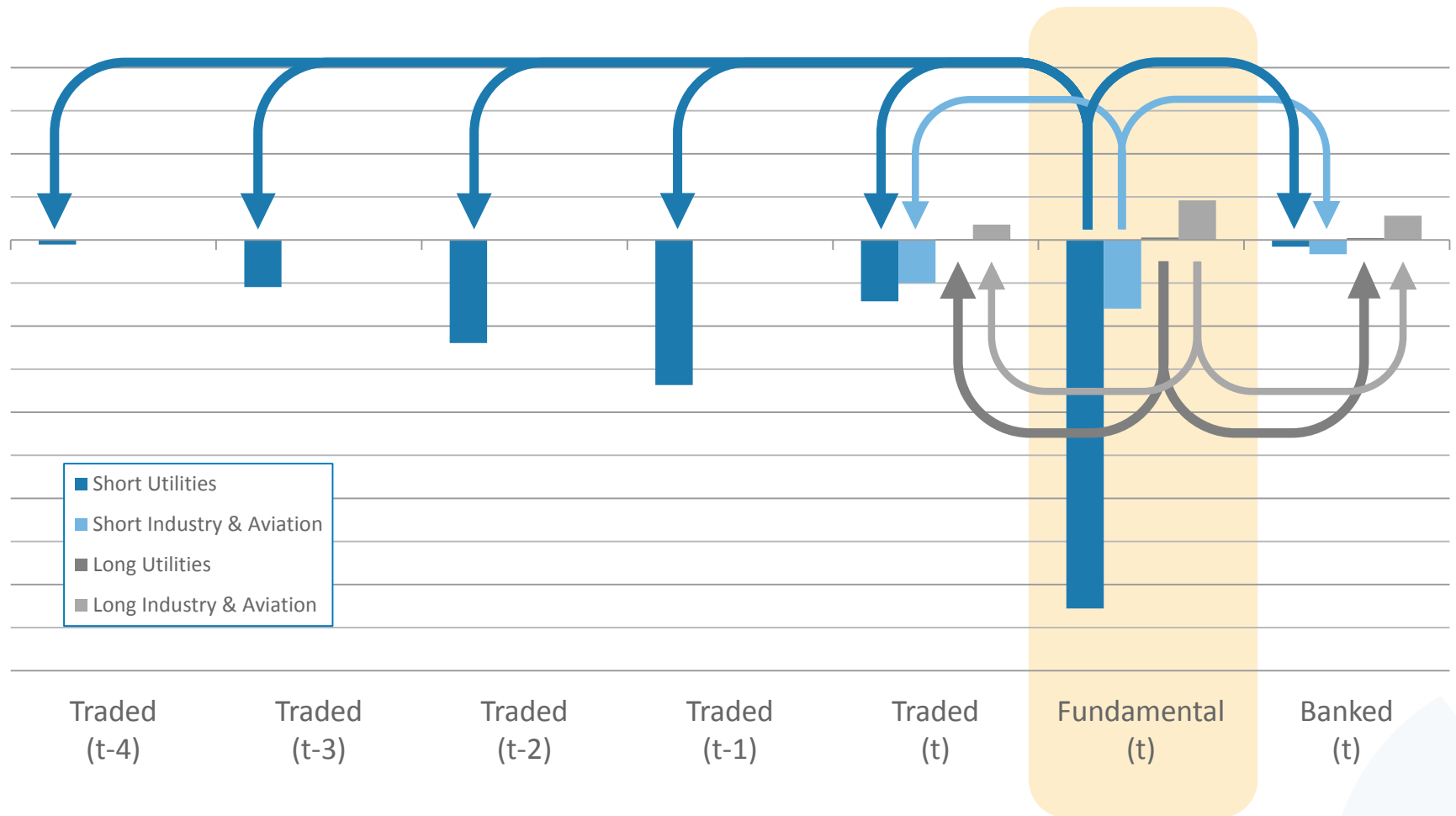


Behaviour and timing in carbon market

- 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



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



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For more detailed information on South Korea ETS, please refer to research outcome and analytics database at:

<http://analytics.icis.com>

