

Tschach Solutions

Outlook on the Carbon Market and the Impact of Back-Loading on Mid-Term Price Developments

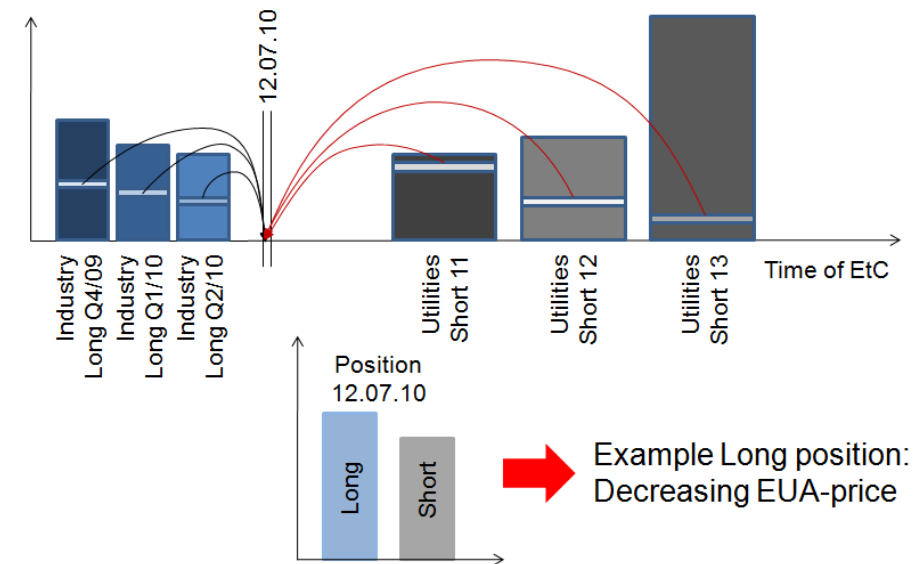
Philipp Ruf
International Emissions Trading Congress
Warsaw, April 2013

www.tschach-solutions.com

- Founded in May 2010 by experienced carbon market professionals
- Provides **research, data, forecasts and tools** for EU ETS, CDM and emerging markets
- Customers
 - Utilities
 - Industrials
 - Financials
 - Trading companies
 - Service providers
- Key: **Focus on behaviour – when** are supply and demand coming to market?

Timing in Carbon Markets

- **Behaviour** of market participants **is key** to understand carbon markets
- Timing of emissions and trading of related positions do not match
 - **Physically short possible**
 - **Unlimited storage** free of charge

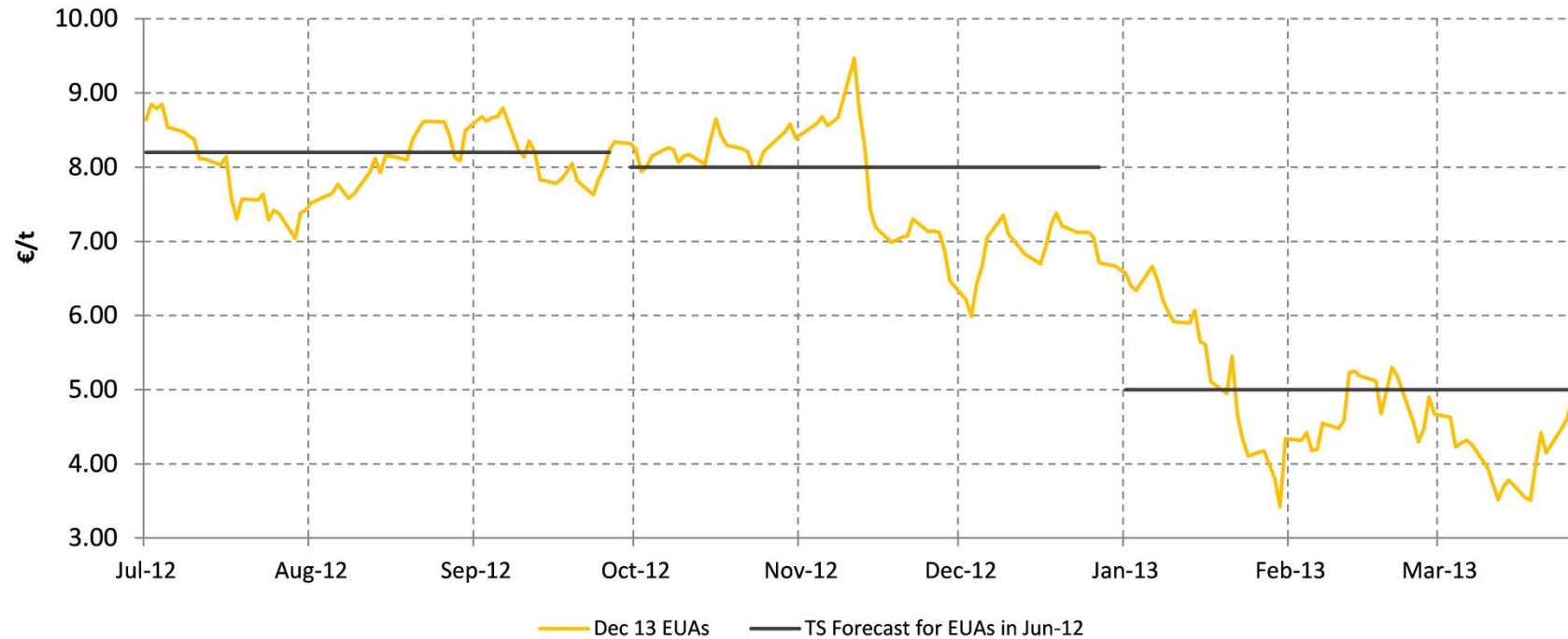


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- Developed the ***Timing Impact Model*** which explains carbon price developments in a *long market*
- Built up a detailed and **comprehensive Behaviour Database** over time

EUA Prices against TS Forecast of June 2012

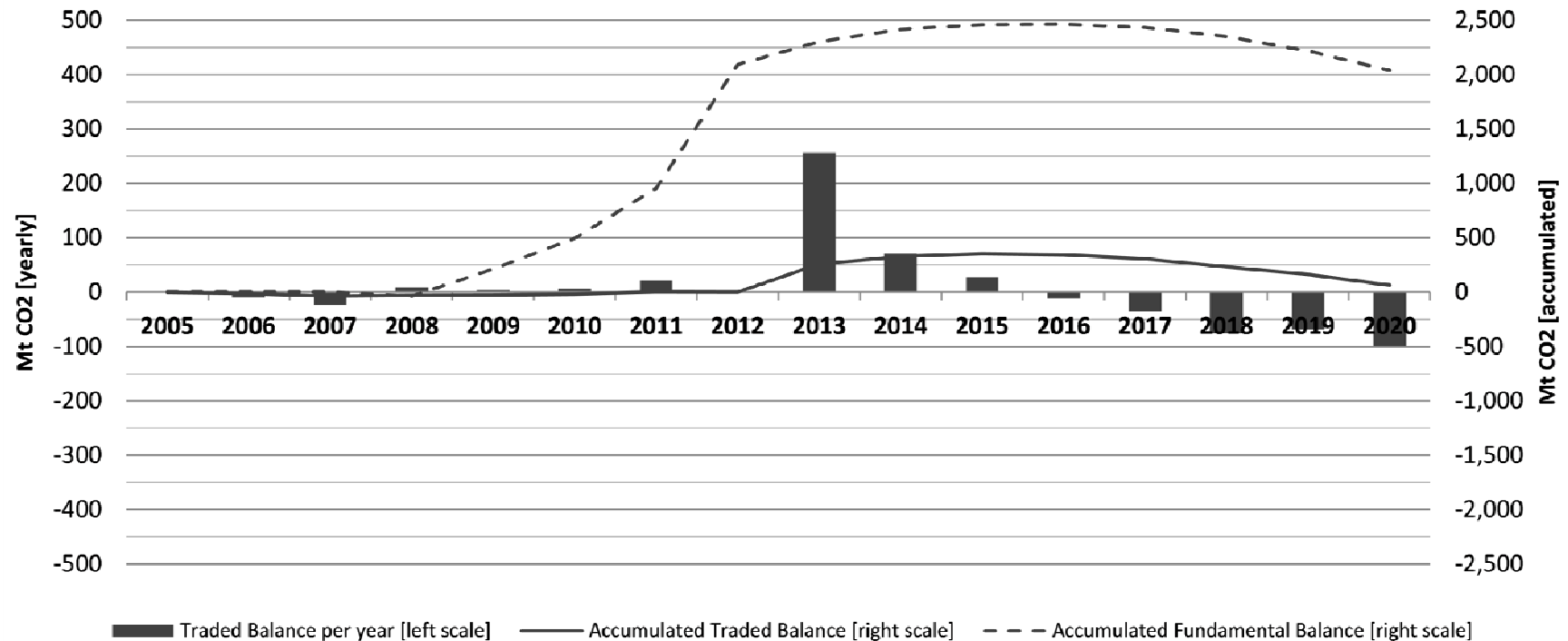
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➤ Tschach Solutions **price forecast** based on Timing Impact Model was **very accurate** in the past 9 months

Yearly Traded Volumes

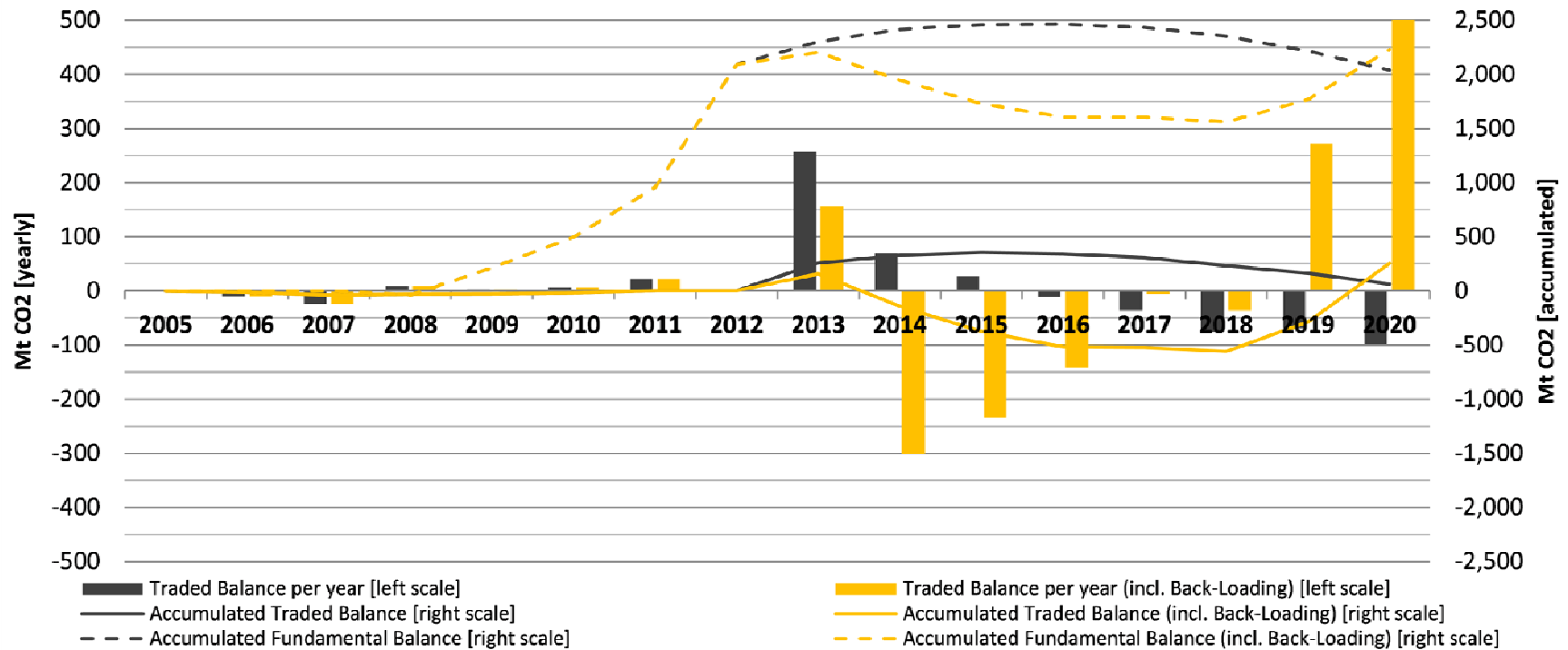
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➤ Timing mismatch (utility hedging and industrial banking) balanced the long market in the past and reduces the extent of long position in the future

Yearly Traded Volumes

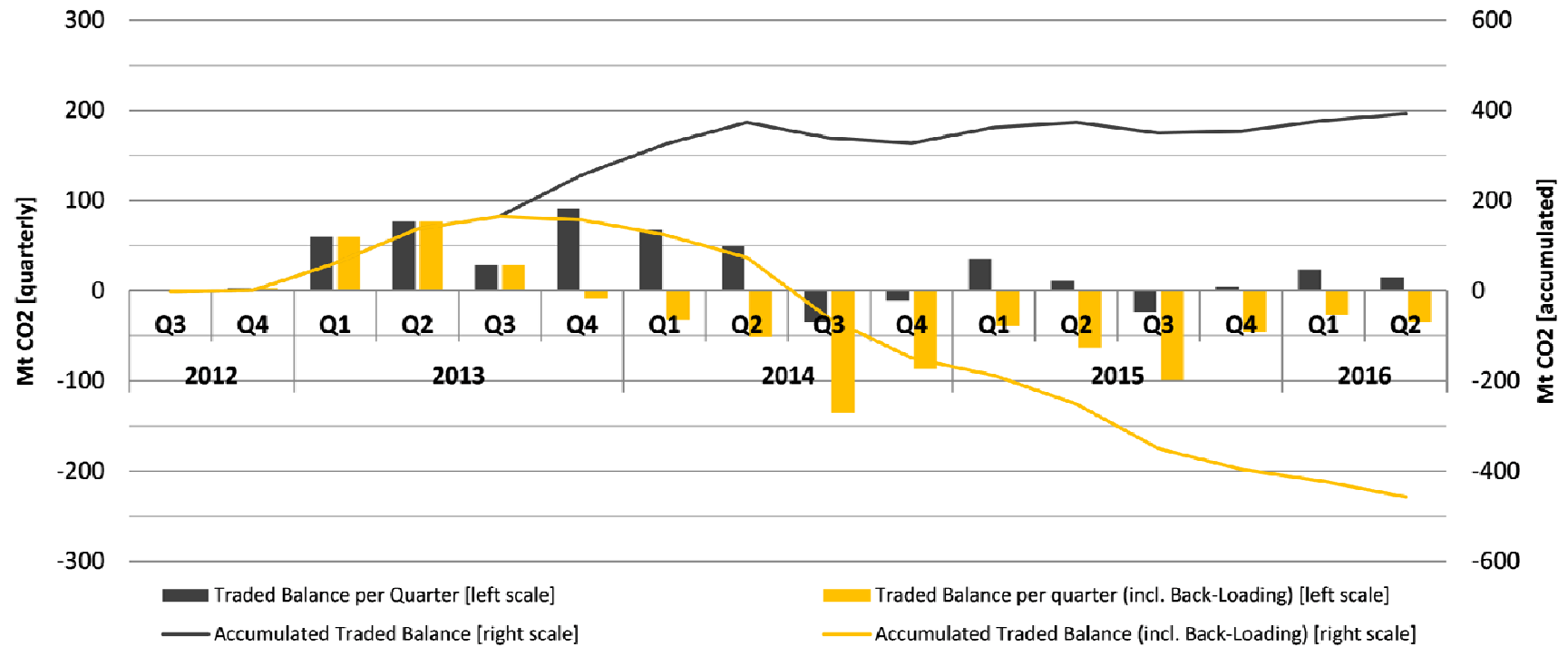
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- Impact in 2013 limited, **substantial impact in 2014 to 2018**
- **Imbalances** in 2019 and especially **2020**

Quarterly Traded Volumes

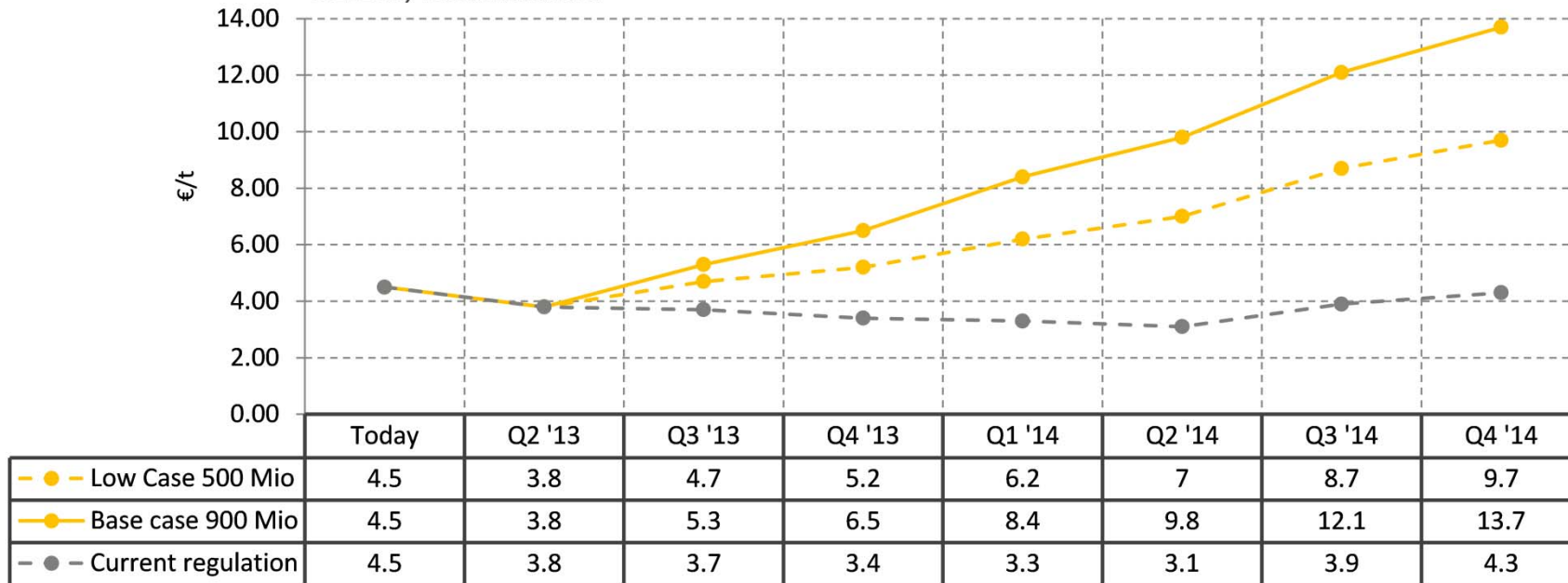
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➤ **Back-loading renders the traded market short in 2014**

Timing Impact Model: Price Curve

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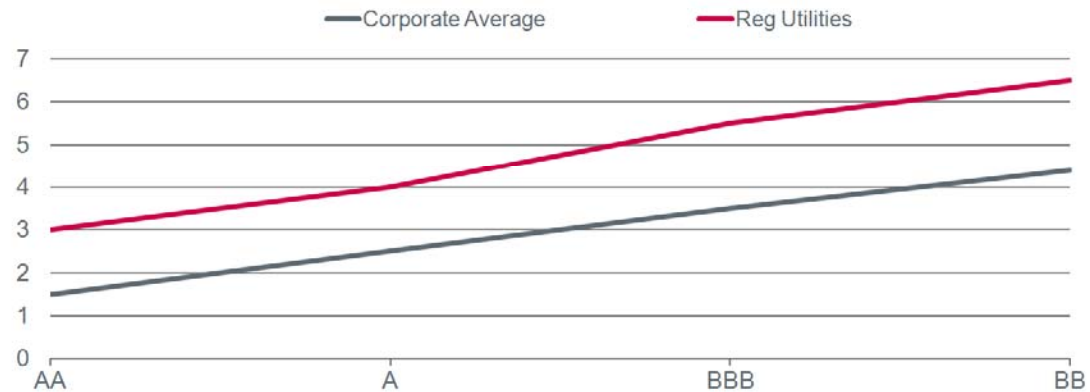


- Back-Loading of 900 Mt will start to **push prices as of Q3 2013**
- Full fundamental effect (reduced auction volumes) from Q4 2013 onwards
- Low **double digit prices** expected during 2014

- **Credit ratings of utmost importance** for utilities' financing costs
- Predictability of returns due to hedging improve credit ratings
- To improve ratings or not to deteriorate them, utilities can intensify their hedging horizon

Why the Big Delta? The Predictability Premium.

FFO Adjusted Leverage Guidelines



Source: Fitch

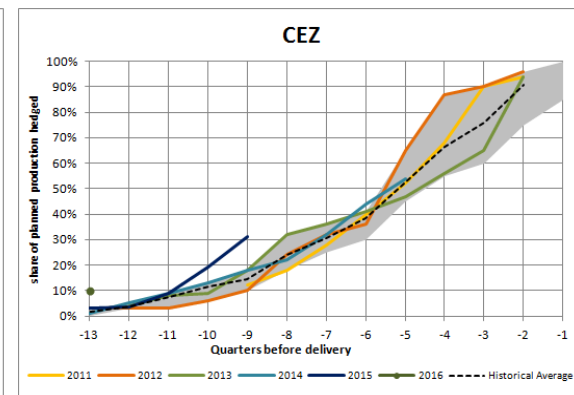
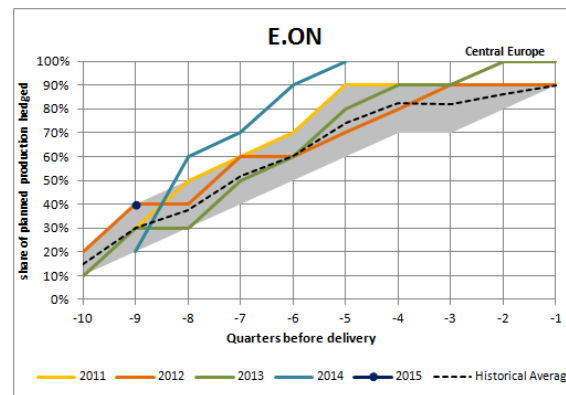
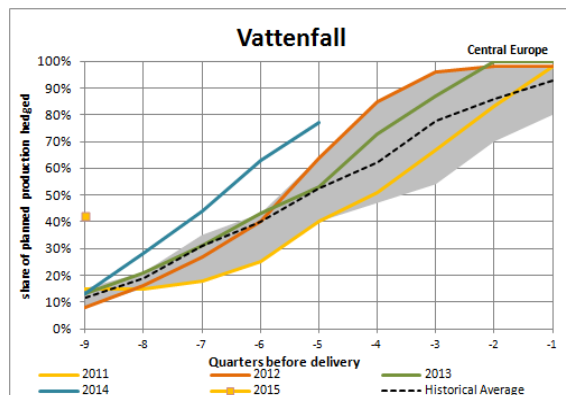
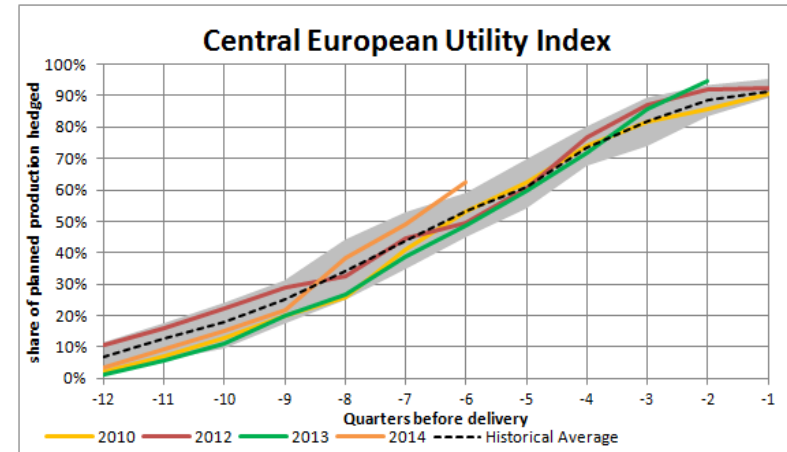
FitchRatings

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➤ **Credit ratings can be improved (held) by deepening hedging activities**

- Utilities significantly intensified their hedges
 - E.g. Vattenfall, E.On, CEZ

- **When adjusting the old hedging profile to the new intensified one, utility demand for carbon is significantly increased**

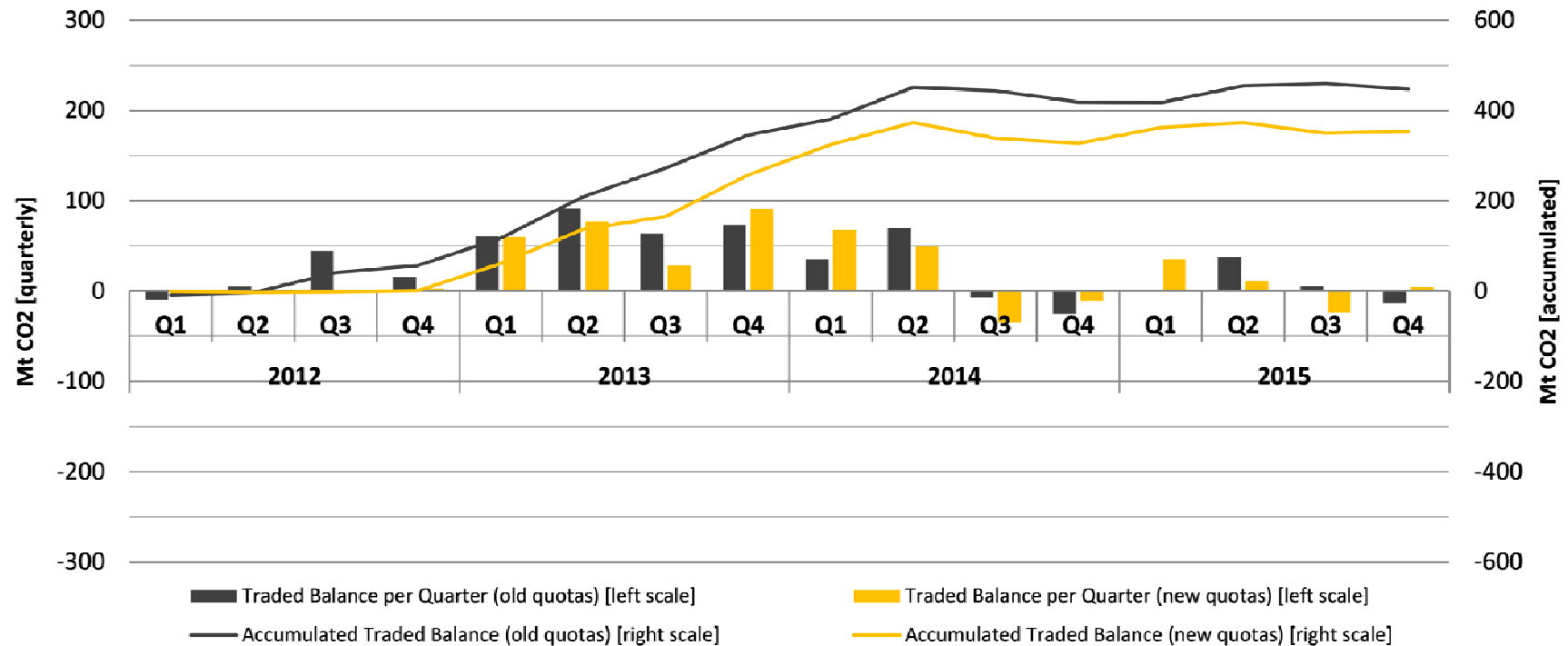


➤ **Intensified utility hedging increases carbon demand temporarily**

Impact of Deepened Hedging Profiles 1/2 Tschach Solutions

Quarterly Traded Volumes - Recently Deepened Hedging Profiles

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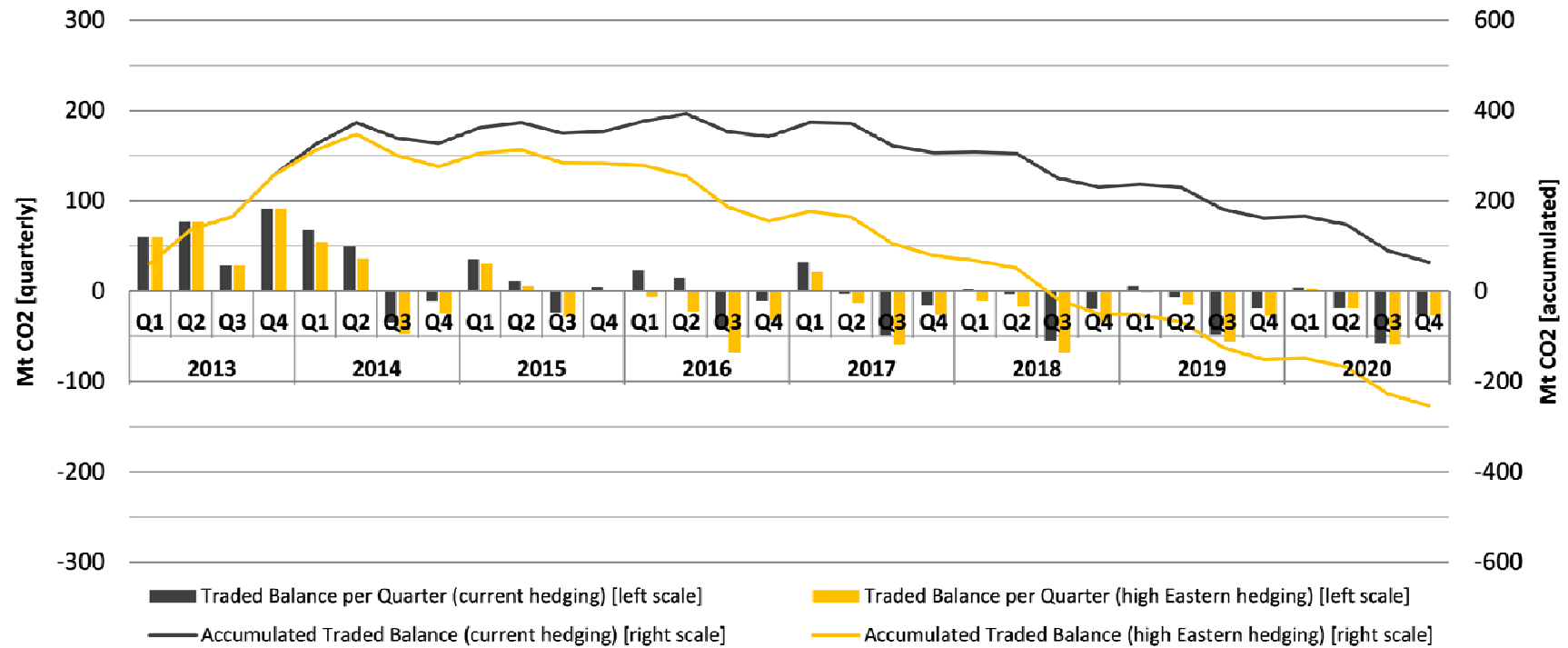


- During the hedging adjustment, **demand increases**
- Afterwards it returns to normal

Impact of Deepened Hedging Profiles 2/2 Tschach Solutions

Quarterly Traded Volumes - Increased Eastern European Utility Hedging

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➤ Intensified utility hedging can have a major impact on the carbon market

- **Behaviour**, i.e. timing of position trading, is **very important** for carbon markets
- **Utility hedging** balanced long market in the past, but
 - Not enough in the future
- **Changes in utility hedging profiles are** extremely important for **temporal carbon demand**
- **Back-loading** will lead to **increasing carbon prices** in 2013 – 2018
- **Back-loaded volumes should be cancelled** (but needs change of Directive)

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Thank you!

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