



Background to discussion on FCA and Nordic market design

Presentation to Nordic market stakeholders
20 April 2015, Arlanda

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Electricity wholesale market

Background

- Target model => Framework Guideline for Capacity Allocation and Congestion Management (CACM)
 - Commission guideline CACM
 - Network Code Forward Capacity Allocation (FCA)
- The goal for FCA is to ensure availability of hedging opportunities for market participants...
- Stakeholder views are important!

Network Codes – Rules for the TSOs

- Network Code on Forward Capacity Allocation (FCA)
- An anomaly in the ‘Nordic market design’ because...
 - All capacity is allocated to the spot market
 - The Nordic TSO do not have a role in the forward market
 - The Nordic market for hedging is regulated by the Financial Supervisory Authority
- Is it possible to enable efficient hedging without the TSO having a role?

The Nordic case

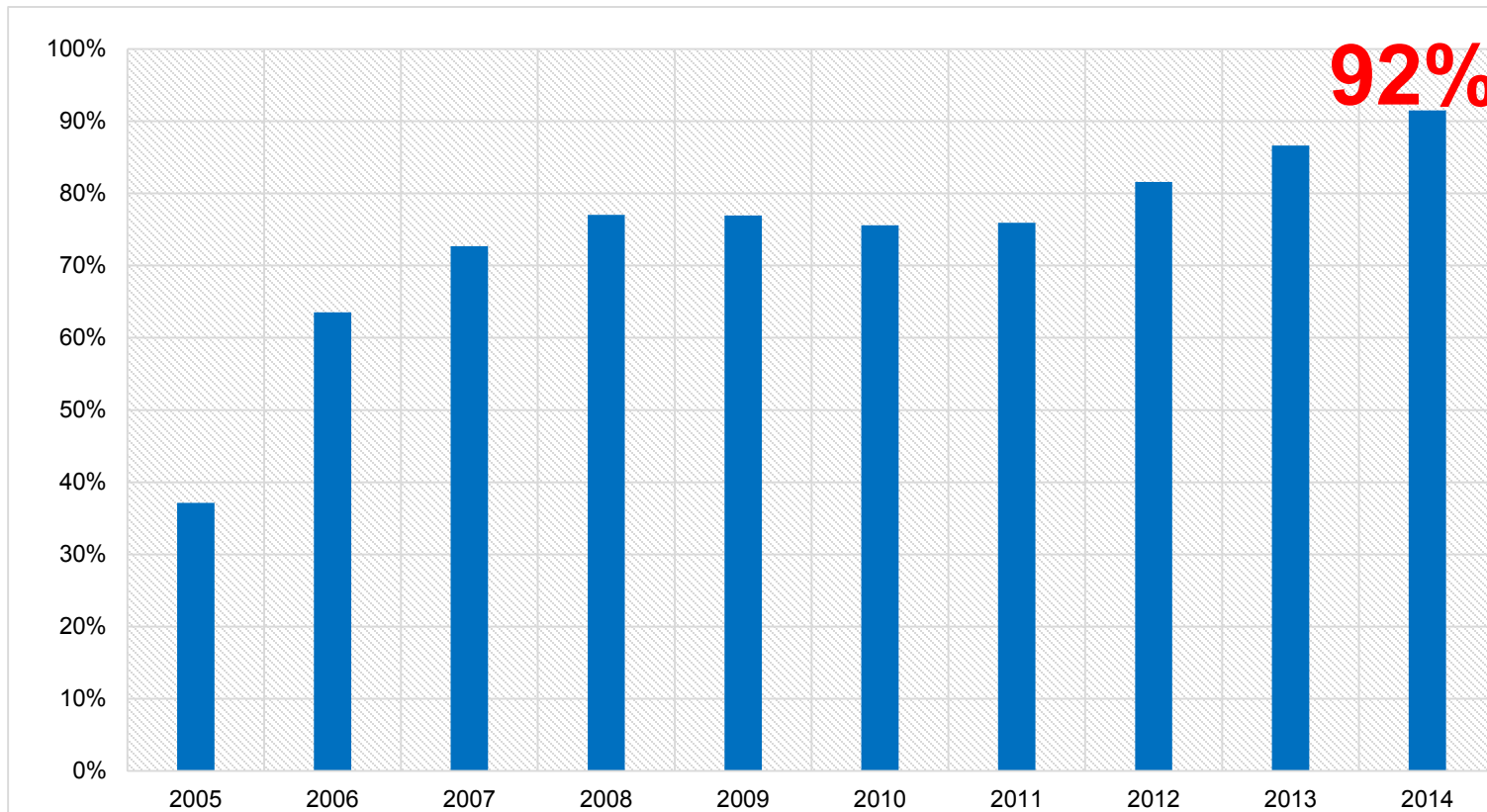
- Strong interlinkage between a robust physical market (>80% traded in the spot market)
- ...an efficient price finding
- ... the System price as a robust reference price
- ...and a liquid market for financial hedging instruments
- ...and efficient hedging



Photo: NVE₄

Key figures – Physical market

% spot trade of total consumption

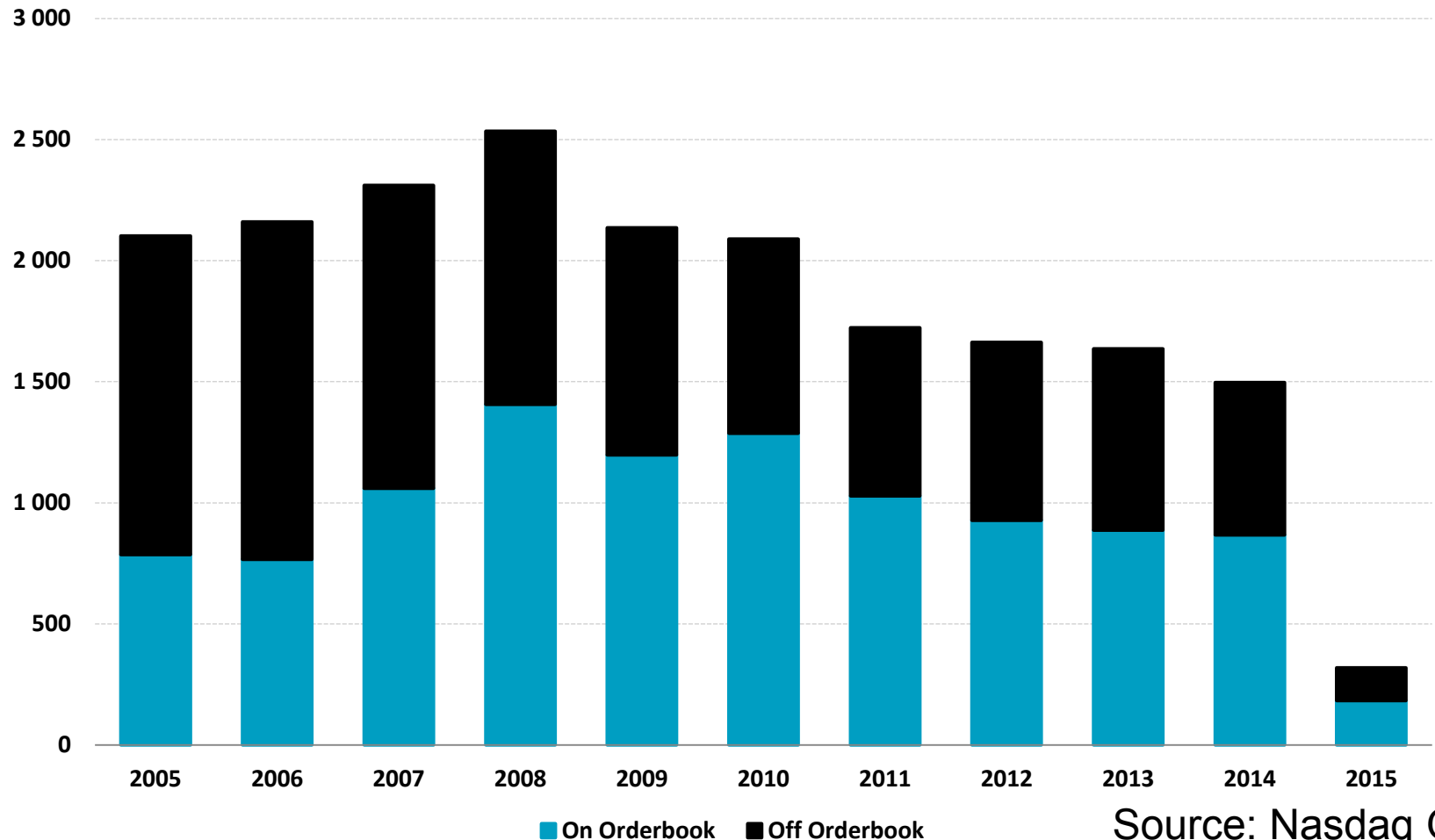


Source: Nord Pool Spot

Key figures – Financial market

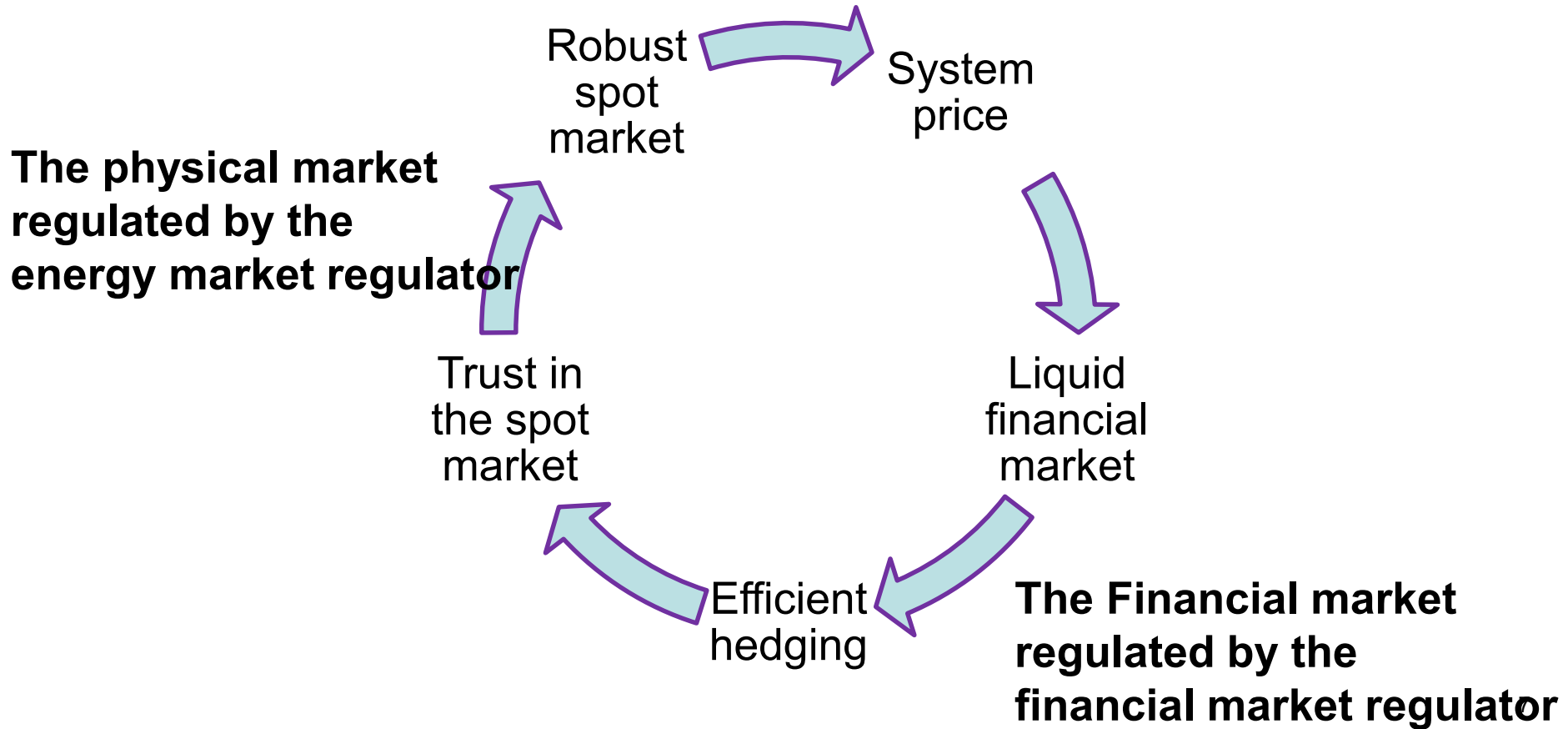
Cleared volume

Cleared volumes Nordic Power Yearly 2005-2015 (TWh)



Source: Nasdaq OMX

Liquidity. Efficiency. Trust.



15 bidding zones – one system price

- Cross border competition is ensured by implicit market coupling
- Market participants face price area risk



Hedging on hubs vs. hedging by Transmission rights

Hedging on hubs

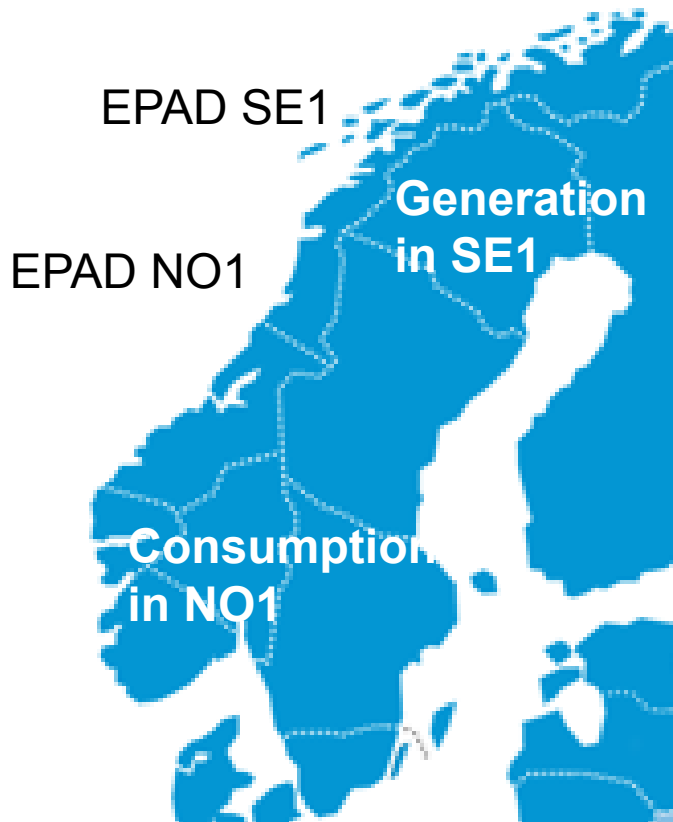
- Financial instruments
 - System price products
 - Highly liquid
 - Contracts for area price difference (EPADs)
- Can also be constructed as 'cross border'

Hedging from 'A to B'

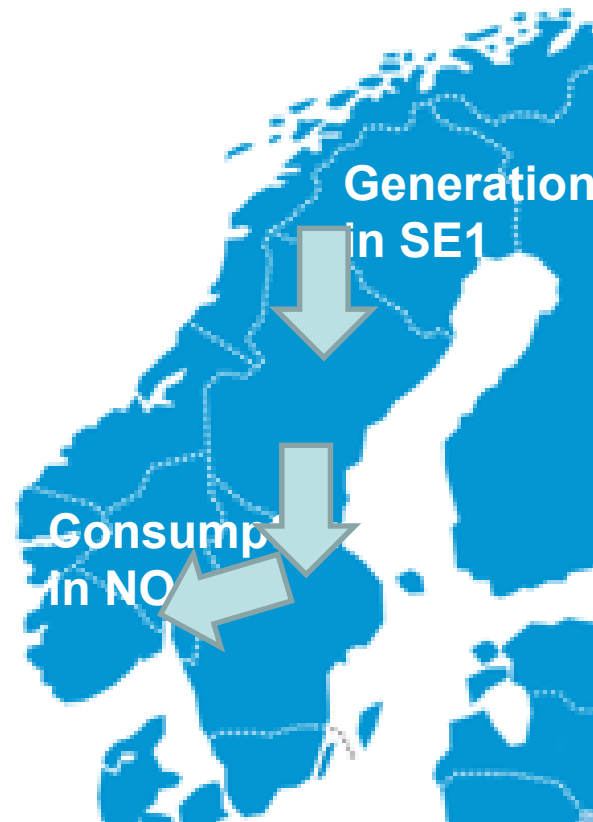
- Transmission rights
 - Cross border
 - Linked to capacity on interconnector
 - 'Liquidity' backed by TSO

Hedging on hubs vs. hedging by Transmission rights

Hedging on hubs



Hedging from 'A to B'



Nordic regulators' goal

- Ensure sufficient hedging opportunities for market participants!
- Enable optionality in possible instruments for hedging
- Don't make TR mandatory

EU Regulation for cross border trade

- EC 714/2009 – Annex 1, pt 2.8:
 - In regions where forward financial electricity markets are well developed and have shown their efficiency, all interconnection capacity may be allocated through implicit auctioning.

EU Regulation for cross border trade

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 - In regions where forward financial electricity markets are well developed and **have shown their efficiency**, all interconnection capacity may be allocated through implicit auctioning.
 - ...whereas Nordic NRAs wanted discretion to decide,
 - EC wanted specific and objective criteria...

What is an efficient market?

- Efficiency test in two steps:
 - Relevant hedging opportunities
 - (based on IAS39)
 - Efficiency of relevant hedging opportunities
 - (based on actual spread vs. implicit spread)

New draft FCA from the Commission

- Opens up for other hedging instruments
- TSO involvement?
- Removes specific reference to IAS 39

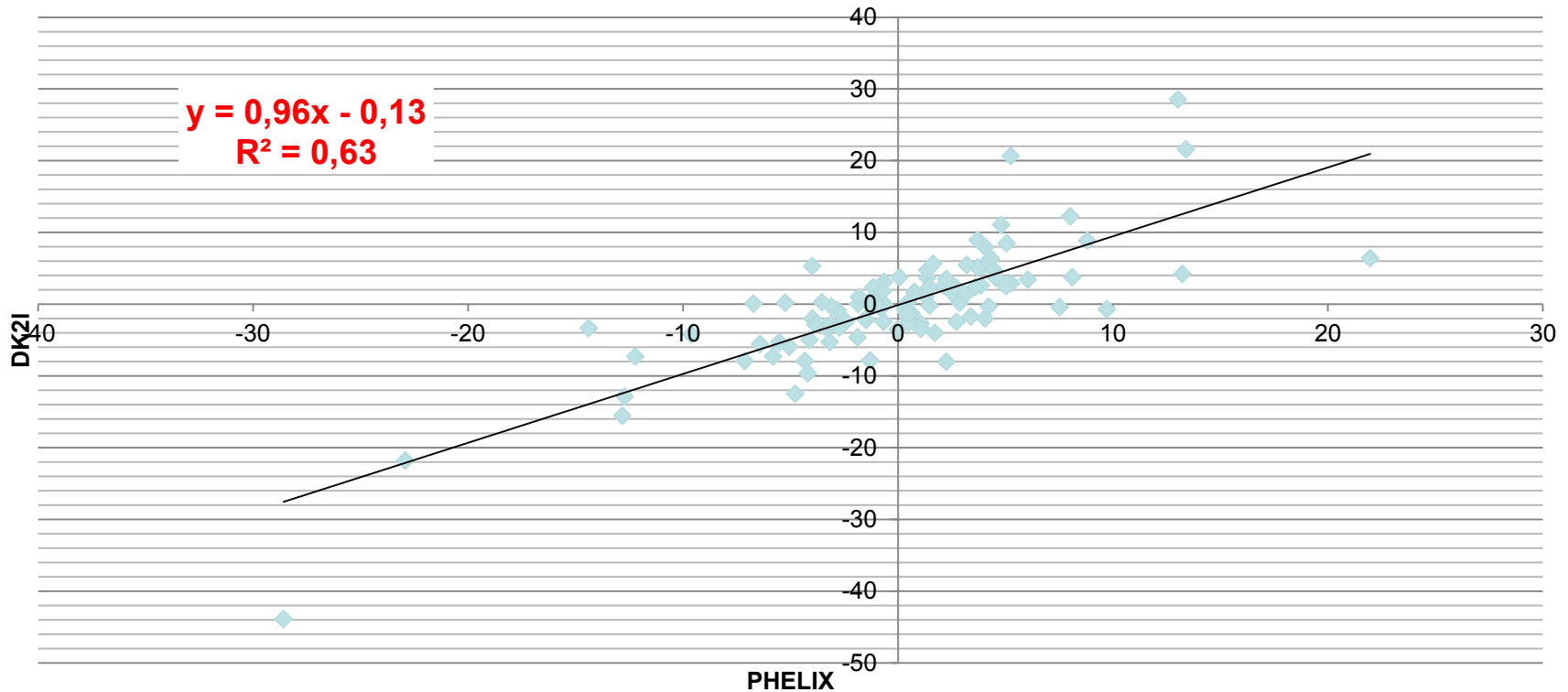
Thank you for your attention!

Robust principles for assessment I

- Not a specialised 'Nordic electricity market test', but
- Based on international accounting standard and common auditing practice
 - Hedged item
 - Hedging instrument
 - Hedge effectiveness
- Linear regression model to test prospective efficiency

Example of test (DK1-PHELIX)

Illustrative
Example



Slope $a = 0,96$, Constraint 1 ok ($\geq 0,8$ and $\leq 1,25$)

$R^2 = 0,63$, Constraint 2 not ok ($\geq 0,8$)

The regression test on Day Ahead Prices between DK2 and PHELIX fails.

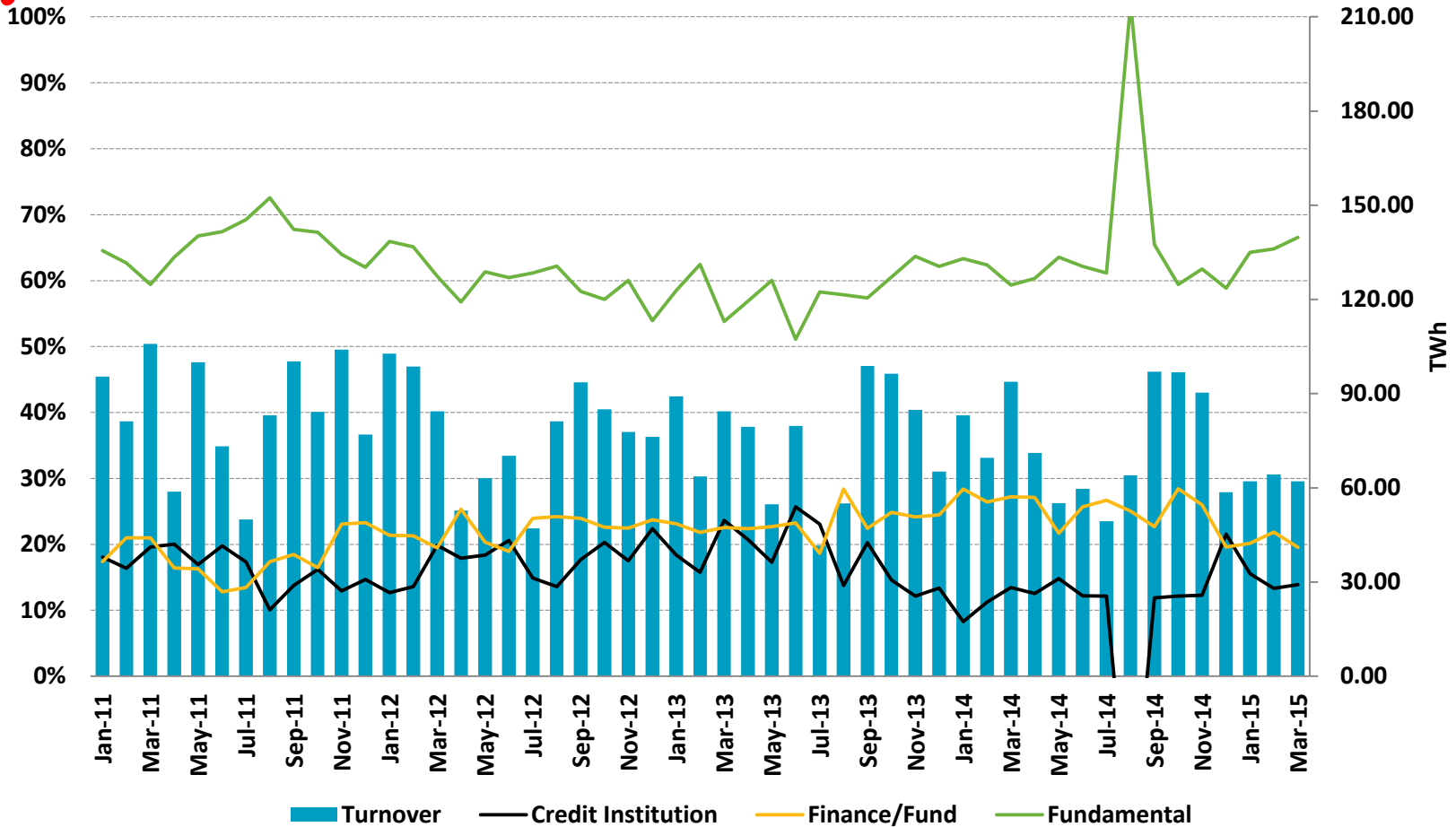
Robust principles for assessment II

“A Simple Implicit Measure of the Effective Bid-Ask Spread in an Efficient Market” in *The Journal of Finance*, Vol. XXXIX. NO. 4, September 1984

Market share per customer category

Key figures
- Back-up

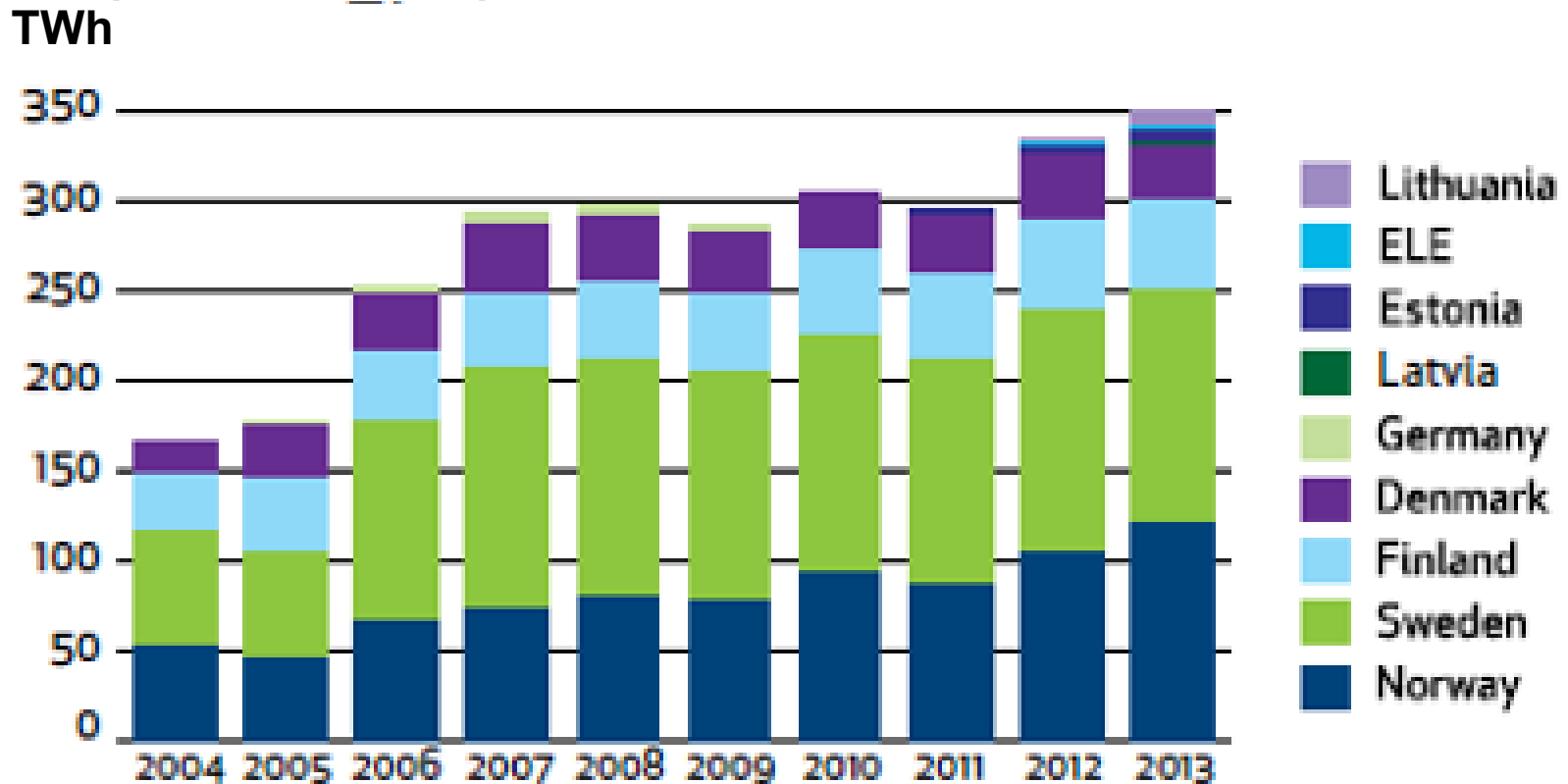
On Orderbook traded Market Share per Customer Category
Monthly 2011-2014



Key figures – Physical market

Key figures
– Back-up

Spot trade: 92% of total consumption in 2014
(87% in 2013)



Source: Nord Pool Spot

Efficiency of hedging opportunities by price derivatives in the Nordics

Key figures
Back-up

Disclaimer: Qualified guessing

Area	Hedging efficiency by Forwards (Correlation and liquidity)	EPAD	Defendable towards current version of FCA?
NO1	OK	JA	Safe
NO2	OK (-)	NEI	Unsafe
NO3	OK	NEI	Unsafe
NO4	OK	JA	Safe
NO5	OK	NEI	Unsafe
SE1	OK	JA	Safe
SE2	OK	JA	Safe
SE3	OK (-)	JA	Safe
SE4	NOT OK	JA	Fail
DK1	NOT OK	JA	Fail
DK2	NOT OK	JA	Fail
FI	NOT OK	JA	Fail

