# Introduction

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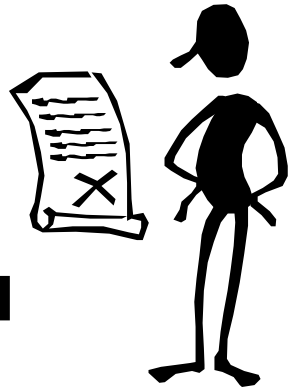
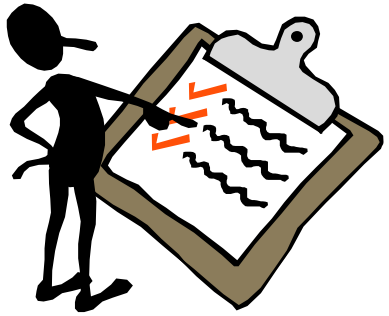


- **In the appendix, you'll find a list of the terms and acronyms used in this presentation.**
- **Concerning the documents mentioned in this presentation:**
  - **At *houmollerconsulting.dk*, you can download the documents from the sub-page *Facts and findings*.**
- **This PowerPoint presentation is animated**
  - **It's recommended to run the animation when viewing the presentation.**
- **On most computers, you can start the animation by pressing *F5*.**
  - **Now the presentation moves one step forward, when you press *Page Down*. It moves one step backward, when you press *Page Up*.**

# European market coupling



- **Preconditions for a well functioning Single European Electricity Market:**
  - **A well-functioning day-ahead congestion management system**
    - **Creating economical optimal energy flows.**
  - **Reliable spot prices.**
  - **Fair and secure influence for all stakeholders: nations, consumers, producers, market players and TSOs.**
  - **A cost-efficient way of achieving the three things mentioned above.**
- **This presentation will argue, we need a single European spot exchange in order to have a well functioning Single European Electricity Market.**

# Harmonisation and market coupling – 1

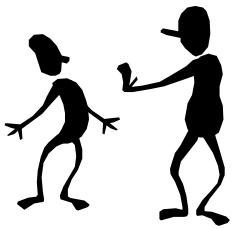
**With market coupling, no exchange can single-handed introduce new products. Everything has to be agreed across the coupled area**

- **Price coupling means using the same spot price calculation for the whole, coupled area**
  - **Therefore: if a spot exchange introduces a new type of bid, this bid must be included in the common price calculation algorithm**
    - **Actually, this means the bid will automatically be available for all players in the price coupled area!**
    - **Hence, price coupling automatically imposes a common spot exchange product development**
      - **Across the whole coupled area.**

# Harmonisation and market coupling – 2

## With market coupling, no exchange can single-handed introduce new products. Everything has to be agreed across the coupled area

- **With price coupling, the individual spot exchanges cannot have their own product development**
  - **For example: a new, complicated bid type cannot be introduced by a spot exchange, before the bid is installed in the common spot calculation software**
    - **And if the new bid greatly increases the software's calculation time, the other parties in the coupling may refuse to install the bid in the software**
      - **Thereby making it impossible for the spot exchange in question to introduce the bid.**



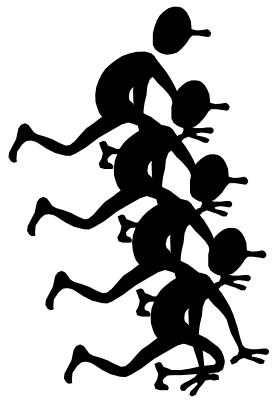
# Harmonisation and market coupling – 3

## With market coupling, no exchange can have own procedures for the daily price calculation

- **The individual spot exchanges cannot have their own procedures for the spot price calculation**
  - **If a crisis erupts during the price calculation, everybody must painstakingly do exactly as agreed in advance**
    - **As can be seem in the extremely complicated PCR emergency decision tree.**
    - **Because: otherwise the different calculations would yield different results – leaving the market with unreliable spot prices.**
- **Hence, even if each spot exchange has a local computer, the individual exchanges cannot take own decisions during the daily price calculation.**

# Creating the Single European Electricity Market

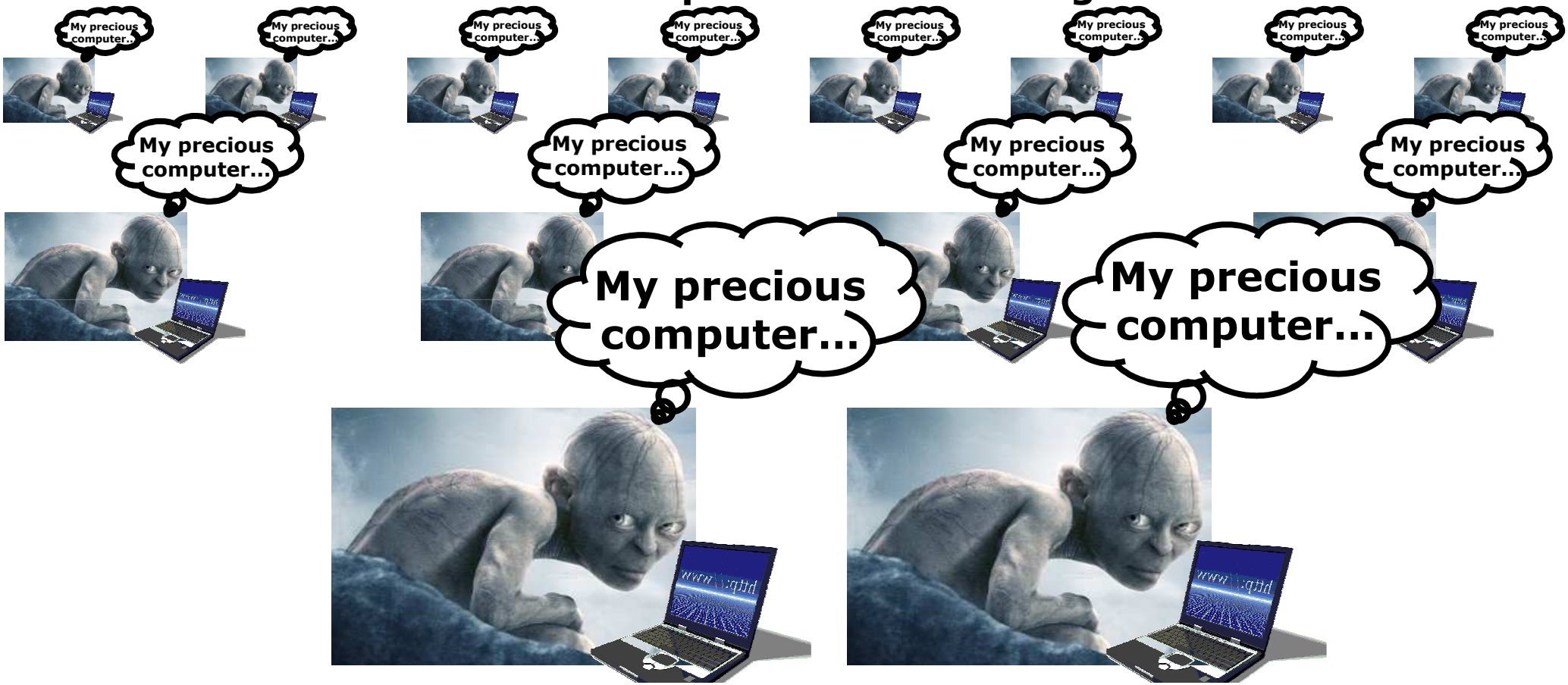
- **Actually, it's very fortunate price coupling introduces this harmonisation.**
- **A necessary condition for a <u>Single Market for Electricity</u> is a <u>single set of spot exchange products</u> across the whole market**
  - **All players must have access to the same products**
    - **Otherwise we'll not have <u>a level playing field for the competition</u> at the whole-sale market.**



- **Also, in order to have a level playing field for the competition, the procedures used in the daily spot price calculation must be the same across the whole market.**
- ***A case: the Baltic-Nordic area has a harmonised set of spot exchange products***
  - ***Although the Baltic-Nordic countries have very different electricity production portfolios.***

# The spot exchanges still cling to the idea of a spot calculation per exchange (their PCR model)

**Lots of redundant calculations: based on all spot bids submitted in the whole, coupled area, each exchange calculates all the spot prices and all the flows for the whole coupled area – all using the same software.**



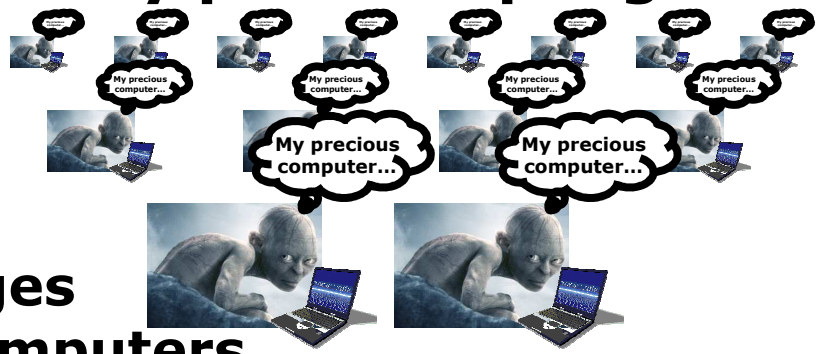

**This is an extremely expensive for the European spot market!**

**And very dangerous, too: see the PowerPoint presentation**

***Single spot exchange for the Single Electricity Market***

# The Single Market requires harmonisation

## Fortunately, automatically enforced by price coupling




**Fortunately, local computers do not give options for local differences**

- **When we have price coupling.**

**This makes it even more odd the exchanges with the PCR model cling to their local computers.**

**For companies exposed to competition, outsourcing is imperative, when it reduces costs and increases quality**

- **The situation would have been entirely different, if the current spot exchanges could be exposed to competition by a single, pan-European exchange.**

**Unfortunately, market coupling makes the spot exchanges monopolies**

- **Making it possible for them to focus on computers.**
- **Instead of focusing on delivering high quality and cost-efficiency.**

**Only pan-European regulation can fix this**

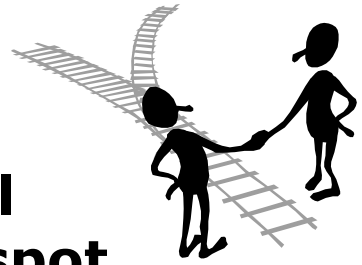
- **We cannot afford the European spot market indefinitely being operated by unregulated monopolies.**

# Handling Europe's crisis

- **Commenting 12 November 2011 on Europe's crisis, the newspaper The Economist wrote:**
  - ***The chances are that Europe will (…) continue rather faster down the path of genteel decline*.**
- **We better prove this wrong!**
  - **Naturally, the electricity supply industry is just a small corner of Europe's economy**
    - **But it's our corner, so it's the corner we must fight.**
- **In order to do this, we must create a well functioning Single European Electricity Market**
  - **With efficient competition where it's possible to have competition.**
  - **And firm regulation where competition is not possible.**
  - **Thereby for all services and products: ensuring strong customer focus by the suppliers, high quality and low costs.**
- **However, we cannot get there without taking on vested interests!**

# The solution

- **In order to deal with the monopoly problem – and in order to create a pan-European solution:**
- **Establish a single spot exchange for the Single European Spot Market**
  - **With one primary calculation site and one disaster site.**
- **Arrange the ownership, so the pan-European spot exchange is owned by the countries participating in the market coupling.**
- **Establish a pan-European market council with representatives for consumers, producers, market players and TSOs**
  - **And grant the council formal influence.**



- **Give ACER and the European energy regulators a legal foundation for regulating the spot exchange and the spot clearing house**
  - **Note: having only local regulation would be pointless, as price coupling requires the same algorithm and the same daily price calculation procedures for the whole coupled area.**
- **For more information, see the PowerPoint presentation *Single spot exchange for the Single Electricity Market*.**

# Appendix
# Terminology and acronyms

# Terminology and acronyms – 1

## As used in this presentation

- ***ACER*** **Agency for the Cooperation of Energy Regulators. An EU body established in 2010.**
- ***Border*** **means a border between two price zones**
  - **Hence, it need not be a border between two countries. It may be a border between two price zones inside a country.**
- ***Double auction*** **A calculation method whereby an exchange's price is set by means of the exchange's supply curve and the exchange's demand curve. See the PowerPoint presentation *Maximizing the economic value of market coupling and spot trading*.**
- ***Energy flow*** **Actually, in this presentation, "energy flow" means "day-ahead plans for cross-border energy flow".**

  **Note that market coupling does not create energy flows. It merely creates day-ahead plans for the cross-border energy flows. Later, these plans my be modified by intra-day, cross-border trading and/or the TSOs' cross-border trading of regulating energy.**
- ***EU*** **European Union.**
- ***Flow*** **Short-term for *energy flow*.**

# Terminology and acronyms – 2

## As used in this presentation

- ***Market coupling*** **A day-ahead congestion management system, you can have on a border, where two spot exchanges meet. The day-ahead plans for the cross-border energy flows are calculated using the two exchanges' bids and information on the day-ahead cross-border trading capacity.**

  **For simplicity, in this presentation "market coupling" is used as a short-hand for "market coupling/splitting".**

- ***Market splitting*** **A day-ahead congestion management system, you can have on a border, where you have the same spot exchange on both sides of the border. The day-ahead plans for the cross-border energy flows are calculated using the exchange's bids and information on the day-ahead cross-border trading capacity.**

  **For simplicity, in this presentation "market coupling" is used as a short-hand for "market coupling/splitting".**

# Terminology and acronyms – 3

## As used in this presentation

- ***Nordic*** **and** ***Nordic area*** **refer to the countries Denmark, Finland, Norway and Sweden.**
- ***PCR*** **Price Coupling Regions. A market coupling system promoted by some European spot exchanges. The market coupling currently used in Western Europe.**

  **Unfortunately, PCR means market coupling with a lot of redundant staff, computers and software installations – financed by captive costumers. See the PowerPoint presentation** ***Single spot exchange for the Single Electricity Market.***

# Terminology and acronyms – 4

## As used in this presentation

- ***Price coupling*** **A version of market coupling, where there's only one calculation of the spot prices (ie, no local re-calculations lacking full information from the whole coupled area).**

  **This contrasts with volume coupling.**

  **With price coupling the spot prices and the day-ahead plans for the cross-border energy flows are calculated using the following information:**

  - **The spot bids submitted in the whole coupled area.**
  - **The day-ahead cross-border capacity for all borders in the coupled area.**

  **Also, for the whole coupled area, the same calculation algorithm is used.**

  **Hence, even if there are many calculations taking place (as with the PRC model), all the calculations have the same input and use the same software (!). See the PowerPoint presentation *Single spot exchange for the Single Electricity Market.***

# Terminology and acronyms – 5

## As used in this presentation

- ***Price zone*** **A geographical area, within which the players can trade electrical energy day-ahead without considering grid bottlenecks.**
- ***Spot bid*** **A purchase bid or a sales offer submitted to a spot exchange.**
- ***Spot exchange*** **In this document, a spot exchange is an exchange where**
  - **Electrical energy is traded day-ahead.**
  - **The day-ahead prices are calculated by means of double auction.**
  - **Note: this document strongly recommends the European spot price calculation is done by a single European spot exchange.**

# Terminology and acronyms – 6

## As used in this presentation

- ***Spot price*** **A price calculated by a spot exchange. Either by a calculation performed by the spot exchange itself, or by a calculation performed by a body, to which the calculation has been outsourced.**
- ***Volume coupling*** **A version of market coupling, where the spot prices are calculated twice:**

  **First there's an initial calculation using all the information from the whole coupled area. However, the spot prices produced by the initial calculation are not used.**

  **In the next step, there are local re-calculations of the spot prices. The spot prices used in the settlement of the spot trading are the locally calculated prices.**

  **Because the local re-calculations do not have access to the full information from the whole coupled area, the local re-calculations can produce wrong spot prices.**

  **For more information, see the PowerPoint presentation *Market coupling and spot price calculation*.**
- ***TSO*** **Transmission System Operator.**

# Thank you for your attention!

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