ofgem Promoting choice and value for all gas and electricity customers

1st GB European Stakeholder Forum

The European Vision for Electricity Markets

10 January 2011

Purpose

- What is driving the European vision for Electricity?
- What is the European model to deliver integrated electricity markets and an interconnected pan-European system?
- How far has GB already gone towards market integration?
- Where are we with network investment?
- And what are other countries doing?

What is driving the European vision for electricity?

- EC Sector Inquiry – Gas & Electricity Markets (2005):
  - too much market concentration in most national markets;
  - a lack of liquidity, preventing successful new entry;
  - too little integration between Member States' markets;
  - an absence of transparently available market information,
  - an inadequate level of unbundling between network and supply interests
- "Third Package" (2007), Regulation 714/2009:
  - Facilitating single market through cross border trade
    - Efficient use of existing interconnection
    - Developing pan-European network infrastructure

What is the European model for market integration?

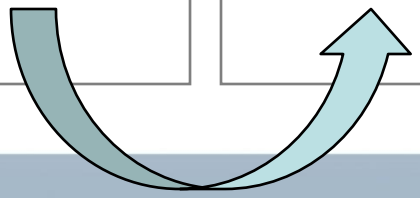
- **Aim: To maximise efficient usage of cross border (or congested) interconnection**
- Maximisation of available cross border capacity
- Market allocation reflects physical reality
- Market based allocation of capacity
  - Capacity is allocated to those that value it most
  - e.g. Implicit or explicit auctions

Explicit auctions

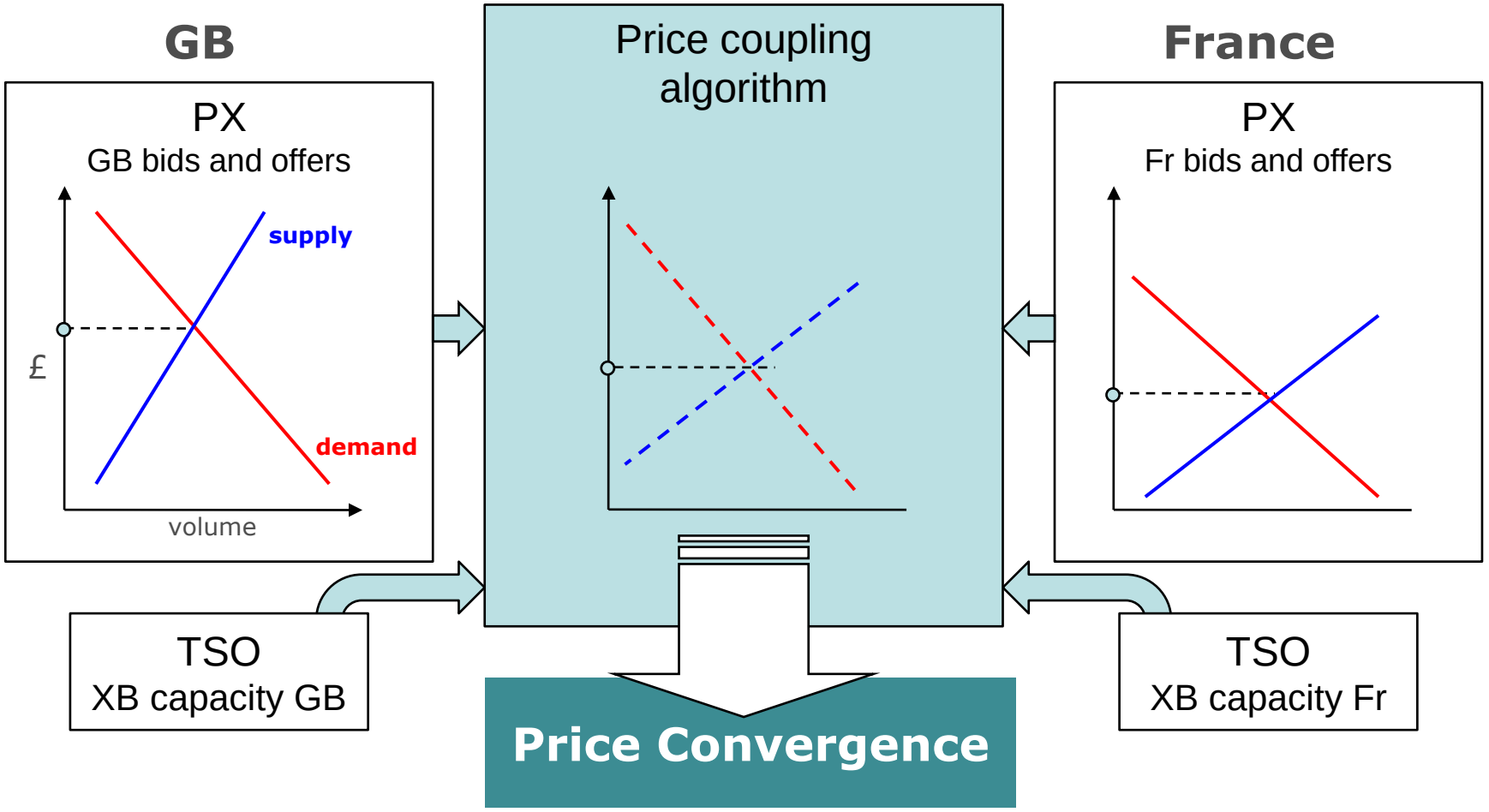
- Purchase of capacity separately from energy
- Decentralised decision making
- Market participants determine flow
- Can result in inefficient use due to imperfect information

Implicit auctions

- Capacity included in valuation of energy
- Centralised decision making
- PXs determine optimal flows according to price differential
- Results in more efficient allocation and use of capacity



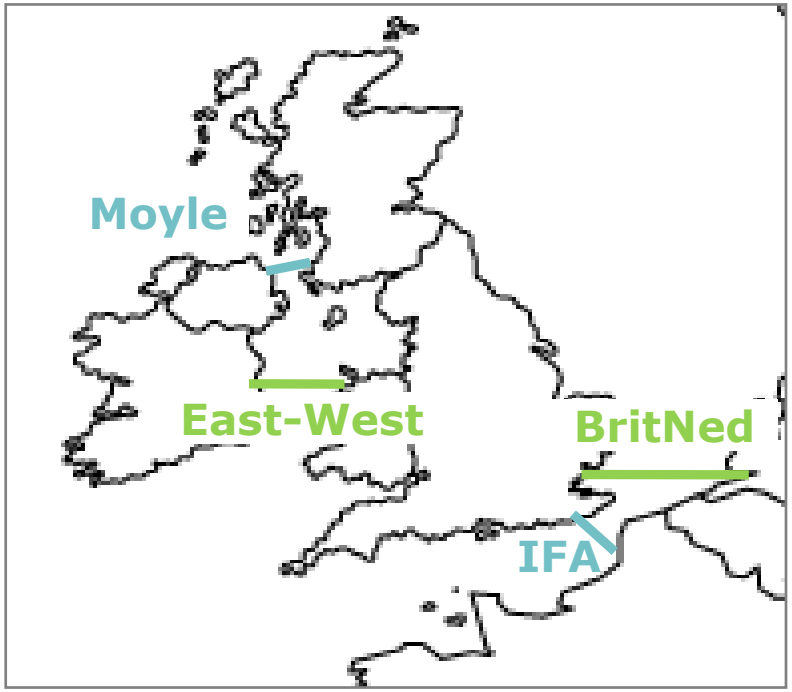
What is market coupling?



What is the European model for market integration?

- Integrating markets in all timeframes
- Working towards a target model to define each timeframe:
  - Long term (yearly/monthly) – Explicit auction
  - Day-ahead – Implicit auction (market coupling)
  - Intraday – Implicit continuous trade
  - Balancing – SO-SO trading, common merit order

Cross border market arrangements in GB …



- **IFA** – Explicit auctions, all timeframes
- **Moyle** – Yearly and monthly explicit auctions
- **BritNed** – Yearly/monthly and intraday explicit auctions, day-ahead implicit auctions
- **East-West** – (planned) Yearly/monthly and day ahead explicit auctions, implicit intraday

… and where is everyone else?

Nordic Region

- Nordpool – 4 countries, integrated marketplace

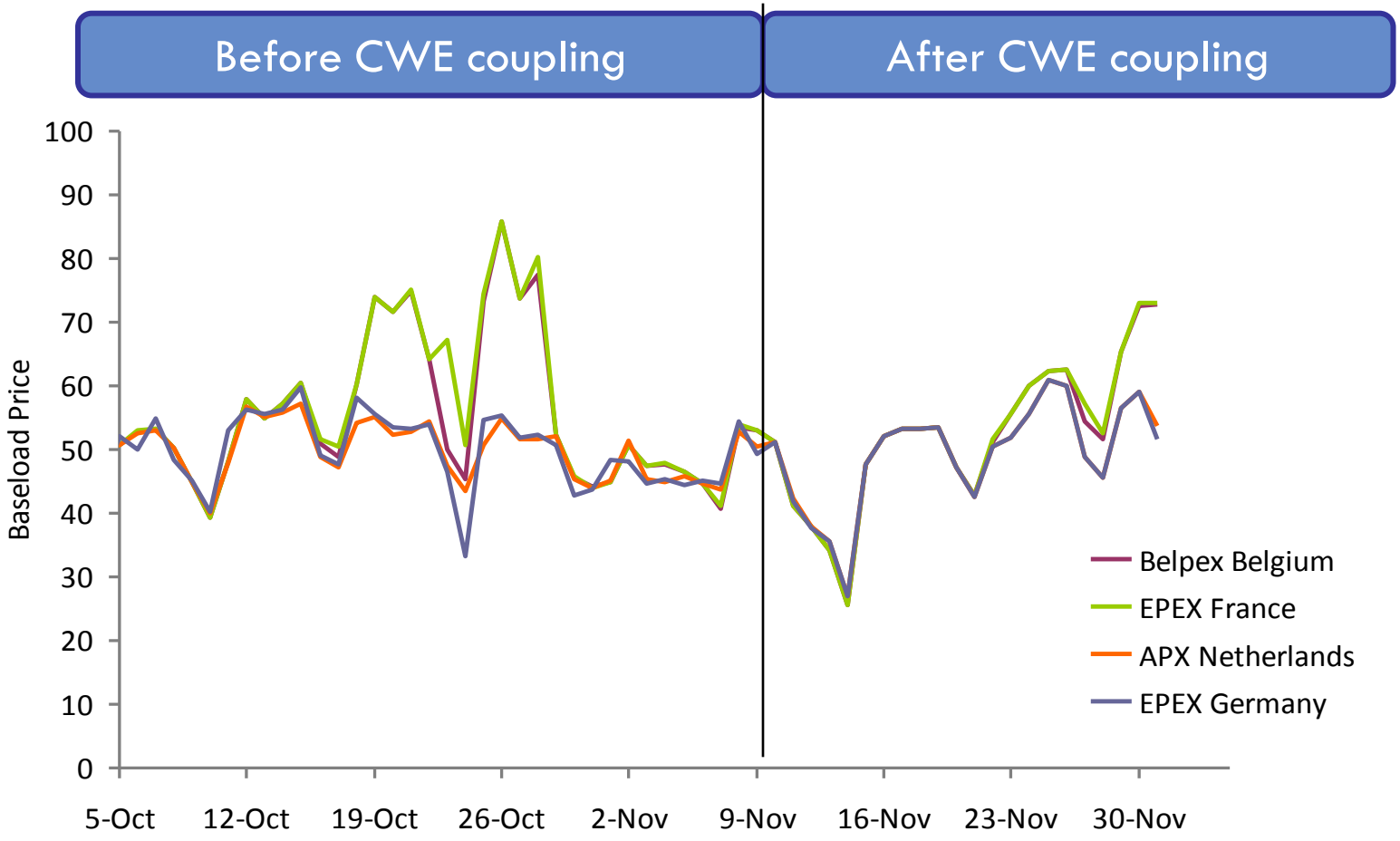
Central-West Europe Region

- France, Belgium, Netherlands and Germany "CWE Coupling"
- Intraday solutions, Belgium-Netherlands & France-Germany

Ireland

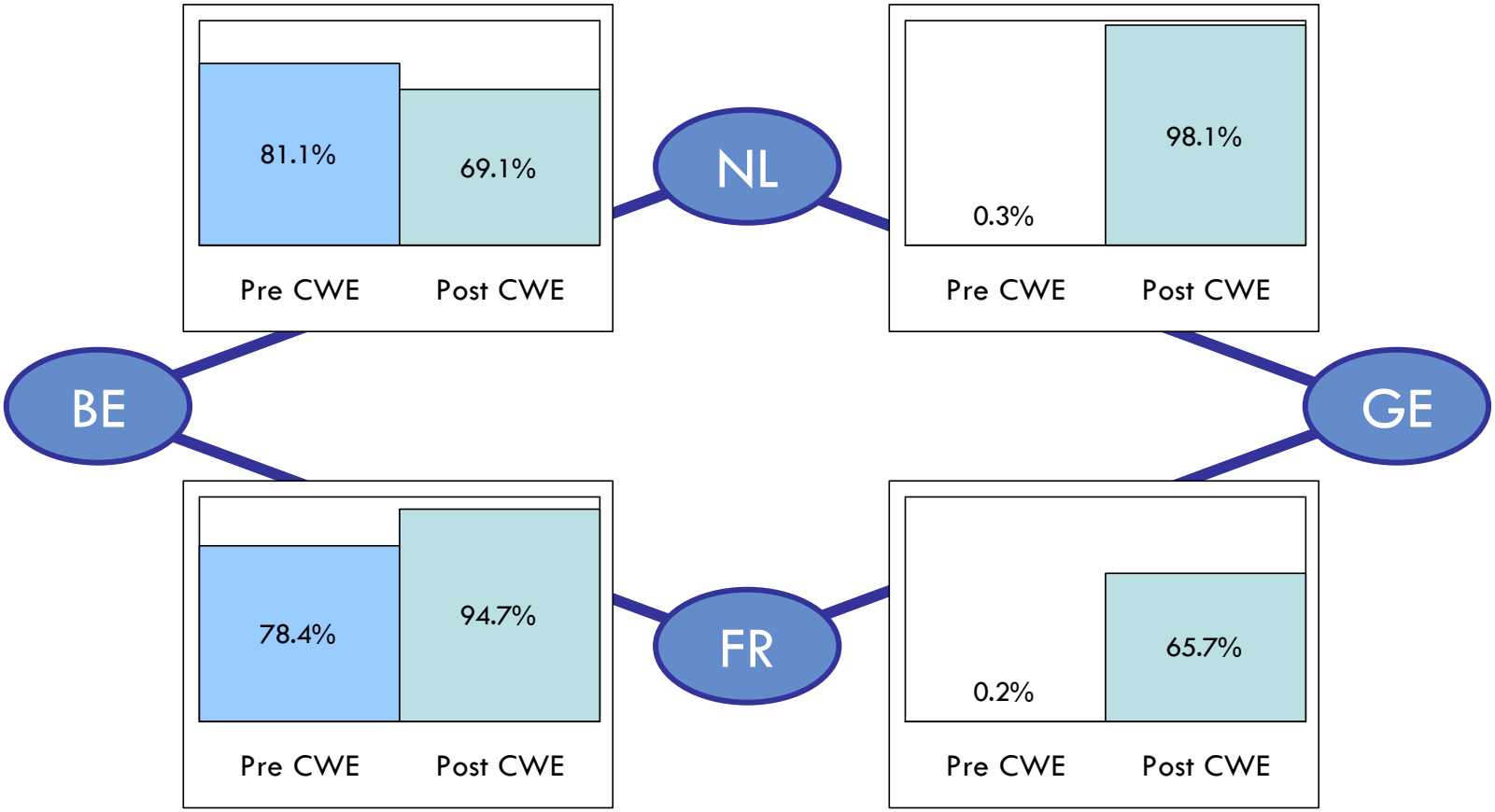
- SEM (Single Electricity Market) in place since 2007
  - Integration of EirGrid and SONI into single market
  - Mandatory gross pool, ex-post prices
- Very different to BETTA, presents some challenges for the next stage of integration …

Successful launch of CWE market coupling



Source: EuroPex & ENTSOE Presentation "Enduring Day-Ahead Market Coupling Initiatives". Presented at the Florence Forum, 13-14th December 2010.

Impact on price convergence
% of hours with identical price



Source: EuroPex & ENTSOE Presentation "Enduring Day-Ahead Market Coupling Initiatives". Presented at the Florence Forum, 13-14th December 2010.

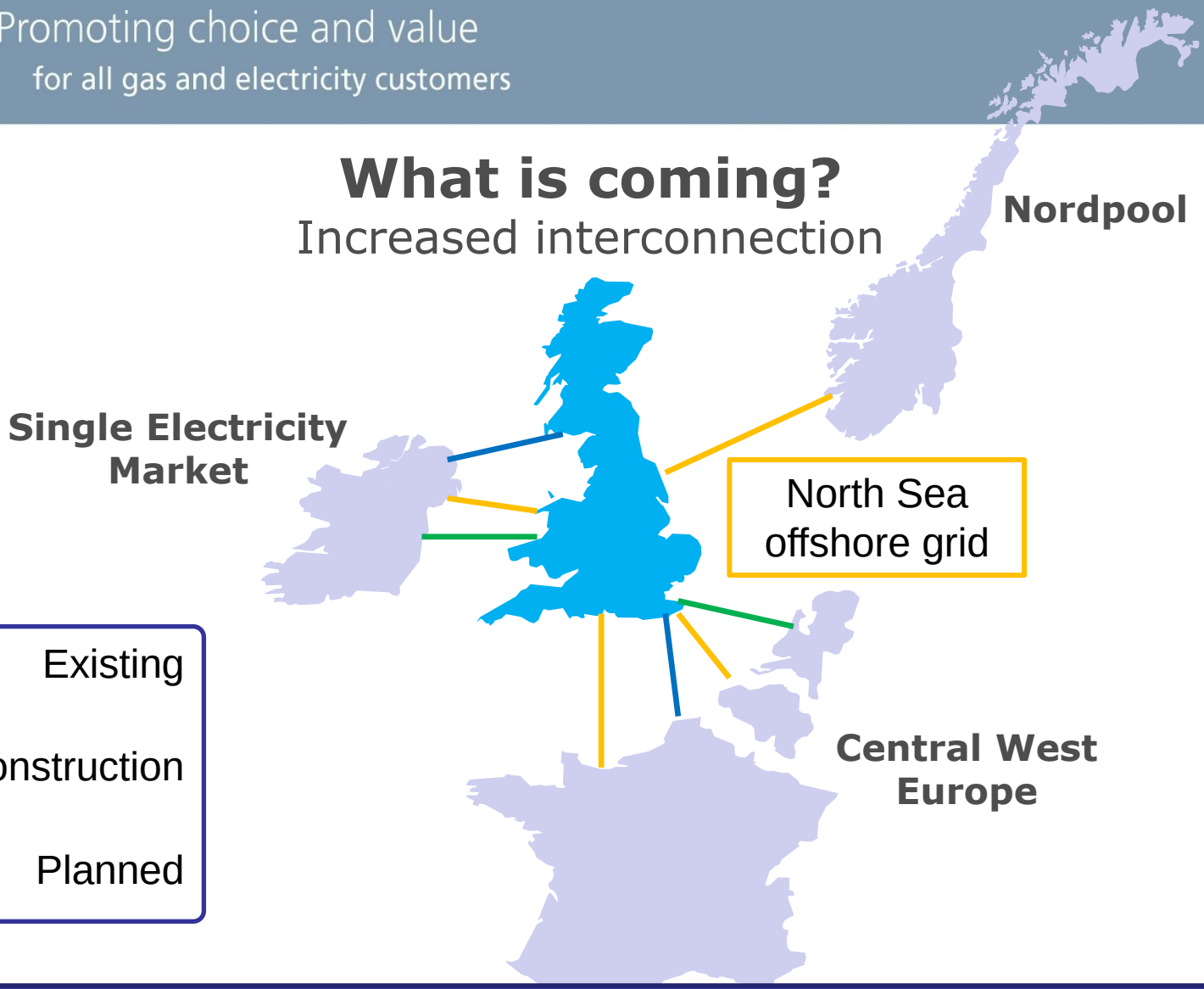
What is the European model for delivering interconnector investment?

- Third Package
  - 10 year network development plan
    - Developed by ENTSO-E
    - Input from National and Regional plans
  - TSOs to deliver investment
  - Regulatory authorities to support /enforce

- Model for regulating interconnector investment
  - Interconnector part of TSO RAB
  - All costs underwritten by consumers
  - Guaranteed rate of return
  - Very little merchant investment

What is coming?

Increased interconnection



Possible Interconnection

2.5GW in 2010 ➔ 4GW by 2013 ➔ 5GW by 2016 ➔ 9 GW by 2020

Interconnector investment in GB:
Can the regulatory regime support this?

- "Light touch" regulation
  - Separate Interconnector licence
  - Merchant interconnection
  - Business case = congestion rents
  - All upside and downside borne by investors
  - Apply for exemption from EU legislation

- Challenges with current regime
  - Regulatory uncertainty (exemptions)
  - Exemptions are the exception
  - Coordination with other NRAs
  - Corporate structure of other TSOs

Less investor commitment to merchant projects

Can we achieve efficient levels of interconnection?

Is the regulatory environment right?

What is coming next from Europe? How will it impact GB?

- Top down
  - Binding legislation from European Commission
  - Third Package – Network codes

- Bottom up
  - Market or member state led "implementation projects"
  - Driving changes in cross border trade and regulation of investment without European legislation …


ofgem
Promoting choice and value
for all gas and electricity customers

ofgem Promoting choice and value
for all gas and electricity customers

1st GB European Stakeholder Forum

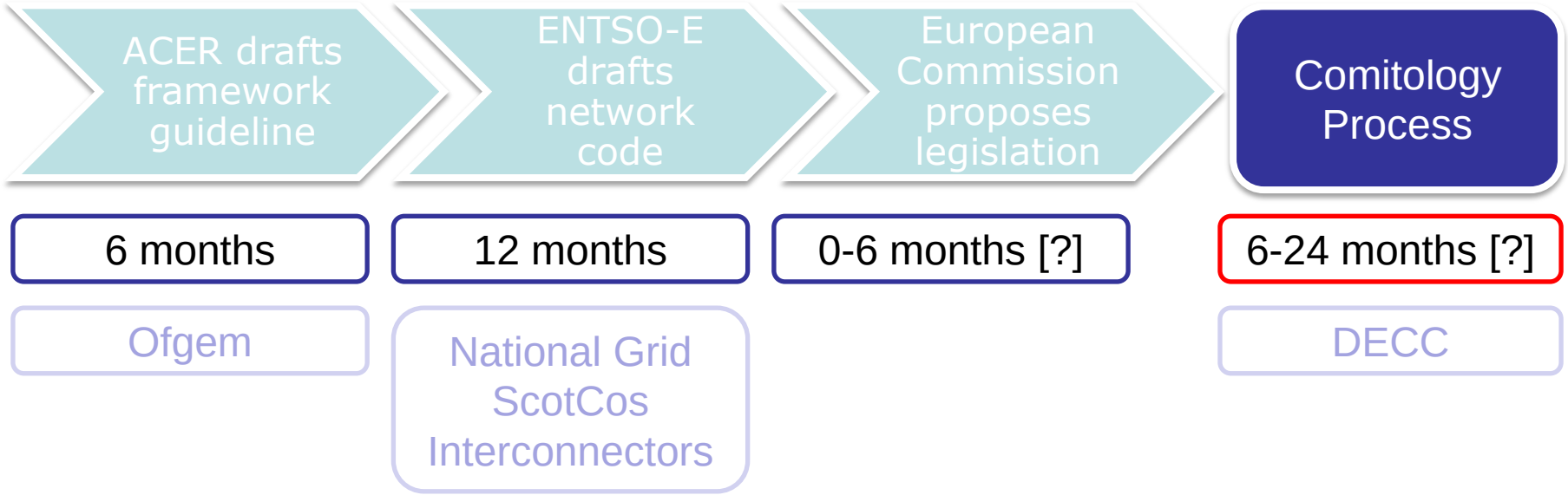
New European Electricity Legislation

10 January 2011

Purpose

- Explanation of the process
- Overview of new European electricity legislation
- Highlight potential impacts on GB

Framework guideline and network code process[1]



1. Regulation (EC) No 714/2009, Article 6;

Comitology guidelines process[2]

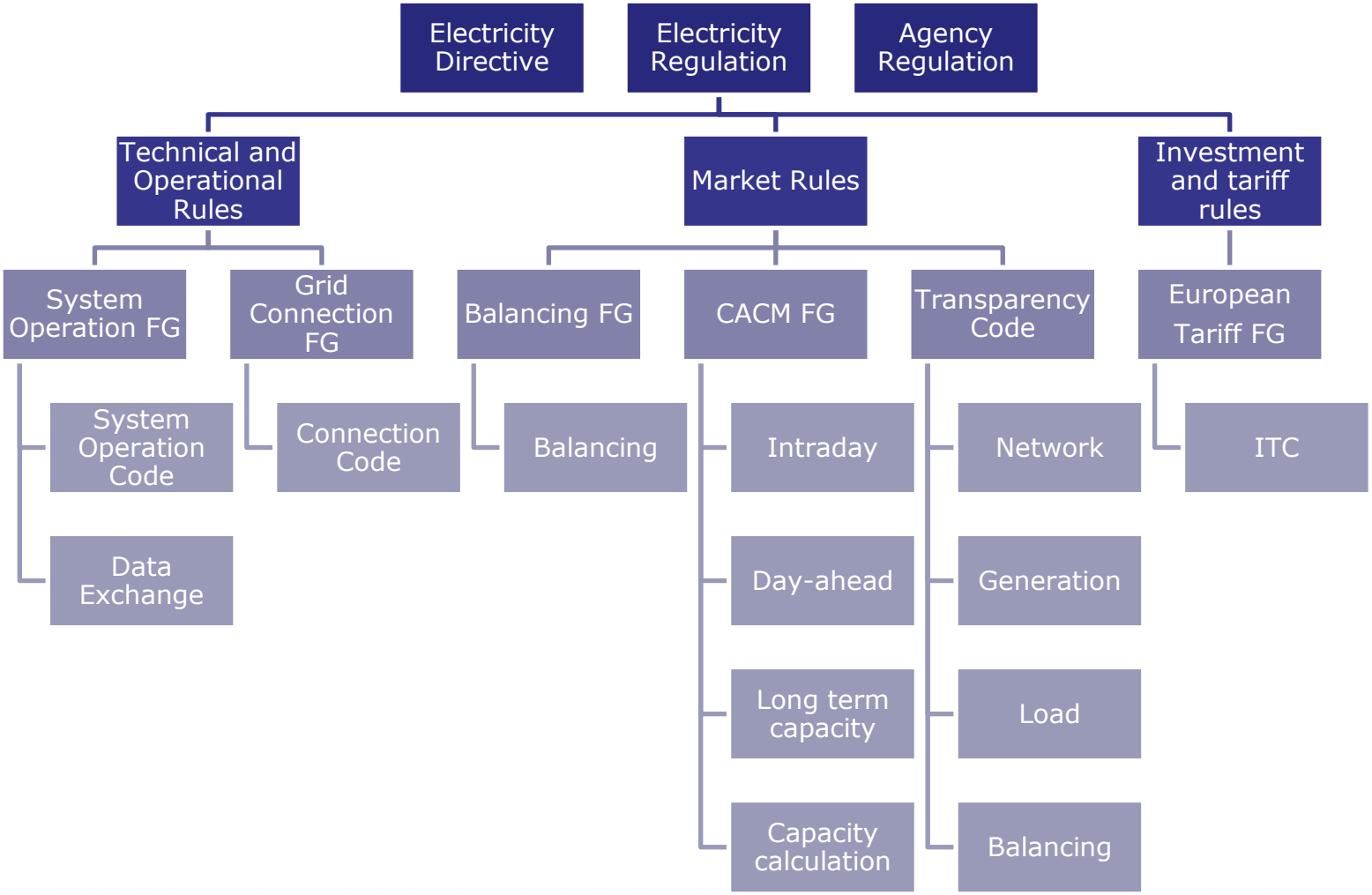
2. Regulation (EC) No 714/2009, Article 18

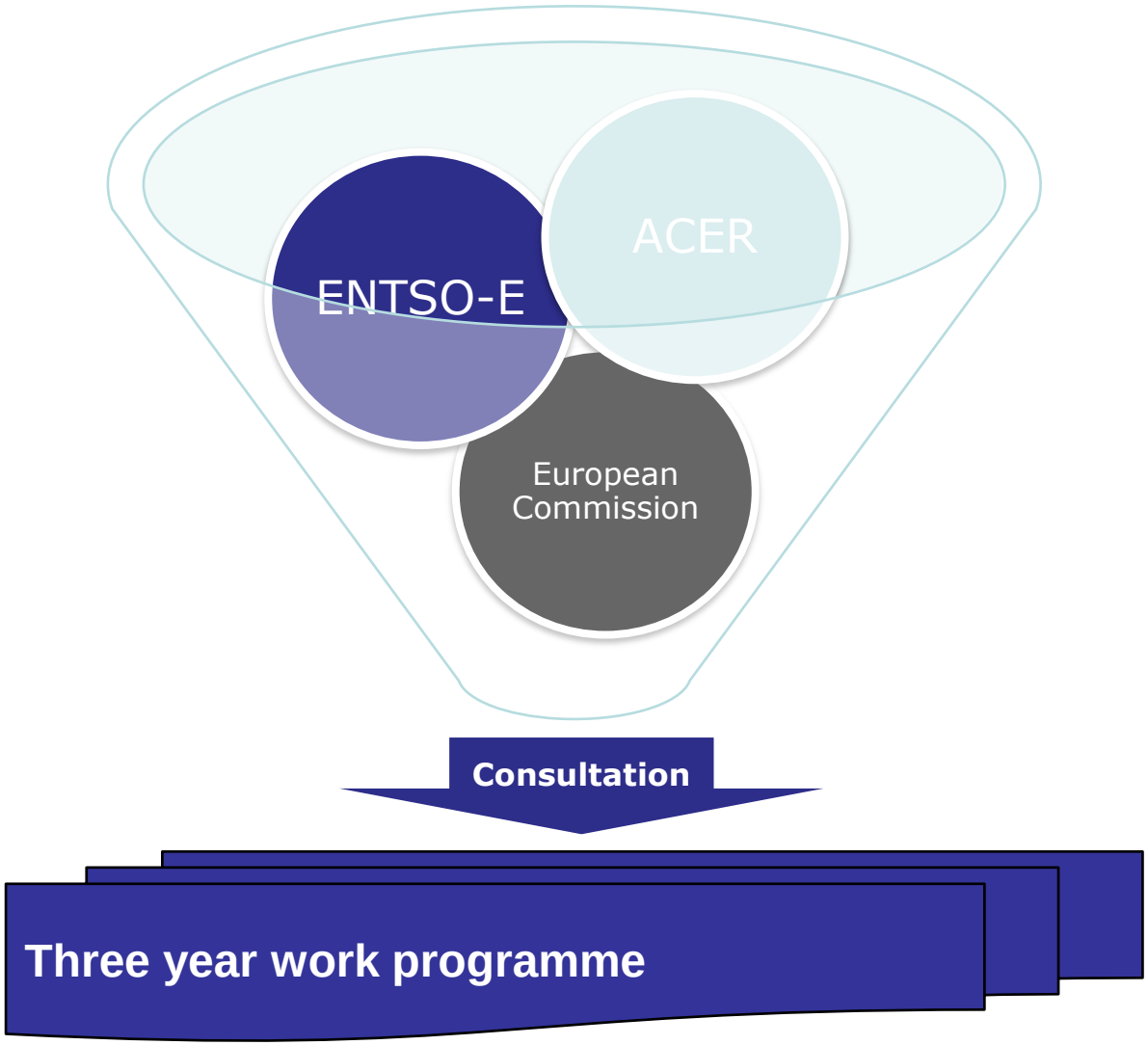
Legal status

- A European network code or comitology guideline
- The legal basis for the codes is in the Regulation
- Likely to be annexed to the Regulation
- Directly applicable European law in GB
- Ofgem and DECC responsible for implementation and enforcement

A legislative process not a “codes” process

Initial view of what needs to be done




ACER
ENTSO-E
European Commission
Consultation
Three year work programme

New European legislation

- Network code on capacity allocation and congestion management
- Network code on grid connection
- Network code on system operation
- Comitology proposal on electricity market transparency
- Network code on balancing

Capacity allocation and congestion management [CACM] framework guideline

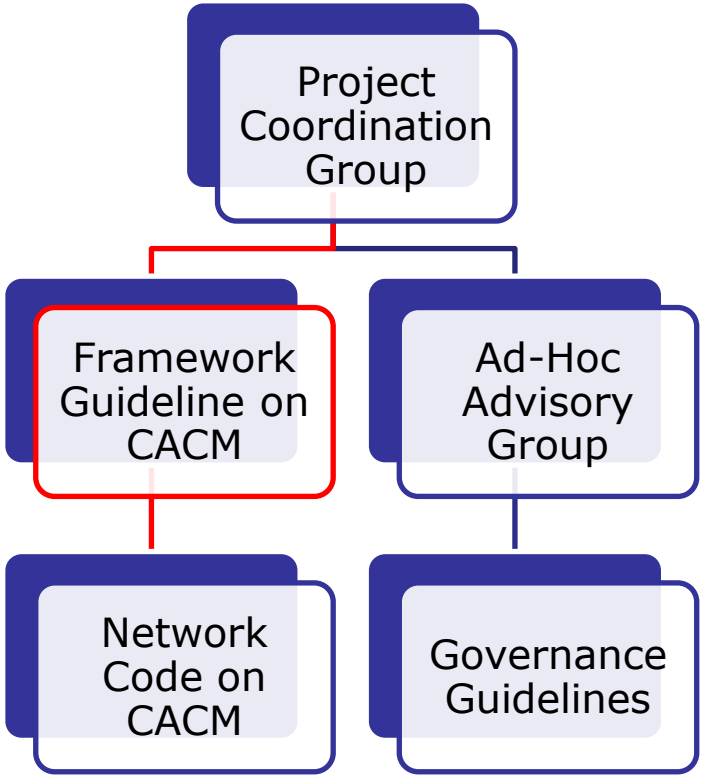
It will be an important set of rules:

1. European market integration dependant on two factors
   - Investment in new infrastructure
   - Efficient use of cross-border infrastructure
2. Determines how trade happens between countries

Write down the target model and formalise it through legislation

CACM FG [2]

Top down



Bottom up

Developing and implementing a target model for coordinated European cross-border trade

Key features

Day ahead	• European wide market coupling
Intraday	• European wide intraday trading
Forward markets	• Explicit auctions to allocate capacity
Zone delineation	• Market areas defined by network topology
Capacity calculation	• Shift toward flow based capacity calculation

Some parts of the target model are more developed than others

Intraday capacity allocation

Objectives

- Enable quick regional trading on an intraday basis
- Shift European wholesale market design closer to real time

Drivers

- Traders take more responsibility for balancing the system
- Increase in renewable (wind) generation
- Least well defined timeframe in target model

ERGEG report on wind integration

- Wind generation is more predictable closer to real-time – markets arrangements should encourage wind generation to integrate into the market.

Gate closure times

- Valid reasons for differences?

Cross-border integration

- Helpful to consider importance of intraday timeframe

Balancing and reserves

- Where appropriate, all generation should be subject to equivalent balancing rules
- Cross border balancing will become increasingly valuable

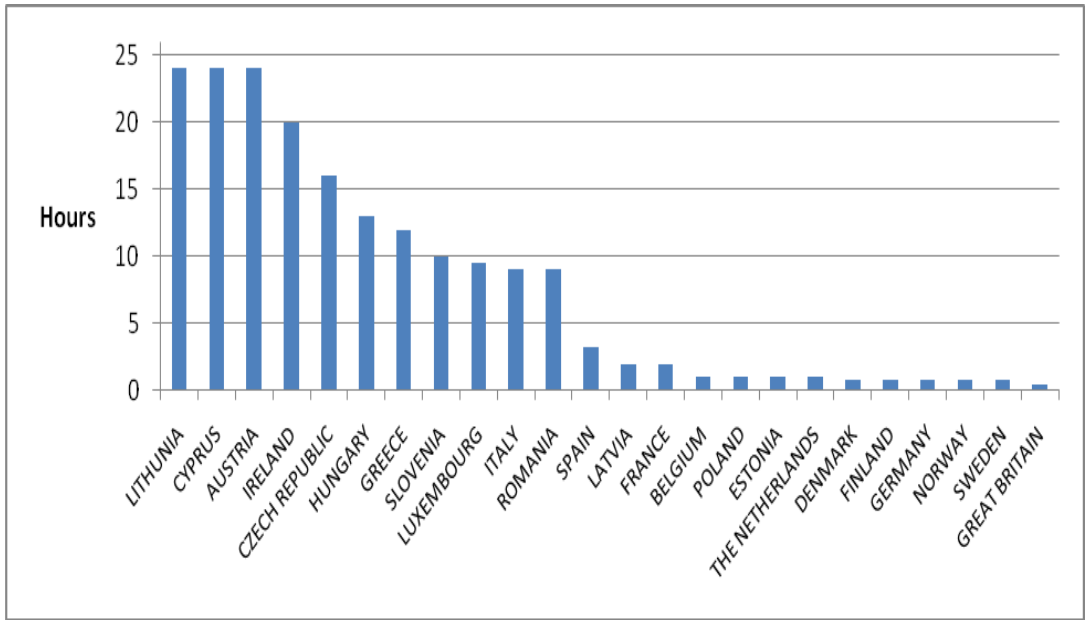


Figure: Time between closure of forward market and real-time delivery

Zone delineation

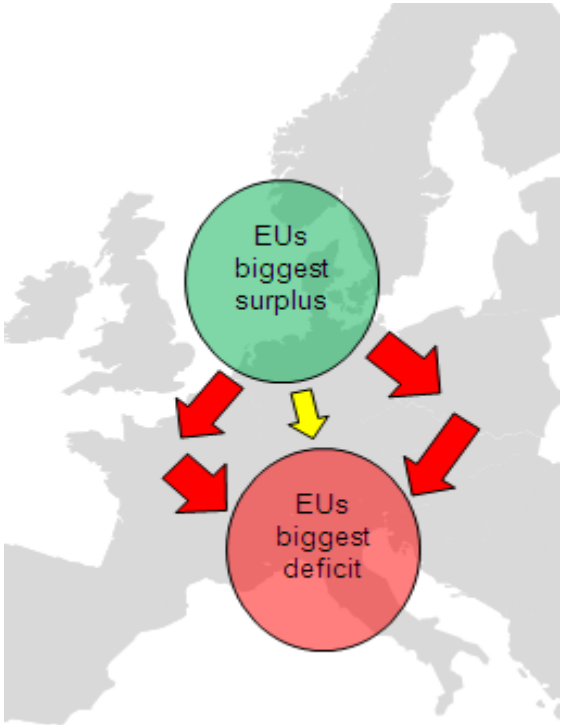
Objectives

- Wholesale prices should reflect the physical reality
- Minimise loop flows on the continental system

Drivers

- Market areas defined by national borders
- Reduce need for TSO to take balancing actions

Why is it an issue?



Svenska Kraftnät (SK)

DG Competition case against Swedish TSO

- Complaint from market parties that SK was "pushing congestion to the border"
- Dealing with internal constraints by reducing available cross-border capacity
- SK commitments included splitting the Swedish market into several market/price areas

Policy dialogue is shifting to support more zonal/nodal pricing

Technical codes

Drivers for change

- Increase in renewable generation
- More integrated European markets
- Small scale embedded generation and flexible demand

Problems

- Electricity flows are more volatile, less predictable and travel further
- Electricity systems required to operate closer to their technical limits

Greater need for communication and coordination between TSOs to safeguard system integrity

Pilot project: framework guideline on grid connection

- Minimum technical standards for network connection, standards can be differentiated by e.g. grid user type, technology, size etc.
- Special requirements for critical grid situations
- TSO powers for compliance monitoring
- DSO-TSO Cooperation
- TSO-TSO Cooperation
- Balancing cost of implementation against benefits of harmonisation is key
- FG tasks ENTSOE to set framework for national TSOs to conduct cost benefit assessment to determine “significant users”, and set requirements on transition periods and exceptions.

Focus is on cross-border issues, but can impact on national codes

Transparency proposals

Objective

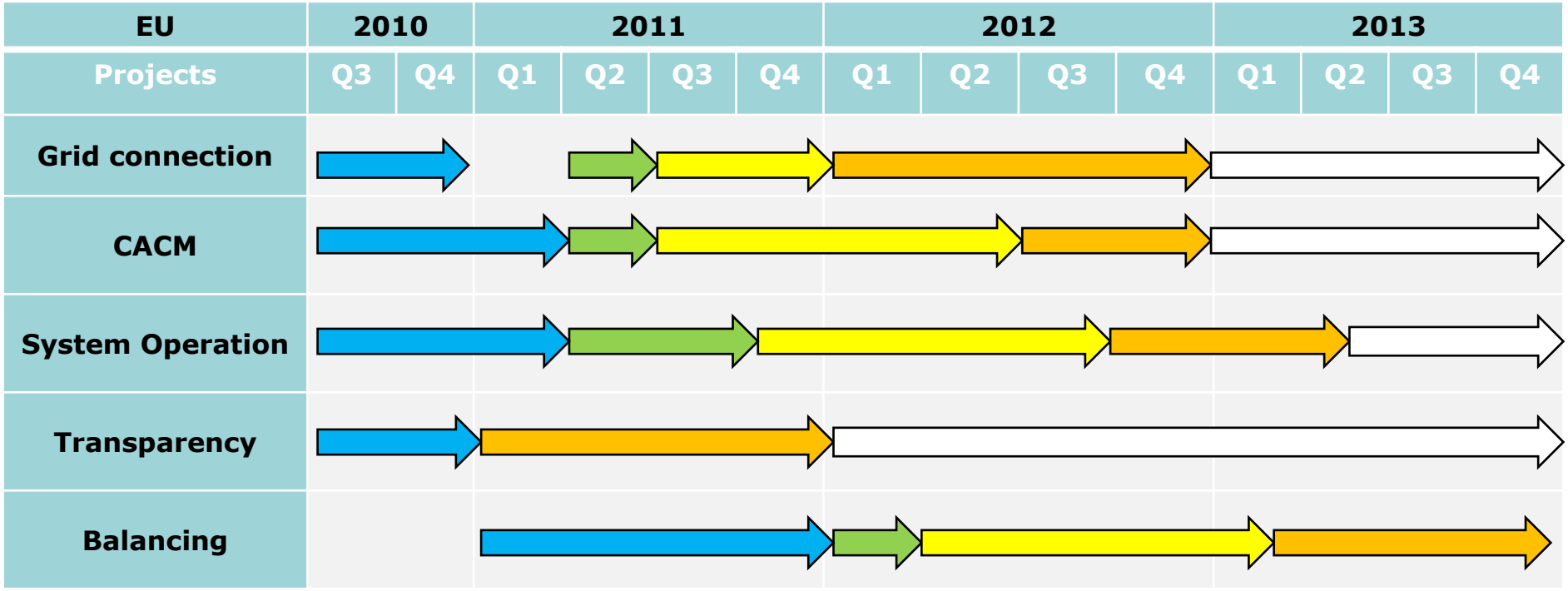
European integration driving new transparency demands

Key requirements

A European platform providing close to real time data on market fundamentals:

- Generation: hourly, unit by unit generation for units over 100MW
- Load: total load published every hour
- Transmission: available capacity and flows
- Balancing: TSO actions and prices

Timeline for some of the European network codes



ERGEG/ACER | ACER evaluation | ENTSOs | Comitology | Implementation

Conclusion

- Many stakeholders and interdependent processes
- Ofgem and DECC required to ensure and enforce implementation
- There will be an impact on GB arrangements


ofgem
Promoting choice and value
for all gas and electricity customers

ofgem Promoting choice and value
for all gas and electricity customers

1st GB European Stakeholder Forum

Electricity Implementation Projects

10 January 2011

Purpose

Take a bottom up approach..

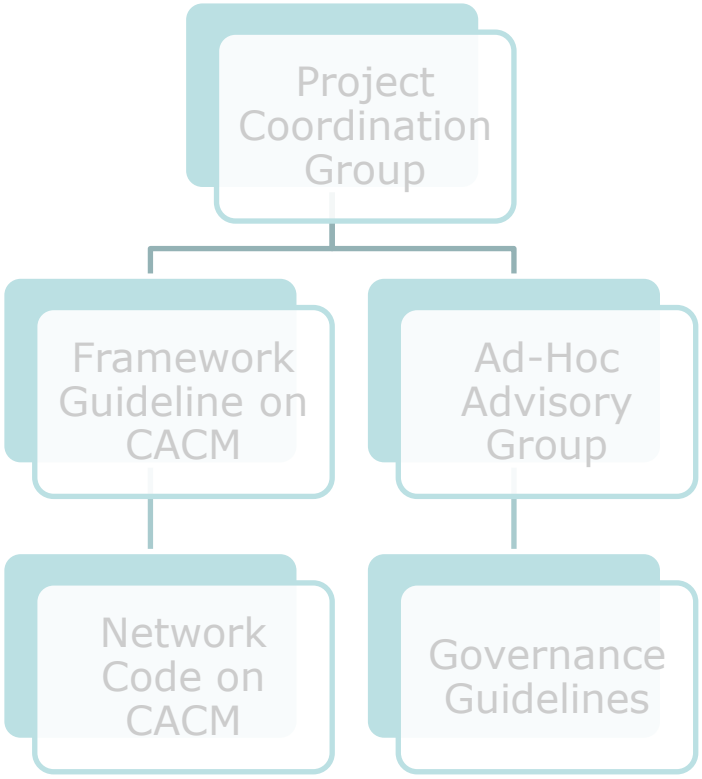
- **"France, UK, Ireland" region**: key achievements

- **Beyond the FUI region: GB and inter-regional projects**

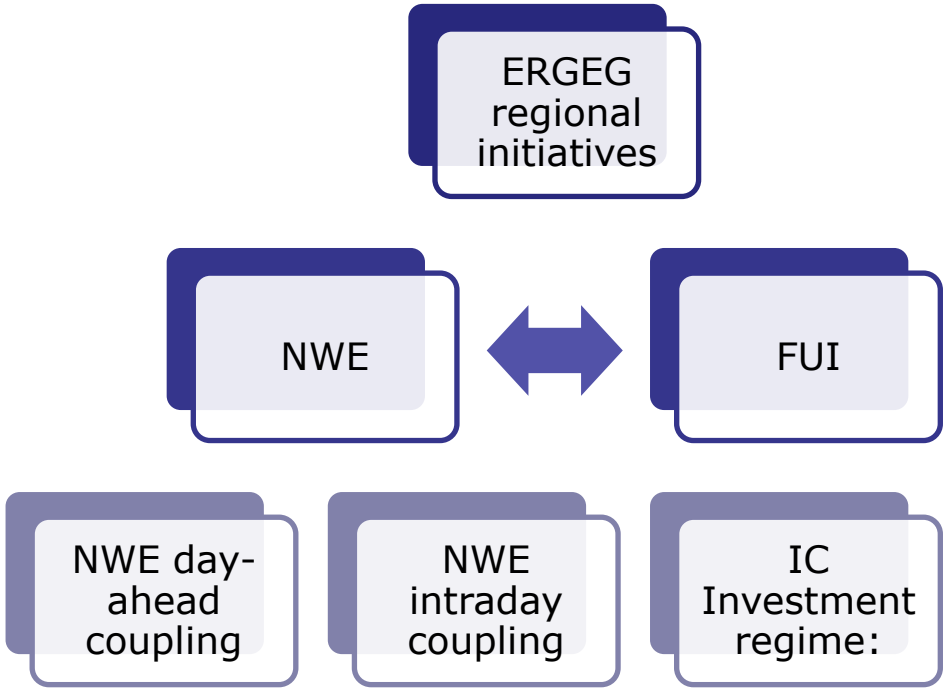
✓ Inter-regional day-ahead and intra-day implementation projects;

✓ New IC investment regime

Top down



Bottom up



Bottom up approach: inter-regional implementation projects are gaining momentum

Electricity Regional Initiatives…

•7 ERIs launched in '06: interim step towards a single EU electricity market, integrating fragmented national electricity markets into regional markets.

•Each region brings together **regulators, companies, Member States, the European Commission and other interested parties** to focus on developing and implementing solutions to improve the way in which regional energy markets develop.

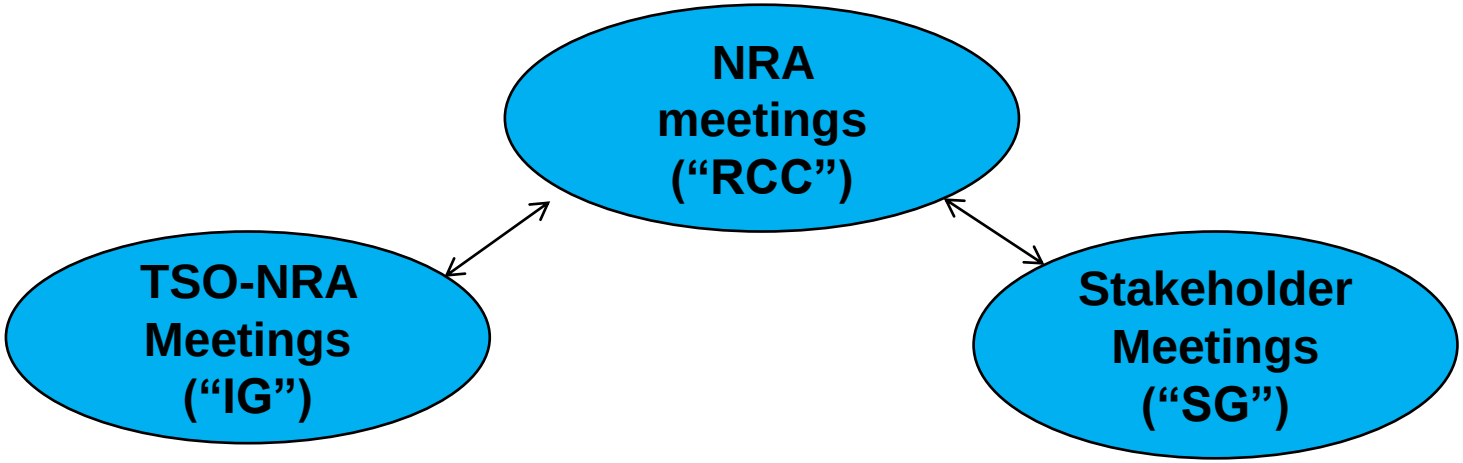
•Evolving new role for ERIs in implementing cross border regulatory framework …

ERIs..
•Baltic
•Central East
•Central South
•Central West
•Northern
•South West
•France UK Ireland…

Where does GB fit ?

"France-UK-Ireland" Electricity Regional Initiative

- Ofgem is the **lead regulator** of the France-UK-Ireland Region..
- FUI region includes Moyle and IFA links and will be extended to include East West (2012) and beyond its "physical borders" with Britned (2011)



Involvement of Stakeholders is crucial for the success of FUI

Key achievements to date

1) New Congestion Management System on IFA

- ✓ Launched in October 2009
- ✓ Ensures compliance with EU legislation
- ✓ Harmonisation with other borders
- ✓ Introduction of intraday allocation mechanism, UIOLI ,UIOSI & netting & pay-as-clear auctions

⇨ **More efficient use of IFA**

Next Step: introduction of implicit auctions and market coupling..

Key achievements to date

2)Balancing

IFA TSO-TSO balancing model

- ✓ 1st such initiative in Europe, contributing towards the vision of single regional market as a step towards an EU integrated market
- ✓ Provides reciprocal access to balancing market in GB and France.

- ✓ Interim arrangements (Mar'09), six prices per day. Positive feedback on both markets..

- ✓ Enduring solution (Dec' 10): move to 1h CBB product.
- ✓ Next step: extension of the model on other borders in FUI and beyond…

IFA TSO-TSO balancing mechanism, could be the target model of the Balancing FGs produced in '11…

Moving beyond the FUI region…

FUI..

CWE..

current

in progress

future

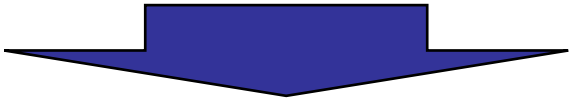
GB :leading role in inter-regional projects..

Ofgem's position on electricity IC policy

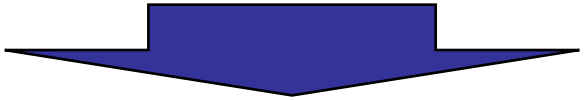
Consultation on electricity interconnector policy (Jan'- Mar'2010)

View on how Ofgem's policy should develop around:

1) Proposed target models for cross border capacity and efficient use of ICs
2) alternative options for regulation of new investment..



July '10: Publish summary of 21 responses received.

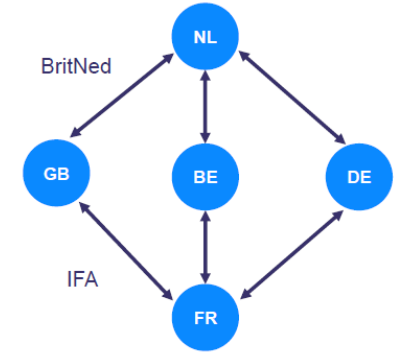


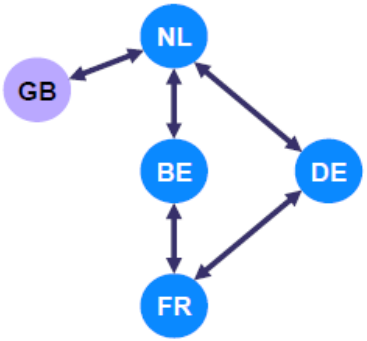
Sept. '10: Open letter on our next steps under two main areas:

1) Market Coupling
2) Regulating New IC Investment

Inter-regional projects: Day Ahead Market Coupling

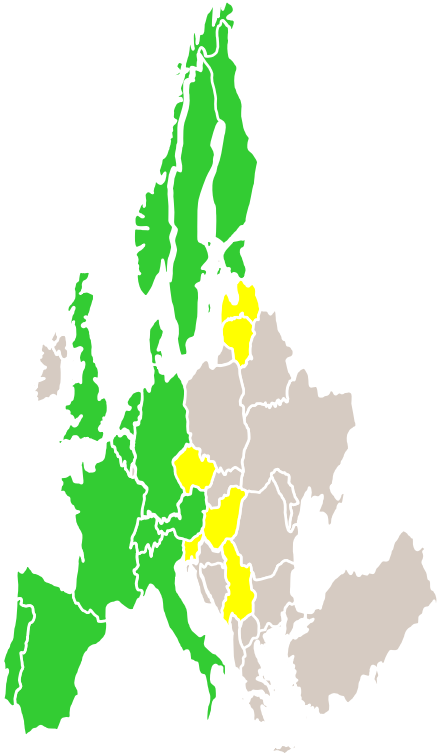
GB-CWE Coupling





TSO NWE Coupling

PX PCR Coupling



Britned: a first step towards the implementation of DA market coupling in GB (including IFA)

Inter-regional Day-Ahead market coupling solution…

TSO and PX initiatives should fit together to deliver an enduring market coupling solution:

- **Single Price Coupling with one coordinated matching across regions**
- *Mid 2012:CWE, Nordic and **GB**,*
- *Post 2012: extendable to all Europe post 2012.*

Ofgem's open letter on IC policy:

- *GB committed to the implementation of an enduring market coupling solution between GB and NWE region*
- *Britned's embedded solution an important interim step*
- *Extension to whole FUI region to include SEM will depend on changes needed in the market design*

Momentum on ERIs to implement target models before network codes come into force..

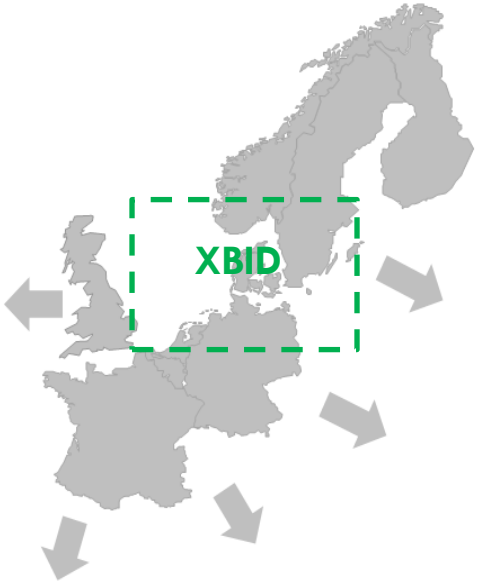
Intra-Day inter-regional projects..

NordPool + APX + Belpex

EPEXSPOT

Interim steps to a NWE solution , including GB

TSO NWE Initiative



Inter-Regional Intra-Day solution

Day-ahead TSO group set up the **NWE Intraday Project** ...

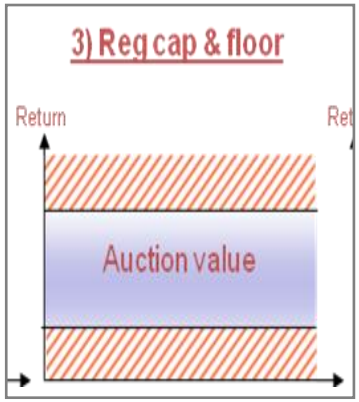
Goal: *create a seamless regional intraday market in NWE region (end of 2012) ,extended to deliver a pan European intraday solution.*

- **Ofgem** co-chairs, the regulators' group, contributing to the development of an enduring solution..

- In parallel, SEM will introduce ID trading in 2011, allowing the whole FUI to work towards the implementation of the ID solution..

Increased amount of intermittent generation expected in GB places additional value to the ID project..

Ofgem's new regulatory regime for interconnectors



- Ofgem is developing a regulated, **cap and collar**, model for new IC investment.
- Cap & Collar: returns within a range, depend on auction revenues ; above or below they are returned to or supplemented from customers.

Project "NEMO" (GB-Belgium IC): "pilot" project in exploring how this model could be implemented in GB (principles, design, implementation mechanisms etc..)

Developing a new regulatory regime for interconnectors

- While, NEMO is our pilot project to develop a regulated regime, we acknowledge that there are other ICs under discussion: e.g. links to France, Ireland, Norway ….
- We envisage holding similar discussions with relevant TSOs and regulators to discuss if this approach could be seen as a high level solution for other non-exempt ICs.
- We also remain open to the merchant route. We intend to develop a coordinated approach towards exemptions with other regulators...

New GB IC regime: potentially a high level solution for future non-exempt ICs..

Conclusions

- IFA access rules and balancing model: key achievements in the FUI region to date…
- Projects are no longer fixed within regional boundaries..
- Momentum on electricity regions to implement inter-regional solutions, ahead of network code implementation..
- Ofgem has a leading role on key inter-regional projects which aim to enhance EU market integration:

✓ NWE day-ahead and intra-day implementation project

✓ Encouraging IC investment through a new regulated investment regime

Electricity bottom up projects: drivers for change in EU cross border trade and regulation


ofgem
Promoting choice and value
for all gas and electricity customers