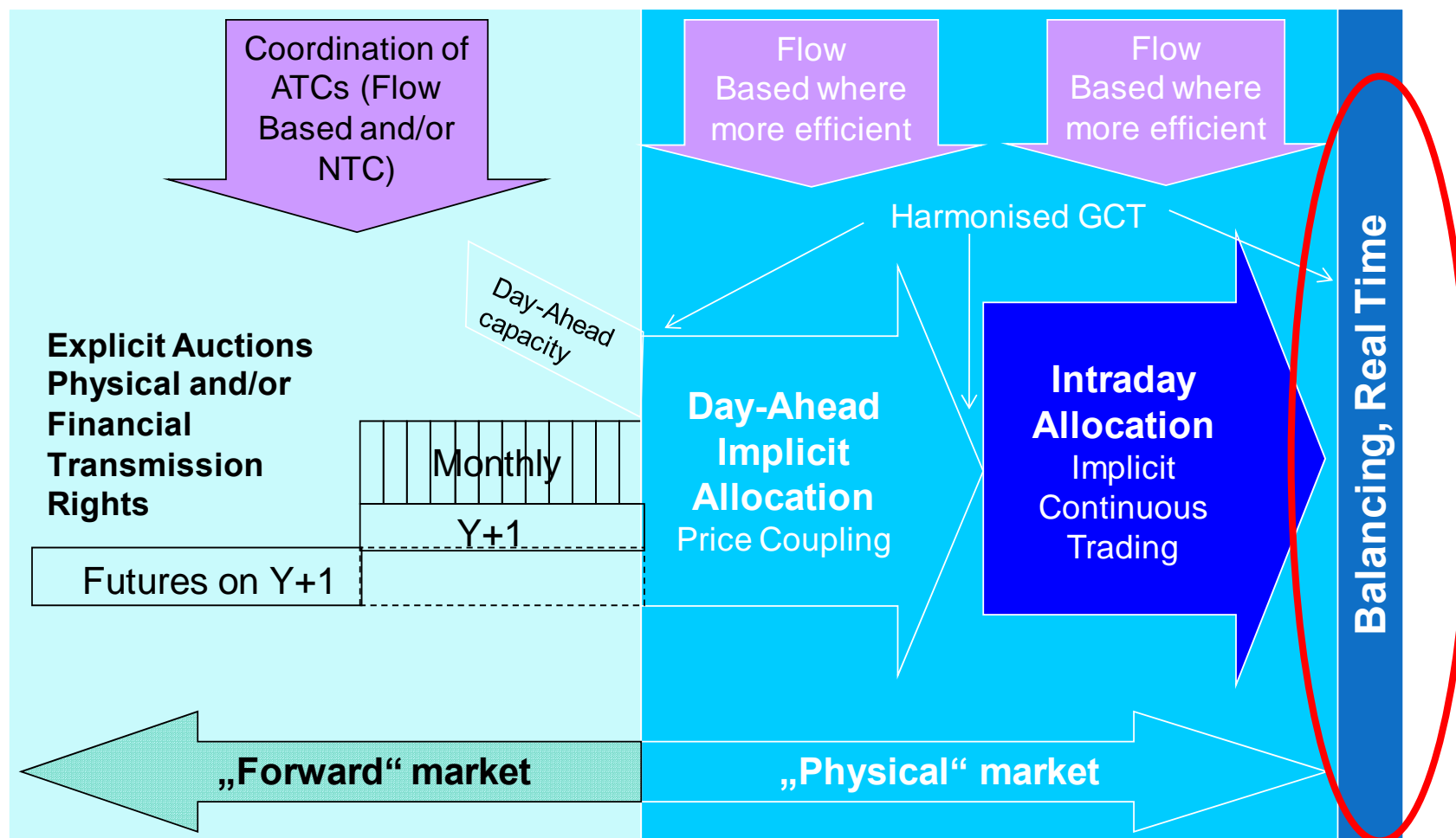


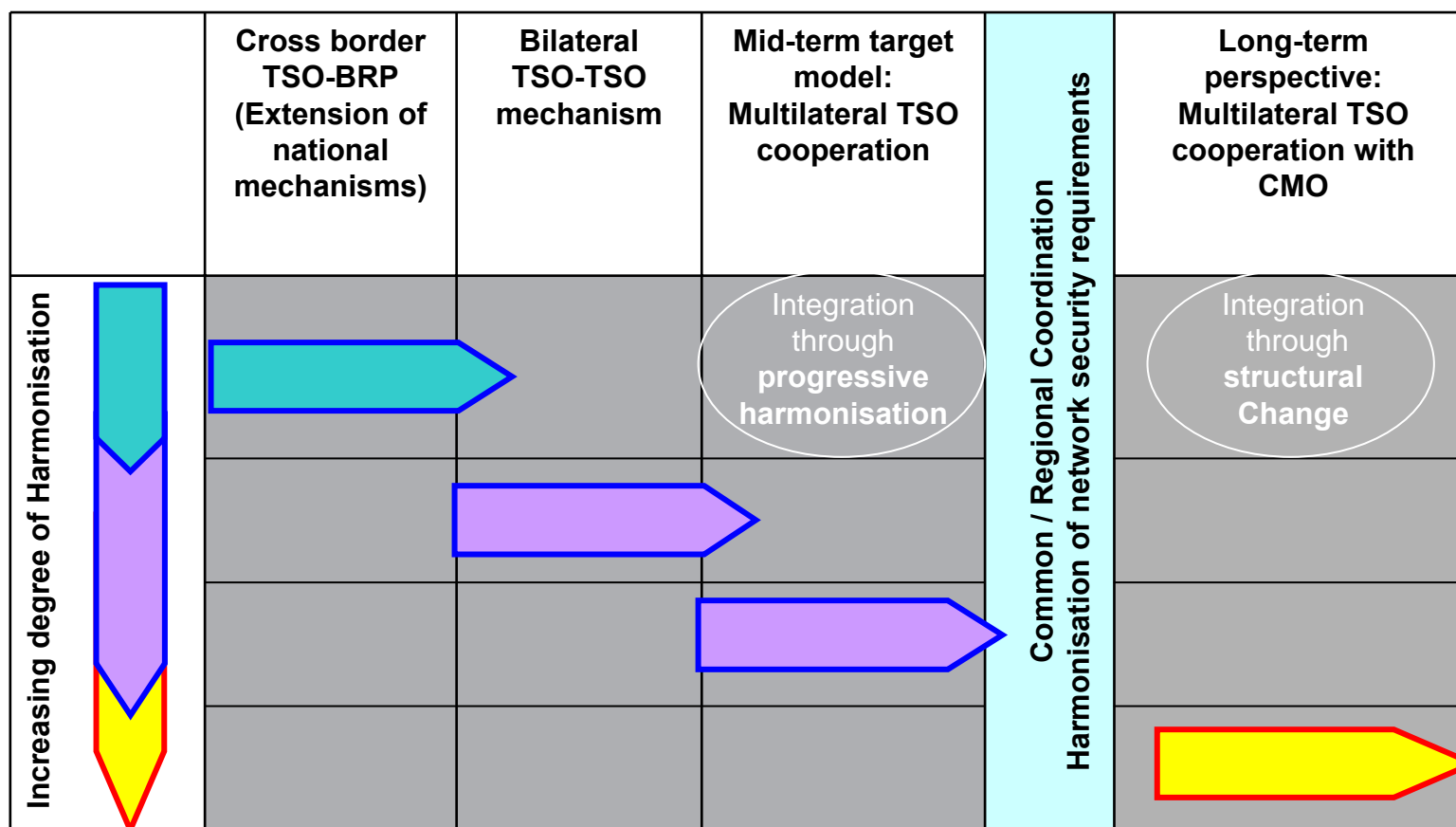
An overview of Europe's cross border balancing projects

ENTSO-E

Balancing- Target Model



Balancing: Roadmap towards the Target Model*



(*) Proposed Roadmap for the Cross-Border Integration of Electricity Balancing Markets discussed in PCG

European Balancing Markets – Current status

Key

Multilat. TSO-TSO model w CMO

Multilat. TSO - TSO Model w/o CMO

Bilateral TSO - TSO Model

TSO – BRP Model

Mechanism under development

1 - TSO -TSO balancing UK-FR (BALIT)

1a & 1b - Interim solutions FR-SP and PT-SP
(Possible extension of BALIT)

1c - Enduring solution PT-SP-FR I/C

2 - SO balancing over Moyle I/C

3 - SO balancing over East West I/C

4 – Development of arrangements over Britned

5 – Nordic Balancing Market.

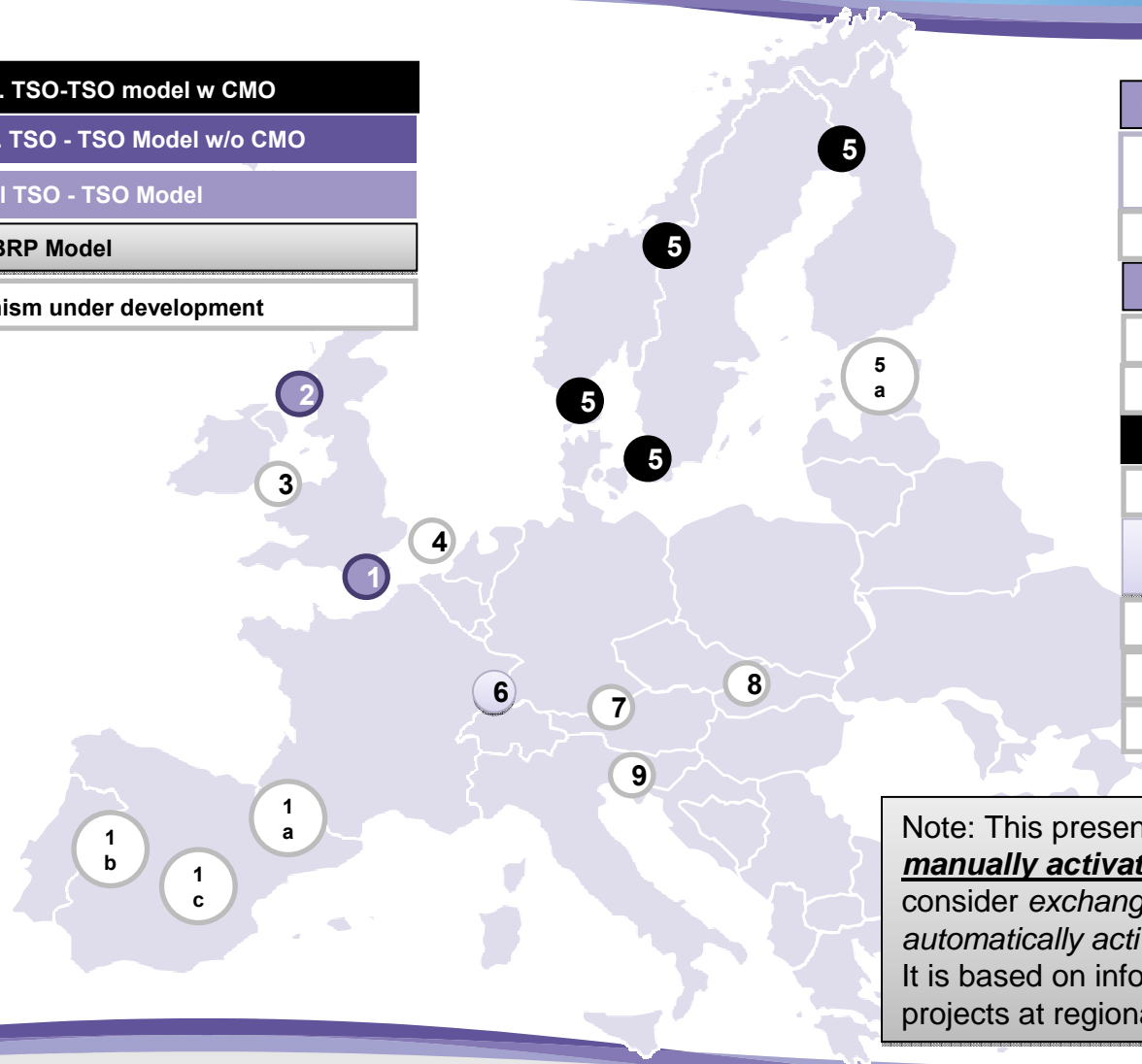
5a – Possible extension of Nordic market

6- Exchange of balancing energy between CH &
DE generators & FR TSO

7- Development of a AT-DE BRP-TSO model

8- Development of a CZ – SK balancing market

9- Developments in Central Southern Europe



Note: This presentation only covers **XB exchanges of manually activated balancing energy**. It does not consider exchanges of reserves or schemes dealing with *automatically activated balancing energy*. It is based on information provided by parties involved in projects at regional level.

1) The BALIT mechanism: TSO – TSO balancing GB-FR

- A Cross-Border mechanism between UK & FR (National Grid & RTE) to enhance balancing market competition, reduce balancing costs and imbalance prices and increase operational security via TSO-TSO exchanges of balancing energy.
- In operation since December 2010 (interim phase since March 2009)
- Allows exchanges of unused surpluses of balancing energy (up & down) after the closure of the intra-day energy market. Each TSO builds & prices ad-hoc offers of 50MW (500MW total). If offers are competitive and if capacity is available, the other TSO can request activation. A common platform (BALIT) performs the coordination.
- A mechanism for the Britned cable is also in the process of being developed. This is expected to be agreed during 2011. (#4 in diagram)

1a) Developments in the SWE region – A possible extension of BALIT

- REN, RTE and REE are working together in order to develop a coordinated balancing mechanism among TSOs using the available transmission capacity after adjustments in the intraday market.

The Interim solution (1a & 1b)

- Both the REN-REE and the RTE-REE solutions intend to allow bilateral trading of balancing energy via the BALIT platform (which is in use on the FR-UK interconnector)
- Both projects remain at the design stage. Analysis of the model and of the different regulatory implications is being undertaken.
- It is expected that the IT testing phase will be completed by Q3 2012 and that the projects will be in a position to 'go-live' around Q4 2012.

The enduring solution (1c)

- As an enduring solution, the SW region is considering a multi-TSO cross-border balancing mechanism (not shown on the figure in slide 4).

2 & 3 - Projects involving the island of Ireland

	2 - TSO to TSO balancing over Moyle interconnector	3 – TSO to TSO balancing over East-West interconnector
What is the project seeking to achieve?	A cross-border mechanism between NI & Scotland to allow TSOs to vary post gate closure i/c flows for SoS reasons.	A cross-border mechanism between GB& IE to allow TSOs to vary post gate closure i/c flows for SoS reasons.
Who is involved?	National Grid & SONI	National Grid & Eirgrid
Which model is being used?	Bi-lateral (multilateral) TSO-TSO exchanges of balancing energy	Bi-lateral (multilateral) TSO-TSO exchanges of balancing energy
Product	In NI replacement reserve energy + Balancing Mechanism energy in GB	In IE replacement reserve energy + Balancing Mechanism energy in GB
Current status?	In operation since April 2005 (will change when E-W goes live)	Project under development, expected to start Autumn 2012
Next steps	None planned	Project under development
Additional detail	The SO-SO trade requires 30mins notice and requests are non-firm (i.e. requests can be refused). A SO-SO trade can be requested at any time.	

5 -The Nordic balancing market

- The balancing mechanisms of the Nordic countries are characterized by a high degree of cross border balancing. This means that the Nordic synchronous area is to some extent regarded as one balancing area.
- As long as there is interconnector capacity available, up- and down regulation will be done with the least costly resources without respect to in which of the Nordic countries they are located.
- The Nordic TSOs cooperate in balancing the system. Balancing services anywhere in the system can be used to handle imbalances anywhere in the system, with due regard to congestion.
- The TSOs maintain a common merit order list of offered resources for manual up and down regulation. It is displayed for all TSOs through the Nordic Operational Information System (NOIS).

5a) Baltic – Nordic balancing cooperation

- As part of the integration of Baltic markets (BEMIP), the integration of Baltic & Nordic balancing markets is seen as a logical next step after DA and ID.
- Baltic TSOs are keen to enhance co-operation with Nordic TSOs.
- Nordic TSOs intend to analyse steps to further integrate the Baltic and Continental system.
- Elering & Fingrid have started a stepwise project to deepen balancing cooperation.
- The project includes analysis about:
 - Differences between the Nordic & Estonian balancing markets.
 - Current mechanisms between the Nordic & West-DK/ continental systems
 - Imbalance pricing and using Elspot as a reference price.
- First steps in the process are planned for January 2012.

6&7 - XB balancing projects in central west Europe



	6 – TSO BRP Model between CH & DE market parties & FR TSO	7- Exchanges of Tertiary control between AT & DE
What is the project seeking to achieve?	A cross-border mechanism enabling Swiss and German actors to bid their unused capacities into the French balancing mechanism, in order to enhance competition and cut prices on balancing resources in France.	Exchange of cross-border balancing energy (tertiary control) between Austria and Germany.
Who is involved?	RTE and the Swiss market parties on the France-Switzerland border; RTE and the German market parties on the France-Germany border	50 Hzt, Amprion, Tennet, EnBW, VkW-Netz and APG
Which model is being used?	Bilateral TSO-BRP exchanges of balancing energy. Achieved via energy bids (hourly products only) by the Swiss and German market parties to the French TSO.	BRP-TSO exchange (in both directions) over the concept of virtual tie-lines;
Current status?	In operation since 2003 on the France-Switzerland border, since 2005 on the France-Germany border.	Under development
Next steps	The possibilities to transform the FR-CH mechanism into a TSO-TSO mechanism (without common merit order) are being assessed.	"go-live" planned during 2012
Additional info	Exchanges only take place if the offers made by the Swiss or German market parties to the French TSO are needed, technically and economically relevant, and if unused ATC remains on the interconnector.	

8 - Balancing projects involving the Czech and Slovak republics (under development)

- The idea of the project is to allow bidding into the existing balancing markets from both sides of the CZ/SK border.
- The project is being developed jointly by ČEPS, SEPS, OTE, OKTE (the TSOs and PXs).
- In due course a Bilateral TSO-TSO model with a common merit order will be used.
- The project however is in its very preliminary phase, thus only limited information is available.
- At present a common methodology is being developed and software updates are being prepared.
- In the long term the mechanism aims to increase the efficiency of usage of control power.

9 – Timescales for developments in the Central Southern Europe Region

- | | |
|------|---|
| 2012 | Identification of the main barriers to the integration of balancing mechanisms in the region through TSO to TSO model |
| 2013 | Identification of potential solutions capable of removing the barriers |
| 2014 | Design and implementation of the mechanism and start up of a pilot project |
| 2015 | Extension to the other borders |

Conclusions

- The many ongoing initiatives to exchange manually activated reserves in Europe require a pragmatic approach to be taken.
- Consistent with PCG conclusions and in line with current developments, ENTSO-E considers the focus should be on developing TSO-TSO exchanges without a common merit order (due to the materially greater complexity this involves).
- This should be viewed as a medium-term Target Model.
- Thus, the goal should be to couple existing XB balancing initiatives (as, for example, is proposed for BALIT) by identifying and tackling barriers to the extension of a TSO-TSO model (without common merit order) on a pan-European basis.

