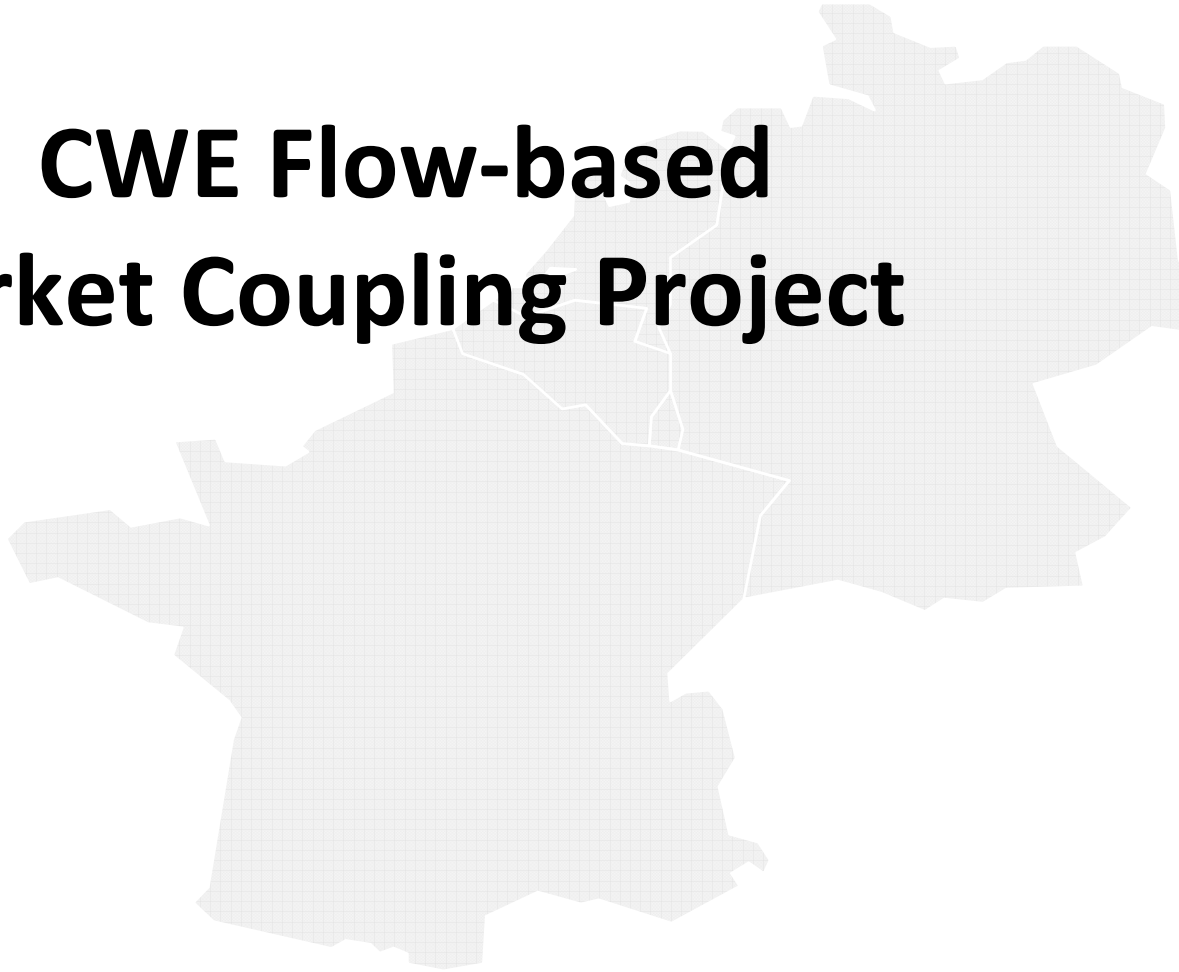
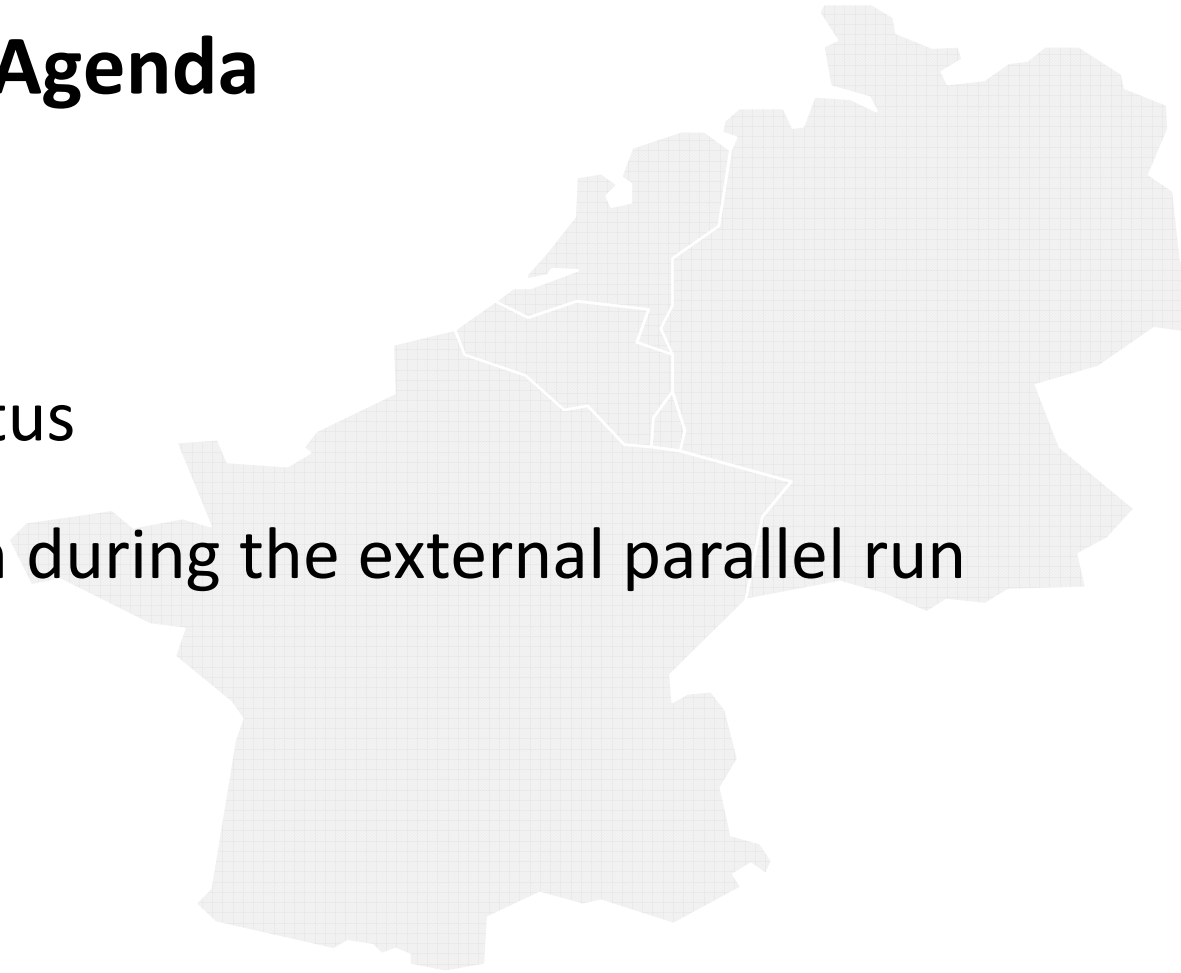
CWE Flow-based Market Coupling Project

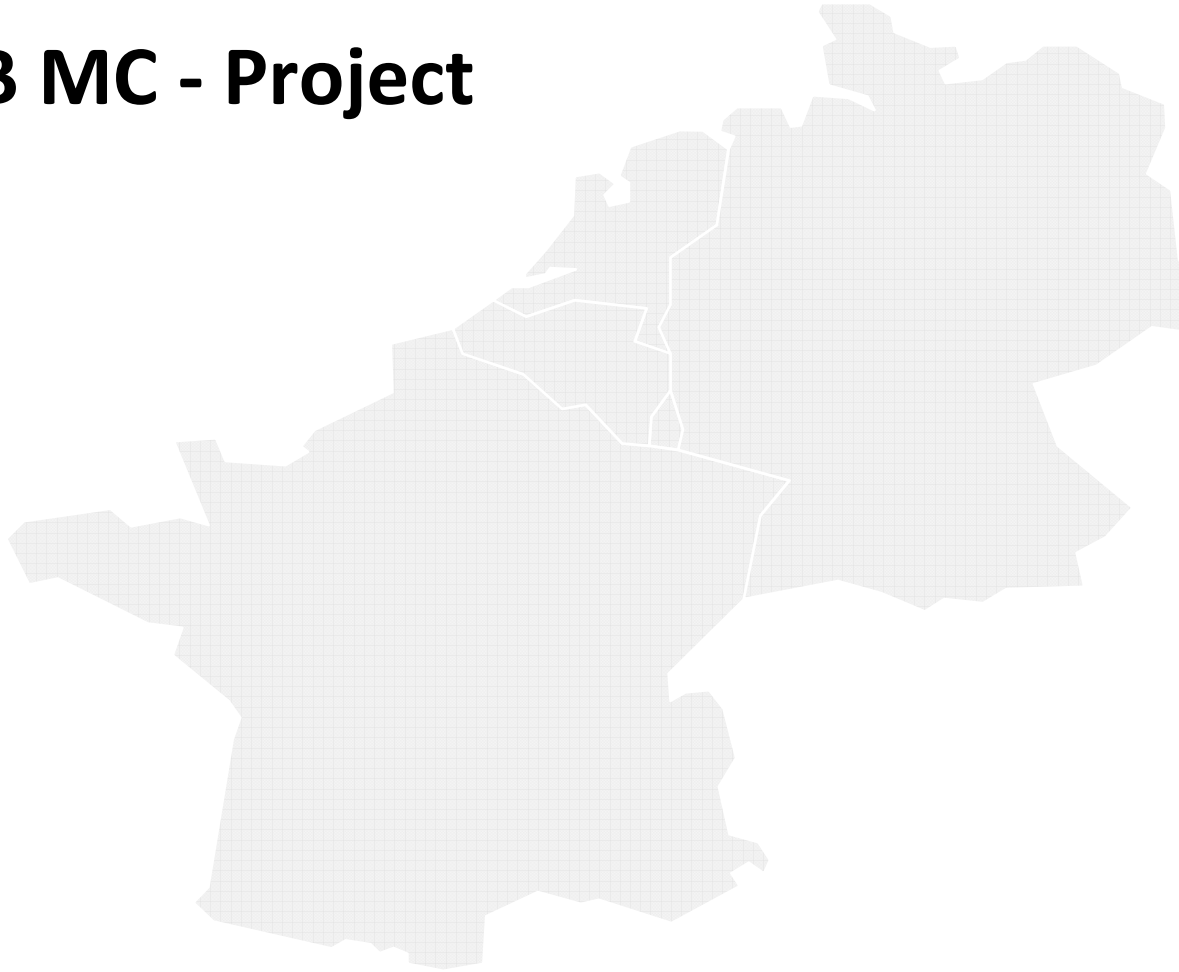


Agenda

- CWE FB MC – Project
- FB implementation status
- Market communication during the external parallel run



CWE FB MC - Project



CWE FB MC - Project

Context

CWE-Region roadmap and objectives:

- Harmonization and improvement of long-term explicit auction rules
- Implementation of a day-ahead Flow Based market coupling
- Implementation of harmonized continuous cross-border intraday trade
- Maximization of the amount and the utilization of cross-border capacities
- Increase of market Transparency
- Guarantee regarding Security of Supply (SoS)

2007 — **2010** — *FB parallel run* — **2013**

Signature of the Memorandum of Understanding by the Pentalateral Energy Forum

Objective: analysis, design and implementation of a flow-based market coupling between 5 countries of the CWE region

Launch of CWE ATC MC

Objective: first step towards an integrated day-ahead market while studying a FBMC in parallel

Objective: simulating the impact of FB MC

Launch of CWE FB MC

Objective: algorithm taking into account a more sophisticated grid modeling in order to optimize commercial flows on the electrical interconnections of meshed networks as in the CWE region

Objective: A CWE FB MC providing more trading opportunities for the market and maximizing the CWE Day-Ahead market

CWE FB MC - Project

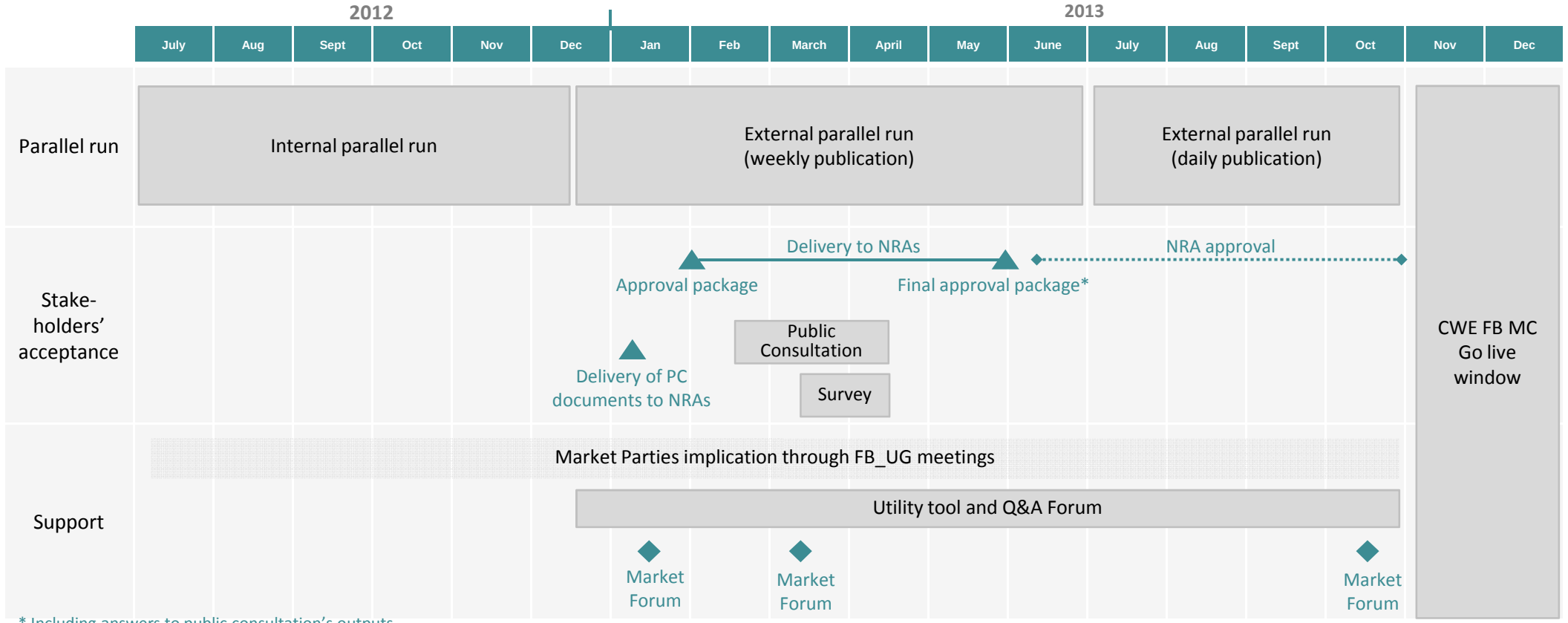
Project Planning

Dependencies:

- Stabilization of FB computation before end of 2012
- Duration of external parallel run (one full year vs. 10 months including seasonality)
- Duration of simulations and testing with NWE
- Regulatory approval

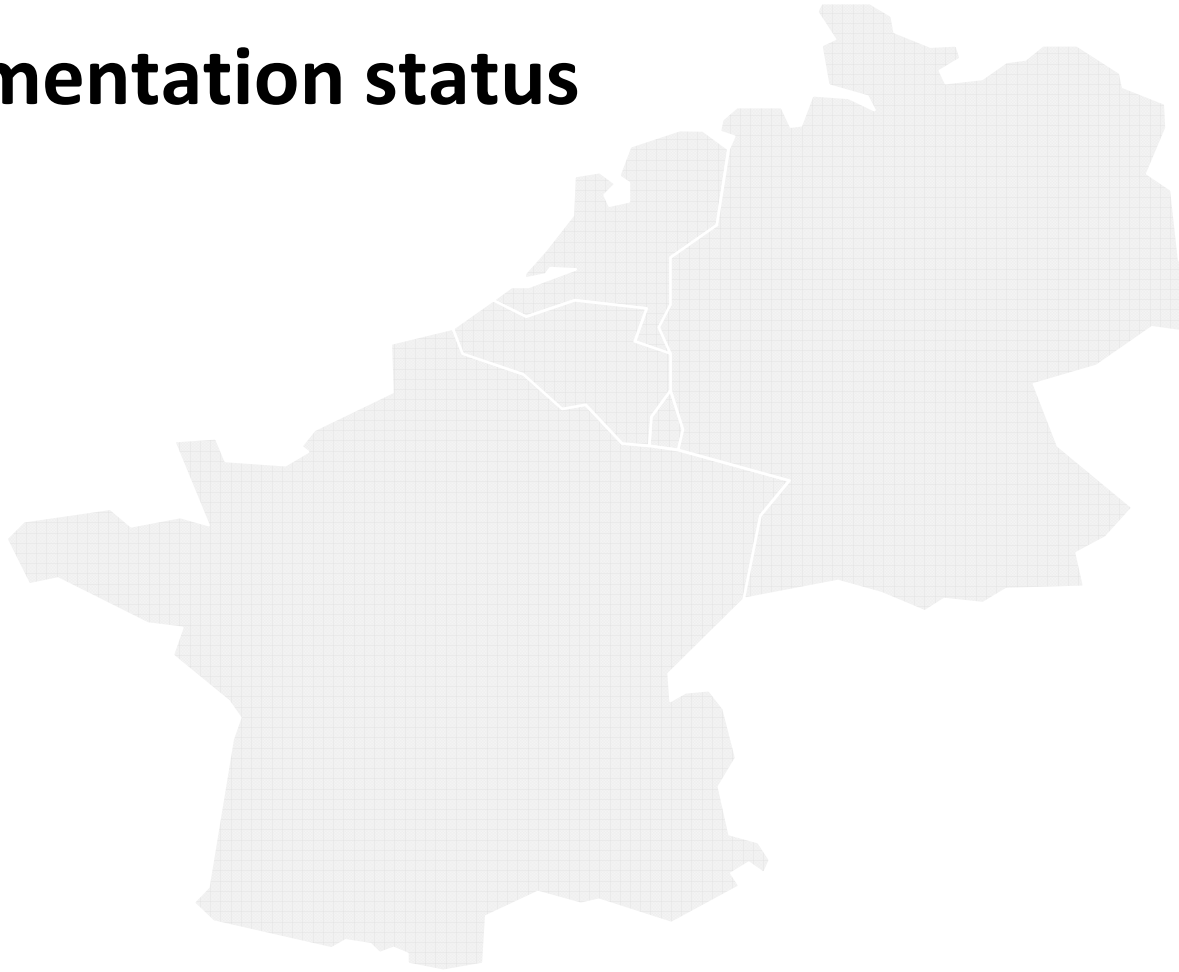
Predictability of LT auctions:

As FB MC Go Live is foreseen for the end of 2013, the impact of this market design change on LT capacity auctions is minimized for 2013



* Including answers to public consultation's outputs

FB implementation status



FB implementation status

Methodology stabilization

- All TSOs have been steadily working on a **detailed action plan** in order to stabilize the FB methodology in terms of:

Generation Shift Keys (GSK)	Flow Reliability Margins (FRM)	Critical Branches (CB) selection	Remedial Actions (RA)
Experimentation of new methodologies in order to overcome the main limitations of the current approach	Finalization of operational FRM values thanks to the learning of the internal parallel run currently performed by TSOs	Implementation of objective selection process in order to foster the usage of an adequate "Critical Branches" set	Implementation of coordinated usage of RA under Flow based in order to optimize the capacity domain

- All TSOs are confident that the provided work on these actions will be reflected in the parallel run results
- The FB principles will be described in detail in the **"CWE consultation package"** and will be submitted to Regulatory approval in the course of 2013

FB implementation status

Operational deployment

- In implementing a complete new methodology, CWE Project had to recognize the **complexity of the process** at different levels:

Operational Level	IT Level
Faced with local TSO organization, CWE Project is challenged to coordinate the activities between all TSOs Knowledge transfer and management relations within the operators, control centers, experts need to be assured despite alternating shifts	Sophisticated IT developments need to be designed and implemented and their availability is subject to a lot of negotiations and testing

- All TSOs have been permanently **improving their operational and decision making process** and are confident that a stabilized and coordinated process will be implemented for the parallel run

FB implementation status

Experimentation results

- Current experimentation results show a gap between theoretical studies, detailed in the Feasibility Report, and practical results in terms of welfare gain, convergence rate, etc

- This “gap”, which shows that the potential of FB is not yet reached at an operational level, is linked to the notions introduced in the 2 previous slides:

  - **In terms of methodology:** TSOs are finalizing the adjustment of the model to operational reality
  - **In terms of operational implementation:** Transfer of expertise to operators and ad hoc tools development are also being finalized

- TSOs are putting all their **effort in the stabilization of an efficient and effective process** so as to reach the potential of FB when the parallel run is launched and to provide the most relevant results to Market Parties during the external parallel run

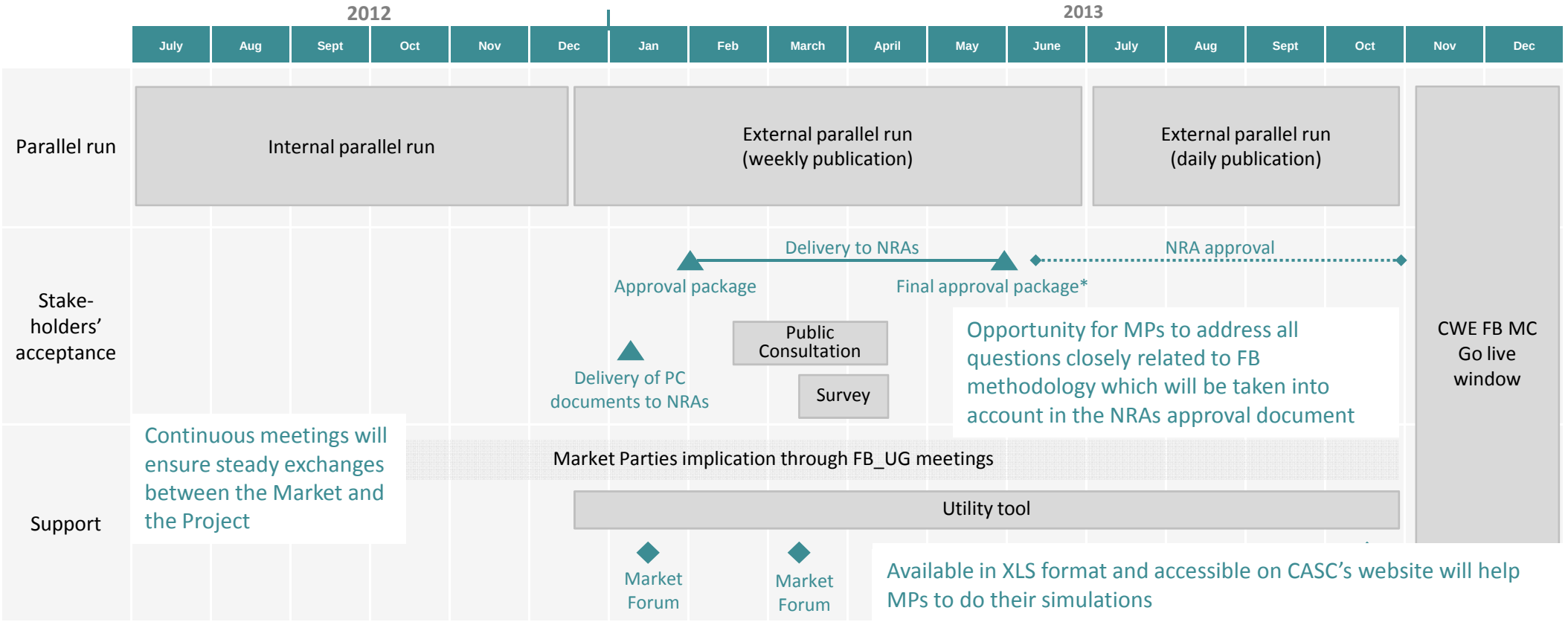
Market communication during the external parallel run



Market communication during the external parallel run

MP support

- CWE Project proposes different forums to ensure a **clear and transparent communication** between all Market Parties and the Project during the external parallel run:



A Kickoff Market Forum before the start of the external parallel run end of 2012 to explain the functioning of the parallel run and the functionalities of the utility tool

A second Market Forum during the public consultation process where MPs' questions will be answered

Market communication during the external parallel run

Focus on Utility tool (1/2)

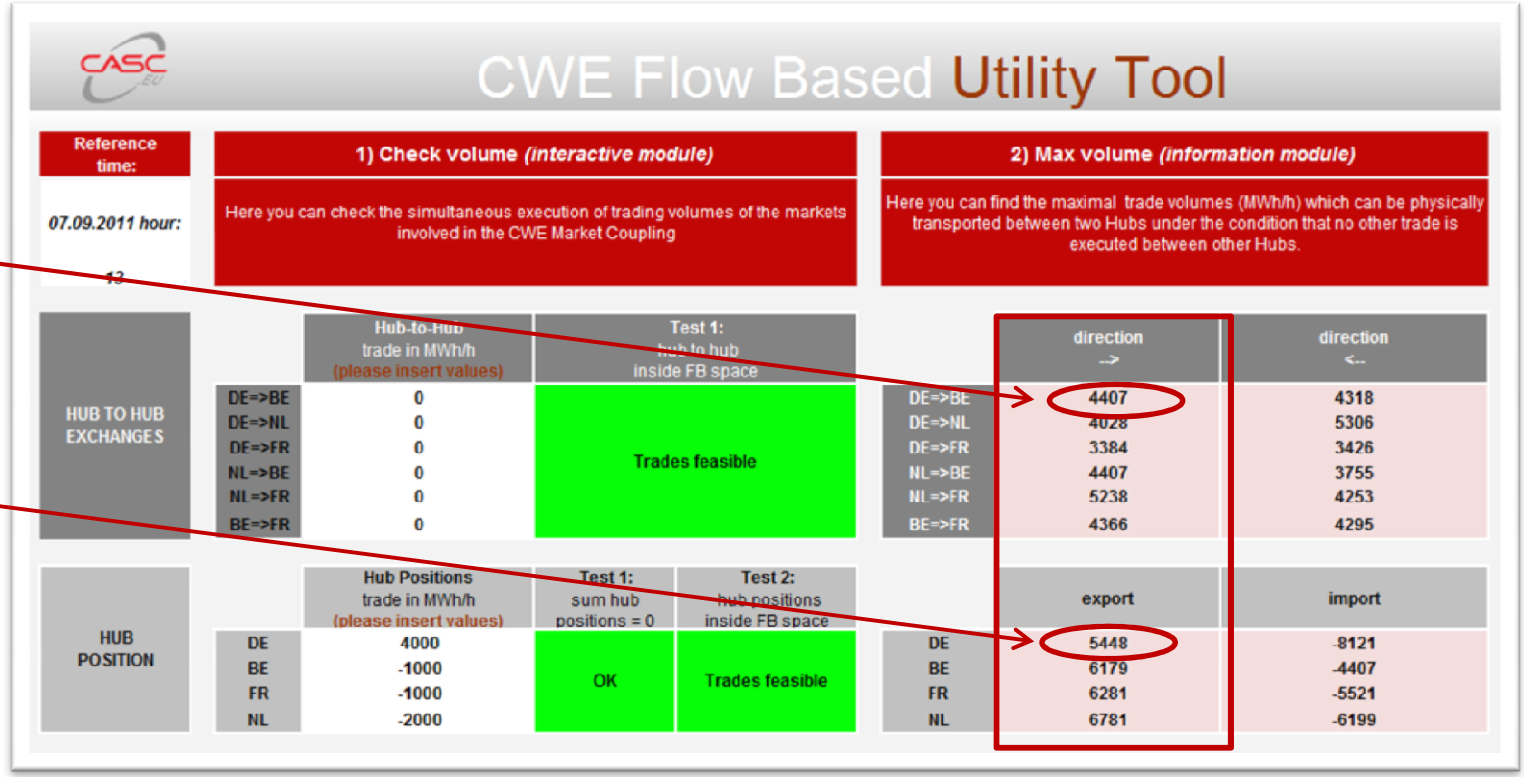
- The following interface allows **simulations for trading volumes** of CWE MC Markets for each hour:

Maximum exchange from DE to BE assuming no other exchanges

(Non simultaneous values!)

Maximum DE export

(other areas are importing to ensure the balance)



CWE Flow Based Utility Tool

Reference time:	1) Check volume *(interactive module)*	2) Max volume *(information module)*
07.09.2011 hour: 13	Here you can check the simultaneous execution of trading volumes of the markets involved in the CWE Market Coupling	Here you can find the maximal trade volumes (MWh/h) which can be physically transported between two Hubs under the condition that no other trade is executed between other Hubs.

		Hub-to-Hub trade in MWh/h (please insert values)	Test 1: hub to hub inside FB space		direction -->	direction <--
HUB TO HUB EXCHANGES	DE=>BE	0	Trades feasible	DE=>BE	4407	4318
	DE=>NL	0		DE=>NL	4028	5306
	DE=>FR	0		DE=>FR	3384	3426
	NL=>BE	0		NL=>BE	4407	3755
	NL=>FR	0		NL=>FR	5238	4253
	BE=>FR	0		BE=>FR	4366	4295

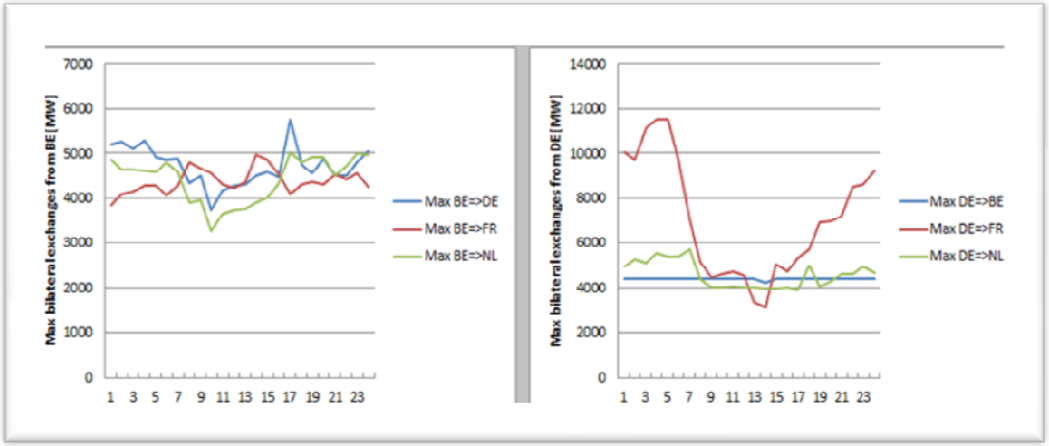
		Hub Positions trade in MWh/h (please insert values)	Test 1: sum hub positions = 0	Test 2: hub positions inside FB space		export	import
HUB POSITION	DE	4000	OK	Trades feasible	DE	5448	-8121
	BE	-1000			BE	6179	-4407
	FR	-1000			FR	6281	-5521
	NL	-2000			NL	6781	-6199

Market communication during the external parallel run

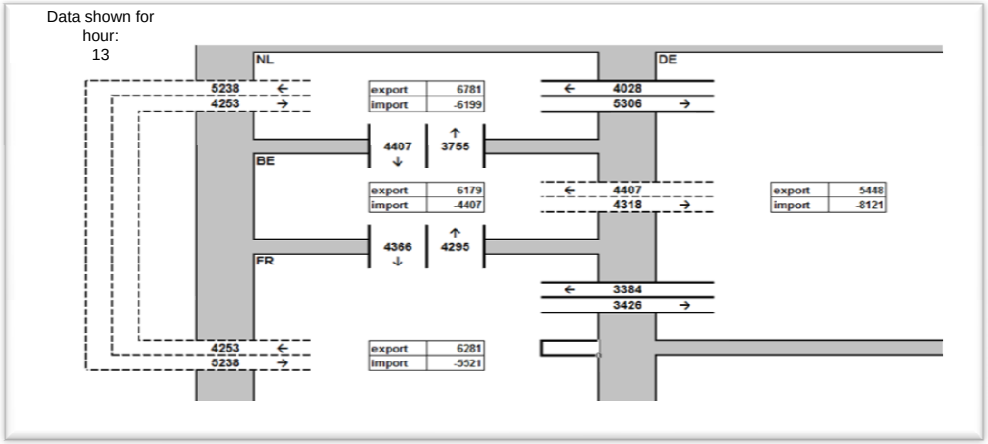
Focus on Utility tool (2/2)

- **Market graphs and a CWE map** facilitate the understanding of impacts of trade volumes for hub to hub exchanges:

Maximum bilateral exchanges



CWE max net positions and bilateral exchanges



- For a **live demonstration** of the utility tool simulation facilities:

Feuille Microsoft Excel 97-2003