Market Coupling mechanism

key for the development of a Regional Market

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International Finance Corporation
WORLD BANK GROUP

IFC is a member of the World Bank Group promoting private sector development

International Bank for Reconstruction and Development	International Finance Corporation	International Development Association	International Centre for Settlement of Investment Disputes	Multilateral Investment Guarantee Agency
1945	*1956*	*1960*	*1966*	*1988*
Lends to governments of middle income developing countries. Total loans outstanding in 2009 were c.$106bn	***Provides loans, equity, and Advisory services to stimulate private sector investment in developing countries. Total investments in 2009 were c.$24bn***	***Provides concessional loans/guarantees to governments of the poorest countries. Total credits outstanding in 2009 were c.$113bn***	***Settles investment disputes between foreign investors and host countries***	***Provides political risk insurance / guarantees against losses from non-commercial risks to facilitate FDI in developing countries***

***World's largest** multilateral private sector investor in emerging markets*
- *US$52 billion investment portfolio*
- *US$18.8 billion in long term investment provided in FY16*

Since 1956 the Leading Investor in Emerging Markets Power

350+ power investments in over 65 countries.

- **Generation** – 40,000+ MWs to date
- **Transmission** – on a select basis
- **Distribution** – reaching > 160 million customers
- **Early stage start ups** in the renewable energy space
- **Financial intermediaries** (banks, PE funds) who reach smaller assets/companies
- **Platforms, HoldCos and sub-sovereign entities** with regional or global footprint.

Comfortable in **markets under reform**, with **first-in-kind projects**.

Renewable energy accounts for ca. 2/3 of IFC's US$5.8 billion power portfolio

- Wind Power – Over 50 investments supporting 3,600+ MW of capacity
- Solar Power – Over 77 investment supporting 1,600+ MW of capacity

IFC's Key Roles

Financing

IFC is the world's largest multilateral provider of financing for private enterprises with over US$26 billion in outstanding investment commitments

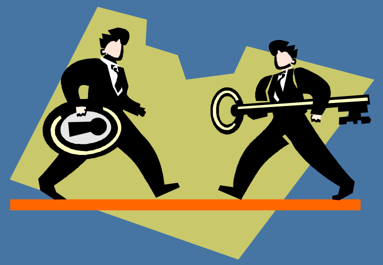
Loans

Equity

Guarantees

Technical Assistance & Advisory Services

IFC also provides technical assistance and advice to governments and businesses



Enterprise Assistance

Environment & Social Sustainability

Access to Finance

Business Environment

PPPs Infrastructure Advisory

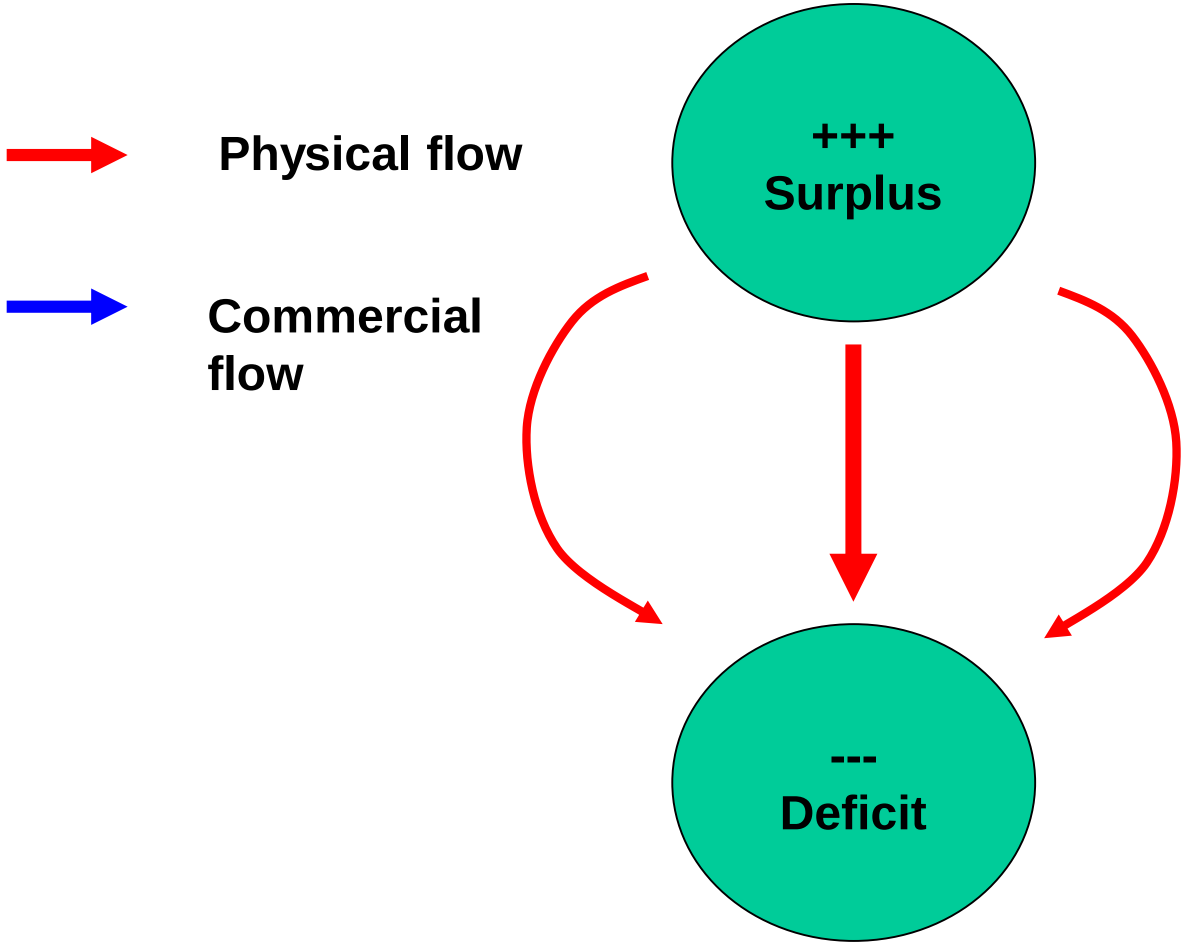
A central message in our new strategy of IFC: *Market Creation*

- ❖ Competitive markets that respond to demands, are central to the sustainability of development gains and advancing inclusive economic opportunities.

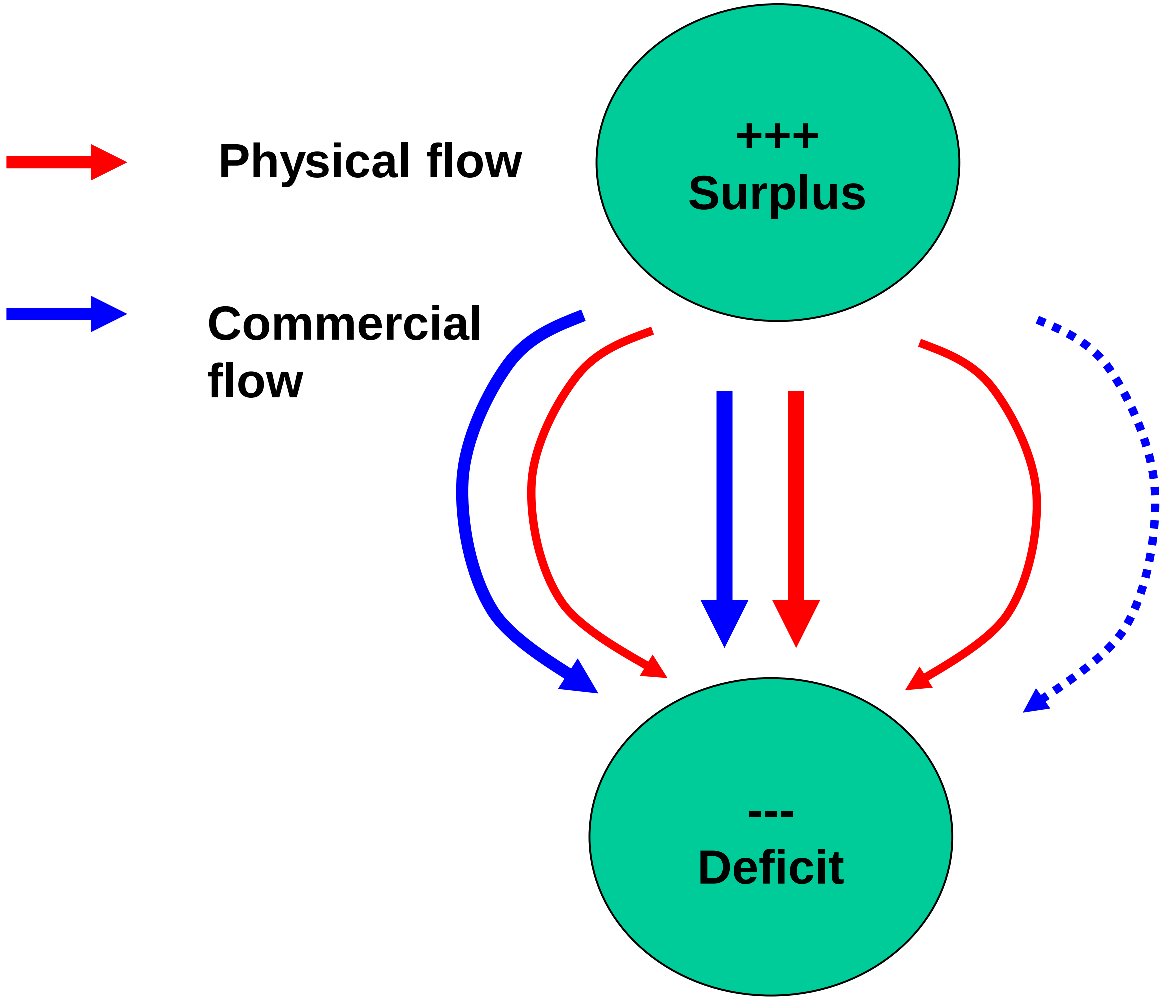
- ❖ IFC new strategy proposes a holistic approach to tackle more difficult development challenges by **creating markets** and mobilizing the needed financing. Focus on correcting for market failures, creating new markets or strengthening them where needed.

- ❖ To create markets, IFC will partner consistently and systematically with the World Bank. Working collaboratively together, the WBG institutions will create a common strategic outlook which generates private sector solutions wherever possible.

Efficient Electricity Markets



Efficient Electricity Markets



Cross-border allocation methods

Non-market based:

- First come first serve
- Pro rate curtailing

Market based: Attribute an economical value to the good being limited available: transmission capacity

- Explicit auctioning
- Implicit auctioning , market splitting/coupling

Counter-buying, compensating re-dispatch

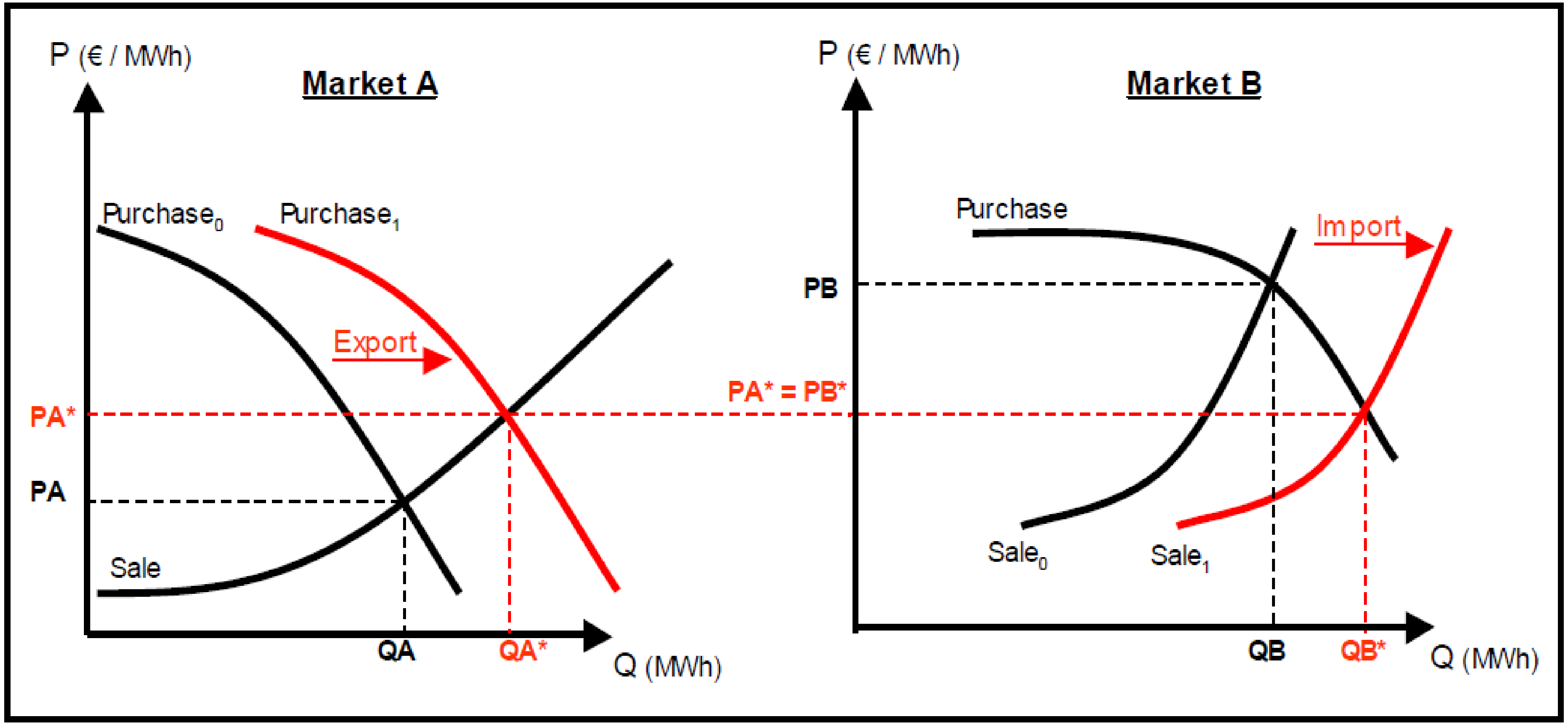
Market coupling needs a day-ahead auction at both sides of interconnector

Transportation capacity:

- Allocated together with the day-ahead power
- Utilized to the maximum
- Cannot be hoarded
- 100% utilization
- Flows in right direction

A market with:

- Lower risks
- Better access smaller parties, end users
- Better liquidity, lower volatility, robust index
- Price convergence
- Mitigates market power abuse

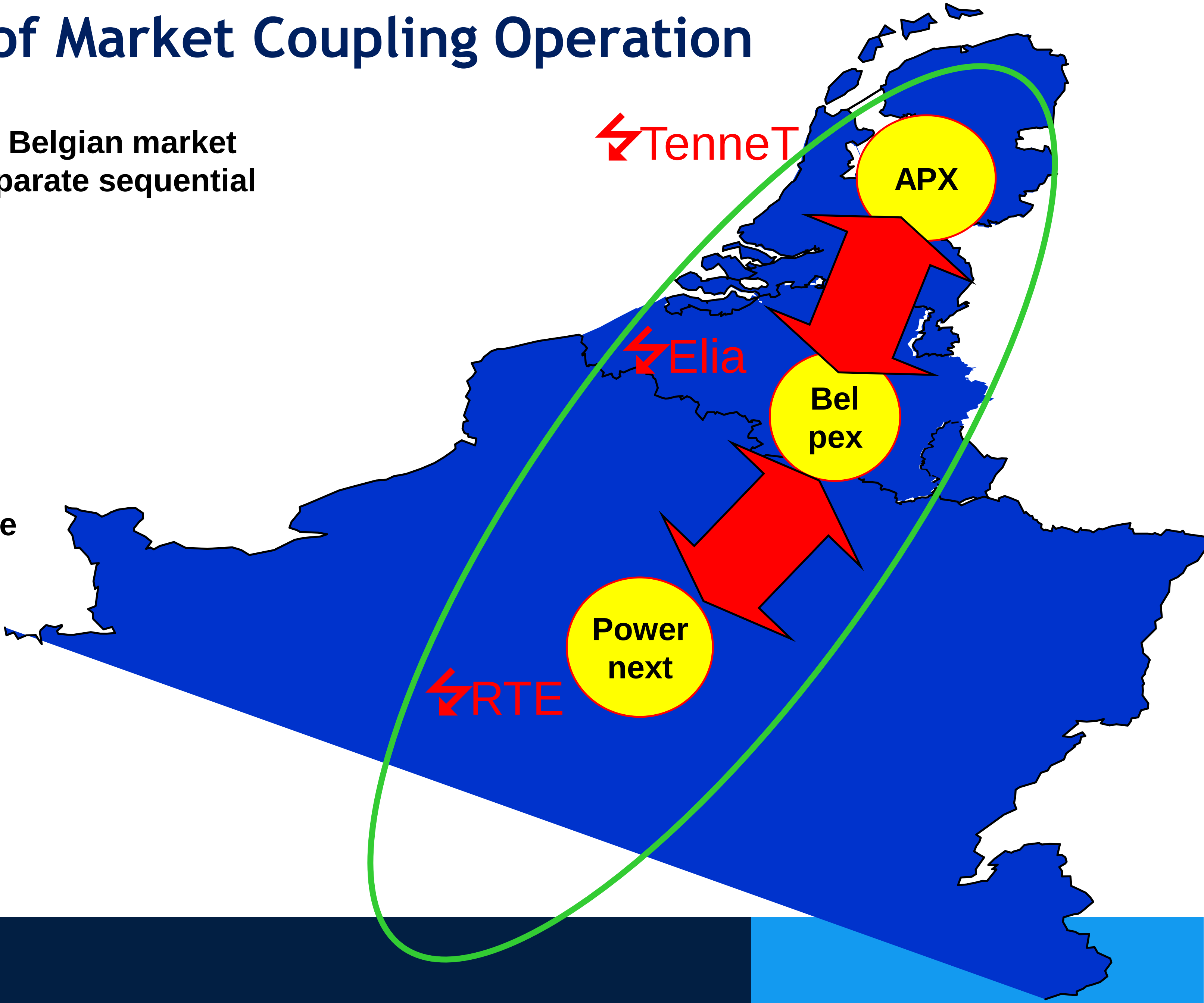


Origins of Market Coupling Operation

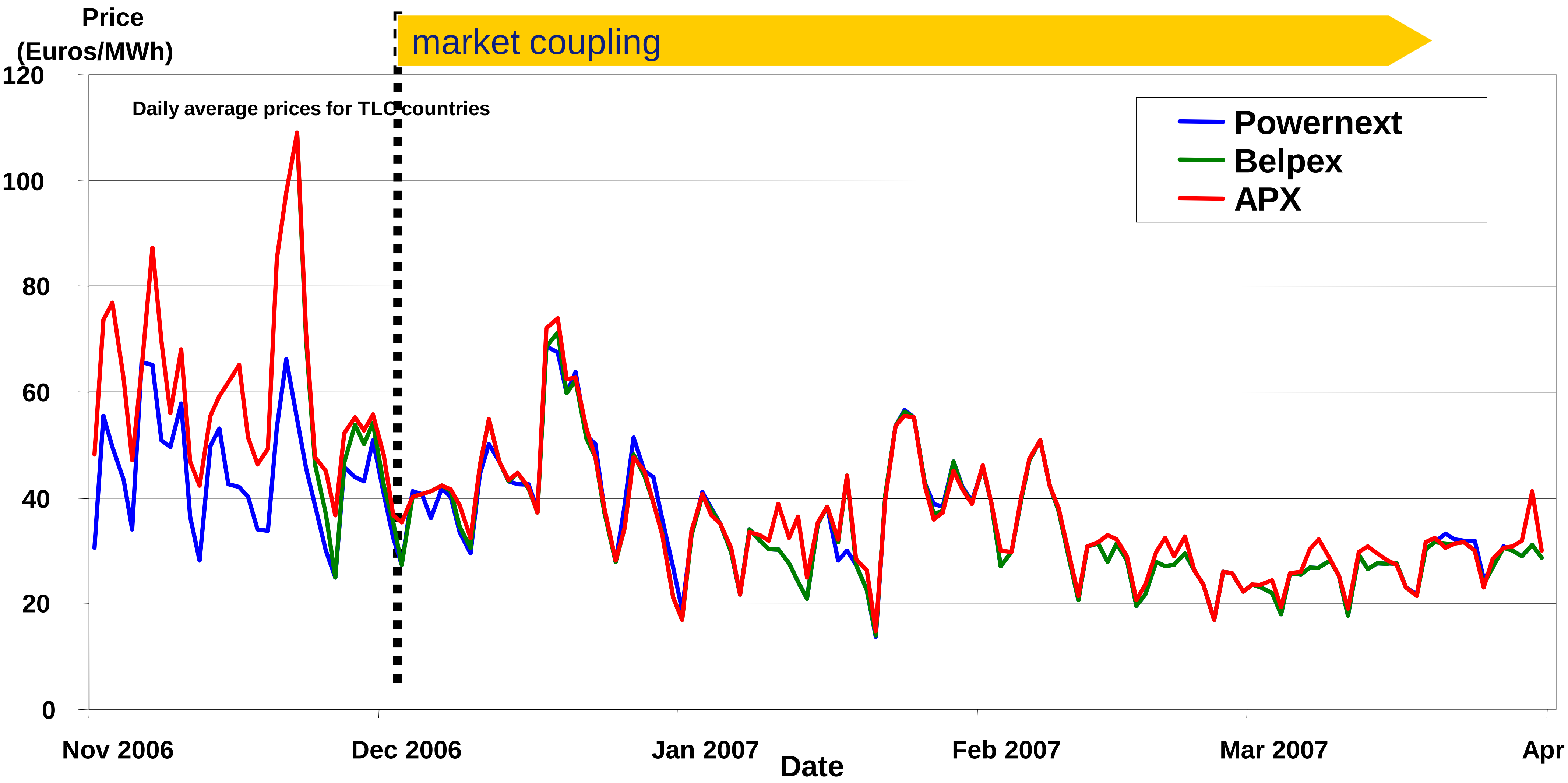
Old situation:
- Separate Dutch and French markets - no Belgian market
- Spot markets and cross-border flows separate sequential

Results sub-optimal and often inconsistent:
- Limited liquidity, large volatility
- Large price differences, yet incomplete capacity use (60% of time)
- Counter-price flows (40% of time)

Initiatives to implement MC from 2001
Plans to found Belgian PX
Florence Forum 2004 support for MC in Europe based on proposal Europex and ETSO
Agreement in 2004 on TLC. Result:
- One integrated system, 1-step operation
- Spot and cross-border flows in one step
- Belgian power exchange Belpex
- 3 PX’s and 3 TSO’s co-operating
- Rotating MC operation
- Started 22 Nov 2006



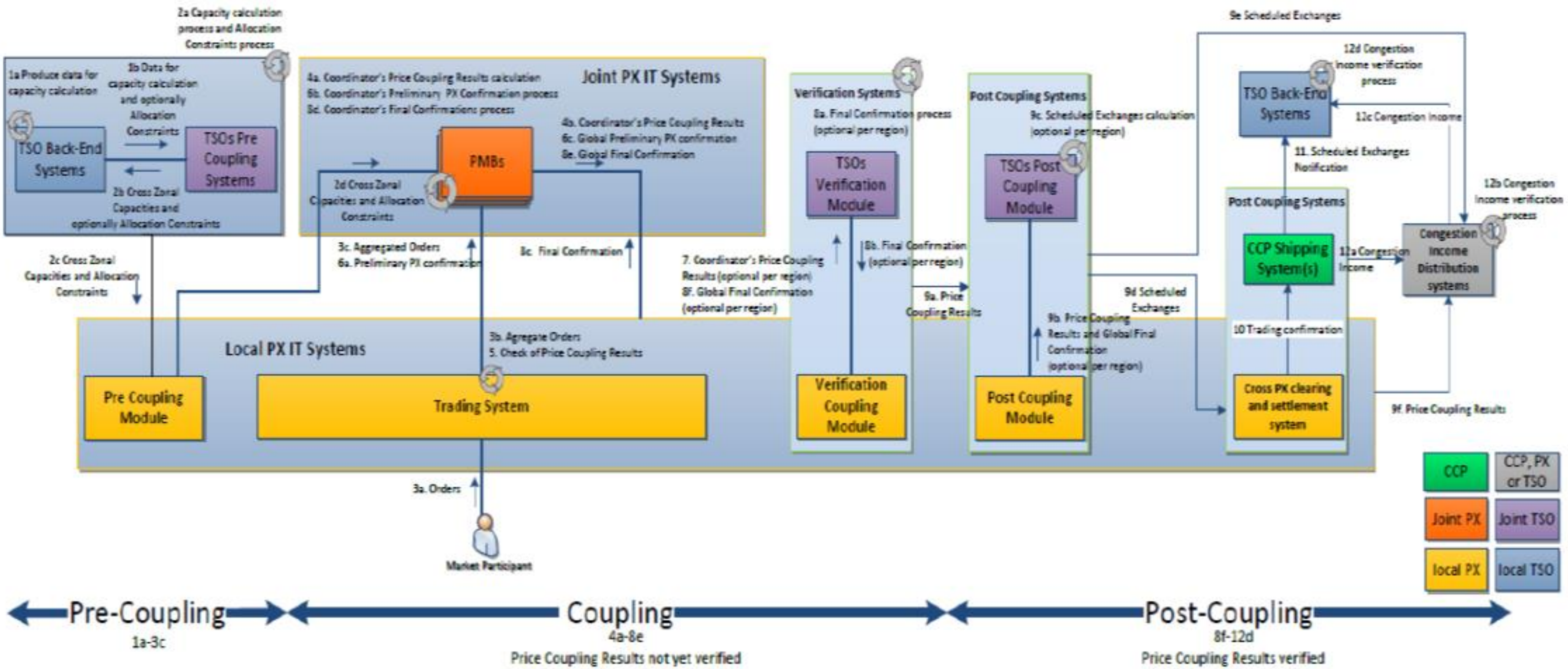
Price convergence after Market Coupling



Why market coupling?

- Efficient allocation of cross-border capacities
- Reduces market power (related to the capacity involved)
- Increases PX liquidity (if explicit capacity rights were traded OTC before)
- Converges prices and price qualities of the coupled markets
- Increases total economic welfare of the coupled markets

Functions in MC – MRC High Level Architecture



High-level roadmap towards an organized market place, ready for MC

Initiation

- Company set-up
  - Regulated or merchant model
  - Ownership
  - Governance
  - Strategy, vision and mission
  - Management
  - Initial budget

Startup

- Business plan
- Marketing plan
- Business case
- License
- Organizational structure
- Staffing
- Project approach
- Design plan and budget

Design

- IT system
- Selection of trading system, and PCR provider
- Market development
  - Products, Fees, Rules
  - Marketing
- Market surveillance, Clearing, Trading, Back-office, Website, Operations
- Contracts
- Implementation plan and budget

Implementation

IT development

- Trading system, Website, PCR interfaces, CCP interfaces, TSO interfaces

Operational procedures

Training

Testing

Dry-run

Go-live preparation

Operational plan and budget

Operation

- Go-live
- Operational management

High-level roadmap towards Market Coupling

Initiation

- MoU
  - Ministries
  - Regulators
  - TSOs
  - PXs

Startup

- APCA (All Party Cooperation Agreement)
- Project organization
- Project approach
- Stakeholder involvement
- Global budget
- Design plan and budget

Design

- Selection of PCR provider
- Pre-coupling
  - Coordinated capacity calculation
- Coupling
  - Harmonization
- Post-coupling
  - Shipping and nomination
  - XPX clearing
- Implementation plan and budget

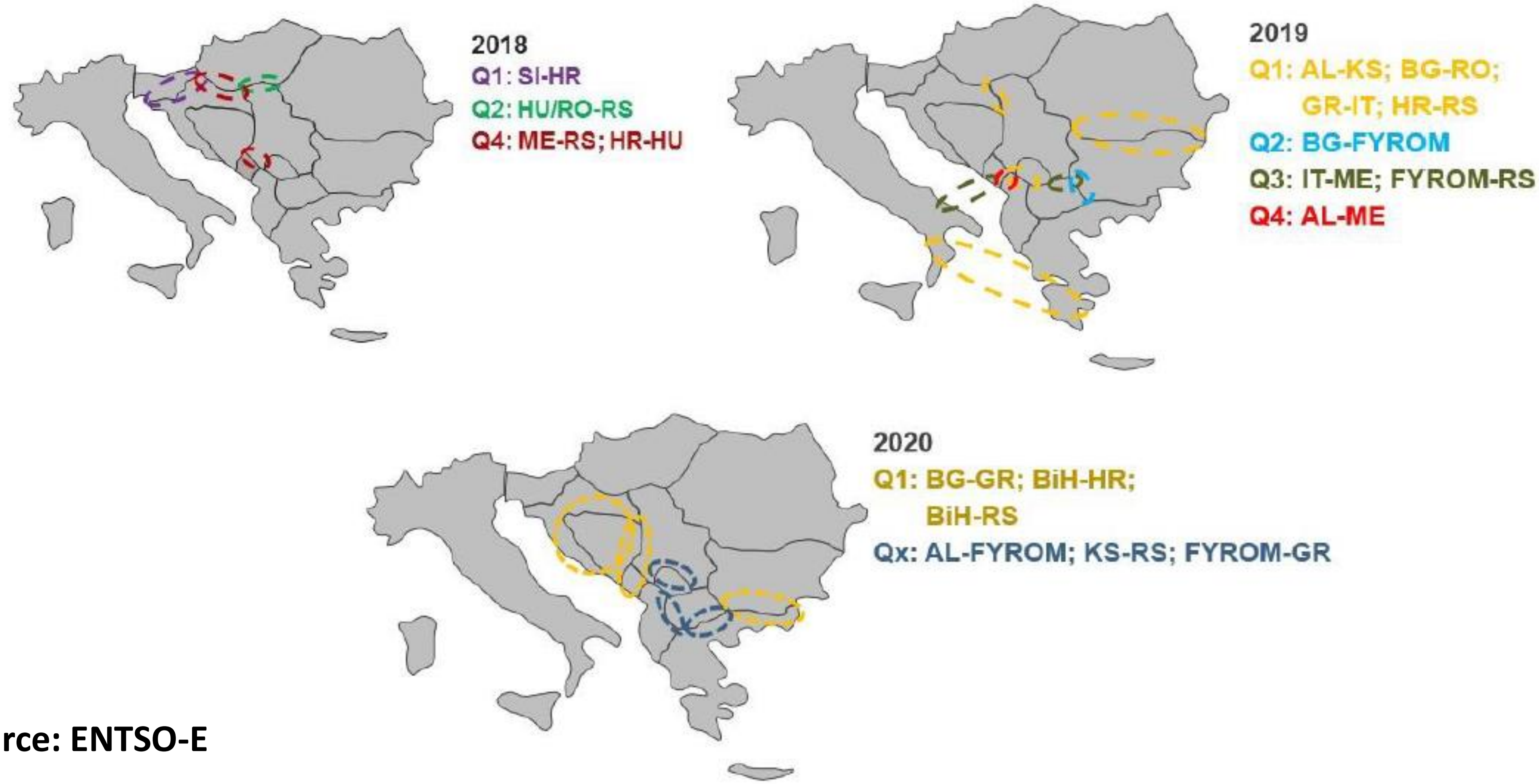
Implementation

- IT development
- Operational procedures
- Testplan
- Testing
- Training
- Operational organization
- Go-live preparation
- Operational plan and budget
- Operational contracts

Operation

- Go-live
- Operational management

Tentative roadmap to regional SEE market



source: ENTSO-E

Thank for your attention

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