

**Workstream Forward Markets  
Proposal for Target Model and Roadmap**

## High level objectives

- Create competitive and integrated European markets
- Provide a level playing field across Europe
- Stimulate market entry and lower entry barriers

### **Practical means to achieve these objectives**

- Efficient long term price signals (forward markets)
  - Incentives for efficient investment
  - Long term hedging and risk management
- Competition across borders (forward transmission markets)
  - Incentives for efficient investment
  - Long term hedging and risk management between market zones
- Efficient linkage of forward market with short term price signals (market splitting/coupling)
  - Optimal use of network capacity
  - Optimal use of generation capacity

## Proposed target model for the primary forward transmission market

- TSOs should sell/offer/issue transmission capacity on a forward basis
  - The amount of sold/offered/issued capacity should reflect the available physical capacity
  - The amount of capacity should be maximised across all timeframes (as required by Reg. 1228/2003)
- These transmission rights could be sold/issued/offered on a regional basis with minimum level of compatibility
  - Either between bidding areas or between a reference system area and a bidding area
  - Either as options or obligations
    - In case of physical rights (PTRs), they should be granted as options
    - In case of financial rights , they can be either options or obligations
  - Either as physical or financial
- In some markets where trustworthy day-ahead prices and/or long-term trading/hedging mainly is handled via derivatives this may mean
  - TSOs provide all capacity DA Implicitly, and then long term sell the financial instruments linked to available capacity

CfDs can co-exist with other financial products

## Sale of longer maturity transmission rights

- Only FTR

- 100% of the available capacity is sold forward as FTRs. This way the whole capacity will be automatically used in the day-ahead MC process.
- Critics say that this would not support OTC markets and does not force PX to compete with the OTC market.
- Others argue that OTC trades may well be accommodated and reflected in the MC process. Thus, capacity would become priced appropriately for OTC and implicit trades. As a result OTC and PX trades would be competitive trade opportunities.

- Only PTR UIOSI

- 100% of the available capacity is sold forward as PTRs UIOSI. Every right that does not get nominated will convert automatically into a FTR and the capacity will be used in the day ahead MC process.
- Critics say that this way it is not guaranteed, that there will be D-1 capacity for the MC process (if the whole capacity is nominated).
- Moreover, to satisfy the need for hedging of price risks as the primary reason for selling long-term transmission rights this may also be achieved by FTR.

100% PTR

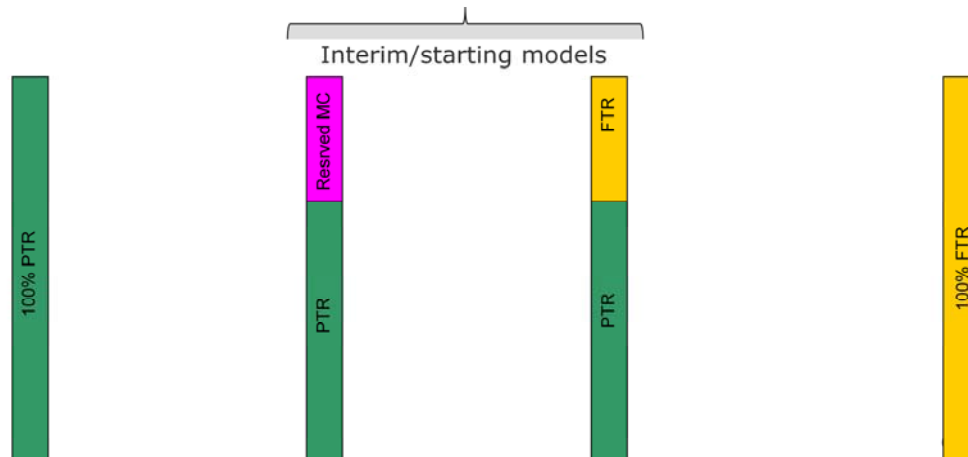
100% FTR

### Which choice in the target model?

- Different stakeholders prefer one or the other of the above models
- As it appears very demanding to agree on one of these models and both have pros and cons of their own, in the following slides we describe two routes to arrive at a greater harmonisation

## Starting points for two harmonisation routes when no applicable financial market in place

- PTR/FTR model
  - Part of the available capacity is sold forward as FTRs – this is to ensure that some capacity is for sure used in the MC process day ahead (assuming this is desirable)
  - The rest of the available capacity is sold forward as PTRs with a UIOSI mechanism so that not physically nominated capacity is automatically used in the day ahead MC process
- PTR/UIOSI model
  - Part of the available capacity is reserved for MC, and will be input into the day ahead process
  - The rest of the available capacity is sold forward as PTRs with a UIOSI mechanism so that not physically nominated capacity is automatically used in the day ahead MC process



## Trading of transmission capacity in the secondary market (1)

- Establishing a secondary market for trading transmission capacity rights is a very high priority
- (Financial) firmness of capacity rights is an essential feature to make secondary capacity markets work properly
  - Without firmness, title tracking is a highly administrative burden
- Transmission capacity should be able to be split and sold without constraints – down to individual hours and in 1 MW units
- For PTRs trade should be able to take place until the deadline for exercising the option (i.e. the nomination deadline)
- FTRs could be traded until D-1 PX gate closure, and that is conceptually true also for CfDs

## Trading of transmission capacity in the secondary market (2)

- Transmission capacity transfer to take place by full assignment of rights and obligations to new owner of capacity
- If PTRs, TSOs are required to operate a registry against which all transactions need to take place. If FTRs, another entity could be responsible for the registry
- Credit and approval by TSO that transfer of the capacity rights can occur must ultimately take place at the cut off time of trade.
  - Such technology is already widely available and used for trading Energy
  - Independent platforms can be used to establish such a service, e.g. by using auction offices
- If immediate approval of transmission capacity trades proves difficult for credit risk on behalf of TSOs, Exchanges or clearing houses may offer clearing service to unblock this issue



## Firmness is an important issue for the forward transmission market

- Transmission capacity should be sold (financially) firm in order to hedge cross-border positions
  - Subject to standardized European definition of force majeure
- (Financial) firmness of capacity rights guaranteed via congestion revenues is an essential feature to make secondary capacity markets work properly (→ without firmness, title tracking is a high administrative burden)
  - Essential for well functioning secondary market
  - Required by XB regulation 1228/2003

## Roadmap for the implementation of the Target Model options

- The target model options as presented shall be implemented as soon as possible, but in any event no later than 2015 on a pan European basis
- Pending on local/regional starting point, progressive evolution can be made from non-existing long-term coordinated allocation or PTRs w/UIoLI towards PTRs w/ UIoSI and, when and if certain conditions are in place, to FTRs
- Increasing harmonisation of access rules, interfaces and IT exchanges should take place on a regional basis as follows
  - By 2012/13: Harmonisation on a regional basis
  - By 2015: Harmonisation across European based on the three options defined in the Target Model

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Explanation for ‘when and if certain for conditions are in place’, see annexes.  
Financial derivatives not linked to transmission rights can co-exist.

## Annex 1.1: Description how forward market in Energy is operating

## Forward market in Energy

- Energy is most frequently traded as the following products
  - Baseload
  - Peaks
  - Offpeaks
- Energy is traded in (roughly) the following timeframes
  - Calendar years forward to Y+3 or Y+4 (2010, 2011, etc)
  - Quarters
  - Months
- The forward market for trading energy works well nationally and has evolved over many years
- However cross-border energy trading is limited by transmission capacity constraints between markets

## Annex 1.2: Detailed examples of sale of forward transmission capacity rights of longer maturities

## Sale of primary transmission capacity by TSOs should be done as for the markets for Energy

- Annual capacity sold up to e.g. Y+4 depending on what is traded in Energy market (e.g. sale of 2010, 2011, 2012, and 2013 baseload cross border capacity in 2009)
- Ultimate goal
  - Sell available capacity long term up to e.g. Y+4
  - Remaining capacity sold as it becomes available/known (e.g. at D-1 stage)
  - Precondition: A liquid market for transmission exists. This is likely to take several years to achieve once trading starts
- Proposed initial proportions (until sufficiently liquid secondary market exists)
  - 10% of capacity has been sold for Y+3
  - 20% of capacity has been sold for Y+2
  - 40% of capacity has been sold for Y+1
  - 70% of capacity has been sold after Months or Quarters
  - 100% of capacity has been sold at D-1
- Percentages are indicative: can differ regionally but should relate to the TSOs best estimate of the forward capacity available
- Capacity calculation process should be aligned with this goal allowing adequate LT estimates (to be addressed in CC WS)
- ENTSO considers necessary to further investigate multi-annual allocation process

## Example of proposed process for selling capacity (transition period)

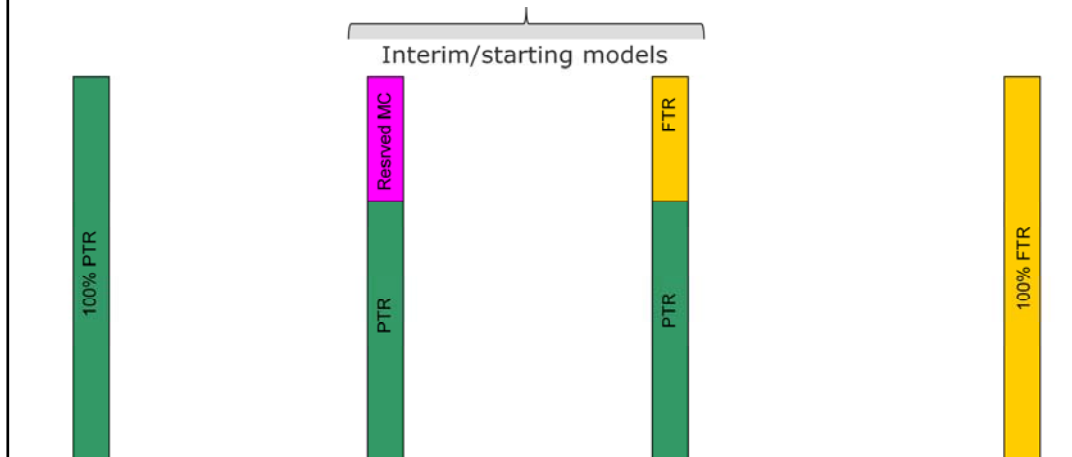
- As an example, a forecast 1000MW of capacity for 2010-2013 may be sold in in auctions every quarter as follows:
  - Q1: 25MW 2013, 25MW 2012, 50MW 2011
  - Q2: 25MW 2013, 25MW 2012, 50MW 2011
  - Q3: 25MW 2013, 25MW 2012, 50MW 2011
  - Q4: 25MW 2013, 25MW 2012, 50MW 2011
- Totals
  - 100MW 2013 and 2012 (10%)
  - 200MW 2011 (20%)
- Likewise, in 2011, the sales would be
  - Q1: 25MW 2014, 25MW 2013, 50MW 2012
  - Q2: 25MW 2014, 25MW 2013, 50MW 2012
  - Q3: 25MW 2014, 25MW 2013, 50MW 2012
  - Q4: 25MW 2014, 25MW 2013, 50MW 2012
- New totals sold to date
  - 100MW 2014 (10%)
  - 200MW 2013 (20%)
  - 400MW 2012 (40%)

### Annex 1.3: Harmonisation routes for the two models

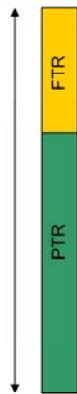


## Starting points for two harmonisation routes

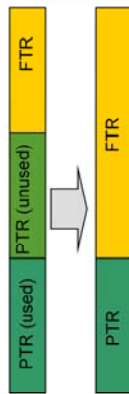
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- PTR/UIOSI model
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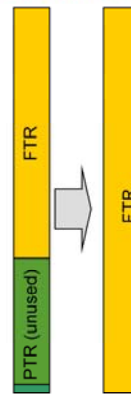
## Harmonisation route from PTR/FTR model



Original situation

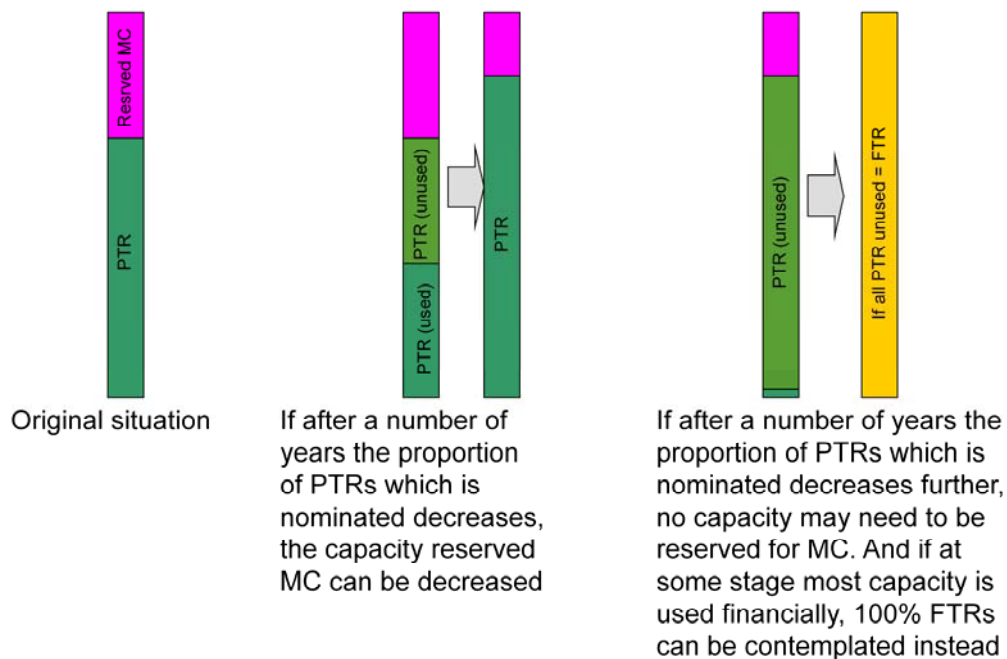


If after a number of years, the proportion of PTRs that is nominated decreases, then the proportion of FTRs will can be increased



If after a number of years, the proportion of PTRs which is nominated decreases further to almost zero, debate can be had about increasing the proportion of FTRs to 100%.

## Harmonisation route from PTR with UIOSI model



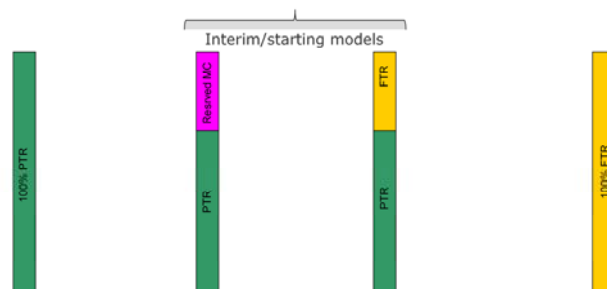
## Similarities of the two harmonisation routes when no applicable financial market (CfD etc.) in place

- In both models, the starting share of PTsR/FTRs sold (or PTRs sold and capacity reserved for MC) is a set on a case by case basis as a function of
  - Market size, maturity and structure
  - How many companies actually use the physical option in the market
- Implementation can be gradual based on actual arrangement and as markets evolve

## Differences between the two harmonisation routes

PTRs/FTRs model	PTR/UIOSI with reserved DA capacity
All capacity sold forward	Part of the capacity de facto not sold forward (reserved for day ahead process)
Two products are sold in the primary and secondary markets	Only one product is sold in primary and secondary markets
Non-existing model yet in Europe	Current existing practice at some borders
In case of FTRs, there is no need to be balance responsible party for purely financial actors	For PTRs, allows proving shipment of green energy

**The WS FW invites PCG to discuss whether a choice between one of both interim/starting models should be made or whether both interim models should be accepted/promoted on all borders**



## Harmonisation issue, how much capacity reserved for day ahead

- The two models (PTR/FTR & PTR/UIOSI) imply that capacity MUST be reserved for the day ahead MC stage
  - In the instance of purely financial, i.e. CfD, then all capacity is provided in DA Implicit mechanism
- The discussion whether this DA reservation has to be the case should also be discussed in the capacity calculation WS and day-ahead WS.
- If this DA reservation is not necessary, then the option of selling 100% PTRs with no reservation on how these are used (physically or financially) and 100% FTRs should be reevaluated

#### Annex 1.4: Example process at forward/D-1 switchover

- For illustrative purposes only to show how the forward target model fits in with the day ahead process – times indicated are not suggestions

## Example process at forward/D-1 switchover

(for illustrative purposes only to show how the forward target model fits in with the day ahead process – times indicated are not suggestions)

Before 10.45 D-1:	Cut off for secondary trading of PTRs
11.00 D-1:	Nomination of whether PTRs used physically or sold in day ahead process/MC (UIOSI) as an FTR (nominated PTRs are now obligations)*
11.15 D-1:	Auction office publishes total available capacity, including amount of capacity used as PTRs and to be included in MC as FTRs
11.45 D-1:	Cut off for secondary trading of FTRs (if only FTR)
12.00 D-1:	Bids and offers due on DA Spot Exchanges
12.15 D-1:	Exchange results published
12.30 D-1:	Intraday market starts

\* Option to use physically to be exercised at a nomination deadline as close as possible to the PX gate-closure to allow TSOs to compute and publish final ATC for implicit allocation in the D-1. In cases where all capacity is offered DA due to for ex. existing financial solution, via among others CfDs, this check point is irrelevant.