

“Market integration of renewables – do we need capacity markets?”

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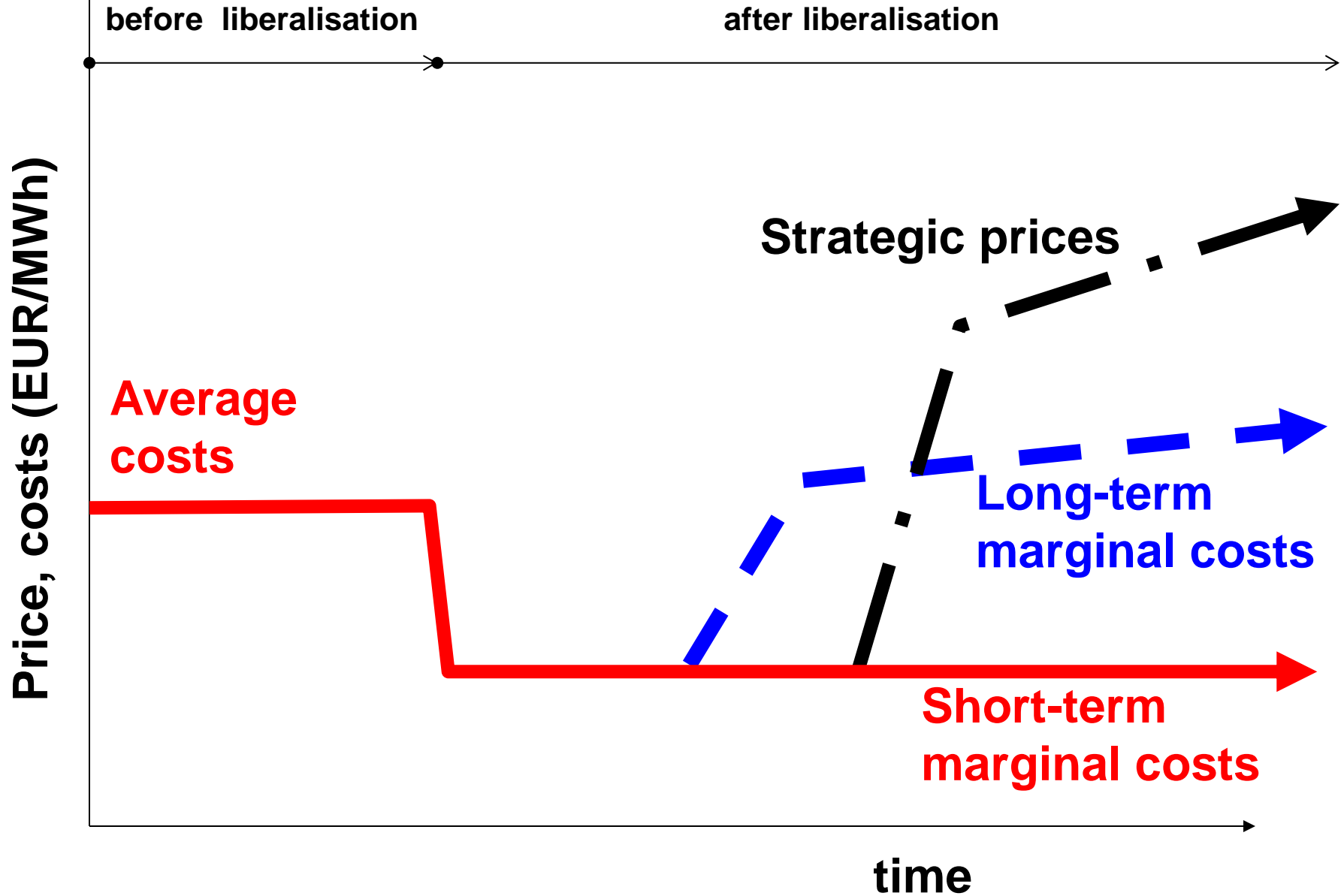
Salzburg, August 2013

- 1. Introduction: Recent developments**
- 2. How prices come about in electricity markets**
- 3. The issue of Supply security**
- 4. Dimensions of electricity markets**
- 5. Needs for new market models?**
- 6. The international dimension**
- 7. Conclusions**

1. INTRODUCTION

Historical capacity markets:

- **Strategic reserves (SE, FI)**
 - **Administrative Capacity payments (ES, EI)**
 - **Capacity exchange for old units (PJM)**
- did never have a focus on intermittent renewables!

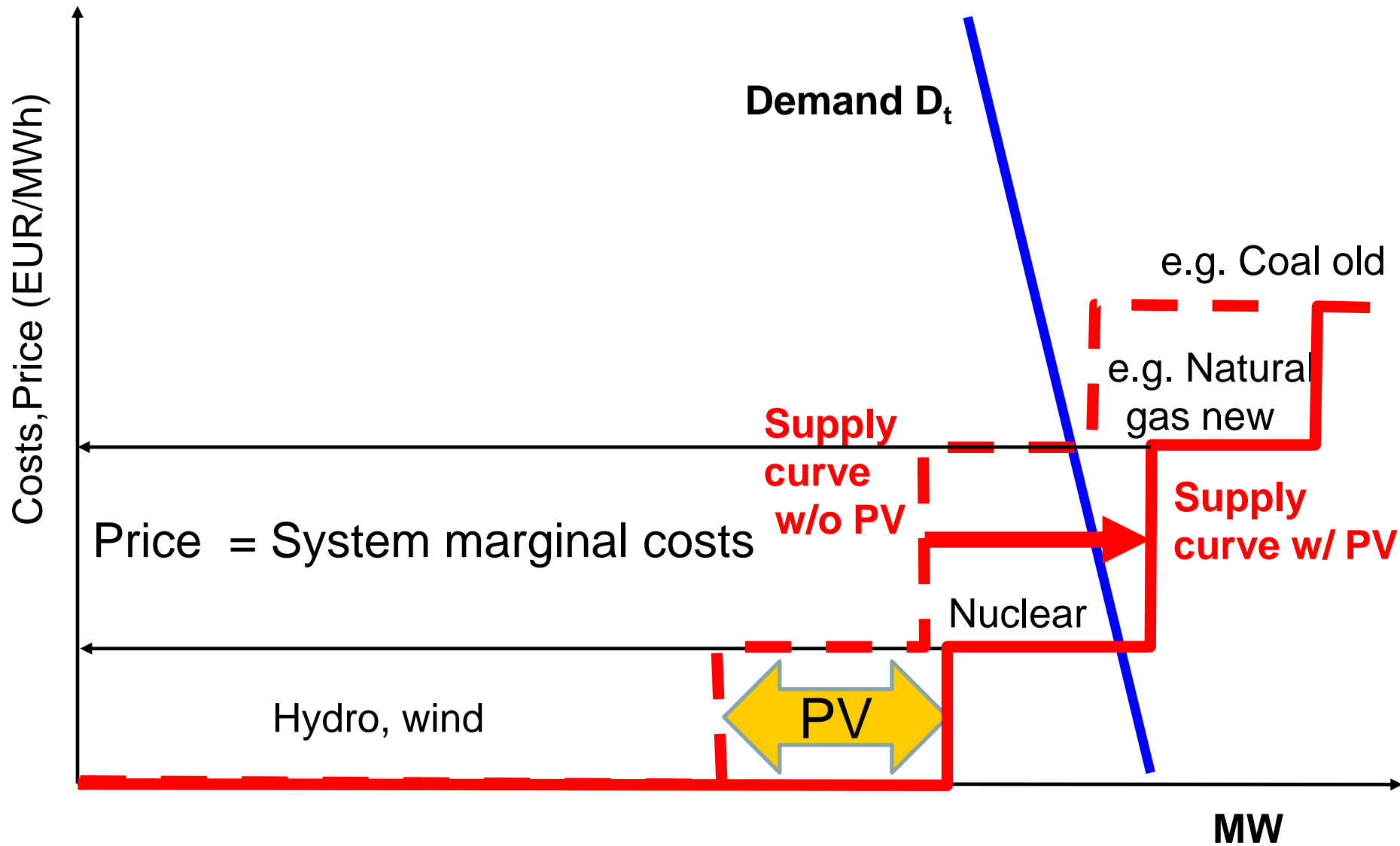


Expectation of:

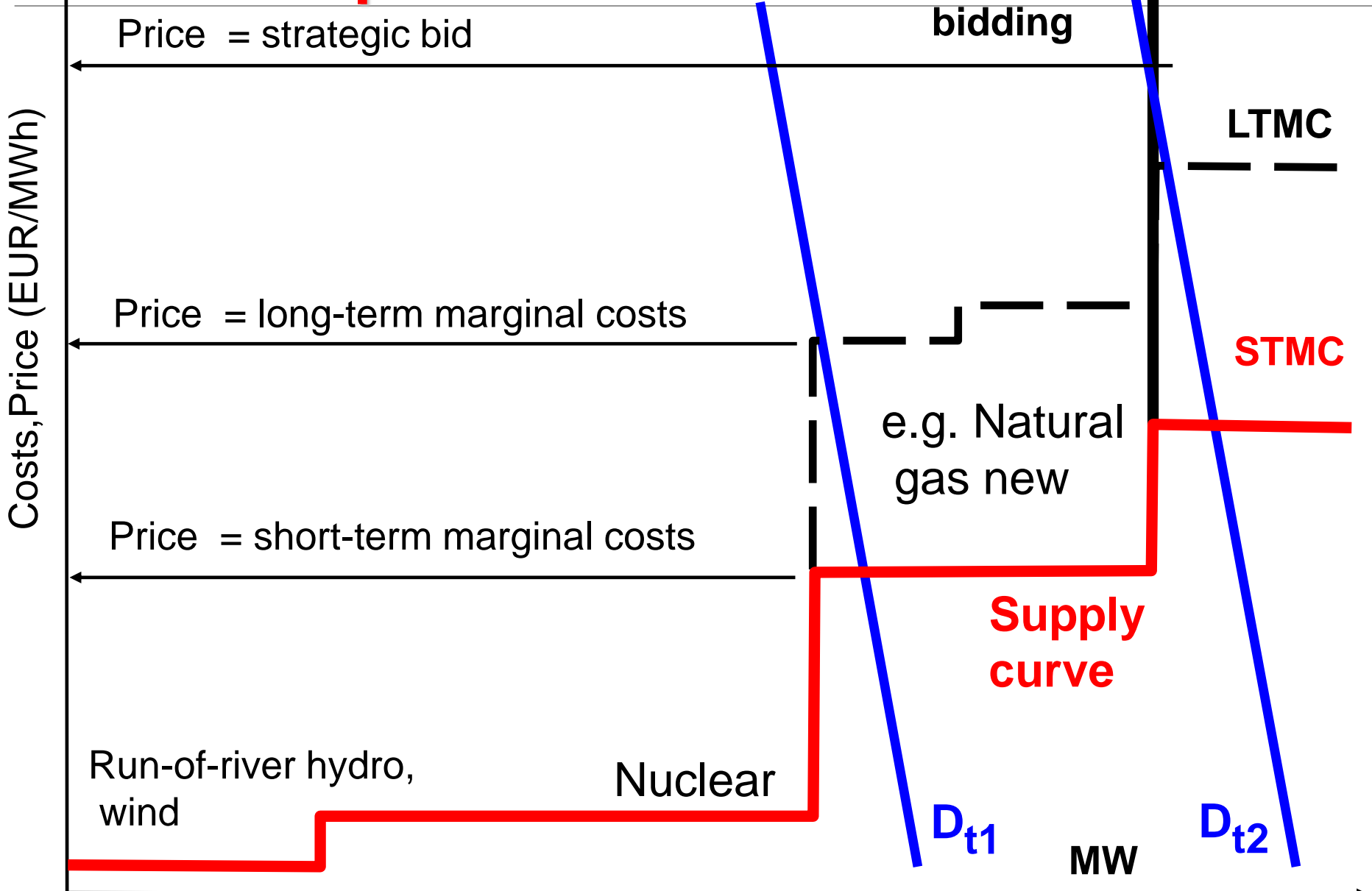
prices = Short-term marginal costs:

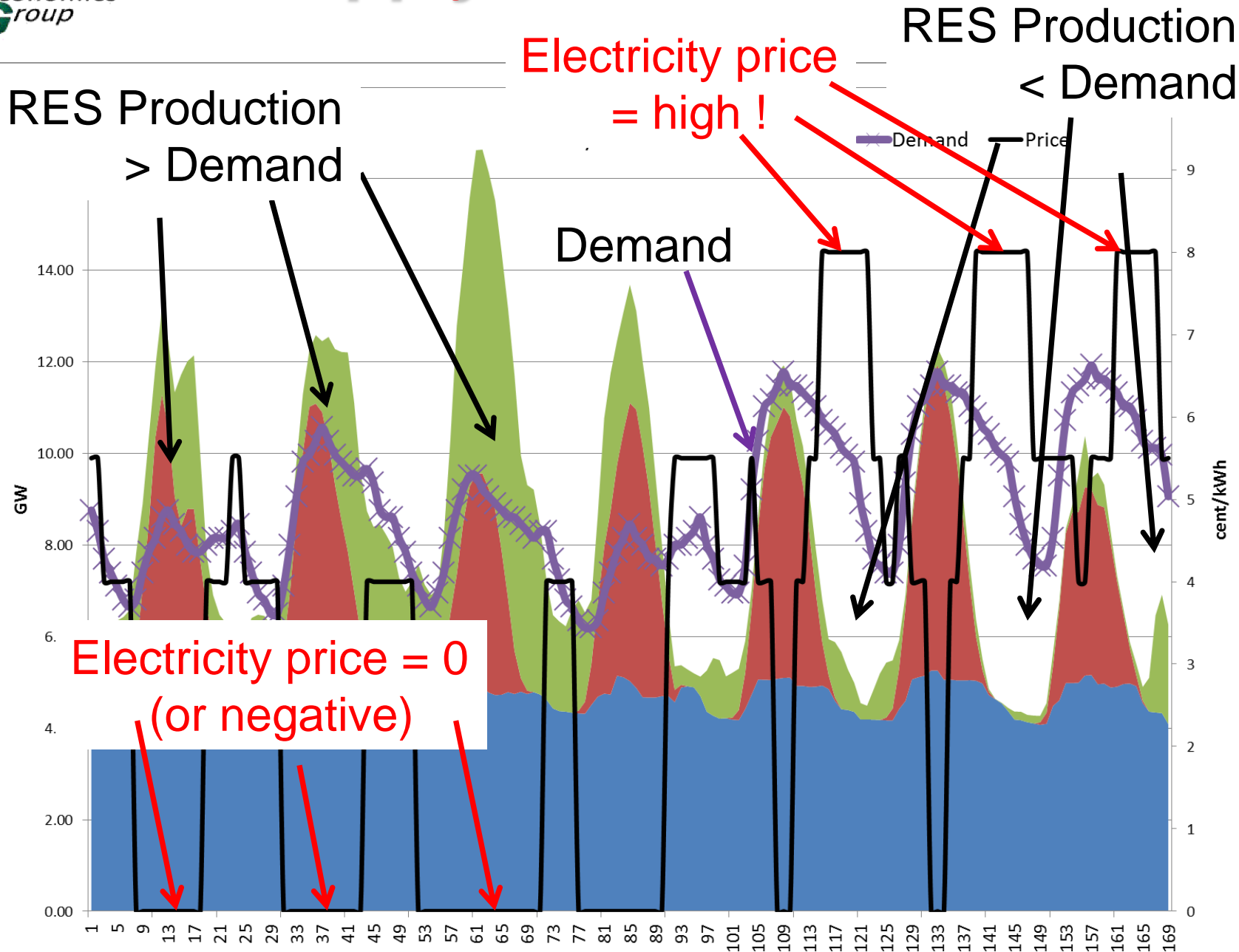
**due to huge depreciated excess
capacities at the beginning of
liberalisation!**

2. HOW PRICES COME ABOUT



Prices under scarce capacities





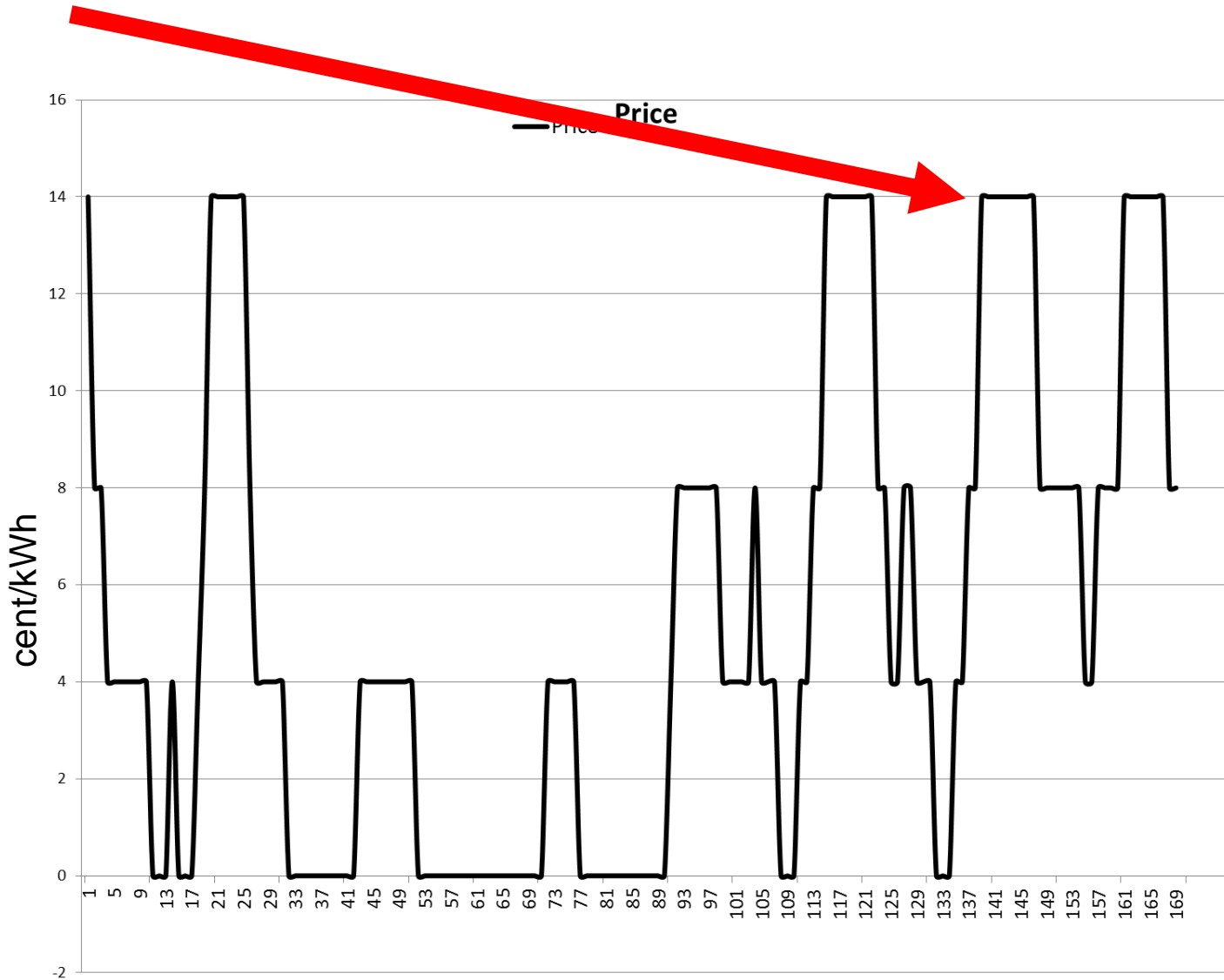
Given this price pattern it would be attractive for (some) power plant operators to stay in the market



REVISED ENERGY-ONLY MARKET

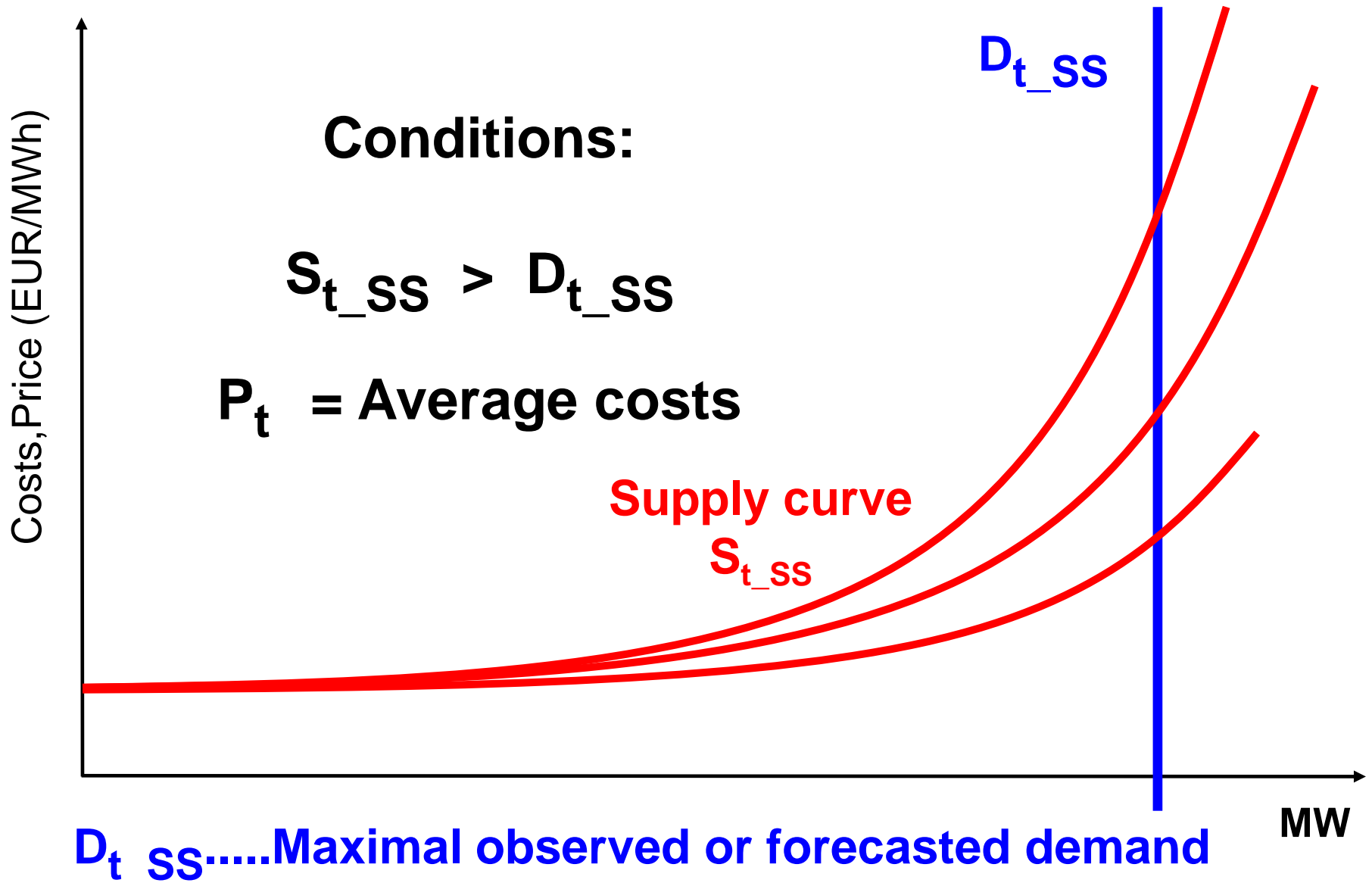
ARE THESE PRICES TOO HIGH?

P_{t1}
New price spreads
 P_{t2}



Historical (anachronistic) definition:

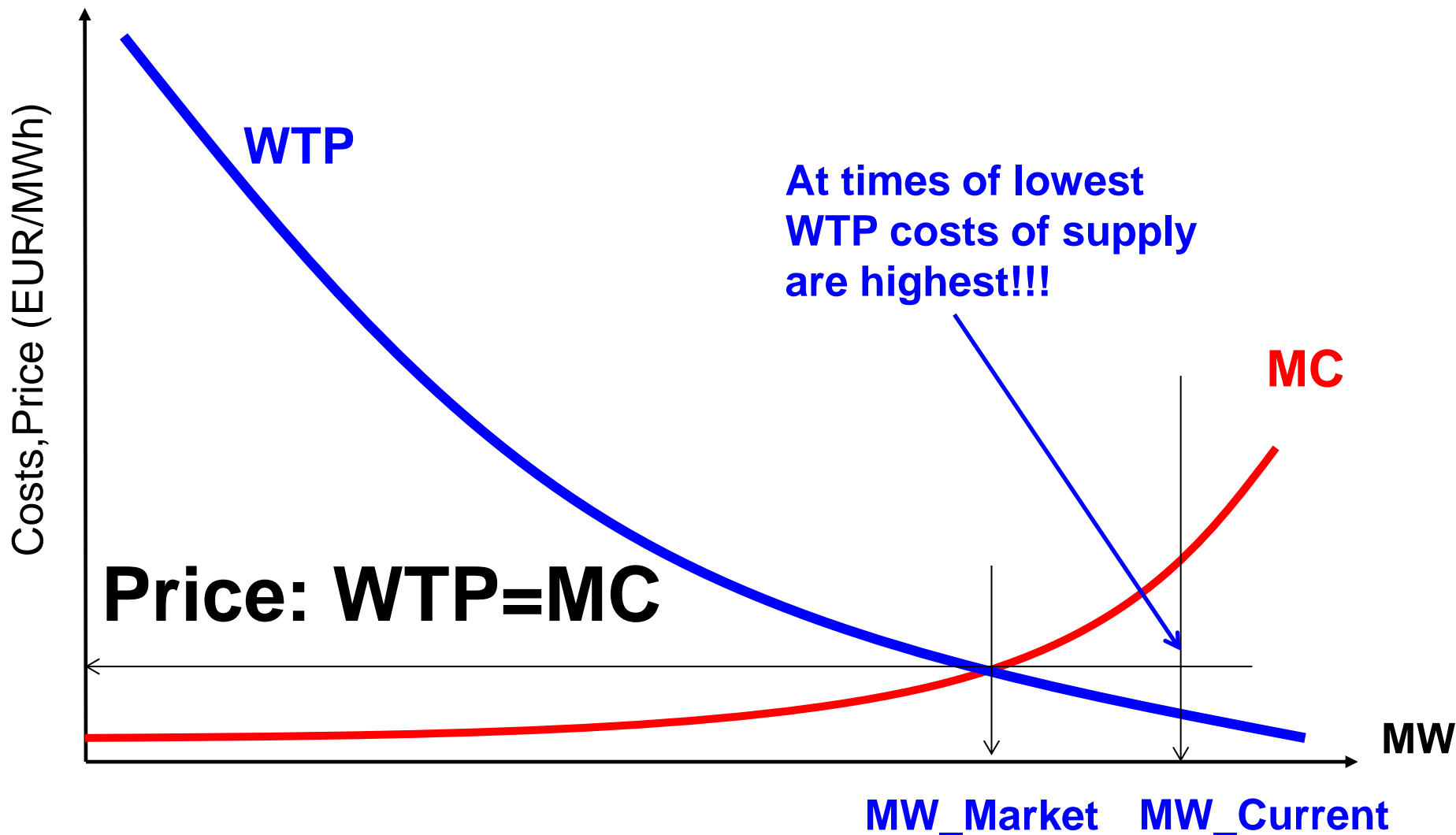
At every point-of-time every demand has to be met regardless of the costs!



**Historical SS + Centralized Capacity
Payments (CCP)**

=

New market DESIGN!
(=planned economy)



DIMENSIONS OF ELECTRICITY MARKETS

SUPPLY

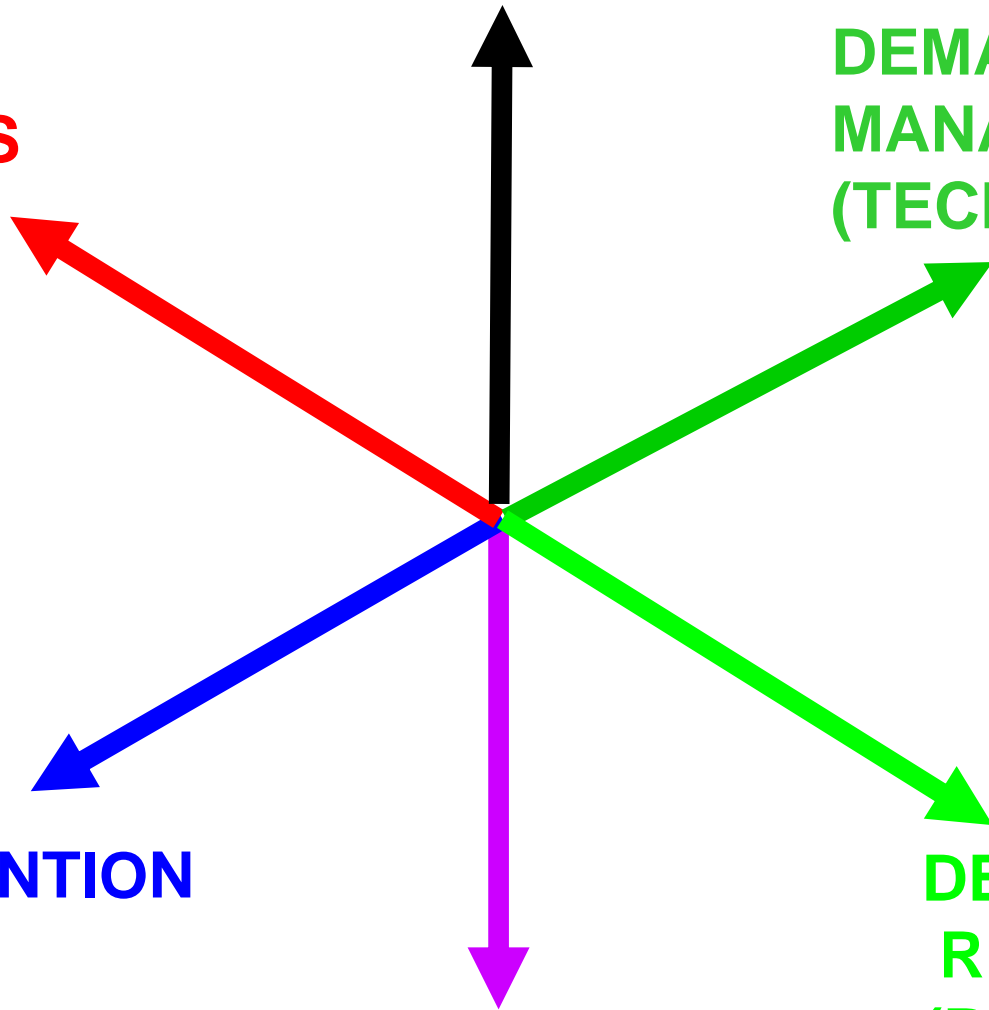
STORAGES

**DEMAND-SIDE
MANAGEMENT
(TECHNICAL)**

GRID EXTENTION

SMART GRIDS

**DEMAND
RESPONSE
(PRICE SIGNALS)**



CONDITIONS:

$$MC_{\text{Gen}} = MC_{\text{Sto}} = MC_{\text{Grid}} = MC_{\text{DSM}}$$

$$P_t = MC = WTP$$

5. WHICH NEW „MARKET“ MODELS ARE DISCUSSED?

Capacity MARKETS???

How should competition take place in a specific region with one supplier? E.g. In Southern Germany?

Or in France???

WHICH NEW MARKET MODELS ARE DISCUSSED?

	P= STMC	P= LTMC	DS contracts	Exist. cap.	New cap.
EOM classic	X				
EOM revised		X			
EOM + DCM		X	X		
Compreh. CCP	X				X
Focused CCP	X			X	X

EOM...Energy-only market

CCP...Centralized capacity payments

DCM...Demand-side capacity market

OPEN QUESTIONS REGARDING CCP:

Which quantity of capacity where?

How to split in existing and new capacity?

How to tune with grid extension?

Who plans? On national or international level?

**E.G. CCP in DE influence operation of
Austrian and Swiss hydro storages**

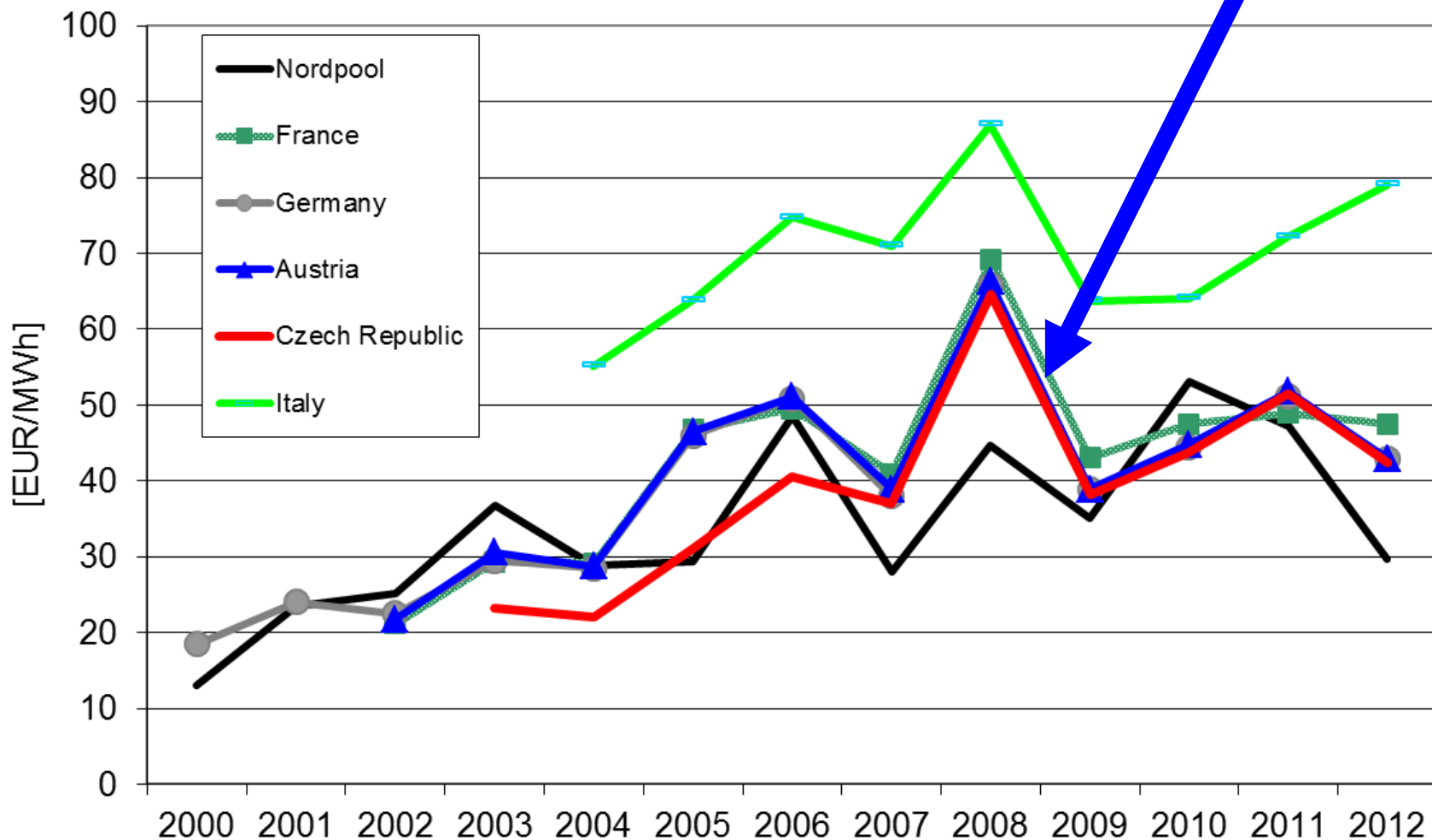
Capacity MARKETS??? How should
competition take place in a specific
region with one supplier?

Or in France???

6. THE INTERNATIONAL DIMENSION

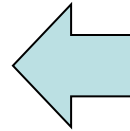
DEVELOPMENTS AT SPOT MARKETS

AT, DE, FR, CZ, PL → One market!



THE PLANNING SPIRAL

Financing
inter-
national?



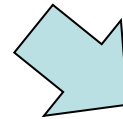
CCP Inter-
national



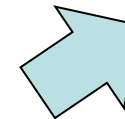
Grid
extention
Nat./Int.



CCP
National



Storage
Internat.



Central
European
planning
commission
!

**Conclusion: Increasing
planning leads to higher and
higher inefficiency in the
system and increasing costs**

THE ALTERNATIVE:

NATIONAL CAPACITY „MARKETS“ ???

Statement EWI Cologne, in favour of CCP:

“If we introduce capacity markets they must really ensure full supply security. That is to say the capacities we need must at least to some extent be higher than expected demand, including a security margin”

(Energy & Management, March 2013)

Now imagine the excess capacity that comes about if all European countries to do this on a national level

PRICES OF „FUTURES“ DECLINED

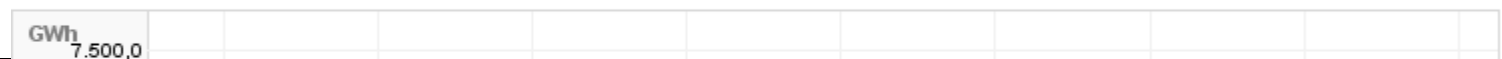
**Until July
2012**



**Until February
2013**



Volumen



7. CONCLUSIONS

- The still applied concept of SS is **anachronistic**
- **National CCP** will never work
- CCP will never work out as „**markets**“;
- CCP will be the **death of all ideas of competition** and head to a strictly planned economy
- CCP completely **neglect the demand-side** which has never been really developed!
- most important now: exhaust the **full potential** of the **creativity of all market participants** especially of the demand-side!
- my contribution to the discussion: an **incentive payment for new very efficient plants**

Prices under scarce capacities

