Electricity pricing crisis.

How to fix underlying market imperfections ?

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§1 Face to electricity prices crisis, which answers?

On short term

- Beliefs in efficiency of market design (ACER, Commission with REPowerEU)
  - In first step, only compensatory measures (energy check, tariff shield, etc.)
  - Later on, emergency market interventions : Superprofit tax (24 September)
    - Revenue cap on infra-marginal technologies (e.g. RES , nuclear, coal) at 180 €/MWh

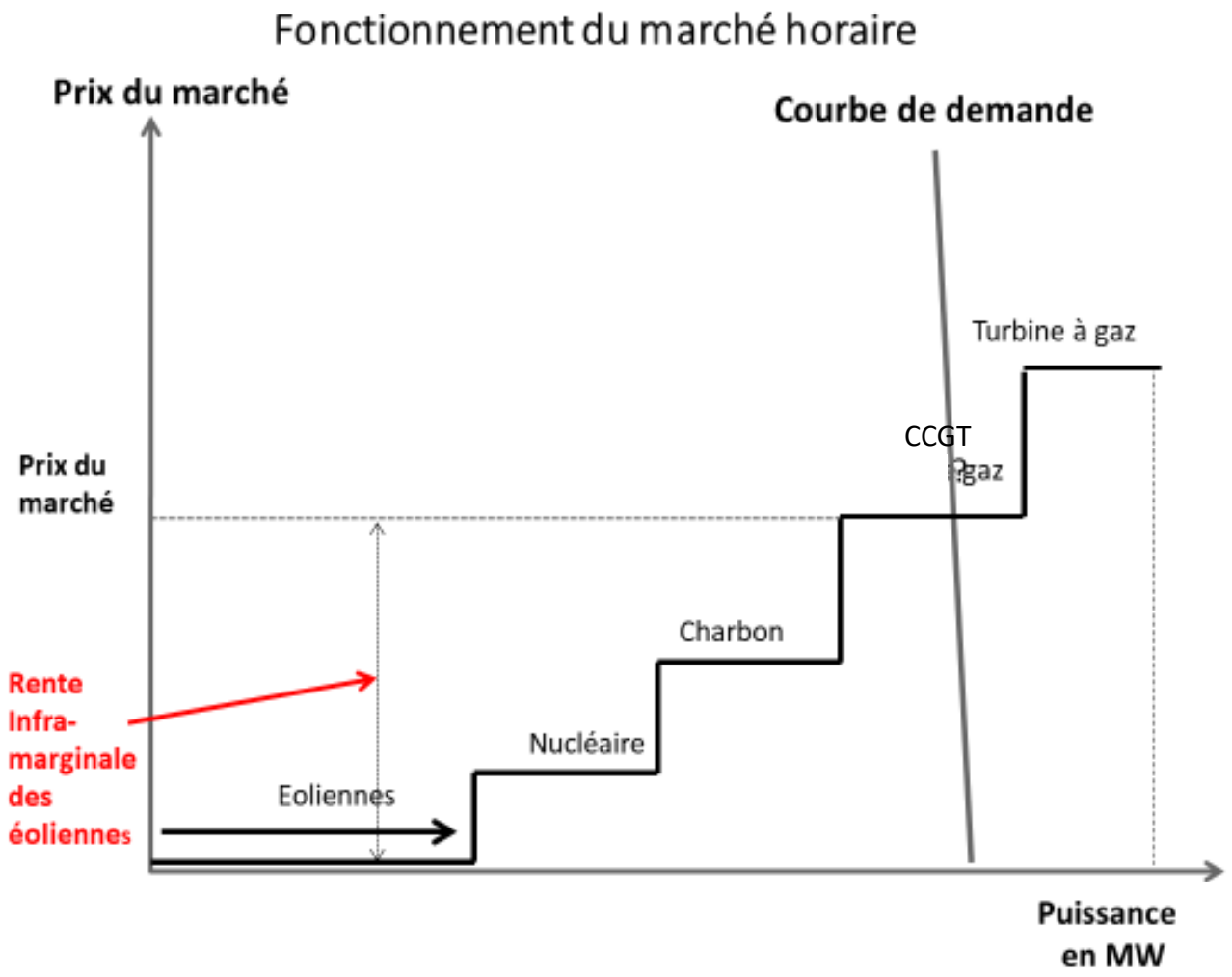
On long term

- Different awareness of the need to change the market design
  - In countries with few gas generation : To avoid « absurd pricing » driven by narrow coupling of elec and gas prices (E.Macron). But no proposal
    - Objective : to protect industrial and small consumers against extreme price risk
  - Ursula v.d. Leyen: « Need of **huge reform**: Market organisation was designed for systems with few RES… ». Commission is working on….
    - Objective: to accelerate transition with low carbon investment and strorage

Three challenging objectives for an exhaustive reform

- Maintaining hourly markets to ensure short-term coordination inside the system and with the other systems (market efficiency)
- Decoupling short term price signals and long term signals for investment in low carbon technologies
    - Revenue guarantee contracts for sharing risks of investing in new equipment
- Insuring the consumer protection with quite stable retail prices by their alignment with long-term costs,
    - while keeping some price variability to incite consumers' reactivity

2. Back to Market Imperfections and Market Failures



2. Back to Market imperfections & Market failures

Why price volatility ? Why the coupling with gas price?

- Structure in hourly markets (with poor links between them) = volatility
- Hourly price aligned with fuel cost of marginal plant called by the market

Effect of market integration:

- price aligned with marginal plant cost of overall market
- problem for a national system with very few fossil génération

Incompletness of markets :no long term financial products

Failures to trigger investment in peaking units and low carbon technologies

- Not any correspondance between short term prices and long term price signal
- Volatility of Infra marginal rents to recover capital and fixed costs (volatility, long term uncertainty)
- Effect of renewables policies effects on decrease of annual average spot price

Former corrections of the market design:

Addition of patches to the “Energy Only Market” without consistency

1.Capacity remuneration mechanisms in view of the security of supply by capacity adequacy

- Long reluctance of the commission
- Member states have chosen their own design
- Some CRMs are based on capacity contracts with government

2. Long term revenue guarantee for renewables (innovation, low carbon)

- Before commercial maturity, feed in tariffs (with their cost financed by a tax per MWh)
- After commercial maturity (competitiveness) , auctioning of financial contracts (CfD type) for wind, solar PV, for covering risks

To generalize these mechanisms in view of consistency and technolgical neutrality

3. A solution to cover the three objectives

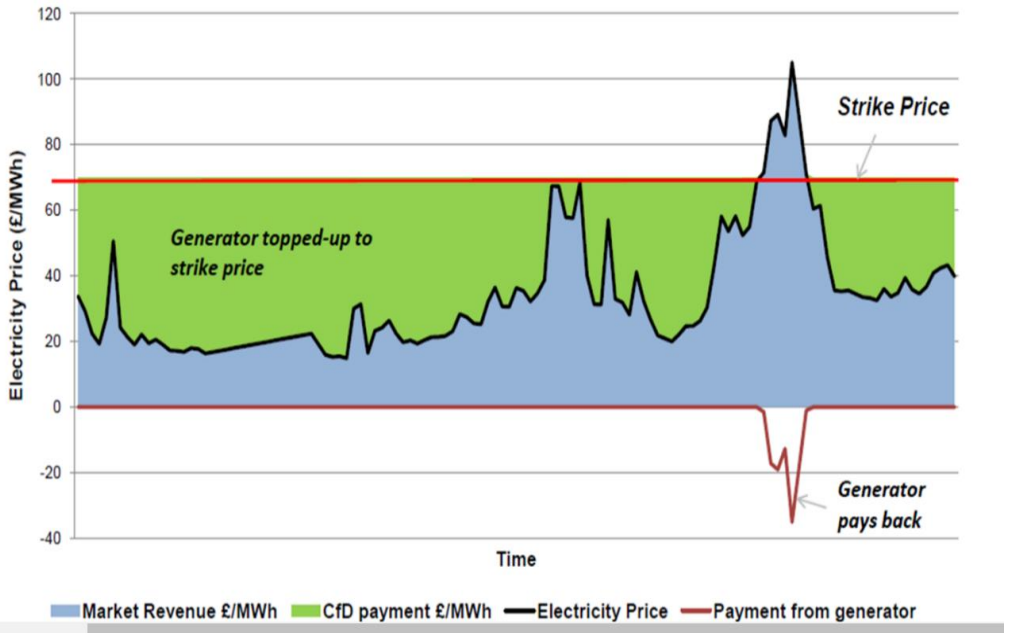
The Long Term Central Buyer model

1. Creation of a public entity in charge of contracting and auctioning

- Long-term contracts with new low carbon assets, but also with existing assets
- In order to preserve EU wholesale spot markets, contract design is financial :

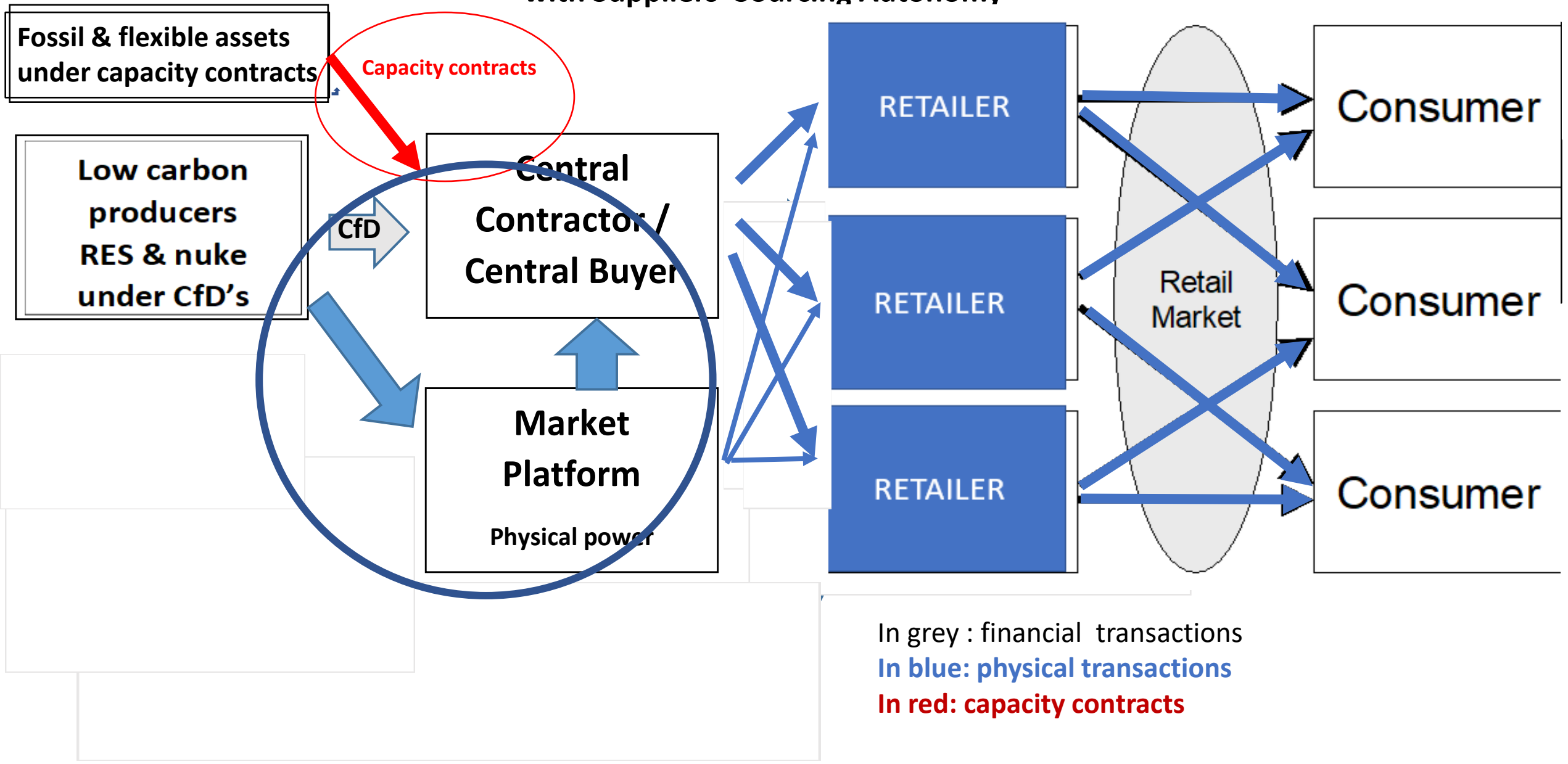
  "Contract for difference" (CfD)

- Auctioning of contracts (strike price)
- Each equipment sell their production on the spot market
- Central contractor is central buyer of MWh's



Model of Long-Term Central Buyer

with Suppliers' Sourcing Autonomy



In grey : financial transactions

In blue: physical transactions

In red: capacity contracts

2. Capacity contracting with fossil equipment (back up) and flexibility sources (storage)

Collective goods: Central buyer contracts in view of SoS (capacity adequacy) and system stability

Auctioning of contracts with equipment in relation to flexibility services and guarantees of availability in critical periods

- Energy revenue guarantees not relevant
- Contracts for capacity remuneration (annuity covering the capital cost)

Integration in capacity remuneration mechanism (CRM) in countries with CRM based on auctioned forward capacity contracts

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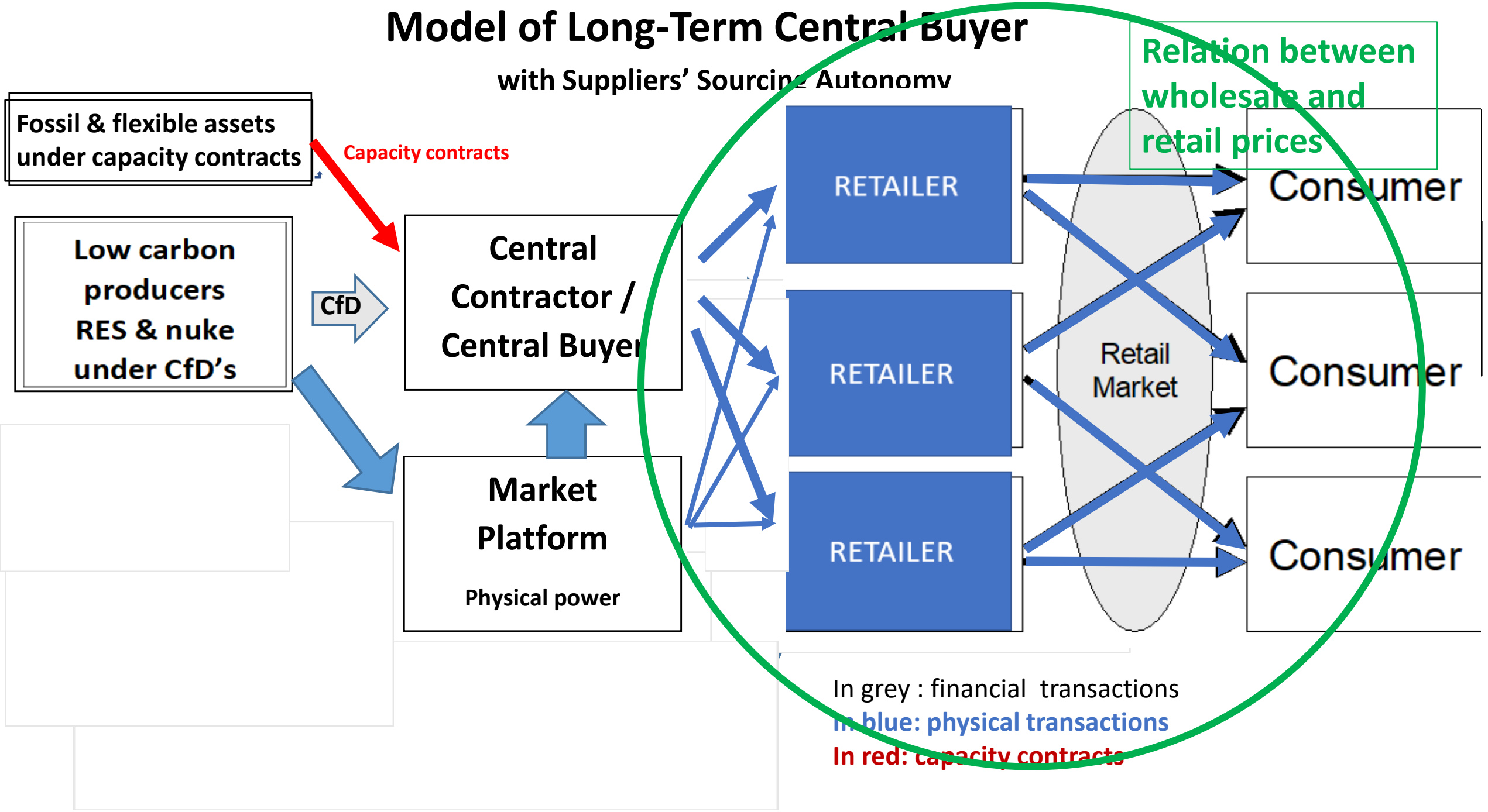


Relation between wholesale and retail prices

- Central buyer = position to control long term costs of every unit

  It pays spot price + cost of CfD (strike price - spot prices) per MWh

- It assumes the major part of retailers' sourcing
  - Transparent mode of **transfer pricing based on long term costs**
  - Regulator's guidelines on the mode of pricing of different energy blocks

Competition between retailers

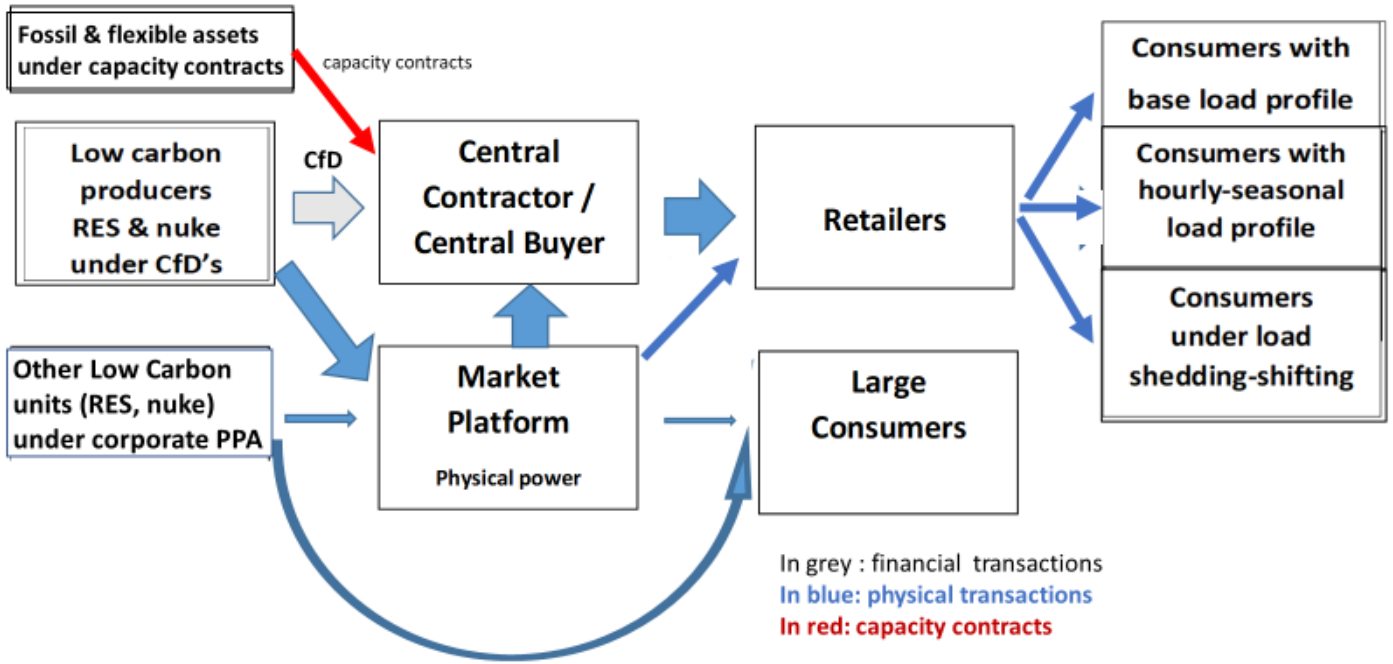
- Acquisition of complementary sourcing on the spot market
  - (mainly during price spikes and tension between supply and demand)
- Ability to match their diffferent sourcing with their price offer to different load profile
- Incentive to develop demand response contracts

Option for low carbon generators and customers to be outside the umbrella of the Central Buyer

PPAs between low carbon developers (RES, nuclear) and large buyers (in search of stable prices and « green image » in case of RES unit)

Questions: How to maintain full scope coordination for cost minimization?

Figure 3. Low Carbon Contracting by PPA & CfD



Need of a strong governance for long term choices

Need of rational planning of investments in the technology mix at the national level

- Inconsistency of the EU energy climate policy based on RES objectives (political criteria)
- Ignorance of other low carbon technologies
- No role for carbon price

Need of a strict coordination between deployment of variable RES and those of flexibility sources

Special public agency with large competences in modelling of complex power systems (impartiality in the advice to government)

Conditions

Explicitly recognition of the pre-eminence of planning upon market for long-term coordination

Delegate the governance of the long term to Member States (sovereignty Art. 194 (2) TFEU)

Conclusion

- Central Buyer model = achievement of both objectives of acceleration of the transition and consumers protection
- Evident compatibility with EU rules:
  - Upstream competition on the wholesale market and downstream competition on the retail markets
  - Market integration of the systems through spot markets
- But two problems ….
  - 1. Disconnection of retail prices from wholesale spot prices (article 5.2)
  - 2. Model not compatible with cross contracting between the “central buyer” and large external buyers

which falls within the exercise of national sovereignty