



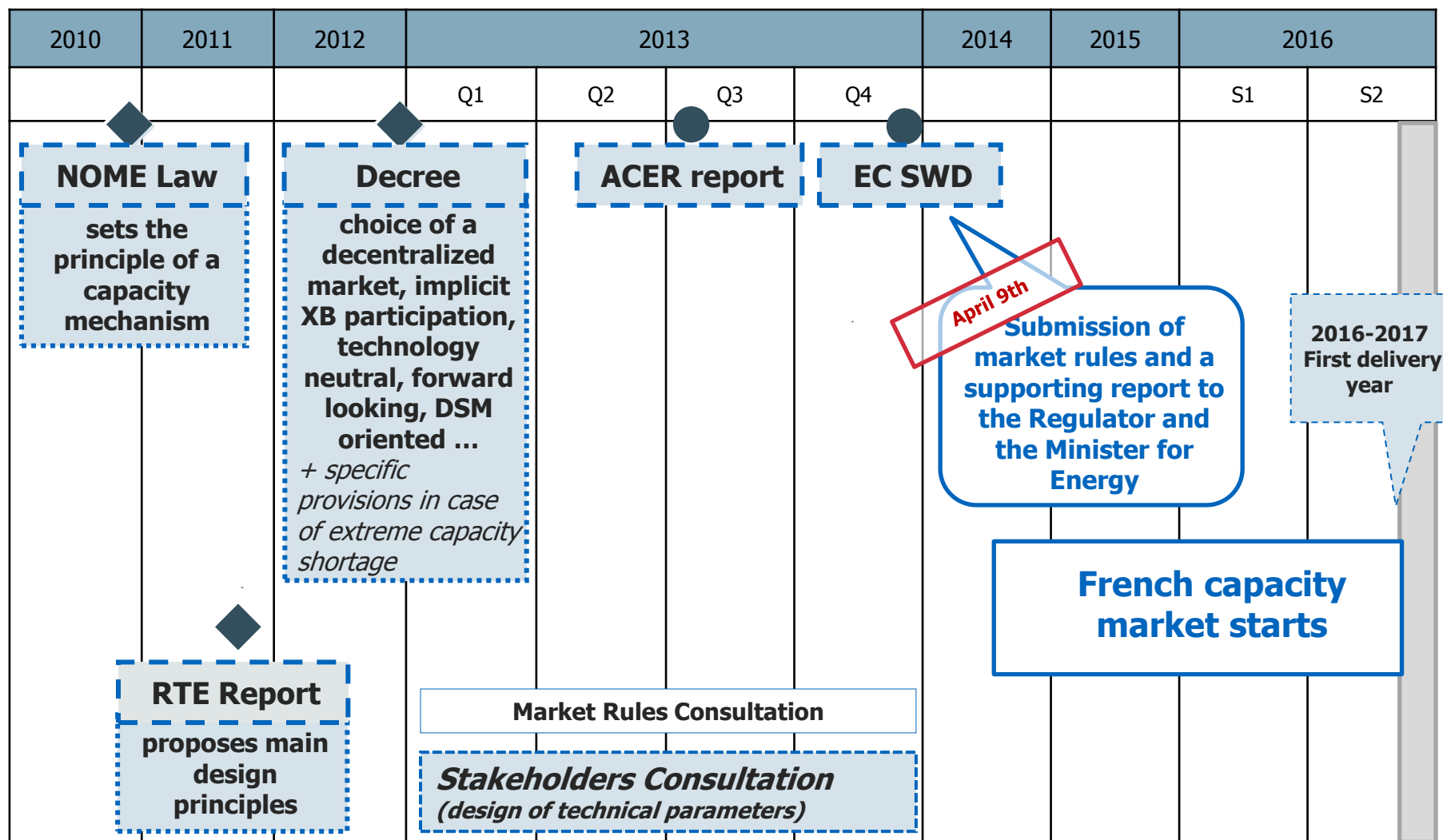
Réseau de transport d'électricité

A capacity market in France – status of discussions and future steps

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Where are we?



RTE proposal to the Minister and regulator

1

Market Rules

To be approved by Minister and Regulator as provided for by existing decree

2

Supporting report

The reports presents capacity mechanisms rationale from a technical and economical perspective,

It support the proposal of market rules by providing explanations about the impact of the different provisions of the rules following the debates during the consultation phase

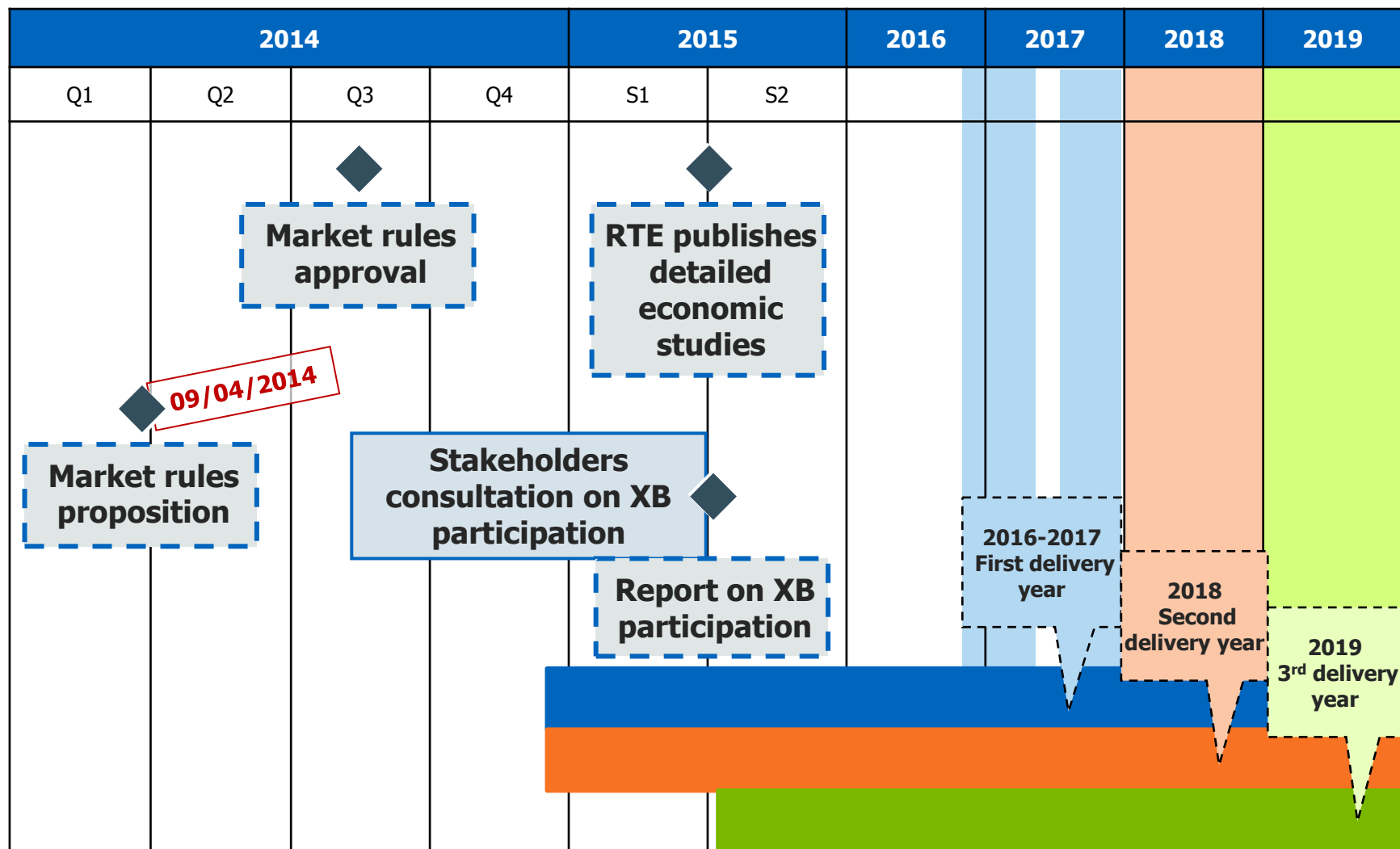
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Answers to all questions and observations from stakeholders during the public consultation held in Autum 2013

Report summary

1. Capacity mechanism rationale
2. Which market design matches for France issues ?
3. French capacity market: main principles
4. Suppliers' obligation
5. Capacity certification
6. Financial incentives
7. Trading aspects, monitoring, transparency and competition
8. Impact analysis
9. XB capacity participation
10. European compliance analysis

Where are we going? Next steps



Contents

1. Rationale for the French Capacity Market

2. The French Capacity Market

focus on demand response participation

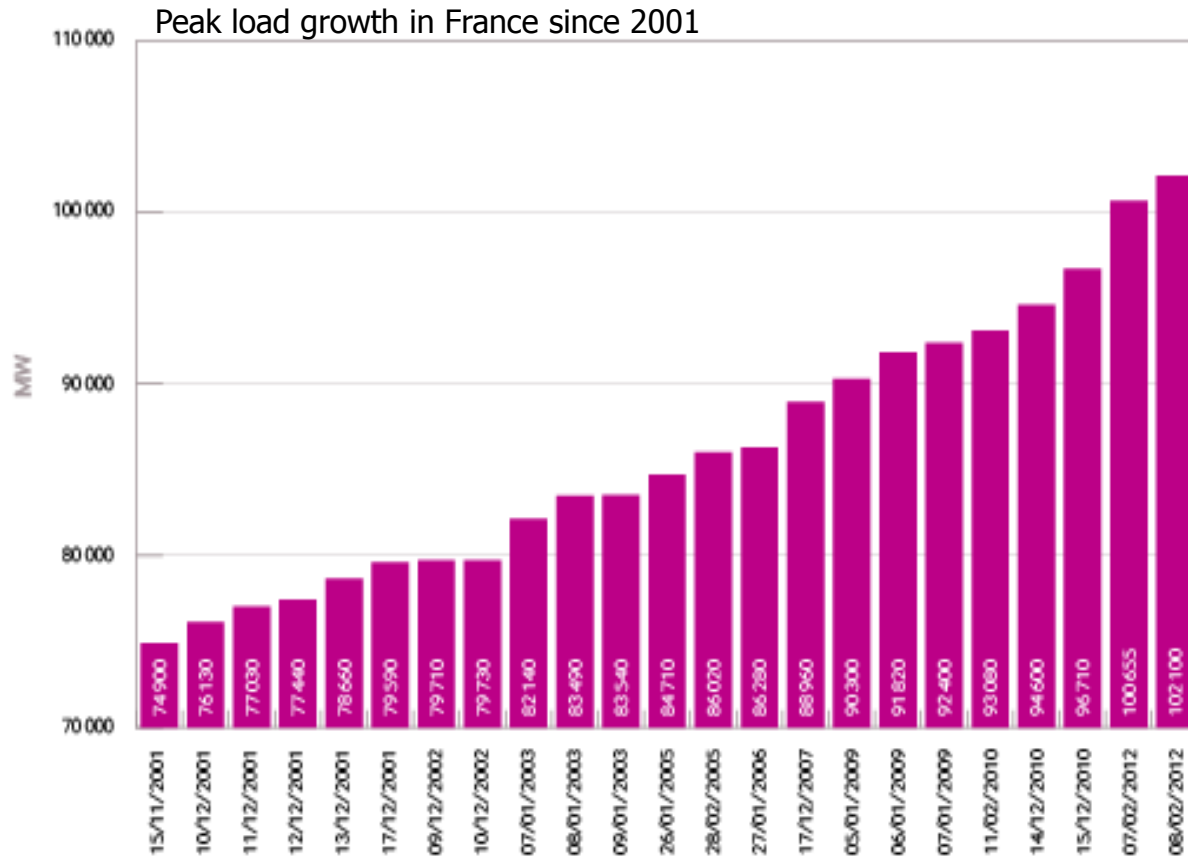
focus on European integration

3. A step into the future

1

RATIONALE

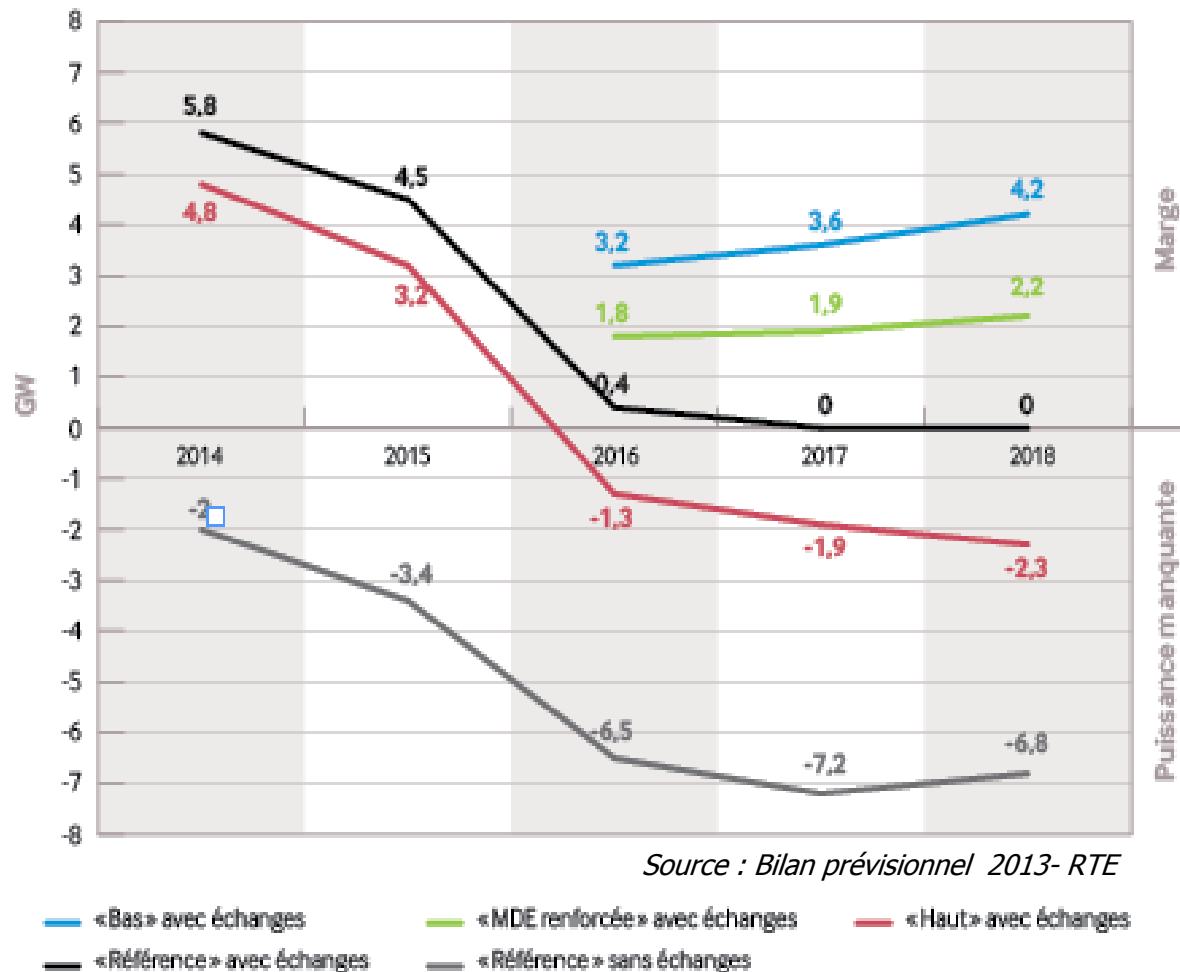
A textbooks market failure – worries about SoS during peakload events



source : Capacity mechanism report – RTE

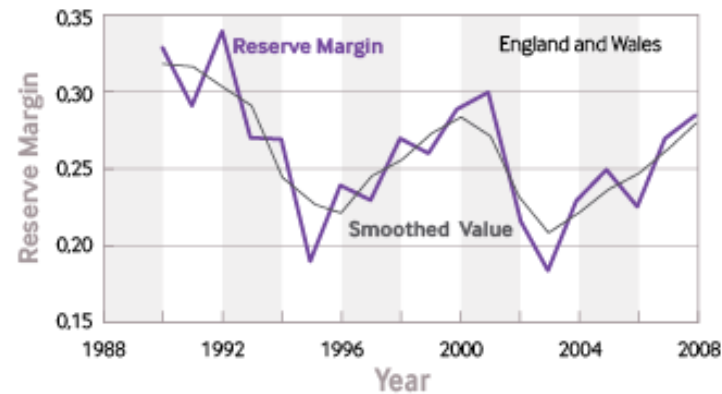
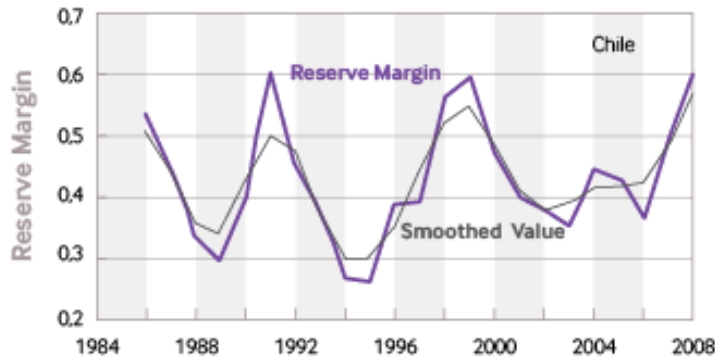
- Peak load growth of 30% in 10y.
 - Thermosensitivity of consumption is the main cause of peak load growth
- **Capacity mechanism is designed to reveal a signal to ensure SoS (in order to respect the SoS criterion defined by the Minister of Energy - Loss of Load Expectation = 3h) and to reduce peak load growth**

A textbooks market failure – worries about SoS during peakload events



- Adequacy studies are based on stochastic approach, modeling France and neighboring countries
- The “reference scenario” of RTE adequacy studies shows a zero margin from 2017
- The worst case scenario shows a lack SoS from 2016
- Some additional closure/mothballing may occur, but also

Investments cycles (boom & bust)

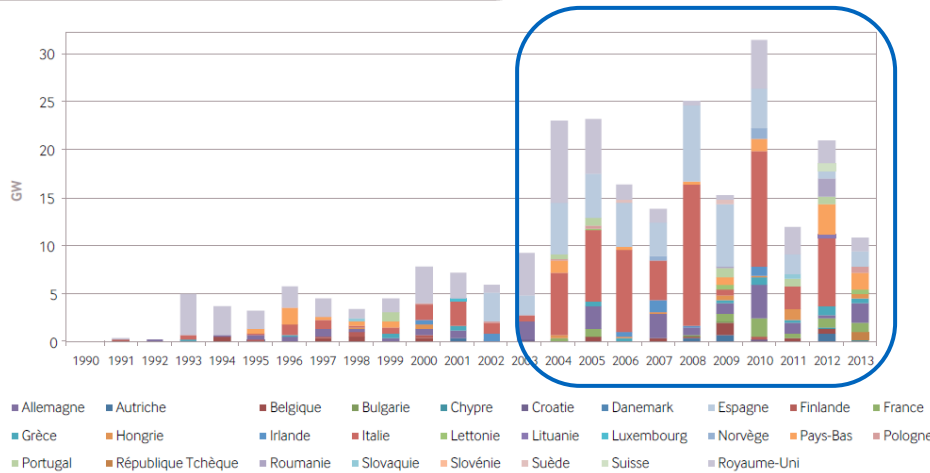


Like other capital-intensive industries, the electricity sector is likely to experience boom & bust cycles. This may affect security of supply.

→ **The Capacity market is supposed to smooth this phenomenon**

Capacity mechanism is a tool for regulation of capacity closing and investment cycles

Figure 6 – Nouvelles capacités en cycles combinés gaz en Europe⁴⁴

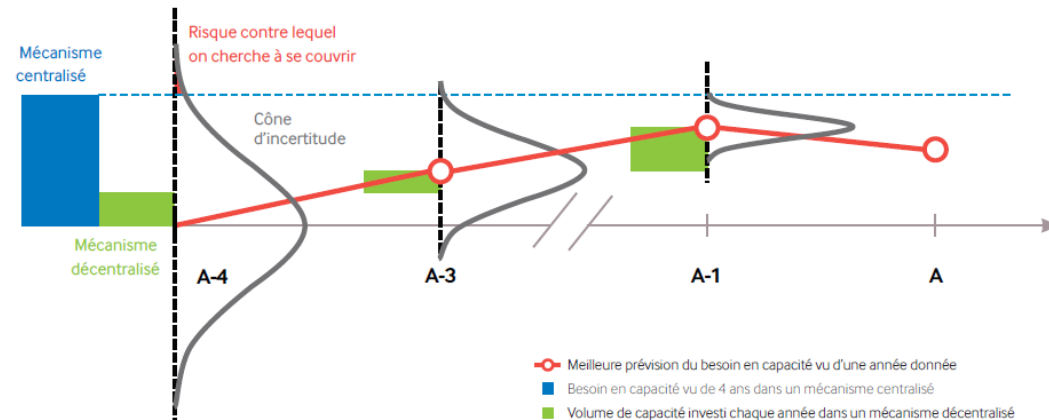


The massive investment in CCGT during the past decade is typical of an investment phase

→ **A strange situation : overcapacities in Europe but would could result in undercapacity if several CCGT capacities are mothballed at the same moment**

A decentralized capacity market with a dynamic adequacy signals and fully DR ready

→ **The Capacity market will contribute to the adaptation of the generation mix and ensure security of supply**



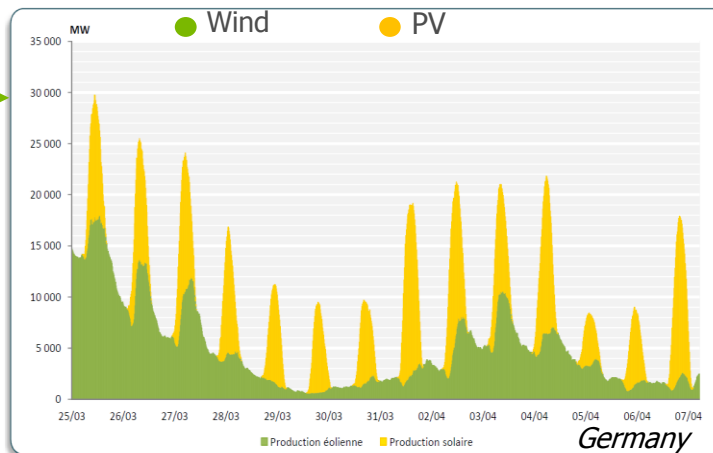
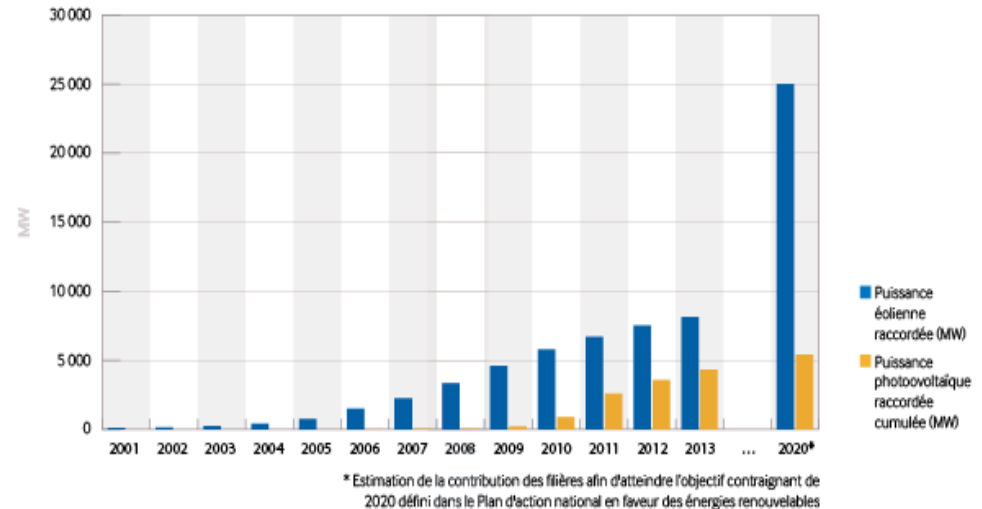
Changes in generation mix may provide additional rationale for capacity market

Energy Mix Evolution necessary to reach 20/20/20 objectives

French RES target :

→ **Wind : 19 + 6 GW**

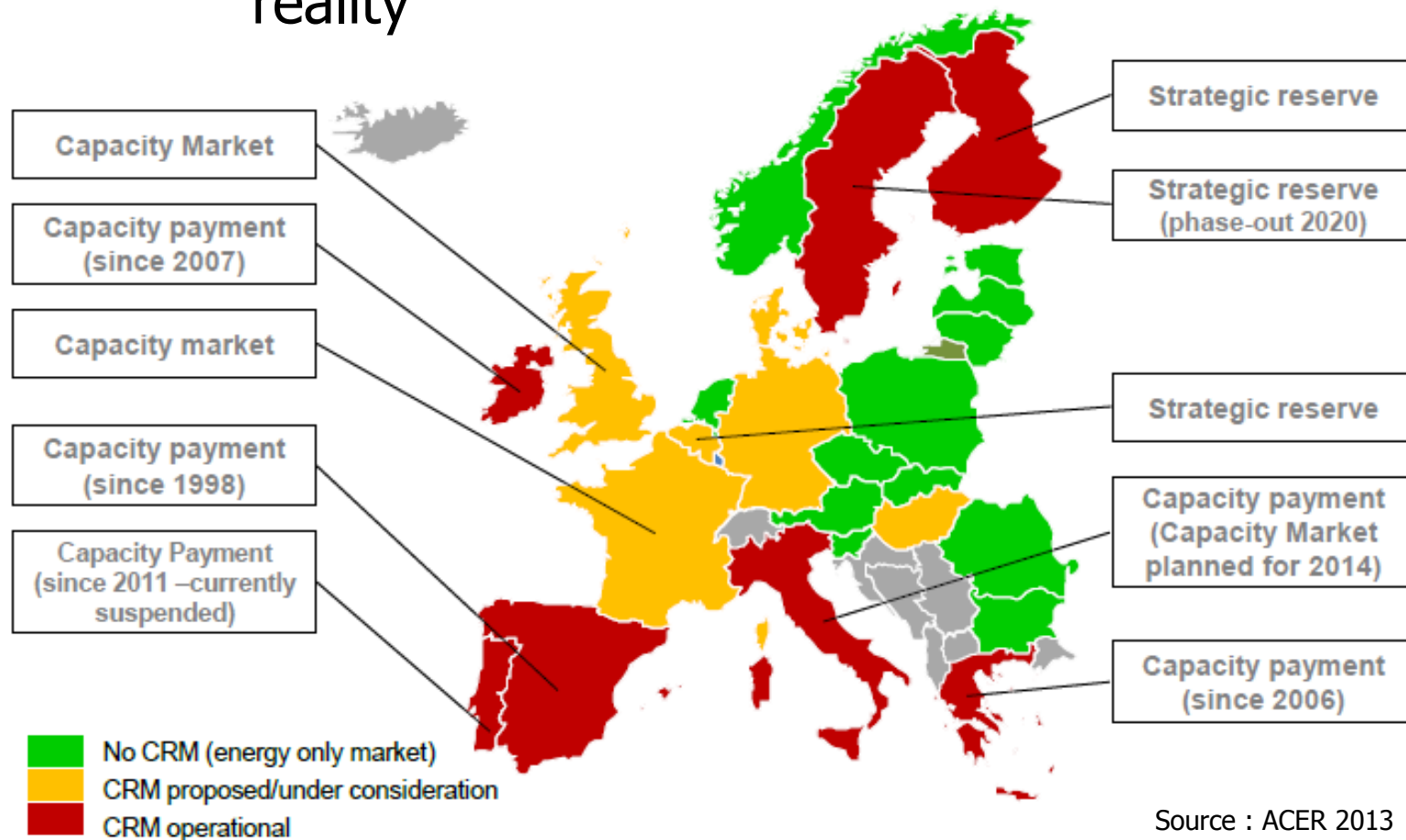
→ **PV : > 5,4 GW**



Intermittency is a growing concern in Europe and in France for SoS and economic efficiency

→ **increasing value of available and flexible capacity in a context of growing intermittency**

Capacity Mechanisms in Europe is already a reality



Source : ACER 2013

Global trend towards capacity mechanisms
XB component remains to be designed

2

THE FRENCH CAPACITY MARKET

The main design principles

COMPLETE MARKET COVERAGE

**MARKET BASED WITHOUT ANY
PUBLIC FUNDING**

**EQUAL TREATMENT OF NEW &
EXISTING PLANTS**

**TECHNOLOGY NEUTRAL
(GENERATION, STORAGE,
DEMAND RESPONSE ...)**

**NO INTERFERENCE ON THE
FUNCTIONNING OF THE IEM (e.g.
no change in market coupling, no
export restriction)**

FORWARD LOOKING

French capacity mechanism in a nutshell

Security of supply criterion

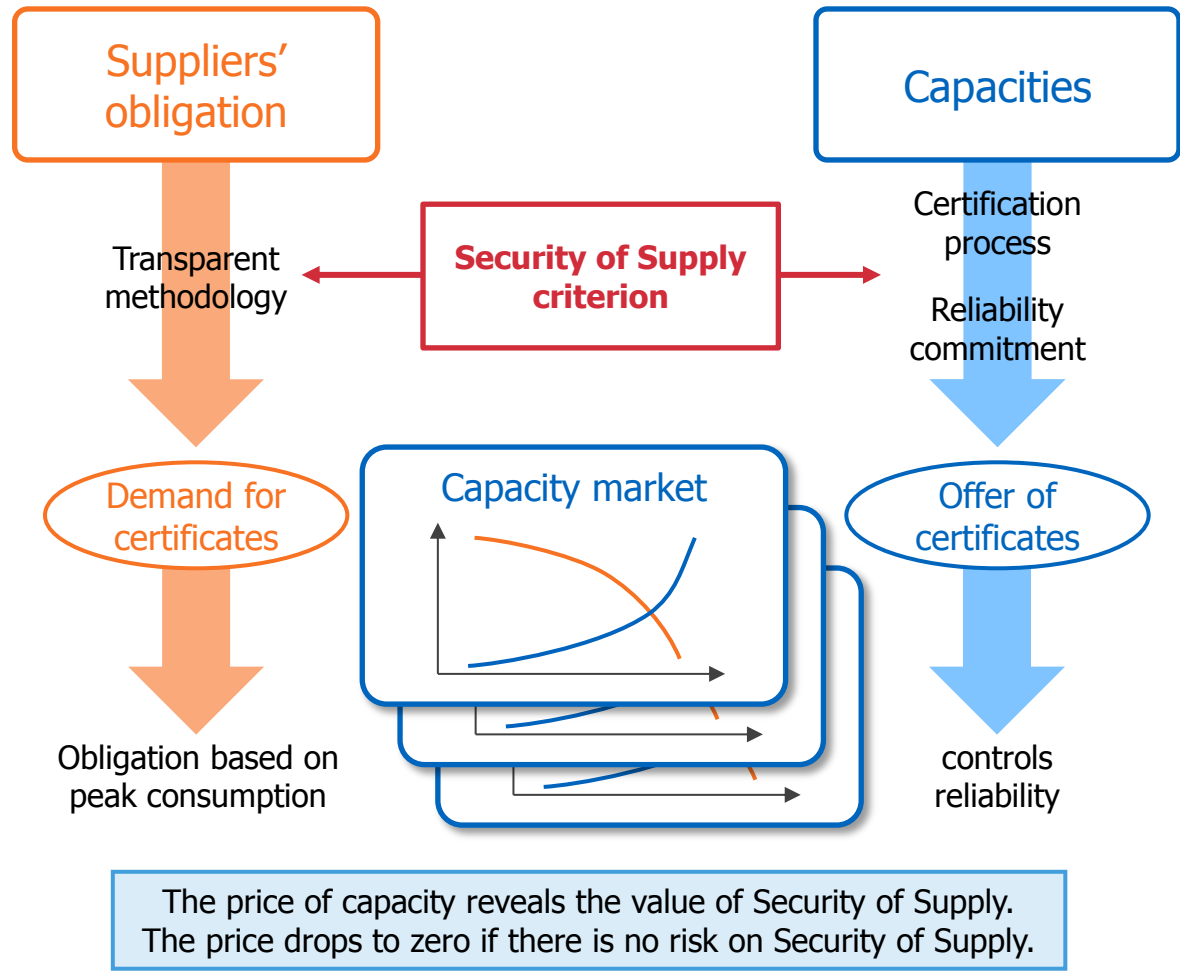
defined by the Minister of Energy
(loss of load expectation = 3h)

Obligation carried by suppliers

to acquire enough capacity certificates
to meet the peak consumption of their
clients

Capacity operators' commitment

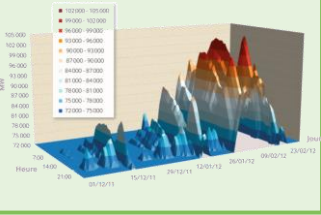
to make their capacities available
during consumption peaks. In
compensation, they are granted
certificates that they will be able to sell
to suppliers



The core elements of the market

Main risk on SoS

Winter peak load



Obligation principles

Suppliers' Obligation corresponds to their customers' consumption during a standard winter cold spell

→ *Realized winter peak load is corrected using a thermosensitivity gradient*

Certification principles

Certification is based on the ability to reduce Loss of Load during winter cold spells

→ *Certified capacity corresponds to winter peak load availability, corrected to take technical constraints and flexibility issues into account*

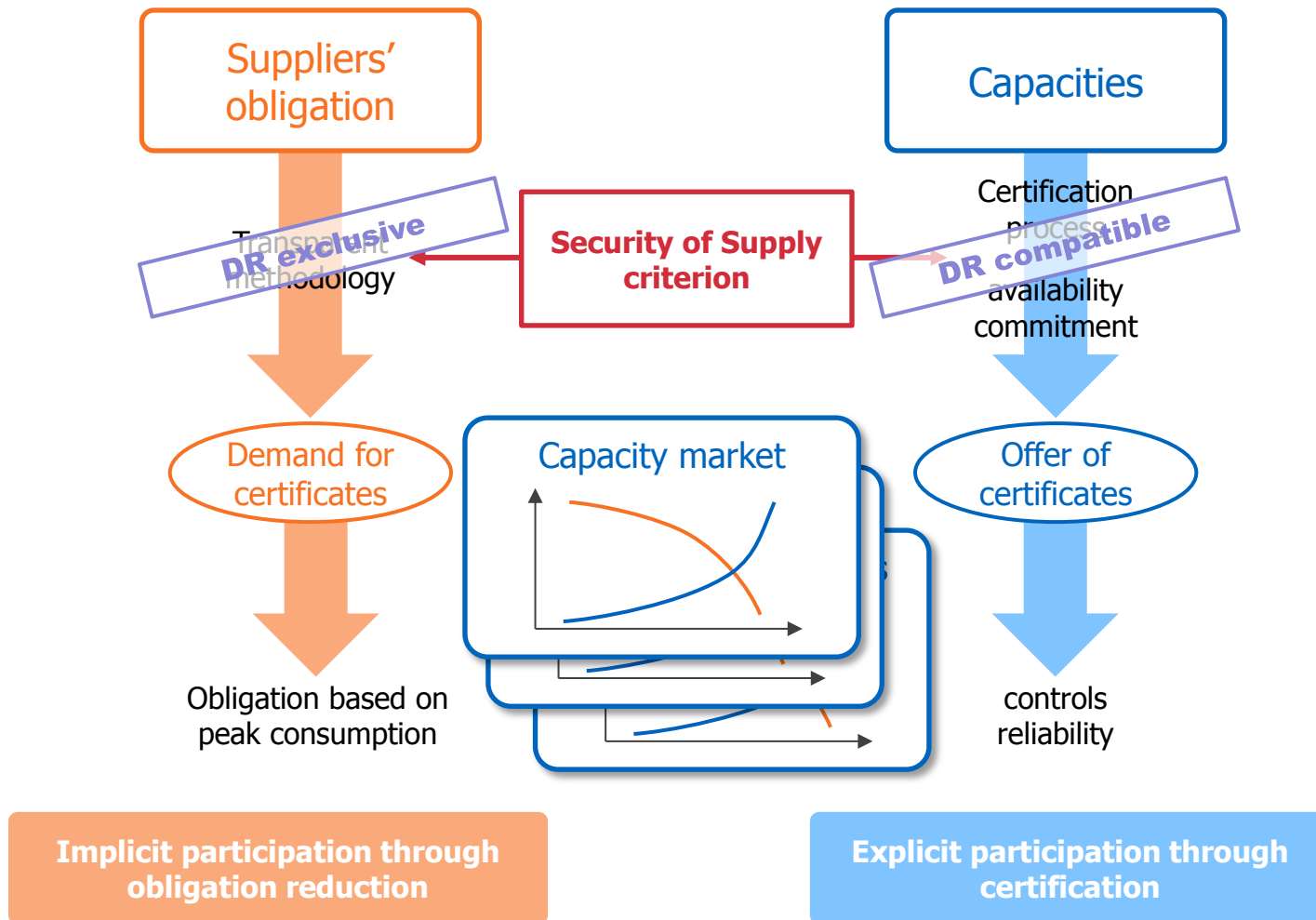
Market operations

- Continuous trading, beginning 4 years ahead of delivery
- 2 imbalances settlement processes, based on realized data
 - Suppliers to cover their obligation
 - Capacities to respect their (aggregated) availability commitments

FOCUS

DEMAND REPOSE

DR participation in the capacity mechanism (1/2)



DR participation in the capacity mechanism (2/2)

Explicit participation through certification

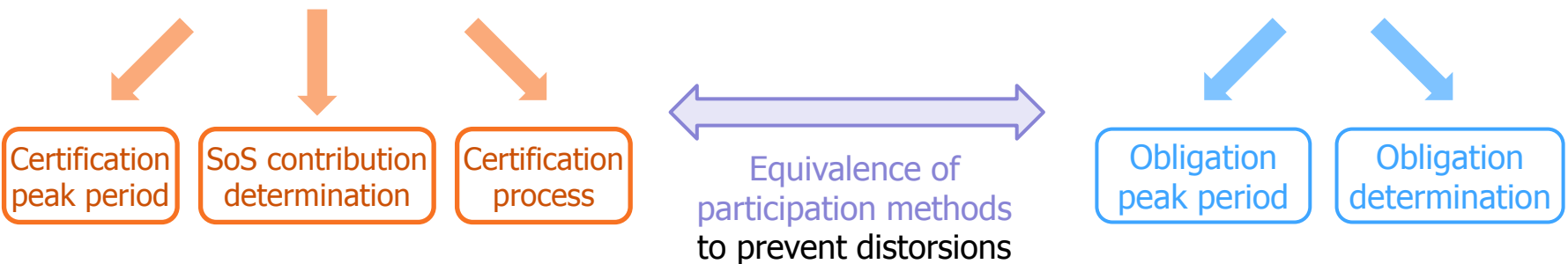
→ Well adapted to « easily certified » DR

**Participation Method
chosen by DR owner**

Implicit participation through obligation reduction

→ Useful for energy savings or difficult to quantify DR

Every layer of the capacity mechanism has been carefully designed for DR to be taken into account according to its contribution to SoS

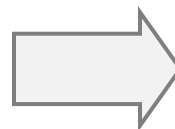
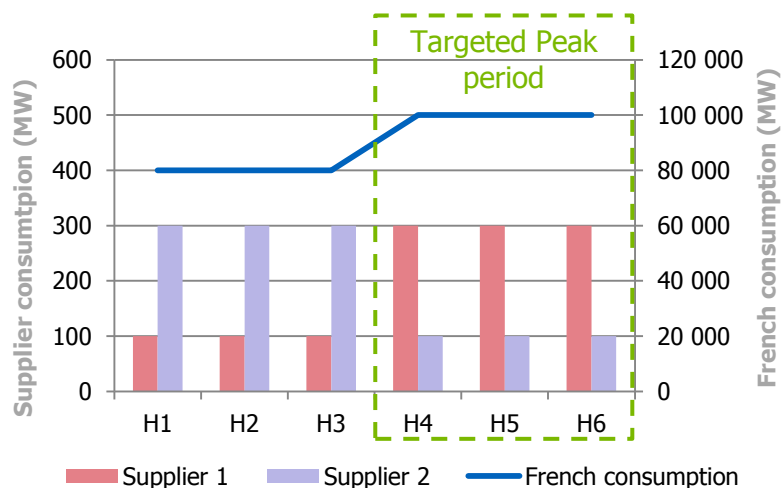


DR in the obligation process to tackle the peak load issue

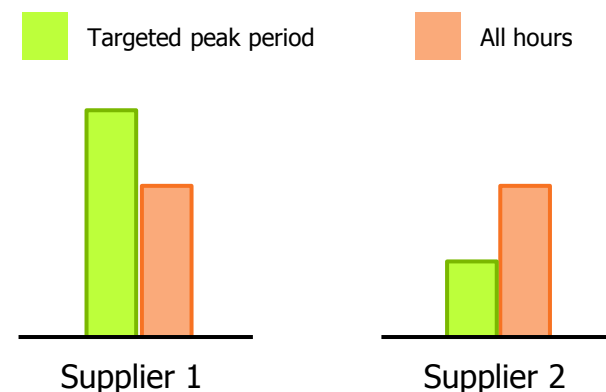
Complementary participation possibilities of DSM is essential to induce a virtuous evolution of load patterns to tackle the peak load issue

Obligation peak period is **limited in size** and **targets** in priority **the more consuming hours** (consistent with an extreme cold event and stimulation of DSM)

Individualized process and parameters as a golden rule to induce evolution of load patterns (gradient determination, realized consumption...)

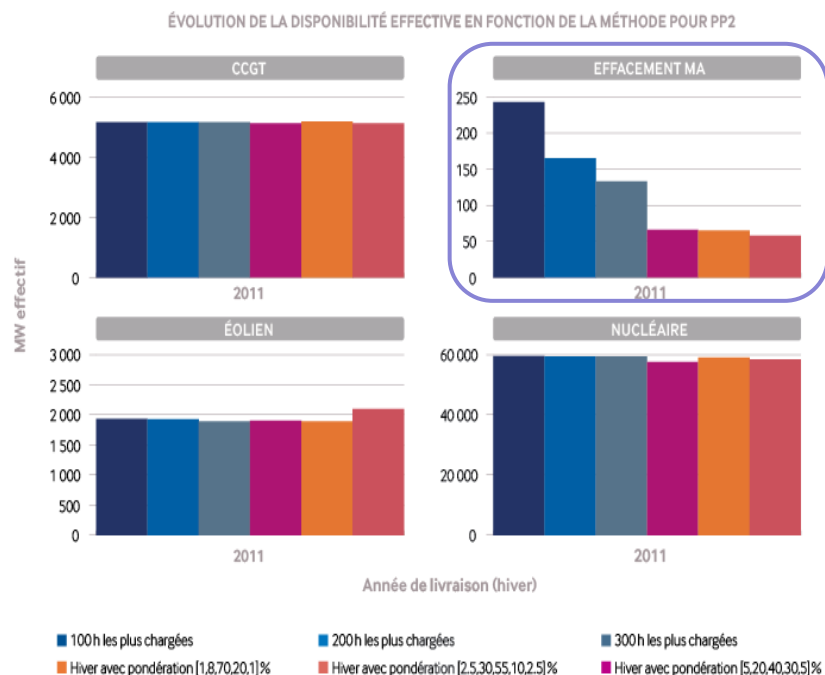


Capacity Obligation



DR in the certification process : right contribution to SoS

Availability during the targeted period when the risk for the system is maximum reveals the real contribution of DR to Security of Supply

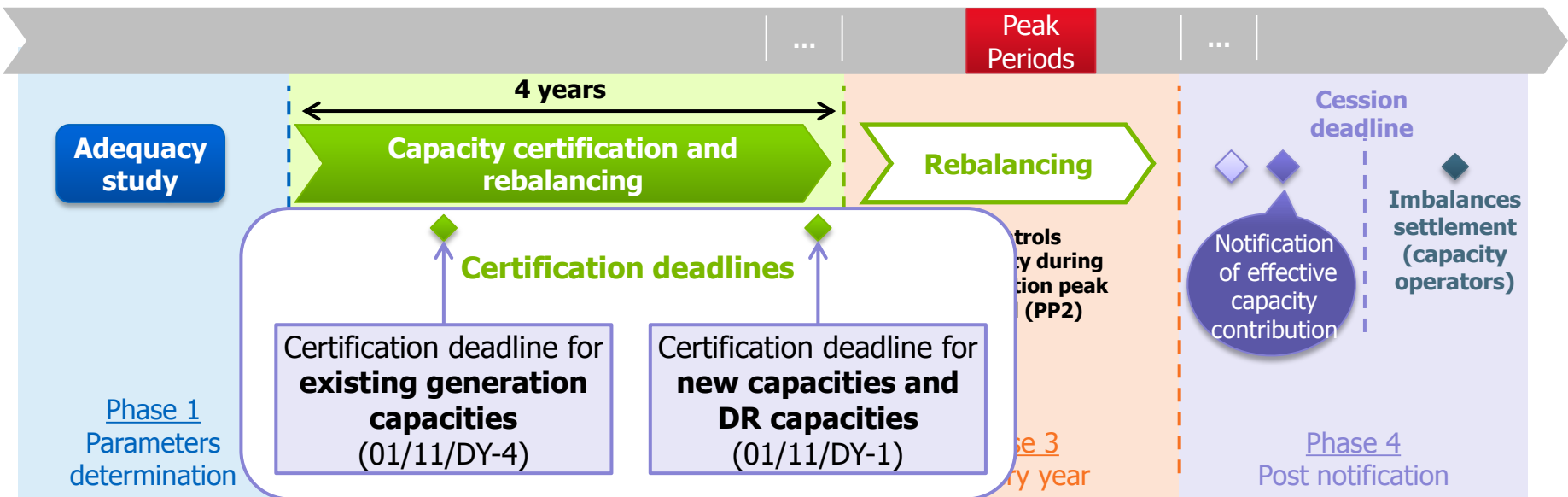


Reliability commitment consistent with loss of load events reveals the real contribution to Security of Supply

→ The technical criteria proposed by RTE fully recognize DR participation

Certification process adaptation to promote DR participation

Certification deadlines that give **forward adequacy signals** and **allow short lead time capacities especially DR to fully participate**



Proposed certification choice **remove any technical barriers for DR participation**

Aggregation of capacities is facilitated with a low threshold of aggregation (1MW) and the possibility to be connected to multiple distribution and transport grids

2014 : a milestone for DR participation

2014: achievement of the 3-years program to open all markets in France to explicit DR participation

2014

1

01/01/14 - NEBEF
direct valuation of
DR in energy
markets

2

01/07/14
Ancillary Services
opening to DR
participation

3

01/11/14
French capacity
mechanism starts
fully opened to
DR

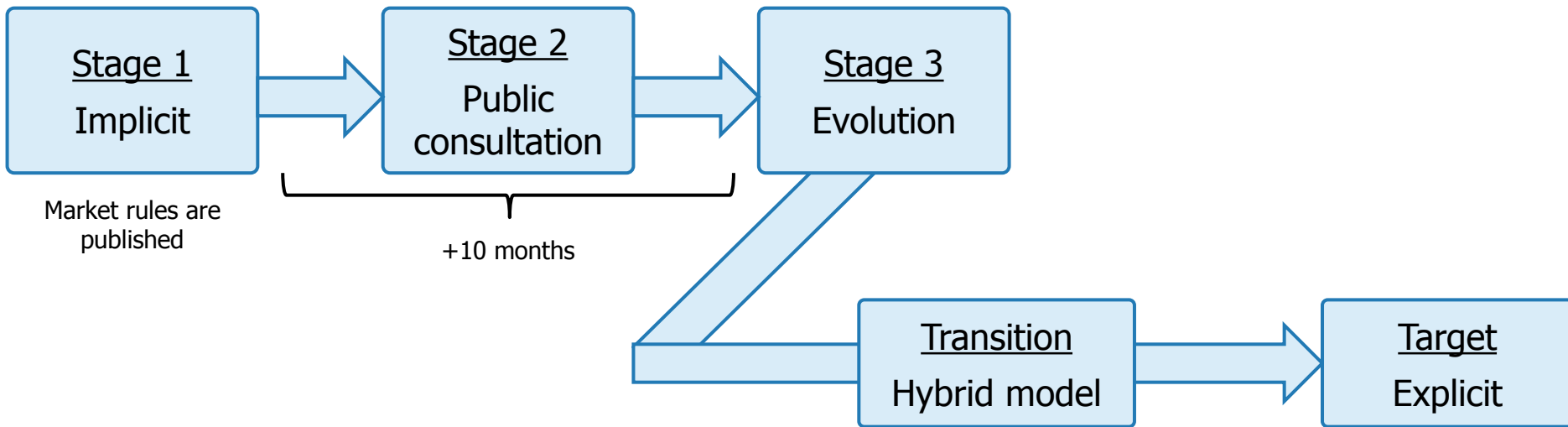
The French capacity mechanism is embedded in a policy aiming at promoting demand response (see last SEDC report)

FOCUS

**EUROPEAN
INTEGRATION :**

**ROADMAP FOR EXPLICIT XB
PARTICIPATION**

Roadmap for explicit XB participation



Explicit XB participation in the Capacity Market is the target

However, transitory solutions can be considered for fast implementation, with lower expectations

Regional approach is a pragmatic way forward

Three pillars to design a solution

Preservation of the IEM

The integration of the energy market has required a decade of efforts, and delivers huge benefits. It must be preserved.

Different national choices on SoS

Harmonization of SoS levels would make things easier, but it is not a realistic prerequisite. Different SoS levels must be possible.

Real added value for SoS

XB participation makes sense economically only if the contribution of a foreign capacity is equivalent to the contribution of a French capacity

Roadmap (to be discussed): key principles for the solution

1. Compatible with different levels of SoS
2. Without reserving interconnection capacity
3. Limited by physical import capacities, allocated with a market based process

Target model

4. Conditional to the existence of a XB certification & control process
5. Conditional to the existence of a cooperation framework on SoS

Transition phase

6. Conditional to the participation of foreign capacities to the French Balancing Market

Second best but more reasonable at medium term and compatible with regional approach

Thank you for your attention