



20 February 2018 - Confrontations Europe Seminar - Is Balancing Responsibility Renewable-Proof ?

# **INTEGRATION OF RENEWABLE ENERGY SOURCES IN THE GRID**

## **Short and Medium Term Perspectives for Electricity Market Design**

**Vincent Thouvenin** - Director for European Affairs



# Deploying Renewable Energy in Europe

## 2004 - 2018 : A European Success Story

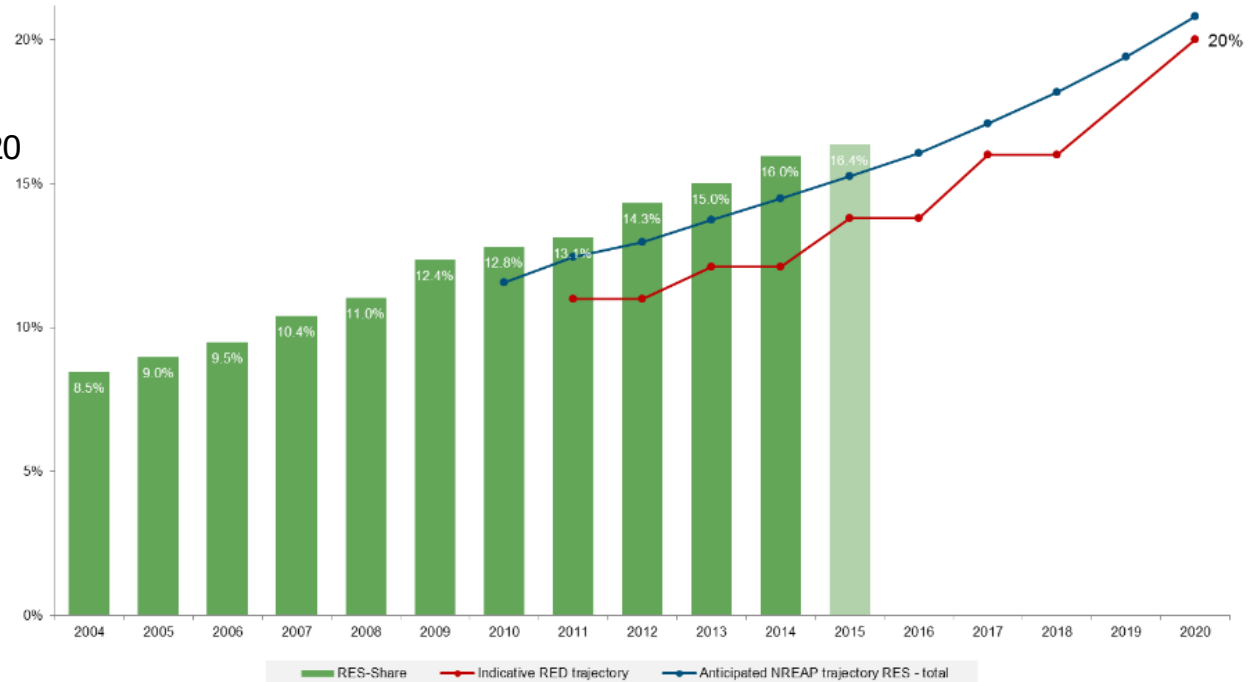
Political Objectives

20% Gross Final Consumption by 2020

Public Support Schemes

Positive Results :

Gross Final Consumption →



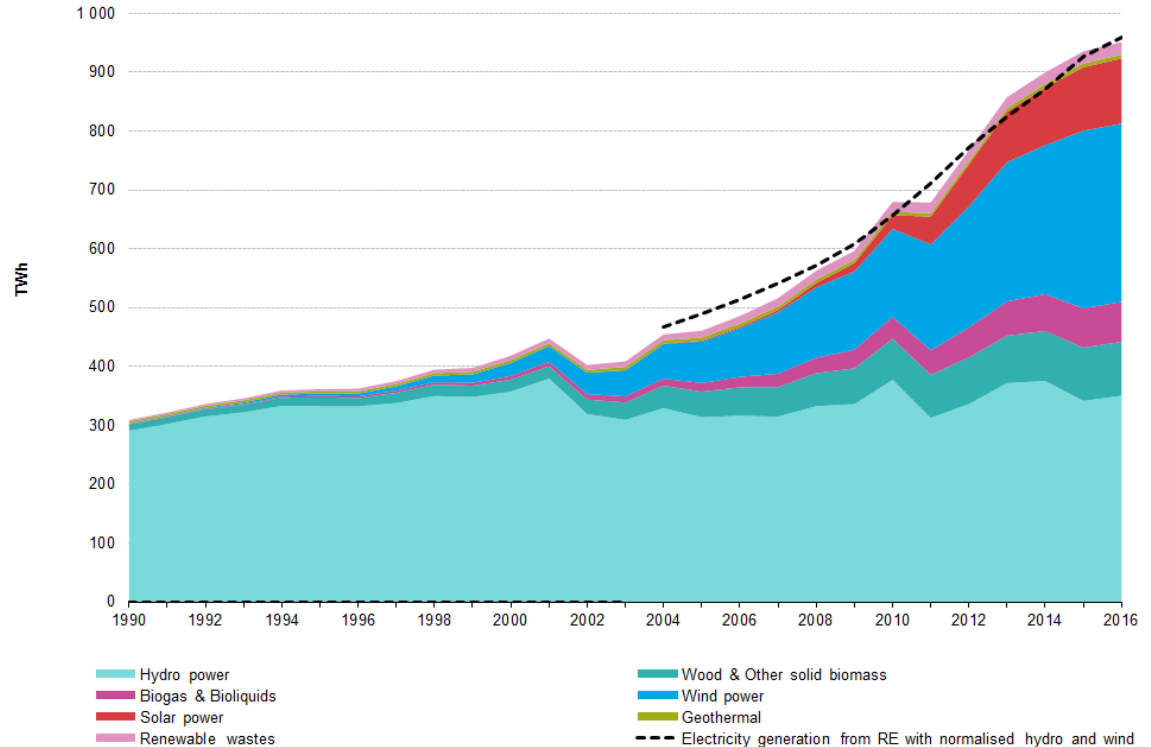
Source : European Commission based on Eurostat and Öko-Institut (2017)



# Deploying Renewable Energy in Europe

2004 - 2018 : A European Success Story

Positive Results :  
Gross Electricity Generation →



Source : Eurostat (2018)



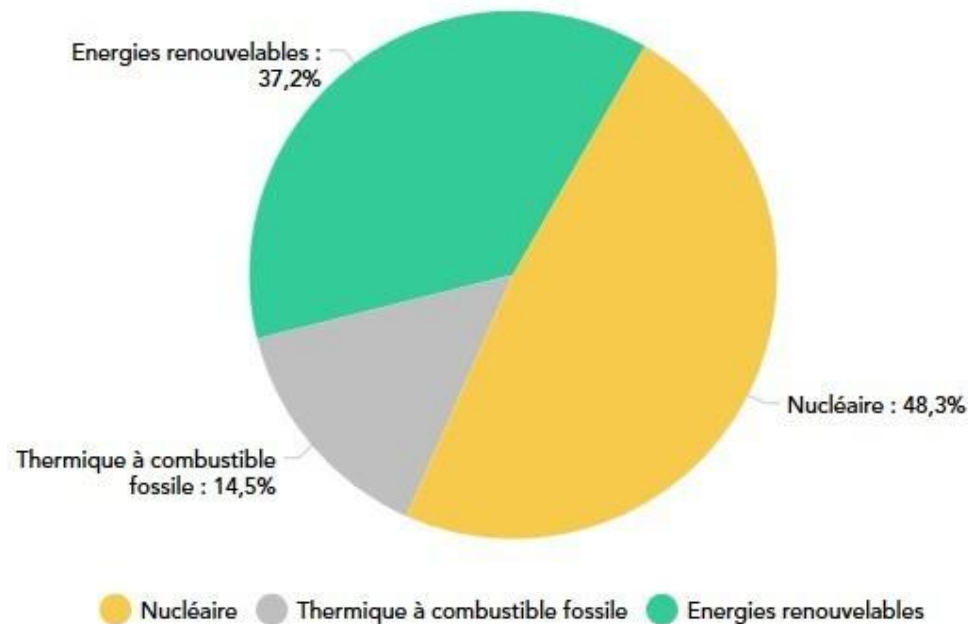
# Deploying Renewable Energy in France

Installed Renewable Generation Capacity in France (31/12/2017)

2017 : 48 672 MW

+ 2 763 MW

For Real-Time Data :

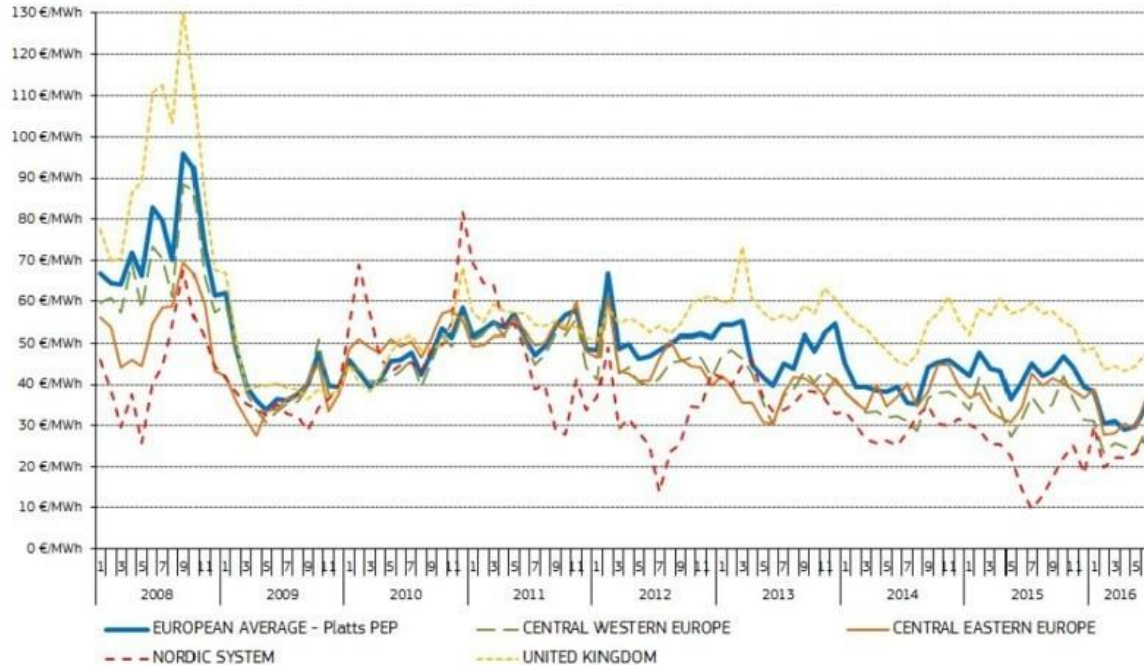


Source : RTE (2017)



# Towards Ineffective « Energy Only » Price Signals ?

## Decreasing Wholesale Prices



Negative Prices

Ineffective Price Signals

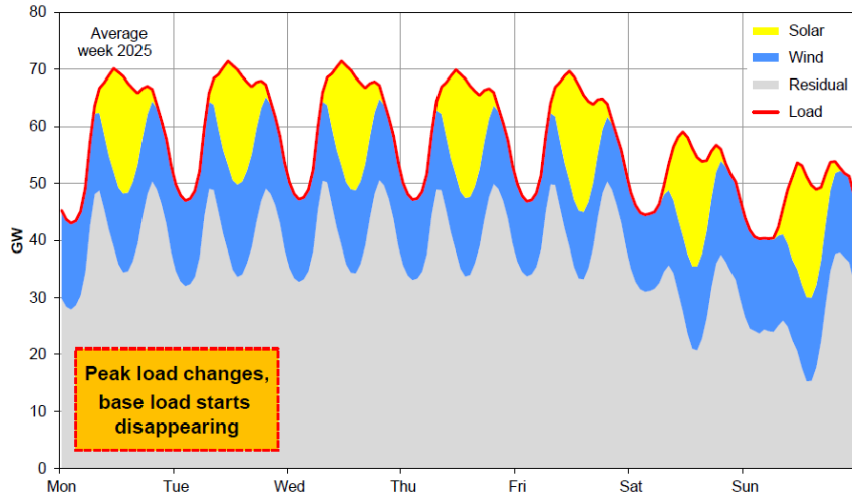
Implications for Security of Supply

Source : Platts and European Power Exchanges (2017)

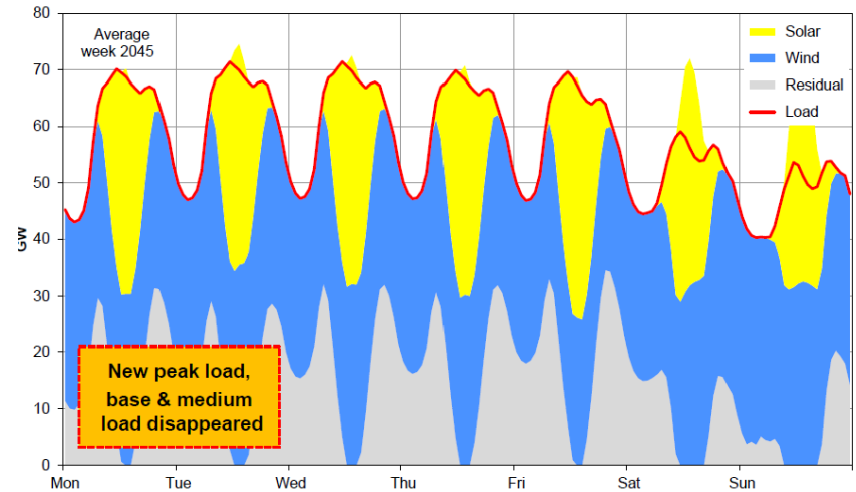
# Towards Ineffective « Energy Only » Price Signals ?

Shifting Fossil Generation from Baseload to Peakload

In 2025 :



In 2045 :



German Example : Forecast Power Generation from Renewable and Conventional Plants for an Average Week

Source : Felix Matthes from Öko-Institut Berlin



# Solutions : a Flexible and Responsible System

Medium Term Solutions : « Security of Supply » Investment Incentives

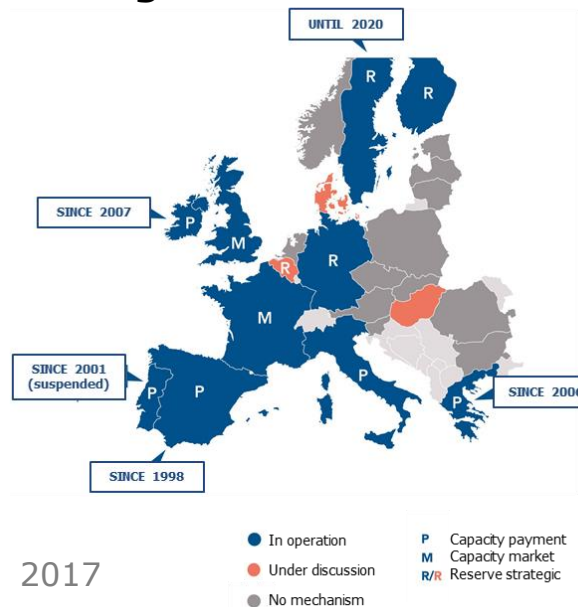
## Mitigating the Insufficiencies of the “Energy Only” Market Price Signal

Various “Capacity Mechanisms” Set Up in Member States

→ Adapted to Given Local Conditions

Focus on the French Capacity Market

- Market-Based
- Technology-Neutral
- Capacity-Wide
- Forward-Looking





# Solutions : a Flexible and Responsible System

## Short-Term Solutions : Tapping into New Flexibility Sources

### Demand-Response as a Resource on the Market

- From Both Industrial Consumers and Households
- Affordable and Sustainable Solution



French Market Mechanism

→ Level-Playing Field for Consumers

→ Benefits for System Security



MARKET  
INTEGRATION

AGREGGATION

INDEPENDANCE

Source : smartEN (2017)





# **Solution : a Flexible and Responsible System**

## Short-Term Solutions : Reviewing Electricity Market Design

### **Short-Term and Balancing Markets Inter-Related Objectives**

- European-Wide Market Integration and Development of Renewable Energy Sources
- Grid Operation Safety under Local Conditions
- At a Reasonable Cost for Consumers

### **Electricity Balancing Network Code Implementation**

- e.g. towards Single European Platforms for Each Product : aFRR / mFRR / RR

### **Clean Energy Package under Discussion**

- Risk that “Over-Detailed, One-Size-Fits-All” Market Rules May not Consider all Objectives
- e.g. European Parliament Proposal on Gate-Closure Time Decrease from 60’ to only 15’

# Solutions : a Flexible and Responsible System

Medium to Long Term Solutions : Innovation & Investments

## Storage

- Batteries
- Electric Vehicles



RTE : Ringo Demonstrator for Grid Operation (2017)

## Smart Grids

- Digitalisation

## Interconnectors

- European Solidarity
- Market integration

**Welfare Surplus : CBA > 0**

