

# Balancing the interests of investors and consumers – an economist's perspective

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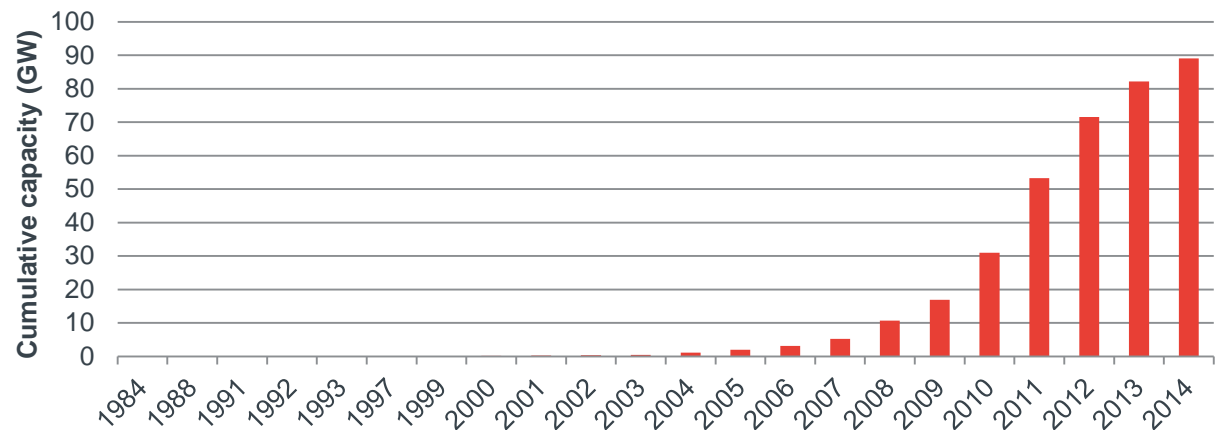
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# Root of the problem: using administrative prices in a market based world...the case of support for solar PV

## Administrative prices in market world

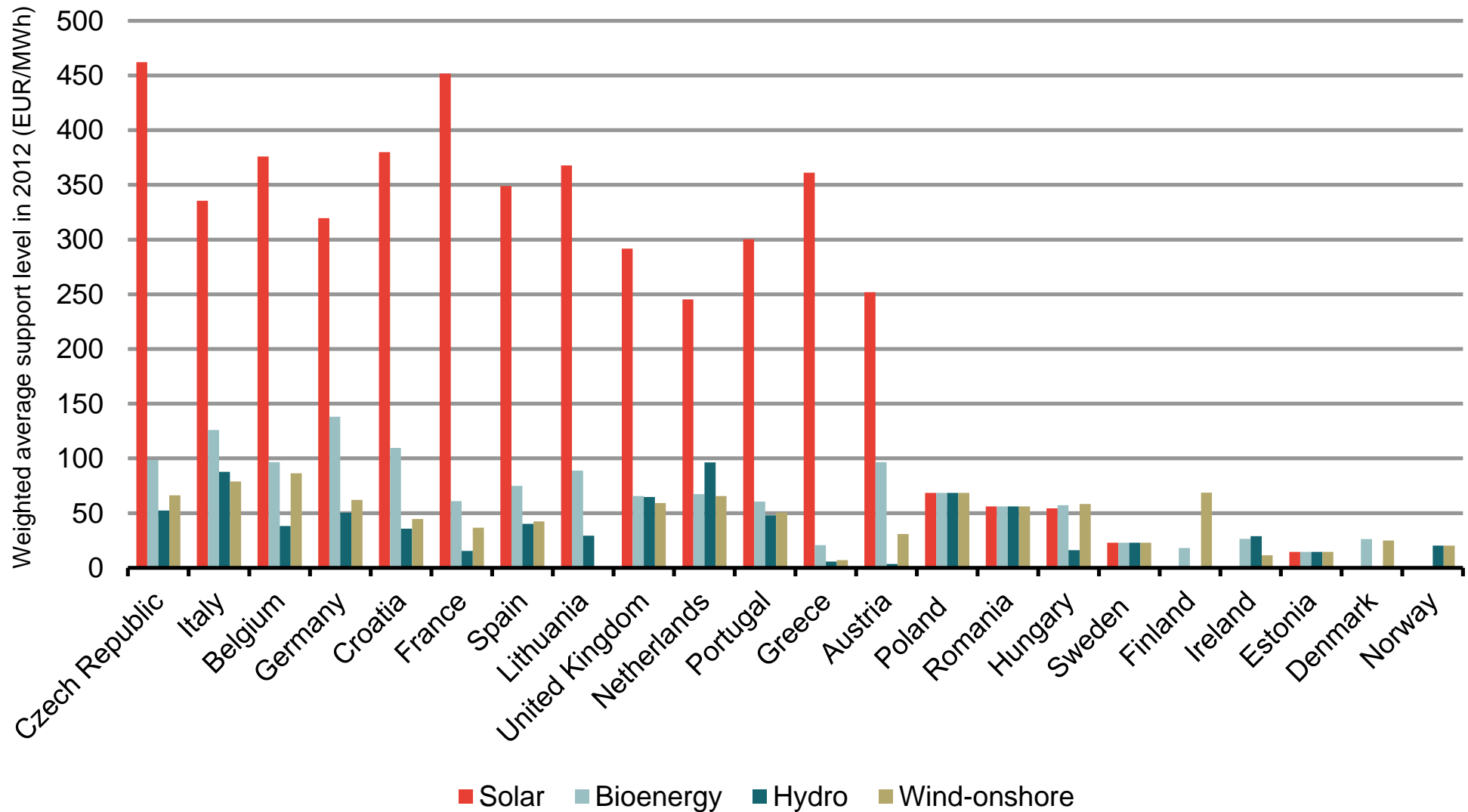
- A nimble market may be able to respond to change very quickly
- If costs fall quickly, authorities do not necessarily keep up

When renewable support schemes were designed, there was very little experience with PV support



- PV received the highest support, reflecting its historically high costs
- Costs plummeted unexpectedly, tariffs did not keep up and investors piled in
- The financial consequences for consumers / tax-payers were potentially huge

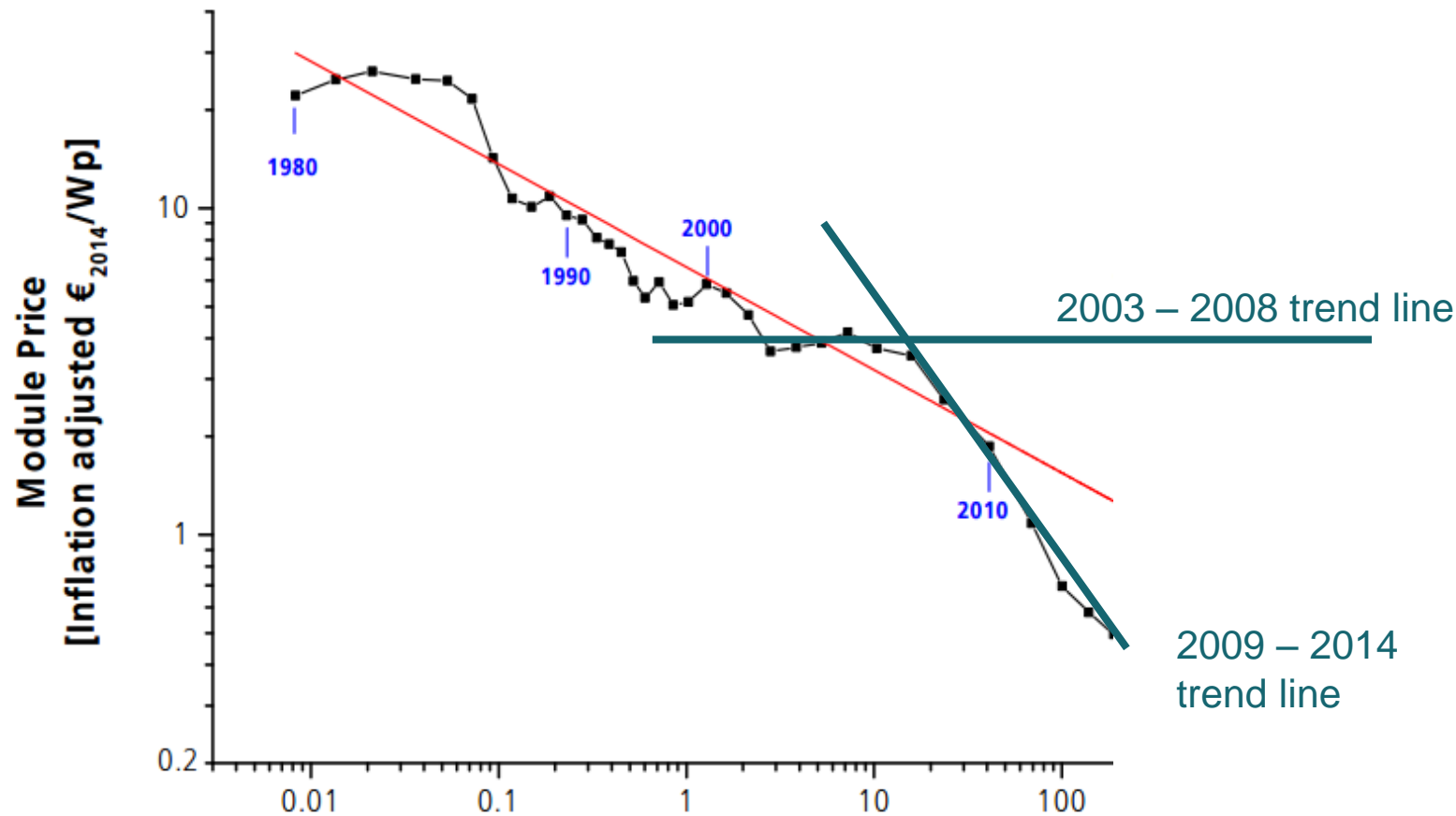
# PV was historically by far the most expensive RES technology...



Source: CEER, Status Review of Renewable and Energy Efficiency Support Schemes in Europe in 2012 and 2013, Table 7

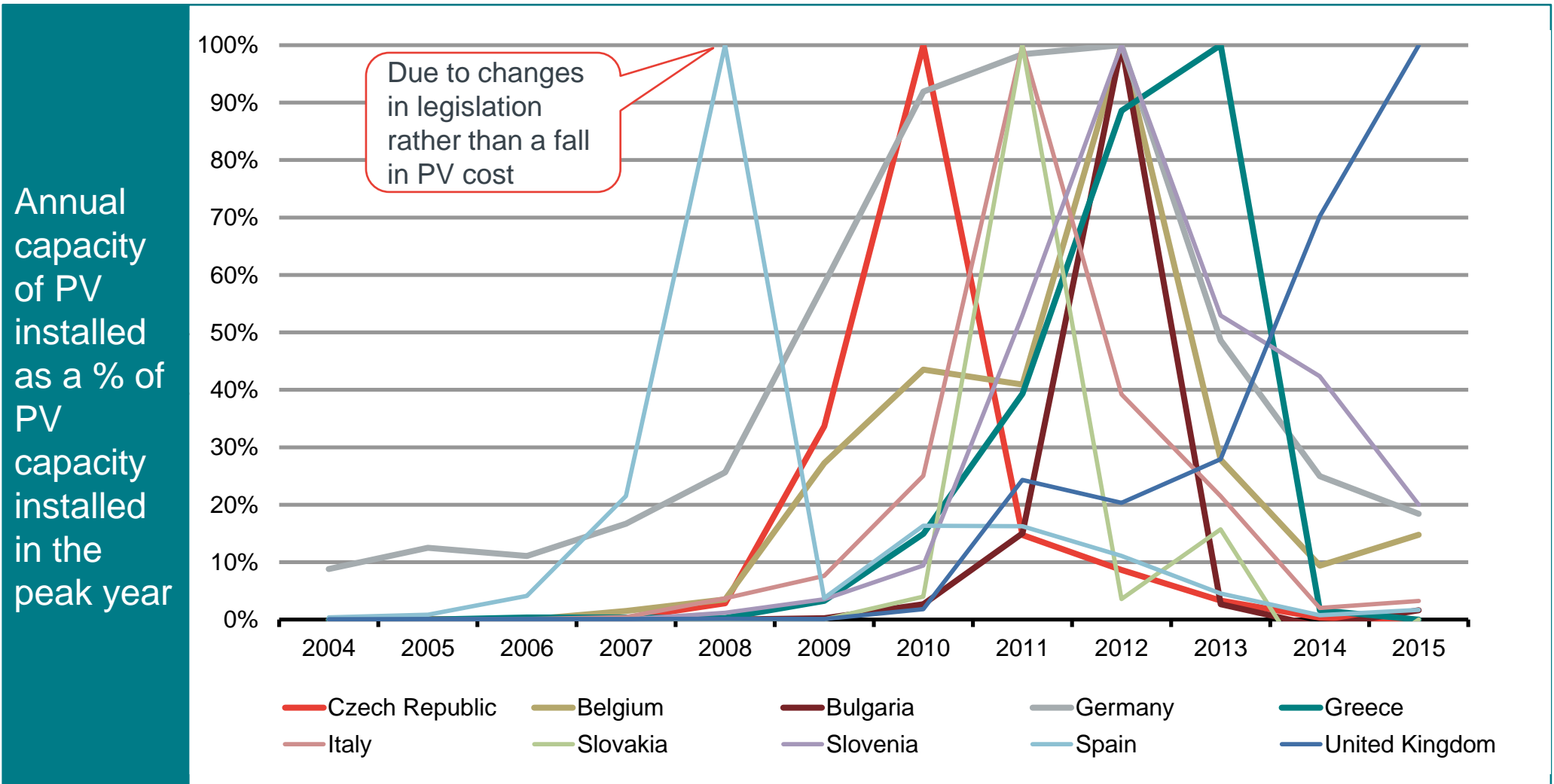
There was a dramatic and unexpected fall in the cost of PV modules, starting in late 2008...

Even though costs were expected to fall, what happened over the years 2009 and 2010 was a much sharper decline than the trend line...



Source: Fraunhofer, Photovoltaics Report from 17 November 2015, p. 41

# Decrease in costs meant a rapid response by investors due to the short lead time of PV...

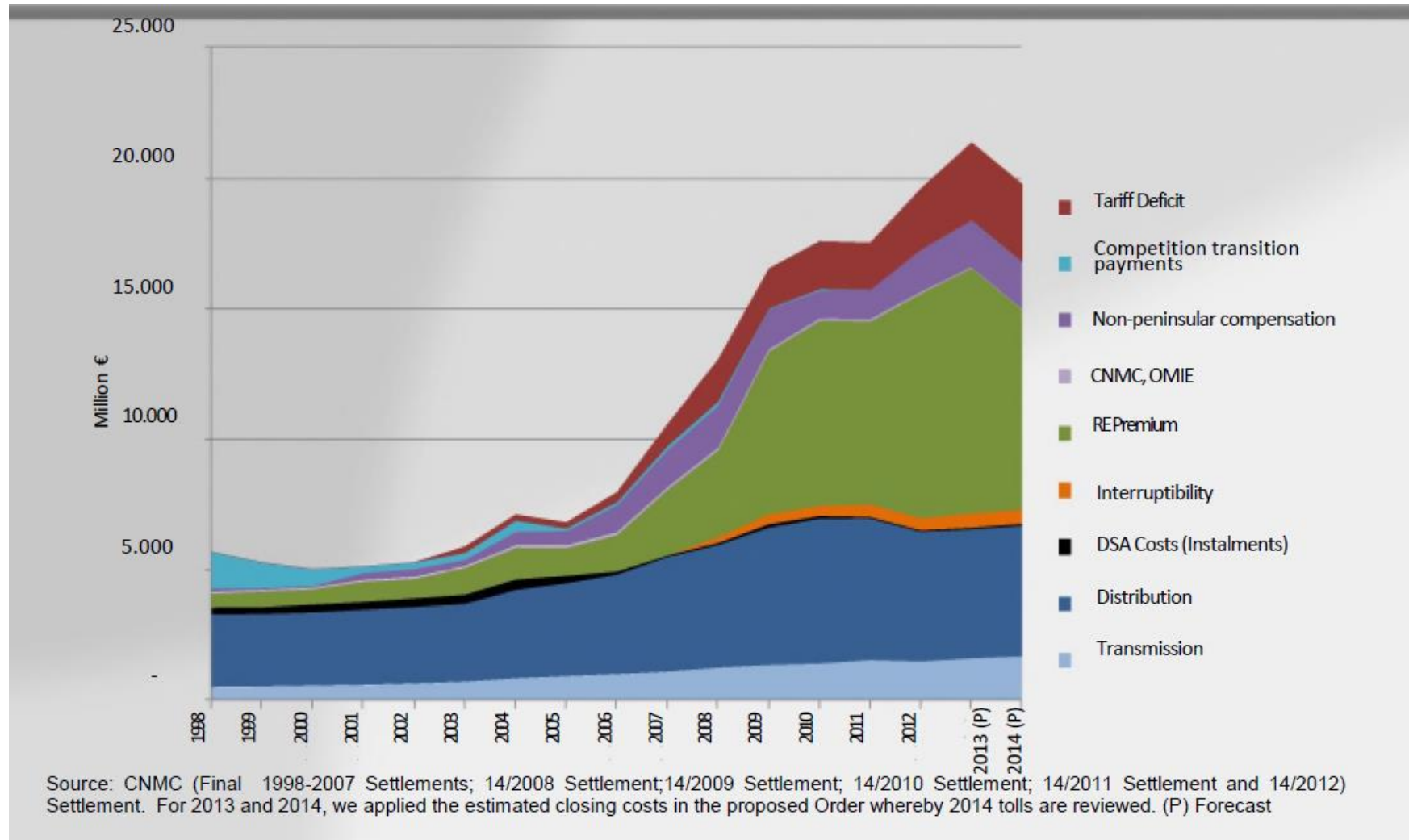


Source: IRENA database

... leading to unintended PV 'booms' in many European countries.

# The rush to invest meant a considerable impact on consumers and tax payers... Example Spain...

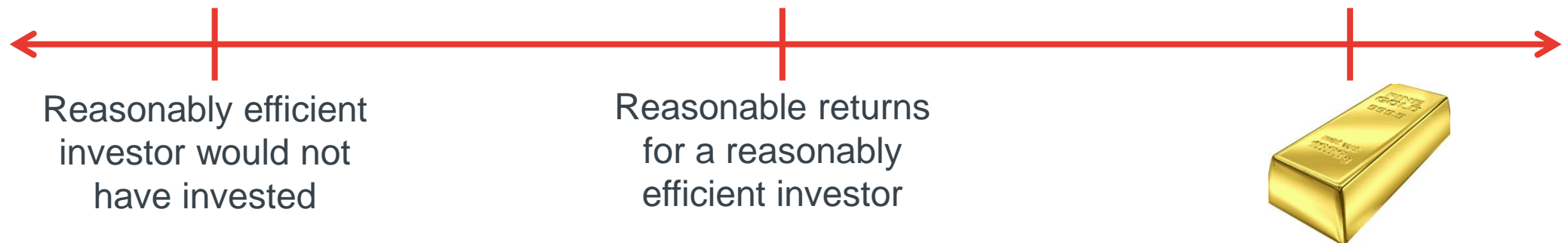
## Evolution of regulated components of electricity price in Spain



# What is a reasonable response by Government?

Governments / regulators are entitled to balance the interests of consumers and investors

- Subject to the legal or contractual framework



Mistakes happen... it's what you do next that matters!

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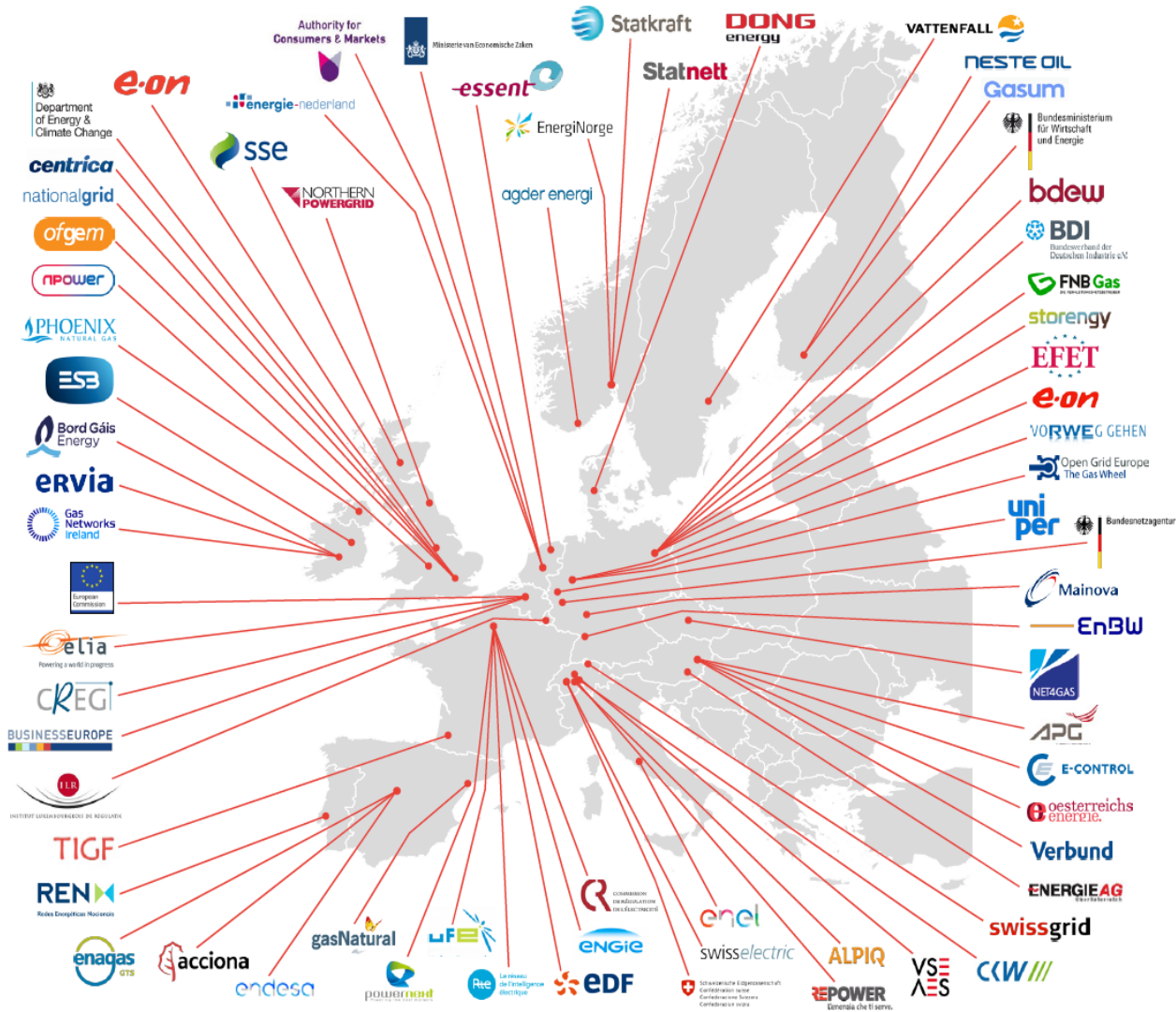
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- Presented testimony before a wide variety of arbitrations including, ICSID, UNCITRAL, the PCA, SCC, VIAC, ICC, as well as national courts and regulatory bodies
- Regularly acts as expert witness in disputes and arbitral hearings, including recent RES arbitration cases, for example:
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  - Republic of Bulgaria v. EnergoPro
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  - The Czech Republic v. Antaris (and others)
  - The Czech Republic v. Natland (and others)
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