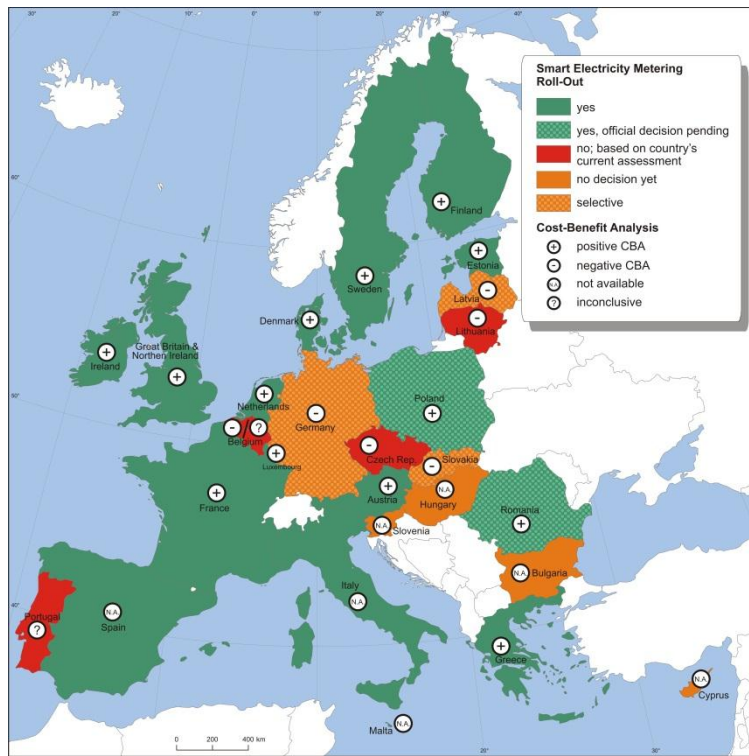


# Cost Benefit Analyses to effectively deploy smart metering in EU



[www.jrc.ec.europa.eu](http://www.jrc.ec.europa.eu)

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*Serving society*

*Stimulating innovation*

*Supporting legislation*

# JRC scientific support to EC smart grids policies

JRC Inventory of Smart Grids projects in EU

2011 – 2012

JRC Cost Benefit Analysis methodologies on Smart Grids and Smart Metering

2012-2013

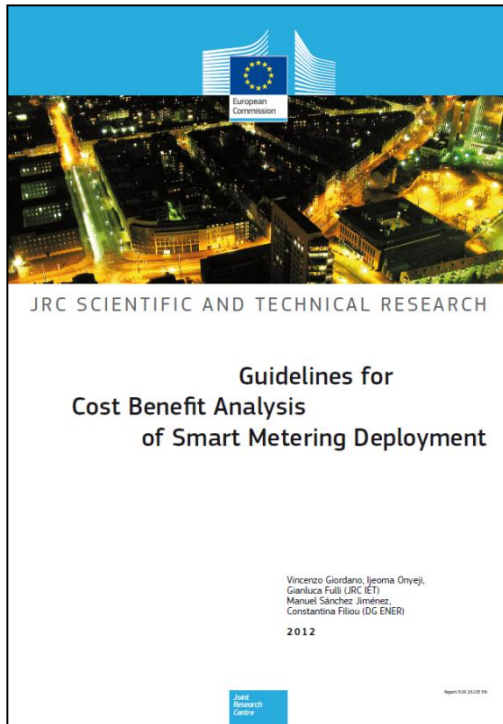
JRC assessment of Projects of Common Interest in the field of Smart Grids

- EC Communication on Smart Grids: from innovation to deployment

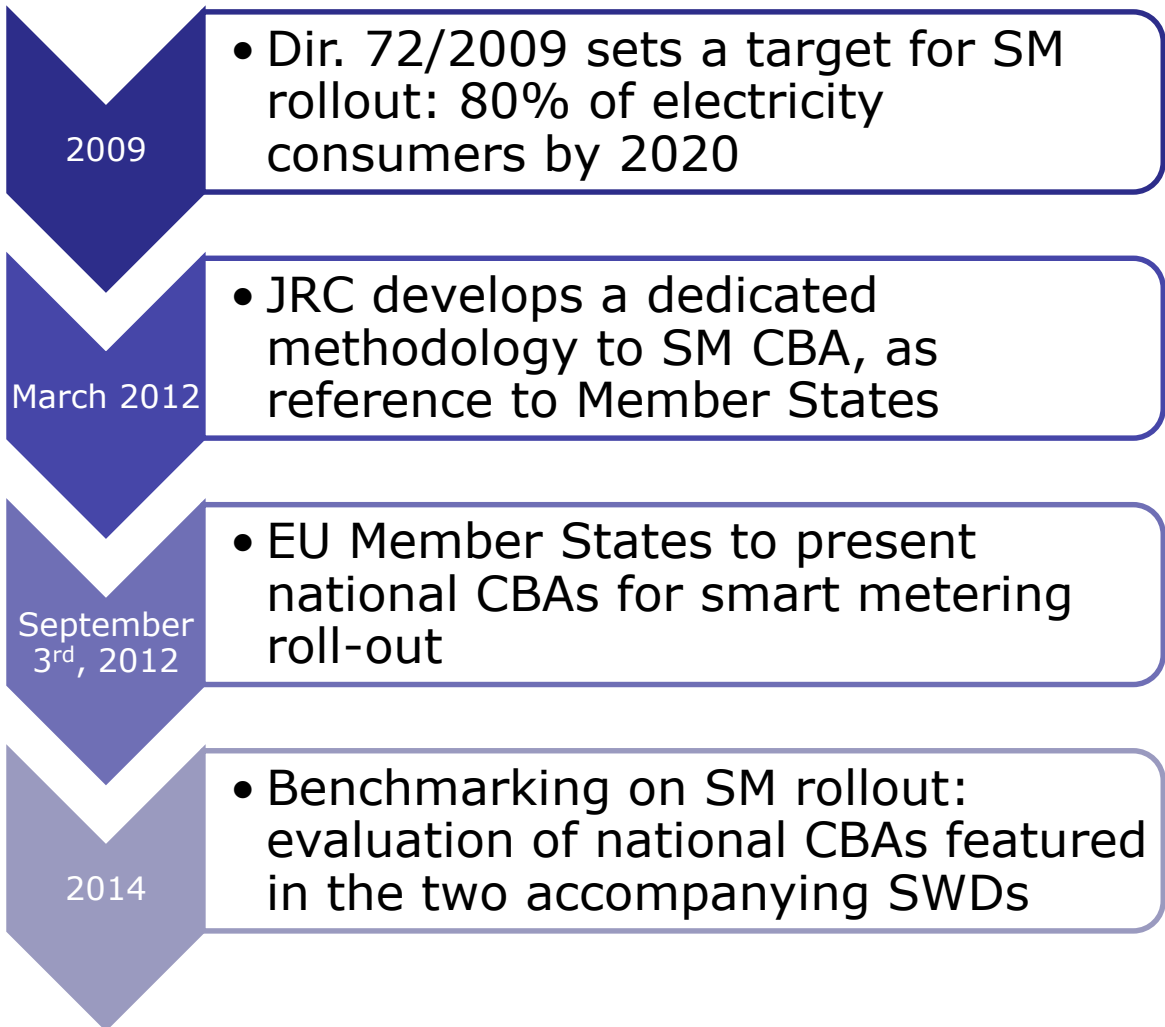
- EC Recommendation on Smart Metering Deployment

- List of Projects of Common Interest, including 2 Smart Grids projects, according to Reg. 347/2013

## JRC scientific support to smart metering deployment in EU



30 June 2014

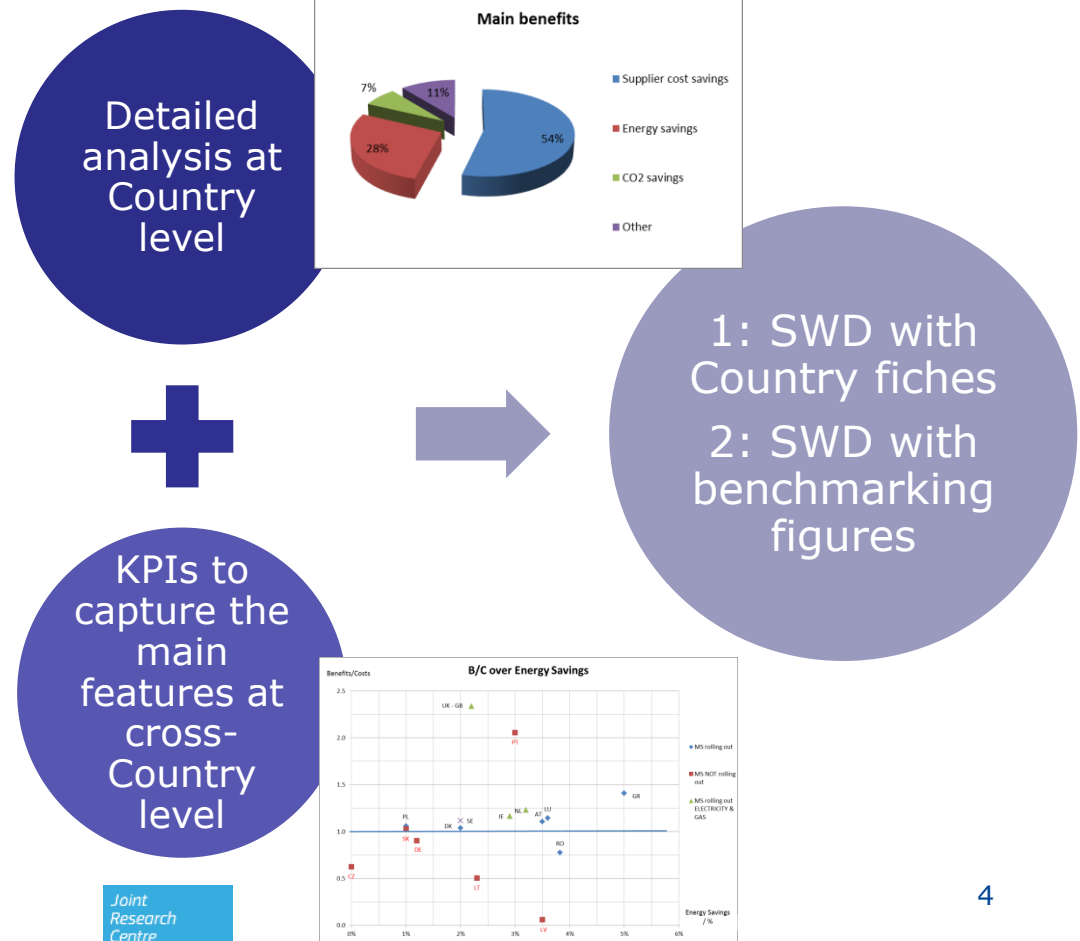


## JRC methodological approach

Important differences  
in national CBAs:

- baseline conditions
- time horizons
- actualization/  
discounting  
frameworks
- roll-out plans  
features

To overcome these difficulties, JRC  
combined two analyses:



## Example from UK fiche

### Example: Detailed Country fiche

Each fiche includes:

- Main CBA hypotheses
- Main sources of Costs and Benefits considered at national level
- Roll-out timeline

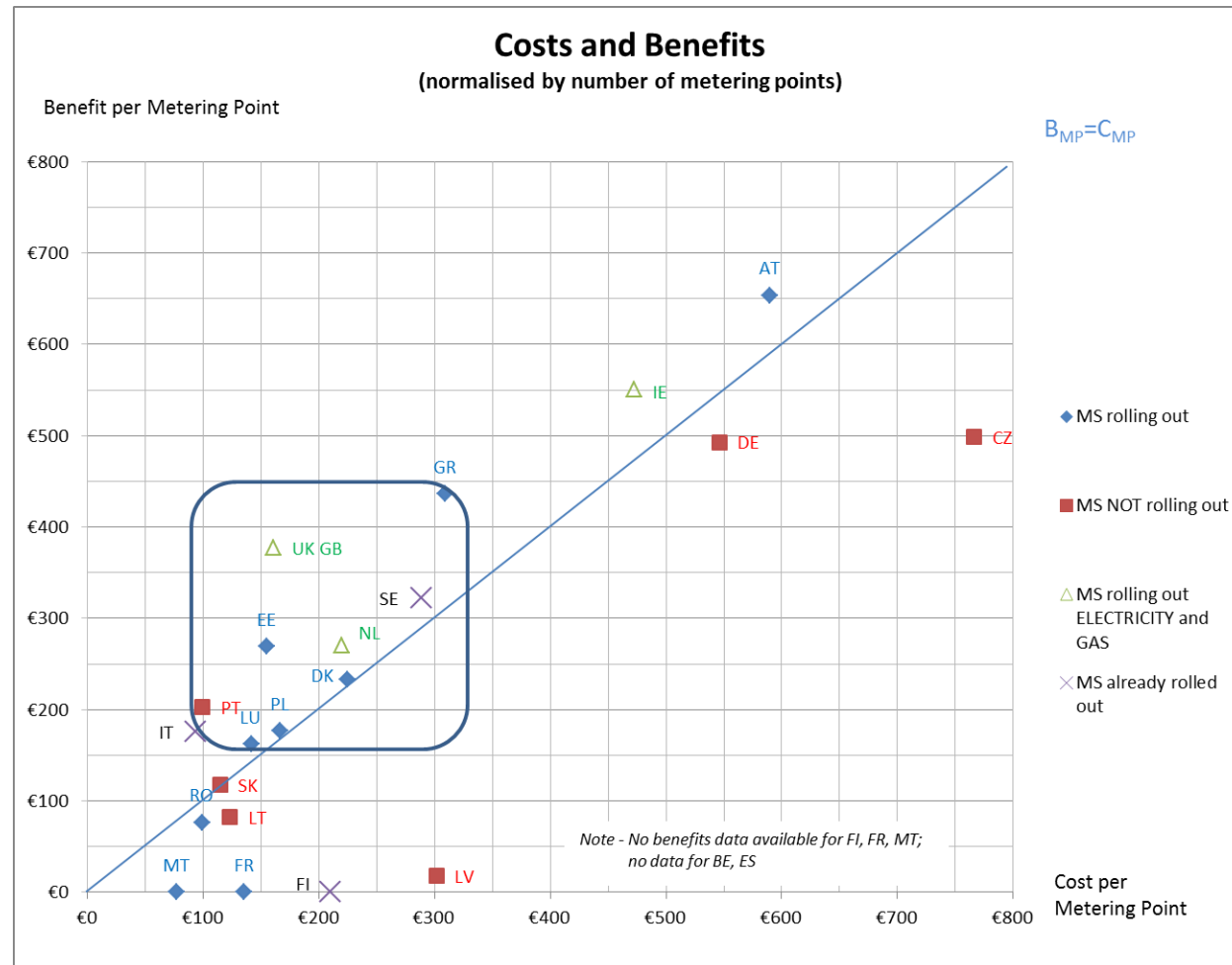
#### CBA BOUNDARY CONDITIONS

<b>Scenarios</b>	Counterfactual scenario; Central scenario
<b>Number of metering points in the Country</b>	59.6 million electricity and gas to be replaced – 32.94 for electricity and 26.63 for gas, by 2030 (total number of metering points by 2030 = 63.8 million)
<b>Common minimum functionalities (as proposed in EC Recommendation 2012/148/EU)</b>	Full compliance with all functionalities of the EC Recommendation (2012/148/EU) <sup>1</sup>
<b>Implementation speed</b>	2012-2020
<b>Penetration rate by 2020</b>	97% assumed in CBA for modelling purposes; 100% by 2030
<b>Discount rate</b>	3.5%
<b>SM lifetime</b>	15 years
<b>CBA Horizon</b>	18 years (2012-2030)
<b>Communication technology</b>	The Data and Communications Company (DCC) signed the first generation of communications contracts in September 2013. A range of technologies will be used including cellular and long range radio.

## Example: cross-Country KPIs

Each Member State reported **total costs and benefits** of its national SM roll-out plan

JRC normalised these figures **by number of metering points** (in 2020)



Wide-scale roll-out (at least 80% of consumers by 2020)	Metering Market	Deployment Strategy	Responsible party - implementation and ownership	Responsible party - access to metering data	Financing of roll-out
Austria	Regulated	Mandatory	DSO	DSO	Metering & Network tariffs
France	Regulated	Mandatory	DSO*	DSO	NA
Italy	Regulated	Voluntary + Mandatory	DSO	DSO	DSO resources + network tariffs
Malta	Regulated	Voluntary	DSO	DSO	Network Tariffs
Netherlands	Regulated	Mandatory w/ opt-out	DSO	DSO	Network Tariffs
Spain	Regulated	Mandatory	DSO	DSO	Network Tariffs + SM rental
Sweden	Regulated	Voluntary	DSO	DSO	DSO resources + network tariffs
United Kingdom - GB	Competitive	Mandatory	Supplier	Central Hub	Funded by suppliers

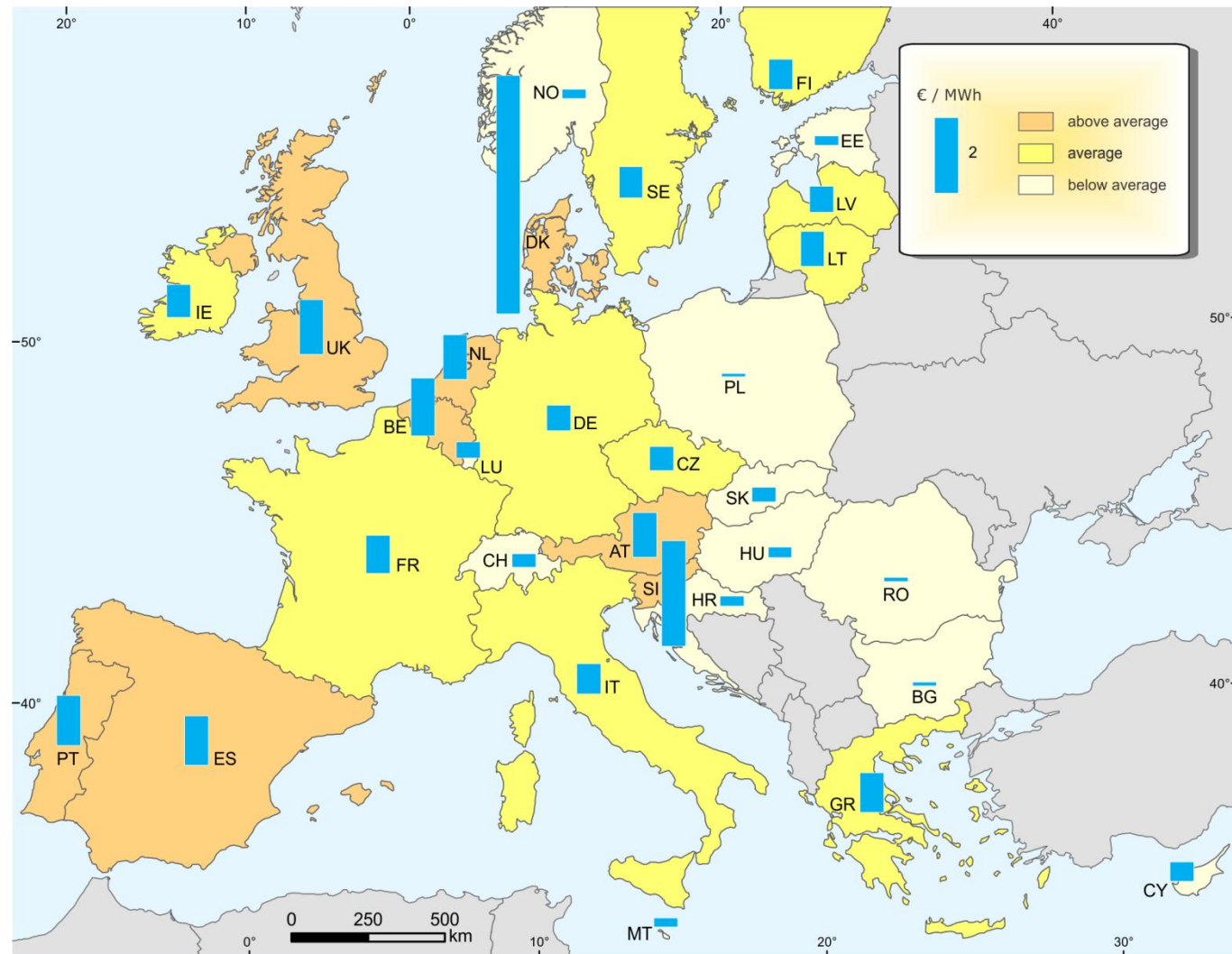
### Example of market arrangements and data management:

- DSOs platform or Central Hubs?
- Roll-out investment to be recovered through the network tariff?

## Highlights from 2014 JRC inventory

Some correlation  
between:

- *investment in Smart Grids projects* and
- *Country's decision to roll-out SM*
- ...with exceptions



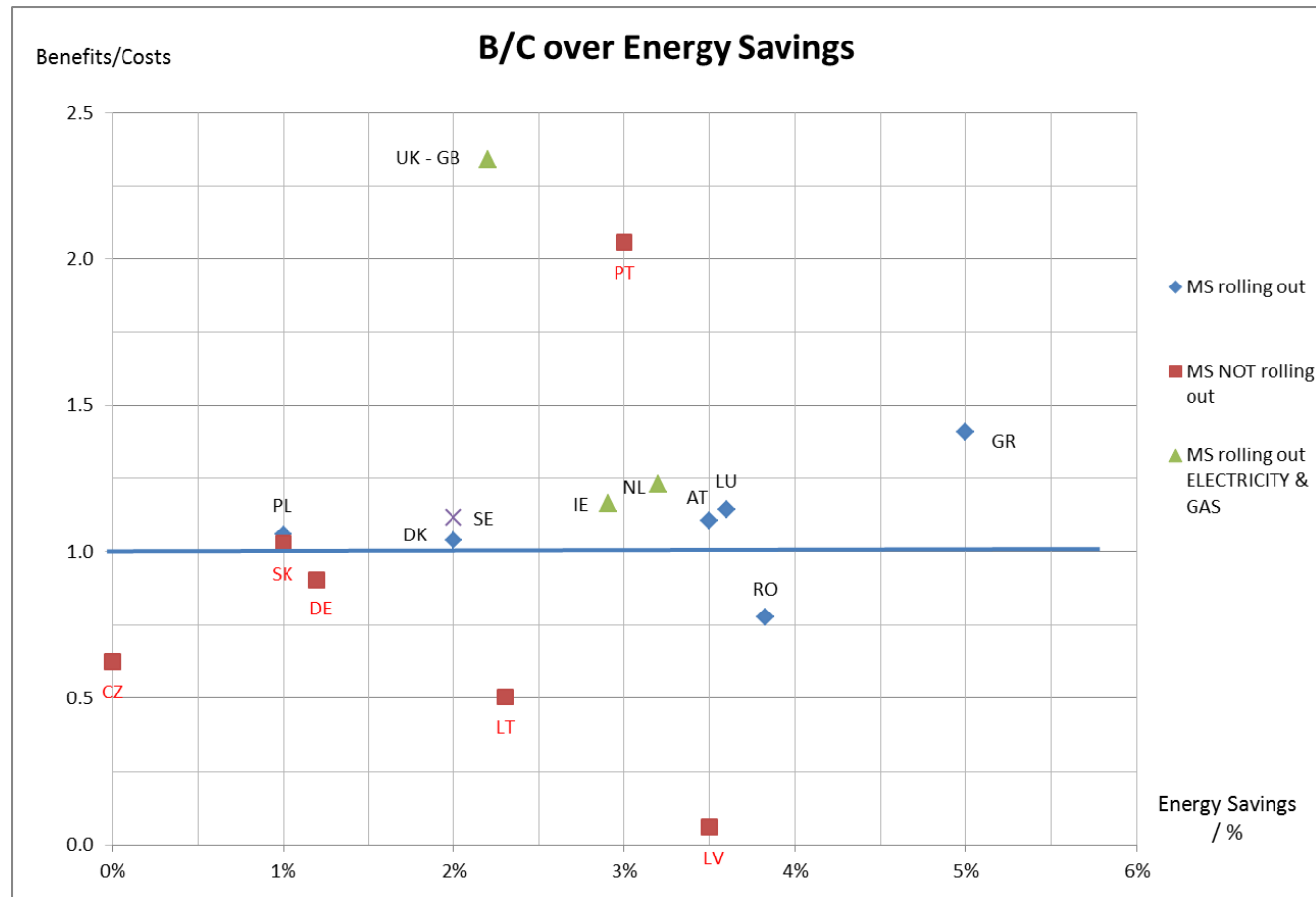


# Benchmarking of Smart Metering CBAs



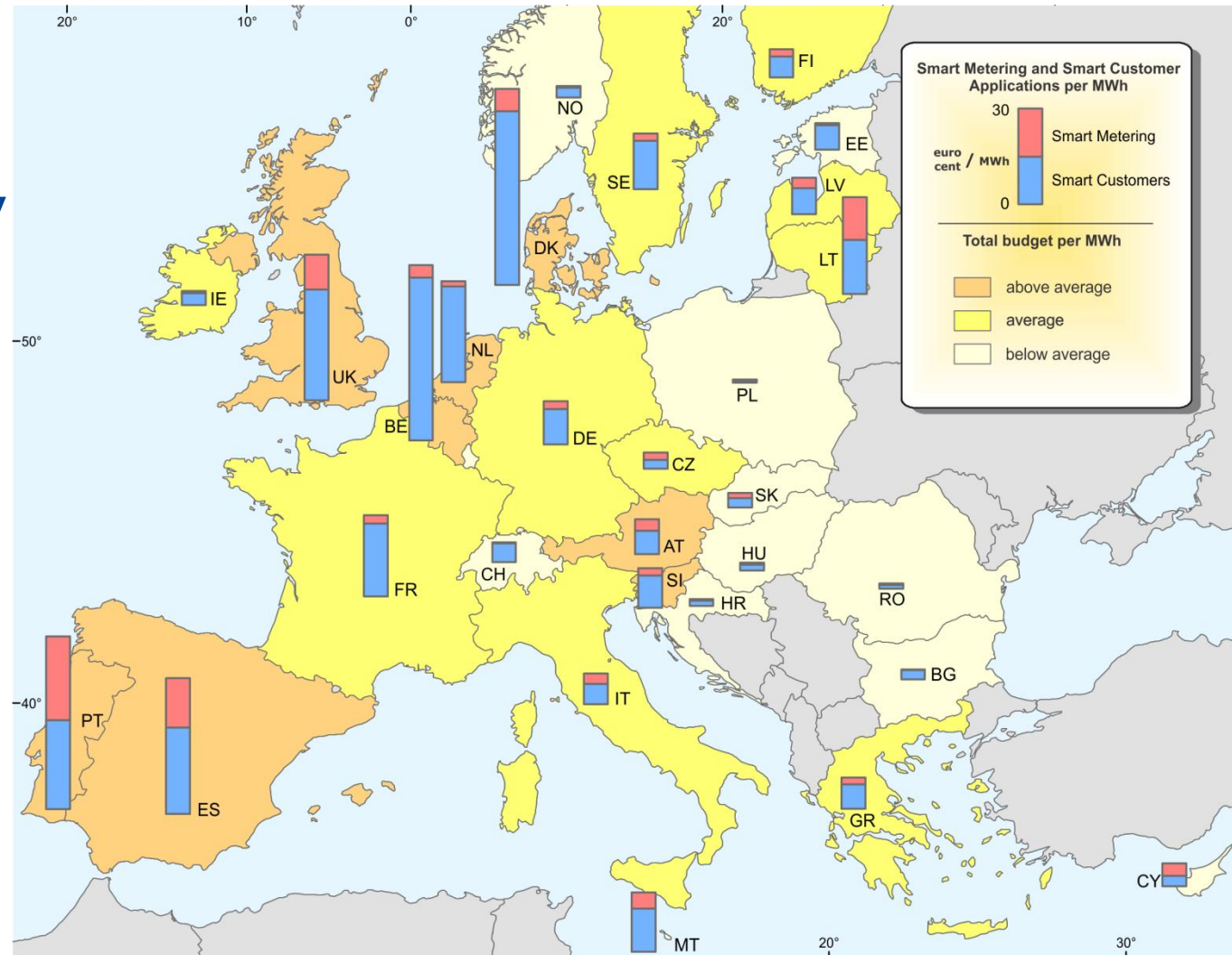
## Benchmarking the results of national CBAs

Do Countries who decided to roll-out estimated higher *energy savings*?



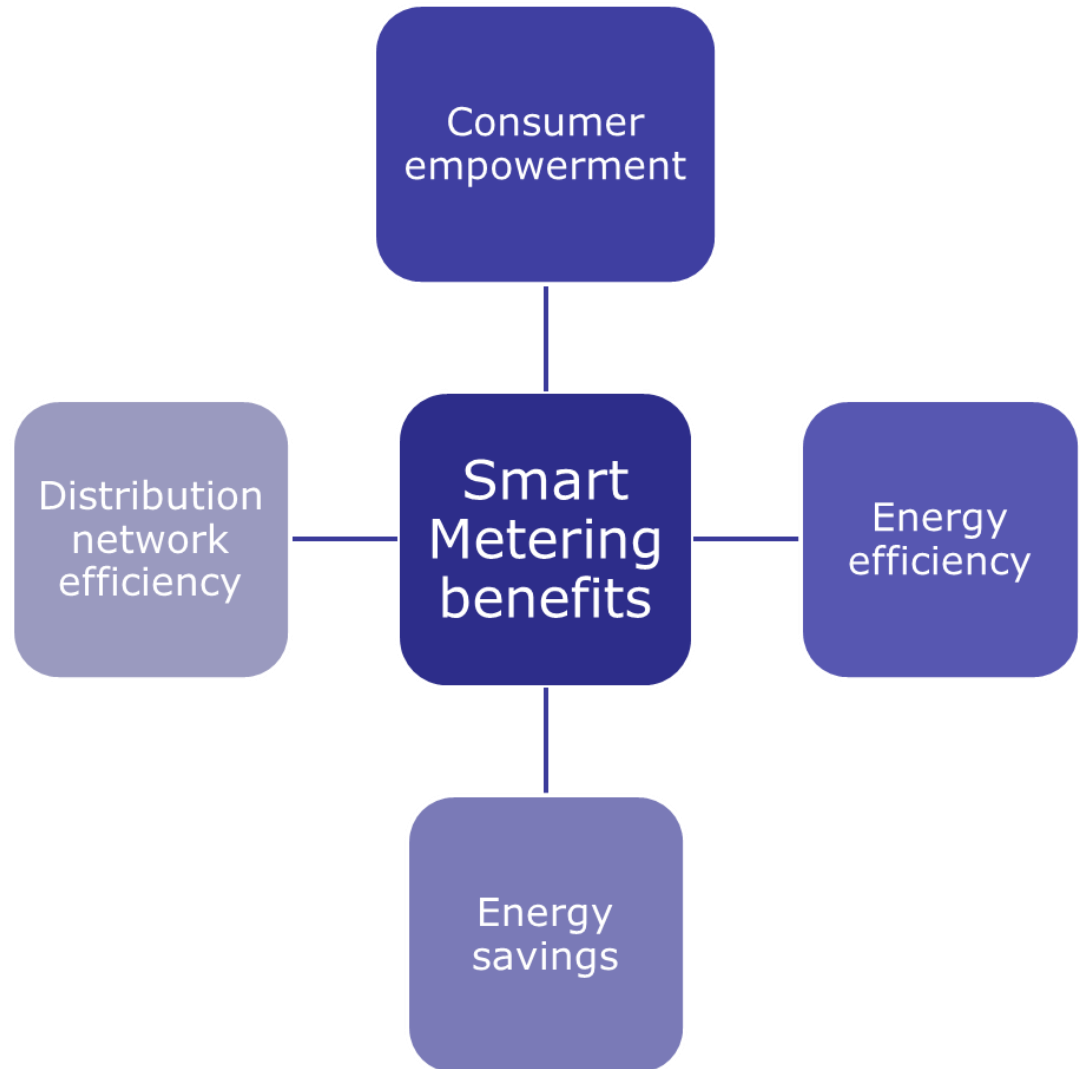
## Highlights from 2014 JRC inventory

- Did Countries investing in Smart Customers and Smart Metering projects decide to roll-out?



## Conclusions

- Enhance the CBA methodology:
  - *Detailed evaluation and benchmarking of benefits (DR, EE, SS, ES)*
  - *Integration with evaluation of Project of Common Interest / Smart Grids*



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