



# OPTIMATE

## Platform overview

Adrien Atayi – RTE

2015/10/27 - Brussels



Co-funded by the Intelligent Energy Europe  
Programme of the European Union



# Agenda

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- Context
- OPTIMATE Platform
- Example of studies
- Conclusion

- How to integrate variable renewable generation?
  - Assessing market designs...
  - ... And their impacts



→ Development of the OPTIMATE prototype  
within a co-financed EC - FP7 project ...

... a tool to compare short-term electricity market  
designs

# Context – FP7 consortium





# Context – FP7 project outputs

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- Outputs of the FP7 project (2009-2012)
  - A prototype (under almost perfect competition assumptions) with partial functional scope
  - Validation studies
- RTE is mandated by the FP7 consortium and the EC to exploit the project's results
  - Functional development of the prototype
  - Prototype exploitation (grant access to external users)
  - Industrialization of the tool



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# OPTIMATE Platform – Input

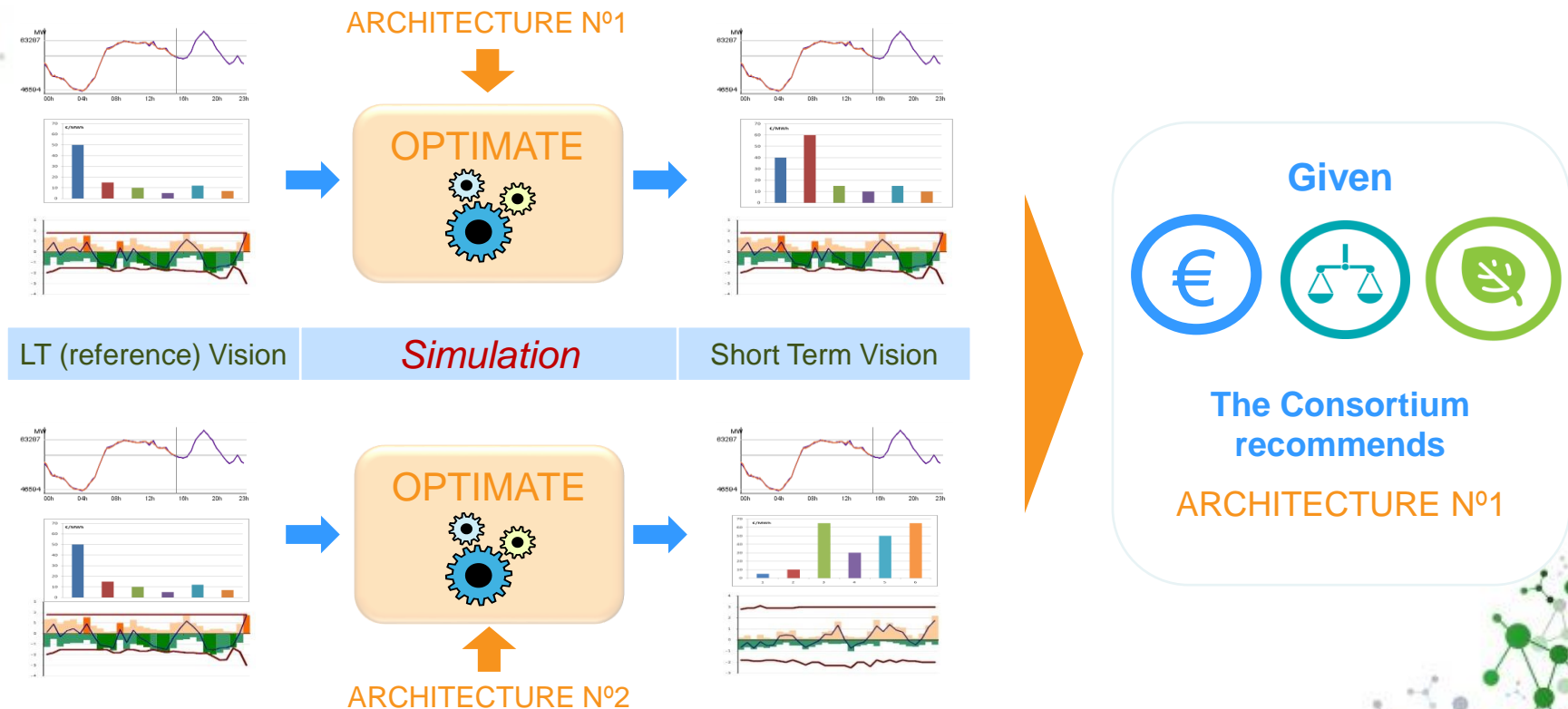
- Market players and assets
  - Generation fleet
  - load and RES capacities (forecast and realized time series)
- Aggregate network
  - Clusters
  - Critical branches, NTCs





# OPTIMATE Platform – in a nutshell

A short-term market architectures simulator





# OPTIMATE Platform – Indicators

For a given scenario and a given architecture,



Day-Ahead market clearing prices, surplus breakdown by market player / portfolio...

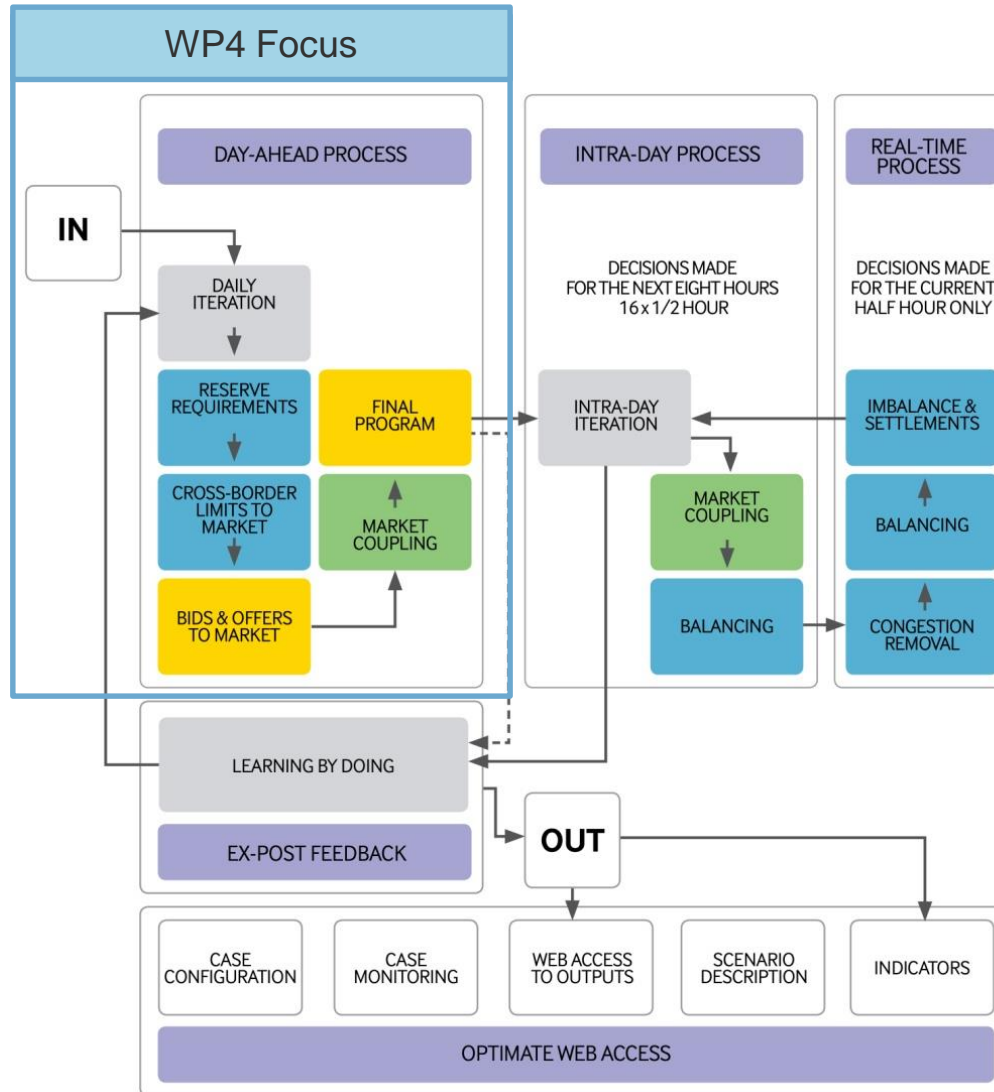


Real time imbalance and imbalance prices, amount of tertiary reserve power, load curtailment duration...



CO2 emissions, share of RES...

# OPTIMATE Platform – Architecture





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- Studies focused on day-ahead markets
  - Within different infrastructure assumptions
  - Study the impact of RES support schemes
  - Assess the effects of demand flexibility
- Make some sensitivity analysis
  - Comparing results with the reference case



# Studies – Intra-Day

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- OPTIMATE last release enables intra-day studies
  - Intraday trading
  - Different Balancing mechanisms
- Example of study
  - Comparing balancing using explicit orders with implicit mechanisms
  - Changing TSOs operational time frame and repetition for balancing



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# Conclusion – Users

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OPTIMATE is an expert tool, used for/by:

- TSOs and National Regulating Authorities
- Academics
- ACER, CE and energy ministries
- And within European projects such as [Market4RES](#)





# Conclusion – Towards industrialization

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- The prototype evolved from the end of the FP7 project to the last v1.11 release
- A broader functional scope
  - Day-Ahead only → From Day-Ahead to Real-Time
- A more robust tool
  - All modules have been 80 to 100% rewritten
- A faster tool
  - For a *classic* Day-Ahead CWE study, computation time divided by 9.



# Conclusion – Towards industrialization

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A prototype built upon the FP7 consortium work  
→ Industrialization is currently ongoing (by RTE)

More info at [www.optimize-platform.eu](http://www.optimize-platform.eu)





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**Thank you very much  
for your attention**

#### COORDINATOR



#### PARTNERS



#### CONTACT

**Market4RES@sintef.no**

Results, event calendar and all related news can be found on: [www.market4RES.eu](http://www.market4RES.eu)