

EUROPEAN TECHNOLOGY & INNOVATION PLATFORM ON **WIND ENERGY**

Towards Grid Support Services: The contributions of REserviceS

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Publicly funded R&I in wind industry

- Publicly funded projects enhance R&I efforts and investments from the wind industry
 - Help bringing novel technologies faster into the market
 - Also, help setting required adaptation of markets (key to Grid Support Services, GSS)
- Facilitate liaison between research and industry peers
 - Multidisciplinary teams, specific expertise
- Traditionally, had played an important role particularly in:
 - Basic research and knowledge creation
 - Development of technology and tools
 - Demonstration of concepts
 - Setting key references and recommendations



Publicly funded R&I in industry

• Example: completed R&I (inputs to REserviceS)



Acciona Energia



Publicly funded R&I in industry

• Example: ongoing R&I





Acciona Energia



R&I in the wind industry

• Quoting a dossier from the Spanish government (21/07/16):



Spain is a world leader in all fields, boasting an industrial fabric that includes companies of high international standing. Their operations all over the world and enormous R&D+i efforts have given them a competitive edge over the global competition.

 National and EU publicly funded projects (FP7, IEE,...) had traditionally play an important role in the development of next generation technologies



Why industry partners joined REserviceS?

- Dealt with R&I issues within the strategic research agenda of the wind/renewable industry
 - High penetration of renewables
 - Electricity markets design (Grid Support Services)
- Timely topic:
 - New European Network Codes under implementation
 - From requirements to system services
 - Technology readiness, additional costs (CAPEX/OPEX), cost allocations,.....
- Well balanced Consortium
 - research institutes, consultancy companies, wind OEMs and power plant operators, DSO's and industry associations.



REserviceS project

• Established a reference basis and policy recommendations for future grid support services from variable renewables.





Benifits of REserviceS in the wind industry

• Findings and recommendations helping the ongoing national implementation of EU Network Codes





A practical example: Q at P=0



- Voltage control at P=0 a GSS, Why?
- Additional costs?
- Changes in existing regulatory framework?



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0,2 0,3 0,4 Production (lag)

-0,4 -0,3 -0,2 Consumption (lead) -0,1 0 0/P---

GSS from wind power are a reality....

• Spain: new legislation laid down the criteria for participation in GSS and now is legally possible since 10/02/2016



ACCIONA'S CONTRIBUTION TO THE ADJUSTMENT OF THE ELECTRIC POWER SYSTEM IN SPAIN ON 28.02.16





Towards future GSS.....

Provision of services of frequency containment and restoration reserves





Final remarks

- Publicly funded projects significantly contribute to R&I of the wind industry
 - REserviceS is an example of a successful project
- Focus on topics align with industry R&I agendas must be maintained
 - Role of Technology Platforms (ETIPWind)
- Shorter time from proposals to start of funded project
 - Minimise administration, expedite Contract, Consortium Agreement and IPR discussions,....
 - Keep in mind external competition





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Thanks for your attention



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