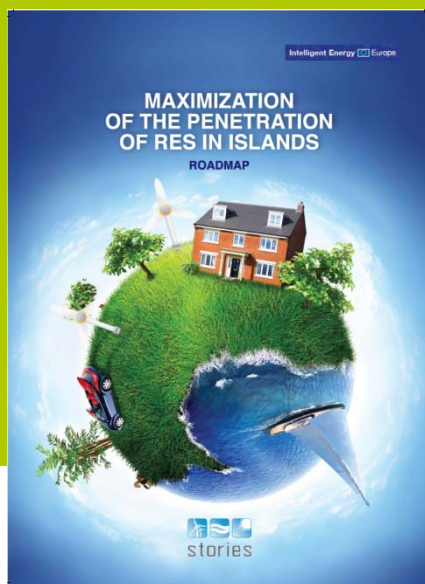


# Maximizing the Penetration of RES in Islands – Roadmap

Rui Martins IDMEC-IST



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## Scope

The starting year in this Roadmap is **2005** and time horizon is **2020**.

Three major objectives are considered in all approaches performed on the Roadmap:

- Increase energy efficiency in 20%,
- Reduce CO<sub>2</sub> emissions in 20%,
- Maximize RES penetration in the islands through the adoption of energy storage solutions.



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## FRAMEWORK

- All recommended measures are related to main renewable energy technologies and energy storage technologies available for decision makers to increase the level of energy sustainability in islands.
- Results of Deliverables 2.2, 3.2 and 4.1 are taken into account for the elaboration of the Roadmap, therefore including all identified regulatory aspects, barriers and strengths, weaknesses, opportunities and threats.



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## SWOT ANALYSIS

- Deliverable 4.1
  - Obtain a reality check on the critical success factors
  - Gain additional feedback
  - Update and add to the critical success factors
- Market
- Technology
- Environment
- RES Utilization



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## RECOMMENDATIONS



Main recommendations have to deal with measures to be taken in four different areas:

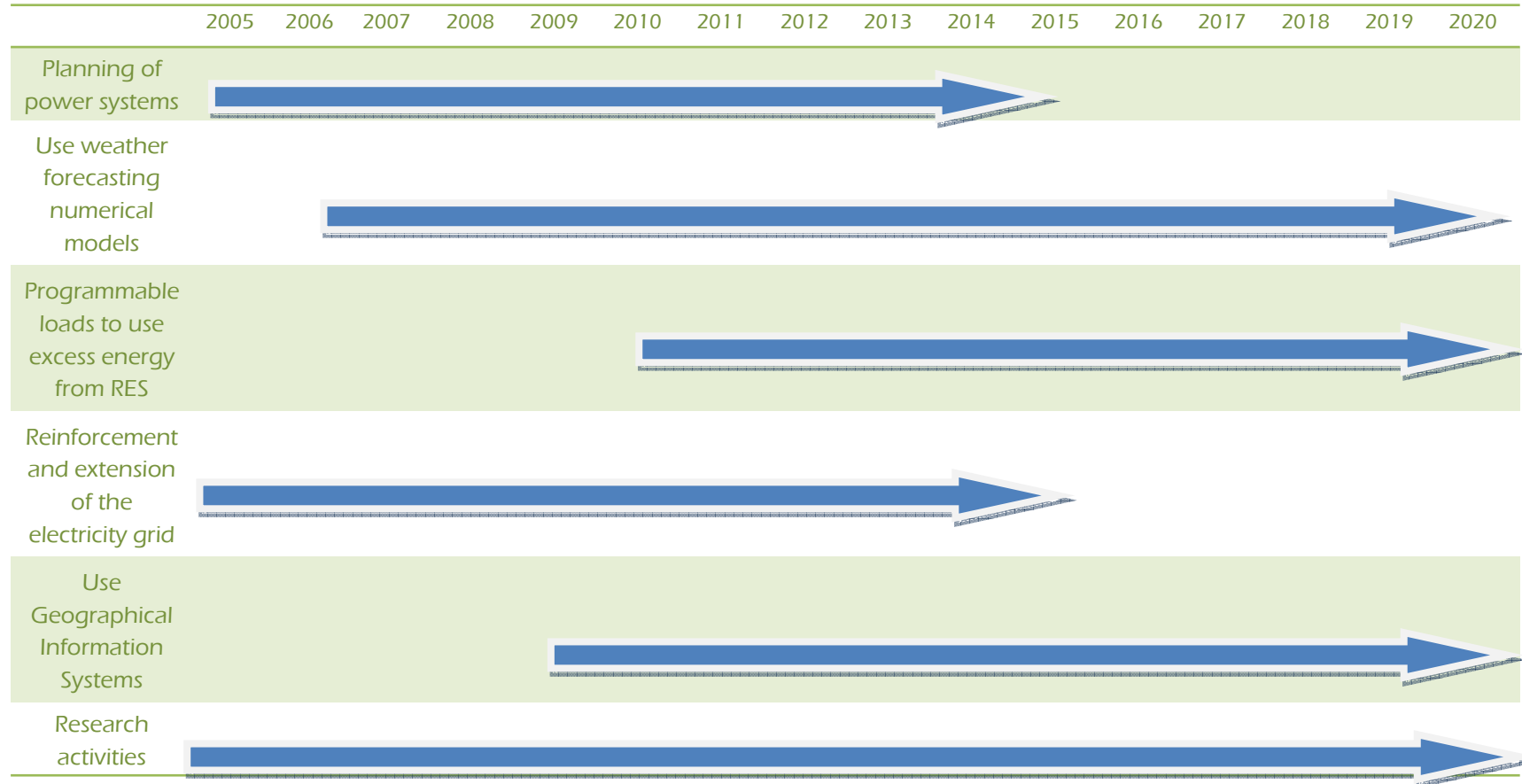
- Grid and Management
- Economy
- Regulations
- Social



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# GRID AND MANAGEMENT MEASURES



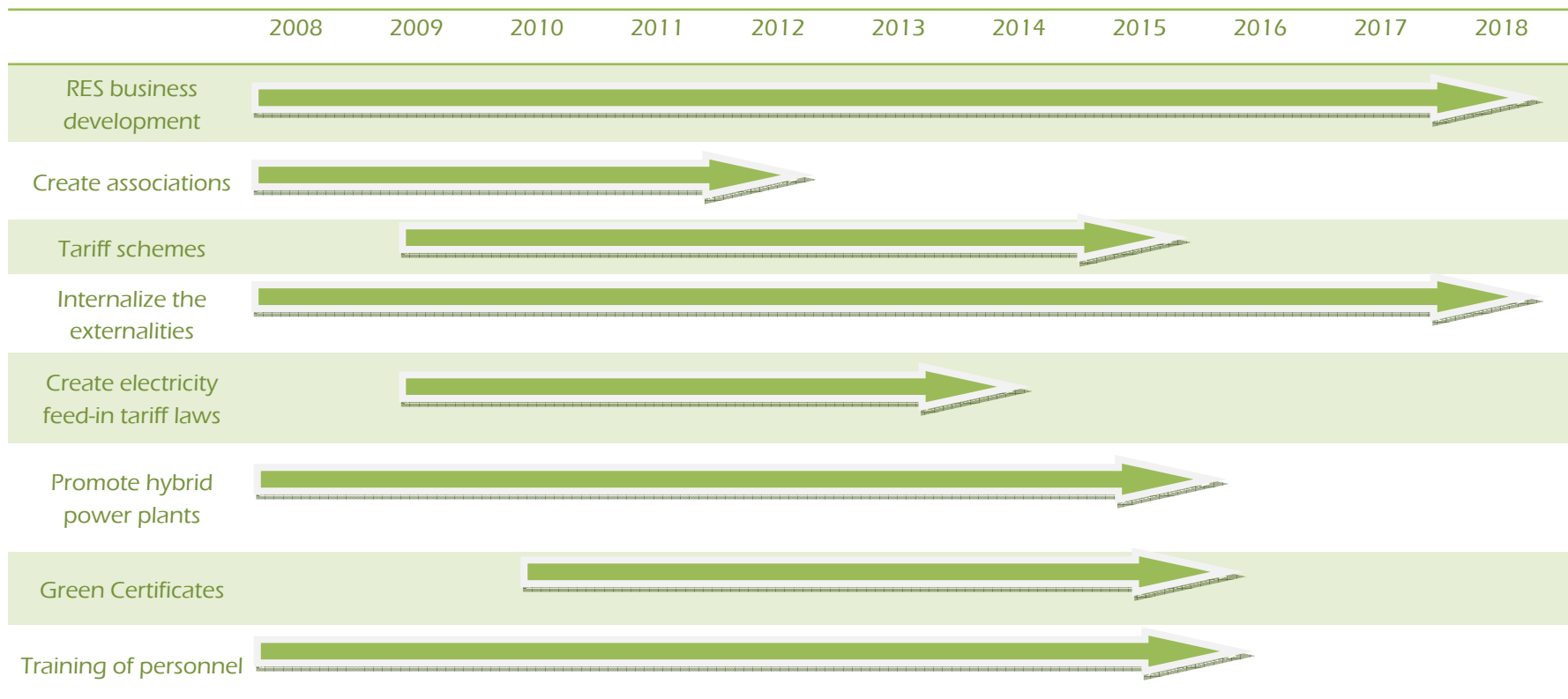
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# ECONOMIC MEASURES



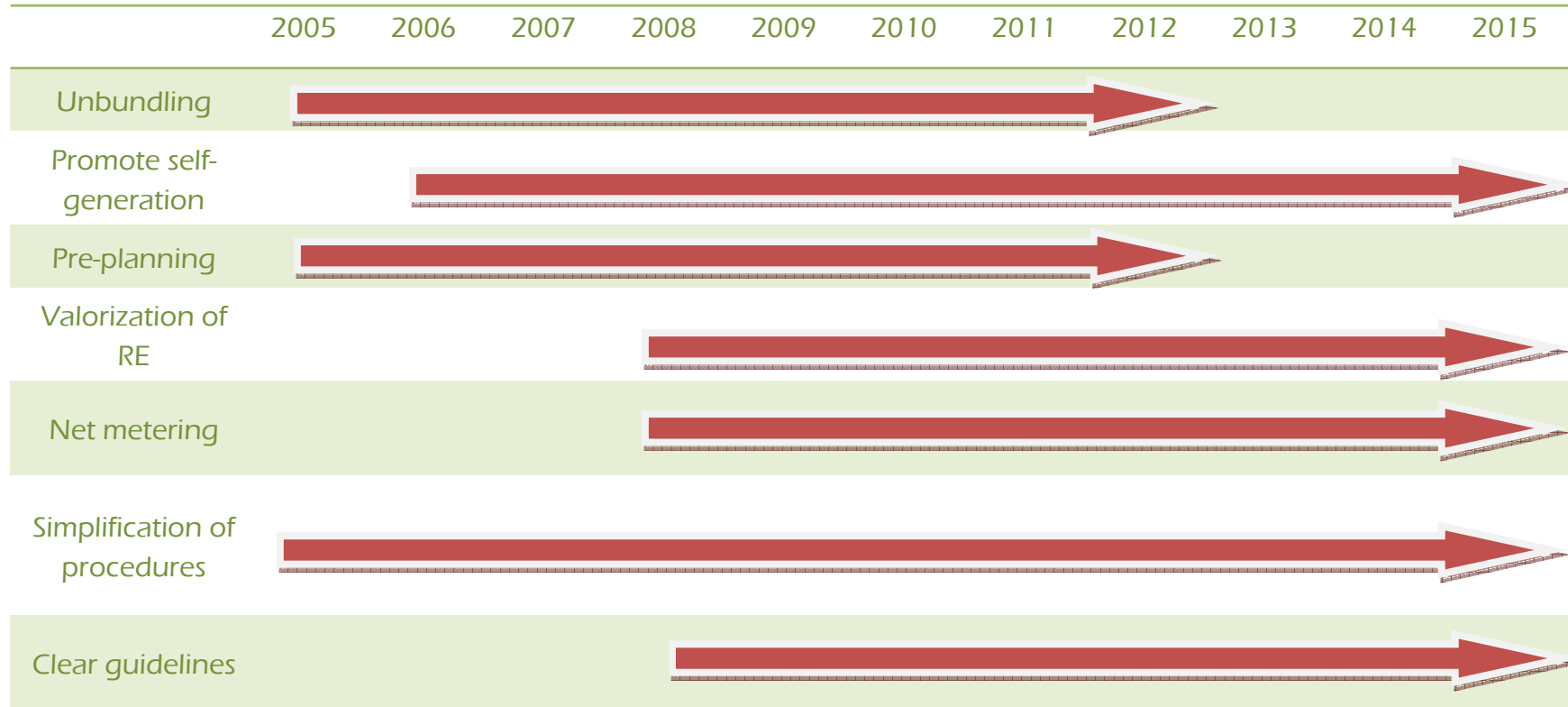
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# REGULATORY MEASURES



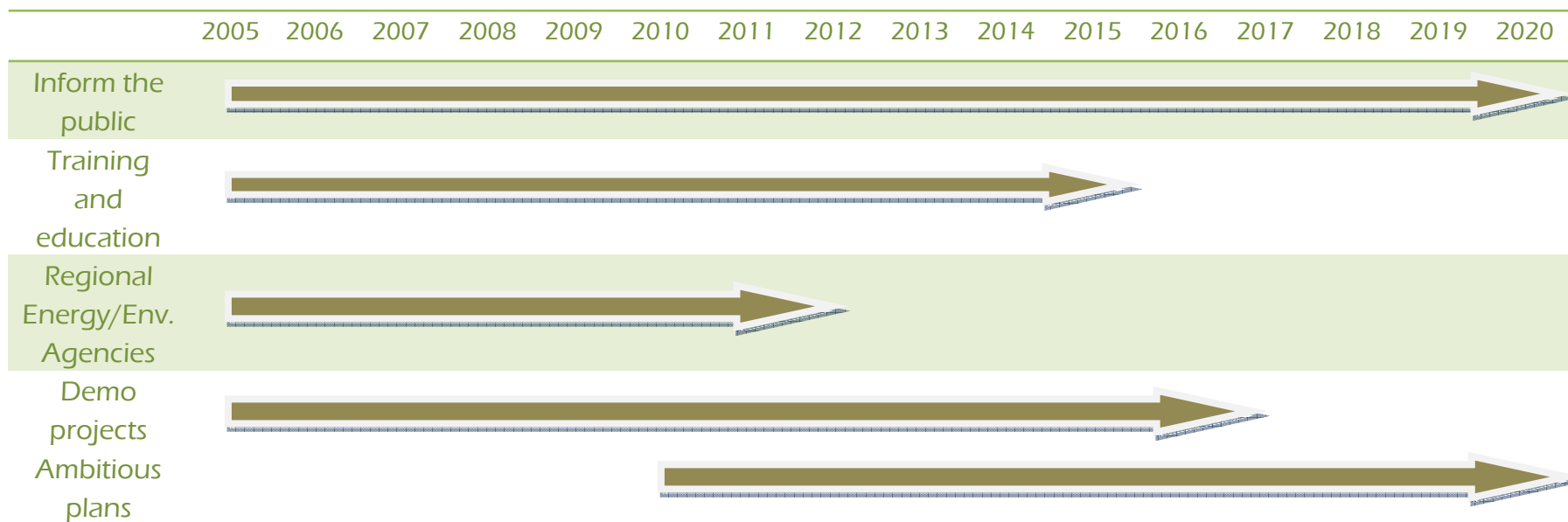
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# SOCIAL MEASURES



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## Example Measures

### Grid and Management

- Create programs to help the development of scientific projects that may assist in achieving RES national goals.

### Economic

- Establishment of schemes for guarantee of origins and green certificates.

### Regulatory

- Define standards of procedures for private micro power plant establishment.

### Social

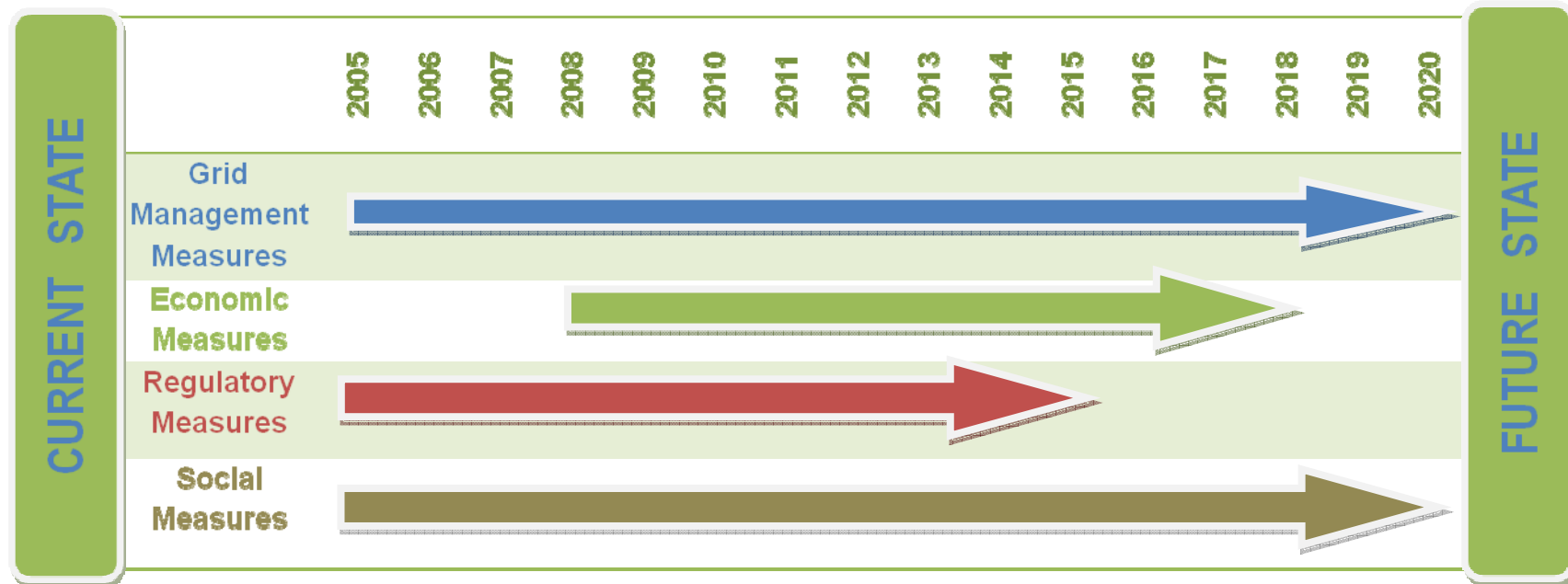
- Create co-ownership of RES power plants to involve the public with the projects.



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# IMPLEMENTATION PLAN



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## SUCCESSFULL Example

- Large penetration of Renewable Energy Sources complemented with storage strategies
  - El Hierro (Canary islands)



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## STORIES PROJECT CASE-STUDIES

Country	Battery system	Pump-hydro	H <sub>2</sub>	Desalination
Spain	<i>La Graciosa</i>			
Greece		<i>Ios</i>	<i>Milos</i>	<i>Milos</i>
Croatia				<i>Mljet</i>
Portugal		<i>Corvo</i>	<i>Corvo</i>	
Italy	<i>San Pietro</i>			
Cyprus		<i>Cyprus</i>		<i>Cyprus</i>
Responsible Partner	<i>ITC</i>	<i>NTUA</i>	<i>CRES</i>	<i>NTUA</i>



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## Dissemination

- Island local authorities
- Energy companies
- Energy research institutions
- Energy Agencies
- Environmental Agencies
- Conferences
- Other...



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# Thank You



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