

European Technology & Innovation Platform on Deep Geothermal

Accelerating the development of **deep geothermal** technology in Europe

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ETIP-DG

European Technology & Innovation
Platform on **Deep Geothermal**

www.etip-dg.eu



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Deep Geothermal Technology Roadmap

2020-2030



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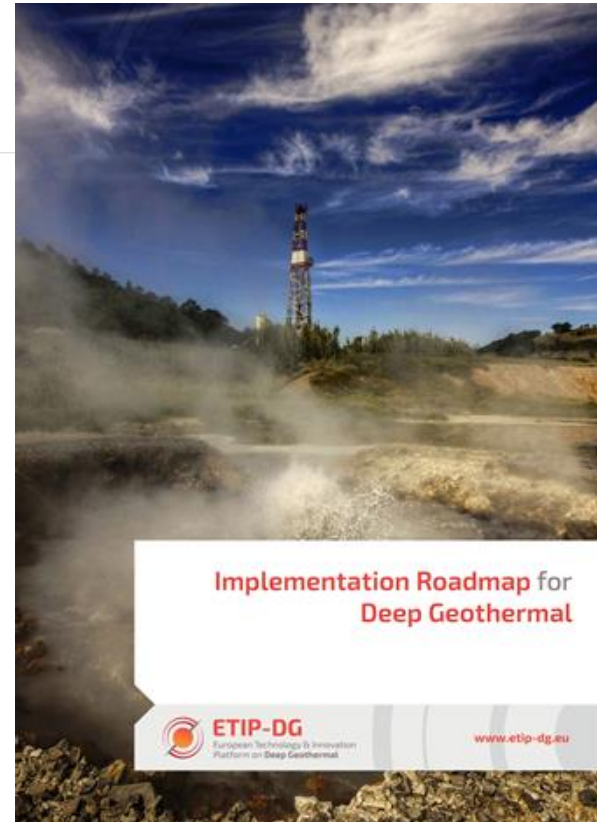
The context: From Vision, SRIA to Roadmap

The targets and KPIs

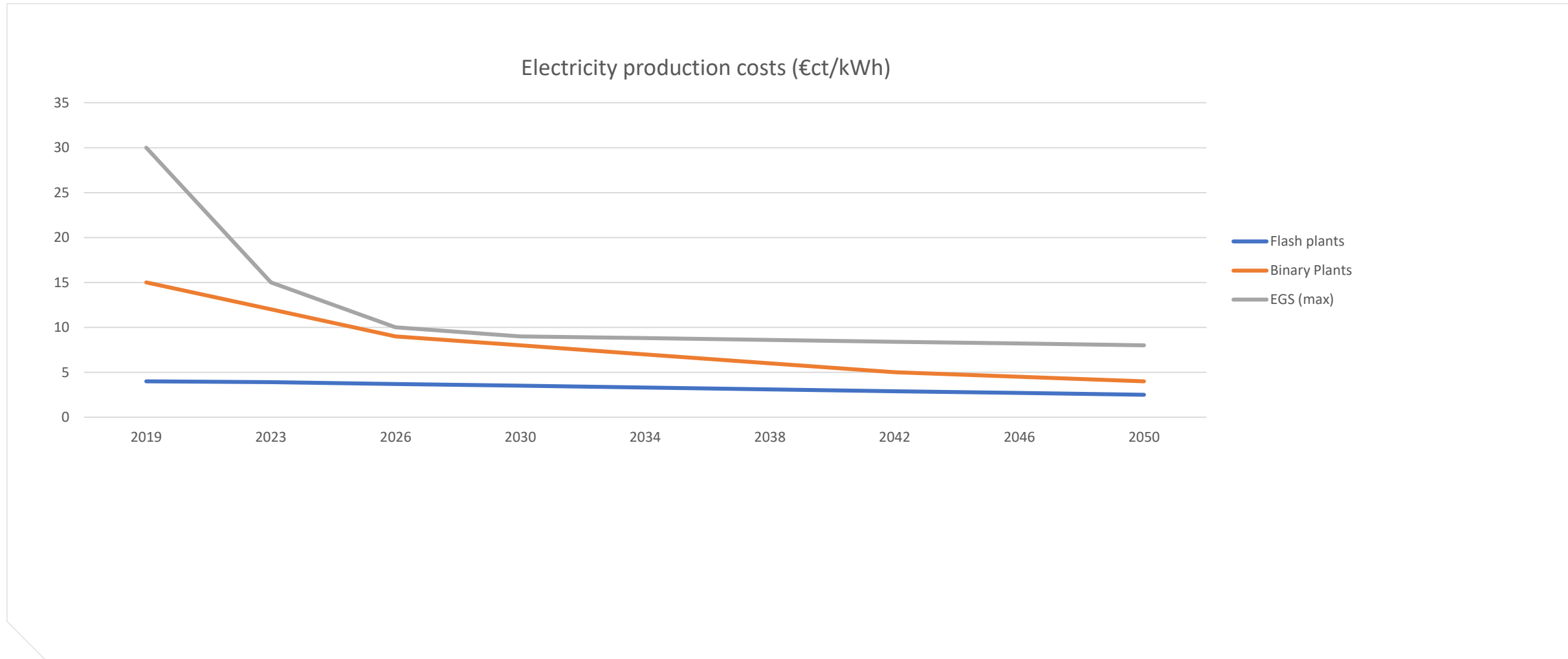
MISSION OBJECTIVES:

- unlocking geothermal energy
 1. Better Prediction and assessment of geothermal resources
 2. More efficient Resource access and development
 3. Deploy Heat and electricity generation and system integration
- improving social welfare
 1. From R&I to deployment, market uptake
 2. Knowledge sharing

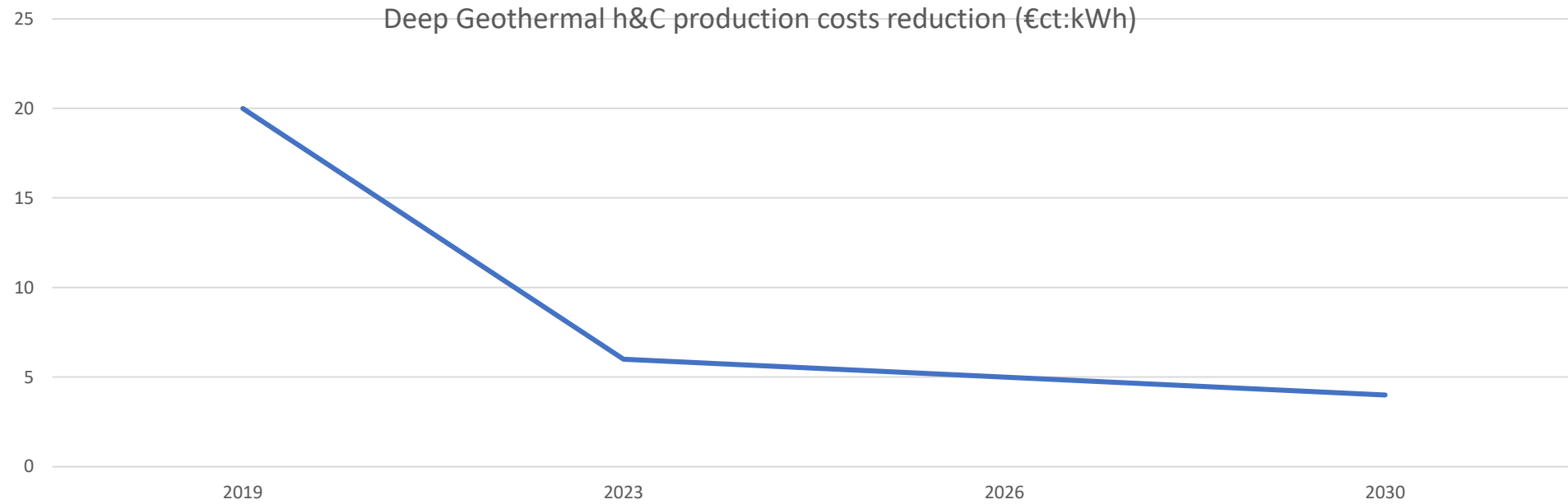
Financing the roadmap



Potential costs reduction: beyond the LCoE approach



Potential costs reduction: beyond the LCoE approach



Implementation Plan

Priorities	2020-2023	2023-2026	2026-2030
PA-1: Assessing Deep Geothermal resource potential			
PA-2: Improved exploration prior to, during and after drilling			
PA-3: Exploration workflows and catalogues			
PA-4: Cutting edge geothermal resources			
PD-1: Total reinjection and greener power plants			
PD-2: Reduce the impact of scaling & corrosion and improve equipment and component lifetime			
PD-3: Efficient resource development			
Priority PD-4: Improved rate of penetration technology to access the resource			
Priority PD-5: New electronics to monitor and operate geothermal well			
Priority PS-1: Developments in turbines			
Priority PS-2: Flexible production of heat and power and integration for smart grids			
Priority PS-3: High-Temperature Underground Thermal Energy Storage			
Priority PS-4: Developing hybrid plants and Exploiting mineral production from geothermal sources			
From R&I to deployment			
Knowledge Sharing			
Next generation of technologies			

Better Prediction and assessment of geothermal resources

- Priority PA-1: Assessing Deep Geothermal resource potential
- Priority PA-2: Improved exploration prior to, during and after drilling
- Priority PA-3: Exploration workflows and catalogues
- Priority PA-4: Cutting edge geothermal resources

Efficient resource access and development

- Priority PD-1: Total reinjection and greener power plants
- Priority PD-2: Reduce the impact of scaling & corrosion and improve equipment and component lifetime
- Priority PD-3: Efficient resource development
- Priority PD-4: Effective and rapid penetration rate technology to access the resource
- Priority PD-5: New electronics to monitor and operate geothermal well

Deploy Heat and electricity generation and system integration

- Priority PS-1: Developments in turbines
- Priority PS-2: Flexible production of heat and power and integration for smart grids
- Priority PS-3: High-Temperature Thermal Energy Storage (HT-TES)
- Priority PS-4: Developing hybrid plants and Exploiting mineral production from geothermal sources

From R&I to deployment

- Priority PM-1: Improving the Policy & Regulatory framework
- Priority PM-2: Ensure Public engagement & mitigation environmental and health impacts
- Priority PM-3: Develop Innovative financing & reinforce competitiveness

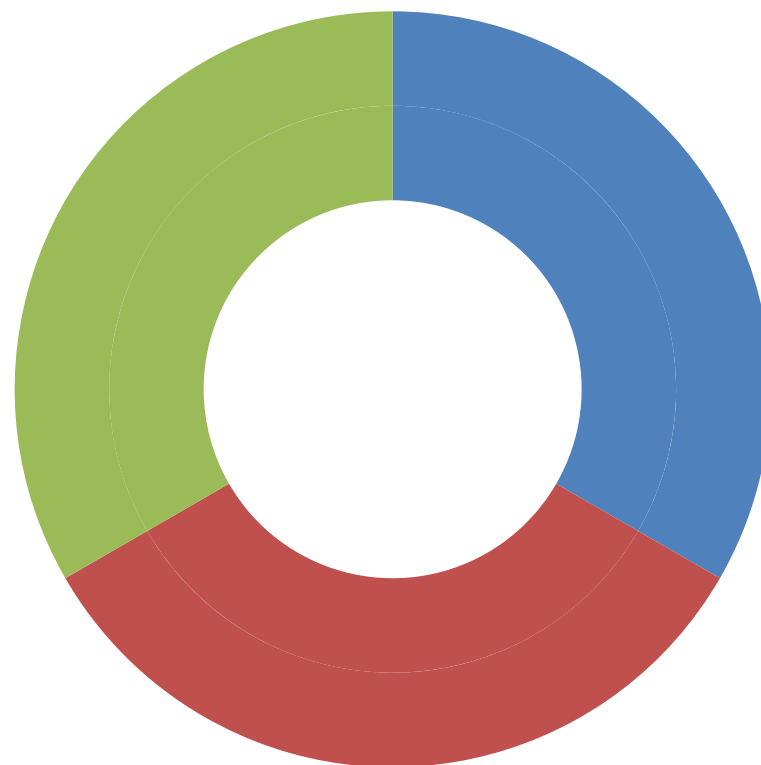
Knowledge sharing

- Priority PB-1: Shared and harmonized geothermal information
- Priority PB-2: Shared research infrastructures (RI)

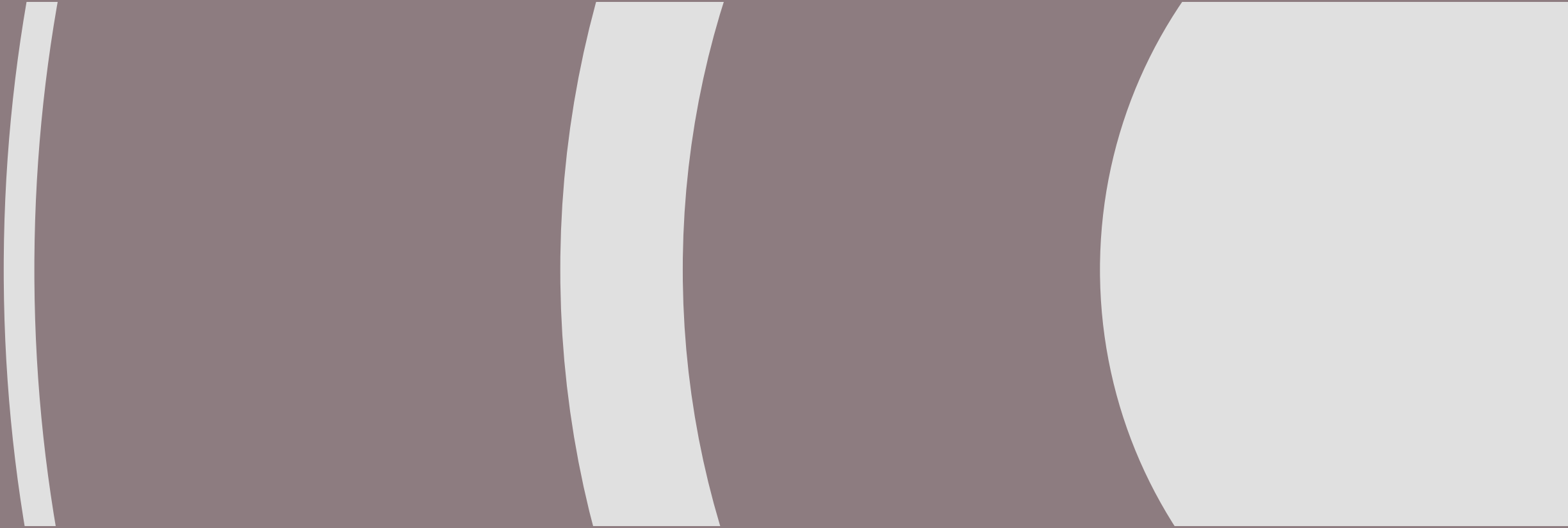
Financing the roadmap

Unlocking geothermal energy		Funding needs 2020-2030
	Better Prediction and assessment of geothermal resources	€400m
	Efficient resource access and development	€600m
	Deploy Heat and electricity generation and system integration	€500m
Improving social welfare		
	From R&I to deployment	€40m
	Knowledge sharing	€40m
Next generation of technologies		€120m
TOTAL		€1,7bn

Funding



- Private investment
- European Commission
- Member states



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