

**Robert Schuman Centre for Advanced Studies** 

**Florence School of Regulation** 

#### Supporting clean energy R&D: Grants for all?

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#### RD&D targeting green technologies needs to be more than doubled.

- Reaching 2050 climate targets involves increasing the share of low-carbon technologies substantially
- RD&D investments are already taking place...



 …but financing gap of €47-60 bn between recent expenditures and those deemed necessary (SET-Plan)

## Do new clean energy technologies develop spontaneously?

- EU ETS does not provide a sufficiently high and credible future carbon price
- Hard (and also undesirable) to capture all the benefits from RD&D within the innovating company
- Typically very high capital investments paired with substantial economic, technological and regulatory uncertainties
- Private investors tend to focus on short-term revenues, whereas climate policy has a 2050 horizon



Additional public support needed to reach the socially optimal level of RD&D

## A balanced portfolio of RD&D projects needs to be designed.

- This will facilitate
  - Acceleration of decarbonization to reach mid-term 2020 climate objectives
  - Development of a diversified technology mix enabling the achievement of long-term 2050 objectives
- Evaluation criterion: expected overall reduction of CO<sub>2</sub> emissions per € of support provided
- Cooperation and coordination among MS and EU support policies have to be improved
  - Initiation of European Energy Research Alliances (aimed at realizing pan-European RD&D pooling national and EU resources) is a step into the right direction

#### Supporting clean energy R&D: Grants for all?

Increasing public costs				
Public loans/ guarantees Publ	Public equity	Subsidies		
	Risky potentially	Prizes	Benefits related to inv.	Grants and contracts
illiquid capital market	highly profitable innovation	Early low-cost	Near-market	Early-stage,
Mainly lower cost innovation with	Investments of modest size	innovation	incremental innovation	capital-intensive innovation
well quantifiable market prospects	Small to medium sized innovating		Typically larger innovator or regulated firms	
entity with	entity			
capability or small innovator			Grante ek	ould be an
addressing low- risk innovation			instrumer	nt of last resort

#### Encourage efficiency while not discouraging private sector participation

- Use competition for funds whenever possible
- Public funding should be output-driven whenever suitable with engagement of private innovators
  - High project costs might require the provision of at least a part of the funds upfront
  - Projects with high probability of failure might require support unconditional to performance
- Institutions set up to allocate funds need to be lean and flexible enough to avoid institutional inertia and lock-in



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# Thank you very much for your attention

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