



# ASSESSING U.S. PERFORMANCE IN ENERGY INNOVATION

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# BENEFITS OF A DISCIPLINED, CONSISTENT METHODOLOGY

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- Comparability of results among projects
  - DOE estimates reduced from 2 to 95 percent
- Clearer insights into government effectiveness
  - Focus on inexpensive economic barriers
  - Create demand for public goods

# A DISCIPLINED, CONSISTENT METHODOLOGY MUST

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- Include all public benefits integral to government mission
- Provide rigorous rules for fuzzy concepts



# THE BENEFITS MATRIX

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	REALIZED	OPTIONS	KNOWLEDGE
ECONOMIC BENEFITS			
ENVIRONMENTAL BENEFITS			
SECURITY BENEFITS			

# RIGOROUS RULES FOR FUZZY CONCEPTS



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- Include full life cycle benefits and costs
- Compare to next best option
- Count only R&D benefits
- Count only results of intervention
- Assume others will innovate

# NEXT STEP – PROSPECTIVE BENEFITS

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- Design a useful tool for allocating government research budgets
- Pilot test regular program evaluation – are benefits being produced as expected?

# RELEVANT BENEFIT DEPENDS ON QUESTION ASKED

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- What is the best mix of technology to advance societal goals?
  - Total benefits created and costs incurred by all sectors
- How should government intervene most effectively to stimulate innovation?
  - Incremental benefits and costs of government action

# DEFINING THE GOVERNMENT ROLE

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- Given a socially optimal technology portfolio
  - Does the private sector have adequate incentive to innovate?
  - If not, what should government do?
    - Create demand
    - Push technology

# DEFINING THE GOVERNMENT ROLE -2

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- If technology push, what is the expected result of government intervention?
  - Remove obstacles to feasible technology
    - Meet existing demand
    - Anticipate demand creation
  - Establish likely benefits of a potentially feasible technology