

# Prioritizing Technology: HIT Catalyst

April 4, 2017

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# Building Innovation and Economic Growth

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- Building Energy expenditures = \$410 billion/year
- Represent 75% of the nation's electricity consumption.
- Contribute 40% of greenhouse gas emissions.



**BUT...**

8.5% of 4.6 Trillion total construction spending was on energy efficient building products

*2016 IEA EE Market Report*





Innovative building technologies are critical for commercial building owners to meet energy and financial goals.





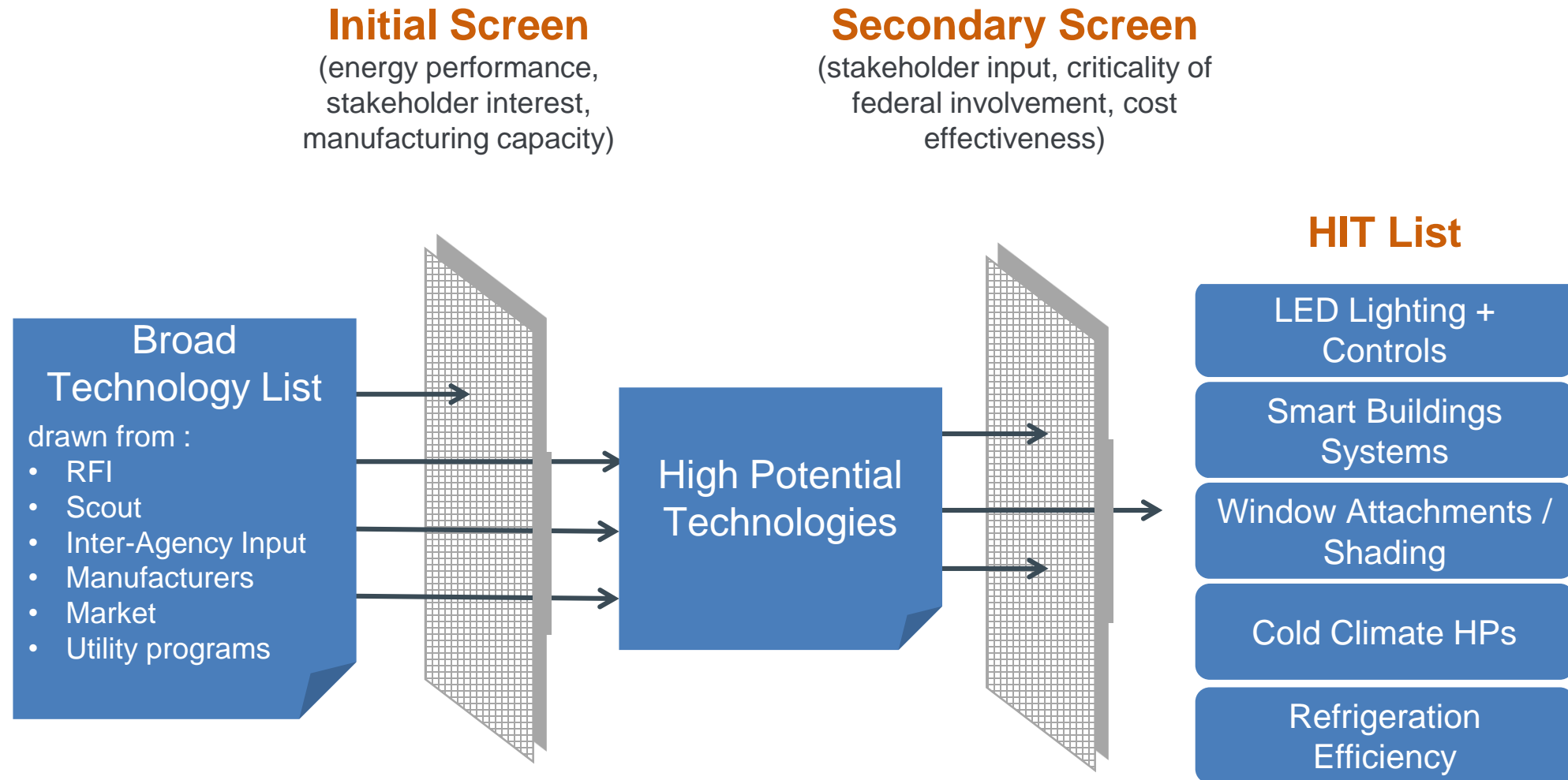
# Commercial Building Technology Framework

Technology's role in reaching 20% less commercial building energy by 2020.

- 1. Prioritize: Identify, Evaluate and Focus**
- 2. Define the Game Plan: Landscape, Strategize and Plan**
- 3. Stimulate the Market: Implement and Track**

# 1. Prioritize: Identify, Evaluate and Focus

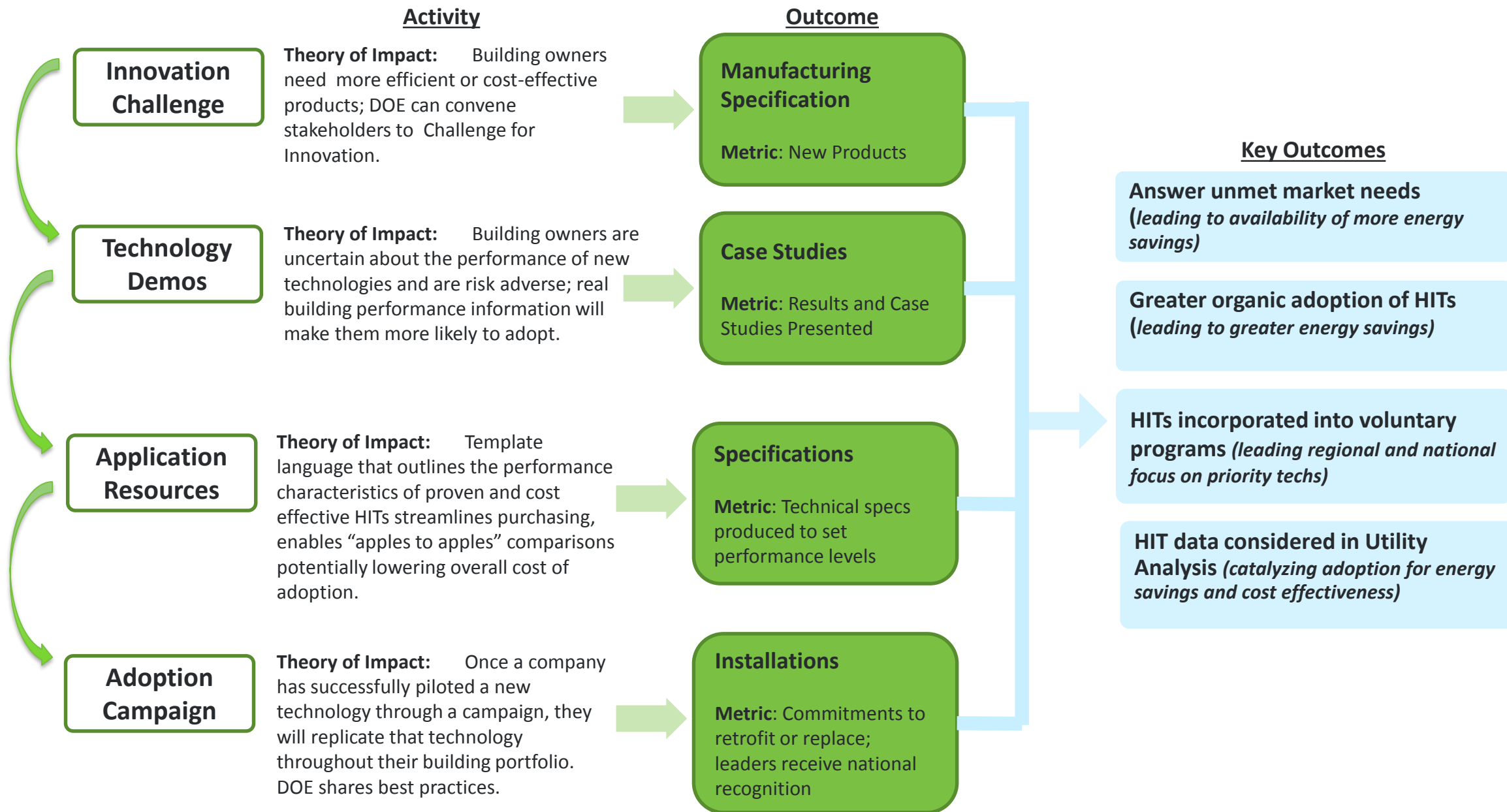
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Measure Name	National Potential (Tbtu/Yr)	Market Criteria
LED Troffers with Controls	500-1000	Verify controllability for whole building energy reductions; assess rapidly changing offerings and interactions.
Energy Management and Information Systems	1000+	Verify cost-effectiveness and performance for standard packages . Track market needs and adoption.
Shading Systems	100-500	Widely adopted in other parts of the world; assess barriers to retrofits in the U.S. including case studies with real performance information.
Cold-Climate Heat Pumps	1000+	Verify savings and benefits over other heating options.
AFDD for HVAC Systems	100-500	Simplified, prioritized and streamlined alerting and automation for unit performance will enable low cost energy improvements.
Refrigerant Efficiency	100-500	Technologies and solutions to reduce refrigerant leakage and improve operation.



# Pathways to Support Broad Adoption for National Impact



## 2. Define the Game Plan: Core Activities Laid out Annually

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Owners demonstrate interest in high impact technologies but...	A 4-step solution — The HIT Catalyst Playbook
...the cost is too high →	<b>1. INNOVATION CHALLENGE</b> to increase competition
...they are uncertain about real world performance →	<b>2. TECHNOLOGY DEMO</b> to validate performance
...there are too many barriers →	<b>3. RESOURCE DEVELOPMENT</b> to support adoption
...they are waiting until the broader market adopts →	<b>4. ADOPTION CAMPAIGN</b> to lock in savings



### 3. Stimulate the Market: Implement and Track



- 3 Innovation Challenges
- 20+ Demonstrations in Occupied Buildings
- 16 Technology Performance Specifications
- 4 Adoption Campaigns = industry partnerships, technical support and national recognition.
  - 150 businesses representing thousands of buildings committed to retrofit or replace.
  - 71,000 packaged heating/cooling unit retrofits (RTUs)
  - 1.1 million LED troffer lights
  - 1780 buildings, 55 million sq. ft. ongoing energy analytics



**\$110 million/year** and **1.3 billion kWh/year** saved so far



# Stakeholder Engagement: Better Buildings Initiative

**>200** partner organizations    **>11 billion sq. ft.**

**20% more efficient by 2020**



Commercial  
Real Estate



Food Service, Retail &  
Grocery



Healthcare



Hospitality



Higher Education

## Technology Solutions Teams



Lighting



Space Conditioning



Plug & Process Loads



Refrigeration



Energy Information Systems



Renewables Integration

## Market Solutions Teams



Financing Strategies



Leasing and Tenant Engagement



Training / Workforce



Appraisals and Valuation



Data Access

# Program Information and Resources

ENERGY.GOV  
Office of Energy Efficiency & Renewable Energy

SEARCH Energy.gov

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## HIGH IMPACT TECHNOLOGY HUB

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Workforce Development & Training  
Zero Energy Buildings  
Resource Database  
Appliance & Equipment Standards  
Building Energy Codes

**Resources for Evaluators**  
*Site Evaluation Checklists  
General M&V Plans  
General Templates*

**Host a Site**  
*Current Opportunities for Owners and Operators*

**High Impact Technology Hub**

**Provide Information About Technologies**  
*Open Opportunities  
Upcoming Events  
Prioritization Tool Input Form*

**Results**  
*Technology Highlights  
Case Studies  
Final Technical Reports  
Market Stimulation Activities*

The High Impact Technology Hub is a one stop shop for information associated with technology demonstrations in occupied, operational buildings. Many technology demonstration templates, resources and final results are dispersed across programs and partners. The Hub brings these resources together and will be updated frequently, as new opportunities, resources and outcomes become available.

Resources posted to Hub should accelerate the selection and evaluation of technology demonstration projects and enable transparency into DOE's market stimulation and tech to market activities. Technology Demonstrations help verify the performance of emerging and underutilized technologies in occupied, operational buildings. Outcomes of these technology demonstrations address the lack of objective performance and cost data that inhibit some technologies from finding their customer base.

U.S. DEPARTMENT OF

[buildings.energy.gov/hitcatalyst](https://buildings.energy.gov/hitcatalyst)

# Thank You

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