



U.S. DEPARTMENT OF  
**ENERGY**

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Office of  
ENERGY EFFICIENCY &  
RENEWABLE ENERGY

# RFF Workshop on Tracking and Evaluation of RD&D Programs at DOE

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# Outline

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- **Motivation – elements driving need for impact evaluations**
- **Examples of types of evaluation in DOE**
- **Evaluation capacity in DOE**
  - **Observation about current capacity**
  - **Impact evaluation capacity building (ECB) – example, Office of Energy Efficiency and Renewable Energy**

# Motivation (1 of 2)

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- DOE conducts and uses evaluations to inform programmatic decision making, guide areas for future development and support, and inform stakeholders of achievements – historical precedent
  
- National focus on federal investments to,
  - Provide our communities with better infrastructure
  - Advance environmental justice, diversity, and equity
  - Advance progress with climate policy
  - Pursue related science and innovations, advanced energy technology R&D, and accelerate adoption of new, cost-effective, high-impact technologies, etc.

# Motivation (2 of 2)

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- Evidence Act – Department has responded by implementing agency-level actions to improve performance and outcomes
  
- Per Title I of the Evidence Act, the agency has produced
  - Learning Agenda
  - Evaluation Policy
  - Evaluation Plan
  - Capacity Assessment

Available at <https://www.evaluation.gov/>

# Examples of Types of Evaluation in DOE

- The Department is an agency with diverse programs/offices, missions, and goals
- DOE conducts and uses a variety of types of evaluations, e.g.,

Types of evaluations	Examples
Outcome evaluation	Assesses claims of association between interventions and outcomes
Impact evaluation	<b>Causal claims</b> about an intervention's effects on outcomes
Formative evaluation	Primarily oriented toward assessing feasibility and acceptability of program before it is fully implemented
Process evaluation – e.g., peer review of projects and programmatic activities, and other process implementation evaluations	Assesses the extent to which essential program elements are in place and operating per expectations

## OMB Description

*“Impact Evaluation assesses the **causal** impact of a program, policy, or organization, or aspect thereof, on outcomes relative to those of a counterfactual. In other words, this type of evaluation estimates and **compares outcomes with and without the program, policy, or organization, or aspect thereof.**”*

[OMB's June 2021 memo M-21-27]

# DOE Evaluations Completed DOE by Fiscal Year (FY)

➤ Peer evaluation using expert panels or advisory review committees (or other process assessment) is most commonly used in DOE

- Average 26 process assessments per FY, FY 2016-2021

➤ Fewer impact evaluations conducted

- Average 2.7 impacts evaluations per FY, FY 2016-2021

DOE Evaluations Completed, FY2016-2021

Fiscal Year	Process evaluations completed	Impact evaluations completed
FY2021	29	0*
FY2020	26	3
FY2019	35	2
FY2018	27	4
FY2017	30	3
FY2016	15	2
Total	156	16

Source: FY DOE Annual Performance Reports to Congress

\* Several impact evaluations delayed due to pandemic

# EERE Completed Evaluations Over the Years

Type of Evaluation	Number of Evaluations Since 2000
Outcome Evaluations	75
Impact Evaluations	80
Process Implementation Assessments	19
In-Progress Peer Reviews	292 peer review events; >6,500 projects; 775 projects/year (2015-2022)
Market Needs & Effects Assessments	10
Cost-Benefit Evaluations	15
Total	491

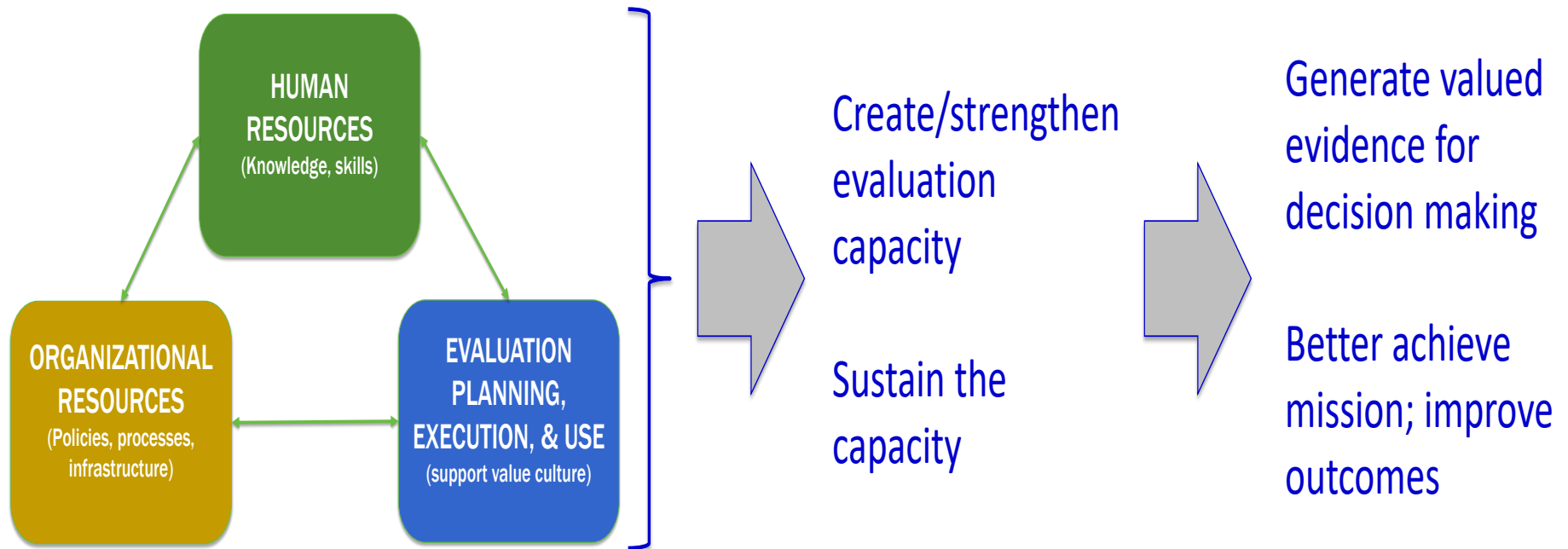
# High-level Observation of DOE Evaluation Capacity

- Peer evaluation has been institutionalized in most organizations in DOE
- More impact evaluations performed over the years and with increasing rigor – e.g., Several RCTs, *majority evaluations are quasi-experimental*, a few non-experimental with expert elicitation
- However, across DOE impact evaluations are not widely conducted; very unevenly implemented
- Impact evaluation capacity is not institutionalized in DOE



# EERE: Advancing Capacity - Strategic Components

## Advancing evaluation capacity



**Aim is to get more impact evaluations done, with increased rigor, using data protocols, and resultant increased use → to continue building evidence culture**

# Elements of EERE's 3-part ECB strategy

## Organizational

- Leadership support
- Evaluation Guide (policy)
- Efficient Evaluation Function
- Funding
- Data infrastructure

## Human Resources

- Hiring qualified impact evaluators
- Evaluation training for office staff
- Evaluation technical assistance to offices

## Planning & Use

- Identify evaluation needs
- Criteria for when/what to evaluate
- Develop methods
- Communicate results & value

# EERE Impact ECB Implementation

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- ✓ Ensuring key leaders support and share responsibility for evaluation capacity building
- ✓ Developing formal EERE-wide evaluation guidance (policy)
- ✓ Improving data infrastructure to support impact evaluations
- ✓ Hiring new federal staff with expertise in impact evaluation
- ✓ Supporting and incentivizing Technology Offices to build staff capacity for managing evaluations

# EERE Impact ECB Implementation

- ✓ **Planning and implementing new impact studies**
  - **Making funding available for impact evaluations**
  - **Developing peer-reviewed methods that utilize rigorous quasi-experimental or other research methods**
    - **for J40, DEIA, Workforce, R&D Return on Investment, STEM competitions, others**
  - **Using independent evaluators to conduct impact evaluations**
  - **Requiring all impact evaluations be peer reviewed by subject matter experts**

# Benefits of greater impact evaluation capacity

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- **Able to quickly and efficiently generate information to help inform decisions to manage funding**
- **Able to document evidence that program goals are being met, and**
- **Capable of generating impact results information for communication to stakeholders and the public**

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**THANK YOU!**