

IEc

# California Energy Commission EPIC Benefits: Benefits Taxonomy

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# Presentation

1. Overview of EPIC Portfolio
2. Benefits Taxonomy
3. Benefit Tools Introduction



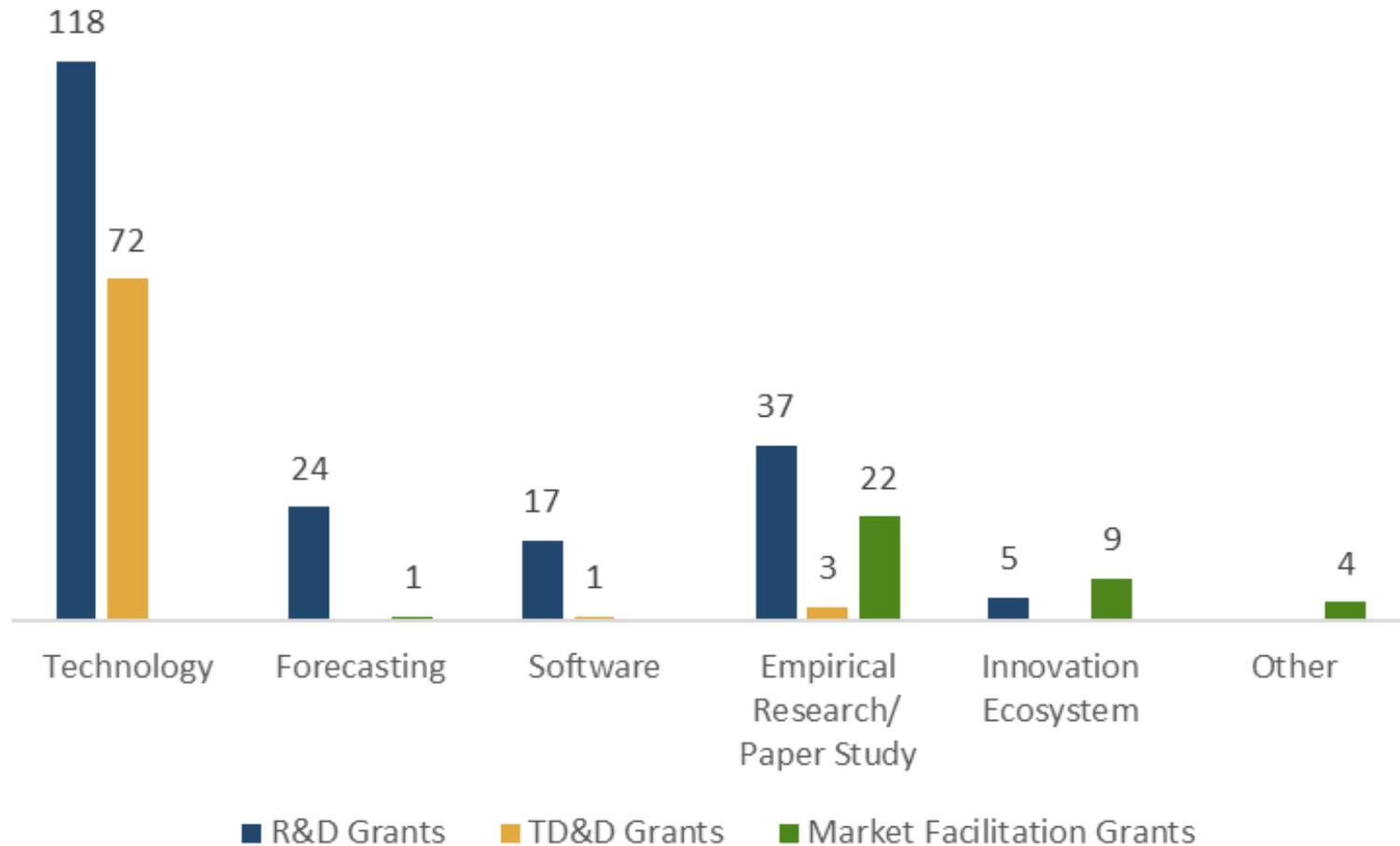
# EPIC Objectives

- CPUC defined ratepayer benefits
  - Lower costs
  - Greater reliability of service
  - Increased service
- Contribution to state decarbonization goals:
  - Reduced building energy use
  - Renewables for new capacity
  - Integration of DER
  - VGI scale up
  - Clean energy jobs
  - Resources to disadvantaged and low income communities

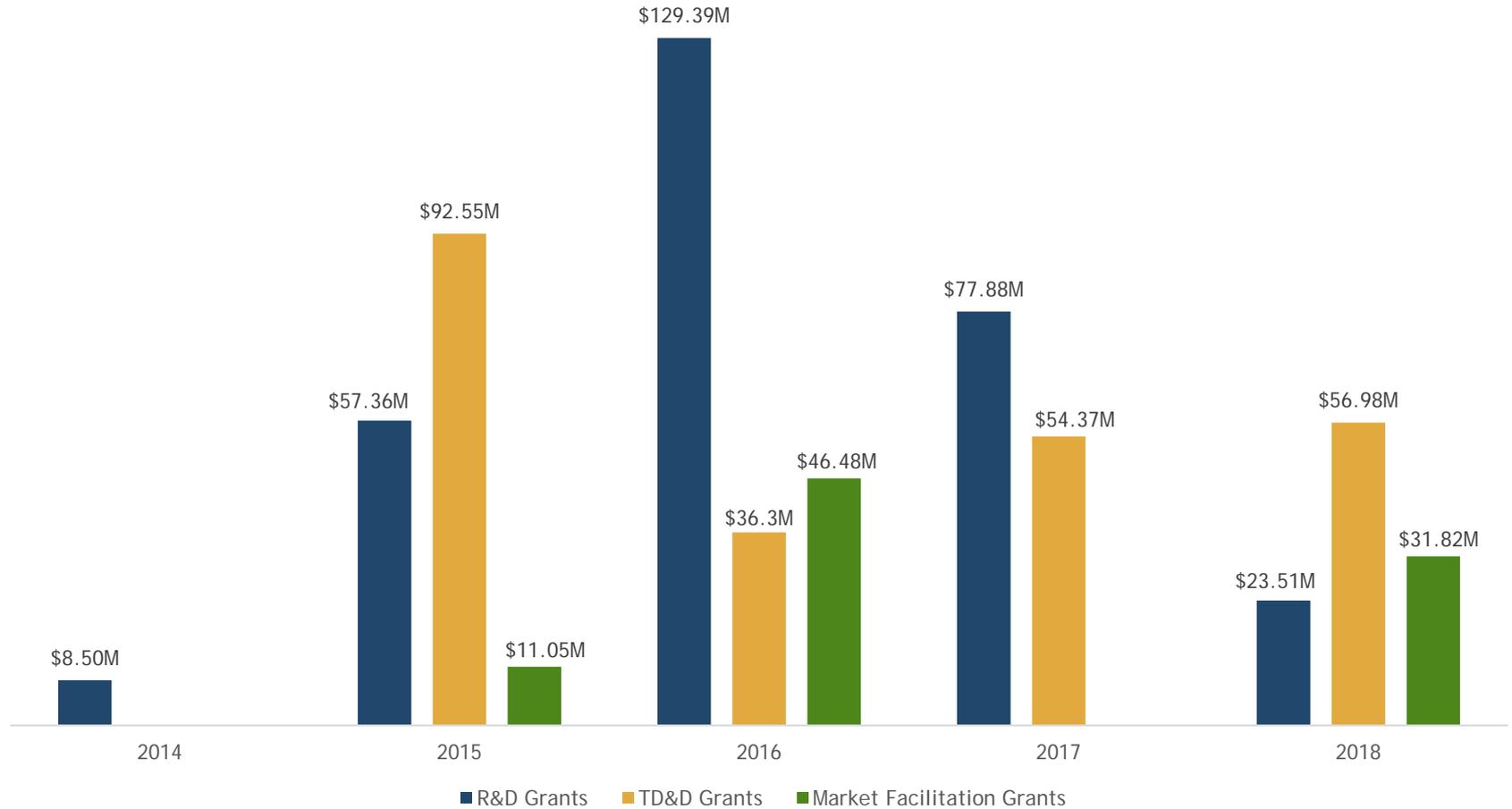
# Overview of IEc EPIC Benefits Project

1. Identify and explore the full scope of potential benefits of EPIC investments
2. Adapt and develop user-friendly methods and tools to estimate prospective and retrospective benefits
3. Improve and streamline grantee data collection support benefits estimation and reduce burdens on grantees and staff.
4. Facilitate communication of EPIC benefits to a diverse set of stakeholders, including regulators, legislators, and ratepayers.

# EPIC Portfolio: Grants by Project Type

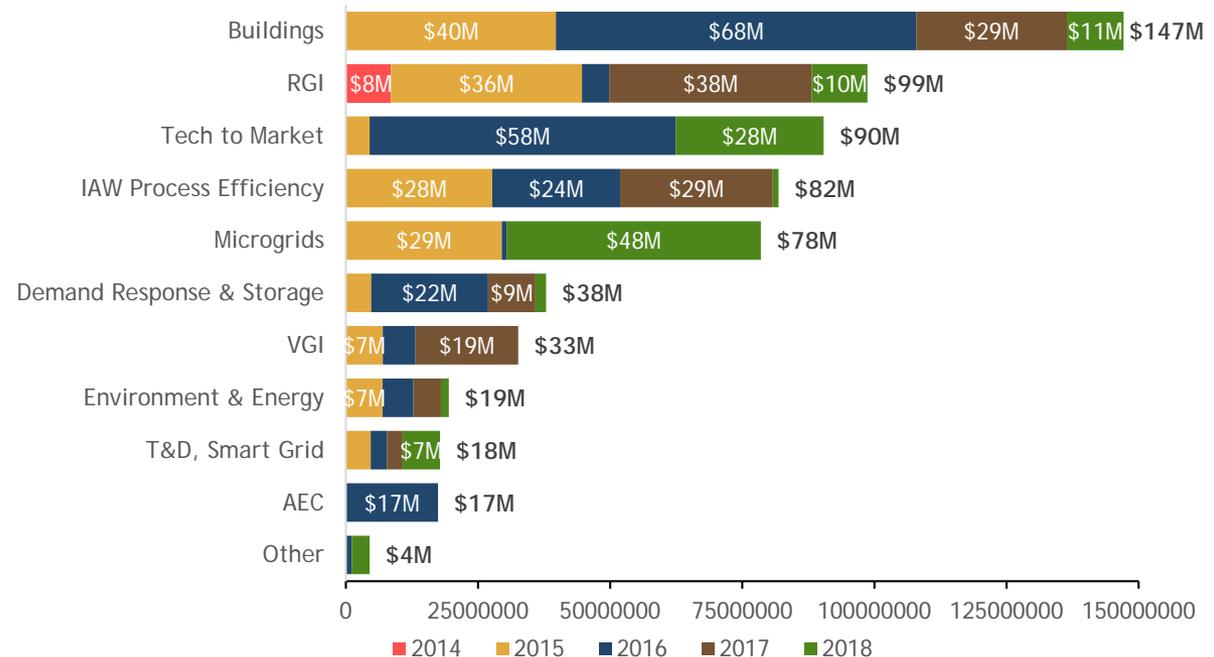


# EPIC Portfolio: \$ by Project Type and Year



# EPIC Portfolio: \$ and Grants by Research Area

RESEARCH AREA	EPIC PROJECTS
Building Energy Efficiency & ZNE	68
Renewables & Grid Integration	57
Industrial/Ag Water Process Efficiency	43
Environment & Energy	37
Microgrids	21
Demand Response & Storage	19
Tech to Market (Helping Entrepreneurs)	18
Grid Integration of Electric Transportation	15
Advanced Energy Community Project	12
Transmission & Distribution, Smart Grid	11
Other	3



# Grants Serving Disadvantaged Communities

## Disadvantaged Communities (DACs) Definition:

- Areas in California which most suffer from a combination of economic, health, and environmental burdens
- Burdens include poverty, unemployment, pollution, hazardous wastes, and incidence of asthma and heart disease
- Defined as the top 25% scoring areas from CalEnviroScreen

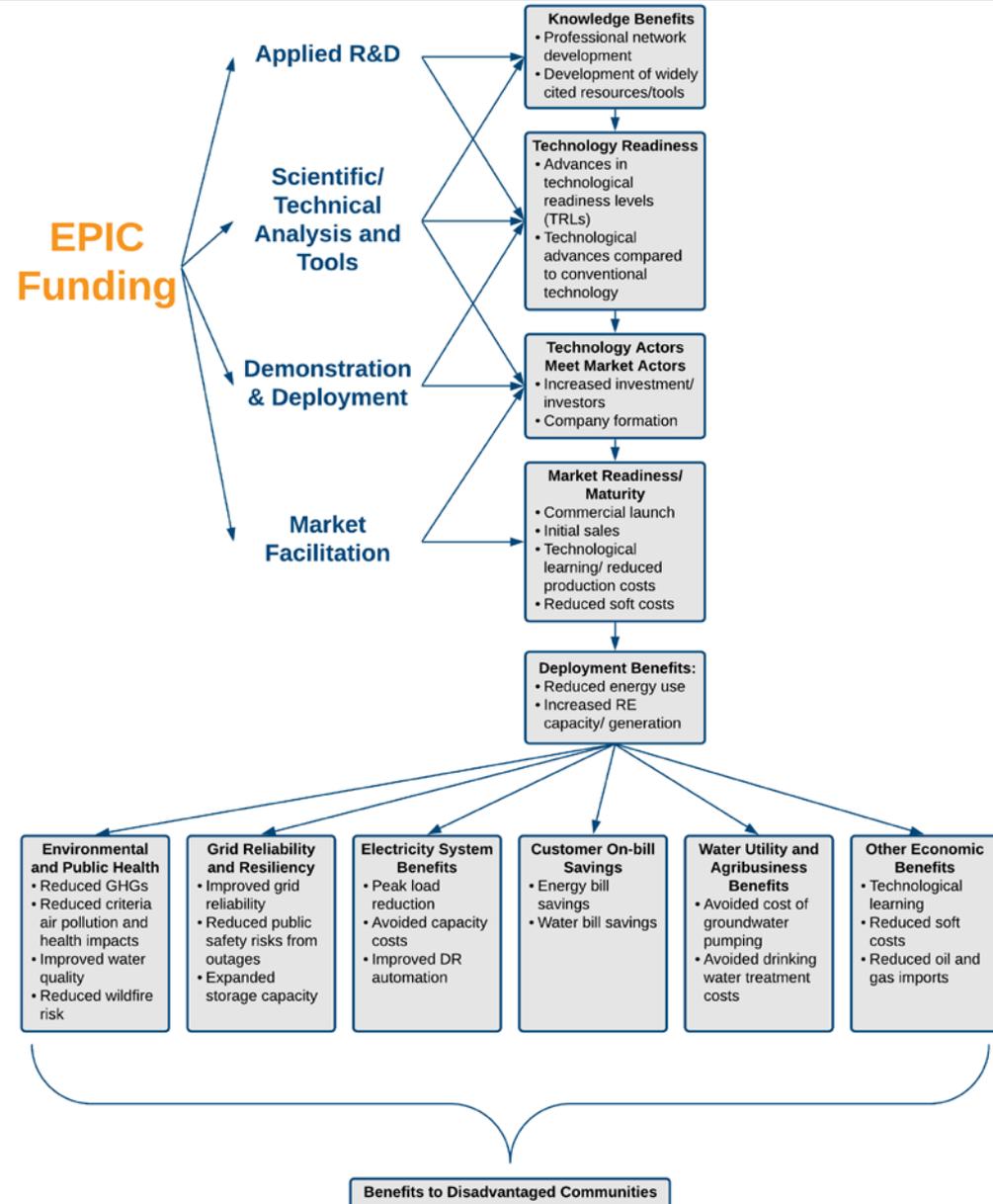
Under SB 350, CEC must spend least 25% of TD&D funds on projects that are located in and benefit DACS

- Additional 10% on projects in/benefiting low-income communities
- Focus on improving “energy equity”

Key benefits to DACs and LI communities can include:

- Health related to air quality improvements
- Household financial/economic improvement
- Employment and community health
- Resilience to natural and economic disruptions

# EPIC Benefits Taxonomy



# Tools - Grant Types - Research Areas

Method/Tool Name	Applicable Grant Types	Applicable Research Areas
<b>KNOWLEDGE BENEFITS, TECHNOLOGY READINESS, AND MARKET READINESS</b>		
Citations Application	All- particularly relevant to scientific and techno-economic research	All
Social Network Analysis of the Growth of EPIC Grantee Connections	All	All
Network Innovation Analyzer (EIN Social Network Analysis Tool)	Market Facilitation	All
Technology, Manufacturing, and Commercialization Readiness Level Calculator	ARD, TD&D	All
Effects of EPIC Support on Investments and Growth of California Cleantech Companies	TD&D, Market Facilitation	All
Technological Learning Calculator	ARD, TD&D	All
Soft Cost Calculator	ARD, TD&D	RGI, Microgrid
<b>CUSTOMER ON-BILL SAVINGS BENEFITS</b>		
On-Bill Energy Savings Calculator	ARD, TD&D	RGI, Building EE
On-bill Energy Savings - Storage	TD&D	RGI, Microgrid
Water Systems Savings Calculator	TD&D	IAW
<b>ENVIRONMENTAL AND HEALTH BENEFITS</b>		
Emissions Calculator	ARD, TD&D	All
Social Cost of Carbon Calculator	ARD, TD&D	All
Air Quality Health Benefits Calculator	ARD, TD&D	All
Wildfire Risk Reduction Screening Analysis	ARD, TD&D, Market Facilitation	Environmental

# Tools - Grant Types - Research Areas (cont)

Method/Tool Name	Applicable Grant Types	Applicable Research Areas
<b>RELIABILITY BENEFITS</b>		
Grid Reliability Benefits Tool	TD&D	Microgrid
Reduced Oil Imports Calculator	TD&D	Microgrid, RGI, VGI
Reduced Natural Gas Imports Calculator	TD&D	Microgrid, RGI, VGI
Public Safety Benefits Calculator	TD&D	Microgrid, RGI
<b>BENEFITS THAT ACCRUE TO THE ELECTRICITY SECTOR</b>		
System-Level Savings Calculator	ARD, TD&D, Market Facilitation	RGI, Building EE
Demand Response Impact Tool	ARD, TD&D	DR/Storage
Renewable Energy Hedging Capability Calculator	ARD, TD&D	RGI
Levelized Cost of Electricity Calculator	ARD, TD&D	RGI
Levelized Cost of Storage Calculator	ARD, TD&D	DR/Storage
<b>WATER UTILITY, INDUSTRY, AGRIBUSINESS BENEFITS</b>		
Groundwater Benefits Calculator	ARD, TD&D	IAW
<b>BENEFITS AND METRICS UNIQUE TO DISADVANTAGED COMMUNITIES</b>		
Value of Increased Equity in DACS and Low-Income Communities	ARD, TD&D	All

# Recommended Core Benefits

CORE BENEFIT	CRITERIA			
	CAPTURES KEY SHORT- AND MEDIUM-TERM OUTCOME OF GRANTS	IMPROVE RELIABILITY, SAFETY; REDUCE RATEPAYER COST	REFLECT STATE GHG POLICY GOALS	PARTICULAR RELEVANCE TO DISADVANTAGED COMMUNITIES
Commercial Launch/ Initial Market Change	X	Indirect/Potential Relationship	Indirect/Potential Relationship	
Increased Investment in Technology	X			
TRL Advancement	X			
Widely Cited Resources/Tools	X			
Reduced Air Pollution and Health Impacts			X	X
GHG Reduction/Avoided Social Costs of Carbon			X	
On-Bill Energy Savings		X		X
Peak Load Reduction		X	X	
Increased Public Safety		X		X
Increased Reliability		X		X

# Analyses Conducted To Date

ANALYSES	TOOLS AND METHODS USED
Citations Application	<ul style="list-style-type: none"> <li>• CEC Citation Application</li> </ul>
Network Analysis of the Growth of EPIC Grantee Connections	<ul style="list-style-type: none"> <li>• Network Analysis of the Growth of EPIC Grantee Connections</li> </ul>
Effects of EPIC Support on Investments and Growth of California Cleantech Companies	<ul style="list-style-type: none"> <li>• Effects of EPIC Support on Investments and Growth of California Cleantech Companies</li> </ul>
EPIC Program Regional Economic Impact Analysis	<ul style="list-style-type: none"> <li>• EPIC Program Regional Economic Impact Analysis</li> </ul>
Building Energy Efficiency Technologies and Market Adoption Analysis	<ul style="list-style-type: none"> <li>• Building EE Delphi Panel Energy Savings</li> <li>• On-Bill Energy Savings Calculator</li> <li>• System-Level Savings Calculator</li> <li>• Emissions Calculator</li> <li>• Air Quality Health Benefits Calculator</li> <li>• Social Cost of Carbon Calculator</li> </ul>
Value of Increased Equity in Disadvantaged Communities (DACs) and Low-Income (LI) Communities from Building Energy Efficiency Technology Market Adoption	<ul style="list-style-type: none"> <li>• Value of Increased Equity in DACs and LI Communities</li> </ul>
RGI Technologies Market Adoption Analysis	<ul style="list-style-type: none"> <li>• System-Level Savings Calculator</li> <li>• Emissions Calculator</li> <li>• Air Quality Health Benefits Calculator</li> <li>• Social Cost of Carbon Calculator</li> </ul>
VGI Technology Market Scenario Analysis	<ul style="list-style-type: none"> <li>• VGI Scenario Forecasting</li> <li>• On-Bill Energy Savings Calculator</li> <li>• System-Level Savings Calculator</li> <li>• Emissions Calculator</li> <li>• Air Quality Health Benefits Calculator</li> <li>• Social Cost of Carbon Calculator</li> </ul>

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# Questions?



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# Portfolio Level Logic Model

