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Regional Economic Impacts of EPIC Grants

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Background

- EPIC grants fund technology development that can have several measurable economic impacts:
 - **Direct effects:** changes in employment and production directly funded by grants or matching funds
 - **Indirect effects:** changes in demand for materials and services to make and implement technologies (e.g., increased business for companies in the supply chain)
 - **Induced effects:** changes in household consumption arising from the direct and indirect changes in employment
- Key analytic questions:
 - How much additional economic activity do EPIC grants create across the state?
 - What can we say about impacts in specific communities?

General Methodology

- Input/output (I/O) analysis:
 - EPIC grants are spent in specific sectors; I/O models track how this is spent in various sectors (including households)
 - Impacts for this analysis only dollars that “stay in California”
 - Analysis uses both IMPLAN model and RIMS II data multipliers
 - Results generally similar, which is reassuring
- Impacts measured:
 - Employment: average annual jobs needed to meet demand
 - Labor Income/Earnings
 - Value added: analogous to GDP
 - Output: total value of industry production

Scenarios Examined

- Overall Epic program time frame: 2014 - 2024
- Investments Examined:
 - EPIC Funding
 - Matching funds
 - Follow-on funds
 - Investments specific to disadvantaged and low-income communities (DACs and LI)
- Analysis considers “point-in-time” (annual) impacts of each year of investment
 - I/O models do not capture dynamic impacts of investment over time or changes in economy

Overall Results (IMPLAN)

- 2014-2024 EPIC investments and matching/follow-on funds linked to \$7 billion in economic output, \$4 billion in value-added and 35,000 jobs
- Impacts per \$1 million invested:
 - \$1.8-\$1.9 million total output
 - \$1.1 million in value added
 - Nine Jobs per \$1 million investment

IMPACT TYPE	OUTPUT	LABOR INCOME	EMPLOYMENT	VALUE-ADDED
Direct	\$3,840,000,000	\$1,480,000,000	15,500	\$2,360,000,000
Indirect	\$1,360,000,000	\$512,000,000	7,440	\$774,000,000
Induced	\$1,790,000,000	\$609,000,000	11,400	\$1,070,000,000
Total	\$6,990,000,000	\$2,600,000,000	34,300	\$4,200,000,000

Distribution of Impacts

- Sectors most affected (30% of invested dollars):
 - Direct EPIC Funding:
 - Colleges, Universities, and Professional Schools (NAICS 611310)
 - Other Scientific and Technical Consulting (NAICS 541690)
 - Productive: \$1.3 - \$1.5 million value added per \$1 million
 - Total Funding (including follow-on and matching)
 - Solar Electric Power Generation (NAICS 221114)
- Impacts concentrated in 2017-2021
 - Peak years for investment to date
 - Note that estimates for 2020-2024 include only investments made by April 2020

Impacts of Investments in DACs/LI Communities

- Analysis specifically looked at EPIC investment in projects in DACs/LI communities
 - Includes all project types
- Total EPIC investment in DACs/LI Communities from 2014-2024:
 - \$186,000,000 specifically identified
 - Includes only investments made through April 2020

IMPACT TYPE	OUTPUT	LABOR INCOME	EMPLOYMENT	VALUE-ADDED
DIRECT	\$186,000,000	\$87,700,000	1,050	\$103,000,000
INDIRECT	\$94,800,000	\$34,000,000	516	\$54,000,000
INDUCED	\$107,000,000	\$36,200,000	675	\$63,400,000
TOTAL	\$388,000,000	\$158,000,000	2,240	\$221,000,000

Notes and Caveats on DAC/LI Impacts

- Analysis assumes state-level input/output patterns apply in DAC/LI communities
 - Could over-state impacts if, for example, DACs/LI communities have fewer retail or supply chain businesses, or if employment is not among residents
 - Could understate impacts if investments over time build location-specific resources and economic activity
- A more detailed analysis could look at specific communities, smaller regions
 - Still limited by typical assumptions in IMPLAN/RIMS II
 - Direct expenditure data most reliable, and a dynamic analysis of longer-term impacts
- Benefits to these communities are different from economic impacts.

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