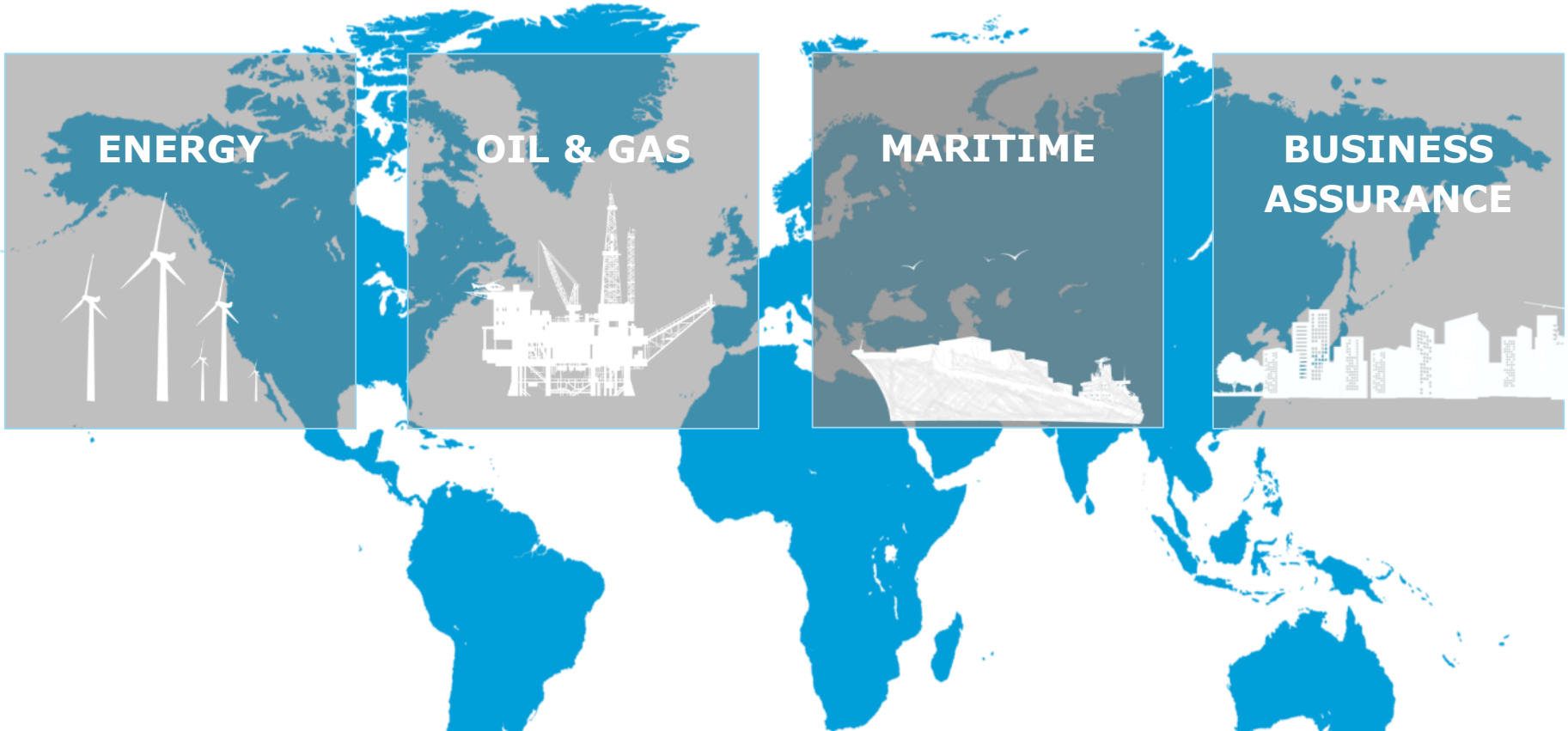




Do EE Rebates Help Drive Multifamily Energy Efficiency Projects in Low-Income Areas?

Presented at the 2017 ACEEE National Conference on Energy Efficiency as a Resource

We Are DNV GL



ENERGY

OIL & GAS

MARITIME

**BUSINESS
ASSURANCE**

150

years of operation

300+

offices

100

countries

13,500

employees

Presentation Overview



Presentation Overview

**Review of challenges and opportunities
in the low income multifamily sector**

**Results of ACEEE research on
participation in multifamily programs**

**Examples of multifamily participation in
residential and commercial programs**

Wrap up and Take Away



Challenges in Multifamily Energy Efficiency



Opportunity in Multifamily Energy Efficiency

Nearly 21 million American households (18% of all households) live in multifamily buildings

Almost 90% of multifamily buildings are occupied by renters

Low-income households pay a higher utility cost per square foot and tend to live in less energy-efficient housing

Many low-income households receive assistance services from other organizations and agencies

Opportunity in Multifamily Energy Efficiency

Energy Efficiency improvements in multifamily buildings could potential save low-income households \$3.4 billion annually



Report from ACEEE

More Savings for More Residents: Progress in Multifamily Housing Energy Efficiency

More Savings for More Residents: Progress in Multifamily Housing Energy Efficiency

Stefen Samarripas, Dan York, and Lauren Ross
February 2017
Report U1702

© American Council for an Energy-Efficient Economy
529 14th Street NW, Suite 600, Washington, DC 20045
Phone: (202) 507-4000 • Twitter: @ACEEEDC
Facebook.com/myACEEE • aceee.org

Report Definitions and Exclusions



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Multifamily defined as buildings with five or more housing units

Table 1. Nationwide housing market

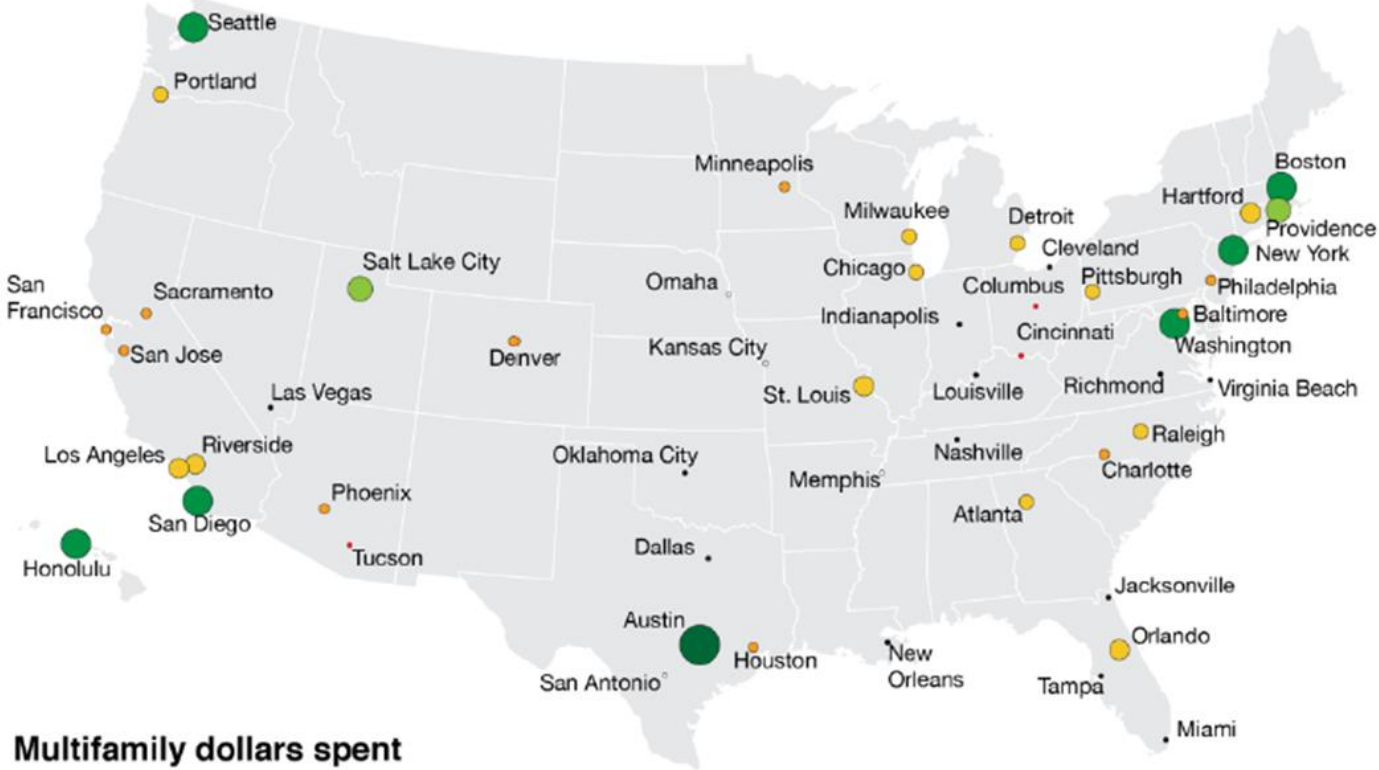
	Number of households (millions)	Percentage
Single-family	80.4	68.6%
Small multifamily (2-4 units)	9.3	8%
Medium multifamily (5-49 units)	14.9	12.7%
Large multifamily (50 or more units)	5.8	5%
Total multifamily (5+ units)	20.7	17.7%

Percentages do not total 100 because figures do not include mobile homes, boats, etc.

Source: American Community Survey one-year estimate for 2014.

Report Definitions and Exclusions

Area includes 51 (MSAs) with the highest number of multifamily households



Multifamily dollars spent as a percentage of total energy efficiency spending

- >15%
- 10–15%
- 8–10%
- 5–8%
- 3–5%
- 1–3%
- <1%
- No data
- None

Report Definitions and Exclusions

Low-income multifamily households are defined as having an annual gross household income at or below 80% of the area median income



The average ELI renter household earns \$1,575 a month. Spending 50% or more of income on rent and utilities means a household is left with **only \$788 for all other living expenses like child care, college tuition, transportation, groceries, emergency savings, medical bills and retirement savings.**

Report Definitions and Exclusions

Program Type

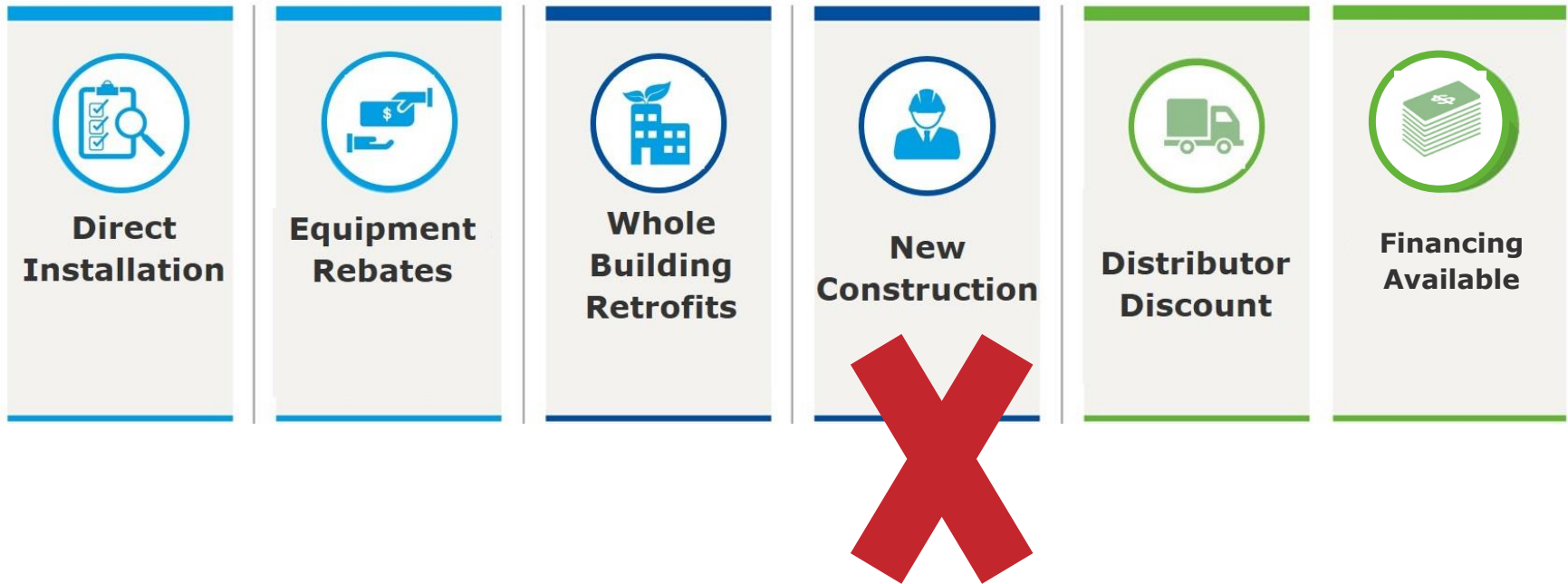
- Report excludes residential or commercial programs for which multifamily programs are eligible but not specifically limited.



Report Definitions and Exclusions

Energy Efficiency Program Offerings

Impacts tracked through new construction are not included.





Key Report Findings

Key Report Findings

Despite new construction, most markets contain a large share of multifamily buildings built before 1980.

Annual Spending on multifamily programs increased by at least \$180 million nationwide since 2011.

Programs designed specifically to serve multifamily owners and residents have grown from 30 to 38 since 2013.

Programs designed specifically to serve the low-income multifamily segment have increased to 15

Programs Serving Low-Income Multifamily Customers

Metropolitan Area	2015 Spending	Program Spending as a percentage of total EE spending
Baltimore-Columbia-Towson	2,372,591	1.44
Boston-Cambridge-Newton	71,620,939	12.13
Denver-Aurora-Lakewood	1,710,980	1.81
Detroit-Warren-Dearborn	8,945,466	1.46
Hartford-West Hartford-East Hartford	16,570,000,	1.56
Houston-The Woodlands-Sugar Land	1,108,002	2.96
Kansas City	NA	NA
Los Angeles-Long Beach-Anaheim	28,390,667	6.31
Minneapolis-St. Paul-Bloomington	1,374,112	1.05
New York-Newark-Jersey City	30,050,846	11.25
Pittsburgh	1,309,000	3.24
Providence-Warwick	9,821,600	9.53
St. Louis	4,500,000	7.76
Urban Honolulu	600,000	10.09
Washington-Arlington-Alexandria	2,428,095	12.99

Q. Do EE rebates help drive multifamily energy efficiency projects in low-income areas?

A. The report shows that EE rebates are driving property managers in these 15 low income areas to do Energy efficiency projects to the tune of \$164,232,298 each year

DNV GL Program Highlights





Services Along The Energy Value Chain

-  Program operations
-  Tracking & reporting
-  Strategic marketing
-  Opportunity assessments
-  Verification services
-  Incentive payments
-  Energy savings modeling
-  Training

DNV GL Program Highlights

Looking Beyond the Scope of the ACEEE Report:

Serving Multifamily Buildings through Commercial and Residential EE Programs

**City of
Anaheim, CA**

**Region of
Eastern
Kentucky**

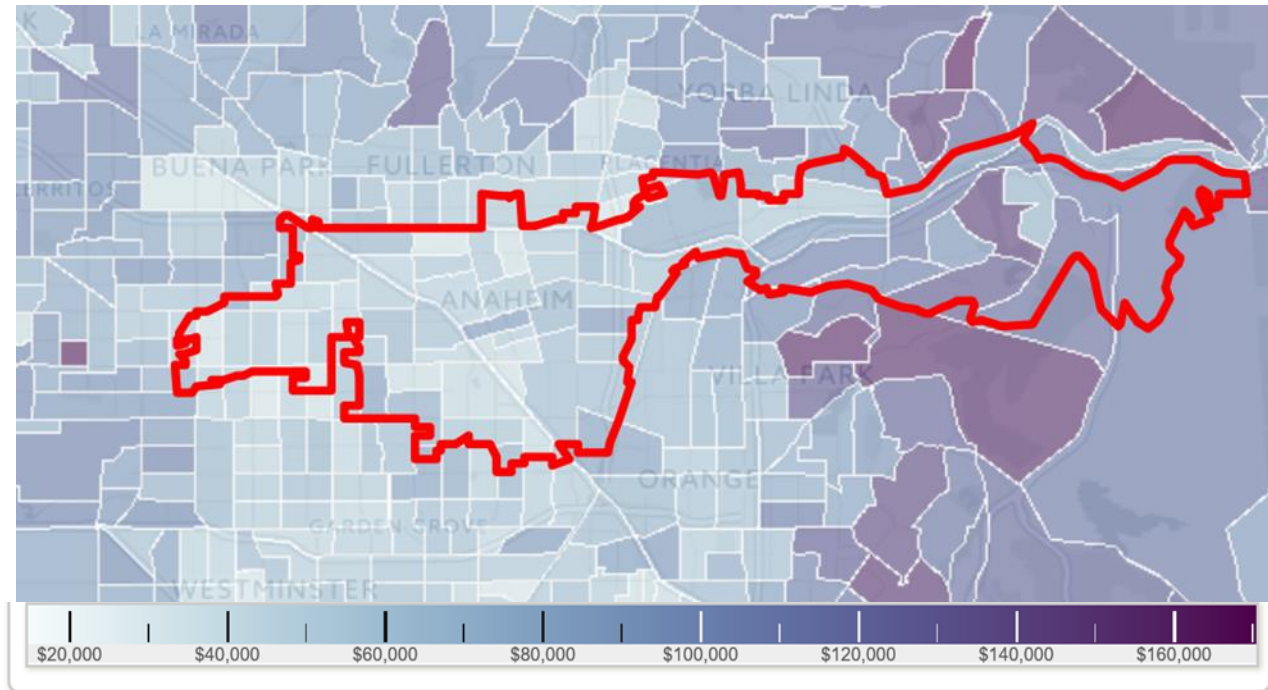
**State of New
Mexico**



California



Anaheim Public Utilities



Service Area

- Community-owned utility, operated by and serving the City of Anaheim
- Provides electricity to more than 115,000 customers within Anaheim.

Area Income

- Percent Persons in poverty: 16.5% (family of 4 earning less than \$24,339)

Anaheim Public Utilities Energy Efficiency Program

Program Type



Residential



**Income
Qualified
Residential**

Energy Efficiency Program Offerings



**Direct
Installation**



**Equipment
Rebates**

Anaheim, CA Energy Efficiency Program by the Numbers

18 years operated by DNV GL

Total utility Annual kWh goal 632,000

Audits for over 2000 residential customers on an annual basis



Kentucky



Service Area

- Serves approximately 168,000 customers in all or part of 20 Eastern Kentucky Counties

Area Income & Demographics

- Median Household income: \$32,612 (rest of Kentucky = \$ 43,470; national = \$ 55,775)
- Since 2008, median income has dropped by an average of 4.2%
- 30.2% live below the federal poverty line (rest of Kentucky = 18.5%; national = 14.7%)
- Approximately 40.2% of personal income comes from government benefit programs (national average is 17.6%).
- Employment has declined by 15%



Kentucky Power Energy Efficiency Program

Program Types



Residential



**Small
Business &
Commercial**

Energy Efficiency Program Offerings



**New
Construction**



**Whole
Building
Retrofits**

Kentucky Power Energy Efficiency Program by the Numbers

6 years operated by DNV GL

7,296,000 - Annual kWh goals

In 2016 – 300 Unique Commercial Customers Participated in Program, paying out over \$ 1.1 million in incentives



Scope Towers – Housing Authority of Ashland

327,003
kWh Est. 1st
Year Savings

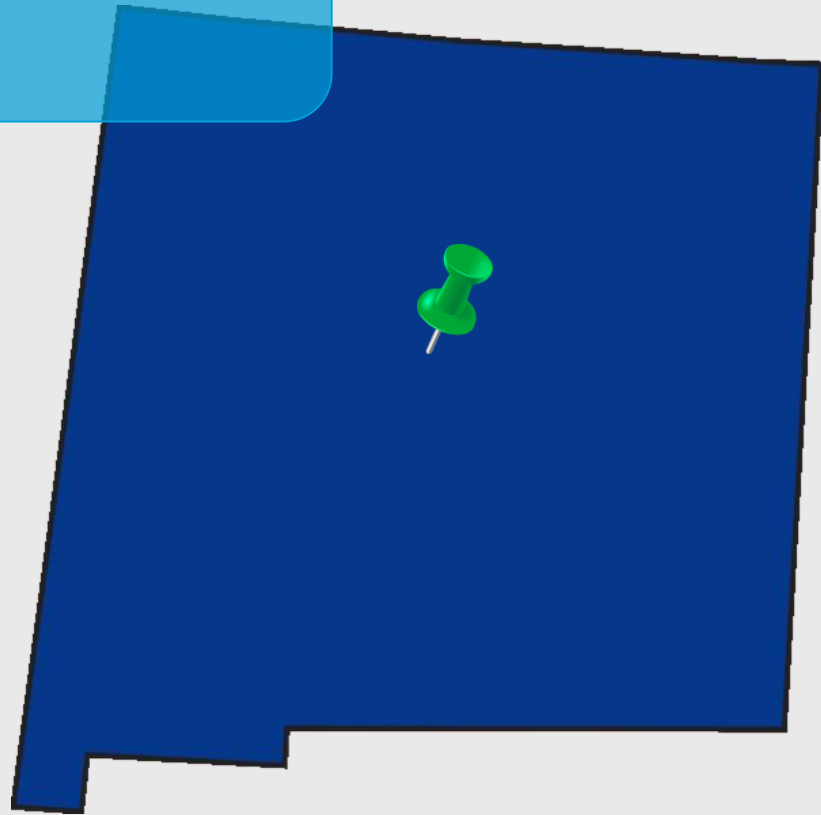
Approx.
\$27,680 in
incentives

276 Low
Income
Apartments

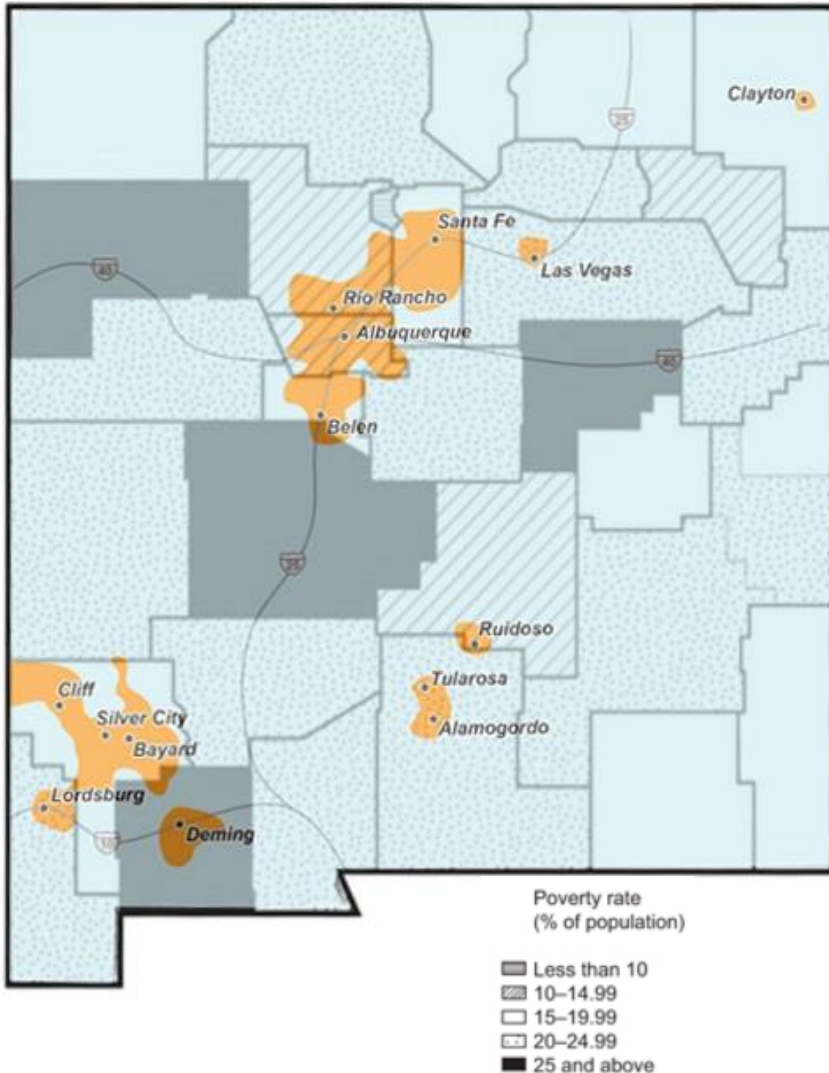
- Completed 3 Projects over 2 years
- Upgraded interior & exterior lighting to LEDs – both



New Mexico



Public Service Company of New Mexico



**Business
Energy Efficiency
Programs**

Service Area

- Largest utility in state
- Serving more than 500,000 residential and business customers

Area Income & Demographics

- Median Household income: \$45,382
- Percent Persons in poverty 19.6%

PNM Business Energy Efficiency Programs

Program Type



**Small
Business &
Commercial**

Energy Efficiency Program Offerings



**Whole
Building
Retrofits**



**Distributor
Discount**



**Direct
Installation**



**New
Construction**

PNM Business Energy Efficiency Programs by the Numbers

Operated by DNV GL for 8 years

Gross Annual kWh Saved 269,987,974

2017 Annual Savings Goal of 43,751,910 kWh



The Imperial Building

**Downtown Albuquerque
205 Silver Ave. SW.**



The Imperial Building, Albuquerque, NM

130,183
square feet

5 stories

74
Apartments

15,000
square feet
Retail

Awards

- 2017 Best Buildings, Associated General Contractors of New Mexico
- 2016 Chairman's Award, NAIOP NM
- 2016 Honor Award for Design Constructed, NMASLA



The Imperial Building, Affordable Housing

54 apartments are set between 30 and 50 percent of the area's median income.

Twenty of the units have rents set at about 10 percent below market prices in the area.

Another 15 apartments are designed for special-needs residents.



The Imperial Building, Albuquerque, NM

Energy Efficient Upgrades:

- Air Source heat Pumps
- LED Interior Lighting
- LED Exterior Lighting
- LED Parking Garage Lighting
- Common areas and individual apartments

Energy Efficient design resulted in:

- Annual savings of 369,755 kWh
- Lifetime savings of 4,580,964 kWh





Wrap Up

WRAP UP

U.S. multifamily rental housing is a globally sought-after asset class with rents continuing to rise in most markets.

61 percent low-income working families spend more than one-third of their income on housing, exceeding an accepted guideline for what constitutes affordable housing

The total number of people considered low-income is expected to reach 50 million in a few years

Energy efficiency must be integrated into distributed generation network systems.

Take Away

- **Programs serving the low income multifamily sector are growing.**
- **Many utility programs have overcome barriers and are achieving substantial energy savings while providing numerous benefits to the communities they serve.**
- **Yet, there still remains a critical need to serve the multifamily, low-income market sector with tailored energy efficiency programs.**





QUESTIONS?

Crescent Romero

Crescent.Romero@dnvgl.com

505-938-9400

www.dnvgl.com

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