

Johnson Controls Housing Market Experience



September 2014 | for Johnson Controls internal use only | confidential
and proprietary



Housing Market Definition

Public Housing

- All housing assets owned by HUD or owned or operated by a public housing authority
- All housing assets owned and operated by a public housing authority

Affordable Housing

- Asset is Owned and Operated by Single Non-Profit Entity
ie: Faith or community based organization
- Asset is owned by for profit entity
- Asset is owned by multiple funders and operated by a non-profit – Typically receives federal/and or State funding



Current Market Drivers

- HUD spends 7 Billion Annually on Energy
 - 20% annual savings represents a big opportunity for the federal government
 - Better Buildings Challenge for Multifamily Housing Program is creating awareness
 - HUD provide financial incentives for public housing if they use performance contracting to reduce energy costs
 - Less than 15% of all eligible housing authorities have implemented a performance contract
 - Incentives have been released recently for the multifamily housing sector
- Pressure of rising operating costs
 - Energy, water, sewer, and repairs
 - Aging Infrastructure



Shared Responsibility for Energy Costs

- Woolwine, Lindsey Lawn, Fouche and Delta residents are given a monthly Electric and Garbage Allowance
- Woolwine Extension is given a monthly Allowance for the Electric, Natural Gas, Water/Sewer and Garbage
- Housing Authority pays all other utilities which are reimbursed by HUD as a part of their operating fund
- HUD does not reimburse the HA for 100% of their operating costs



HUD Energy Performance Contracting Program

- Adopted into law as a Federal Regulation in 1987
- 24 CFR 965.308 – Energy Performance Contracts
- Competitive procurement via RFP for qualifications
- PHA selects “best” solution provider not lowest bid
- Requires annual funding for major equipment replacement in energy services agreement
- Requires M&V for contract period
- Project term can be 20 years
- All contracts have to be approved by HUD



What motivates PHA's to enter into EPC's?

- No upfront cost to PHA
- Shrinking subsidies
- Reduce utility expenses
- Facility improvements
- Reduce repair & maintenance costs
- Modernize building operations
- Training for maintenance staff
- Educate staff/residents
- Opportunity to increase services
- Improve resident comfort
- Environmental benefits
- Financial flexibility
- Reduce maintenance expenses
- Unencumbered cash flow
- Community benefits
- Assist in establishing private partnerships
- Local jobs & contracts
- Improve community perception of public housing



Do not copy without written consent of JCI

Are there other funding options?

Grants and Incentives

- Federal, State, and Local tax credits
- Utility incentives
- Foundation grants
- Federal, State and Local rebates

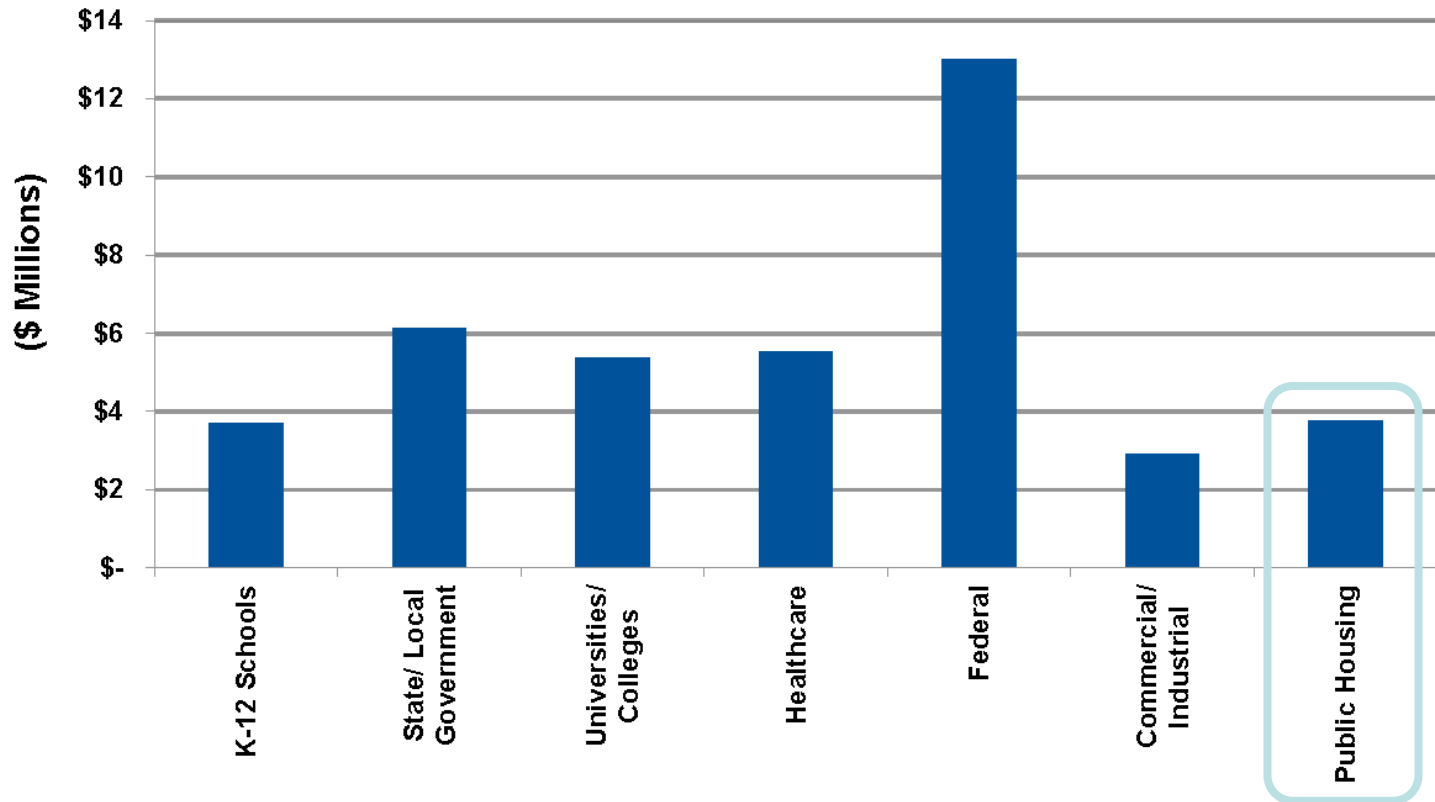


Since 2009, our team has helped customers secure more than **\$400+ million** in alternative sources of funding: government and private grants, utility rebates and incentives, and government subsidized loans



Average Project Size by Customer Type

Chart 2.3 Average Project Cost by Customer Type, United States: 2013



(Source: Navigant Research)



Case Studies

Missoula Housing Authority – Phase II in development

271 Units



- High Efficiency Lighting
- High Efficiency Heating Hot Water Systems
- Temperature Controls
- Water Conservation
- Building Envelope Improvements
- High Efficiency Appliances
- Central Heating/Cooling
- DDC Control upgrades
- DHW Upgrades
- High Efficiency Chiller
- Condensing Hot Water Boilers

Financial Impact:

Combined \$3,162,138 project with annual energy cost savings in excess of \$115,691



Helena Housing Authority-Phase II under construction

366 Units



- Solar Photovoltaic
- Tenant Allowance - conversion from utility master meter to individual electric and gas meters
- Elevator upgrades
- Lighting upgrades
- Water conservation including new kitchen faucets
- Boiler Retrofits
- Furnace retrofits
- Water heater retrofits
- Appliance upgrades
- Fuel conversion
- Upgrade to DDC controls
- Programmable thermostats
- Controls for engine block heaters
- High efficiency cooling for elderly residents
- Irrigation controls upgrade

Financial Impact:

\$4,301,610 project with annual energy cost savings in excess of \$239,518

JCI Multi-Family Pilot Experience

- Partners in the Department of Energy Pilot
- Grantee & Program Manager : SAHF - Member Organization of Multi-Family Owners
- LIIF – Project Financing
- Johnson Controls – Assess, Engineer, Design, build, and provide financial guarantees



Pilot Lessons Learned

- Most of the properties were under our typical threshold for opportunity size
- High costs of assessment and development due to scattered properties
- The guarantee requirement burdened the project with the cost of risk and due diligence
- Multiple owners and funders proved challenging to finance and some properties were dropped due to this factor
- High cost of contracting, even though we had a standard contract, each owner wanted their own modifications.
- Market opportunity requires less complex technical solutions and therefore should lend itself to simple contract and funding models



Opportunities to Scale Market

State

- Set up revolving funds for multi-family owners
- Use dedicated bond funding for multi-family housing retrofits
- Provide Job growth through training and development of small business to address the market
- Provide risk mitigation support through energy office expertise

HUD

- Simply the public housing approval process and have consistency in the regulations
- Create financial incentives for multi-family housing similar to those for public housing
- Additional resources to the Energy Office Team
- Team with State Energy Offices to provide market education

Private Sector

- Develop new financial business models
- Simply the development and contracting process

