Swimming Against the Tide—Gauging HVAC Quality Installation and Quality Maintenance Program Efforts to Establish a Foothold in the Market

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IEPEC International Energy Program Evaluation Conference

Agenda

- Study Objectives
- Programs and Market Transformation Indicators
- Data Sources
- Findings
- Recommendations

Study Objectives

- Provide baseline for CPUC HVAC residential and small commercial customer programs to help assess future market effects
- Address market transformation indicators (MTIs) established for HVAC programs
- Develop estimates for energy-efficient HVAC equipment of market share, sales, saturation

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CPUC HVAC Subprogram Areas

- Quality Installation (QI) and Quality Maintenance(QM)
  - Industry standards (ANSI/ACCA/ASHRAE) establish minimum requirements for the installation, inspection and maintenance of HVAC systems
  - Promote thermal comfort, indoor air quality, and energy efficiency.
- Upstream HVAC Equipment
  - Incentives provided to distributors for selling high efficiency HVAC equipment

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CPUC HVAC Subprograms and Market Transformation Indicators (MTIs)

Subprogram	Subprogram Name	MTI	MTI Description
HVAC-1	Upstream HVAC Equipment Subprogram	MTI-1	Market share of climate appropriate HVAC equipment.
HVAC-2	Residential Energy Star Quality Installation Subprogram	MTI-2	Percentage change in the use of Quality Installation guidelines among all California Residential HVAC installation contractors.
HVAC-3	Commercial Quality Installation Subprogram	MTI-3	Percentage change in the use of Quality Installation guidelines among all California Commercial HVAC installation contractors.
HVAC-4	Quality Maintenance Development Subprogram	MTI-4	Percent change in the employment of Quality Maintenance practices among all California HVAC contractors and technicians.

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Data Sources

- Data sources for baseline MTIs and secondary indicators
  - HVAC Maintenance Behavioral Research Study
  - RMST/CLASS
  - CMST/CSS
  - HVAC Impact Evaluation
- These included
  - Online and telephone surveys of residential customers, small commercial customers, and contractors
  - In-depth interviews with program staff and HVAC distributors
  - On-sites and field assessments of homes with cooling systems, recent installations, and recent maintenance

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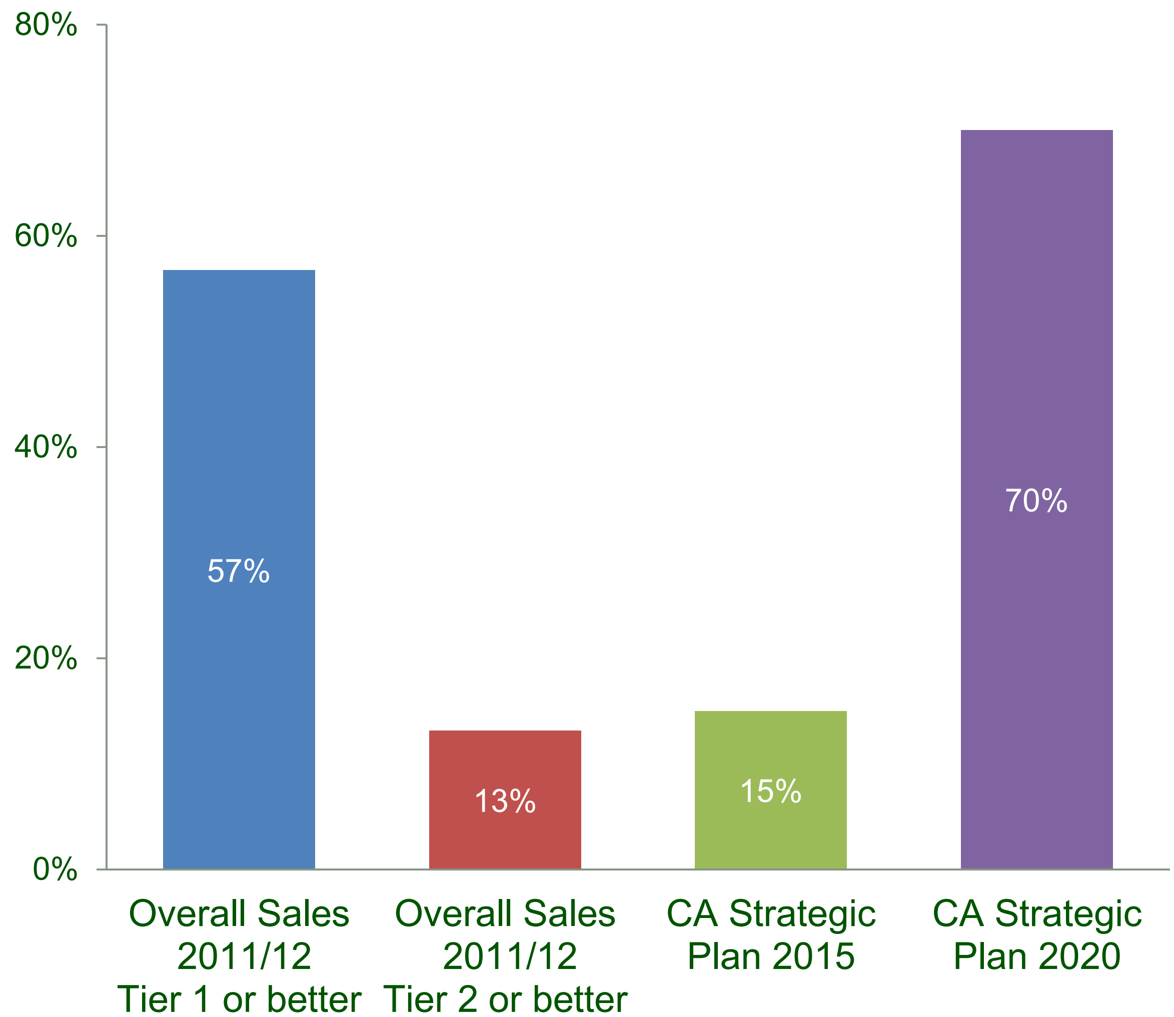
Progress Toward California Energy Efficiency Strategic Plan Market Share Goal:

15% of HVAC equipment shipments optimized for California's climate by 2015 and 70% by 2020



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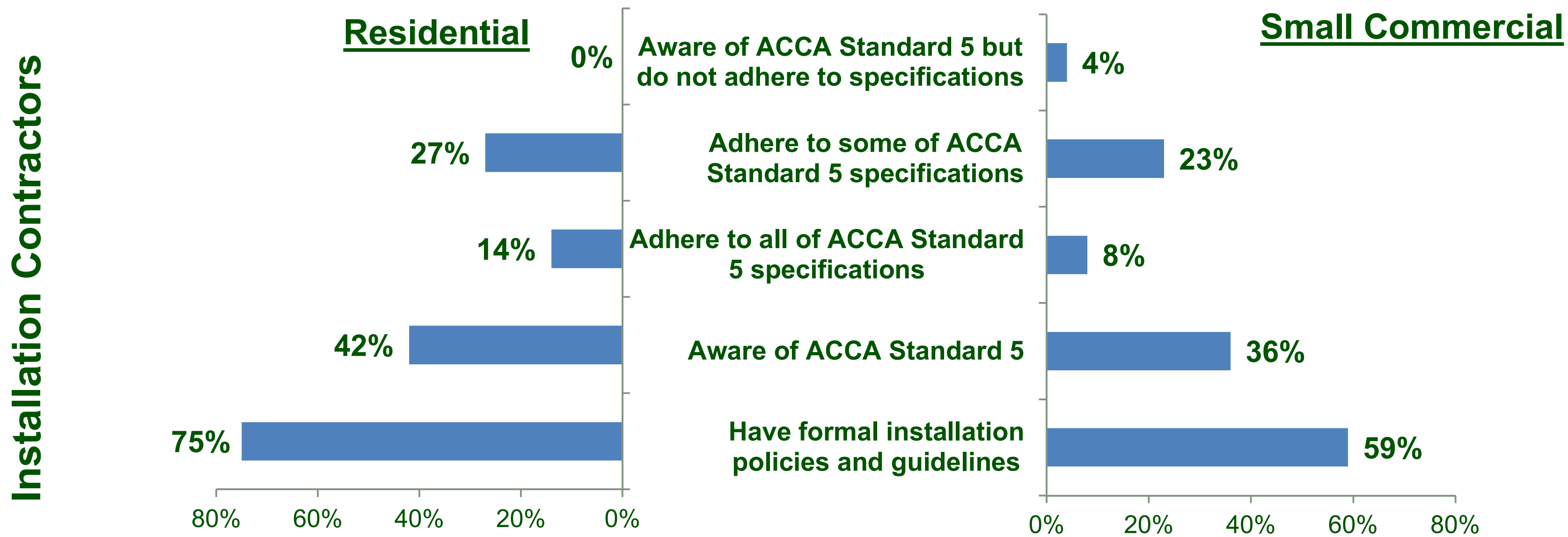
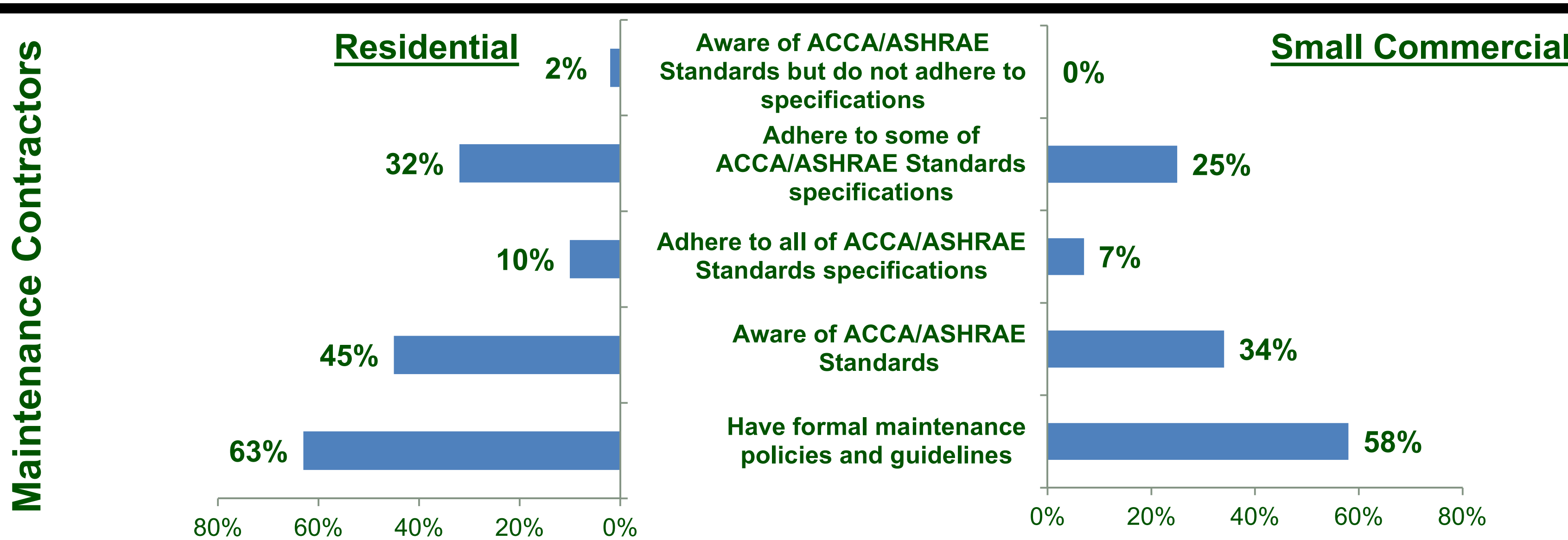
Contractor Awareness of and Adherence to Standards





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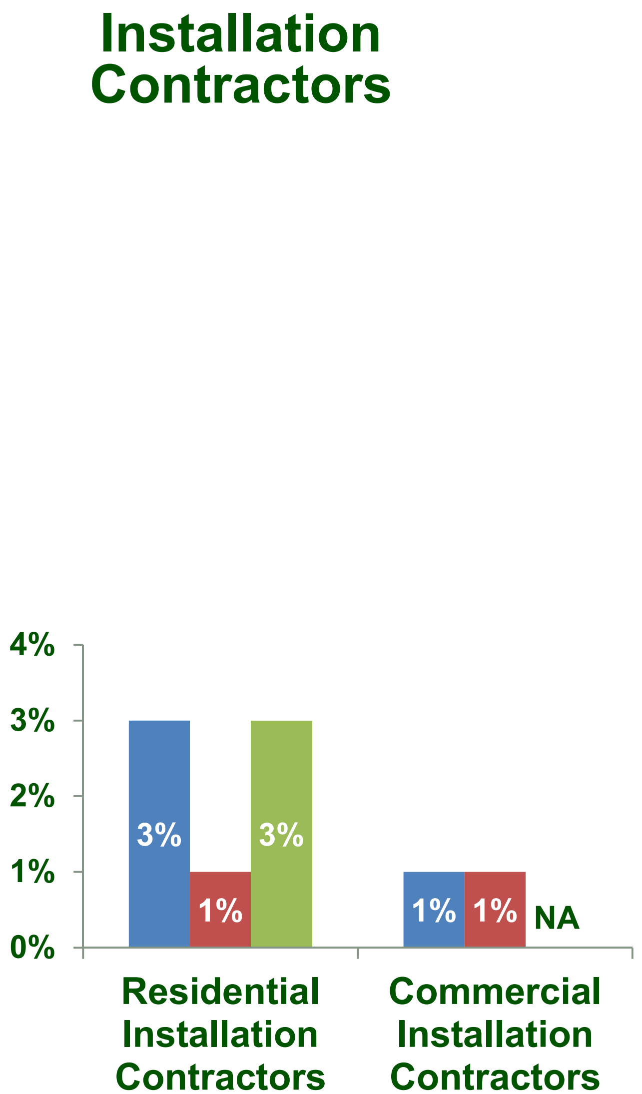
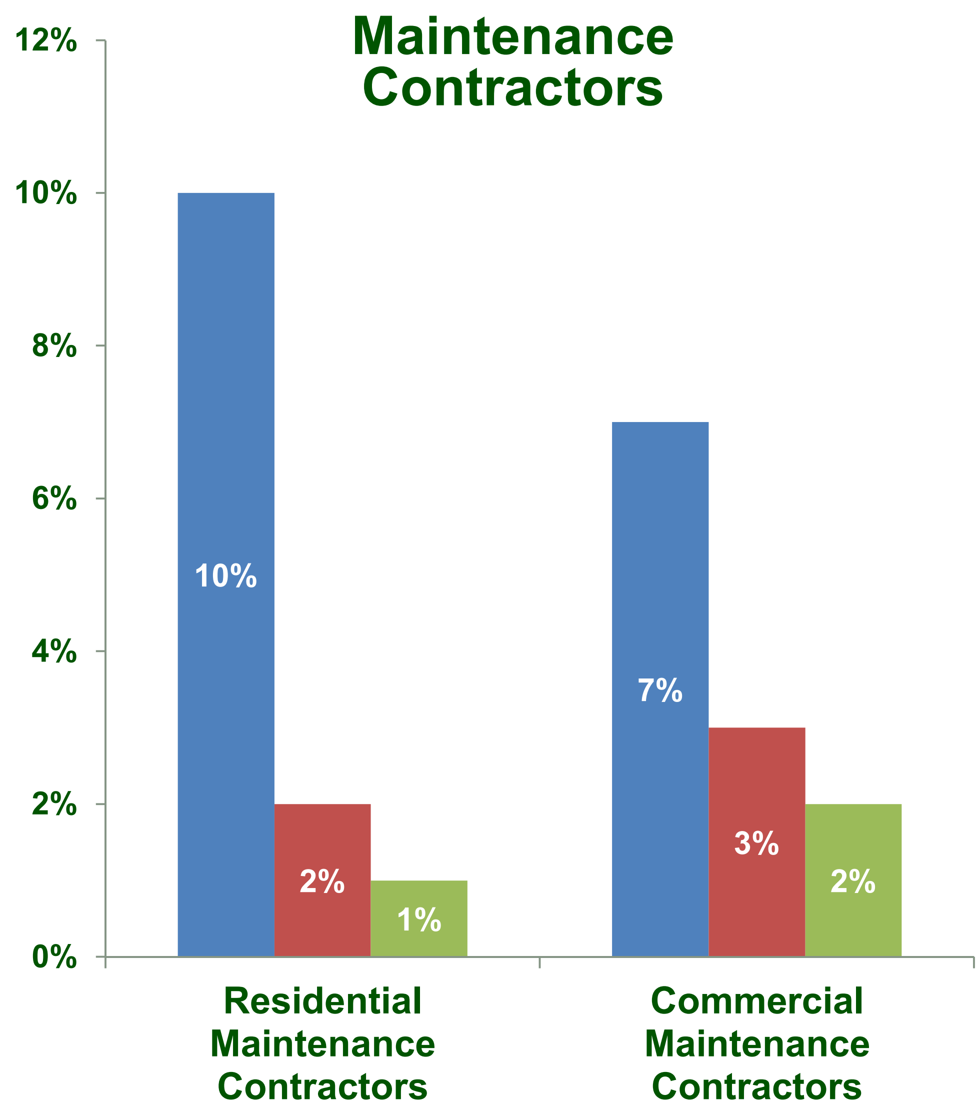
Contractors with IOU Training / Qualification





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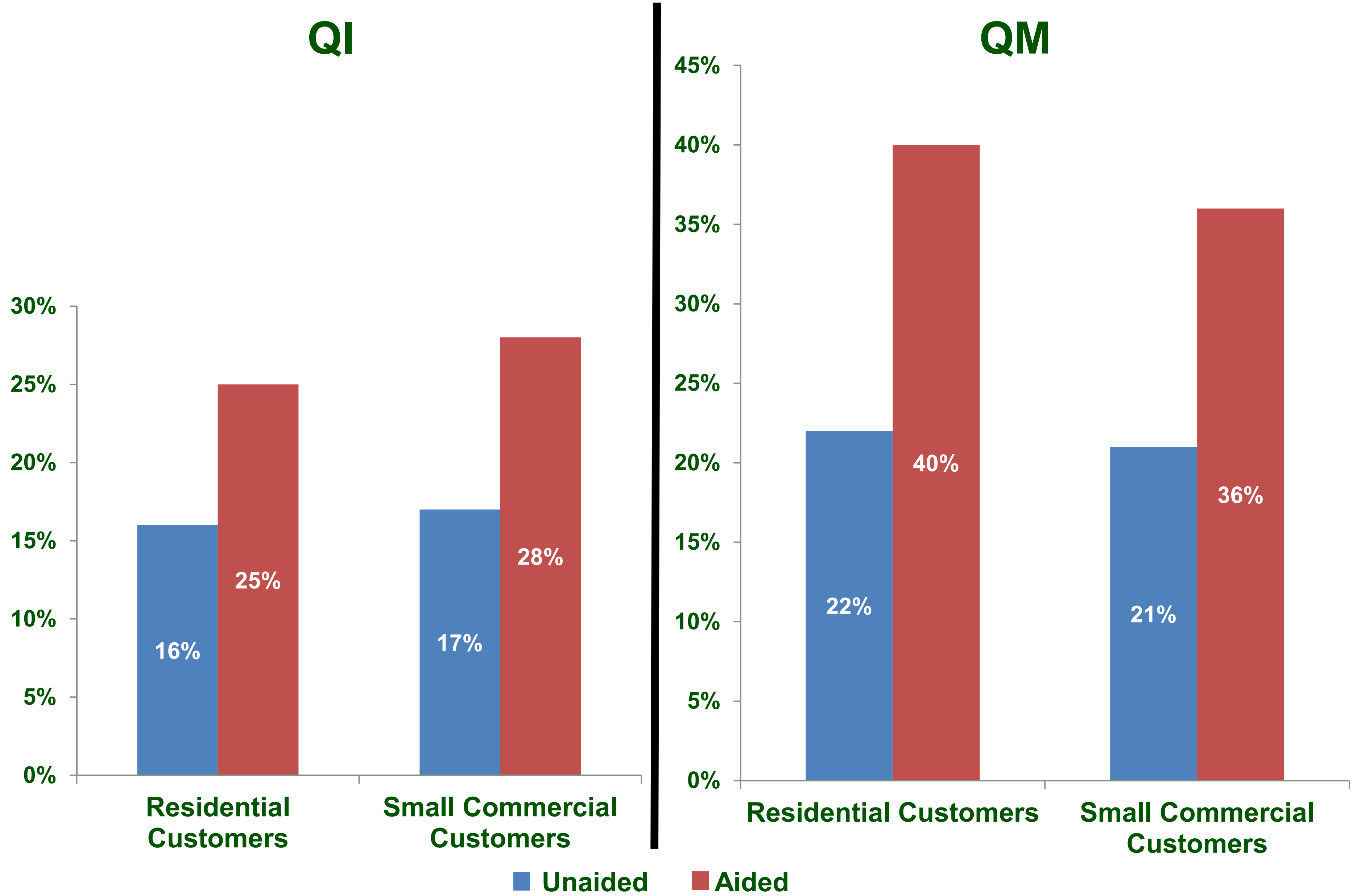
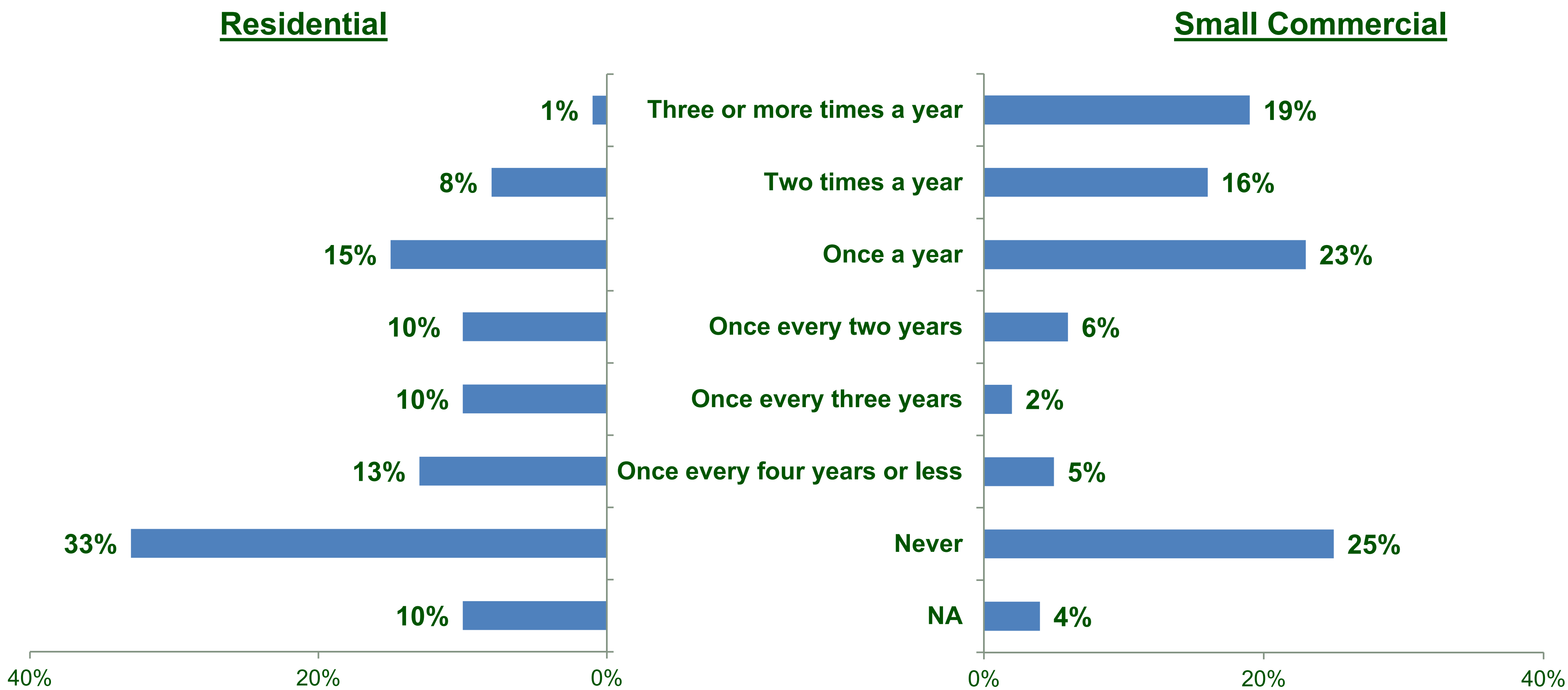
Customer Awareness



Customer Reported Frequency of Maintenance Visits (excluding repairs)



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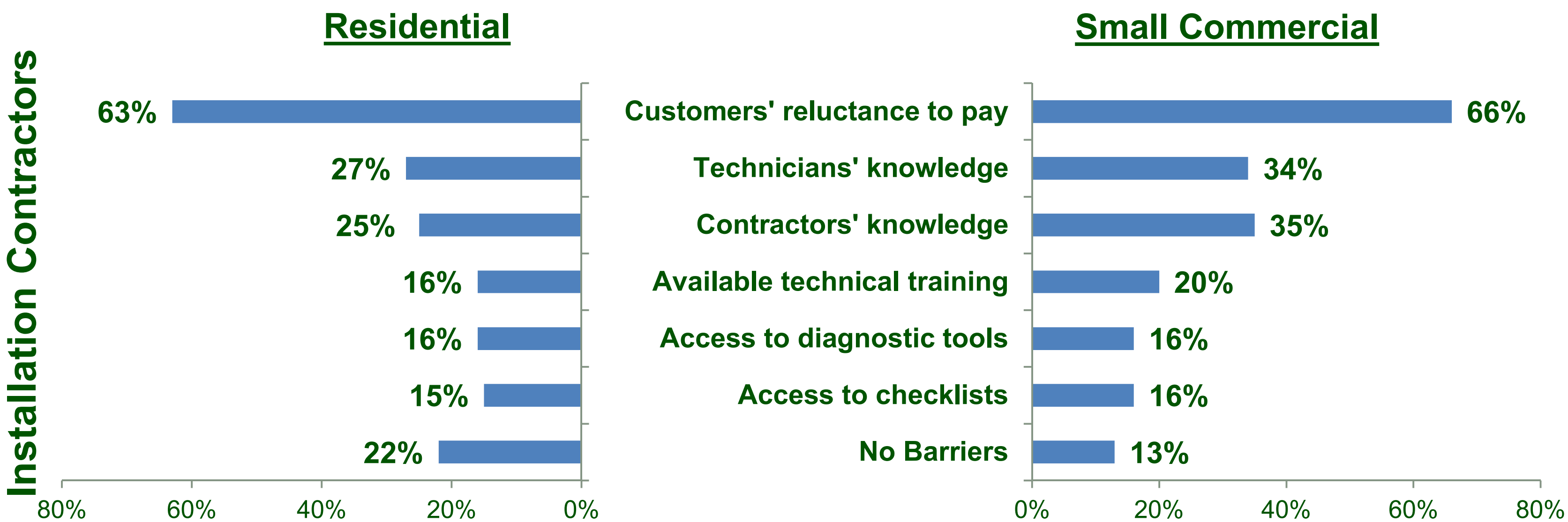
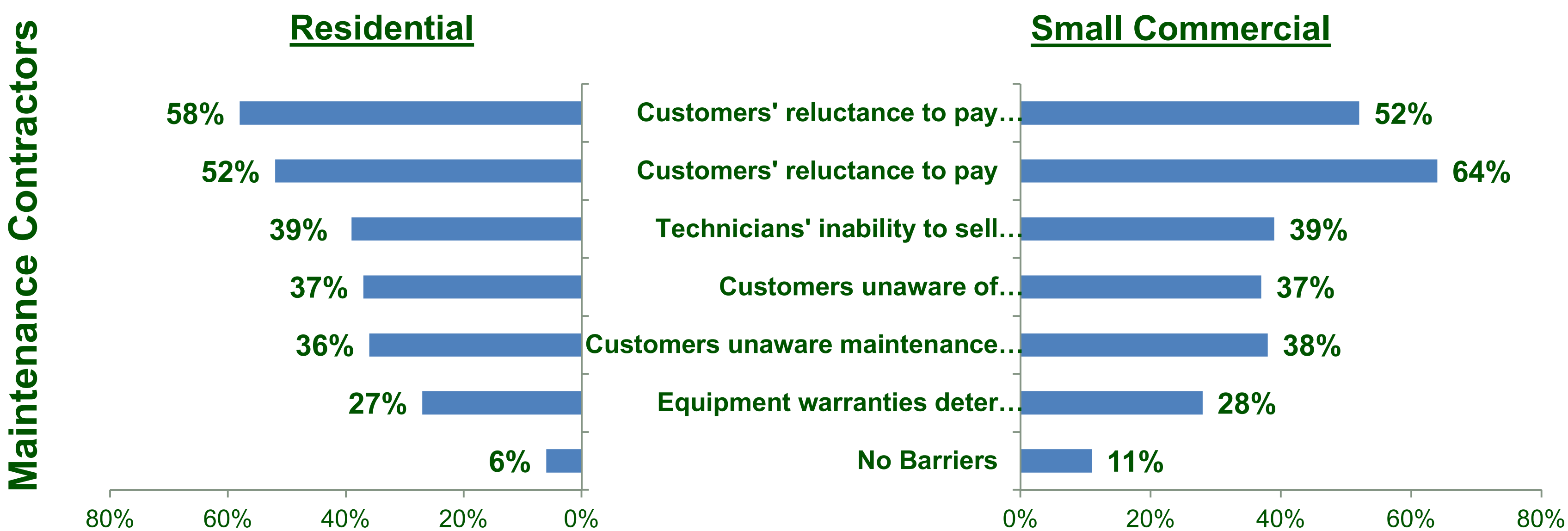
Barriers to QI and QM





Market Squeeze on Programs

- "Race to the bottom" in the market for HVAC service and installation
  - Low customer awareness of QI and QM
  - Customer inability to assess quality of contractor's work
- The QI and QM Programs attempt to address this issue
- But may be caught between the pincers of a demand-side and supply-side squeeze
- On the demand side, customer reluctance to pay is a barrier
- On the supply side, up to one-quarter of HVAC technicians in California may be unlicensed contractors
- Strong cost pressures on licensed contractors
- May limit ability of QI and QM programs to gain traction in marketplace

Recommendations

- Design and operation of the HVAC subprograms
  - Focus on educating customers about QI and QM and the benefits of energy efficient HVAC systems
  - Step up efforts to have contractors participate in IOU training programs
- Research and monitoring of program indicators
  - Implement a market share tracking system for periodic reporting of market shares by efficiency level and sales
  - Customer focus groups may help assess perceptions of "Quality Installation” and “Quality Maintenance” versus the generic term “quality”
  - Further assess the magnitude of the problem of competition from unlicensed technicians

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