



THE
CADMUS
GROUP, INC.

Proposed Phase 2 Measures/Programs

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Goals for Selection of Protocols

- For Phase 1, selection based on:
 - Prevalence in current portfolios
 - Diversity in methodology, fuel, sector
 - Capturing various “use cases”
- For Phase 2, selection based on:
 - Likely prevalence in portfolios 3-5 years hence
 - Diversity
 - Limited by time/budget

Choice of Options

- Include those not selected in Phase 1
- Limit to commercial and residential
 - Industrial undergoing similar effort through ISO 50001
 - Maybe revisit industrial in Phase 3
- Ideally, capture measures or programs that constitute ~80% of portfolio savings available in 3-5 years

Selection process

- Brainstormed to develop list of measures/programs
 - Based on industry knowledge of programs
 - Results from conservation potentials assessments
- Assigned priority (high/medium/low)
- Need to select 10-15 measures/programs for Phase 2

High Rank

Sector(s)	Protocol	Reason
Nonresidential	ASD Motors	very large savings potential
Nonresidential	Air compressors	very large savings potential
Nonresidential	New Construction/Major Renovation	very large savings potential
Nonresidential	Retro-commissioning	small to medium savings, widespread potential

Medium Rank

Sector(s)	Protocol	Reason
Residential	ENERGY STAR Appliances (clothes washer, dishwasher)	small savings, although widespread use
Nonresidential	Com Refrigeration Systems - LED Case Lighting	reasonable savings, limited application
Nonresidential	Com Refrigeration Systems - Anti-sweat heater	reasonable savings, limited application
Nonresidential	Com Refrigeration Systems - ECM Motors	reasonable savings, limited application
Nonresidential	Com Refrigeration Systems - Evap Controls	reasonable savings, limited application
Res/Nonres	HE Water Heaters	small savings, although widespread use
Residential	Low-flow showerheads/aerators	small savings, although widespread use
Residential	Furnace ECM	small savings, although widespread use
Residential	Small AC	small savings, although widespread use

Medium Rank, cont

Sector(s)	Protocol	Reason
Res/Nonres	Water-Source Heat Pump	large savings (especially in MF high-rise), limited application
Residential	Behavioral	Uncertainty in EMV, more and more programs
Residential	ENERGY STAR New Homes	reasonable savings
Residential	Small ASHP	small savings, although widespread use
Nonresidential	Heat recovery - Enthalpy wheels, plate/frame	reasonable savings, limited use as of yet
Nonresidential	Heat recovery -- Boiler Economizers	large savings, limited industrial application
Res/Nonres	HVAC Controls	medium to large savings
Nonresidential	Data center efficiency- ES Servers/Virtualization, Efficient Storage/UPS	large savings, limited application
Res/Nonres	HVAC QI	small savings, but widespread use

Low Rank

Sector(s)	Protocol	Reason
Nonresidential	Refrigeration Systems - Lighting Controls	limited application
Residential	Heat recovery - ERV/HRV	small savings, limited application
Nonresidential	Commercial cooking (griddle, oven, steam cookers)	small savings, although widespread use
Nonresidential	Data center efficiency – HVAC	reasonable savings, limited application
Nonresidential	Data center efficiency - Design operation	reasonable savings, limited application
Res/Nonres	Household/Office Electronics	small savings
Nonresidential	Hotel key card	reasonable savings, limited application and use
Nonresidential	PC Network Controls	reasonable savings, limited application and use