



M E M O

DATE: August 7, 2014
TO: Mike Ihesiaba, CECONY
FROM: Ryan Bossis and Satyen Moray, ERS
RE: DMP014/015 - M&V Plan

The Demand Management Program (DMP) projects DMP014/015 involve the installation of adaptive climate controllers (ACC) on existing PTAC units throughout a residential multi-family complex. The complex is divided into two towers connected on the lower floors. Each tower is assigned a separate DMP project number. The ACC varies the PTAC fan speed to match the load, thereby savings fan energy as well as properly sizing the airflow over the unit's coil.

ERS reviewed the fan and compressor energy use during several periods. The results are provided in Table 1. The analysis did not take into account variation in the ratio of fan to compressor runtime (changes in cycling) for the reasons mentioned above. This will be accounted for in the actual sampling. Overall, the unit with the ACC controller saw lower fan and compressor use, with the largest difference in wattage during the 2 - 6 pm period.

Table 1. Test Summary

Period	Component	ACC	Bypass	Savings	
		Watts	Watts	Watts	Percent
All	Fan	15	48	33	69.2%
	Compressor	882	919	36	3.9%
Day	Fan	15	48	33	68.1%
11 am - midnight	Compressor	903	941	38	4.0%
Night	Fan	14	47	33	70.5%
Midnight - 6 am	Compressor	828	841	13	1.6%
Peak	Fan	15	48	34	69.6%
2 - 6 pm	Compressor	917	982	66	6.7%

During the peak period savings were 34 W and 66 W for the fan and compressor respectively. Using an average metered duty cycle of 50% during the period, the weighted savings would be 50 W.

Potential Savings

Table 2 provides the potential savings of this measure, assuming 50 W savings per unit and 3,023 PTAC units.

Table 2. Potential Project Savings

Measure Name		Energy Savings (kWh/yr)	Peak Demand Savings (kW)
PTAC controller	DMP014	2,908,030	227
	DMP015	6,340,128	304
	Application total	9,248,158	531
	Desk review	N/A	N/A
	Spot testing	1,500,000	150