ADRES Automated Demand Response and Energy Savings
BUILDING AUTOMATION SYSTEM
INFORMATION RESPONSE

ENERGY PROCUREMENT AND MANAGEMENT DEPARTMENT
ADVANTAGES AND CONSIDERATIONS

Prepared by:

Winn Energy Controls, Inc.

2637 Ariane Drive
San Diego, California 92117

Energy Management Department

The Energy Management Department that is responsible for electric, gas, and water utilities can utilize that ADRES Controller to provide procurement strategies. With the ADRES Controller tracking energy consumption, trending data, and weather data the Energy Management Department can optimize wholesale energy procurement strategies or select an optimized utility rate structure for a region or buildings.

The ADRES Controller can provide real-time or scheduled demand response to reduce energy costs while maintaining the store environment.

Future addition of Solar PV and battery systems, small commercial wind turbine systems, backup emergency generator systems, advanced lighting systems can all be controlled, monitored, alarmed, programmed and configured by the corresponding ADRES unit type controller.

Some of the Energy Management and Utility Highlights:

➢ The ADRES Controller provides energy consumption, trend data, with weather data to project energy consumption requirements for different times of the year.
➢ Automated Utility accepted and approved Measurement and Verification system.
➢ The ADRES Controller can trend, graph, and report energy consumption associated with individual building systems (e.g. HVAC, Lighting, etc.…)
➢ The ADRES Controller unit can be programmed to participate in Demand Response Programs.
➢ The ADRES Controller uses Utility verified Measurement and Verification reports to participate in Utility Rebate and Incentive Programs.

ADRESpro HVAC Trend Report Example

ADRESpro electric meter detailed report sample. Graphical trending of the data is also available.

	Readings	Reports	Control	Options	
Channel	**Description**	**Reading**	**Pulses**	**Reading Time**	
1	Electric Meter		387,646.1 kWh	63,548,541	10/3/2015 12:00 AM
1	Electric Meter		387,647.1 kWh	63,548,700	10/3/2015 12:15 AM
1	Electric Meter		387,647.7 kWh	63,548,799	10/3/2015 12:30 AM
1	Electric Meter		387,648.7 kWh	63,548,966	10/3/2015 12:45 AM
1	Electric Meter		387,649.3 kWh	63,549,058	10/3/2015 1:00 AM
1	Electric Meter		387,650.3 kWh	63,549,224	10/3/2015 1:15 AM
1	Electric Meter		387,650.8 kWh	63,549,316	10/3/2015 1:30 AM
1	Electric Meter		387,651.8 kWh	63,549,483	10/3/2015 1:45 AM
1	Electric Meter		387,652.4 kWh	63,549,575	10/3/2015 2:00 AM
1	Electric Meter		387,653.4 kWh	63,549,738	10/3/2015 2:15 AM
1	Electric Meter		387,654.1 kWh	63,549,853	10/3/2015 2:30 AM
1	Electric Meter		387,655.2 kWh	63,550,040	10/3/2015 2:45 AM
1	Electric Meter		387,655.8 kWh	63,550,131	10/3/2015 3:00 AM
1	Electric Meter		387,656.8 kWh	63,550,299	10/3/2015 3:15 AM
1	Electric Meter		387,657.4 kWh	63,550,390	10/3/2015 3:30 AM
1	Electric Meter		387,658.4 kWh	63,550,558	10/3/2015 3:45 AM
1	Electric Meter		387,659.2 kWh	63,550,682	10/3/2015 4:00 AM
1	Electric Meter		387,662.7 kWh	63,551,265	10/3/2015 4:15 AM
1	Electric Meter		387,666.1 kWh	63,551,814	10/3/2015 4:30 AM
1	Electric Meter		387,668.4 kWh	63,552,189	10/3/2015 4:45 AM

Back to Selection | Graph | Report Preview | PDF Report | Get Current Reading | Export to Excel

Tabular HVAC summary M&V performance data is shown within the following report sample:

Energy Savings Report Detail (HVAC)

Building: Ruby Moanalua (ADRES)   Building Status: All
Unit: Select Days: All
    Select Time: All
Baseline Range: 9/8/2015 12:00:00 AM to 9/12/2015 12:00:00 AM   PostRetro Range: All

M&V for Ruby Moanalua ADRES Unit 1

Baseline Performance Data						Post Retrofit Performance Data						Read Details
Total Bin Hours	Energy Consumption (kWh Avg)	Room Temperature (Deg F Avg)	Supply Temperature (Deg F Avg)	Return Temperature (Deg F Avg)	Delta Temp (Supply - Return) (Deg F Avg)	Total Bin Hours	Energy Consumption (kWh Avg)	Room Temperature (Deg F Avg)	Supply Temperature (Deg F Avg)	Return Temperature (Deg F Avg)	Delta Temp (Supply - Return) (Deg F Avg)	Reading Date
72	0.25	7.4	71.0	15.0	17.8	-2.75							9/11/2015 3:15 PM
73	0.75	24.4	72.0	47.0	54.0	-7.00							9/11/2015 4:00 PM
73	0.25	8.6	72.0	16.0	18.0	-2.00							9/11/2015 4:15 PM
78	0.75	24.7	71.0	51.0	53.3	-2.25							9/11/2015 5:00 PM
78	0.25	7.7	71.0	17.0	17.8	-0.75							9/11/2015 5:15 PM
76	0.75	22.5	71.0	51.0	53.3	-2.25							9/11/2015 6:00 PM
76	0.25	8.0	71.0	17.0	17.8	-0.75							9/11/2015 6:15 PM
85	0.75	24.0	72.0	53.0	54.0	-1.00							9/11/2015 7:00 PM
85	0.25	8.0	72.0	18.0	18.0	0.00							9/11/2015 7:15 PM
84	0.75	23.0	72.0	53.0	54.0	-1.00							9/11/2015 8:00 PM
84	0.25	7.3	72.0	18.0	18.0	0.00							9/11/2015 8:15 PM
73	0.75	22.4	73.0	47.0	54.8	-7.75							9/11/2015 9:00 PM
73	0.25	7.3	73.0	16.0	18.3	-2.25							9/11/2015 9:15 PM
72	0.75	20.1	73.0	47.0	54.8	-7.75							9/11/2015 10:00 PM
72	0.25	7.3	73.0	16.0	18.3	-2.25							9/11/2015 10:15 PM
73	0.75	17.4	72.0	47.0	54.0	-7.00							9/11/2015 11:00 PM
73	0.25	1.8	72.0	16.0	18.0	-2.00							9/11/2015 11:15 PM
72	0.75	6.3	71.0	47.0	53.3	-6.25							9/12/2015 12:00 AM
71							0.75	8.1	71.0	46.5	53.3	-6.75	9/15/2015 12:00 AM
71							0.25	2.0	71.0	15.5	17.8	-2.25	9/15/2015 12:15 AM
75							0.75	6.8	71.0	51.8	53.3	-1.50	9/15/2015 1:00 AM
75							0.25	2.2	71.0	17.3	17.8	-0.50	9/15/2015 1:15 AM
76							0.75	6.7	73.0	53.3	54.8	-1.50	9/15/2015 2:00 AM
76							0.25	2.4	73.0	17.8	18.3	-0.50	9/15/2015 2:15 AM
79							0.75	6.9	76.0	57.0	57.0	0.00	9/15/2015 3:00 AM

Sunday, September 27, 2015   Page 14

HVAC summary M&V performance report sample:

Energy Savings Report (HVAC)

M&V for Ruby Mililani

Filtering Criteria	
Building Status: All	Baseline Range: All
Select Days: All	Post Range: 7/1/2015 to 8/1/2015
Select Time: All	

Ambient Temp (Bin)	Baseline Performance Data						Post Retrofit Performance Data						Resulting Energy Saved			
	Total Bin Hours	Energy Consumption (kWh Avg)	Room Temperature (Deg F Avg)	Supply Temperature (Deg F Avg)	Return Temperature (Deg F Avg)	Delta Temp (Supply - Return) (Deg F Avg)	Total Bin Hours	Energy Consumption (kWh Avg)	Room Temperature (Deg F Avg)	Supply Temperature (Deg F Avg)	Return Temperature (Deg F Avg)	Delta Temp (Supply - Return) (Deg F Avg)	Efficiency Improvement	Energy Saved (kWh Avg)	Total Post Retrofit Hours	Total kWh Saved
0 - 4																
5 - 9																
10 - 14																
15 - 19																
20 - 24																
25 - 29																
30 - 34																
35 - 39																
40 - 44																
45 - 49																
50 - 54																
55 - 59																
60 - 64	9.00	6.3	70.6	67.0	70.6	-3.56	7.00	0.1	72.6	68.0	72.6	-4.57	4,769 %	6.2	7.00	43
65 - 69	62.00	6.9	71.5	68.0	71.5	-3.47	66.00	1.2	74.2	113.3	74.4	38.92	499 %	5.7	66.00	378
70 - 74	33.00	16.1	72.3	60.0	72.3	-12.33	169.50	6.8	74.9	166.5	75.0	91.44	138 %	9.4	169.50	1,585
75 - 79	15.00	20.4	71.9	62.0	71.9	-9.87	88.00	14.1	75.1	180.1	75.1	105.09	45 %	6.4	88.00	559
80 - 84	26.00	20.3	72.0	67.0	72.0	-4.96	65.75	16.9	75.3	179.1	75.3	103.76	20 %	3.5	65.75	227
85 - 89	34.00	23.0	72.1	70.0	72.1	-2.09	64.00	16.8	74.8	156.8	74.9	81.82	37 %	6.3	64.00	400
90 - 94	11.00	23.9	71.4	81.0	71.4	9.64	78.00	14.5	74.5	144.9	74.8	70.10	66 %	9.5	78.00	739
95 - 99							30.00	13.8	74.4	182.2	74.4	107.77				
100-104							4.00	11.8	74.8	203.0	74.8	128.25				
105-109																
110-114																
115-119																
Totals	190	117.0					572	95.8							538.25	3,931

Saturday, September 19, 2015   Page 1