

Alabama Industrial Assessment Center

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*Alabama Industrial
Assessment Center*



Industrial Assessment Centers 2012-2016



U.S. DEPARTMENT OF
ENERGY

Energy Efficiency &
Renewable Energy

IAC Mission

1. Assist small-to-medium manufacturers with
 - Energy efficiency
 - Productivity
 - Waste management
2. Train next-generation of engineers in energy practices



Features of IACs

- ***No direct cost***—funded by U.S. Dept. of Energy
- Experienced engineering faculty and students conduct assessments
- No obligation to act on any recommendations
- Client confidentiality protected
- Builds strong relationship between industry and university
- Engineering students receive valuable real-world experience



Partnerships

- Alabama Technology Network
- ADECA
- Alabama Power
- Alagasco
- TVA



AIAC/ATN Partnership

- Natural alliance since both organizations serve small/medium manufacturers
 - AIAC = DOE funding
 - Major focus energy efficiency
 - ATN = DOC (NIST) MEP funding
 - Major focus enhancing productivity (including energy utilization)
- Began informally early 2007 following AIAC inception in 2006

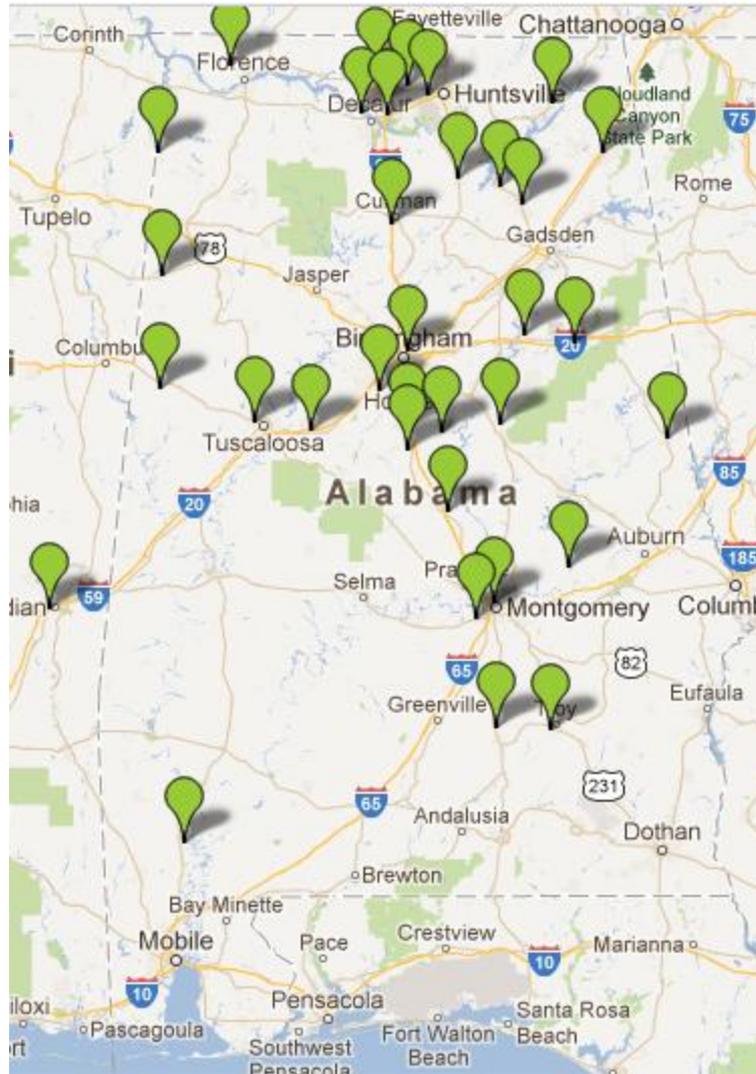


AIAC/ATN/ADECA

- Proposal with ADECA to DOE “Save Energy Now: State, Regional, and Local Delivery”
 - Funded under ARRA spending authorization in 2009
- Economy/Energy/Environment--E3 Consortium
 - Led by ATN
 - Utilities, service providers, financial services, state agencies
 - Goal is to deliver a coordinated collection of services to clients
 - Communication among members is key



AIAC Clients



- Base activities funded by DOE Industrial Technology Programs
 - Seventh year of operation
 - About 130 assessments to date
 - About \$25.4M in 962 energy savings recommendations (typically 5% - 20% of plant use)
 - About \$2.9M in 307 implemented energy savings projects reported
- ADECA award w/ATN
 - Allows about 12 extra assessments per year

http://www1.eere.energy.gov/manufacturing/states/state_activities/map_new.asp?stid=AL

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Assessment Activities

- Student-led faculty-student teams
- Pre-visit analysis and preparation
- One-day on-site assessment
- Reporting (60 days) and Implementation Follow-up (12 mos.)



Most Common Recommendations

- Lighting
- Compressed Air
- HVAC
- Boilers and Furnaces
- Pumps
- Fans



Typical Client Savings Table

ASSESSMENT RECOMMENDATION SUMMARY TABLE

	AR No.	Description	Natural Gas Savings (MMBtu/yr)	Electricity Savings (kWh/yr)	Demand Savings (kW-mo/yr)	CO2 Reduction (Tons/yr)	Total Cost Savings (\$/yr)	Imp. Cost (\$)	Simple Payback Period (yrs)
Lighting	1	Replace MH lights	N/A	377,849	601	280	26,860	38,323	1.4
	2	Install Occupancy Sensors	N/A	26,207	N/A	19	1,632	1,609	1.0
Insulation	3	Install Insulation on Pipe Sections, Boilers, and Holding Tank	4,462	N/A	N/A	261	24,682	6,975	0.3
Compressed Air	4	Lower System Air Pressure	N/A	186,990	328	139	13,459	480	0.0
	5	Reduce Air Leaks	N/A	159,987	224	119	11,206	5,100	0.5
HVAC	6	Programmable Thermostats	N/A	39,844	N/A	29	2,481	2,210	0.9
Water	7	Reduce Pump Elevation	N/A	1,692	2	1	119	85	0.7
TOTALS			4,462	792,569	1,155	848	80,439	54,782	0.7

Lighting Projects

- Common recommendations

Project	Average Savings*	n
Replace MH with Fluorescent	40%	20
Use Occupancy Sensors	13%	20
Use Photocells to control lighting	12%	6
Remove unnecessary lighting	36%	5

*savings based on fraction of the system energy use, not facility energy use



Compressed Air Projects

- Common recommendations

Project	Average Savings*	n
Lower plant air pressure	13%	29
Implement Air Leak Program	11%	37
Install automatic sequencer/reduce pressure	13%	5
Install dedicated compressor/reduce run time	17%	5
Install VSD compressor	6%	3

*savings based on fraction of the system energy use, not facility energy use



HVAC Projects

- Common recommendations

Project	Average Savings*	n
Implement/Utilize Air Side Economizers	18%	5
Setback thermostat/adjust set points	24%	17
Implement HVAC maintenance program	7%	2
Modify building envelope	9%	4

*savings based on fraction of the system energy use, not facility energy use



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