ECM ID#	Project - Agency	Category	Category / SubCategory	ECM Description	Recommended M&V	M&V Comments
136	Agricultural Exposition Authority, Georgia	Lighting	Lighting Fixtures	Lighting System upgrade and retrofits -The Georgia Agicultural Exposition Authority performed a detailed evaluation of the lighting systems currently in place throughout 13 buildings and determined there are significant opportunities for electrical energy savings by installing energy efficient fixtures and bulbs and motion sensors. The Georgia Agricultural Exposition Authority proposes converting 900 metal Halides (ranging from 465W-1000W) to 1,071 T8 fluorescence fixtures (221W). It is estimated that these lights will reduce energy consumption by 59% while adding 35% more light levels. Furthermore, these lights burn at 98 degrees vs 1200 degrees, and thus reduces HVAC costs by keeping the building "cooler". Additionally 60 motion sensors will also be installed that will allow lights to operate only when there is activity in the area. Another benefit and anticipated savings, although not "energy-related", will be in annual maintenance savings of $9,300 in labor and parts.	Option A	
261	Agricultural Exposition Authority, Georgia	Building Envelope	Building Envelope Roof	The Georgia Agricultural Exposition Authority has performed a detailed evaluation and review of the energy efficiencies to be gained through the application of a reflective, elastomeric coating on the metal roofs of eight HVAC conditioned buildings. The coating's properties reflects 85% of the sun's ultra-violet rays, thereby reducing the amount of radiant heat generated and absorbed by the metal roofs. This allows the buildings to become cooler and require less energy in operating the buildings' HVAC system. The Georgia Agricultural Exposition Authority proposes to install this elastomeric coating on the roofs of eight buildings; Reaves Arena (104,517 sqft), Georgia Building (30,775 sqft), Heritage Hall (30,964 sqft), McGill Marketplace (36,660 sqft), New South Arena (19,832 sqft), Roquemore Conference Center (8,820 sqft), Beef/Dairy Arena (15,096 sqft), Cotton Commission and Livestock Offices (34,347 sqft). The cost of installing this coating is approximately $464,000, with estimated annual electrical energy savings of $72,000. The coating application carries a ten year warranty.	Option C or at the campus level	
137	Agriculture, Georgia Department of	Lighting	Lighting Other,This ECM will replace bulbs and ballasts, and install motion sensor devices.	The Department of Agriculture with the help of Georgia Power has conducted an investigation of the lighting systems at six State Farmers' Markets and determined there are significant opportunities for lighting retrofits. The department will use the required stimulus funds for replacing and installing new energy efficient lighting fixtures as well as lighting controls linked to motion sensors to conserve power. The Department hope to replace and upgrade roughly 10,300 lamps and motion sensors in 40 buildings. The retrofits will benefit the Department of Agriculture and our market tenants by reducing energy bills. Currently, energy bills are one of the major operating costs at State Farmers' Markets, which is significant because the markets generated more than $7.2 million in revenue for the state treasury in FY 2008. In addition, the targeted markets are home to more than 140 small businesses that employ roughly 3400 employees. In 2009, these markets facilitated sales of over $1 Billion in agricultural products. Therefore, the substantial reduction in the electricity bills of our market tenants would boost business and job growth. The Department of Agriculture will perform a more precise audit showing the exact lamps and motion sensor locations if the Department is awarded the stimulus funds. We believe our current estimates of project costs and savings to be very conservative.	Option A	
079	Building Authority, Georgia	Controls	Controls Building Automation	The Demand Flow Chiller Optimization -- Large savings can be gained by implementing variable/demand flow plant operations schemes along with VFD control of the associated fan and pumping systems throughout the GBA facilities and changes to the operating parameters to greatly reduce the energy usage during off peak and after-hours operations. Much of the needed VFD controlled equipment has been installed with our current ESCO project reducing this implementation costs allowing a much more impressive payback. This new plant and system control logic and sequencing will actually shift the chiller refrigerant cycle to high efficient areas and lower the operating costs to achieve a great return on investment.	Option B	
159	Building Authority, Georgia	Mechanical	Mechanical Pumps / Fans	The current chiller pumping system operation was designed and installed 45 years ago and provides water flow much higher than is required for the equipment needs and has no way of adjusting that flow to the actual demand causing excessive energy usage especially during off-hours operations. This replacement of 2 large chill water pumps and 2 condenser water pumps with new energy efficient pumps fitted with VFD's and BAS controls will allow the water flow to match the needs of the chiller plants thereby allowing for much more efficient system operations and reduced electrical consumption.	Option B	
226	Building Authority, Georgia	Lighting	Lighting Other,Parking Garage Lighting Replacement by LED's	Parking Garage lighting - Replace outdated and inefficient parking deck lighting with a combination of new LED equipment and low wattage fluorescent systems. This will provide new and innovative lighting for 13 parking garage facilities. Lighting will be replaced and retrofitted to accept LED's and low wattage fluorescent lamps for much improved energy reduction. Some facilities could see as much as a 50% reduction or better in energy consumption.	Option A	
230	Building Authority, Georgia	Lighting	Lighting Fixtures	Can Light Fixture Replacement with LED's - Replace inefficient can lighting fixtures with LED fixtures and retrofit kits. This typically can reduce energy usage from standard light fixture by 50 percent or greater (i.e. a 36 watt can fixture can be reduced to a 12 watt LED lamp with a soft warm white light output that surpasses the CFL light and color rendition. LED lighting has evolved to where it is highly competitive with the light output for standard light output in most can type fixture	Option A	
060	Bureau of Investigation, Georgia	Controls	Controls HVAC contols	The GBI main and annex chiller plants operate around 7300 hours annually. They collectively consume about 2.8 million KWH of energy, which is approimately $193,200 at $.069/KWH. The plants use about 46.4% of the total annual electricity costs for the 2 buildings, which totals approximately $416,000 per year. The two plants generate about 1.7 million tonhours of cooling. The average as built plant efficiency is about 1.6KW/ton. Demand Flow Optimization would reduce the annual KWH consumption by about 1.3 million KWH as compared to a statisitical year. Using a blended costs of $.07/KWH this yields about $91,000 in annual savings or about a 46% reduction in energy costs for the plant. Savings are generated from improved plant operating efficiencies and reducing AHU leaving air temperatures. Reducing CHWS temperatures in the plant will also provide increased capacity in any areas that need more cooling. The poor efficiency is best explained by the very low operating Delta T on the chilled and condenser water systems, which are about one third of design intent. There is also significant opportunity for improvement in comfort as well as energy reduction. The low Delta T syndrome exhibited in this plant contributes to excess pumping and chiller energy as well as a loss of deliverable air side cooling capacity. Data suggests that a flat plate heat exchanger is used about 600 hours annually in a "Free Cooling" mode when ambient temperatures are cold enough. Except during the coldest weather Demand Flow Plant operation would be more efficient than the current "Free Cooling" mode due to pumping and AHU fan efficiencies. Current Equipment System design information, utility cost data, historical operating logs, historical operating trend data and ton-hour data were supplied by the GBI. The chilled water plant is comprised of the following equipment: Main Plant: (2) York chillers; 300 Ton each (2) Primary Chilled water pumps (2) Secondary Chilled water pumps (2) Condenser water pumps (2) Cooling towers with one fan each The Main Building chillers are piped in a very efficient series configuration with constant volume pumps. However, due to low operating Delta T these efficiencies are lost. This plant also utilizes a heat exchanger for low ambient operation. Annex Plant: (2) Trane chillers; 300 Ton each (2) Chilled water pumps (3) Condenser water pumps (2) Cooling towers with one fan each The Annex chillers are piped in parallel with constant volume primary pumps. This is a decoupled plant with distribution chilled water pumps.	Option B or C	
080	Bureau of Investigation, Georgia	Controls	Controls Building Automation	Add Building Automation System connectivity for 3 labs to allow control and network access from the central server at GBI HQ which controls the HQ and 4 labs at this time. Install Variable Frequency Drive's to control fan speeds on AHU's that do not have them. Provide programming for the controls systems so that schedules and strategies are in place and maintained to reduce chiller, boiler, and fan power during unoccupied hours. Considering that the HVAC systems only need to operate in the occupied mode a third of the time, 60 hours per week, tremendous amounts of electricity and natural gas can be saved over the course of a year. AHU's serving office areas can be turned off at night and only allowed to run when temperatures exceed the night high and low limits. Closing outside air dampers during unoccupied modes and reducing air flow during unoccupied hours will also reduce energy consumption. AHU's serving the labs need to run continuosly, but strategies to minimize both exhaust and supply air and raise and lower temperature setpoints during unoccupied hours can significantly reduce HVAC energy costs.	Option B or C	
077	Community Affairs, Department of	Building Envelope	Building Envelope Roof	Tip Top Roofers has surveyed the roof and proposes installing a new roof with White Elastomeric Rubberized Roof Coating to reflect 80 % of the sun's rays and provide up to 20% in energy savings.	Option C	

ECM ID#	Project - Agency	Category	Category / SubCategory	ECM Description	Recommended M&V	M&V Comments
390	Community Health, Department of	Commissioning / Recommissioning	Commissioning / Recommissioning	The Decatur Public Health Laboratory is a BSL-2 and BSL-3 clinical laboratory facility which does sample testing in the divisions of virology, parasitology, bacteriology, chemistry and newborn screening. It also includes a CT-BT emergency prepardness (EP) division. Since the lab was built in 1997 its mission and workload has changed dramatically. Most notably is a 274% increase in newborn screening tests performed, and the addition of the EP division. These programatic changes have included the addition of refrigeration space and high heat output auto sampling equipment such as gas chromatographs and tandem mass spectrometers. For these reasons the retro-commissioning (CxR) process of this building and associated costs will exceed normal market averages and must be inclusive of building automation system upgrades and seperation of critical equipment HVAC needs from the general building HVAC system. Although the CxR design is not complete, an extensive facility audit has been done by a lab commissioning professional, MEP engineer and myself which identifies multiple opportunities for significant energy savings.	Option C	Several ECMs will be installed in this building
433	Community Health, Department of	Controls	Controls HVAC contols	The lab has a 12 year old Johnson Controls Metasys HVAC automation system which has had no software or hardware upgrades, even though the laboratory has experienced many programatic changes. To enhance energy savings by better control and management of the HVAC system, we need to add current technology and control features. These would include power and natural gas usage, boiler and chiller efficency levels, control supply & exhaust static pressures (varible speed drives) and monitor cascades at each biosafety level change. We also need programming parameters in place to automatically bring the lab in and out of night and weekend set-back modes. This single feature can create significant energy savings, but can only be used effectively when paired with the seperation of environments which support equipment which runs after normal business hours such as freezers and tandem mass spectrometers.	Option C	Several ECMs will be installed in this building
435	Community Health, Department of	Mechanical	Mechanical Motors / VFD's	The laboratory has six varible frequency drive (VFD) exhaust fans, but the two correlating supply fans are static drive. The turning vanes have deteriorated such that they are not repairable and replacement costs are equal to that of installing VFDs. The most effective and efficent way to control laboratory air exchange rates is by installing varible frequency drives on the supply fans.	Engineering Calculations	Several ECMs will be installed in this building
440	Community Health, Department of	Renewable Energy	Renewable Energy Other,Cold water	Using a large chilled water coil, located inside the air handler unit, the laboratory uses 42 degree chilled water to supply cool air (55F) throughout the building. During summer months, when outside temperatures and humidity are high, a tremendous amount of condensate is generated from the chilled water coil. Capturing this chilled water condensate and supplying it to the cooling tower will save both electricity and water. It will mix with and further cool water inside the cold water reservoir and create most all of the make up water lost to evaporation.	Option C	Several ECMs will be installed in this building
455	Community Health, Department of	Mechanical	Mechanical Boilers	The laboratory operates year round using two 125 hp commercial boilers. During the warmer months the boilers are operating at minimum efficency rates, only supplying domestic hot water for hand washing and autoclave steam. We can achieve significant savings if we install one correctly sized (much smaller) 96% efficency rated boiler to carry the summer load. The two large boilers can then remain off for five to six months out of the year.	Option C	Several ECMs will be installed in this building
458	Community Health, Department of	Mechanical	Mechanical Chillers	The laboratory contains four small rooms (1,600 gsf) where cooling levels are critical and must be continously maintained. Seperating these rooms off the main air handler & chiller system will enable us to achive greater temperature set back control measures for the remainder of the lab. It also gives us cooling redundancy for our most critical equipment rooms which include the Tigris gas chromatograph-mass spec. our ultra low freezer room, the IT server room and the tandem mass-spec. lab.	Option C	Several ECMs will be installed in this building
291	Corrections, Department of	Commissioning / Recommissioning	Commissioning / Recommissioning	Commissioning/Retro-Commissioning: In order to measure and verify the success of implemented programs and target future energy efficiency projects, the Georgia Department of Corrections has identified all buildings over 25,000 sq. ft. as eligible to participate in this program. The GDC has a total of 170 buildings meeting this criterion in its portfolio, totaling 6,995,377 gross square feet. This process creates an inventory and analysis of existing buildings and commissioning services include: • monitoring the function of existing equipment • functional performance testing for new equipment • identify systems operation and integration issues • witnessing of various testing procedures and factory start-ups for new equipment • maintenance and owner training • Creation and review of a systems manual. The commissioning/retro-commissioning plan will ensure the effectiveness of other proposed energy efficiency projects and programs identified for the purposes of this grant and will lay the basis for a comprehensive building commissioning program.	Option C	
316	Corrections, Department of	Mechanical	Mechanical Other,PSP Chiller Replacement	The Department of Corrections at Pulaski State Prison is operating a 300 hp boiler for the sole purpose of running a 590 ton absorption chiller. The original design of the boiler was to use wood chips from local saw mills as free fuel. The wood chips were contaminated with sand causing boiler refactory problems and eventually the mills were shutdown and there was no fuel supply. Today the boiler runs on natural gas. Burning gas to make steam to run an absorption chiller is very inefficient There is significant opportunity to save energy by replacing this inefficient operation. GDC proposes to replace the absorption chiller with two 300 ton air-cooled electric chillers with high efficiencies. This will enable the 300hp boiler to be shutdown and used as back up steam as needed.	Option B	High value, complicated; Option C would not work b/c metering an commissioning also happening
319	Corrections, Department of	Controls	Controls Metering	The Georgia Department of Corrections has identified all buildings over 5,000 sq ft as eligible for the utility sub-metering program. This includes 544 buildings for a total of 12,367,183 gross sq. ft. The GDC plans to apply sub-metering technology to 3 major utilities per building to monitor consumption and analyze variances and fluctuations. Upon determining the differences between energy efficient operation and inefficient operation of buildings the GDC will prioritize energy improvement programs where they will achieve the greatest effect. Additionally, this comparison will initiate investigations to determine if a behavioral change or equipment malady has contributed to changes in consumption and result in immediate corrective measures. Sub-metering also provides an effect method to provide measurement and verification of performance of energy conservation measures. And sub-metering raises building occupant energy use awareness that has been shown to have a real effect on energy consuming behavior of building occupants.	EnergyCAP or other billing comparison at highest resolution possible before retrofit	
334	Corrections, Department of	Mechanical	Mechanical Other,TSP Hot Water System Redesign	At Telfair State Prison there are two boilers feeding (one in the summer) the hot water system. An underground hot water supply and return loop deliver water to the dorms where it is used in a secondary loop to heat water in each dorm for supply to showers and lavatories. The hot water loop is 6" and 4" black iron pipe and is corroding from the outside in. Repairs of the HW loop are continuous. Rather than repair the HW loop this ECM is looking to replace the ineffiency loop-to-loop design with stand alone HW heaters per dorm and retire the corroding loop in place. This design will save natural gas, water and substantion O&M dollars. Solution - abandon underground delivery system and install seven smaller electric package boilers at the dorms and admin buildings.	Option B	
336	Corrections, Department of	Mechanical	Mechanical Heat Recovery	Georgia State Prison utilizes no form of heat recovery on the boilers. There are three boilers all if which can have stack economizer installed. Stack temperatures during both low fire and high fire as well as the clearance between the boiler and the boilerhouse roof, suggest that a condensing econimizer can be installed cheaply and with strong energy savings and GHG reduction.	Option B	
338	Corrections, Department of	Mechanical	Mechanical Other,GSP Cannery Steam	Georgia State Prison has a cannery operation to process food for inmate consumption. Steam from the boilerhouse is required 30 weeks per year to run this operation. Steam to cannery is via underground header that is over 20 years old and has lost its insulating integrity as evidenced by poor steam quality at the cannery and no ground frost in winter. Equally important is the fact that no condensate is returned to the boiler and all of the energy is lost to the sewer. At least 70% of the condensate is clean and can be retruned to the feedwater system. The cannery uses 25,000 lbm/hr (max) and 5,000 lbm/hr (SS). Replacing the steam header, it jacketed insulation, and the condensate return system will be a high return project with great benefit to the GDC.	Option A or B	
339	Corrections, Department of	Mechanical	Mechanical Other,GSP Ngas Distribution System	Georgia State Prison's natural gas distribution system (down stream of the utility meter) is 20+ yrs old and is leaking into the ground as evidenced by an unaccounted pressure loss between regulator and the load. This is not only a pure waste of natural gas but a safey concern as well. Solution - repair/replace piping as required.	Option A	
098	Human Resources, Department of	Lighting	Lighting Sensors	Lighting Controls Upgrades - DBHDD has concluded that significant opportunity exists for lighting control improvements. CSH proposes to install occupancy sensors in administrative areas of the Powell Building that will "cycle" lights when the areas are unoccupied. CSH proposes to retrofit approximately 425 fixtures.	Engineering Calculations	
099	Human Resources, Department of	Controls	Controls HVAC contols	HVAC Controls Upgrades - DBHDD has determined that opportunities exists to retrofit our energy management programs to control HVAC equipment in unoccuppied areas. CSH proposes to make programming upgrades, control module modifications/replacements, to approximately 15 air handlers in the administrative areas of the Powell Building.	Option B	

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106	Human Resources, Department of	Other	Other	DMHDD has determined that to monitor electrical usage by individual building location should result in a ten percent saving on power consumption. CSH proposes to install five metering devices on the secondary side of each tranformer to monitor electrical usage.	EnergyCAP or other billing comparison at highest resolution possible before retrofit	
220	Juvenile Justice, Department of	Lighting	Lighting Sensors	The Department of Juvenile Justice has identified five buildings that would benefit from improved lighting control by utilizing occupancy sensors. This includes: Augusta (built 1950, 275,786 sq ft); Bill Ireland (1944, 415,823 sq ft); Eastman (1995, 155,666 sq ft); Macon (1968, 128,134); and Metro (1950, 111,356 sq ft). An energy audit revealed that occupancy sensors can reduce energy costs and improve efficiency for 4,705 existing fixtures. DJJ seeks to implement an occupancy sensor that utilizes motion and inferred sensing coupled with lighting timer switches. This would minimize the amount of energy used in the buildings at off- peak hours or when occupants leave a room for a prolonged period of time.	Option A	
351	Juvenile Justice, Department of	Controls	Controls Metering	The Department of Juvenile Justice has identified 7 buildings to monitor and verify as a part of the utility control sub-metering project. This project includes: Augusta (built 1950, 275,786 sq ft); Bill Ireland (1944, 415,823 sq ft); Eastman (1995, 155,666 sq ft); Macon (1968, 128,134); and Metro (1950, 111,356 sq ft); Waycross (1967, 17,860 sq ft); Dalton (1973, 19,596 ft sq). For existing facilities that are already sub-metered to improve efficiencies, the previous year's energy performance serves as the baseline for evaluating potential upgrades. The DJJ plans to apply sub-metering technology to 3 utilities for buildings 5000 sq ft and above. The DJJ will prioritize energy improvement programs for the buildings based on their determined efficiencies. The savings that are generated after a retrofit can be a fraction of a facility's total energy use, and it can be difficult to estimate project savings from analysis of monthly utility bills alone. As such, indirect methods such as energy modeling and engineering calculations are often used to estimate savings. Readings prior to and after the retrofit can be used to establish both the energy use baseline and the energy savings if the end-uses of buildings are individually metered.	EnergyCAP or other billing comparison at highest resolution possible before retrofit	
377	Juvenile Justice, Department of	Commissioning / Recommissioning	Commissioning / Recommissioning	In order to measure and verify the success of implemented programs, and target future energy efficiency projects, The Department of Juvenile Justice has identified 7 facilities as a pilot for energy efficient commissioning and retro-commissioning. This project includes: Augusta (built 1950, 275,786 sq ft); Bill Ireland (1944, 415,823 sq ft); Eastman (1995, 155,666 sq ft); Macon (1968, 128,134); and Metro (1950, 111,356 sq ft); Waycross (1967, 17,860 sq ft); and Dalton (1973, 19,596 ft sq). This process, which creates an inventory and analysis of existing buildings and commissioning services, includes: • Monitoring the function of existing equipment • Functional performance testing for new equipment • Witnessing of various testing procedures and factory start-ups for new equipment • Maintenance and owner training • Creation and review of a systems manual. The commissioning/retro-commissioning plan will ensure the effectiveness of other proposed energy efficiency projects and programs identified for the purposes of this grant and will lay the basis for a comprehensive building commissioning program. This project is specific to buildings within these facilities totaling 5,000 sq ft and above.	Option C	
147	Natural Resources, Department of	Building Envelope	Building Envelope Other,Weatherization - windows, doors, roof, insulation	This project would seek to weatherize the Department's 375 cabins and 205 residences. This will consist of upgrading to more efficient windows, improving insulation, and tightening the building envelope. The cabins and residences constitute 682,500 square feet, or approximately 50% of the Department's conditioned space. Using Energy Information Administration estimates of residential energy use per square foot, the cabins and residences consume 13% (8,498,025 kWh) of the Department's total energy purchased every year. (The energy-use intensity used to estimate energy use in the cabins was reduced significantly from EIA's residential estimate to account for the cabins' lower process loads) A meta-analysis compiled by the Oak Ridge National Laboratory (ORNL) estimates that weatherization has been found to reduce household energy consumption by approximately 23%. Thus, this weatherization project could save almost 2 million kWh annually, reducing the Department's total energy consumption by 3%. This project would represent significant step in meeting the Department's 15% reduction laid out in the Governor's Energy Challenge. Costs for this project were generated with the help of the above-mentioned ORNL study. That study estimates weatherization construction costs to be approximately $2,500 per unit. This number was reduced to $2,000 for this project to account for the relative simplicity of the units being weatherized.	Option C	probably not enough savingsd at DNR level; possibly at park-level to notice; could use sampling either of structures or parks
246	Natural Resources, Department of	Other	Other	This project is to upgrade the HVAC and lighting systems at the musum at the Little White House. Since this building must maintain strict museum quality humidity levels theer are opportunities to upgrade the HVAC system to humidify and dehumidify using efficient, state of the art equipment. Likewise, the extensive lighting in the museum could be optimized with a more efficient lighting and lighting control system.	Engineering Calculations	
283	Ports Authority, Georgia	Controls	Controls Building Automation	In Garden City Terminal install site DDC system to control Administration Building, Raes Hall, Container Port, Maintenance, Warehouse 27, Warehouse 83A, Warehouse 83B, Annex 1, and Annex 2 from a central location. Control system to be expandable and web-based. The control system will monitor equipment and alarm as manpower response or comfort conditions occur. This system will allow for smart switching, zone control, and better manage remote structures - a means to manage energy consumption and cost.	Option B	
284	Ports Authority, Georgia	Lighting	Lighting Exterior	At Garden City Terminal install voltage regulating transformers and astronomical time clock to reduce total energy consumption of the container storage area high mast lighting. The reduced voltage will also increase the life of the the light bulbs. This lighting control system will regulate 2100 fixtures, each with 1000 watt lightbulbs, on the 1200 acre terminal. GPA, as a cargo seaport has large container storage areas and this area is not included in the gross square footage in the "Section 1: Project Summary" information.	Option A	
308	Public Broadcasting, Georgia	Mechanical	Mechanical Boilers	Based on a current mechanical engineering study and evaluation, Georgia Public Broadcasting (GPB) proposes replacing all 5 existing 80% efficient boilers and 2 existing water heaters at Georgia Public Broadcasting's 14th Street, Atlanta, GA headquarters with 94% efficient boilers and water heaters. GPB believes that there may be additional utility incentives that could be applied to this ECM, but has been unable to obtain that information from Atlanta Gas Light, as yet. GPB will continue to seek this information and will provide it separately as an addendum to the Georgia Environmental Facilities Authority (GEFA). Please note: 1. Utility Cost Data is based on Current Rates with no annual inflation included in the simple payback term. 2. Thermal Load calculations are based on ASHRAE Standards using ASHRAE, EPA Energy Star and bin weather data.	Option A or B	
317	Public Broadcasting, Georgia	Other	Other	Based on a current mechanical engineering study and evaluation, Georgia Public Broadcasting (GPB) proposes replacing series hot water reheat boxes with parallel fan-powered boxes in the corner offices of the 2nd, 3rd, and 4th floors of GPB's 14th Street, Atlanta, GA headquarters building. GPB believes that there may be additional utility incentives that could be applied to this ECM, but has been unable to obtain that information from Georgia Power, as yet. GPB will continue to seek this information and will provide it separately as an addendum to the Georgia Environmental Facilities Authority (GEFA). Please note: 1. Utility Cost Data is based on Current Rates with no annual inflation included in the simple payback term. 2. Thermal Load calculations are based on ASHRAE Standards using ASHRAE, EPA Energy Star and bin weather data.	Engineering Calculations	
116	Student Finance Commission	Lighting	Lighting Fixtures	The Student Finance commission has determined a significant savings in operational funds can be seen in energy useage by replacing the lighting fixtures and bulbs. The upgrade to newer technology will be done by removing the exisiting light fixtures and exchange with current technology. An attempt to upgrade or replace lighting controls to occupancy sensor units will be made to furher reduce energy consumption.	Option A	

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180	TCSG -Athens Technical College	Lighting	Lighting Sensors	Athens Tech has identified 12 buildings that will require energy efficient occupancy sensors. These buildings include J100/200/300, (3 connected buildings constructed in 1966 and totaling 53,634 sq ft); I-400 (1966, 12,959 sq ft); K500/K600 (1966, 16,369 sq ft); H700 (1980, 24,234 sq ft); B1000/2000 (2005, 19,223 sq ft); N B&I #1(construction date mid-1908s, 6,867 sq. ft); O B&I #2 (mid-1980s, 4,357 sq ft); M B&I #3 (mid-1980s, 13,383 sq ft); P JQC (mid-1980s, 8,258 sq ft); F 900 (1995, 32,327 sq ft); E Maintenance (mid-1980s, 5,266 sq ft); and D Auto (1995, 11,934 sq ft). An energy audit revealed that occupancy sensors can reduce energy costs and improve efficiency throughout all fixtures. Athens Tech would like to implement an occupancy sensor that utilizes motion and inferred sensing coupled with lighting timer switches. This would minimize the amount of energy used in the buildings at off-peak hours or when occupants leave a room for a prolonged period of time.	Option A	
281	TCSG -Athens Technical College	Commissioning / Recommissioning	Commissioning / Recommissioning	In order to measure and verify the success of implemented programs and target future energy efficiency projects, Athens Tech has identified 12 buildings as a pilot for energy efficient commissioning and retro-commissioning. These buildings include J100/200/300, (3 conected buildings constructed in 1966 and totaling 53,634 sq ft); I-400 (1966, 12,959 sq ft); K500/K600 (1966, 16,369 sq ft); H700 (1980, 24,234 sq ft); B1000/2000 (2005, 19,223 sq ft); N B&I #1(construction date mid-1908s, 6,867 sq. ft); O B&I #2 (mid-1980s, 4,357 sq ft); M B&I #3 (mid-1980s, 13,383 sq ft); P JQC (mid-1980s, 8,258 sq ft); F 900 (1995, 32,327 sq ft); E Maintenance (mid-1980s, 5,266 sq ft); and D Auto (1995, 11,934 sq ft). This process includes an inventory and analysis of existing buildings, monitoring the function of existing equipment, functional performance testing for new equipment, witnessing of various testing procedures and factory start-ups for new equipment, maintenance and owner training, and the creation and review of a systems manual. This plan will ensure the effectiveness of the other proposed energy efficiency projects and programs identified for the purposes of this grant, and will lay the basis for a comprehensive building commissioning program.	Option C	
370	TCSG -Central Georgia Technical College	Controls	Controls HVAC contols	To improve efficiency, active flow control (VSDs) is needed to match the capacity of the system to the actual requirements of the building. The existing HVAC system was installed in 1976. Matching the capacity to the requirements increases the level of comfort for the buildings occupants and saves energy. Air handling units contribute to 24% of utility costs. The units control air and water flow. According to information gathered from past GA Power applications, a savings of approximately 25% can be expected in energy consumption. CGTC will utilize stimulus funds to change out the air handling system and will research the water flow handling for future energy savings.	Option B	
429	TCSG -DeKalb Tech	Lighting	Lighting Other,Fixture replacement / Lighting Controls	Lighting Upgrades & Controls - DeKalb Tech investigated and sought out professional lighting companies to provide guidance as to payback for complete replacement of all the fixtures and bulbs in the B, C, and D building at the Clarkston Campus. Further, investigation was made as to the feasibility of installing a new lighting control system to control each office, classroom, and lab switch independantly (162 in all). Lighting controls for 1/3 of all the circuits (BACnet compliant with relays) will be donated by Triatek corporation, and 1/3 of all the motions sensors will be donated by Kele Corporation. 900 fixtures and over 2000 bulbs will be replaced, and the total kw reduction based upon building usage schedule is over 72kw for the three buildings at full occupancy. Assumptions made were that 80% of lights will be on during normal hours (7am-9pm) and 20% of lights on for night crews (9pm-7am). Weekend light usage was figured at 20% lights on. Total payback period assuming 12 cents per kwh is 7.62 years for just lighting replacement. When lighting controls are included in the payback analysis, 20% figure for night crews reduces to 10% and the weekend percentage reduces to 0% since no classes are held in B,C,D buildings on the weekends. This reduces the period payback to under 6 years. This project is highly leveraged in that partners in our new Building Automation Systems program like Triatek, Kele, Siemens, Distech Controls, Alerton, Waypoint Systems, and others have all made written commitments to donate products in support of this initiative should we be funded. This is one part of a multi-part strategy to significantly reduce energy consumption and also qualify for LEED points in pursuit of LEED Gold Certification for B,C,D which will only be possible should we receive significant funding to augment our efforts. This project is fully designed and ready to be drawn up for submittals.	Option A	
448	TCSG -DeKalb Tech	Mechanical	Mechanical Other,Variable Refrigerant Volume HVAC System & Controls to replace existing Chillers, Boilers, & Unit Ventilators (4 pipe system) and new power monitoring & controls for B,C,D	The B,C, and D buildings currently each have a 4-pipe system with 2 Lochinvar 1MBTUH boilers and 1 Trane Series R 70 ton, 2 circuit screw chiller, and approximately 40 unit ventilators per building. The 4-pipe system in each building will be completely replaced by a Daikin VRV system (basis of design) complete with BACnet compliant controls and integrated to the new BACnet trunk off of a Tridium Jace integration panel which is being donated by Waypoint Systems for this project. Each building currently has a Trane Series R 70 ton chiller with 2 35 ton circuits. The new VRV system has been designed based on new load calculations related to other ECM measures found in this proposal like window replacements, lighting replacements, lighting controls, etc. The more energy efficient buildings will only require 24 tons of cooling each. That is an immediate 32% reduction in tonnage while realizing an increase to a minimum 13 SEER performance for this on-demand cooling system. This identical system has been applied to the first floor of the ASHRAE building to great success. The system will provide heating and cooling, also allowing for the removal of 6 Lochinvar (Model PBN1000) boilers at 1,000,000 BTUH each. 6,000,000 BTUH of capacity driven by natural gas will be removed from service, and this, coupled with solar water heating installation under another ECM will totally eliminate need for natural gas service to the B,C, and D buildings. In all, over 7,000,000 BTUH driven by natural gas, to include natural gas space heaters will be removed from service pursuant to this ECM. This is advantageous also when one considers that all the boilers have reached the end of their service life and now is an ideal time to consider replacing them with a more environmentally friendly and efficient alternative. DeKalb Tech has a great deal of controls donation commitments of BACnet MODbus compliant devices to support monitoring and verification of performance.	Option B	
456	TCSG -DeKalb Tech	Commissioning / Recommissioning	Commissioning / Recommissioning	Over the last year, we have conducted an internal audit of how our A,B,C, & D buildings use energy. We were shocked at the results. The buildings were set to run 24/7, the outside air damper actuators weren't functioning, many of the three-way unit ventilator controls valves are stuck, causing overheating and/or overcooling of spaces. No economizer functions were operable, and the control system has fallen into dis-repair. It's clear that a complete retro-commissioning of remaining equipment, and an enhanced commissioing to include new HVAC, renewable power generation equipment, and controls systems should be performed as part of this proposal. Many simple items have been addressed, like run-time of equipment. As part of our review process, we contacted Southface. After looking over the scope of what we wish to accomplish, Southface is comfortable in assisting DeKalb Tech in pursuing LEED Gold ratings for the B,C, and D buildings should we be awarded this stimulus funding for the entire scope of all ECMs. We have included pricing from Brandon Jones of Southface for planning & administration of the project, design work and review, submittal phases of design & construction, and preparing energy models for the buildings so we can establish accurate baselines. We have also included basic and enhanced commissioning through "Working Buildings" to be certain our project performs as expected. In addition, we will be re-commissioning the outside air systems to be certain we exceed the ASHRAE 62.1 standard by 30%. This will also benefit the buildings through allowing an economizer, free-cooling, cycle for the A,B,C, and D buildings. Outside air flow sensing and building pressurization sensors have been committed by Triatek and real-time power analysis will be accomplished through installation of watt-transducers (PowerTrak 9500) on each building. All components selected are BACnet and/or MODbus compliant.	Option C or at the campus level	
409	TCSG -Dougherty County Campus	Lighting	Lighting Fixtures	ECM1: Lighting upgrades: As a result of energy audits, Albany Tech has already purchased 420 T8 fixtures and proposes a purchase of 1034 additional fixtures to reduce KW usage from 36,350 to 13,086kwh and $128,000 annual savings in energy costs. The replacement of light switches with motion sensitive devices will further reduce costs. The retrofit of 50 parking lot lamps and the replacemnt of 175 various style exterior lights will reduce usage from these sources by about 50%.	Option A	

ECM ID#	Project - Agency	Category	Category / SubCategory	ECM Description	Recommended M&V	M&V Comments
452	TCSG -Lanier Technical College	Building Envelope	Building Envelope Windows/Doors	Preliminary results from investment grade energy audits and energy consultant opinions of Lanier Tech's buildings both indicate that the financial, environmental and energy efficiency ROI from replacing, upgrading and weatherizing windows on the Oakwood and Forsyth campuses – when combined with upgraded lighting (from T12 -> T8 and LED; see other project) – will provide the greatest bang-for-the-buck in terms of energy efficiency improvements, GHG emissions reductions, money savings and jobs created. Lanier Tech proposes to replace almost 1,000 extremely inefficient and degraded windows at the Oakwood campus and Forsyth campus with upgraded, triple-glazed double-soft-coat low-e (0.30) & low SHGC (0.30) windows. In order to measure and monitor the energy savings, efficiency improvements, GHG reductions and money savings, Lanier Technical College has initiated an unprecedented partnership with TRIRIGA, one of the largest and most experienced providers of real estate environmental sustainability solutions and enterprise workplace management solutions in the world. TRIRIGA will provide the TREES energy management and carbon footprint measurement system (see details below) at a deeply-discounted educational/academic rate for the life of the GEFA project development and implementation to Lanier. All of Lanier Tech's utility bills, project costs and environmental savings measurements will automatically be integrated into one dashboard that will streamline carbon disclosure and environmental reporting. Twenty-four sustainability metrics will be used to analyze resource and energy consumption, emissions production and carbon accounting. Carbon footprint reduction over time will be captured and charted in order to validate progress against environmental and financial goals. In addition, Lanier Tech will automate the creation and tracking of critical activities and tasks that accelerate completion of energy efficiency and renewable energy projects.	Option C or at the campus level	
053	TCSG -North Georgia Technical College	Controls	Controls Other,Computer-based automation system for lights and HVAC at all three campuses	North Georgia Technical College will develop specifications and, following the Technical College System of Georgia bid protocols, contract with a building management company to design and install computer-based automation systems for lighting and HVAC control at each of the three campuses. For both Blairsville and Currahee, the system would control a single large building with different zones and usage patterns. Blairsville would also control a single adult education building. For the Clarkesville campus, the system would be used to control 15 buildings, some very large. The new control system would allow the energy manager to monitor energy usage, and to only light, heat or cool spaces as needed. Sensors would be used to detect occupied areas and to adjust to available daylight: both strategies for reducing demand. Using this control system, NGTC expects to cut energy use significantly and save at least $123,000 annually for a simple payback of 2.9 years for this part of the project. NGTC has gathered data from schools that use similar systems, as well as from management system vendors, to determine energy savings projections for this ECM. The $28,000 listed for design and engineering includes $12,000 for commissioning to determine effectiveness. Training for employees will be part of the bid specifications to allow the college to use the system effectively.	Option C or at the campus level	Option a or b over 15 bldgs seems expensive; Option C would need to deduct the lighting improvement from other ECM
216	TCSG -North Georgia Technical College	Lighting	Lighting Other,Combination of interior ballast & bulb replacement with exterior lighting upgrades	In an audit conducted March of 2009, Georgia Power recommended the college replace highly inefficient lighting fixtures. NGTC proposes to develop a lighting plan to replace lighting at all three campuses. This plan would be the basis for a bid specification package that included an on-site consultant, design development, and installation. This contract would be awarded to an experienced lighting contractor according to Technical College System of Georgia bid procedures. The lighting plan will include replacing T-12 fluorescent fixtures with T-8 fluorescent fixtures and replacing incandescent lamps with compact fluorescent lamps. Lights would also be changed out to improve the usability of a primarily unused 62-year-old building, used for many community events, graduations, and other school activities. The college is already using budgeted funds to replace windows on this building to improve energy efficiency and public use. Where possible, the lighting plan would also mean changing out incandescent exit signs to LED exit signs. In alignment with the CONTROLS EMC, the plan would also use sensors to light only occupied areas and to make adjustments when daylight can be used. The plan would also include changing out fixtures on 191 exterior lights that need updating to improve energy efficiency. Projected savings are $102,478 annually, for a simple payback of 4.9 years.	Option A	
066	TCSG -Okefenokee Tech	Controls	Controls Building Automation	OTC proposes to tie 13 roof-top units and multiple heat pump units into the building automomation software system. This will effect buildings 100, 200, 300, 400, 500, 600, 800, and 1000. The integrated system will allow for programming on-and-off functions of the units as well as better measurement and verification. Additionally, labor savings will be realized due to time saved with the automated shut-off of air conditioners. Upgrades to the controls in buildings 300 and 400 will allow a reduction in energy usage and demand as a result of automoted controls that allow for monitoring and verification.	Option A or B	BAS Software should help post-retrofit
067	TCSG -Okefenokee Tech	Commissioning / Recommissioning	Commissioning / Recommissioning	A college-wide balancing study has not been done in 13 years. OTC proposes to conduct a recommissioning study on buildings 500, 600, 100, 200, 300, and 400, 800, and 1000 to 1) assess the competency of the central plant and 2) develop recommendations for modifications. Building modifications over the past decades have changed the function of existing heating and cooling systems.The Commissioning would identify recommendations that will decrease energy consumption and build efficiency, thereby reducing costs. Analysis of the system reveals many problems with air flow that affect efficiency. The duct system is inadequate for the square footage and energy demand. In the 400 building, insullation breaks loose, clogs the coils, and restricts air flow. Buildings 100 and 200, built in the 1960s, have been modified to accommodate growth, but the units are seriously out of balance because they were not properly sized to the areas served. Room modifications, the addition of hundreds of computers to rooms, and the positioning of air conditioning units have created air flow problems. A balancing study would determine the proper CFM for each room and lab and have the units adjusted accordingly.	EnergyCAP or other billing comparison at highest resolution possible before retrofit	
260	TCSG -Sandersville Technical College	Lighting	Lighting Exterior	STC's project will replace 178 exterior lights at the Sandersville Center (123), Jefferson County Center (18), Jefferson County CTD Range (11), and the Hancock County Center (26). The purchase of the bulbs and fixtures and the installation will cost $154,901 and generate a yearly electricity cost savings of $18,399. The 21 exterior lights and poles at the Jefferson County Center and Jefferson CTD are rented from Jefferson Energy Cooperative (JEC). The yearly rental from JEC and electricity costs for these poles and lights is $6019.00. Helton Electrical Services estimates the electricity used by these lights to be $2468.43 per year based on the current bulbs and usage being 12 hours per night. Buying the poles and replacing the lights would cost $2000 each for a total of $42,000. The current exterior light poles will be used for the new fixtures. The new fixtures will house 4 foot long florescent bulbs that use ½ as much electricity as the current fixtures while still emitting the same amount of light. The bulbs will burn an average of 20,000 hours before being replaced. This project will enable Sandersville Technical College's three centers to have the same amount of exterior light in parking lots with a projected 47% reduction in electricity used. The proposed lighting systems are manufactured by Orion Energy Systems. Orion is a leader in energy-efficient lighting systems. The exterior lights offer a whiter, brighter light with mounting brackets that fit all standard poles and allow customers to alter the angle of the light to suit their needs.	Option A	
163	TCSG -Savannah Technical College	Lighting	Lighting Sensors	Energy & Environment has conducted an energy audit of the lighting systems throughout the entire Savannah campus, which consist of six (6) buildings, and has determined that there are significant opportunities for lighting retrofits. The buildings range from 3-30 years old with a wide range of lighting fixtures/components. The facility has completed the first phase of light retrofit to include 80% elimination of incandescent lighting. This phase will complete that effort and incorporate re-lamping, sensors, controls, new fixtures, LED, etc. This proposal includes retrofitting, replacing, de-lamping approximately 3,197 lamps, 926 fixtures and 126 sensors/switches. The Maintenance cost savings will be $678.38 / yr. Photocell control will be incorporated to control new designed dimming ballast (Savannah, GA made) that allows inexpensive dimming control of fluorescents. We propose to retrofit a number of fixtures, particularly in spaces with significant daylighting to this technology. The photo sensor control will detect the ambient light level and adjust, dimming down or even turning off the light fixture if the sunlight lightens a given area. The dimming is slow and not noticeable to the eye. The energy savings will be significant on those fixtures. Occupancy sensors may turn off lights in unoccupied spaces. Savannah Tech has a number of environments where sensors would be advantageous. Various technologies will be incorporated, simple wall motion. Ultrasonic for bathrooms and ceiling sensors for large spaces. There's no technology of greater efficiency than – off.	Engineering Calculations	
166	TCSG -Savannah Technical College	Lighting	Lighting Fixtures	Energy & Environment has conducted an energy audit of the lighting system for the Annex buildings and has determined that there are significant opportunities for a lighting retrofit. The building is over 30 years old incandescent lighting. This proposal includes retrofitting, replacing, 105 HID (Magnetic Ballasted High intensity Discharge) fixtures and 45 sensors/switches. These spun aluminum highbays consume vast amounts of energy and release much heat that then must be cooled against (heat load). We propose the wholesale replacement of old HIDs to fluorescent highbays. Note: If both grants, one for the entire campus lighting (Project #188) and this one (Project #191), are granted this Lighting ECM will be omitted, as it is included in the other (Project #188) as well.	Option A	

ECM ID#	Project - Agency	Category	Category / SubCategory	ECM Description	Recommended M&V	M&V Comments
169	TCSG -Savannah Technical College	Building Envelope	Building Envelope Insulation	This proposal is for the installation of foam insulation to the underside of the exposed roof deck (ceiling). The building was constructed in the late 1970's and is not adequately insulated. Installation of foam insulation will insulate and create an air seal. It is an effective "breathing" air barrier that can adjust with the building to maintain a seal against energy-robbing air leakage. Convective air movement inside cavities is virtually eliminated, providing more uniform temperatures throughout the building the result is higher comfort levels and lower heating and cooling cost by as much as 45% annually.	Option C, if savings significant (>10% building use); Option C would have to account for other ECMs; otherwise simple calculation	
295	TCSG -Savannah Technical College	Lighting	Lighting Bulb Replacement	Energy & Environment has conducted an energy audit of the lighting systems throughout the entire Savannah campus, which consist of six (6) buildings, and has determined that there are significant opportunities for lighting retrofits. The buildings range from 3-30 years old with a wide range of lighting fixtures/components. The facility has completed the first phase of light retrofit to include 80% elimination of incandescent lighting. This phase will complete that effort and incorporate re-lamping, sensors, controls, new fixtures, LED, etc. This proposal includes retrofitting, replacing, de-lamping approximately 3,197 lamps, 926 fixtures and 126 sensors/switches. Maintenance cost savings will be $5,456.29 / yr. Relamp: The existing F32 T8 lamps in most fixtures on the campus may be replaced, based on the predominate electronic ballast type, by energy saving F28T8 lamps. The rated lumens of the lamps are divergent by less than 6%. The color rendering index for the F28 lamp is 85, much better than the 75 CRI of the existing lamp population. The rated life of the old aging lamp population is 20,000hr (about 4 years at current burn rates) verse the 24,000 hour rated life of the F28. Often a higher CRI is perceived as more light. It is likely this lamp will seem to put off more light as the higher CRI wavelengths are more usual to eye than the old lamps.	Option A	
296	TCSG -Savannah Technical College	Lighting	Lighting Other,Re-lamp Incandescent Lighting	Energy & Environment has conducted an energy audit of the lighting systems throughout the entire Savannah campus, which consist of six (6) buildings, and has determined that there are significant opportunities for lighting retrofits. The buildings range from 3-30 years old with a wide range of lighting fixtures/components. The facility has completed the first phase of light retrofit to include 80% elimination of incandescent lighting. This phase will complete that effort and incorporate re-lamping, sensors, controls, new fixtures, LED, etc. This proposal includes retrofitting, replacing, de-lamping approximately 3,197 lamps, 926 fixtures and 126 sensors/switches. Maintenance cost savings is $1,529.62/yr. The campus is mostly retrofitted or changed out to T8 lighting. We would like to "mop up" the area missed, which are somewhat substantial. Replacement of existing fluorescent light fixture (if in good working condition as most of the existing fluorescent fixtures are, would be a great waste of money. Retrofitting allows the least waste, the most energy savings, at the lowest cost	Engineering Calculations	
297	TCSG -Savannah Technical College	Lighting	Lighting Fixtures	Energy & Environment has conducted an energy audit of the lighting systems throughout the entire Savannah campus, which consist of six (6) buildings, and has determined that there are significant opportunities for lighting retrofits. The buildings range from 3-30 years old with a wide range of lighting fixtures/components. The facility has completed the first phase of light retrofit to include 80% elimination of incandescent lighting. This phase will complete that effort and incorporate re-lamping, sensors, controls, new fixtures, LED, etc. This proposal includes retrofitting, replacing, de-lamping approximately 3,197 lamps, 926 fixtures and 126 sensors/switches. The HID (Magnetic Ballasted High intensity Discharge) fixtures, predominately in the Annex building are dinosaurs. The spun aluminum highbays consume vast amounts of energy and release much heat that then must be cooled against (heat load). We propose the wholesale replacement of old HIDs to fluorescent highbays in the Annex. In classroom buildings a modern electronically ballasted HID, dimmable and controllable for energy and daylight harvesting would be better suited for these environs. They can be off or dimmed way back to take advantage of natural daylight much of that time. We propose new LED exits signs for those areas with remaining aged fixtures and LED and Compact Fluorescent fixtures where possible.	Option A	
298	TCSG -Savannah Technical College	Lighting	Lighting Exterior	Energy & Environment has conducted an energy audit of the lighting systems throughout the entire Savannah campus, which consist of six (6) buildings, and has determined that there are significant opportunities for lighting retrofits. The buildings range from 3-30 years old with a wide range of lighting fixtures/components. The facility has completed the first phase of light retrofit to include 80% elimination of incandescent lighting. This phase will complete that effort and incorporate re-lamping, sensors, controls, new fixtures, LED, etc. This proposal includes retrofitting, replacing, de-lamping approximately 3,197 lamps, 926 fixtures and 126 sensors/switches. Exterior lighting consist of changing the existing metal halide lamps to a LED fixtures or changing the ballast and incorporating a lower wattage of metal halide. In addition the existing photocells will be replaced.	Engineering Calculations	
092	TCSG -South Georgia Technical College	Lighting	Lighting Fixtures	Georgia Power conducted an energy audit in 2008 at the request of SGTC to improve the overall efficiency of college operations. They have recommended, and SGTC proposes the removal and replacement of 2,257 outdated light fixtures in 14 buildings with High Energy Efficient Lighting using a combination of contract, in house and student labor. Lighting engineers from Georgia based Cooper Lighting have been consulted and we have experimented with the installation of some of the most energy efficient lighting products available for classroom, lab, administration and common areas. Products have been identified for all lighting applications to facilitate rapid and successful implementation of this ECM. South Georgia Tech has spent $41,718 in maintenance funds in preparation for this element of our energy savings plan and these funds are not included in this request. Each replacement fixture proposed uses approximately half of the electricity used by the product it will replace. The newly designed fixtures use the most efficient T-8 and T-5 fluorescent lamps available, solid state ballasts and LED technologies. Significant savings in the maintenance of existing outdated light fixtures is also expected. In addition to energy savings, this project makes an adjustment of our Georgia Power Customer Baseline Rate possible which will reduce our overall electrical utility rate. Georgia Power also indicates that this project clearly qualifies for the Lighting Retrofit energy rebate.	Option A	
094	TCSG -South Georgia Technical College	Controls	Controls HVAC contols	South Georgia Tech proposes the installation of 50 programmable thermostat HVAC system controls in 18 buildings as recommended by the June, 2008 Energy Survey by Georgia Power. Programmable thermostat controls for heating and cooling will be set to reduce or raise temperatures as appropriate in accordance with building occupancy to conserve energy. They can also be used in conjunction with the Georgia Power Energy Direct program in reducing overall electrical usage during high cost, peak demand periods. The projected return on investment for this ECM is 6 months.	Option C or at the campus level	
100	TCSG -South Georgia Technical College	Lighting	Lighting Sensors	South Georgia Tech proposes to replace conventional light switches with 150 occupancy sensing lighting controls in 18 buildings which will turn off lights when areas are unoccupied. Georgia Power has recommended this ECM as part of a comprehensive energy audit. This has the potential for significant energy savings and has a projected return on investment of 3.1 years. It is also expected to prolong lamp life and reduce maintenance costs associated with lighting.	Engineering Calculations	
139	TCSG -Southeastern Technical College	Mechanical	Mechanical Motors / VFD's	HVAC upgrades and energy management systems need to be installed according to an energy audit conducted by Ga. Power. We have to control entire building manually to start or stop HVAC systems. A 20,000 to 30,000 sq. ft. building could have only one room occupied and we have to run the entire system. With these replacements and additions we could program zones for occupied or unoccupied zone to reduce energy consumption.	Option A or B	
300	TCSG -Southwest Georgia Technical College	Lighting	Lighting Other,Fixtures and Sensors	Lighting Upgrades and Controls- Southwest Georgia Technical College has conducted an investigation of the lighting systems throughout three buildings and has determined there are significant opportunities for lighting retrofits. Southwest Georgia Technical College proposes replacing existing lighting fixtures with new energy efficient lighting fixtures, as well as replacing light switches with lighting controls that will "cycle" lights when rooms are unoccupied. Southwest Georgia Technical College proposes to replace approximately 3,570 lamps, 1,280 fixtures, and 207 light switches (lighting controls).	Option A	
406	TCSG -Valdosta Technical College	Lighting	Lighting Fixtures	This ECM proposes to replace the existing T-12 fixtures with more eneregy efficient T-5 fixtures,	Option A	
058	World Congress Center Authority, Georgia	Lighting	Lighting Fixtures	Retrofit all outdated lamps and fixtures throughout the campus. This project will assist in getting LEED certification. Reducing operational expenses and consumption by 20% yields the following: 86,556,751.0kwh to 69,245,400.8, reflecting a annual cost savings of $1,117,301. This would result in 1,643 cars being removed from the highway and the planting of 27,257 trees.	Option A	