



# **ENERGY CONSERVATION MEASURES PROPOSED FOR THE CITY OF MIAMI BEACH**

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**PRESENTED BY COMMISSIONER  
JERRY LIBBIN**



## **ECM 1: Facility Lighting and Lighting Control Upgrades**

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**The City of Miami Beach currently has a minimal amount of lighting controls installed throughout the City's facilities. With the exception of the Convention Center, none of the facilities in the current project scope have a building lighting controls system of occupancy sensors. Ameresco proposes to install wall and ceiling mounted occupancy sensors and photo sensors in appropriate locations.**

**Cost \$2,960,000**  
**Savings \$310.000**  
**ROI (yrs) 10**



## ECM 2: Street Lighting Upgrades

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The street lighting and other outdoor lighting throughout the City utilizes both HRS and MH lamps and ballasts for exterior lighting. However, due to advances in technology, more efficient lamp technologies that provide better light quality and longer lamp life, are available. Ameresco proposes replacing many of the HPS and MH street and outdoor pole fixtures with induction technology.

Induction technology has been available for many years, but it has only been recently that it has become the preferred choice in interior and exterior applications. Due to improved technology and the decreasing cost of induction lighting, and the significant maintenance saving generated by the extended life of induction lighting, induction technology has become a very viable option for many applications

**Cost \$7,740,000**

**Savings \$520,00**

**ROI (yrs) 15**

# ECM 3: Domestic Water Conservation

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**Ameresco proposes to replace existing commercial water fixtures, where applicable. New water-saving fixtures, including new china, will be selected to be equivalent to existing equipment.**

- **Replace Commercial Toilets and Flush Valves**
- **Urinal Valves**
- **Low Flow Showerheads**
- **Install Aerators with Low Flow in Hand Washing Sinks**
- **Investigate Pool Covers for Three Municipal Pools**

**Cost \$790,000**  
**Savings \$80,000**  
**ROI (yrs) 10**

## ECM 4: Irrigation Water Conservation

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**A) The City of Miami Beach can save water currently applied to their golf course by installing a Reverse Osmosis Plant that will produce water at a much lower cost. This applies to the irrigation system at the Miami Beach golf Club, future athletic parks, and the Par 3 Golf Course.**

- **For the Reverse Osmosis plant option, the savings have been calculated based on the current rate of \$3.88 per kGal of water, less a \$0.76 per kGal operational cost of the new Reverse Osmosis plant. Estimated savings arising from the R.O. Plant are approximately \$313,725 per year.**

## ECM 4: Irrigation Water Conservation

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**B)** Ameresco, along with its water treatment partners, analyzed an alternative process for water irrigation at the Miami Beach Golf Course; this process is called Scalping. Scalping consists of intaking a portion of the sewer water and re-using it for irrigation water, The direct economic benefit of using Scalping technology for irrigation water is two-fold, as potable water usage is significantly reduced, as well as avoiding sewer water discharging into the Miami Dade County system.

- For the Scalping Reclaim Water Plant, the savings will be the water consumption avoidance of 100.553 kGal at the \$3.88 per kGal rate for water, plus the same amount in sewer avoidance at \$5.12 per kGal rate, less the projected cost of operating the Scalping Reclaim Water Plant.

**Cost \$2,170,000**  
**Savings \$310,000**  
**ROI (yrs) 7**



## ECM 5: HVAC Controls

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**Integrating the existing the building level control systems into a single, web-based EMS allows the conditions at each building to be monitored in real-time from any location. This enhances occupant comfort while providing significant energy savings. The citywide EMS will also display real-time alarms, allowing for quick response times and remote troubleshooting by the Property Management staff.**

**Additionally, Ameresco proposes to implement energy savings strategies such as Demand Controlled Ventilation (DCV), active building scheduling and unoccupied setback, allowing schedules can be applied through the citywide EMS, allowing HVAC equipment to be turned off or set back when the building in unoccupied. DCV ensures adequate building ventilation and provides significant energy savings by controlling building outside air intake based on CO<sub>2</sub> levels in the space.**

**Cost \$790,000**  
**Savings \$80,000**  
**ROI (yrs) 10**



# ECM 6: Convention Center Chiller Upgrade and Expansion

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Ameresco proposes to extend the existing chilled water loop at the Convention Center and Jackie Gleason Theater to provide chilled water for City Hall and new Municipal Parking Garage. This energy conservation measure (ECM) will convert the Convention Center cooling plant into a District Cooling Plant. This project will shift inefficient chilled water operations at City Hall and the new Municipal Parking Garage chilled water systems to the modernized plant currently serving the Convention Center. In order to maximize the efficiency of the new District Cooling Plant, the project also will install a Chiller Plant Optimization Package to the plant, along with a Geothermal Condenser Water System. These combined efficiency improvements to the Convention Center Chiller Plant will greatly improve cooling efficiency to the buildings served utilizing chilled water.

**Cost \$3,950,000**  
**Savings \$270,000**  
**ROI (yrs) 15**





**THANK YOU!**

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**FOR ADDITIONAL INFORMATION OR  
SUGGESTIONS CONTACT:**

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