

1. Set a minimum goal for state facilities. Governor Cuomo has set a goal for a 20% reduction. Based upon my experience on various projects, I believe that a 40% reduction is very feasible for lighting loads alone by 2015. This can be achieved by:
 - a. Employing bi-level lighting for stairwells and hallways. When occupied, these spaces shall be fully lit to standard light levels. When vacant for a set period of time, the light and power level fall by 80%.
 - b. All spaces that have some daylight should have daylight sensors, with appropriate controls to modulate artificial light and power levels. This includes office space with windows and the perimeter areas of parking garages.
 - c. Where feasible, daylighting should be introduced into spaces through skylights or light tubes, with daylight sensors and controls for remaining electric lights.
 - d. The lighting in all spaces should be modulated by occupancy sensors coupled to lighting controls.
 - e. The lighting levels for all spaces including corridors should be surveyed. When spaces are found to have lighting levels that exceed standards, steps should be taken to reduce lighting levels and concomitant power levels.
 - f. All incandescent (including halogen) lighting should be replaced by CFLs or LED technology.
 - g. All obsolete lighting fixtures with T12 lamps and magnetic ballasts should be replaced or refurbished for T5 or T8 lamps with electronic programmed start ballasts, new reflectors, and lens cleaning. The number of lamps can generally be reduced at the same time. Alternative LED lamps or fixtures may also be considered.
 - h. Outdoor lighting can be modulated with motion sensors and controls.
 - i. Parking lots and roadways should be periodically surveyed to ensure that lights are off when there is adequate daylighting.
 - j. All outdoor fixtures should direct light only toward surfaces that enhance safety in keeping with dark sky and energy-saving principles.
 - k. Reductions in energy levels for non-lighting electric loads (e.g., heating, air conditioning, refrigeration, elevators, escalators, data storage and processing, and office equipment) should achieve a minimum of 30% energy reduction by 2017.
 - l. State facilities should be surveyed and consolidated.
 - m. Where possible existing state employees and other stakeholders (e.g., existing contractors, students, and inmates) should contribute to these efforts, without involving special contractors. This way the state would reap the rewards of reduced utility bills.
2. EmPower authority should be extended to 2020 with 30% overall electrical energy reduction for all facilities throughout the state, at a minimum. This contrasts with a 25% per capita reduction as in the draft plan (page 12).

3. EmPower authority should be extended to reduce demand from other stationary energy sources, including natural gas, propane, and fuel oil, with similar goals and timetables as electrical energy reductions.
4. All building codes should be revised to require or encourage energy-savings. For example, bi-level lighting mandates that full lighting levels remain in effect for at least 15 minutes after the last person was sensed in the space. That could be reduced to 5 minutes.
5. Remove exclusive or monopolistic authority of preferred contractors. Require that utilities establish strategic partnerships with existing or new electric contractors and other appropriate trade businesses, to train, educate, and empower them to apply energy-savings measures. These partners should be able to offer the same services as preferred contractors at competitive prices.
6. Conduct research through state departments, colleges, and universities into the development and application of cost-effective energy-saving technology. These technologies should then be deployed through Maryland institutions and businesses.