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BOMA SAN FRANCISCO EMERGENCY ENERGY ADVISORY

Voluntary Emergency Energy Conservation Measures

The following is a list of emergency energy conservation measures that can be voluntarily undertaken by building managers and tenants in response to emergency load curtailment requests from our local utilities and government officials.

Not all the ideas on this list will apply to each building as control systems vary and building use and tenant operational needs vary.

The ideas expressed here set out the procedures for reducing energy loads in buildings to meet short-term emergency situations usually triggered by a request from the Independent System Operator (ISO) or a top government official such as the Governor. Such requests are generally announced via the media.

These suggested actions should reduce energy loads from 5-15% or more based upon how many of these options are available in your operation.

These emergency conservation measures are divided into tenant considerations and general building considerations and items on each list could apply to both groups. We encourage you to work with your tenants whose voluntary cooperation can have a significant impact on the success of your emergency power curtailment efforts.

Disclaimer: Sustained operation of these emergency measures may result in adverse conditions. System load shedding must consider lease obligations, liability, safety and security and tenant satisfaction. These are good citizenship voluntary efforts that BOMA encourages its members to consider. However, specific life safety, security, and asset protection concerns need to be maintained.

Should you have any questions regarding this advisory, please contact Ken Cleaveland, Director of Government and Public Affairs, at the BOMA San Francisco office (415-362-2662, ext 11) or via e-mail kenc@boma.com

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Voluntary Emergency Energy Conservation Measures :

Building Management Considerations

1. Ask your tenants to help by distributing a formal request to conserve energy usage. (See “Tenant Considerations”) Ask tenants for ideas to conserve energy in the building and recognize them for their efforts. Educate tenants on the importance of their role in reducing energy usage. Enlist tenants and employees in the effort to save energy. Communicate the need to manage individual and collective energy use through posters, employee/tenant newsletters, group e-mails, etc.
2. Follow the “Tenant Considerations” measures in your own building management offices.
3. HVAC Equipment Conservation Tips:
 - a. Lower set points in common areas and tenant zones that are in heating mode; set up maintained temps in interior zones that are in cooling mode
 - b. Tweak chiller OSA interlock temps to delay or eliminate start up where possible. Disable start during peak demand periods
 - c. Reduce Domestic Hot water temps
 - d. Turn off hot water boilers early and allow temps to coast
 - e. Tighten up Optimal start/stop schedules
 - f. Duty cycle less critical equipment not susceptible to cyclic damage
 - g. Reduce fan static pressure where possible
 - h. Set up a reduced duty cycle for garage fans
 - i. Fine tune and calibrate equipment to reduce hunting.
 - j. Turn off non-essential auxiliary systems such as fountains, etc.
 - k. Start chillers and VAV heaters earlier in the morning so you can reduce the call for energy during the higher demand hours.
 - l. If DDC controls re-set temperature, set points.
 - m. Turn off hot water tanks, or reduce temperatures or cycle them.
 - n. Don’t run circulating pumps that are not necessary.
 - o. Reduce your building hours of operation for heating, ventilation and air conditioning (HVAC) systems, lighting, plug loads.
 - p. Perform operations and maintenance (O&M) procedures to ensure that HVAC systems are performing at optimal levels. (For example, clean filters.)
 - q. Set hot water tanks below 105 degrees and set auto shutoff system for non-use times.
 - r. Check HVAC runtimes and reduce or put on EMS optimum start program.
 - s. Check to see if all unoccupied after-hour areas’ HVAC have been set back or below **60** degrees.
 - t. Close or install thermal lined drapes.
 - u. Reduce temperatures in occupied areas to **68** degrees.
 - v. Check all entrances for tight weather seals on doors and windows.
 - w. Reset heating only thermostats in common areas to lower than standard temperatures (below 65 degrees) and lock out changes via DDC. [Note: This option should only be

used if it does not activate cooling equipment.] Use auto load shedding to alternate and shut down loads at predetermined levels or peak demand times.

- x. Insure no space heaters or foot warmers are in tenant spaces. They are definitely high power usage items, and usually in violation of local fire codes as well.
- y. Check that roof top unit discharge air supply temperature resets are not being driven cooler by hot zones caused by computer monitors and general office equipment positioned underneath thermostats.
- z. Rebalance air CFM in hot zones to minimize need for DX cooling.
- aa. Reset night minimum heating and cooling set points for wider span. [Note: If feasible, eliminate night set points.]

4. Lighting Conservation Ideas:

- a. Retrofit with energy efficient lamps
- b. Lower wattage of lamps where possible, or reduce the number of lamps where possible
- c. Adjust lighting time clocks or computer lighting programs to reduce occupancy cycles when possible
- d. Use partial lighting level wherever possible in Interior lighting circuits
- e. Use partial lighting level wherever possible in garage lighting
- f. Reduce exterior lighting that would not effect security or liability.
- g. Turn off unnecessary interior lighting not in constant use such as backroom operations, perimeter lighting circuits near windows (taking advantage of daylight), lights in office areas when not needed (task lighting), display lights and/or permanent decorative lighting, >
- h. If your janitors don't clean every night, be sure to have someone check that all lights are turned off in all unoccupied tenant areas. Work with the janitorial contractor to leave lights off in space not being used or cleaned. Adjust building housekeeping and custodial maintenance routines to minimize after hours lighting.

Other Considerations:

- 1. Turn off all office equipment that is not necessary for productivity. Please consider using a central printer (if networked) and copier, and turn off all infrequently used printers and copiers.
- 2. Check elevators to see if the sleep mode time can be started early. Have cleaning crew turn them off after leaving
- 3. Survey tenants for possible reduction or changes in normal office hours and adjust operating time schedules accordingly
- 4. Sign up volunteers to "watt a clean up!" duty at the end of the work day to identify and shut down office equipment and any lights that may have been left on.

Long Term Conservation Measures to Consider:

- 1. Replace incandescent lights with fluorescent.
- 2. Replace electrical motors with high efficiency.
- 3. Install duty cycle controls for electrical heating.
- 4. Install load shedding controls for heating, lighting and hot water tanks.
- 5. Install motion sensors in rest rooms to turn off lights and exhaust fans when unoccupied.
- 6. When purchasing new office equipment, look for the Energy Star™ logo indicating energy efficient models.

Additional optional steps to take during a Stage 2 or Stage 3 alert to shed load:

- Cut Electric Heat off in stages for both central and terminal (VAV)
- Stop Hot water circulating pumps
- Shut down Chillers & related pumps
- Shut Building supply and return fans
- Stop Heat pumps
- Shut down non essential escalators
- Shut down non-essential restaurant cooking equipment

Last Resort Load Shedding:

- Cut all but one elevator off and all escalators
- Ask tenants to de-energize all plug loads
- Turn off all lighting except emergency pathway lighting
- Suggest tenants shutdown offices and send employees home early

Voluntary Emergency Energy Conservation Measures : Tenant Considerations

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1. Ask all your staff to participate in energy conservation measures. Share these ideas with them and recognize them for contributing to the effort. Help communicate that these measures can actually contribute significantly to avoiding power shut downs and helps to mitigate your companies operating expenses.
2. Reduce plug load during lunch times by turning off computers, printers, and monitors not in use.
3. Turn off other ancillary devices to reduce plug load such as desk fans, radios, desk lamps, and especially space heaters.
4. Turn off lighting in areas not regularly occupied.
5. Enable all energy saving features in office equipment.
6. Switch off lighting at the end of the day and let the janitorial staff turn it on when cleaning.
7. Switch off other business machines and equipment not needed for the conduct of business.
8. Working with building management, adjust temperature set points lower for heating or no greater than 69° F during the day and 55° F after-hours.
9. Use task lighting instead of full overhead light where possible. Turn off perimeter lighting circuits near windows taking advantage of day lighting.
10. Turn off holiday displays etc.
11. Close thermal lined drapes if you have them.
12. When purchasing new office equipment, look for the Energy Star™ logo indicating energy efficient models

What If The Power Goes Off?

- An electricity curtailment is a controlled event that can occur during a Stage 3 alert when power levels drop below 1.5% of what's necessary. If one is implemented in your area, the electricity should come back on within two hours. A work stoppage plan should be developed with management to determine what employees should do in the event of a temporary electricity curtailment.

- If a Stage 3 is imminent, back up your computer and don't forget to frequently save what you are working on, to be ready if the power goes off.
- If out on the road, please drive carefully. Remember that traffic signals may be out in a rolling blackout. Consider each intersection to be a four-way stop, and drive defensively. If you are a pedestrian, be extra alert, since normal traffic patterns are disrupted.
- Be sure you have flashlights and fresh batteries in all parts of the office, in particular those without external natural light sources.
- Candles should not be used under any circumstances. Remember, buildings have heat and smoke detectors that can be triggered if candles are used. Life safety systems (including sprinkler systems) work independent of the power supply.
- Dress to stay warm in cold weather. A warm hat and socks can help you reduce the amount of heat loss through your head and feet. Encourage employees to bring extra clothing to the office.
- Avoid opening your office refrigerator and freezer, if you have one, as much as possible. Food inside should stay cold for hours if the door is left closed.
- If caught in an elevator at the time of power failure, do not panic, but remain calm. Activate emergency alarm and/or communication system. Refer to your building's emergency procedures manual.

Other Sources Of Information

Each of these sites has a number of links to other sources of energy and electricity information. They also have mail and phone numbers for direct contact if necessary.

- Pacific Gas & Electric has a site that provides consumers with a lot of timely information. It can be reached at <www.pge.com>
- The California Independent System Operator (CA ISO) provides up-to-the-minute status information on the electricity grid. They can be reached at www.aiso.com.
- The California Energy Commission has additional information on energy conservation for work and home. You can access their information at www.energy.ca.gov.
- The California Board for Energy Efficiency was created by the California Public Utilities Commission to oversee the development and delivery of energy efficiency programs. The CBEE can be reached at www.cbee.org.
- The California Public Utilities Commission can be reached at www.cpuc.ca.gov.
- The Federal Energy Regulatory Commission can be reached via their website at www.ferc.gov.