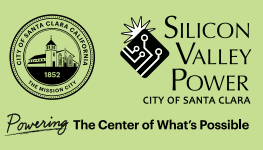




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## Ask an Engineer: Heat Pumps and Indoor Air Quality

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Are heat pumps better for indoor air quality than conventional HVAC systems?

Heat pumps provide multiple benefits compared to conventional HVAC systems — increased energy efficiency, quieter operation and reduced maintenance. They can also help improve indoor air quality.

Heat pumps can provide better ventilation than conventional HVAC systems because they are capable of bringing in fresh outdoor air and filtering out indoor air pollutants. By contrast, conventional HVAC systems typically recirculate the same air throughout the building and may not bring in fresh outdoor air without extra equipment.

Heat pumps can provide continuous ventilation that can help reduce the concentration of indoor air pollutants, such as carbon dioxide, volatile organic compounds (VOCs), and other airborne contaminants. These pollutants can contribute to poor indoor air quality, which can have negative health effects on building occupants, such as headaches, fatigue and respiratory problems.

Heat pumps can also use high-efficiency filters to remove airborne pollutants from the air, further improving indoor air quality. By bringing in fresh outdoor air and filtering out indoor air pollutants, heat pumps can create a healthier and more comfortable indoor environment.



## Is California Ready for Summer Energy Demand?

The good news is the State of California is off to a great start due to heavy rains this winter that filled the reservoirs. This translates to production of more hydroelectric energy that can support grid reliability at critical times. This bodes well for grid reliability through summer and fall of 2023.

Last summer was challenging for the State of California. The statewide grid barely avoided rolling outages in Sept. 2022. Without the help of load reduction from large industrial and commercial customers through the California Energy Commission's new Demand Side Grid Stability program (DSGS) and other voluntary efforts during the FlexAlerts, the outcome may have been different. Silicon Valley Power customers reduced over 350 megawatts during the week of Sept. 5-8. Every effort to reduce energy consumption during the extreme heat wave made a difference to the reliability of the grid. Thank you for your contribution to reducing demand on the electric system during critical peak periods. Every light you turned off and every degree you turned the thermostat up made a difference.

Ultimately, we do not know if the summer will be hotter or more mild than last year, which impacts grid reliability. Silicon Valley Power has a diverse portfolio of generation resources to support Santa Clara customers' energy use and the additional water in the reservoirs returns much needed hydroelectric resources to the power mix.

To stay informed about statewide energy emergencies, sign up to receive notifications for Flex Alerts.

Flex Alerts are issued by the California Independent System Operator (CAISO) when forecasts predict high energy demand statewide and grid conditions are likely to become strained. When Flex Alerts are issued, voluntary conservation of energy can help the state avoid rolling blackouts. Customers can help by turning off and unplugging unnecessary equipment, increasing thermostat settings to 78 degrees or higher, pre-cooling when possible and avoiding the use of energy-intensive equipment during peak periods. Visit [flexalert.org](http://flexalert.org) for more information and to sign up for alerts.

To help reduce your energy use overall, visit [SiliconValleyPower.com/BusinessRebates](http://SiliconValleyPower.com/BusinessRebates) to learn more about our equipment rebates. If you need assistance identifying areas where you can invest in energy efficient upgrades, contact one of our energy engineers for a free energy survey at [savemoney@siliconvalleypower.com](mailto:savemoney@siliconvalleypower.com) or 408-615-6650.



## Daylighting Takes Control in Energy-Efficient Design

With the increasing focus on energy efficiency and sustainability, daylighting has become a more important concept in building design. Lighting accounts for more than 10% of total energy use in a typical commercial building, according to the U.S. Department of Energy. Buildings designed to optimize daylight use less energy, while providing a more enhanced indoor visual appeal.

### Controls for integrated daylighting

The use of daylight in commercial buildings requires more than just appropriately placed windows and skylights, although these are important. To optimize savings and the visual environment, it's critical to integrate the building design with properly installed controls so that they complement the lighting system effectively. Four control strategies are commonly used:

1. **Occupant dimming.** Occupants can manually dim or increase the lighting in their area. This approach depends on changing behavioral patterns and rarely results in sustained energy savings.
2. **Automatic shutoff.** In many buildings, light sensors and relay switches have replaced light timers. Careful design is necessary to eliminate the possibility of lights turning on and off seemingly at random, which may result in complaints from building occupants.
3. **Stepped dimming.** Unlike automatic shutoff systems that suddenly switch lights off and on, this approach gradually steps down (and increases) light levels. Stepped dimming is popular in buildings with high-bay lighting systems.
4. **Continuous dimming.** A time-of-day scheduler or a photo sensor dims light fixtures gradually over a full range of light output. This provides the highest degree of flexibility for spaces with variable daylight levels. Many occupants perceive this to be a better approach.

An important design consideration for dimming systems is the creation of control zones where all the lamps in a zone are dimmed and regulated by a controller and photo sensor. The major energy standards like ASHRAE 90.1 specify the maximum size of daylighting zones. For high-intensity discharge (HID) lighting systems, each lamp requires a dimming ballast and can't be dimmed below 60% of total light output. LED lighting systems can easily accommodate dimming controls and have virtually no low limit.

Whichever control option you choose, a properly arranged daylighting system that interacts effectively with energy-efficient artificial lighting can be an important part of any strategy to improve building energy performance.

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## Mid-year Rate Increase Effective July 1, 2023

In May, the Santa Clara City Council approved a mid-year rate increase of 5% for all electric customers. This increase will take effect July 1, 2023 and customers will see it reflected on utility bills received in August. Unforeseeably high natural gas prices early in 2023 have had a significant impact on electric and gas utilities throughout California. Natural gas prices temporarily increased by 300%, causing power prices to rise 150%. To manage these unexpected cost increases, Silicon Valley Power tightened its budget, pared down spending wherever possible and is using appropriate reserves to help cover the increased costs. However, a 5% mid-year rate adjustment is necessary.

Silicon Valley Power understands the impacts rising utility costs have on all its customers. The utility offers a variety of programs to assist business customers in reducing energy costs, including free energy audits to identify potential energy efficiency upgrades and a variety of rebate programs to help with the cost of new energy efficient equipment. For more information, visit [SiliconValleyPower.com/Businesses](https://SiliconValleyPower.com/Businesses). To contact an energy engineer for a free energy audit, call 408-615-6650 or email [savemoney@siliconvalleypower.com](mailto:savemoney@siliconvalleypower.com).

## Lexus Stevens Creek LED Project Yields Big Savings and Rebates

Lexus Stevens Creek completed a lighting retrofit project where it installed LED fixtures in place of existing fluorescent T8 and CFL fixtures in the showroom and metal halide fixtures in the parking lot. The project resulted in reduced operating costs, improved visual appeal and increased safety of the facility. They utilized a contractor from Silicon Valley Power's Trade Ally Network who filled out the rebate application, completed the lighting rebate calculator and submitted the application and required documentation on the dealership's behalf. They also coordinated the pre- and post-installation inspections, making the entire process easy.

Lexus Stevens Creek received \$29,700 in rebates from Silicon Valley Power, which reduced the payback period for the project to 2.5 years. The savings from the lighting upgrade will reduce the facility's annual electricity bill by \$27,500. Due to the long life of the LED fixtures as compared to linear and compact fluorescent lamps, Lexus Stevens Creek will save money in maintenance costs as well.

Tom Slagle, general manager for Lexus Stevens Creek, said "the Trade Ally contractor was excellent. Their work was very professional and clean." Keeping a clean job site minimized the impact on staff and customers, allowing Lexus Stevens Creek to maintain normal business operations during the project. Mr. Slagle added that he was "very happy with how the new lighting looks."

Customers interested in upgrading to more efficient LED lighting may be eligible for a rebate, with bonus incentives up to 100% of the rebate amount currently available through Dec. 31, 2023 for some fixture types. Complete program details can be found at [SiliconValleyPower.com/Lighting](https://SiliconValleyPower.com/Lighting). Information on the Silicon Valley Power Trade Ally Network can be found at [SiliconValleyPower.com/TradeAlly](https://SiliconValleyPower.com/TradeAlly).



### Ashley Sterling Key Customer Representative

**Background:** Before coming to Silicon Valley Power (SVP), Ashley worked for the City of Santa Clara in the Municipal Services Division. During her time there, she built up her skillset in handling customer accounts, utility billing, and communication. Ashley's skillset easily transfers to her current role as a Key Customer Representative. She is the utility's primary point of contact for assisting with their needs related to electric service. For example, if a customer needs an electric service upgrade, Ashley will work with the customer to ensure its location is capable of handling the amount of power the facility requires.

**Comment:** "I love my job because of all the knowledge I have gained in the electric field. With all I have learned, I am better able to assist customers with their electric projects."

**Favorite pastime:** When she's not working, Ashley spends time with her three young children and takes them to sports practice. She also enjoys working on arts and crafts projects. "I love to craft. I make a lot of t-shirts and customized cups."

**Working at SVP:** Ashley appreciates the community at SVP. "It's great to work here. Everyone is very supportive and encouraging."