

# Energy optimisation checklist

Cost-saving measures, productivity enhancements, and optimisation opportunities for aged-care/retirement village facilities

| TASK  | SUB-TASK/DETAIL   | COMPLETE? |
|---|---|-----------|
| <b>Measure Energy Usage</b>                               | a. Monitor energy consumption (electricity, natural gas, LPG) as well as water usage regularly to identify any unexpected increases.  |           |
|   | b. Refer to the benchmarking tool to see how your site compares to others.  |           |
|   | c. Compare monthly energy consumption data to the same month a year prior and on a rolling 12-month basis to identify trends (i.e., increasing/decreasing energy consumption).  |           |
| <b>Domestic Hot Water (DHW)</b>                           | a. Ensure efficient showerheads are installed where possible (<8L/min). You can measure water flow by seeing how quickly a 2L jug fills up. If it takes less than 30 seconds to fill the jug then look to replace the showerheads.  |           |
|   | b. Ensure cleaning, dishwashing, washing, and laundry practises minimise hot water use as much as possible.   |           |
|   | c. Ensure hot water is stored in the range of 60-65 degrees.  |           |
|   | d. Regularly check shower and bathroom taps to ensure they are not dripping.  |           |
| <b>Heating, Ventilation &amp; Air Conditioning (HVAC)</b> | a. In spaces which are occupied for part of the day: <ul style="list-style-type: none"> <li>Set timers to switch on HVAC systems 1 hour before the space is occupied. (You can test the time that's required to heat or cool the space to reach the desired temperature).</li> <li>Turn off the system shortly after the last occupant has left the space.</li> </ul> |           |
|   | b. Ensure external doors can close automatically to prevent excess conditioned air from leaving the building.   |           |
|   | c. Only open windows if there is a need for ventilation or quick cooling. Try to keep windows closed in spaces where HVAC is operating (especially when the HVAC is heating the space).   |           |
|   | d. Control room temperatures using a dead-band between which neither heating or cooling occurs (this is usually achievable using AUTO function). For instance, set a room to heat to 21 degrees and cool to 24 degrees.   |           |
|   | e. Avoid situations where adjacent air conditioning controllers operate in different modes (i.e., heating and cooling) when the units are in close proximity -such as twin units or neighbouring rooms).  |           |
|   | f. For large common area spaces, consider engaging an expert to review ventilation requirements vs actual ventilation levels and to review controls on extraction fans.   |           |
|   | g. Ensure any radiators are turned off or down when outside air temperatures are high.  |           |
|   | h. Ensure heat pump ducting systems are cleaned annually.   |           |
|   | i. Clean air filters, fans, and coils on your heating, ventilation, and air conditioning (HVAC) system - replace if need be.  |           |
|   | j. Clean heat transfer surfaces, including cooling and condensing coils on HVAC system.   |           |
| <b>Insulation and glazing</b>                             | a. Ensure new spaces are well insulated and ensure insulation levels are sufficient in older buildings - particularly roof spaces as these are generally easier to access (than external walls).  |           |
|   | b. Ensure all hot water piping is well-insulated.   |           |
|   | c. Consider double glazing for retrofit window installations - this will limit thermal gain in summer and thermal loss in winter.   |           |
|   | d. Insulate outdoor ducting for supply air.   |           |
|   | e. Consider treating windows with low-emissivity (i.e. low-e) coating or use solar window films.  |           |

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| <b>Lighting</b>                          | a. Install occupancy sensors in spaces which have variable levels of occupancy throughout the day.   |  |
|  | b. Install lighting controls linked to daylight sensors in spaces where natural lighting is sufficient for large parts of the day.   |  |
|  | c. Replace low efficiency lights with LED equivalents, focussing first on areas where lighting usage is high.  |  |
| <b>Kitchen</b>                           | a. Schedule kitchen air conditioning and ventilation operations to match to hours of kitchen operation (i.e., there is generally no need to air condition a kitchen space overnight).  |  |
|  | b. Maintain chillers and freezers regularly to sustain compressor efficiency and limit refrigerant leakage. Check that temperatures are as expected.   |  |
|  | c. Only run dishwashers on full loads .  |  |
|  | d. Ensure that oven doors are closed as much as possible, and burners are only switched on when cooking - limiting kitchen heat will also reducing air conditioning requirements in summer.  |  |
|  | e. Check the gas equipment every 3 months by a contractor to avoid gas leakage, and emission of carbon monoxide.   |  |
|  | f. Use variable speed extraction systems to allow the fan speed to adjust to the rate of extraction required .   |  |
| <b>Laundry</b>                           | a. Run low temperature washes where possible and increase natural (air) drying if possible.  |  |
|  | b. Run high RPM spin cycles to remove as much moisture as possible from laundry before using dryers.   |  |
|  | c. Consider installing an energy-efficient ozone laundry system to replace remaining hot water washes.   |  |
|  | d. Consider outsourcing laundry to a business with more energy efficient cleaning technology.  |  |
|  | e. Run full loads of washing to minimize frequency of operation.   |  |
|  | f. Ensure that the amount of water used is in accordance with washing machine manufacturer instructions.   |  |
|  | g. Check and regularly clean the dryer's filters & ensure the correct maintenance of laundry machines.   |  |
| <b>Pools &amp; Spas</b>                  | a. Use a pool cover during unoccupied hours. This reduces evaporation which means less energy is required to maintain the pool temperature, and it also results in less moisture in the air which reduces ventilation requirements.  |  |
|  | b. Reduce the operating hours of the pool if possible.   |  |
|  | c. For larger pool areas, consider engaging an expert to review ventilation requirements vs actual ventilation levels and to assess if heat recovery is a viable option.   |  |
|  | d. Consider heat recovery from warmer extracted air to pre-heat incoming cooler outside air.   |  |
|  | e. Ensure large water jets are set on a timer as opposed to continually.   |  |
| <b>Boilers</b>                           | a. Ensure boilers have a regular maintenance program and are tuned for optimal combustion efficiency.  |  |
|  | b. Check boiler fortnightly for any leakage of fuel and of any smoke in flue that could indicate poor combustion.  |  |
|  | c. Operate condensing boilers at the lowest possible hot water temperature to ensure energy benefits of the technology are maximised.  |  |
| <b>Office Equipment &amp; Appliances</b> | a. Ensure automatic sleep/power-off timer for computers, printers, and TVs etc.  |  |
|  | b. Cool server rooms to no less than 22 degrees.   |  |
| <b>Villas/Independent Living Units</b>   | a. Ensure villas are as energy efficient as possible: <ul style="list-style-type: none"> <li>• Consider energy efficient designs (such as Greenstar) for new builds .</li> <li>• Install heat pumps, low flow showerheads and LED lighting when renovating villas.</li> </ul>  |  |
|  | a. Educate care workers and other staff about the importance of being as energy efficient as possible, managing hot water use and turning off equipment when not in use. <ul style="list-style-type: none"> <li>• Host a lunch and learn session, hold a webinar, or present about why it's important to save energy at staff meetings, or other get-togethers. You can also integrate information about your energy programme into your organisation's orientation training.</li> <li>• Create a mechanism for occupants or employees to share their suggestions with you. Make sure you respond to comments and act on recommendations when feasible. You may even offer a reward for the best energy-saving ideas. Check out ENERGY STARS treasure hunt.</li> </ul> |  |
|  | b. If any lights need to be manually switched off, then encourage staff to take responsibility to ensure that lights are off when spaces are left unoccupied.  |  |
|  | c. If any air conditioning needs to be manually switched off, encourage staff to take responsibility to ensure that air conditioning is switched off when spaces are left unoccupied for an extended period of time (e.g. overnight).  |  |
|  | d. Ensure cleaners take responsibility for switching off lights once cleaning of an area is completed.   |  |
|  | e. Share your energy efficiency goals. Transparency is the first step to getting the people inside your building or space interested in what you're doing. When you share your energy reduction goals and progress toward saving, employees and occupants sit up and take notice of your efforts.  |  |