Source: https://mtbest.net/tips-for-your-home/

Energy efficiency tips for your household

How do we use energy in our homes?

Most energy in our homes is used for heating and hot water. For this reason these systems should be addressed first.

Tips below are listed in the order of their best effect for minimum investment.

•Seal all gaps and drafts. Mass (air) transfer is the greatest home energy thief in winter. There is little point to improve heating or insulation if you neglect drafts. Seal gaps around doors, windows, ceiling cornices, floors and skirting boards. Have in mind that halogen light fittings have large gaps that let the warmest air in your room continuously escape. These gaps are required because halogens produce more heat than light and require cooling. Blocking those gaps is a recipe for setting your house on fire. You need to replace halogens with "cool to touch" LEDs in order to eliminate those gaps.
•Examine thermal insulation in your house and see if it can be improved, especially in the ceiling
•Windows can contribute to significant loss of heat. Consider bubble glazing for windows. It is much cheaper than blinds and does not block light
•In winter try your best to make the most of the sunshine that enters your windows. Explore the possibility Solar Reflective Heating for all your sun-facing windows
•In summer consider reflective blinds, especially on windows facing east and west
•Eliminate electric heaters and replace them by heat pumps (reverse cycle units). When you use a heat pump - **your heat can be up to 80% solar** even at night, because 80% heat can come from the atmosphere outside. Investigate COP (coefficient of performance) of a heat pump before you buy. Typically, the smallest units have the highest efficiency (highest COP) and also they are the quietest and cheapest.
•Replace electric or gas hot water system with evacuated tubes solar hot water unit. Mains pressure system with 10 year warranty can cost you as little as $1435 (in Australia) and reduce your energy costs for years to come. The smartest are systems with heat exchangers because solar-heated water and

water under pressure that you use are separate circuits. Evacuated tube water heaters with heat exchangers do not store the hot water that you use - they work like "instantaneous" water heaters and they are best suited to instantaneous boosting.
Make sure that a person who installs the system insulates all pipework very well. Solar energy is free, but it does not mean that it should be wasted by lack of insulation.

•Instantaneous gas boosting for your solar hot water system is more energy efficient choice than direct electric boosting regardless whether you take your power from the grid or not.

•Heat pump boosting is the alternative solution, but it is expensive and wastes energy when hot water is stored.

•If you have no room for direct solar hot water system, consider heat-pump storage unit, making sure that it has high COP (coefficient of performance). If COP=4 for example, 2/3 (66%) of the energy heating your water will be solar, even at night. If COP=5, 80% of energy heating your water will be solar.

•Buy a power point energy meter (~$20) and/or a wireless energy monitor and identify "energy thieves" in your household, one by one. Then investigate alternatives and/or upgrades to the most offending appliances. Knowing your energy use pattern will enable you to find most effective and least costly strategies for improving your energy efficiency and lifestyle. Knowing is much better than guessing.

•Upgrade lights in your house to LEDs or compact fluorescent lights. When buying LEDs check their specifications: lumen rating and power draw having in mind that LED technology improves every year

•Consider changing your fridge to chest fridge. It can save you a few kWh per day.

•If you use computer for many ours each day, consider switching to laptop. Laptops are designed with energy efficiency in mind to extend their battery life... Battery in your laptop is your UPS (uninterrrupted power supply) when you power the laptop from your power point.

•Examine appliances that are on "standby" and are powered all the time. These appliances can consume 10-20% of your electricity, and continue to waste energy even when you are away on holidays. Consider turning these devices at the power point. Explore wireless-control of power points and grouping appliances to maximize the convenience of standby power control.