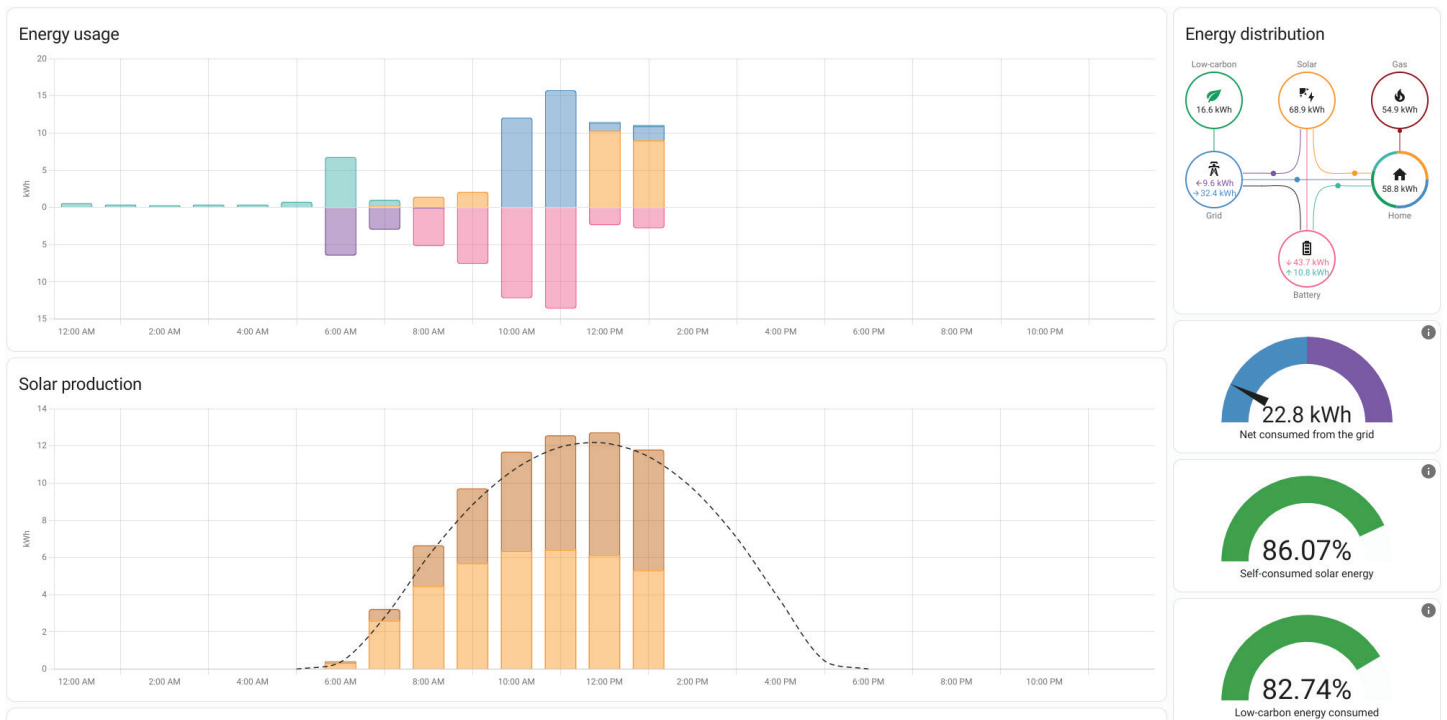




# CHAPTER EIGHT: Monitoring and Control

## INTRODUCTION

Monitoring and control are essential aspects of household electrification. By monitoring energy usage, households can identify areas of high consumption and take steps to reduce waste. Additionally, by using smart home technology, households can control energy usage and reduce their overall energy consumption. This chapter will provide information on how to monitor and control energy usage in your home and reduce waste.



## MONITORING ENERGY USAGE

Monitoring energy usage is an essential aspect of household electrification. By monitoring energy usage, households can identify areas of high consumption and take steps to reduce waste. There are several ways to monitor energy usage in your home, including:

1. **Smart Meters:** Smart meters are digital meters that measure energy usage in real-time. They provide households with accurate information on their energy consumption and can help identify areas of high consumption. Smart meters also provide information on the time of day when energy consumption is highest, which can help households adjust their energy usage accordingly.
2. **Energy Monitors:** Energy monitors are devices that provide households with real-time information on their energy consumption. They are usually attached to the electricity meter and can be accessed through a mobile app or a web portal. Energy monitors provide households with information on their energy consumption and can help identify areas of high consumption.
3. **Home Energy Audits:** Home energy audits are comprehensive assessments of a household's energy usage. They involve a professional energy auditor visiting the home and conducting a detailed analysis of energy usage. Home energy audits provide households with a detailed report on their energy consumption and recommendations on how to reduce waste.

## COSTS AND SAVINGS

The cost of monitoring energy usage in your home will depend on the method you choose. Smart meters are usually installed by energy providers and are provided free of charge. Energy monitors can be purchased for around \$100-\$200, while home energy audits can cost between \$300-\$500.

The savings from monitoring energy usage can be significant. By identifying areas of high consumption, households can take steps to reduce waste and save money on their energy bills. For example, by identifying appliances that consume a lot of energy, households can replace them with more energy-efficient models, which can save hundreds of dollars per year.

Source	Energy	Cost
Solaredge I1 AC Energy kWh	37.33 kWh	
Solaredge I2 AC Energy kWh	31.56 kWh	
<b>Solar total</b>	<b>68.89 kWh</b>	
Battery Export	10.8 kWh	
Battery Import	-43.7 kWh	
<b>Battery total</b>	<b>-32.9 kWh</b>	
Site Import	32.4 kWh	A\$1.36
Site Export	-9.6 kWh	-A\$1.54
<b>Grid total</b>	<b>22.8 kWh</b>	<b>-A\$0.18</b>
Heating & Cooling (Heat Pump)	15 kWh	A\$0.28
Hot Water (Heat Pump)	1.72 kWh	A\$0.15
Pool Energy	22.5 kWh	A\$0.11
Car (EV)	12.9 kWh	A\$0.49
All lights energy	0.91 kWh	A\$0.08
Dishwasher	0.36 kWh	-A\$0.01
Dryer - energy	0.01 kWh	A\$0.00
Washing Machine	0.01 kWh	A\$0.00
Fridge - energy	1.46 kWh	A\$0.12
Microwave - energy	0.05 kWh	A\$0.00

## CONTROLLING ENERGY USAGE

Controlling energy usage is another essential aspect of household electrification. By using smart home technology, households can control energy usage and reduce their overall energy consumption. There are several ways to control energy usage in your home, including:

- **Smart Thermostats:** Smart thermostats are devices that allow households to control their heating and cooling systems remotely. They can be programmed to adjust the temperature based on the time of day and can be controlled through a mobile app or a web portal. Smart thermostats can help households reduce their energy consumption and save money on their energy bills.
- **Smart Lighting:** Smart lighting systems allow households to control their lighting remotely. They can be programmed to turn on and off at specific times and can be controlled through a mobile app or a web portal. Smart lighting systems can help households reduce their energy consumption and save money on their energy bills.
- **Energy-Efficient Appliances:** Energy-efficient appliances consume less energy than standard appliances and can help households reduce their energy consumption. By replacing standard appliances with energy-efficient models, households can save hundreds of dollars per year on their energy bills.

## COSTS AND SAVINGS

The cost of controlling energy usage in your home will depend on the method you choose. Smart thermostats can be purchased for around \$200-\$300, while smart lighting systems can cost between \$100-\$200 per room. Energy-efficient appliances can be more expensive than standard appliances, but the savings from reduced energy consumption can make up for the higher upfront cost.

The savings from controlling energy usage can be significant. By using smart home technology, households can reduce their overall energy consumption and save money on their energy bills. For example, by using a smart thermostat to control heating and cooling, households can reduce their energy consumption by up to 20%, which can save hundreds of dollars per year.

## CONCLUSION

Monitoring and control are essential aspects of household electrification. By monitoring energy usage and controlling energy consumption, households can reduce their carbon footprint, save money on their energy bills, and contribute to a cleaner, greener future. There are several ways to monitor and control energy usage in your home, including smart meters, energy monitors, home energy audits, smart thermostats, smart lighting, and energy-efficient appliances. The costs and savings of monitoring and controlling energy usage will depend on the method you choose, but the savings from reduced energy consumption can be significant. By using smart home technology and energy-efficient appliances, households in Noosa Shire can play their part in the transition to a low-carbon future.