Old Geyser?

In most hybrid solar installations that we deploy, we design for replacing between 60% to 80% of our customers electricity grid usage with solar/battery depending on the scale of that usage. Generally, the electrical loads are split into two segments, essential loads such as fridges, lighting, plug circuits etc. The non-essential loads are typically high-demand appliances such as geysers, stoves, ovens and often air conditioners.

The essential loads are connected into the inverter and have three sources of electricity, usually in this order – Solar, Battery, Grid. The non-essential loads remain on grid only, as to include them would require substantial additional cost in larger inverter, more batteries and solar panels to accommodate them.

Fortunately, a *true hybrid inverter* (one that synchronizes to the grid frequency) offers the ability to feed-in to the power grid in certain municipalities who allow this. It also offers the ability to blend power from the grid, batteries and solar allowing the use of any surplus solar energy to power the non-essential loads.

This is thus a good case for investing in a True Hybrid inverter rather than an Off-Grid inverter often referred to as hybrid because it integrates solar, battery and grid but cannot blend them. Naturally a true hybrid inverter will cost a bit more than an off-grid, however the cost benefits of true hybrid could negate the upfront savings over time.

All this aside, one of the non-essentials is the geyser which represents 30% to 40% of an average household electricity consumption. Getting these “appliances” off-grid is therefore a very important aspect of saving you money and saving the planet.

Migrating to a solar geyser used to mean installing an unsightly contraption on the roof of your home and discarding your existing geyser. It also meant penetrating the roof which is always a risk and the reason why modern solar mountings are non-penetrative.

Enter the *Elon SmartWater,* a South African invention which uses your existing Kwikot geyser simply by replacing the thermostat and installing a handful of normal solar panels.

The Elon connects to the existing grid connection as well as to three or four solar panels. The beauty of this is that if you have and existing PV solar system, we could use matching panels to maintain the aesthetics on your roof. If you are planning to install PV solar later, you can ensure that your solar panel selection for the Elon matches the ultimate plan.

The SmartWater is the second generation of the manufacturer PowerOptimal's Elon 100 product line. SmartWater is a Smart device that connects to wi-fi and utilizes the Elon app to configure and monitor the conventional geyser. The configuration is essentially connecting to the wi-fi and then selecting a profile that suits your usage.

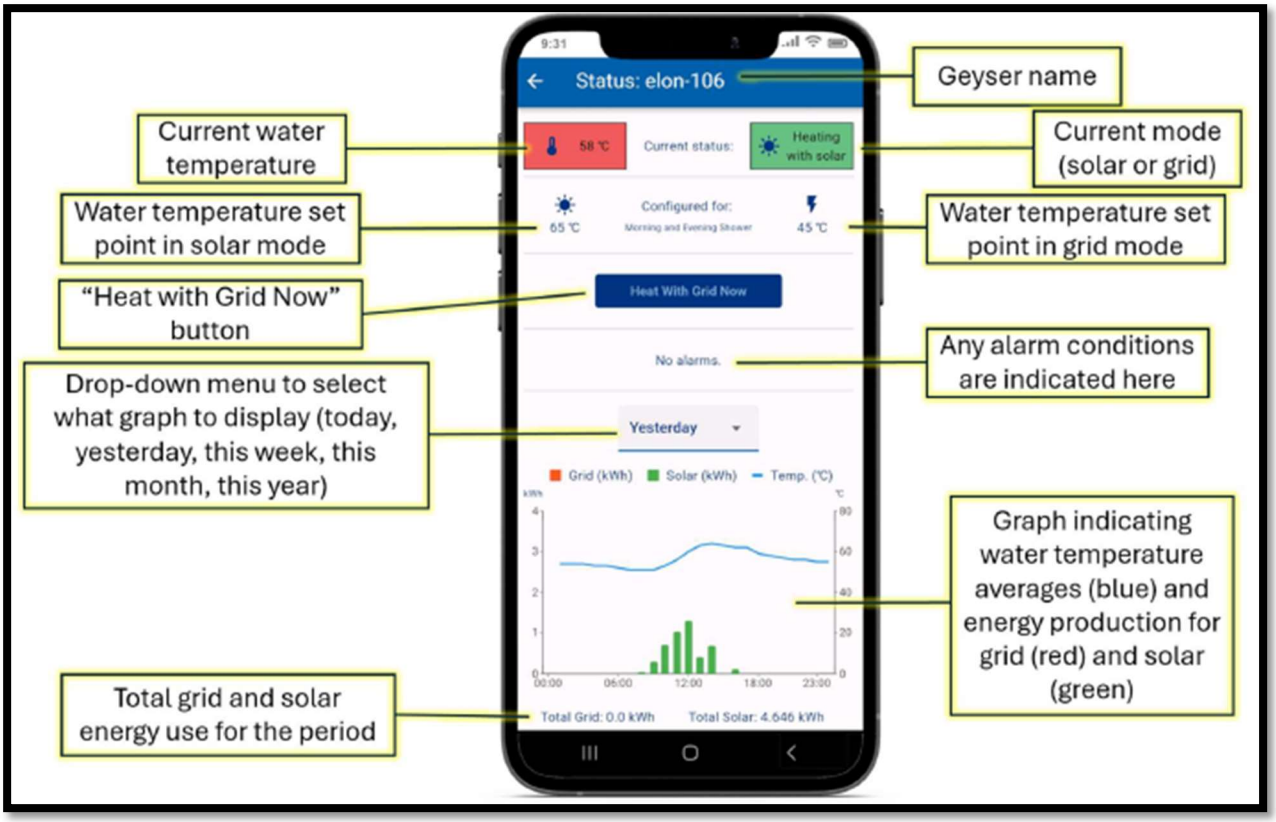
Heating Profile option	Solar power use	Grid power use	Comments
Grid Only	Never	Always	Select this option if you don't have any solar panels installed.
Solar Only	Always	Never	ONLY use solar power. NEVER use grid power.
Morning Shower	Always except for 3 am – 5 am	3 am – 5 am	Solar power will be used whenever available, and grid power will only be used early in the morning to boost water temperature to the Grid set point if the temperature is lower than that.
Evening Shower	Always except for 5 pm – 7 pm	5 pm – 7 pm	Solar power will be used whenever available, and grid power will only be used in the late afternoon to boost water temperature to the Grid set point if the temperature is lower than that.
Morning and Evening Shower	Always except for 3 am – 5 am & 5 pm – 7 pm	3 am – 5 am & 5 pm – 7 pm	Solar power will be used whenever available, and grid power will only be used in the early morning and late afternoon to boost water temperature to the Grid set point if the temperature is lower than that.

The app allows you to set the maximum temperature from solar up to 60 degrees C, however that is generally too hot, so we set the maximum temperature to 55 Degrees and the grid temperature (or Grid set point) to 45 degrees. If the SmartWater detects a temperature lower than 45 degrees during the allowed "grid power use" time it will permit grid power to heat the geyser.

A well-insulated geyser set to 55 degrees maximum will generally stay above the 45 degrees mark overnight in the summer, therefore minimal if any grid usage. Winter will no doubt see more grid usage, however you have control of that via the app without climbing in the roof.

What about cloudy days when you want a hot bath in the middle of the day. The app provides a "Heat Now" button that permits you to heat from the grid anytime you choose.

This really is a smart way to save money and take control of probably the most power-hungry devices in your home. With solar panel prices at an all-time low and the impending massive electrical tariff increases, this investment will, on average, pay itself back in 2 years.


Geyser name
Current water temperature
Current mode (solar or grid)
Water temperature set point in solar mode
Water temperature set point in grid mode
"Heat with Grid Now" button
Any alarm conditions are indicated here
Drop-down menu to select what graph to display (today, yesterday, this week, this month, this year)
Graph indicating water temperature averages (blue) and energy production for grid (red) and solar (green)
Total grid and solar energy use for the period
Status: elon-106
58 °C
Current status:
Heating with solar
Configured for:
Morning and Evening Shower
65 °C
45 °C
Heat With Grid Now
No alarms.
Yesterday
Grid (kWh)
Solar (kWh)
Temp. (°C)
Total Grid: 0.0 kWh
Total Solar: 4.646 kWh

Elon App.