■ FUTURE POWER

STUDENT QUICK-START

SCENARIO

Future City's power company is no longer able to supply power to the city. Residents, essential services, and industry face disaster if the power cannot be supplied! Your team's task is to ensure that the power supply is maintained.

AIM

The aim of this half-day activity is to supply power to the city and make a profit. This is achieved by supplying power to the required infrastructure as cheaply as possible.

TERMS

There are some terms used in this activity that you may not be familiar with:

Infrastructure	Infrastructure is the users of electricity - the switches and lights on the Future Power board.
Power	The amount of electricity supplied to the infrastructure.
Cost	The cost of the leasing any power station used, plus the cost to generate that power.
Load	The amount of electricity needed to run the infrastructure.

WHAT TO DO

Your team will be given a double-sided Future Power board, which has power supply controls on one side and infrastructure switches on the other. You choose any number of different plug-in power stations from the six types available, and balance the power supplied (from power stations on one side of the board) with the power needs of the required infrastructure (the switches on the other side of the board) in each scenario.

Aim to balance power supply and load (indicated by the row of coloured lights) so that the Power and Load (shown on the display) are equal. To do this, progressively turn on the load switches on one side of the board, whilst adjusting the power station controls on the other side of the board.

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RULES

Your team can use any number of power stations to power each scenario, but only **one** of each type of power station is allowed.

For each scenario you must balance the load and power, so that the Load and Power are equal as shown on the display (see photo above).

To receive a valid score you must supply power to all the infrastructure (switches) specified in each scenario.

Work at your own pace but make sure the Event Staff score each scenario before moving on to the next one. Teams can only attempt each scenario once.

SCORING

The score for each scenario is automatically calculated and displayed on the Future Power board. This is the income made by supplying power to satisfy the Load, less the Cost to generate that power.

A positive score is only displayed once your team is making an income (i.e. if it's displaying zero, you are running at a loss)

In Scenario's 1 – 4, your team is free to use any of the six types of power stations.

In Scenario's 5 – 8, your team can **only** use renewable power stations (Hydro, Solar, or Wind).

In Scenario's 9 – 12, your team must use at least two renewable power stations.

> ⚠ **At the end, ensure your team's score sheet is with the Event Staff**

TIPS

It is critical that your team communicates clearly and quickly.

Take the time at the start of each scenario to select the power station(s) wisely, as the cost of power varies between the each one.

Loads are applied by turning on the switches on one side of the Future Power board. When a switch is turned on, a red light appears next to it. On the other side of the board, the load is shown on the display and the first green lights in the row will light up.

Power that a power station provides is controlled by the dial above it. When the dial is turned up, the display will show the amount of power provided, and the row of coloured lights above the display will light up.

If too many switches are turned on at once or there's too much power supplied to the system, the row of lights move into the red and the display will show "Overload!!!" If this happens, turn all switches off and turn the dials down to zero before starting the scenario again.

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