# Energy: decision sheet.

Name: Class: Date:

Fill in the matrix on this page as you add each column on screens 2 to 6. Pages 2 and 3 follow the screens. Give numbers, and say where each one comes from, for example (AEMO) or (CSIRO).

## SCREENS 2 TO 6 My decision matrix

**a** **Write each score (1 to 5) as you add its column. Circle any score you moved.**

| SOURCE | GREENHOUSE GASES | LASTING | LAND | COST | ON DEMAND | WASTE |
|---|---|---|---|---|---|---|
| **Coal** | | | | | | |
| **Gas** | | | | | | |
| **Nuclear** | | | | | | |
| **Wind** | | | | | | |
| **Solar** | | | | | | |
| **Geothermal** | | | | | | |
| **Bioenergy** | | | | | | |

**b** **A score I moved, or the score I find hardest to agree with, and the evidence:**

## SCREEN 2 Why renewables?

**a** **Two pieces of evidence that the world needs renewable sources of energy, with numbers and sources:**

## SCREEN 3 Four renewables

**a** One reason each is needed and one limitation, with evidence:

| RENEWABLE | WHY IT IS NEEDED | A LIMITATION |
|---|---|---|
| Biofuels | | |
| Solar | | |
| Wind | | |
| Geothermal | | |

**b** At 4 km, average rock is about _____ °C and the Cooper Basin granite about _____ °C. What makes the granite so hot?

## SCREENS 4 AND 5 Collect, store and move

**a** What is left of 100 units of energy:

| TECHNOLOGY | OUT OF 100 UNITS | WHERE THE REST GOES |
|---|---|---|
| Rooftop solar panel | | |
| Wind turbine, at best | | |
| Coal power station | | |
| Gas, combined cycle | | |
| Battery, in and out | | |
| Hydrogen, in and out | | |

**b** Why does a bigger battery do little on a cloudy, still winter day?

## SCREEN 6 What it leaves behind

**a** The waste I would least want to manage, and why: how much there is, how long it lasts and where it ends up.

## SCREEN 7 Weigh it up

**a** My weights:

| CRITERION | WEIGHT (0 TO 3) | WHY |
|---|---|---|
| Greenhouse gases | | |
| Lasting | | |
| Land | | |
| Cost | | |
| On demand | | |
| Waste | | |

**b** Cut-offs I used: _____ My top three: 1 _____ 2 _____ 3 _____

**c** My top choice would change if

## SCREEN 8 Test the plan

**a** My mix: wind _____ MW, solar _____ MW, batteries _____ MW for _____ hours, links _____ MW, gas _____ MW, other _____

**b** The results:

| WEEK | RENEWABLES, HOUR BY HOUR | GAS | HOURS NOT MET | EMISSIONS (KT) |
|---|---|---|---|---|
| Spring | | | | |
| Winter | | | | |
| Summer | | | | |

## TOGETHER My recommendation

**What should make South Australia's electricity in 20 years' time? Say which sources and roughly how much of each, which criteria mattered most to you, what your test showed, and one piece of evidence that would change your mind.**