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 **Handout 36b: Exemplar answer for advantages and disadvantages of solar energy for heating water**

­The main advantage of using a solar panel to heat water is that it uses a renewable energy source rather than fossil fuels**.** This means that no pollutants**,** such as carbon dioxide and sulphur dioxide**,** are released by the combustion of fuels**.** Carbon dioxide contributes to the greenhouse effect and sulphur dioxide contributes to the formation of acid rain**.** In contrast**,** if water is heated by an electric immersion heater**,** the electricity will most probably have been produced by power stations that burn fossil fuels**.**

The main disadvantage of the solar heater is that it only heats the water when daylight is available**.** On cloudy days**,** the solar heater might not produce sufficient hot water for the family**.** The graph shows that the solar heater will only heat sufficient water between April and September**.** This means that it must be supplemented by another source of heat**,** such as an immersion heater**,** during the rest of the year**.**

(Adapted from AQA’s *Guidance on Quality of Written Communication (Science)* document)