Solar chargers for mobile phones

Charging your mobile phone with solar power works in one of two ways:

1. A solar panel charges a rechargeable battery, and in turn you charge your mobile from the battery. This means that you can charge your phone when it's dark, as long as you've charged your battery during the day. The battery can be an internal Lithium-ion (eg. Ipower) or or removable AA NiCads or NiMHs (eg. Violetta, Scotty).

    - With this type of arrangement, the size of the battery will determine the number of times you can recharge your phone before you need to use the solar panel again.
    - Internal Li-ion batteries are an excellent lightweight, high capacity option, but it may be useful to have removable AA batteries if you can use these for other devices.
    - The size of the solar panel will determine how quickly the internal battery is charged. The speed at which your phone is charged will not change.

Solar chargers with integrated batteries generally come with a set of connectors to fit directly into your phone. However, as mobile phone manufacturers regularly change the types of connector used, there may be compatibility issues, especially with newer models. The phone manufacturers are starting to standardise around a mini USB port which should help to reduce these problems.

2. You can also recharge your phone directly from a solar panel, usually via a 12V cigarette lighter plug adapter socket, much the same arrangement as you have in a car. Solar panels such as the Sunlinq and Powerfilm panels are supplied with a cigarette lighter socket attachment into which you plug your in-car charger (12V cigarette lighter plug). You will need to purchase this separately for your particular make of phone, but they are available from any good travel store, phone or electronic shop. The 12V cigarette lighter socket gives you great flexibility, but there are still issues to be aware of.

    - Phones can only accept charge up to a maximum rate of around 0.5A@5V. This means that over around 2.5W a larger panel will not charge your phone faster in bright sunlight. However, in poor light conditions a larger panel will continue to generate sufficient power when a less powerful panel will not.
    - Some phones will only accept power over a certain rate – in other words you can't trickle charge them with a very low current. Nokia phones, for example, need at least 120mAh before they will begin to charge.
    - If you charge directly from a solar panel, a passing cloud could reduce the power output to practically zero. Many phones in this situation will stop accepting a charge until they are reset. Thus they will no longer charge even though the panel is producing enough power. To reset them you just need to disconnect and reconnect them to the panel.