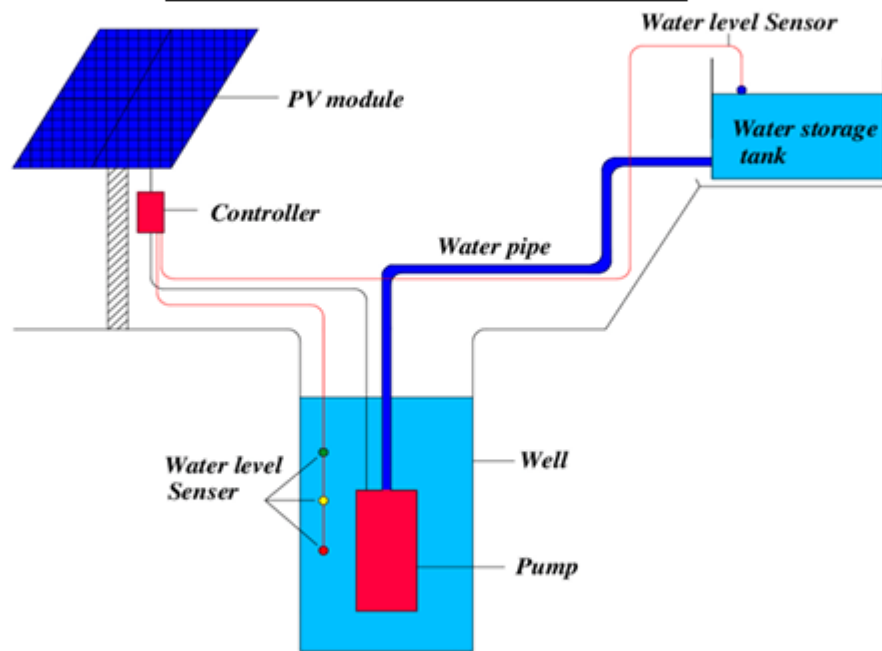


## SOLAR WATER PUMPING SYSTEM



A solar water pumping system uses photovoltaic (PV) panels to convert sunlight into electricity, which powers a pump to move water. The system works by the solar panels generating direct current (DC) power from the sun, a controller managing this power for the pump, and the pump itself then drawing water from a source like a well or river. The water is then delivered through pipes to its intended destination, such as for irrigation or household use.

### **System components:**

- **Solar Panels:** These PV panels capture sunlight and convert it into DC electricity.
- **Pump Controller:** These acts as a management system, regulating the power from the panels and sending it to the pump. It also protects the pump from issues like short circuits or overvoltage.
- **Water Pump:** The electric motor-driven pump moves water from the source to the destination. It can be a surface pump or a submersible pump depending on the application.
- **Pipes and Storage:** Pipes channel the water, and storage tanks can be used to store it for later use.

### **How it works?**

- **Sunlight to electricity:** Sunlight strikes the solar panels, causing photons to dislodge electrons and generate a DC electric current.
- **Power regulation:** This DC electricity flows to the controller, which regulates the power sent to the pump motor.
- **Water pumping:** The controller activates the motor, which drives the pump to draw water from the source (e.g., a well, pond, or river).
- **Water delivery:** The pump delivers the water through pipes to a storage tank or directly to a field for irrigation.