

# [What soon. this is because the country](https://assignbuster.com/what-soon-this-is-because-the-country/)

What energy resource can be used in pakistan to try to conserve our energy resources? The use of renewable energy sources go back thousands of years with the use of wind energy harnessed by sails to travel across the ocean. This use of renewable energy can be traced back around 7000 years to ships on the persian gulf and the river nile. 7000 years later energy, specifically electricity is more important than ever with thousands of machines powering countries, cities and even homes. Pretty much all of these machines require electricity to function and Pakistan has got itself into an enormous energy crisis, with 13 – 14 hours without electricity in urban regions and 16 – 19 in rural regions very frequently.

These frequent power shortages harm the GDP growth and will continue to do so if nothing is done soon. This is because the country has to import generators and fuel to  power them, which costs the country millions of dollars every year. Luckily however, Pakistan has many choices when it comes to renewable energy to fix this problem. Currently around 30% of Pakistan’s power is hydroelectric however with solar panels becoming cheaper and the (on average 300 per year) sunny days in pakistan, solar energy might just be able to solve the energy crisis without harming the planet. In order to understand why solar energy can solve pakistan’s energy crisis it’s important to understand how solar panels work. Solar panels are made of smaller units called solar cells.

Most are made of silicon, a semiconductor that is the second most abundant element on earth. In a solar cell crystalline silicon is sandwiched between conductive layers . Each silicon atom is connected to its neighbors using 4 strong bonds, which keep the electrons in place so no current can flow. The key is a silicon solar cell uses 2 different layers of silicon. An N type silicon has extra electrons, a P type silicon has extra spaces for electrons called holes. Where the 2 types of silicon meet, electrons can wander across the p/n junction leaving a positive charge on one side andnegative on the other.

Light is made up of tiny particles called photons. When photons hit the silicon cells with enough energy, it can knock an electron from its bond, leaving a hole. The negatively charged electron and the location of the positively charged hole are now free to move around, but because of the electric field at the p/n junction they can only move one way. The electron is drawn to the N side, while the hole is drawn to the P side.

The mobile electrons are then collected by thin metal ‘ fingers’ at the top of the cell. From there they flow through an external circuitDoing things like powering a lightbulb before returning to the conductive aluminium sheet on the back. Each silicon cell only gives half a volt, but when stringed together in modules, 12 photovoltaic cells are enough to charge a modern smartphone, though it takes many more modules to power an entire house. Electrons are the only moving part of the cell and all of them come back where they came from, meaning there is nothing that actually gets used up or worn out meaning solar panels can last for tens of years. So what is stopping us from primarily using solar power? There are political factors at play and also businesses, based completely on non-renewable resources, however if we were to ignore that and focus on only the logistical factors and physical challenges, we would come to find that solar energy is unevenly distributed across the world. Some areas have more or less sun.

It’s also very inconsistent, as less solar energy is available when it’s cloudy or at night. So total reliance would require efficient ways to gather solar energy from sunny places and also efficient ways of storing the energy. Even the efficiency of the solar cells themselves can also be a problem since if the light reflects rather than being absorbed or if dislodged electrons go back into a hole rather than going through the circuit, the photons energy will be lost.

As of 2016, the most efficient solar cell only converts about 46% of all the available sunlight into electricity, not to forget that most commercial panels are only at about 15-20% efficiency. In Spite of all those it would be possible to power the entire planet using today’s solar technology. It would take the funding to build the panels and a large area to put it there. Because of more advancements, solar cells are getting better and cheaper as well. Everything else aside, there is the fact that thousands of people in pakistan don’t have access to a reliable power grid and especially in a country like pakistan, with on average about 300 sunny days per year, solar energy is alreadycheaper and more reliable than other alternatives"https://www. dawn. com/news/1275116https://www. dawn. com/news/1324565https://propakistani. pk/2017/03/31/solve-energy-crisis-pakistan-must-realize-solar-power-potential/https://en. wikipedia. org/wiki/Solar\_power\_in\_Pakistanhttps://www. dawn. com/news/1242279https://en. wikipedia. org/wiki/Pakistan\_Coal\_Mines\_and\_Resourceshttps://tribune. com. pk/story/202976/the-solution-to-pakistans-energy-crisis/https://www. eniday. com/en/sparks\_en/a-renewable-solution-to-pakistans-crisis/