Solar panels analysis persuasive essay

Product Description Characteristics A solar panel is a collection of many small solar cells spread over a large area. These solar cells work together to provide sufficient energy to power a given item.

(Northwestern University) Their creation is a very delicate process which is why many of their advancements did not come until last quarter of the 20th century. In this period, advancements in semiconductors and photovoltaic products allowed efficient and cost effective solar panels to be produced. (Solar Panel Info) There are two types of solar panels: crystalline and amorphous. In both types, the key component is silicon which is cut into tiny disks less than a centimeter thick. Silicon is a " non-metallic chemical component that makes up 30% of the earth's crust and is the 7th most common element in the Universe.

" Amorphous solar panels are cheaper to manufacture because they're less likely to break, they use less silicon. Unfortunately, their output is typically lower than amorphous panels, which means their installation takes more space. They also deteriorate faster than crystalline panels so their power output decreases faster during years of use. They consist of a very thin layer of " silicon atoms and dopants simply sprayed onto backing material – typically glass or metal , but also on plastic surfaces to make flexible solar panels, or on roofing tiles to make solar roof tiles. " These silicon layers can be 100 times thinner than silicon wafers.

Crystalline solar panels use silicon sliced in thin disks called wafers that are a few millimeters thick. They are shaped, polished and any holes are filled in. To generate electricity, dopants or contaminants are added to the silicon

afer. This is done by putting a layer of phosphorous on the surface and heating it. The phosphorous atoms will then diffuse into the silicon wafers. The “ doped” silicon wafers are put together to form the solar cell.

These solar cells are put on the backing panel to form the solar panel. Conductive metal strips, used to attract sunlight, are put on the side of the panel facing the sun. The last step is to glue a layer of glass on top of the solar cells which protects them from other elements and allows sunlight to pass through. (REUK) UsesSolar panels are used to power many types of electronic equipment such as handheld calculators, vehicles, boats, entire buildings or cities. To power cities, solar power plants are used which consist of an array of solar panels arranged to generate sufficient commercial electricity. However, this is 2 to 5 times more expensive than producing electricity from fossil fuels.

Solar electricity, however, is free, abundant and does not pollute. Solar panels can also be used to power homes, and can be placed on tops of rooftops. The solar panels can be used independently or “ in conjunction with a local power grid. (Solar Panel Info) The most well known use of solar panels is to reduce the use of fossil fuels. In Dubai, the government is focusing on reducing their reliance on oil. Solar energy is being used more around the world as people realize its benefits.

For example, Toronto Hydro, a company in Toronto Canada, in 2004 implemented solar panels worth $300, 000. It consisted of 189 panels arranged on the Toronto Hydro site and runs the entire building. The was one part of a revamping of the company’s policy on energy saving which also

included using wind energy and the shift to bio-diesel to power their vehicles. Priesnitz, 2004) The energy payback for solar panels is between 1 to 20 years depending on the type used.

Each cell produces around 18. 5 watts of electricity. (SpectroLab) The number of cells needed depends on the size of the project and the energy needs. Brand Name and Pricing Solar panels range in prices depending on their use. There are panels sold strictly for consumer uses. For example, a consumer can by Flexible Solar Panels 6v, which produces 6 volts of electricity and provides a cost effective way to power small power applications and costs $13 per panel.

Also available for a consumer is the PowerFilm 20 Watt solar panel, which can be used, right out of the box, to power radios, TV’s, lights and fans in an SUV or trailer. This panel will produce 110 watts of electricity and costs $865. From a commercial standpoint, popular brands are Atlantis Sunlates, BP Solar, Conenergy, Kyocera, Mitsubishi Electric, Sanyo and Shell. (Silocon Solar Inc). These solar panels can span in the thousands of dollars.

Real Life Case Russian Semeral Energy, located in Yerevan, is looking to export solar panels to Serbia. They’re looking for reliable partners there and are attracted by the ease of doing business in Serbia. The company estimated Armenia’s energy needs and feels that with the abundance of sun, and their growing tourism industry, that this is a viable and efficient solution. The solar energy is measured through kilowatts/hour, and in Armenia, they receive 1720 kw/hr, when Europe only receives 1000 kw/hr.

Iran has subsidized $3. 5 million for this 2. 6 megawatt plant construction. Armenia has also passed various laws to support this initiative, and to encourage the use of solar energy be consumers. Arka News Agency, 2007) Bibliography Arka News Agency.

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