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City of Liberty Essay

City of Liberty

The threat of war has been an advantage point for President Ugo Chavez. City of Liberty's oil supply comes from Venezuela, and the president of Venezuela is Ugo Chavez. This president despises our president, George Bush. If one day our president says something inappropriate, Chavez might stop giving oil to the City of Liberty. If oil is not sent to the City of Liberty, no cars, houses, schools, nor buildings would be heated or powered. Therefore, we decided to develop an energy system that will not depend on the foreign oil supply.

The technology in our energy system is based on fuel cells. Fuel cells are very clean. They reduce air pollutants because the fuels in them do not have to be burned. Our fuel cell system, which uses solid oxide fuel cells, can use both hydrogen and carbon monoxide. It can also use different fuels such as: gasoline, jet fuel, alcohol, and natural gas. We choose the solid oxide fuel system because it can turn our non-renewable natural gas into renewable fuel.

Our supply of natural gas is stored in salt caverns. Salt cavern storage facilities are best suited for natural gas because it is hard for the gas to escape unless it is being extracted. Also, the natural gas stored in a salt cavern can be readily (and quickly) withdrawn. Although creating the salt caverns can be quite expensive, it is well worth it. (Naturalgas.org).

Solid oxide fuel cells systems are also very reliable because they generate an abundance of power unlike conventional power systems. As long as they are supplied with fuel they will continue to produce energy. Our customers are happy with their new power system because it is highly efficient. Its overall effectiveness exceeds 92%.

In addition to providing power, our solid oxide fuel cells system generates a high quality by-product, heat energy. Generating steam is one way in which we use this heat energy. This steam is used to power vehicles through an underground pipeline system. Our vehicles are also equipped with an electrical system. This allows them to move when they are not in a pipeline area such as driveways and parking garages.

Another reason why we selected a solid oxide fuel cell system is because it can reform natural gas internally (U.S. Department of Energy). By having the reformation occurring in the fuel cell, we do not need additional machinery such as a reformer. This helps keep production cost down.

A major disadvantage of the solid oxide fuel cell system is that it has to operate at extremely high temperatures. Since it takes time for the temperature to rise, there would be a power delay if the plant ever shuts down. This would only pose a problem if there is a sudden major power failure.

In order to have an abundant supply of fuel, we have an alternative fuel source, which is methane. We get our methane supply from the landfills. Since methane gas is a very potent greenhouse gas, reducing its emission from landfills reduces the air pollutants. By using it in the solid oxide fuel cells, we continue to improve our environment. (U. S. Environmental Protection Agency).

In our industrial zone the power is generated through underground pipelines that are connected to the power plant. About 550,000 kilowatts is needed to power the industrial zone daily. The power plant produces enough energy to power the entire zone. In case of emergencies, we have 14 solid oxide fuel cells units placed in buildings throughout the zone. Each on-site unit can generate approximately 1640 kilowatts hourly.

City of Liberty lives up to its name because it no longer depends on others to supply its power. Our citizens are happy to be free of international threats.

Word count - 630

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