Electricity in South Yasric:

*Anaya Coal Plant* produces 200 Megawatts (which provides electricity to roughly 150,000 homes).

*Russian Gas Pipeline* provides 20 Megawatts (which provides electricity for 15,000 homes).

*Zelfia Nuclear Plant* could produce 4,000 Megawatts (which provides electricity to 3 million homes).

*A new solar farm* could produce 50 Megawatts (which could provide electricity for 38,000 homes and requires 500 acres).

Pollution:

The *chemical* burning process in *coal and natural gas plants* produce carbon dioxide and other greenhouse gases that contribute to pollution and climate change.

*Nuclear power* produces no pollution from the *nuclear* burn. The only source of pollution or greenhouse gasses is fuel fabrication and operation.

Zelfia Nuclear Plant Operation:

Enriched uranium is made into *fuel rods* that are loaded into the reactor. The fuel rods boil water, which creates steam. The steam turns a turbine, which *generates electricity*.

As the reactor operates, the fuel rods become *highly radioactive*.

Transition to Carbon-Zero Energy:

South Yasric believes it is unrealistic for the country, currently dependent on coal for electricity, to transition to carbon-zero energy within the next 2-3 decades.

- The industrial sector will far outpace the energy supply for the foreseeable future
- The cost of installing renewable energy infrastructure could not be met without massive foreign loans that would take decades to pay off.

Waste Management:

The radioactive spent fuel rods are replaced after 4.5 years in the reactor. The spent fuel is submerged in a spent fuel pool *located next to the reactor* for 10+ years.

After the spent fuel *cools* (10 years), it is moved to a permanent repository underground.

Spent fuel remains radioactive for thousands of years.

Nuclear Accidents:

During normal operation, a nuclear reactor is *very safe*.

In the event of a disaster (natural or otherwise), there is a risk that *radioactive contamination could leak* from the reactor.

Meltdown:

During a meltdown, the fuel rods get too hot and melt, *releasing radioactive particles*.

The particles get into the air and are *carried by the wind*.

People *breathe* in these particles and can become sick from radiation poisoning. *Radiation poisoning* can lead to death or long-term illness such as cancer.

Long-term Environmental Concerns:

Radioactive waste has to be *stored permanently*.

Over time, there is a risk that *radioactive contamination could leak* from the spent fuel containers in permanent storage.

That radiation would *seep into groundwater* and contaminate people that drink it.

Spent fuel remains radioactive for thousands of years.

Proliferation Concerns:

Spent fuel contains plutonium. Plutonium can be used to make a weapon.

The spent fuel is submerged in a spent fuel pool *located next to the reactor* for 10+ years.

After the spent fuel *cools* (10 years), it is moved to a permanent repository underground.

Have any questions? Ask!
Spent Fuel Theft:

A proliferation concern is that spent fuel could be **stolen and used** for illicit purposes.

Even if the stolen fuel were not used by bad actors, the theft would be bad for South Yasric, as it would prove they are unable to secure spent fuel and should not operate a nuclear power plant.

North Yasric and Zelfia:

North Yasric fears that South Yasric may one day use the Zelfia Nuclear Plant to develop a nuclear weapon to use against North Yasric.

Convincing North Yasric that Zelfia will not be used to create a weapon will be very challenging. Proving to other nations that nuclear fuel or waste will not be used for illicit purposes is very difficult.