**Powering the Pearl: A Study of Cuba’s Energy Autonomy**

**METHODOLOGY**

“Triangulation is the process of corroborating evidence from different individuals (e.g. interviewing both a principal and a student), types of data (e.g. observational field notes and interviews), or methods of data collection (e.g. documents and interviews)” (Creswell, 2012, p. 259). The three methods of data collection used in this study are interviews, artifacts, and literary review.

- **Interviews**
  - Five interviews were performed during the trip to Havana:
    - Employee of a Cuban and Canadian petroleum collaboration
    - Electrician of the Cuban National Power Grid
    - Hostel Owner in Viñales
    - Cuban Tour Guide
    - Professor of Economy at the University of Havana

- **Observations**
  - Observations were collected on planned excursions and independent explorations of Havana.

- **Literary Review**
  - Data that could not be collected through qualitative methods was collected from online sources.
  - Personal blogs, online Havana news sources, and other primary sources were used.

**ARTIFACTS COLLECTED**

- **Cuba’s electricity grid extends far into the country.** Most, if not all, of the energy grid is above ground.
- **People fill up their vintage/oil-modified vehicles at a gas station.** There are 4 different types of gas. Nearly all cars are manual transmissions.
- **Domestic petroleum extraction is done through fracking.** Oil rigs and refineries line Cuba’s northern coast near Winderosa.
- **Electricity is paid for on a micro scale.** A meter measures each household’s energy use, and they pay by accommodation.
- **Most households do not own a washing machine or dryer.** In both the city and country, clothes were hung up outside to dry.
- **Farmers too far from the national power grid - farmers too far from the national power grid have led to two instances where an unexpected decrease of imports caused Cuba to nearly collapse. In order to protect against another infrastructure collapse and to increase domestic energy production, Cuba is trying to diversify its energy portfolio in both types of electricity production and foreign partnerships. Meanwhile, the exploitation of the tourism industry as a main source of income is greatly affecting lifestyle by creating inequality of electric resources.”

**REFERENCES**

Interview with and employee of a Cuban and Canadian petroleum collaboration. March 17, 2017.

Interview with an electrician of the Cuban national power grid. March 18, 2017.


Interview with a Cuban tour guide. March 12, 2017.

Interview with a professor at the University of Havana. March 17, 2017.


**KEY FINDINGS**

**Tourism/Economy**

- The Tourism grid has more electricity than what the native Cubans receive.
- Those associated with the tourism industry are afforded a higher quality of life, as the growing sector allows for a higher income.
- The majority of those who graduate with any degree end up either involved with the military, healthcare, or the tourism sectors as they are most in-demand.

**Lifestyle**

- In attempts to save energy, scheduled and unscheduled blackouts are experienced.
- Electricity is only used for basic necessities, e.g. cooking, small appliances use like television, radio, fan, phone.
- Electric washers and dryers are not common appliances in the city or country.
- In the country, people used either gas-powered harvesting tools or oxen for farming. Horses are often used for transportation.

**Sustainability**

- As Venezuelan oil production is decreasing, the amount of subsidized oil imported to Cuba is also decreasing. Cuba has resorted to fracking to extract oil along the coastal region.
- Foreign companies and other governments are collaborating with the Cuban government to produce electricity.
- The use of old oil burning equipment are contributing to the oil shortage by causing less-efficient fuel burning.
- Different types of energy are used depending on what region people live in, and electricity is available to everyone. Farmers too far from the national power grid

**CONCLUSION**

Until now, electrical autonomy has not been possible for Cuba. Relying solely on other countries to import petroleum has led to two instances where an unexpected decrease of imports caused Cuba to nearly collapse. In order to protect against another infrastructure collapse and to increase domestic energy production, Cuba is trying to diversify its energy portfolio in both types of electricity production and foreign partnerships. Meanwhile, the exploitation of the tourism industry as a main source of income is greatly affecting lifestyle by creating inequality of electric resources. The decrease in oil imports, and therefore the shortage of electric power has made this inequality more pronounced. The exploitation of solar, wind, and other renewable resources in the areas in which they are best suited can create a more even distribution of resources, boost the economy outside of tourism, and pre-