**Detailed Evaluation Plan**

The power community in the Google Play Store and the Apple app store is practically none existent with only a handful of applications. The closest thing that apps came to in terms of having the user build his or her own power plants were city simulations such as City Island2[1], Moon Base[2] and Megapolis[3]. In these apps there was no educational view as to how the power was generated but often apps listed pros and cons of the types of power that were available. From an educational direction there were very few apps that explained how power plants worked and the ones that did explain only focused on one type of power. To my knowledge, there are no apps in either store that directly focus on energy and provide an understanding to the user as to how multiple power sources work.

Unsurprisingly, the internet had a more plentiful market of educational energy-based games. These games covered multiple energy sources and gave detailed descriptions, animations, and data on how these power sources operate. Although not all games contained an educational aspect, there were a few that did. In comparison to all of the other games that were reviewed, the overall goals of these games were the same as those of “The Source”, although they differed in style and variety of power plants that were covered.

In summery “The Source” differs from any energy based app in the Google Play and Apple app store in the variety of educational power sources that are covered and in its unique play style. It is also unique in these regimes because of its educational focus that does not exist in most games. In comparison to educational web based applications “The Source” only differs in the content that it covers and its unique play style.

In order for “The Source” to be successful it must be evaluated in two ways. The first way “The Source” must be evaluated is in terms of usability and it must meet the following two criteria. The application must be engaging to the user and provide an overall pleasant playing experience. The application must also help the user to comprehend general facts about where power comes from and how power is generated. If the source is successful in these two ways then it will also be successful in being different from all other content in its market. The second way “The Source” must be evaluated is in terms of numeric stability and consistency. The user should experience a slight variation in play each time they interact with the application, but always in reasonable scenarios. In order to discover if the game is successful in meeting these criteria, two participant groups are needed, one group to test the usability criteria and one group to test the numeric mechanics of the game. Each group is discussed in more detail below.

**Group 1: Mechanic Testers**

This group's purpose is to discover mechanical flaws in the system, find tasks or options that are too easy or difficult and to discover general bugs in the system. This group has the potential to be small, only 3-5 members, and requiring no knowledge related to specific areas prior to testing. After collecting information from the questions below, a more enjoyable and pleasant playing experience can be created for future users.

Specific pieces of information that will need to be collected from this group include

1) The number of advertisements that were not used and which ones they were

2) The number of public services that were not used and which ones they were

3) If there were any power sources that were not built and why not

4) Was there any piece of information that you would have wanted that was not displayed to you

5) Was keeping up with the power demand a challenge

6) Was the pace of the game too fast/slow

7) Were some items too expensive or cheap making the game too easy or hard

8) Did the user ever run out of building options for any power source

9) Did the user use the fast forward button

10) In addition to the items listed above, statistics regarding how the user is doing throughout the game should be collected. For example the user should not have $1000 five minutes into the game. To analyze this the user will fill out a small table during the game and record some quick numbers like how much money he/she has, how many blackouts have happened, etc.

**Group 2: UsabilityTesters**

This group is responsible for testing the two usability criteria that the game must fulfill. Namely, the criteria that the user must have a pleasant playing experience and that upon completing the game the user learned about power sources and generation. This group would primarily contain a mixture of people having varying knowledge levels of energy. This group should roughly consist of 15 – 20 people. In theory the people who know nothing should learn a lot, the people who know a little should only learn a little as the game only covers power at a general level and the people who are knowledgable should learn almost nothing. In order to know if a user has learned anything he/she will be required to complete a short knowledge test before and after completion of the game. This way the pre and post answers will be compared to discover if the user has learned anything.

Specific things that this user group will have to do is to give a brief understanding of each kind of power, for example:

**Hydro:**

1) What is source of energy for a hydro-electric dam?

2) Explain how a hydro-electric damn uses the energy source to create power.

3) List 3 pros and 3 cons of the hydro-electric dam.

These same three questions will be repeated for each kind of power and answers to each are within the game. By comparing answers before and after we will be able to see if the user has learned anything. In the test after completion of the game the user will also be asked some questions referring to their experience playing the game. Some questions include:

1) Did you ever become frustrated playing the game?

2) Would you rate your experience playing the game as positive?

3) Do you feel that you have learned a little more about how the world you live in operates?

4) Did you ever have a hard time finding a specific screen and if so which one?

5) Additional Comments

**Conclusion:**

With all of these questions answered it can be discovered if “The Source” was successful in meeting the criteria of numeric stability and usability. More specifically, it will be determined if “The Source” is successful at being a positive playing experience and teaching users general facts about where power comes from and how power is generated.

**References:**

[1] City Island 2, Created by a group known as Sparkling Society ™, unknown publication date.

https://play.google.com/store/apps/details?id=com.sparklingsociety.cityisland2&hl=en

[2] Moon Base, Created by Marc Bechamp, unknown publication date.

<https://play.google.com/store/apps/details?id=jeu.de.marc&hl=en>

[3] Megapolis, Created by a group known as Social Quantum Ltd, Unknown publication date.

https://play.google.com/store/apps/details?id=com.socialquantum.acityint&hl=en