Script

* **Intro**

Good afternoon everyone and welcome to SMART power!

My name is Adam and I’ll guide you through our product today.

* **Banana**

Energy is like *bananas*…don’t you think so?

Let me try to explain…have you ever tried to guess how many bananas you eat during the week to know how many to buy at the grocery *store*?

You don’t want to buy **too** many because they may go bad and then you’ve just wasted money.

This is the same type of thinking electrical system operators go through **everyday** to supply your electricity!

A SO only wants **just** enough electricity to supply the demand and any extra they have to sell at a loss to neighbouring states or provinces.

**--Now for more information on the Ontario energy market,**

* **PROBLEM**

Exports of clean energy cost Ontario over a **billion** dollars in a 21 month span from 2016 to 2017.

That’s enough energy to power **2 million homes** across Canada for an **entire year!**

Now…How could this happen? The **answer is,** due to **poor load forecasting**.

With the population on the rise, it is evident that system operators need a more efficient way to forecast, and that is where SMART Power comes in.

* **THE MARKET**

In 2019 alone, the Independent Electrical System Operator lost $12M from surplus energy generation.

For just 1 percent of that surplus reduced, we can save the SO $100,000 as well as cascading improvements to infrastructure.

26 Terawatts of electricity was imported and exported in 2019, really highlighting the need for improved accuracy in forecasting.

To put things in perspective, there are a Trillion Watts in a single Tera Watt.

An average toaster takes up about 1000W. So we’re talking about almost 26 Billion toasters! That’s a lot of toast lost! But don’t worry, we have a solution.

* **VALUE PROP**

SMART Power will provide accurate forecasts of regional electric load demand using advanced Machine Learning algorithms. This will help our customers minimize their loss.

* **CUSTOMERS:**

SMART Power is in a unique scenario. Our customers **are also** our *partners*!

When our customers provide us with more accurate data, we are able to produce better forecasts.

So its in their best interest too!

Our main customers include OntarioPowerGeneration and the *IESO*.

* **Revenue Streams**

Now that the problem in the market has been identified, and potential customers considered, we will address how SMART power generates revenue.

We use a tiered-based subscription model with **two** *options*

The basic subscription at a price of $299.99/day has the benefits of weekly load forecasting and embedded weather analysis.

The premium subscription has a price of $499.99/day which provides everything included in the basic subscription, as well as additional features that truly leverage SMART power’s online webapp capabilities.

* **Cost Model**

*Now*…you can’t have revenue without talking about *costs*.

The primary costs incurred are related to data storage relevant to the datasets, hosting the domain, and Azure subscription such as cluster management and node usage.

Now that we’ve talked a little bit about our business model, lets give a demonstration on our product, the SMART Power web application.

* **Login**

Now it may be obvious that all applications require some form of login or validation. **Well** the smart power web app is no different.

* **Dashboard – outline UI**

Once logged in, the user is greeted with a *sleek*, *balanced* home dashboard.

The synergy between visuals and *data* reduces clutter, which is *essential*, as we aim for easy user navigation and comprehension.

Along the left-hand side of the screen you can see there is a menu with tabs for model and forecasting.

This will take us away from the home dashboard and deeper into the **real** power this web application holds.

* **Model**

Our approach to the model interface is that we wanted to extend personalization to the *customer.* So, we have implemented four layers of settings.

*The region* can be selected if they have a subscription purchased for its forecasting and

For the purpose of this demo we have integrated Toronto, Ottawa and Bruce Penninsula.

The user can use **classical** *forecasting metrics* to optimize models.

The Forecast horizon determines how far into the future the user wishes to *predict*.

This being a **short term**, we designed the range to be within 24 hours.

The cost of using larger values is added *inherent error* just as a cost-benefit.

The last setting is the *start time*, where the user would input the current and end timestamps to outline the range they wished to predict. We also want to incorporate a historical functionality

to allow reviewing trends on *past days.*

* **Forecast**

The main chart shows SMART power’s **specialized** forecast, including a *diversified view* to see all associated error.

Now, a forecast is only as good as the model *itself*, so we’ve incorporated an easy to read metrics system to provide insight.

We believe in passing on as much information to the customer as possible so that they can make the most informed decision.

If the model’s not to the user’s *liking*, they can submit a re-run request with the premium *subscription* and is essential in any kind of final product.

Lastly, all the forecasting data can be exported to common file formats for analysis outside of the webapp.

* **Sample**

Now, you might be thinking, that’s great that you can provide all this *data* but how accurate are the models that SMART power makes?

We conducted an in-house study over 7 days from April 4th -10th on a regional basis to show it outperforms the industry standard even during the variability of the COVID lockdown.

* **Model comparison**

The testing **continued** to outperform for all other regions consistently, demonstrating SMART power’s reliability.

Now I’ll continue with the design architecture:

* **Flow chart for architecture**

Stepping a level *out* and looking at our project as a whole, we leverage **3** azure cloud services. Azure Blob Storage for all data required and *generated*,

Azure Machine Learning Workspace for training, testing and deploying our *model*,

and the Azure App *Services* for hosting and maintenance of our web application.

* **FINANCIALS**

We created a conservative projected income statement to show the financials during the first three years.

We estimated a revenue for a single region in year 1 that scales by 30% for premium subscriptions and 20% for basic subscriptions in the following *years*, just to be on the safe side.

Even under these limiting estimates we wanted to emphasize that SMART Power would **still** be a profitable business with a **single** customer, earning a healthy profit by year 3.

* **Next Steps**

Moving forward, we believe a feasible amount of time needed to launch Smart power is 10-12 months

and in that time we would address the next steps such as further developing the *backend model*,

launching the official webapp on our *domain*, company incorporation *setup*, and most ***importantly*** acquiring our customer base.

* **QUESTIONS**

Thank you for listening to the opportunities of investing with SMART power, now we’re happy to answer your questions.