* **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.

* **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, 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.

* **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: