**NosTerra Ventures Energy Model**

**Introduction and Overview**

**Context: Getting to a clean, abundant energy future is complex**

NosTerra Ventures envisions a world with access to abundant energy that is low-cost and clean, transforming the world and protecting our future. The good news is that there are many potential paths to get to that future. The bad news? There are many potential paths to get to that future, all influenced by energy economics, technology development, and policy. That complexity makes it difficult for entrepreneurs, investors and policy makers to effectively invest their time, resources, and policies to achieve that clean energy future.

**Approach: build a model that enables users to understand impact of different drivers**

To address that complexity, NosTerra built an energy model that provides users with insights into the ways evolutions in the world can impact the future of energy. By leveraging this tool, stakeholders can make informed decisions to drive innovation, optimize investments, and shape sustainable energy policies that meet global demands.

**What the model does**

This model integrates research and data analytics to forecast trends and identify opportunities in the energy sector over the coming decades. The model allows a user to understand how inputs related to technological innovation, public policy, energy availability, and wholesale price impact carbon emissions, grid supply, total demand, and potential opportunities. This informs questions like:

* If retail power prices reflected wholesale generation costs, what would the generation portfolio look like?
* How do energy storage costs impact grid mix?
* What is the tradeoff in building a better interconnected grid vs improving storage duration?
* How will a disruptive new power plant impact your electricity bill
* If a new nuclear plant is built in each state, how many more datacenters would follow? What would this plan cost?

**How the model works**

The model has four main stages, Inputs, Calculations, Simulation, and Results. A user will initially be able to manipulate certain levers to perturb the baseline expectations for growth and efficiency. Based on these selections we perform some simple equations to calculate the expected growth in energy demand and available supply. The results of those equations are then passed into a modeling engine to be refined through economic algorithms, grid storage feedback loops, variable energy scenario simulation, and physical constraints. The final output is then visualized as a Sankey chart and translated to highlight the most anomalous moments that were predicted by the model. Through working with NosTerra’s model, users will harness the insights and conclusions to optimize investments and steer policy.

