**Schneider Electric**

1. Create green building
   1. Need: load profile, PV profile, types of battery, economic/environmental estimates, etc.

**MIT Office of Sustainability**

* MIT’s smart sensor
* Reduce GHG emissions with machine learning
* No learning thermostat for large-scale campus buildings (like NEST)
* Hack MIT’s smart sensor: reduce MIT’s emissions by 10-15%
* Status quo: Static set points with fixed occupancy schedule; how to make more dynamic?
* Cannot adapt quickly to changes (i.e. occupancy, schedules, etc.)
* Want method for dynamic set points and schedules for energy systems based on data from all around campus (can choose any building on campus)

**McKinsey & Company (BIG YEET)**

* Decarbonizing aviation
* By 2040, aviation and shipping will account for 40% of GHG emissions
* Sustainable Aviation Fuel (SAF)
  + Costs 2-3x more
* Make SAF economic
* Specific questions: Why will airlines adopt SAF? How can we make a more accessible product?

**Iberdrola-Avangrid**

* Develop an energy storage deployment strategy for offshore wind farms
* Create fictional study case for an offshore wind farm in the northeast US
* Propose an energy storage utilization strategy for case study
* Develop a financial and operation model that optimizes the utilization of energy storage with offshore wind production for this case study

**Cimetrics**

* How can we achieve large-scale reductions in GHG emissions?
* Energy strategies
  + Improve efficiency of energy use
  + Use “cleaner” energy
* “Market forces” will not be sufficient (i.e. carbon capture and sequestration cannot be accomplished through market alone
* Government policies are also needed
* **Roleplay energy policy advisor for a government**
* **Develop a plan that could achieve an 80% reduction in GHG by the year 2050**
* **Mathematical modeling for estimating GHG emissions in that region**
* **Choose a real region or nation**

**Customer First Renewables**

* Procure large scale renewable energy
* Summit Farms solar facility in NC
* 24x7 RE matching (Google) → requires understanding of markets, tech, etc.
* How can we get 24/7 RE?
* What is the supply mix that they should add to their brown power + solar today to reach 24/7 RE?
* Number of hours across lifetime of portfolio with 100% RE in an hour (as a percentage of all hours)
* Financial performance of proposed portfolio considering risks and returns

**Massachusetts Clean Energy Center**

* Clean transportation
* Choose a region in MA and develop policies for that region that would encourage the use of clean transportation to reduce congestion with clean transportation solutions

**NICE (National Institute of Clean and Low Carbon Energy)**

* Reimagine and industrial process for improved demand response for an electric grid with 100% renewable energy generation
* Pick an industrial process and think about how we can facilitate low transfer on the grid

**WITricity**

* Charge electric cars wirelessly
* Is our electric grid ready for transition to electric vehicles?
* Can EVs stabilize a renewable grid?
* Discrepancy between renewable energy production (day) and demand (night)
* Challenge: determine the economic value of electric vehicles to the companies that own and operate the electricity distribution grid
  + Vehicle to grid technology

**Marathon Oil**

* The future oilfield
* Rethink oilfield operations and facilities that will fulfill the technical requirements to produce oil and gas and provide a reduced environmental footprint

**Candor Energy**

* Market-based, transactive exchange between energy producers and consumers
* Design transactive energy marketplace, utilizing blockchain technology

<https://www.mitenergyhack.org/hacker-portal>

Password: energy18