**Categories**

1. Forecasting energy generation
   1. Wind power
   2. Solar energy
   3. Hydro power
   4. ….
2. Determining Plant location, size and configuration
3. Managing smart grid
   1. Balancing demand and supply
   2. Grid operations and management
   3. Grid data management
   4. *E.g. RL (Reinforcement Learning) for grid management*
4. Forecasting energy consumption
   1. Electricity load forecasting
      1. *E.g. ARMA (Autoregressive Moving Average Model)*
   2. *E.g. LSTM (Long Short Term Memory)*
   3. *E.g. SVM (Gaussian distri. could be used for meter reading approximation)- similar model can be extended for forecasting energy generation, Optimal Demand Response and Anomaly Detection of Malicious Energy Usage*
5. Deciding price of energy (Energy market)
   1. *E.g. RL , MDP (Markov Decision Process) based agents*
6. Fraud detection
   1. *E.g. detecting unusual less/more consumption*
7. NILM (Energy disaggregation)
   1. *E.g. using LSTM, autoencoders*
8. Energy conservation
   1. Forecasting energy generation + forecasting energy consumption and optimizing both