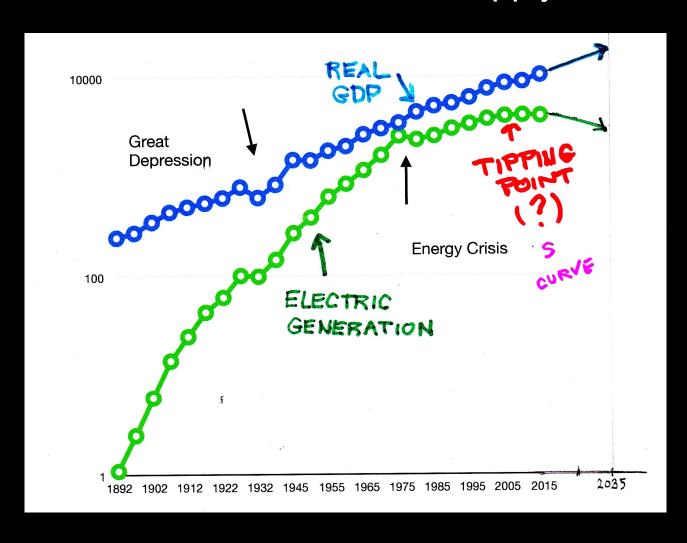
Where are we going? Why does it matter? What will you do about it?

Leonard S. Hyman SURFA New Orleans, LA April 2018

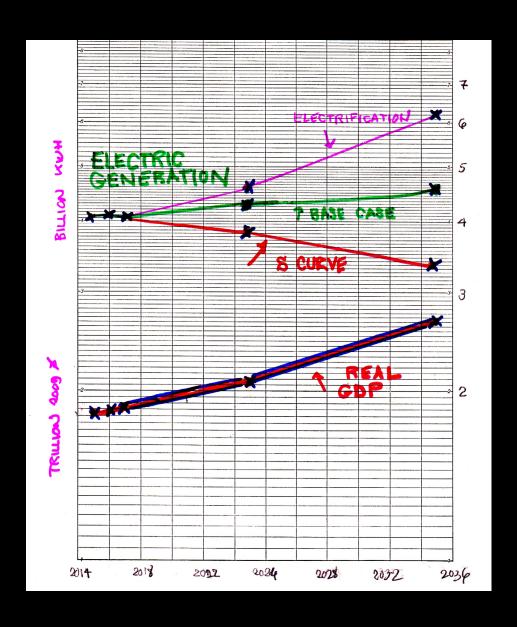


Problem #1: uncertain demand which makes for uncertain supply



Projection by ruler no longer works. Demand for electricity uncouples from economy

Problem #1 (continued): Plausible range of outcomes too wide for prudent long term investors



Electrification and decarbonization will change the picture but when?

Problem #2: Unknown technology for both consumer and utility



Timing key
Who pays
Who benefits
Government
role



Problem # 2 (cont.): Let me count the ways...



Central station or decentralized
Microgrid or network
Command and control or customer control
Renewable, fossil or nuclear
Storage or generation
Decarbonization at source, consuming less or
environmental engineering
New uses
False starts

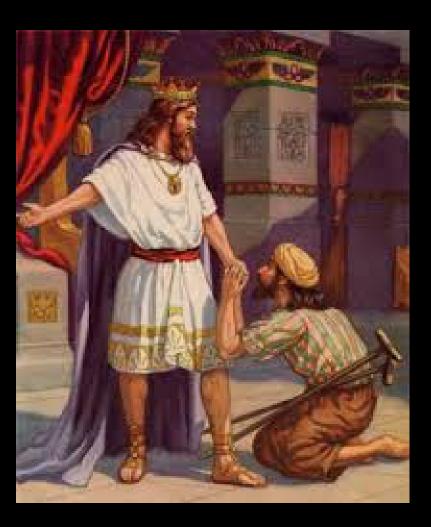
Problem #3: Overriding importance of partially unrecognized (by politicians) environmental issues

Utility operations
Recurring violent storms and recovery
Service territory viability
Electricity demand
"Economics" vs environment
Who pays
Moral hazard or buyout



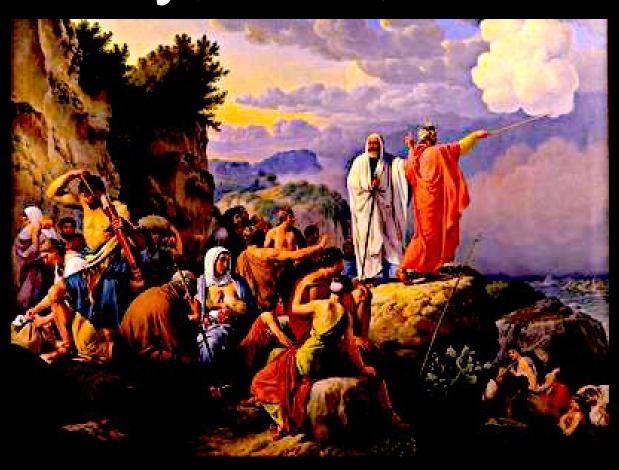


Problem #4: regulatory hazard is a two way street



Depending on regulator for bail out Regulatory decisions that inhibit ability to adjust

The future of the electric utility, then, is...



...somewhere between



and



Thank you