



# Strategic Electrification

Be a trim tab - Create change



# Why?

A major scientific report issued by 13 federal agencies Friday presents the starkest warnings to date of the consequences of climate change for the United States.

- What can the individual do?
- Do we have to wait for permission?



# Is Change Possible?

- If change is not possible:
  - There is no possibility of a better future;
  - “Sustainability” of a broken system is not a solution;
  - Technology alone is not sufficient;
  - Short time horizons & Exponential rates of change;
- Is a Green New Deal Possible?



# Utilities are Strategic Assets

- Essential providers of network services
- Need to sell more kWhs to stay in business
- What is their 21st century business model?
- A 21st century grid requires universal broadband connectivity.
- Will the PUC champion a new model for the grid?



# My small steps

- EV for transportation;
- Level 2 charger for home charging;
- PV for local generation;
- Batteries for local storage & grid support;
- Hybrid hot water heater;
- Nest thermostat;
- Wood Pellet stove;
- The results can be greater than the sum of the parts.











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# Benefits

- 100% utilization of our PV, even when the grid is down;
- Lower cost of Electricity;
- Carbon foot print reduced;
- Bolt costs less than 4 cents per mile to drive;
- \$120 per month in avoided gasoline costs;
- PV paid off in less than 7 years;
- Necessary but not sufficient.



“In order to change an existing paradigm you do not struggle to try and change the problematic model. You create a new model and make the old one obsolete” -  
R. Buckminster Fuller



# Root Causes

- Inequality
- Dominion over natural world
- Infinite growth on a finite planet
- Pricing signals corrupted by externalities
- Short time horizons



# Additional Actions

- Champion equality
- Renounce dominion
- Embrace justice as fairness
- Develop long time horizons
- Demonstrate exponential rates of change
- Common purpose - Shared burden



# Drum, Tamborine, Stick

- Education, Incentives, Policy:
  - Drawdown to get to less than 300 ppm CO<sub>2</sub>
  - Carbon tax to pay down 200 years of lunches that were not free
  - Benefit all citizens



# Change is Possible

- A better future is possible, but uncertain;
- We can all make changes and be trim tabs;
- We do not have to wait for a silver bullet to start;
- We do not need Federal billions to start;
- We can be the exponential rate of change today.







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