The Changing Face of Power

Life as we know it
What are we truly addicted to?

Most Valuable Commodity: Power

Data Centers, Warehouses, Hospitals, Manufacturing, Power Plants, Solar Arrays, Batteries (auto/truck/recreation, toys, schools, bikes) Substations, Wires, Poles and Bigger Poles and on and on and on.....

What’s it all look like?

Laptops
Cell Phones
Tablets
Portable Devices
E-bikes/ Scoters
Electric Vehicles

The Average Highschool can have over 400 batteries on site during an average day.

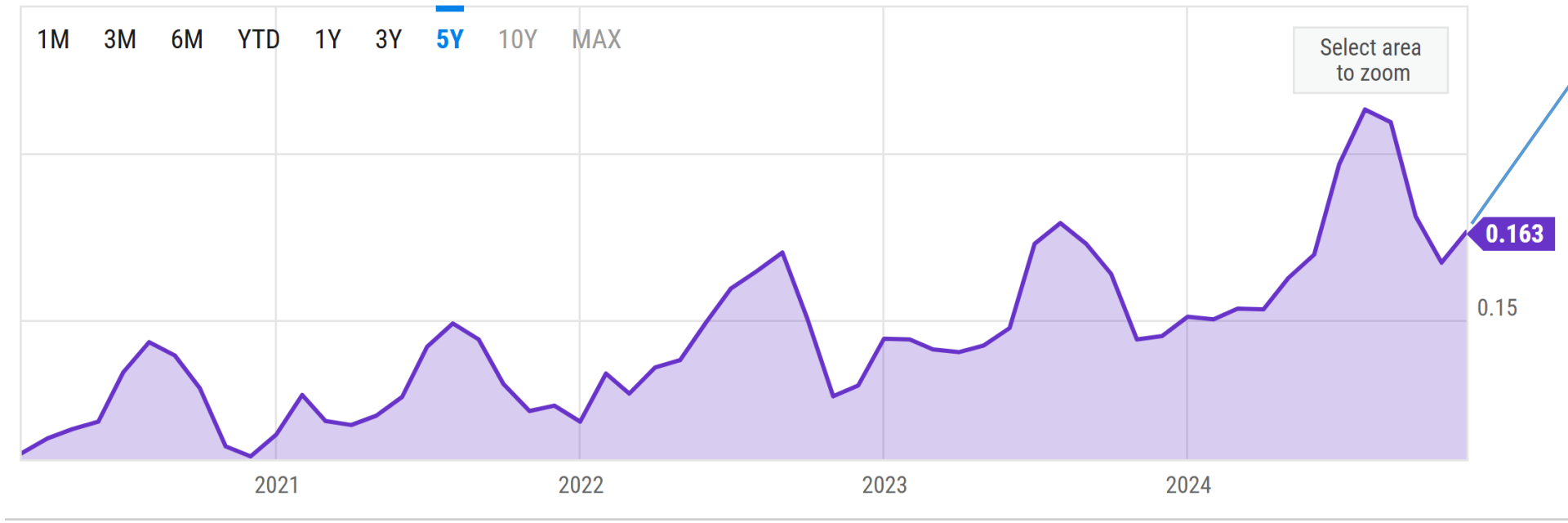
The Dreaded S D T

Energy Supply – Where do we get it from? Gas, Nuclear, Coal, Solar, Other

Energy Demand – When do we want it, how much, when don't we want it.

Energy Transmission and Distribution – How do we move it from where we make it (supply) to where we want it (demand)? Poles, Wires, Tolls….

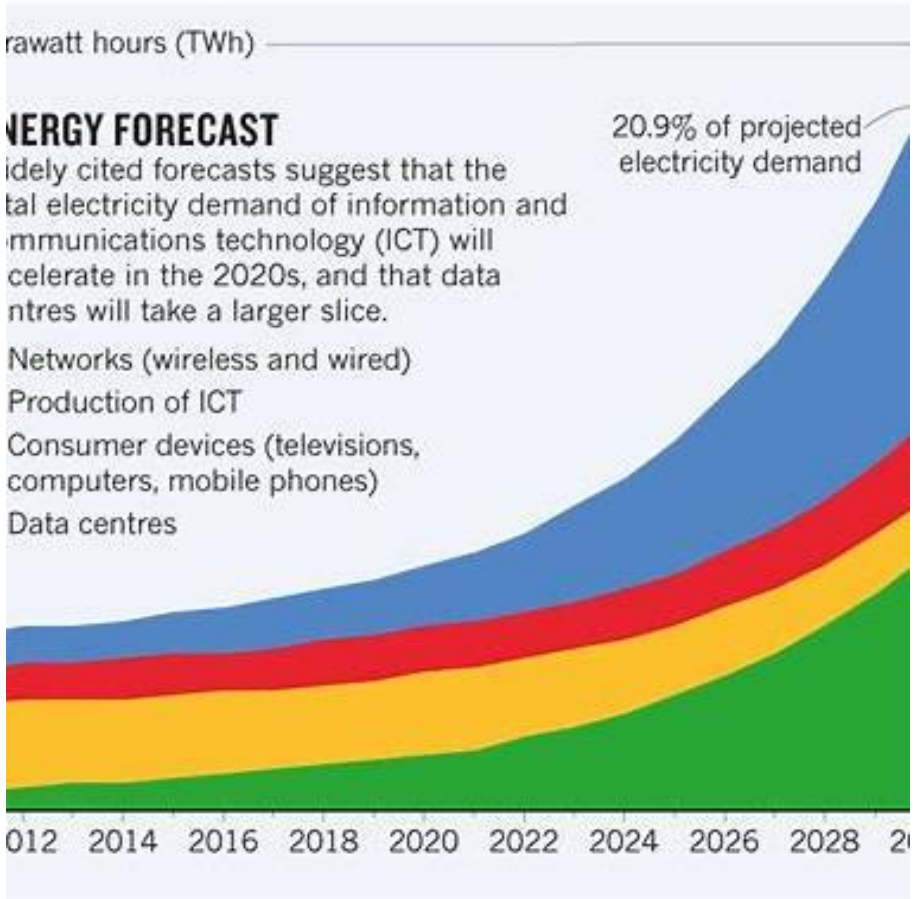
Energy Cost Will Rise at Record Pace



Storms, Power Plant Retirement, Local Resistance, Power Growth, Population Growth, Covid, Supply Side, Regulations..

How do we fit in to the changing world?

- Storage - Batteries, Batteries and more Batteries
- Renewables – Solar, Fuel Cells, Other
- Recycling – Plastics, Wood, Other
- Food Waste - RNG
- Jobs – Fastest Growing Sector of the Economy
- Policy – Changing at a rapid pace
- Information – Soon all things will talk to all things – NEST….
- DATA CENTERS – ***energy converted into information!!!***



What is a Data Center

- The Cloud and Your Phone
- Data Center and AI
- Cost to Fit Out - $15,000,000 Per MW --- Average Size 50 MW or More
- Water, Power, Back Up Power, Fiber
- Our Growing Reliance On Them.....

New Jersey and its technology & power future.

- Billions of dollars will be spend in New Jersey over the next 10 years to harden the grid and expand it for the type of power growth that is coming.
- Brownfields to support new power infrastructure and new power users such as data centers are getting new life given the high price of land that energy infrastructure creates.
- New Policy will push for the recycling of old solar panels, batteries, transformers and other early or outdated models that were developed in the early stages of the EMP. (20 Years Ago)
- Microgrids and self generating properties
- Information, Access to Tracking, Enforcement will all become easier and more information follows everything – RFID

Future

- Collection of Data
- More Electrification
- Systems, Intelligence, Integration
- Targeting of Programs (and Information)
- System Integration Further into Day-to-Day Life
- Schedule, AI, Transportation
- The Application of Applications.....

The internet of the internet of the internet

Improving life not just improving productivity!

Thank you

Adam J. Zellner

President Greener by Design

Adjunct Professor Rutgers University

www.GbDtoday.com