



Takeaways from the Clean Tech Roundtable on 4/25/17

How to Read: the red text are the **Gaps / Needs Improvements** identified by the businesses, the green text are the **Possible Solutions / Recommendations** identified by the businesses. Black text are the general comments that apply to the section.

1. Identify key issues within your industry

- A. Utility companies do not currently face much competition
 - a. But that will change in the coming years as more off the grid and personal utilities technology become the norm.
- B. There is growth in the service area due to the booming construction going on in our county (PUD)
- C. Growth in rate pressures to provide discounted rates to low income and senior customers
 - a. Although Sno Co has high income there are pockets of poverty
 - b. There are about 5,500 subsidized electric heat users within Sno PUD network
- D. Skill sets within many employees are not keeping up with technology
 - a. Long time employees are not willing to adapt to new technology which limits tech advances.
 - b. "we've always done it this way" mentality
 - c. Staff don't want to change processes
- E. Self-service options are not available to consumers because internal staff is reluctant to change
- F. Utility companies are highly unionized within the area

2. Challenges & Opportunities

- A. Department of Energy (DOE) has provided funding opportunities allowing for research universities and laboratories to collaborate
 - a. But these funds have been drying up
- B. Governor's Clean Tech bill has also provided funding for innovation
- C. Decision process in identifying or creating new delivery of energy is decades long
 - a. No one makes energy decisions quickly which impacts innovation
 - i. Entities may have a good idea, but because of the long-time for implementation and high cost the decision trees it takes too long to move new ideas into markets
- D. Consumers want lights on and rates low and don't care particularly what helps that happen
- E. Utility companies by practice are very conservative as they cannot use money on practices or techniques that are not proven to operate close to 100% of the time and highly efficiently



- F. Smart grid is making the transportation of energy more efficient from sources of energy to the end users
 - G. Other industries usually look to new companies to bring more innovation into their fields, this is not the case within energy
 - a. Within Energy it is the large companies that are creating their own internal innovations to solve specific energy issues
 - H. Generation & delivery of energy to users is in crisis
 - a. Technology is pushing so we will not need single source power
 - i. As homes will be able to provide energy themselves and can move outside the grid
 - b. This is being pushed by the need for rural areas and the third world needing to figure out how to generate and store their own power
 - c. This will be good for many end users but is likely going to threaten utility companies
3. Solar Energy
- A. Solar Energy technical panel are becoming more efficient
 - a. Struggles in marketing solar energy
 - i. Especially in the area
 - b. Need a supply chain and a global market to make any head way in development
 - B. Possibly find a way for consumers to sell back energy created in homes (i.e. like California program)
 - C. This type of energy works but there doesn't seem to be a lot of benefits
 - D. PUD has about 600 solar customers
4. Wind power
- A. Not very stable and hard to integrate into the grid
 - B. Need long-term investment into research and resources
5. Other
- A. PUD about to open a battery storage operation
 - B. UW professors are working on smart grid technology with PNNL
 - C. DOE funding is scheduled to be cut next year which will impact university research
 - D. There needs to be a planning grant that allows for commercialization of technology
 - E. When looking at energy development, we must look at global markets (vs. regional)
 - F. Other companies may be facing an Engineering cliff because of the number of engineers within the industry who are 55 years +
 - G. "Clean Tech" is new and sexy coat over a mostly 100 years old backbone of a system



6. PUD

- A. Is making consistent investments to update their infrastructure with newer technology
 - a. But many do not realize the full benefits of these investment for about 30 – 40 years
 - b. Energy as a whole is very long term looking and makes it very conservative in decision making
- B. Expensive to make infrastructure improvements
- C. Line jobs are a 5-year apprenticeship (IEBW) in WA
 - a. Other states have linemen schools, but Washington does not outside of the union
- D. PUD is constantly hiring people because of steady retirements, but not a crisis.
- E. PUD/unions pay very well with good benefits
- F. Not many part-time or temporary jobs and don't utilize temp agencies
- G. Hire workers of all-ages
- H. Restrictions related to collective bargaining agreements
- I. PUD utilizes Electrical & Mechanical Engineers, who tend to job hop for higher paying jobs
- J. CSR make \$32-\$33/hour after 18 months and have 6 weeks vacation, 3 pensions
 - a. PUD gets about 800 apps for 6 positions
 - b. when looking at resumes what rises up is experience, progressive responsibilities, multi-tasking (911 operators, banking experience)
 - i. "stellar customer service"
- K. Moving away from nepotism from the past
- L. PUD has 1200 employees
- M. Bilingual is a plus
- N. Since Snohomish County has a lower cost of living, it's easy to compete against King Co.

7. Internships

- A. UW students find it difficult to find internships locally (especially in material science)
 - a. Professors at UW are able to help students gain internships
- B. PUD hires summer interns across their organization
- C. Technical installation (apprenticeships)
- D. Reps suggested that networking works in Snohomish County (students, job seekers should attend events)

8. What would be helpful in the industry?

- A. Support for research enterprise
- B. Collaboration between organizations



- C. Governor's Clean Energy Fund ongoing funding
 - a. Previous funding allowed utilities to put together consortiums to create demonstration projects that they could take to market
 - D. Need funding for scaling up equipment/testing products to take to market
 - a. Because of the industry, no new untested technology will be implemented into a power grid
 - E. Provide opportunities to collaborate
9. Job Seekers
- A. Job seekers need help in targeting their resumes to the jobs they are seeking
 - B. They need to know how to present themselves
 - C. Resume presentation and creating a "leave behind"
 - D. Dress appropriately for interviews
 - E. How to perform in a behavioral interview