

LIFT Scholarship Exchange Experience for Innovation & Technology (SEE IT)
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TRIP REPORT

SCHOLARSHIP UTILITY: *DC Water*

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ATTENDEE: *Matt Ries*

TRIP DATES: *June 18-23, 2023*

UTILITIES/SITES VISITED: *VCS Denmark (Odense, Denmark) & Aarhus Vand (Aarhus, Denmark)*

TECHNOLOGIES/INNOVATIONS SEEN:

- Observed innovations were more cultural than technical, by design. These included regulatory drivers for sustainable operations and cultural drivers (Danish culture of sustainability)
 - A sustainable culture comes from long-term thinking associated with routine planning and the use of the UN SDGs in strategic planning
 - An organizational culture that is open, encourages freedom, innovation, and flexibility
 - Their senior leadership is engaged and accessible on the topic of sustainability
 - The utilities demonstrated data-driven, digital approaches and had specific and aggressive goals for energy and carbon management along with non-revenue water management
- However, the plant tours did include examples of technical innovation that leads to more sustainable operations. These included:
 - VCS Denmark biochar full-scale pilot, MABR full-scale pilot, Kemira ViviMag® Phosphorus recovery pilot, wet weather treatment pilot
 - Aarhus Vand fully automated/unmanned water treatment plant (Beder waterworks)

TRIP BACKGROUND and RATIONALE: DC Water strives to be a sustainable water utility; sustainability is one of five strategic imperatives for us. However, making significant strides to embed a sustainable mindset and strategy requires more than sustainable projects, it requires a sustainable culture. Danish utilities such as VCS Denmark and Aarhus Vand exhibit elements of a sustainable culture with results including energy positive wastewater treatment plants and significant progress toward carbon neutrality. The trip to visit these two utilities served to better understand their drivers for sustainability and how they have developed a culture of sustainability.

TRIP SUMMARY:

Why did you select the specific utility and technology for the visit?

Aarhus Vand and VCS Denmark serve the second and third largest urban areas in Denmark. Through previous connections while working at WEF and on the Board of Directors at Alexandria Renew, the researcher had personal connections with leaders at each utility. Each has energy positive wastewater treatment plants, each is on a journey toward carbon neutrality, and each leverages innovative approaches to be a sustainable utility and foster a culture of sustainability.

On your visit, do you think this technology/approach works for your utility?

It is important to understand that the Danish utilities operate in a very different regulatory framework than US utilities. Danish regulations and the EU Water Framework Directive clearly drive sustainable actions at these utilities. For example, Danish utilities must reduce their budget 2% each year. They operate in a “pay to pollute” regulatory framework. Fines are levied for CSOs and distribution system leakage above 10%. These provide regulatory drivers that we do not have in the US.

However, the cultural elements of the Danish utilities can be replicated at US utilities. Specifics are provided in the longer paper, but long-term, strategic thinking helps drive sustainable thinking. Their organizational culture is open; they value “freedom” at the workplace; innovation is cross-cutting and ever-present. The organizational structure is flat and the CEOs at both utilities are very accessible and embedded within their workforce.

How useful was the trip in your decision-making process?

The trip was extremely useful in understanding Danish culture and the utilities’ culture. This is not something that could have been effectively convened via a series of virtual Zoom calls. The trip understanding went beyond the utilities and included everyday Danish culture (transportation, environment, climate, food, civic engagement, government) that is important in understanding how the national culture influences the utilities’ culture.

What were some of the trip highlights and takeaways?

- The Danish utilities have a different regulatory framework that drives sustainable operations (e.g. Danish EPA and EU Water Framework Directive)
- The national Danish culture of sustainability influences water utilities and their employees
 - For example, energy price variation and monitoring at home is consistent with fluctuating prices for the utility’s energy
- Sustainable thinking is nurtured at the utilities via the use of the UN SDGs in strategic planning and recurring sustainability communications with staff
- The organizational culture is open, encourages freedom, innovation, and flexibility
- The CEOs and senior leadership are both setting personal examples of sustainability and in direct engagement with staff on the topic; for example, eating lunch with staff in the utility “canteen” where the staff gets together every day
- There is deliberate staff engagement in sustainability and cross-training of utility staff to create a broader understanding of the utility functions and how their individual roles fit into, e.g. Anthropologist in HR running a phosphorus recovery pilot plant