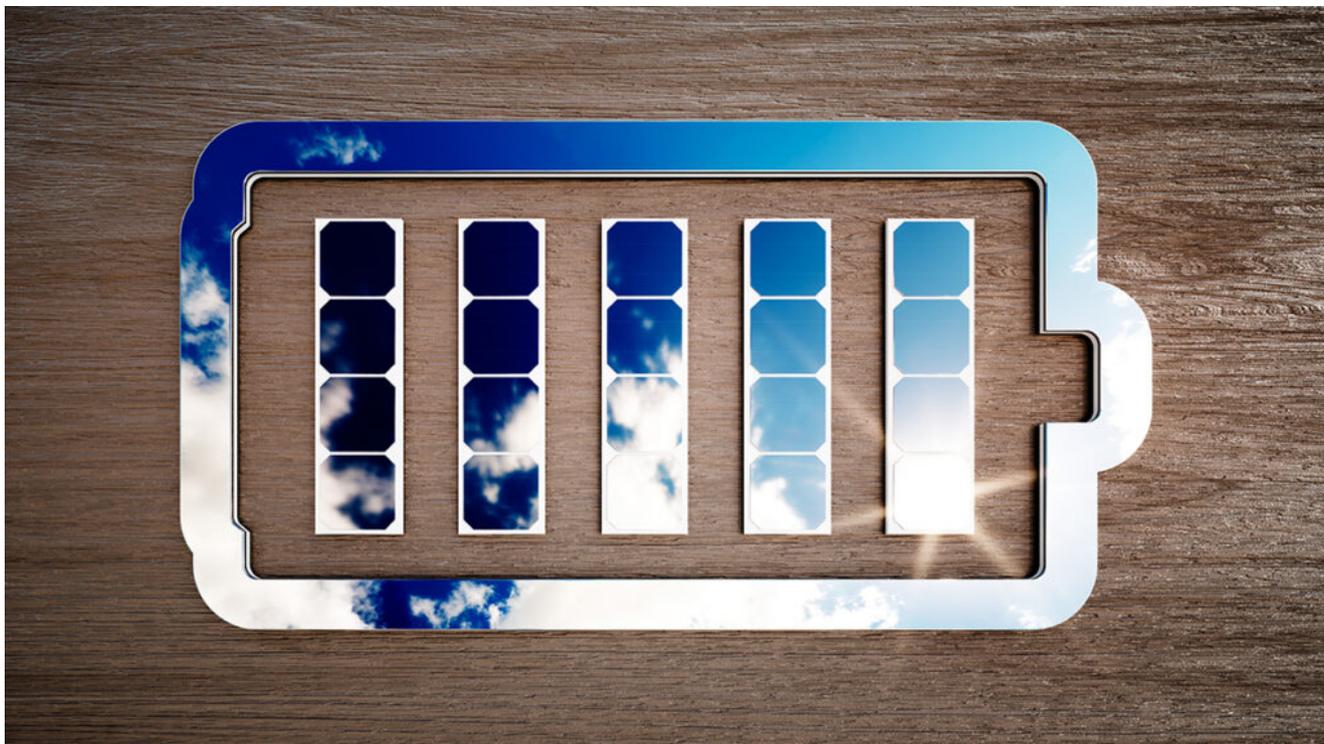


Battery storage at the center of energy policy



GPS students look at battery storage options in Florida in a study designed to solve real-world problems

By Rachel Hommel | GPS News

During spring quarter Professor [David Victor](#) and Professor of Practice [James Lambright](#) co-teach Advanced Energy Systems and Policy at the UC San Diego School of Global Policy and Strategy (GPS). A vital component of the capstone course is producing consulting projects for real-world clients in the energy sector.

“We want students to gain practical experience working with real clients on strategic problems,” said Victor. “At GPS, we give students tremendous technical and analytical skills. But real-world application of those skills requires a lot more.”

Students form teams over the quarter to focus on these consulting projects. This past year, GPS students Daniel Falk, Rick Ferrera, Travis Lindsay and Taylor Marvin, joined by David Larson from Jacobs School of Engineering, produced a public report that allowed the team to get a glimpse inside the process and

outcomes of energy policy.

Titled ["Battery Energy Storage in Florida: Value, Challenges, and Opportunities"](#), this report explores new strategies for the transformation of the electric power grid. Research studies routinely look at renewable power like solar and wind, however energy storage is a growing need for the low carbon energy ecosystem.

"I came to GPS aspiring to work in the energy space, and this project was a valuable part of my energy coursework," said Marvin. "I'm enthusiastic about how GPS is improving its energy curriculum, offering a competitive advantage in energy over many other international affairs and public policy programs."

Lambright explained that in the class students receive a first-hand opportunity to solve actual problems, from understanding what the client needs to learning how to communicate complex results to many different audiences - from line experts within an organization right up to the CEO.



The team project, which turned into a major report, looks at the potential value of battery energy storage in Florida's electric power sector. While California is leading the way with regards to battery storage, deployment and adoption in most of the U.S. and worldwide is still behind.

"These technologies have gained a foothold and stand a good chance of earning a larger role in the U.S. power grid based on their economic merits alone," said Ferrera. "This was an interesting time to be focused on Florida."

Ferrera cites that the battery storage market is analogous to the solar market regarding adaption and push back, with many people citing battery storage as too expensive to justify. However, the report indicates that with falling costs, Florida is adopting studies and pilot projects for battery storage, defying partisan political divisions.

The students connected with GPS alumnus [Michael Aller '06](#), executive director and CEO of Energy Florida, who connected the team to some research institutions around the Southeast doing relevant work.

“We had some very good conversations with them. Aller also provided a lot of interesting context on the energy sector in Florida, which really helped us understand the lay of the land in a state that none of us had worked in before,” said Ferrera.

In Florida, battery deployment has been very limited, due to the state’s energy costs and utility landscape. However, in the study, the team identifies how Florida’s slow start position could actually benefit them, by taking advantage of cost-effective opportunities to deploy batteries.

Additionally, the cost of battery storage has fallen quickly in recent years, with the most progress being made in states with high electricity bills, such as California. The report further highlighted the possibility of adoption and expansion for pilot projects, with a new power system that is cleaner and less carbon intensive than the fossil-fuel-dependent.

“One striking finding was how enthusiastic Florida’s largest investor-owned utilities are about storage. They have made an effort to really understand the technology and are undertaking very ambitious projects,” said Marvin.

Battery storage hopes to offer a cost-effective way to reduce many Florida commercial and industrial customers electricity bills, with behind the meter customer-sited battery storage systems. Charging battery systems when the demand is low and discharging them when the demand peaks can also help lower costs - a significant portion of commercial and industrial bills.

However, one of the larger questions will be whether batteries will become the next renewable technology, particularly in states without incentives. Victor cites its potential to become a dynamic technology for the power grid, unlocking the potential for pervasive use of renewables and even complete decentralization of the grid.

“Technology and policy are combining to make the power system cleaner and more distributed,” said Lambright. “Batteries can play a big part in this evolution in places where the regulatory regime and rate structure make the use of

batteries economically attractive.”

The student-led report also falls in line with the mission of the [Deep Decarbonization Initiative](#), which studies decarbonization in the real world — with real politics and real commercial constraints. This campus-wide initiative led by Victor looks to tackle policy and technology challenges, all with the goal of getting to zero global carbon emissions.

“Stopping global warming requires deep decarbonization,” said Victor. “And almost every study shows that will involve a big shift to electricity.”