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Energy Technology Connections Newsletter

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SEPTEMBER 2016

A Note from the Editors

Our September edition of Energy Technology Connections brings you recent industry highlights and a list of upcoming energy industry events. In Leaders in the News, we profile our friends at EnerNOC, a leading provider of energy intelligence software (EIS) that supports decision-making around energy costs and sustainability issues, and highlight its new multi-million dollar contract as part of Consolidated Edison Company of New York's Brooklyn-Queens Demand Management (BQDM) Program. Our Innovator Profile spotlights Biota Technology, a DNA sequencing and data science company that analyzes the earth's subsurface to provide the oil and gas industry with insights that help maximize reservoir production and reduce environmental impact. For event highlights, we feature Northeast Energy and Commerce Association's (NECA) Market Movers Awards Night, where ML Strategies' David O'Connor will receive the Vanguard Award, and the Intentionally Designed Endowment Forum at Loyola University Chicago, which will seek to advance the conversation on endowment investing in the context of 21st century sustainability challenges. Finally, our Washington Update provides the latest on House and Senate developments following the summer recess, and highlights the North American Energy Security and Infrastructure Act of 2016 which, if differences between the House and Senate versions can be reconciled, will be the first comprehensive energy bill passed in nearly a decade, as well as the Department of Energy and Department of Interior's strategic plan to accelerate the development of offshore wind energy in the US.

For links to industry grant opportunities and stories from the business, policy, and research sectors of the energy and clean technology industry, please see our Energy Navigator.



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Leaders in the News: EnerNOC

This month we'd like to highlight **EnerNOC**, a leading provider of energy intelligence software (EIS) that supports decision-making around energy costs and sustainability issues. **EnerNOC** helps businesses control their energy costs, navigate disclosure reporting, and improve operational performance, as well as providing utilities and competitive energy retailers with demand response and wholesale procurement solutions.

Founded in 2001 and based in Boston, Massachusetts, **EnerNOC** delivers a comprehensive range of services through analytics software and services that give customers deep insight into their operations and help identify

areas for cost-savings. **EnerNOC** helps utilities and power grid operators reduce their customers' electricity consumption during peak demand times. **EnerNOC's** demand management and facility analysis tools highlight opportunities for businesses to reduce energy consumption and identify areas of operational inefficiency. **EnerNOC** also offers access to more demand response programs worldwide than any other provider, providing enterprises a valuable payment stream to further enhance bottom line results, and utilities and grid operators a reliable, cost-effective demand-side resource.

On August 31, 2016, **EnerNOC** announced that it was awarded a multi-million dollar contract as part of Consolidated Edison Company of New York's Brooklyn-Queens Demand Management (BQDM) Program. Con Edison's BQDM Program, approved in December 2014, is a targeted effort to reduce demand in certain areas of New York City, delaying or eliminating the need to invest \$1.2B in a new substation. The program is part of New York's "Reforming Energy Vision" (NY REV) initiative, which is focused on building a better energy system for all New Yorkers. The contract will enable **EnerNOC** to expand its services to a significant portion of New York City, where managing energy resources while still meeting demand is becoming increasingly challenging. This development represents an exciting time for **EnerNOC** as it works to provide parts of New York with better energy demand management that could serve as a model for other cities in the future.

"Programs like BQDM and NY REV are putting an increased focus on the use of distributed energy resources like demand response and energy storage to meet challenges traditionally solved by putting steel into the ground—an expensive proposition in any market, but particularly in a densely populated area like New York," said Tim Healy, Chairman and CEO of **EnerNOC**. "EnerNOC, Con Edison, and other participants in BQDM are demonstrating that a clean, resilient, and affordable energy system can effectively save consumers millions of dollars."

Congratulations to **EnerNOC** for winning this major contract with Con Edison's BQDM program! We look forward to **EnerNOC's** continued success in the energy management field.

Innovator Profile: Biota Technology

This month we feature **Biota Technology**, a DNA sequencing and data science company that analyzes the earth's subsurface to provide the oil and gas industry with insights that help maximize reservoir production and reduce the environmental impact of hydraulic fracturing. **Biota** has created a new application for the bioinformatics software developed by UCSD Professor Rob Knight, which had previously been used to analyze the human microbiome, to analyze the earth's subsurface hydrocarbon microbiome. Combining cloud computing, DNA sequencing, and novel software analytics, the technology analyzes these microbial communities to provide oil and gas companies with actionable subsurface reservoir diagnostics. **Biota's** innovative process is a non-invasive, low-cost reservoir diagnostics tool that allows customers to maximize hydrocarbon production while minimizing environmental impact.

Biota's *Subsurface DNA Diagnostics*[™] combines the benefits of many methods into one economical approach to track the potential and flow of oil within a well and across a field. This high-resolution data source provides 4D analysis across the production lifecycle and does not introduce additional environmental risks. DNA sequencing the subsurface generates up to 10K data points per sample that provide highly specific information to identify the subtle subsurface changes that impact the extraction and field development processes of oil and gas companies. Additionally, **Biota's** process requires no special downhole tools or workover so reservoir characteristics can be assessed across time to provide a dynamic view of the changes to the reservoir. The DNA data is captured from the natural subsurface samples, and the non-invasive method does not require pumping any chemical tracers into the reservoir.

Biota employs a suite of technologies to deliver specialized analysis on its customers' reservoirs. *DNA WellSpace*[™] estimates drainage height to optimize well placement. Several blind tests have demonstrated the accuracy of Biota's drainage height estimation and operators are considering this technique as an integral part of well spacing decision workflow to maximize asset value. *DNA Target*[™] identifies potential sweet spots within a well for targeted completion, early results have shown 90% correspondence to actual output from tracer data. *DNA Surveillance*[™] can categorize wells based on DNA similarity and identify which among neighboring wells is responsible for a frac hit with a monitored producing well. Results have been validated by operators, who use this diagnostic to determine the extent of well-to-well and reservoir connectivity over time.

Biota strives to empower the oil and gas industry with subsurface DNA as a novel data source. To date, Biota has applied *Subsurface DNA Diagnostics*[™] for several customers in 70+ operating wells and various shale plays to help operators improve their well spacing and fracture design. Most recently, in May 2016, Biota was featured on the cover of the top oil industry magazine, *Journal of Petroleum Technology*, for creating a new category of reservoir characterization techniques with its **DNA Diagnostics**. The company has plans to expand the applications to other US shale plays, and also offshore fields. We are excited to watch **Biota** grow in the industrial DNA sequencing field – keep up the great work!

Event Highlights

NECA Market Movers Awards Night

This month, we are thrilled to announce David O'Connor will be honored with NECA's Vanguard Award on October 13. This accolade recognizes an individual who has made a substantial contribution to the development and maturation of competitive markets in the Northeast.

David has been a leader and problem-solver in the public and private sectors for more than 30 years. Currently, he is the Senior Vice President for Energy at ML Strategies – the consulting arm of Mintz Levin. In this role, he helps energy and technology companies expand their markets and accelerate their growth by influencing the scope and content of emerging legislation, regulations, and public policies. Prior to ML Strategies, David served as the Massachusetts Commissioner of Energy Resources from 1995 through 2007, where he played a critical leadership role in the development and implementation of Massachusetts' electric restructuring and shift to competitive markets. While in office, he also drove a historic movement to expand the use of clean energy in the region. For example, he implemented the first-ever standards for renewable energy use and renewable certificate trading in New England. David oversaw the operation by electric and gas utilities of \$150 million annually in energy-efficiency programs, and was a member of the Massachusetts team that negotiated the first-ever multistate agreement known as the Regional Greenhouse Gas Initiative (RGGI), to limit emissions of climate-changing carbon from power plants.

On Thursday, October 13, NECA will be hosting its 3rd Annual Market Movers Awards Night. There, David will be presented with NECA's Vanguard Award alongside this year's recipient of the Innovation Award – Jason M. Hanna. Jason is a Co-Founder, Board Member, and Former Managing Director of Greentown Labs, a globally recognized incubator for clean energy companies. For more information and to register for the event, click here.

Intentionally Designed Endowment Forum at Loyola University Chicago

Loyola University Chicago will be hosting Hank Paulson, former US Secretary of the Treasury, at the upcoming Intentionally Designed Endowment Forum on November 1-2, 2016. David Blood, co-founder and Senior Partner of Generation Investment Management will also be a keynote speaker, and many other leading experts in the sustainable investing field will be on the program.

Loyola University Chicago and the Intentional Endowments Network are pleased to host this forum to bring together selected decision-makers from colleges, universities, and foundations to advance the conversation on endowment investing in the context of 21st century sustainability challenges. As the focus on the impact of the \$550 billion in endowment funds of the nation's higher education institutions continues to grow, this is a timely event to explore the risks and opportunities that sustainability challenges pose to investment portfolios. This forum will provide an opportunity for campus leaders to learn from peers and experts about current trends and best-practices. To register for this event, click here.

Washington Update

Congress returned from the long summer recess on September 6 for a short work period before breaking again in October to allow members to campaign ahead of the November 8 elections. During the September work period, the primary focus of Congress is on funding the government in the new fiscal year which begins on October 1, 2016 – most likely with a short-term Continuing Resolution that runs into mid-December.

Congress

As reported in last month's Washington Update, conferees were appointed to reconcile the House- and Senatepassed **North American Energy Security and Infrastructure Act of 2016** which, if given final approval, will be the first comprehensive energy bill passed in nearly a decade. On September 8, House and Senate conferees had their first formal meeting. Conferee statements primarily focused on what energy issues should be the focal point of a final bill. Given the disparate measures passed by the House and Senate – the White House has threatened a veto of the House version – there is much work to be done, but if the bill does emerge from conference and to final approval, it will likely be in the post-election lame duck.

On September 15, the Senate approved the **Water Resources Development Act (WRDA)** in a nearly unanimous vote of 95-3. In addition to providing authority to the Army Corps of Engineers to move ahead on 30 different projects, the bill also includes language that aims to help small and disadvantaged communities improve access to clean and safe drinking water and to repair aging infrastructure that contributes to lead contamination. The contamination language specifically addresses the issue of contaminated drinking water in Flint, MI which has become a national issue with regard to failing infrastructure. The House is expected to move its own WRDA measure in the near future, although the House language does not appear to include any provisions to address the situation in Flint. Senate Environment and Public Works Committee Chairman Jim Inhofe (R-OK) has said that he will fight for the Flint language in a conference of House- and Senate-passed bills. Should Flint language not make it into a final WRDA bill, the issue could be addressed in a Continuing Resolution or year-end Omnibus bill.

On September 15, the House Energy and Commerce Subcommittee on Energy and Power held a hearing on "The Department of Energy's Role in Advancing the National, Economic, and Energy Security of the United States" with testimony from Energy Secretary Moniz. The hearing focused on the role of the Strategic Petroleum Reserve (SPR) in protecting the nation's energy security and how to improve it, as well as how to protect the United States' energy system from threats, specifically cyberattacks and inclement weather caused by climate change. Secretary Moniz emphasized that investment and innovation are necessary to increase the nation's renewable resources capabilities and drive down costs, and that while the US will soon be a net exporter of oil, the country still imports large amounts of oil and is susceptible to international events that impact the world's oil supply.

Rep. Jim Langevin (D-RI) introduced the **Offshore Wind Incentives for New Development (Offshore WIND) Act** on September 15 with 14 original cosponsors. The bill is a companion measure to S. 3036 which was introduce by Senators Markey (D-MA) and Whitehouse (D-RI) earlier this year. The tax extenders approved at the end of 2015 included wind and solar tax credits, but the timeline provided for offshore wind was not sufficient given the extensive siting and construction process of building offshore wind farms. The Offshore WIND Act would extend the Investment Tax Credit for offshore wind until 2025, allowing for the longer-term timeline required for offshore wind farm development.

Administration

The Secretary of Energy Advisory Board's **Task Force on the Future of Nuclear Power** has issued a draft report finding that in order to secure the future of nuclear power in the US, a carbon emissions fee or power production credit is needed. The task force was formed with the goal of creating a new nuclear power initiative that would lead to the deployment of one or several nuclear technologies in the years 2030 to 2050.

On September 9, Energy Secretary Moniz and Interior Secretary Jewell announced the publication of a collaborative strategic plan to continue accelerating **the development of offshore wind energy in the US** which could help enable 86 gigawatts of offshore wind in the US by 2050.

The report, the National Offshore Wind Strategy: Facilitating the Development of the Offshore Wind Industry in the United States, details the current state of offshore wind in the US, presents the actions and innovations needed to reduce deployment costs and timelines, and provides a roadmap to support the growth and success of the industry.

The Energy Department's **Advanced Research Projects Agency-Energy** on September 13 announced \$37 million in funding for 16 innovative new projects as part of a new ARPA-E program: Integration and Optimization of Novel Ion-Conducting Solids (IONICS). The project is intended to pave the way for technologies that overcome the limitations of current battery and fuel cell products.

The Energy Department has announced that the **2017 Solar Decathlon** will take place October 5-15, 2017 in Denver, Colorado. The Decathlon challenges collegiate teams to design, build and operate solar-powered houses that are cost-effective, energy-efficient, and attractive. The 2017 Solar Decathlon will focus on creating high-performance houses that reflect current market conditions, innovative building, and the best in sustainable living. Teams from 14 colleges will compete.

On August 31, the Energy Department announced, as part of the President's Climate Action Plan, **\$29 million in funding under the Frontier Observatory for Research in Geothermal Energy (FORGE) program** for projects awarded to teams at Sandia National Laboratories and the University of Utah. The funding will be for each team to fully instrument, characterize, and permit candidate sites for an underground laboratory to conduct cutting-edge research on enhanced geothermal systems (EGS).

Also on August 31, the United States Navy released four **Requests for Information (RFIs) for energy** generation and/or storage at Marine Corps Base Camp Pendleton, Naval Base Coronado, Naval Base San Diego, and Naval Weapons Station Seal Beach. The RFI's are released as a portfolio and respondents may respond to one or multiple RFIs in the portfolio.

Upcoming Events

AWEA: Wind Resource & Project Energy Assessment Conference 2016 September 27–28, 2016

Minneapolis, MN

GTM's New York Rev Future September 27–28, 2016 Brooklyn, NY More Info »

NECA 2016 Fuels Conference September 28, 2016 Marlborough, MA More Info »

POWERCON 2016 September 28 – October 1, 2016

Wollongong, Australia

More Info »

2016 Getting to Zero Forum October 12–14, 2016 Denver, CO More Info »

NEWIN/WPI Water-Innovation Workshop

October 24, 2016 WPI – Rubin Campus Center

NECEC's 9th Annual Green Tie Gala

October 25, 2016 Boston, MA More Info »

GTM's US Solar Market Insight October 25–26, 2016 San Diego, CA More Info »

International Offshore Wind Partnering Forum October 2-5, 2016 Newport, RI More Info »

LACI Cleantech Global Showcase: GLOSHO16 October 3-4, 2016 Los Angeles, CA More Info »

Energy Storage North America October 4-6, 2016 San Diego, CA More Info »

AWEA Wind Energy Finance & Investment Conference 2016

October 5-6, 2016 New York, NY

More Info »

Water & Long-Term Value 2

October 5-6, 2016 San Francisco, CA

More Info »

IEEE PES Innovative Smart Grid Technologies, Europe October 9-12, 2016 Ljubljana More Info »

emPOWERing Arkansas: AAEA's 5th Annual **Meeting & Policy Conference**

October 11, 2016 Little Rock, AR

More Info »

NEWIN Water Pitch Night – Focus on Water IT and Analytics October 12, 2016 TBD More Info »

Keystone Energy Efficiency Alliance (KEEA) Conference October 25, 2016 Harrisburg, PA

More Info »

AWEA Offshore WINDPOWER 2016

October 25, 2016 Warwick, RI More Info »

NECA 2016 Power Markets Conference

November 1, 2016 Westborough, MA

More Info »

Med Tech Conference November 17, 2016 New York, NY

More Info »

NEWIN/MIT Water Summit November 18-19, 2016 MIT More Info »

GTM US Energy Storage Summit 2016 December 7-8, 2016 San Francisco, CA More Info »

EnergySMART Conference February 22-24, 2017 Orlando, FL

More Info »

GlobalCon

March 22-23, 2017 Philadelphia, PA

More Info »

West Coast Energy Management Congress June 7–8, 2017 Long Beach, CA

More Info »

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