

Category	Title	Link
Project News	France Reveals Winners of Tender for Large-scale Storage in Corsica and Overseas Territories	http://bit.ly/mercomfrwt
	<p>France's Energy Regulatory Commission (CRE) has selected 11 large-scale storage projects in a tender held for the deployment of storage capacity in Corsica and France's overseas territories. The projects will have a combined power of 50 MW and a storage capacity of 56.8 MWh. The additional production costs avoided by implementing the projects will be approximately €450 million (\$520 million), representing a saving of €370 million (~\$428 million) in public service electricity over 25 years, said the regulator in a statement, without providing further details.</p> <p>The CRE said Corsica, Guadeloupe, Guiana, Martinique and Reunion are either not connected to the continental electricity network or linked in only a limited manner, and the new storage units will enable them to integrate higher volumes of renewable energy, while reducing electricity costs.</p> <p>La Reunion leads for installed PV Only one of the projects is in Corsica, a 5 MW/10 MWh storage unit proposed by Corsica Sole. In Guadalupe, two 1 MW/0.6 MWh projects were submitted by NWE while a larger, 5 MW/4 MWh system was proposed by EDF SEI, a unit of France's state-owned utility EDF. Guiana will host three projects, another 1 MW/0.6 MWh unit, planned by NWE, and two systems to be developed by French renewable energy company Voltalia, which will have capacities of 5 MW/4 MWh and 5 MW/7.3 MWh, respectively.</p> <p>For Martinique, the CRE has selected another 5 MW/4 MWh unit proposed by EDF SEI, and a 12 MW/12 MWh project submitted by French independent power producer Akuo Energy, while the two projects assigned to La Reunion were proposed by EDF SEI - which will install another 5 MW/3.7 MWh unit - and Corsica Solar, which has planned a 5 MW/10 MWh system. <i>Source: PV Magazine, Oct 12</i></p>	
Industry News	New York Announces \$40 Million to Support Solar Powered Storage Projects	http://bit.ly/mercomnamo
	<p>New York Governor Andrew M. Cuomo announced that \$40 million will be made available to support solar projects that integrate energy storage, accelerating progress toward New York's energy storage target of 1,500 MW by 2025. These projects will build toward Governor Cuomo's mandate that 50% of the state's electricity come from renewable sources by 2030 to combat climate change and build a cleaner, more resilient and affordable energy system.</p> <p>This funding represents a continued commitment by the state to ensure the rapid growth of the evolving solar industry energy is paired with innovative storage technology that will significantly reduce emissions and provide additional benefits to the electric grid. As New York adds more renewable energy to the grid, storage will play an increasingly important role in improving the efficiency and reliability of the grid for all New Yorkers.</p> <p>To help jumpstart New York's energy storage efforts, the NY-Sun program will make \$40 million available in early November for the development of solar-plus-storage projects. This funding will accelerate the deployment of at least 50 megawatts of energy storage paired with solar, and reduce barriers to deployment of this clean energy technology associated with customer acquisition, siting, and interconnection.</p> <p>These funds will be the first storage incentive funds made available since the release of the New York State Energy Storage Roadmap in June. By offering a new incentive for solar-plus-storage projects for the commercial and industrial sectors, including so-called community solar gardens, the storage component will ensure that renewable energy is shifted to times of highest customer usage, such as afternoon hours on summer days.</p> <p>Solar-plus-storage helps reduce consumer energy bills and improves the value of renewable energy to the grid. In addition, paired solar and storage systems can deliver lower costs to consumers by taking advantage of expiring federal tax credits, combining the permitting and interconnection processes, and utilizing less space by co-locating on the same sites.</p> <p>To ensure that communities are informed about the benefits of co-locating storage with solar systems and prepared to review the zoning and local tax implications of these projects, NYSEEDA will be performing outreach to communities where projects are proposed and will be providing technical resources, including adding an energy storage chapter to the solar guidebook for communities. <i>Source: Governor Andrew M. Cuomo, Oct 10</i></p>	
Project News	Duke Energy to Invest \$500 Million in Battery Storage in the Carolinas Over the Next 15 Years	http://bit.ly/mercomdbsc
	<p>Duke Energy's advancement of battery energy storage technologies in the Carolinas includes \$500 million of projects in the company's 15-year forecast. In the company's recent Integrated Resource Plan (IRP), Duke Energy outlined plans to deploy \$500 million in battery storage projects in the Carolinas over the next 15 years - equal to about 300 MW of capacity. Combining battery storage from all utilities, North Carolina has only about 15 MW of battery storage capacity in operation, and far less in South Carolina.</p> <p>The company filed for a Certificate of Public Convenience and Necessity with the North Carolina Utilities Commission for a solar facility in the Hot Springs community of Madison County as part of a microgrid project. The Hot Springs Microgrid project will consist of a 2 MW (AC) solar facility and a 4 MW lithium-based battery storage facility. The microgrid will provide a safe, cost-effective and reliable grid solution for serving the Hot Springs area, and provide energy and grid support to all customers. The project will defer ongoing maintenance of an existing distribution power line that serves the remote town.</p> <p>The Hot Springs project is part Duke Energy's Western Carolinas Modernization Project, which involves on-going conversations with community partners to help advance a cleaner energy future for the region. It includes closing a half-century-old, coal-fired power plant in Asheville in 2019. The plant will be replaced with a cleaner natural gas-fired plant and distributed energy resources like solar power and battery storage.</p> <p>Other Projects In addition to battery storage projects planned or operating in Florida, Indiana, Ohio and Texas, Duke Energy is also operating and pursuing other projects in the Carolinas.</p> <p>In the city of Asheville, a 9 MW lithium-ion battery system will be placed at a Duke Energy substation site in the Rock Hill community - near Sweeten Creek Road. The battery will primarily be used to help the electric system operate more efficiently and reliability for customers. In Haywood County, Duke Energy has an innovative zinc-air battery installation that was recently highlighted nationally. The 95 kWh zinc-air battery and 10 kW solar installation serving a communications tower on Mount Sterling in the Smoky Mountains National Park has been operating for more than a year. <i>Source: Duke Energy, Oct 10</i></p>	
M&A News	SolarEdge Technologies to Acquire Kokam	http://bit.ly/mercomsttk
	<p>SolarEdge Technologies, a provider of smart energy technology, announced that it has entered into definitive agreements to acquire a major stake in Kokam, a provider of lithium-ion battery cells, batteries and energy storage solutions.</p> <p>The acquisition of approximately 75% of outstanding equity shares of Kokam reflects an aggregate investment of approximately \$88 million, including related transaction expenses. The transaction is subject to customary closing conditions and is expected to close in the coming weeks. Over time, the company intends to purchase the remaining outstanding equity shares of Kokam that are currently listed on the Korean over the counter exchange through open-market purchases and otherwise, eventually resulting in Kokam becoming a wholly-owned subsidiary of SolarEdge. <i>Source: SolarEdge Technologies, Oct 11</i></p>	

Category	Title	Link
Event	ASEAN Solar + Energy Storage Conference 14-15 November 2018 Philippines	http://bit.ly/mercomasen
	<p>3rd Annual ASEAN Solar+ Energy Storage Congress & Expo has made its name as the largest congress focusing on solar and energy storage market in ASEAN region. Officially endorsed by Philippine Department of Energy (DoE) and Philippine Energy Regulatory Commission (ERC), the event will take place on November 14-15, 2018, in Manila, Capital of the Philippines.</p> <p>Around 1000+ industrial stakeholders, ranging from regulators, investors, developers, EPCs, manufactures, and associated third-party providers across the globe, are estimated to join the premier platform, discussing and brainstorming the future path of green economy development in the Southeast Asia market.</p>	
	For more information, visit: http://bit.ly/mercomasen	
Industry News	Portland General Electric Announces Ambitious Smart Grid Test Bed	http://bit.ly/mercompget
	<p>Portland General Electric (PGE) announced plans to file a proposal for a Smart Grid Test Bed that will integrate smart grid technology on a scale never before attempted in the U.S. Slated to begin in 2018, the project aims to accelerate PGE's vision for a clean energy future through partnering with customers to decarbonize the grid.</p> <p>PGE is building and testing three smart grids within its service area that will enable more than 20,000 customers to take advantage of special demand-response signals and incentives for using smart-home technologies, giving them greater energy efficiency opportunities and increased control over their energy use and carbon footprint. The entire service area will benefit as PGE integrates even more renewable energy resources into its power supply without compromising grid safety, security and reliability.</p> <p>PGE will make this a seamless experience for customers by helping them automate their smart devices, such as thermostats, water heaters, electric vehicle chargers and batteries, to work in concert with PGE as it operates the grid. During times when demand for electricity is especially high in the region, customers will be able to decide on an event-by-event basis if they want to participate in reducing their overall energy consumption.</p> <p>To accomplish this, PGE will leverage advanced communications capabilities and distribution system upgrades in three Oregon cities: Hillsboro, Portland and Milwaukie. Three feeders and substations in these cities will also be equipped with other smart grid technologies such as new remote controls that increase system reliability and enhanced safety and cyber security.</p> <p>The test bed will accelerate the development of distributed resources, which include customer-hosted renewables like rooftop solar; flexible resources like batteries, thermostats and water heaters; and electric vehicle charging. The project will rely on PGE's unique ability to partner with customers. The two-and-a-half-year project aims to achieve at least 66 percent participation by eligible customers, an ambitious goal considering typical uptake of demand-response programs nationally is less than 7%.</p> <p>The project was conceived and is being overseen by energy regulators in Oregon. To accelerate the concept, PGE developed the pilot with guidance from the Rocky Mountain Institute. The project is being steered by an advisory committee of local and national subject matter experts from the public and private sectors. <i>Source: Portland General Electric, Oct 11</i></p>	
Study	The Next Stage of the Energy Transition will Trigger \$8 Billion Investment in Flexible Power Generation Assets to 2030	http://bit.ly/mercomaerp
	<p>New analysis by Aurora Energy Research suggests an investment opportunity in the region of £6 billion (~\$8 billion) between now and 2030 for the development of around 13 GW of distributed and flexible power generation and storage assets in the GB power market. The last 12 months have seen some major changes to policy, regulation and markets which have impacted the business cases for gas engines and batteries, in particular: the reduction in de-ratings for duration-limited storage, the low clearing prices in the Capacity Mechanism auction, the drop in prices in the Frequency Response market, and significant reduction in Triad payments to embedded generators. <i>Source: Aurora Energy Research, Oct 11</i></p>	
Company News	Nissan and EDF Energy Partner to Advance Low Carbon Transport	http://bit.ly/mercomneep
	<p>The UK's producer of low-carbon electricity and one of Britain's car manufacturers are joining forces to work together on a number of projects that will support the adoption of electric vehicles and energy generation and storage solutions. Nissan and EDF Energy signed the new agreement in Paris today and the partnership will kick off with a first of its kind collaboration to explore how second-life Nissan electric vehicle (EV) batteries can support demand side management.</p> <p>Both EDF Energy and Nissan have been at the forefront of developing the market for electric vehicles in the UK and will bring substantial technical expertise to the wide ranging agreement that will support the transition to low carbon transport, such as smart charging, batteries, decentralized generation and grid integration.</p> <p>The first joint project will see the partners explore the business case for recycling retired batteries from Nissan LEAF into commercial battery storage. The system would see electricity stored in the batteries and released back to the grid using EDF Energy's PowerShift to react quickly to demand side response (DSR) initiatives. Storage systems offer a lower carbon solution compared to relying on coal and gas power stations to meet peaks of electricity demand on the grid. <i>Source: EDF Energy, Oct 10</i></p>	
Company News	Schneider Electric Microgrid to Service Long Beach, California Community by Creating Energy Resilience at Port	http://bit.ly/mercomsem1
	<p>Schneider Electric, an energy management and automation company, announced an agreement to design, engineer and build a new microgrid that will enable critical energy resilience at the Port of Long Beach in the city of Long Beach, California. Schneider Electric will create a microgrid technology demonstration which will include an integrated system of distributed energy resources (DER) and microgrid controls, enabling added resilience via long-term islanding at the port's critical response facility, the Joint Command and Control Center, which functions as the port's hub for security.</p> <p>Schneider Electric's \$5.2 million contract with the Port is part of a \$7.1 million project that is partially funded by a \$5 million grant from the California Energy Commission (CEC). Schneider Electric will design and install the microgrid, which will include the preconfigured hardware solution, Energy Control Center - DC coupled and merged with technologies from partner EnSync Energy, mobile storage solution, microgrid controls and EcoStruxure Microgrid Advisor, the cloud-connected, demand-side energy management software platform that simplifies the Port's DER integration and allows microgrid operators to collect, forecast and automatically optimize operations. The project will also include EcoStruxure Power solutions including Power Monitoring and Power SCADA Operation.</p> <p>The project will also include installation of a 300 kW array PV system for energy production, integration of a 250 kW microgrid-extending mobile battery energy, a 500 kW Diesel Generator and the installation of additional microgrid controls to allow demand response, peak shaving, and islanded operations for energy resilience. As part of the project, Energy Control Center will also leverage 330 kW and 670 kWh stationary battery energy storage. <i>Source: Schneider Electric, Oct 10</i></p>	

Category	Title	Link
Industry News	Electric Vehicle Company Fundings are Bright Spot as Clean Energy Investment Slips in Third Quarter	http://bit.ly/mercomefbs
	<p>Global clean energy investment was \$67.8 billion in the third quarter of 2018, down 6% from the same period in 2017, according to the latest authoritative figures from Bloomberg NEF (BNEF). The slip in the July-September quarter leaves investment for the year so far running a modest 2% below that in the first nine months of 2017 - leaving open the possibility that 2018 as a whole will end up matching 2017's total, particularly if a few more multibillion-dollar offshore wind deals are concluded before Christmas.</p> <p>BNEF includes equity raising by specialist electric vehicle companies in its clean energy investment totals, and this element was a conspicuous bright spot in the latest quarter. There was a \$1 billion initial public offering by NIO, a \$585 million Series C venture capital round by Guangzhou Xiaopeng Motors and a \$294 million pre-IPO round by Zhejiang Dianka Automobile.</p> <p>Looking at the third-quarter global investment figures by type, asset finance of utility-scale renewable energy projects came to \$49.3 billion, down 15% on 3Q 2017, while the purchase of small-scale solar systems of less than 1 MW totaled \$13.5 billion, up 9% on a year earlier. Public markets investment in clean energy jumped 120% to \$3.1 billion, helped by the NIO flotation mentioned above but also by a \$1.3 billion convertible issue from waste-to-energy specialist China Everbright International and a \$311 million IPO by U.S. fuel cell developer Bloom Energy.</p> <p>Venture capital and private equity investment increased even more sharply, by 378% to \$2.4 billion. VC/PE fundings of specialist clean energy companies have reached \$7.5 billion in the first nine months of 2018, making this year certain to be the strongest since at least 2011. The largest six VC/PE new equity deals of 2018 so far have all involved Chinese electric vehicle firms, including the two mentioned above during 3Q.</p> <p>The three biggest renewable energy asset financings in the quarter were the 860 MW Triton Knoll project in U.K. waters at an investment cost of \$2.6 billion, the Enel Green Power South Africa portfolio, at \$1.4 billion for 706 MW, and the Guohua Dongtai offshore wind project phase four in Chinese waters, at an estimated \$1.2 billion for 300 MW.</p> <p>A country split of the overall numbers shows China as yet again the largest investor in clean energy in 3Q at \$26.7 billion, marginally above the numbers for the same period of 2017. However, there were further signs of one important, expected change: a cooling-off in the country's solar installation surge, in the face of deliberate action by policy-makers. In 3Q, Chinese solar investment was \$14.2 billion, down 23% on a year earlier. <i>Source: BNEF, Oct 09</i></p>	
Company News	Salt River Project Selects Willdan's LoadSEER Software to Support Planning, Grid Modernization, and DER Integration	http://bit.ly/mercomssw
	<p>Willdan Group, a provider of professional technical and consulting services, announced that Salt River Project (SRP), a community-based, not-for-profit public power utility, has selected LoadSEER to deliver foundational load and distributed energy resource (DER) planning as part of its grid modernization strategy. LoadSEER is the flagship software application of Willdan's software unit, Integral Analytics.</p> <p>This five-year contract was signed on September 26 and provides SRP access to more granular network intelligence, while allowing the utility to efficiently invest in its distribution network, based on in-depth analysis of evolving customer energy use patterns and the emerging impact of solar, storage, and electric vehicles. <i>Source: Willdan Group, Oct 09</i></p>	
Project News	Hawaiian Electric Companies Select 7 Solar-plus-storage Projects for Record Increase in Renewable Energy	http://bit.ly/mercomheir
	<p>Seven major solar-plus-storage projects on three islands, representing the largest infusion of renewable energy in state history, are now in contract negotiations between developers and the Hawaiian Electric Companies. These negotiations are expected to produce long-term contracts for approximately 260 MW of solar energy on Oahu, Maui and Hawaii islands. Each solar project will be connected to a storage system that will capture up to four hours of electricity that can further reduce fossil fuel use in the evening or other times when the sun isn't shining.</p> <p>The seven projects include:</p> <ul style="list-style-type: none"> • On Oahu, three projects totaling approximately 120 MW and 515 MWh of storage • On Maui, two projects totaling approximately 75 MW and 300 MWh of storage • On Hawaii Island, two projects totaling approximately 60 MW and 240 MWh of storage <p>Developers will begin community outreach activities in the coming weeks. Community members will have the opportunity to comment on the proposed projects and Hawaiian Electric will file the comments with the PUC as part of the regulatory approval process. <i>Source: Hawaiian Electric Companies, Oct 09</i></p>	
Project News	CPS Energy Launches Solar Energy and Battery Storage Project	http://bit.ly/mercomcels
	<p>CPS Energy, an electric utility, has taken a major step in using new technology to produce emission-free renewable energy during high energy use days. This focus on reliability, environmental stewardship and innovation was announced as Greater San Antonio's natural gas and electric provider broke ground on their first solar energy and battery storage project.</p> <p>The project is a culmination of three years of work which included a partnership with Southwest Research Institute (SwRI). For their part, SwRI is providing nearly 50 acres of land on which the solar facility and battery storage system will be constructed. SwRI aims to gain valuable insight into the efficiencies of both solar production and battery energy storage.</p> <p>The \$16.3 million project, which will be constructed by RES Americas, was approved in earlier 2018 by CPS Energy's Board of Trustees. The site will consist of a 5 MW solar power facility and a 10 MW battery storage system located in San Antonio. The site is expected to be online in the summer of 2019. <i>Source: CPS Energy, Oct 08</i></p>	
Industry News	Jump-Start to Victoria's Electric Vehicle Revolution	http://bit.ly/mercomjsve
	<p>The Andrews Labor Government will help develop Australia's fastest electric vehicle charging stations in regional Victoria, using local expertise and businesses. Minister for Energy Lily D'Ambrosio announced Australian business Chargefox will receive \$1 million to develop Australia's first ultra-rapid vehicle charging sites in Euroa and Barnawartha North.</p> <p>Chargefox has made an electric vehicle charge management software platform designed and built in Australia and will create two charging sites with multiple charging stations at each. The company will match the Labor Government's funding to build the stations, which are expected to be operational by the end of October.</p> <p>The charging stations will dramatically reduce charging time for drivers, with up to 400 km of range delivered in 15 minutes, the fastest of any charger currently deployed in Australia. The locations of the charging sites will make it easier for motorists travelling interstate, providing a boon for local economies, and boosting tourism in regional Victoria. The Labor Government has legislated for net zero emissions by 2050, and this new investment in electric vehicles will help the sector along the journey to a low carbon future. <i>Source: Premier of Victoria, Oct 2018</i></p>	

Category	Title	Link																										
Industry News	Netherlands Top for Electric Vehicle Charger Density	http://bit.ly/mercomntev																										
	<p>The Netherlands has been making swift and steady progress in developing an infrastructure to support plug-in electric vehicles. According to the Dutch-based Bond van Automobielhandelaren en Garagehouders, the country had 1,826 charging stations for electric vehicles in 2011 and today, it has 33,607 in total. Last month, Vattenfall's Dutch subsidiary Nuon teamed up with McDonald's to equip every drive-thru restaurant branch with two fast-charging points, an effort that is expected to add 168 stations to the nationwide network.</p> <p>A recent KPMG report gauging countries' readiness for autonomous vehicles also looked at the number of electric vehicle charging points per 100 km of paved road in different countries as part of its analysis. Using International Energy Agency data, the report found that the Netherlands now boasts 19.3 charging stations per 100 km, far ahead of all other countries analyzed. China has 3.5, certainly impressive progress considering its massive population and the country's sheer size. The U.K. has 3.1, ahead of Germany's 2.8.</p>	<p>Netherlands Top for Electric Vehicle Chargers Density Number of Electric Vehicle Charging Stations per 100 km of Paved Road (Selected Countries)</p> <table border="1"> <thead> <tr> <th>Country</th> <th>Number of Charging Stations per 100 km</th> </tr> </thead> <tbody> <tr><td>Netherlands</td><td>19.3</td></tr> <tr><td>China</td><td>3.5</td></tr> <tr><td>United Kingdom</td><td>3.1</td></tr> <tr><td>Germany</td><td>2.8</td></tr> <tr><td>United Arab Emirates</td><td>2.5</td></tr> <tr><td>Japan</td><td>2.3</td></tr> <tr><td>Singapore</td><td>2.2</td></tr> <tr><td>South Korea</td><td>2.0</td></tr> <tr><td>Sweden</td><td>1.9</td></tr> <tr><td>France</td><td>1.5</td></tr> <tr><td>United States</td><td>0.9</td></tr> <tr><td>Russia</td><td>0.1</td></tr> </tbody> </table> <p>Source: Forbes</p>	Country	Number of Charging Stations per 100 km	Netherlands	19.3	China	3.5	United Kingdom	3.1	Germany	2.8	United Arab Emirates	2.5	Japan	2.3	Singapore	2.2	South Korea	2.0	Sweden	1.9	France	1.5	United States	0.9	Russia	0.1
Country	Number of Charging Stations per 100 km																											
Netherlands	19.3																											
China	3.5																											
United Kingdom	3.1																											
Germany	2.8																											
United Arab Emirates	2.5																											
Japan	2.3																											
Singapore	2.2																											
South Korea	2.0																											
Sweden	1.9																											
France	1.5																											
United States	0.9																											
Russia	0.1																											
	<p>Even though it was widely reported in 2016 that Japan had more electric car charging points than gas stations, it still trails other developed countries in the ranking with 2.3 chargers per 100 km. Even though sales of Teslas and other plug-in vehicles have risen sharply in the U.S., the country still has an enormous amount of work to do in order to support all of those new vehicles. It comes much further down the ranking with 0.9 charging points per 100 km. <i>Source: Forbes, Oct 08</i></p>																											
Funding News	Gilbarco Veeder-Root Makes Minority Investment in Tritium	http://bit.ly/mercomgvrt																										
	<p>Gilbarco Veeder-Root, a Fortive business, announced that it has made a minority investment in Tritium, a privately held electric vehicle (EV) charging manufacturer. <i>Source: Gilbarco Veeder-Root, Oct 08</i></p>																											
Industry News	\$173 Million Announced to Modernize New York's Power Grid	http://bit.ly/mercomgcag																										
	<p>New York Governor Andrew M. Cuomo announced funding for two groundbreaking programs aimed at building a smarter, more responsive power system across the state. The initiatives, funded by the New York Power Authority (NYPA) at a total of \$173 million, will help NYPA to collect data more quickly and accurately, and allow for a faster response time to outages and other power grid issues. These modernizations will ultimately enable a more reliable and resilient power system in New York.</p> <p>The NYPA trustees authorized \$95.7 million for the Authority's Sensor Deployment Program and an additional \$77.5 million for its Communications Backbone Program. Both programs directly support Governor Andrew M. Cuomo's Reforming the Energy Vision strategy for creating a cleaner, more resilient and affordable energy system. In addition to advancing the state's energy plan, the work will increase grid resiliency and deliver value to customers in the near-term while supporting the Power Authority's Vision 2020 strategy to become the first, end-to-end digital utility in the country.</p> <p>Launched in earlier 2018, NYPA's Sensor Deployment Program will enable the Power Authority to measure up to 117,000 new data points across its generation and transmission system by 2019, improving NYPA's monitoring capabilities and ability to preempt maintenance and service issues. NYPA trustees approved the use of the \$95.7 million for the second phase of the program that will focus on placing new sensors on generator turbines, circuit breakers, cable systems and battery banks, and connect the sensors to NYPA's Integrated Smart Operations Center (ISOC) in White Plains.</p> <p>As part of the \$95.7 million, NYPA trustees ratified a five-year, \$76.2 million contract to a statewide consortium of engineering firms, E-J O'Connell Sensor Deployment Joint Venture of Long Island City, to design, build and install new sensors and associated networking across NYPA facilities. The remaining portion of the sensor deployment funding authorized will support sensor procurement, installation and commissioning, as well as, overall project management. The funding represents an expansion of the original scope of the program to include additional sensors for NYPA's generation and transmission assets.</p> <p>NYPA's Communications Backbone Program, receiving \$77.5 million through this Board action, will create a robust, secure and scalable communications network to replace NYPA's legacy technology and manage data originating from NYPA facilities and equipment. The Board's funding this week reflects an expansion on the original scope of the optical ground wire portion of the statewide project.</p> <p>In addition to other types of communications networks, the expanded project encompasses an additional 550 miles of new optical ground wire installations on existing transmission towers in central, northern and western New York. Ultimately, this investment will lead to a nearly 700-mile optical ground wire installation by 2021. When completed, the Communications Backbone Program will allow NYPA to be less reliant on third-party carriers and provide more flexibility to deliver and expand services. <i>Source: Governor Andrew M. Cuomo, Oct 2018</i></p>																											
Project News	Saft and Hevel to Pioneer Megawatt-scale Energy Storage to Bring Green Power to Siberia	http://bit.ly/mercomshpm																										
	<p>Saft and Hevel Group, a solar module manufacturer and PV project developer, have signed an agreement to pioneer megawatt-scale energy storage systems (ESS) for solar power plants in the Altai Republic, a remote region in southern Siberia. Integrating Saft's lithium-ion (Li-ion) energy storage technology with the solar plants will ensure a reliable and predictable supply of electricity as well as providing a range of ancillary services to maintain the stability of the local power grids.</p> <p>To demonstrate the capabilities of ESS technology a pilot project is being carried out to install a Saft Intensium Max containerized lithium-ion (Li-ion) system at the existing 10 MW Kosh-Agach solar plant. This is one of the sunniest places in Russia, with over 300 cloudless days per year. Depending on the results of the pilot, the next stage will be to move to commercial implementation, with several ESS units with a total power in excess of 20 MW, mainly in off-grid locations, to be installed between 2020 to 2022. <i>Source: Hevel Group, Oct 2018</i></p>																											

Category	Title	Link
Project News	Alfa Power Installed 60 kW Rapid Charge Point in UK	http://bit.ly/mercomairu
	Alfa Power, a developer of an extensive network of electric vehicle charging points, has installed the 60 kW agnostic charger at Crown Service Station, Brighouse. The charging point is ready for use and the first of its type to be compatible with all models of electric vehicle. It is capable not only of 60 kW charging but also of simultaneously charging up to four vehicles via several connectors, namely CCS (European Combined Charging System), Type 2 (European AC charger) and CHAdeMO (quick charging method). Alfa Power plans to install 100 kW chargers at sites between major cities across the UK and beyond. <i>Source: Alfa Power, Oct 2018</i>	
Project News	Duke Energy Florida Launches Park and Plug EV Charging Station Pilot to Encourage Clean Transportation	http://bit.ly/mercomdfip
	Duke Energy is installing up to 530 electric vehicle (EV) charging stations within its Florida service area that will provide the necessary infrastructure network to promote and support the benefits of clean electric transportation. The company is working with various communities and groups to install the units for public use in multi-unit dwellings, workplaces and locations with broad public access, such as sites with high traffic or in major corridors. Host sites are being selected through an application process. Additionally, 10% of the charging stations will be installed in income-qualified communities to make the benefits of cleaner electric transportation available to all customers. Duke Energy selected NovaCHARGE, a national EV charging solutions provider, to supply equipment, install the charging stations and integrate services for the Park and Plug pilot program. Selected host sites for the program will work directly with NovaCHARGE to have the equipment installed. <i>Source: Duke Energy, Oct 2018</i>	
Study	At Least 700 MW of Energy Storage Can Be Deployed Cost Effectively in Nevada by 2030 <i>Part-1</i>	http://bit.ly/mercomepen
	<p>A new study released by Brattle economists and prepared for the Public Utilities Commission of Nevada (PUCN) and the Nevada Governor's Office of Energy (GOE) finds that energy storage can be a cost-effective component of Nevada's energy resource mix.</p> <p>The Brattle study found that, for the Nevada system with a peak demand of roughly 8,500 MW, up to 175 MW of utility-scale battery storage (with 4-hour storage capacity) could be deployed cost effectively by 2020. By 2030, declines in storage costs and changing market conditions could increase cost-effective deployment levels to a range from 700 MW to more than 1,000 MW. The study also notes that behind-the-meter storage adoption by commercial and industrial customers could further increase this value by up to 70 MW by 2030.</p> <p>A number of the study's findings are relevant for other systems that are exploring the value of storage:</p> <ul style="list-style-type: none"> • A 30% decline in storage costs (e.g., from \$300/kWh to \$210/kWh) would increase cost-effective deployment levels by 200% to 500% • The economically optimal level of energy storage deployment increases as system conditions evolve and flexibility needs increase over time. At a given cost of energy storage, optimal deployment levels are more than twice as high in 2030 as in 2020 	<p>Total System Benefits and Costs of Storage at Various Deployment Levels</p> <p>Source: The Brattle Group</p>
	<ul style="list-style-type: none"> • The ability to use battery systems to mitigate distribution system outages potentially accounts for 20% to 40% of the total benefits, which can significantly increase the economically optimal level of storage deployment • High-value opportunities can decline quickly. For instance, most of the identified opportunities for geographically-targeted transmission and distribution investment deferrals in Nevada were captured with only about 200 MW of energy storage. Other value streams, such as resource adequacy value, are less sensitive to deployment levels <p>The Brattle study's findings are largely consistent with those of similar recent studies in Massachusetts, New York, and Texas, when comparing the optimal storage deployment levels relative to system size. Based on the findings of the study, Nevada policymakers will consider establishing a statewide energy storage procurement target. Recognizing uncertainty in future storage costs, the Brattle authors recommend defining future storage procurement goals as a function of costs.</p> <p>Findings</p> <p>Energy storage can be incorporated cost-effectively into Nevada's future power supply mix. Under the assumptions used in this study, a statewide deployment of up to 175 MW of utility-scale storage could be cost-effective in 2020 if storage costs are at the lower end of the expected cost range.</p>	<p>Incremental Net Benefits of Storage Deployment in Nevada</p> <p>Source: The Brattle Group</p>

Category	Title	Link																															
Continued	<p align="center">At Least 700 MW of Energy Storage Can Be Deployed Cost Effectively in Nevada by 2030 <i>Part-1</i></p>	<p align="center">http://bit.ly/mercomepen</p>																															
	<p>By 2030, declining battery costs and evolving system conditions increase this estimate of cost-effective potential to at least 700 MW and possibly exceeding 1,000 MW at the high end. The development of these estimates accounts for constraints that limit the operation of the storage devices relative to that of a peaking unit, in particular limits on battery storage discharge duration.</p> <p>Within these ranges, the optimal storage procurement target will depend on the state's evolving actual need for new generating capacity. Thus, the incorporation of similar storage scenarios into NV Energy's resource planning process would be valuable to further confirm these conclusions. Total 2020 benefits exceed total costs only at the low end of deployments analyzed, and only if the low end range of installed storage costs can be realized. In 2030, total benefits exceed total costs across the full range of cost projections and deployment scenarios, although the net benefit of incremental additions in 2030 drops to zero at 700 MW for the high battery cost scenario.</p> <p>Up to 175 MW of storage deployment are cost effective in 2020 at the low end of the storage cost range. By 2030, the cost effective deployment level exceeds 1,000 MW at the low end of projected cost, with 700 MW being cost effective at the high end of projected costs.</p> <p>Implementation of and Nevada's participation in a regional power market may reduce the value of storage due to lower production cost savings associated with increased resource diversification that would be achieved through having a market that spans a larger region. The resource adequacy needs associated with serving Nevada loads may not be reduced and other value streams are unlikely to be affected.</p> <p>If the implementation of a regional market were to reduce the production cost savings by half and not affect other value streams, the cost-effective level of storage deployment in 2030 would fall from a range of 700 MW to greater than 1,000 MW (without a regional market) to a range of 400 MW to greater than 1,000 MW (with a regional market).</p> <p>In addition to the assumed utility incentive payments for resource adequacy, it is possible that BTM storage could provide additional sources of value, such as ancillary services or avoided T&D costs. Third party aggregators, utilities, or customers could monetize greater value under these conditions, thereby leading to increased BTM storage investments.</p> <p>As these results show, energy storage can be a cost-effective addition to Nevada's future mix of electricity resources, reducing system costs and benefitting consumers as a result. It can provide value across a range of applications and use cases, whether for resource adequacy, renewables integration, T&D investment deferral, or some combination of these and other benefits streams. This conclusion is robust across a range of modeled scenarios. The economically optimal levels of future deployment depend most significantly on the trajectory at which energy storage costs decline and new generating resources are needed to meet Nevada's electricity demand. <i>Source: The Brattle Group, Oct 2018</i></p>	<p align="center">Cost-Effective Incremental BTM Storage Potential with Utility Incentive Programs</p> <table border="1"> <caption>Cost-Effective Incremental BTM Storage Potential (Megawatts)</caption> <thead> <tr> <th>Year</th> <th>Case</th> <th>Adoption without incentive</th> <th>Incremental impact of incentive payment</th> <th>Total</th> </tr> </thead> <tbody> <tr> <td rowspan="3">2020</td> <td>Low Case</td> <td>1</td> <td>0</td> <td>1</td> </tr> <tr> <td>Medium Case</td> <td>6</td> <td>0</td> <td>6</td> </tr> <tr> <td>High Case</td> <td>7</td> <td>13</td> <td>20</td> </tr> <tr> <td rowspan="3">2030</td> <td>Low Case</td> <td>6</td> <td>0</td> <td>6</td> </tr> <tr> <td>Medium Case</td> <td>11</td> <td>7</td> <td>18</td> </tr> <tr> <td>High Case</td> <td>32</td> <td>7</td> <td>39</td> </tr> </tbody> </table> <p align="right"><small>Source: The Brattle Group</small></p>	Year	Case	Adoption without incentive	Incremental impact of incentive payment	Total	2020	Low Case	1	0	1	Medium Case	6	0	6	High Case	7	13	20	2030	Low Case	6	0	6	Medium Case	11	7	18	High Case	32	7	39
Year	Case	Adoption without incentive	Incremental impact of incentive payment	Total																													
2020	Low Case	1	0	1																													
	Medium Case	6	0	6																													
	High Case	7	13	20																													
2030	Low Case	6	0	6																													
	Medium Case	11	7	18																													
	High Case	32	7	39																													
Company News	<p align="center">Duracell to Launch AI-enabled Home Battery System for UK Market</p>	<p align="center">http://bit.ly/mercomdlah</p>																															
	<p>Duracell is set to launch a home energy storage system in partnership with a UK energy supply and services company, which claims it will enable big increases in the revenues available to owners of the devices. Following a Beta testing phase using BYD batteries and around five years of development and testing, the company says its partnership with Duracell will be commercially launched in the first quarter of 2019.</p> <p>National Grid has approved Social Energy's domestic battery offering to participate in demand side response (DSR) as well as provide grid-balancing services such as frequency response. Social Energy is targeting an official launch for the product line in late November. <i>Source: Solar Power Portal, Oct 2018</i></p>																																
Industry News	<p align="center">The Commonwealth of Virginia's 2018 Energy Plan <i>Part - 2</i></p>	<p align="center">http://bit.ly/mercomtvp</p>																															
	<p>Integration of Emerging Technologies</p> <p>As the number of EVs and their charging needs increase, so too will the load that utility companies have to manage. Uncontrolled, EV load growth has the potential to exacerbate already expensive system peaks. Although it is difficult to estimate with certainty the effects of added load that EVs will place on Virginia's electricity grid and the grids serving Virginia, the potential is significant.</p> <p>Given its flexibility, EV charging can be used by utilities to make the grid itself more flexible. EV load can be moved to times of day when it is less expensive to serve. The demand to which EVs might contribute (blue) could be shifted off-peak (gray), avoiding the need for new generation. EV load could also be moved to times when otherwise unused renewable energy might be available.</p> <p>An EV's ability to provide both load and generation, while also serving as a source of mobility, suggests the potential for coordination between regulators, customers, equipment providers, and grid operators to take advantage of EVs as grid resources. EV charging services are capable of providing significant benefits to the overall utility transmission and distribution network if they are properly deployed, but without a price signal, drivers will generally plug in and charge immediately upon arriving home after work, exacerbating evening peak demand.</p> <p>A properly-designed rate can help mitigate these problems by sending price signals to customers that encourage them to charge their vehicles when there is less stress on the system during off-peak periods. While rate design can play a key role in managing EV charging, utilities have developed smart charging programs to further enable vehicle integration.</p> <p>Examples of smart charging include demand response, one-way controlled charging, or vehicle-to-grid. Demand response (DR) principles can be applied in the EV charging context. Utilities can simply pause charging at peak times or when supply is otherwise disrupted. A DR approach could help stabilize grid frequency and avoid the dispatch of often more expensive and dirty peaking generation resources.</p> <p>Another version of smart charging, referred to as "one-way, controlled charging," adds scheduling and modulating charging to the basic DR approach. This allows utilities greater flexibility to move the charging activity to times when the grid is most capable of providing the service, saving the EV owner and power company expense by avoiding the need for additional investment in infrastructure or generation capacity.</p>																																

Category	Title	Link
----------	-------	------

Continued	The Commonwealth of Virginia's 2018 Energy Plan Part - 2	http://bit.ly/mercomtvep
-----------	---	---

Vehicle-to-Grid (V2G) or two-way charging can be thought of as an advanced form of smart charging. It essentially allows for an EV's battery to serve as a storage device that can discharge power back onto the grid when called upon.

Electric Generation

Virginia is served primarily by two investor-owned utilities (IOU) for electric service: Dominion Energy and Appalachian Power Company (APCo). Both are members of the PJM Regional Transmission Organization (RTO), which operates a competitive wholesale electricity market and manages the high-voltage electricity grid to ensure reliability for more than 65 million customers in thirteen states and the District of Columbia. Virginia is also home to 144 utility-scale power facilities.

As PJM members, Dominion Energy and APCo are signatories to PJM's Reliability Assurance Agreement, which obligates the IOUs to own or procure sufficient generating and distribution capacity to maintain overall system reliability. PJM determines these obligations for each zone through its annual load forecast and reserve margin guidelines. PJM then conducts a capacity auction through its Short-Term Capacity Planning Process to meet these requirements three years into the future.

Electric Transmission and Distribution

Virginia's electric transmission system is made up of high-voltage, high-capacity components. Dominion Energy, Appalachian Power, Delmarva Power, and Old Dominion Electric Cooperative own and maintain transmission and distribution facilities in Virginia.

Energy Consumption

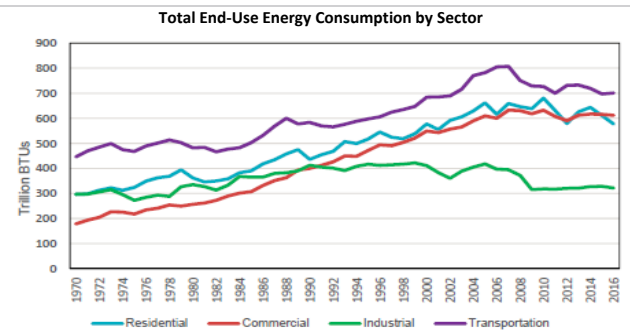
Energy consumption statewide increased steadily across the residential, commercial, and transportation sectors between the 1970s and 2000s, but has experienced some declines since approximately 2008-2010. Consumption in the industrial sector began to decline in 2005 and has remained relatively flat over the last decade.

Residential - Electricity delivers 58% of energy to the residential sector for space conditioning, hot water, lighting, and electronic devices. Approximately one in three households in Virginia use natural gas for home heating.

Commercial - Electricity delivers 61% of all energy to the commercial sector, with most of the remainder served by natural gas. Commercial building energy use overall peaked in 2010 and has declined slightly in subsequent years.

Industrial - The industrial sector is the second-largest natural gas-consuming sector in Virginia, consuming 19% of electricity used statewide. Natural gas is an ingredient of a number of products and serves as fuel for heating and hot water or steam.

Transportation - The largest sector for total energy use, the transportation sector uses 701 trillion British thermal units (Btu) in Virginia. Petroleum motor fuels (primarily gasoline, diesel, and jet fuel) deliver 99% of energy. About 1 percent of energy used for the transportation sector is electricity.

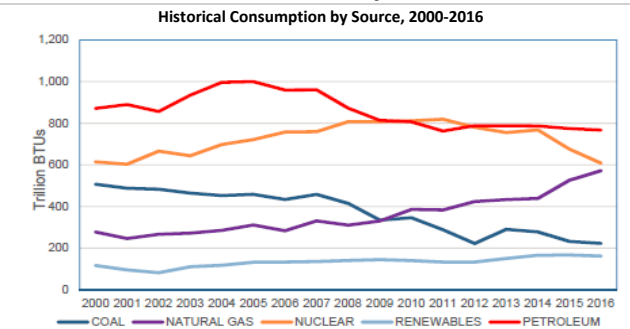


Source: Governor of Virginia

Electricity generated in Virginia in 2016, the most recent year in which data is available, came from a variety of sources including:

- 28% from nuclear
- 52% from natural gas
- 11% from coal
- 6% from renewables
- 2% from hydroelectric
- 1% petroleum

Energy consumption can be cyclical and driven by the economy and other factors, such as changes in production costs. Year-to-year fluctuations may also be weather-dependent. According to the Energy Information Administration (EIA), 2016 retail electricity consumption in Virginia was approximately 112,280 GWh, ranking 10th highest in the nation in 2016.



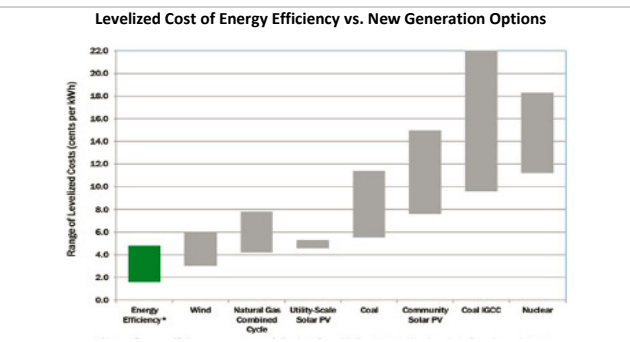
Source: Governor of Virginia

Changes in dispatch from coal to natural gas have impacted the overall electricity profile. The use of natural gas in Virginia has increased significantly over the last five years, from 410,106 million cubic feet in 2012 to 541,620 million cubic feet in 2016. Coal use in Virginia has declined steadily since 1991, and 2016 consumption of approximately 9.5 million short tons was primarily through the electric power sector (approximately 82%) and industrial sectors (18%).




Energy Efficiency

The U.S. has made significant progress on energy conservation efforts, including both energy efficiency (doing the same function with less energy, such as replacing an old air-conditioning unit with a new highly-efficient unit) and behavior changes (such as turning the lights off when leaving a room). Driven by economics, advances in technology, consumer awareness, and public policy initiatives, the U.S. economy has continued to grow steadily while per capita energy use is down 7% below 2010 levels.

Despite efficiencies in Virginia's energy system, energy load is expected to grow in Virginia. PJM predicts net energy load growth of 0.4% annually over the next 10 years and 0.5% over the next 15 years in the PJM Regional Transmission Organization (RTO). However, Virginia uses energy more efficiently than the nation, consuming 277 million Btu per capita, while the nation consumes an average of 345 million Btu per capita. *Source: Governor of Virginia, Oct 2018*



Source: Governor of Virginia

Category	Title	Link
Update	Mercom's 9M 2018 Funding and M&A Report on Storage, Smart Grid and Efficiency Releasing Next Week <i>Subscribe for 2018 bundle and save ~20 percent</i>	http://bit.ly/MercomSmartGridReports
	<p>Mercom Capital Group's Battery Storage, Smart Grid, and Efficiency Funding and M&A Reports are comprehensive high-quality reports delivering superior insight, market trends and analysis. These reports help bring clarity to professionals in the current financial landscape of the smart grid industry.</p> <p>The Quarterly Funding and M&A Reports contain quarter-over-quarter (QoQ) information on market activity displayed in easy-to-digest charts, graphs and tables, as well as data-driven analysis covering:</p> <ul style="list-style-type: none"> • Venture capital funding deals including top investors, QoQ trends, and a breakdown of charts and graphs by stage • VC funding by technology • Debt and other funding deals • Mergers and Acquisitions (M&A) including QoQ trends, with charts and graphs by technologies <ul style="list-style-type: none"> • Battery and storage funding deals • Smart Grid funding deals • Energy Efficiency funding deals • New cleantech funds <p>This report also contains comprehensive lists of all announced deals and transactions during the quarter, including:</p> <ul style="list-style-type: none"> • VC deals and investors • M&A transactions and acquirers • New cleantech funds 	
Technology Highlight	Innolith Launches Non-flammable Battery with 50,000 Charging Cycles	http://bit.ly/mercomilnb
	<p>Innovative battery technology provider Innolith announced the commercial launch of its inorganic electrolyte technology to improve lithium-ion batteries for grid-scale storage applications. According to the company, the use of the new type of electrolyte allows mitigating the inherent limitations lithium-ion batteries have. Reportedly, the new battery electrolyte allows up to 50,000 charging cycles and eliminates flammability. This longevity would effectively reduce the costs per charging cycle, making it a more attractive solution for cycle intensive applications, such as grid storage systems providing frequency response.</p> <p>At this first stage, Innolith says it will start commercial production of the batteries at an undisclosed location and with an undisclosed manufacturer. Innolith will supply its electrolyte to the undisclosed battery manufacturer, which will in turn produce the batteries. Greenshields highlights that through this partnership, the companies will be closely tied and that this is not just a supply deal. <i>Source: PV Magazine, Oct 2018</i></p>	
<p>Click here to purchase a copy of Battery Storage, Smart Grid, and Efficiency Q2 2018 Funding and M&A Report - http://bit.ly/MercomSGQ22018</p>		
<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;"> <p>FUNDING and M&A</p>  <p><small>quarterly and annual reports</small></p> </div> <div style="text-align: center;"> <p>ADVERTISE WITH US</p>  </div> <div style="text-align: center;"> <p>SUBSCRIBE</p> <p><small>Solar Smart Grid/Storage/Efficiency</small></p>  <p><small>to our weekly market intelligence report</small></p> </div> </div>		

Disclaimer: When quoting, please cite "Mercom Capital Group". Although information in this report has been obtained from sources that we believe to be reliable, Mercom Capital Group does not guarantee its accuracy and is not liable for its use. Mercom reports may not be reprinted, reproduced or republished whole or in part without express permission from Mercom Capital Group. Copyright © 2018 Mercom Capital Group, All rights reserved.