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## **Energy and Climate Report**

### **Afternoon Briefing - Your Preview of Today's News**

The following news provides a snapshot of what Bloomberg BNA is working on today. Read the full version of all the stories in the final issue, published each night.

#### **Hurricane Maria May Be U.S. Preview of Climate-Fueled Migration**

*Posted September 27, 2017, 01:28 P.M. ET*

*By Christopher Flavelle*

Hurricane Maria's devastation of Puerto Rico may offer a preview for Americans of one of the most jarring potential consequences of global warming: the movement of large numbers of people pushed out of their homes by the effects of climate change.

The storm, which destroyed houses, washed away roads and cut off power to the commonwealth's 3.4 million residents, risks accelerating an exodus that's already under way as people flee economic stagnation and rising taxes brought on by a fiscal and debt crisis.

Puerto Rico Governor Ricardo Rossello warned Sept. 26 that without "unprecedented relief" from the U.S. government, "thousands if not millions" of residents could leave the island for the mainland. That would strain housing and job markets in the cities that received those people, as well as local government services.

In Puerto Rico, a further drop in population would make it harder to reverse its economic decline. The commonwealth declared bankruptcy in May and has stopped making payments on much of its more than \$70 billion in debt. Fewer residents would mean less economic activity, further reducing tax revenue and leaving officials even less able to repay Puerto Rico's loans.

Scientists say higher water and air temperatures, as well as rising sea levels, increase the intensity and destructive power of hurricanes, a trend that will continue as the concentration of greenhouse gases in the atmosphere increases.

Researchers at the International Monetary Fund, in a report released Sept. 27, looked at the links between extreme weather and emigration in more than 100 countries over three decades. They found that "a rise in temperature and greater incidence of weather-related disasters increase out-migration," according to Petia Topalova, the IMF researcher and lead author of the report.

It describes migration as an "adaptation strategy for households hurt by weather shocks" and predicts that "substantial migration flows, potentially spilling across country borders, could arise if climate change causes a significant rise in sea levels."

In some parts of the world, that's already happening. In Africa, climate change forced an estimated 1 million people to leave their homes in 2015; in the Pacific, the World Bank has urged Australia and New Zealand to open their doors to residents forced off small island nations such as Tuvalu and Kiribati. Even in Syria, internal migration sparked by a historic drought contributed to the civil war, which has added to the wave of people trying to enter Europe in recent years.

### **Whole U.S. Open to Puerto Ricans**

Maria, which struck Puerto Rico Sept. 20, could expose the U.S. to a similar dynamic. The scale of destruction on the island, combined with its large population and Puerto Ricans' legal right to move anywhere in the U.S., could prompt migration on a larger scale than other natural disasters.

That raises questions about the country's ability to handle such a movement of people. The housing market in those cities may not be able to accommodate that kind of influx, according to Jesse Keenan, an expert on climate adaptation at Harvard University.

"Let's say just 350,000 leave," Keenan said. Of those, he added, "let's say just half end up in cities. It's a major housing crisis. We don't have that much slack in housing inventory."

Keenan used the example of New York, which has the largest concentration of Puerto Ricans outside of the island. The city's traditionally Puerto Rican neighborhoods, where new arrivals might settle -- East Harlem, Bushwick, parts of the Bronx -- already have low vacancy rates and high rental costs, Keenan said.

"The city of New York right now needs to set up a plan to house these people," he said. If they're forced to stay with friends or relatives, "you're talking about housing being burdened by having too many people legally in the unit," Keenan said, leading to fire risks, domestic strife and other problems.

Large numbers of newcomers also would place "a tremendous burden on social service delivery, at least for a couple of years," Keenan said.

### **Big Employment Challenges**

Topalova, the IMF researcher, said that people who leave Puerto Rico because of Maria may have a harder time finding their feet in their new homes.

"Previous IMF work suggests that people who were forced to depart their home country due to various events outside their control may be different, in terms of demographics and skills, than economic migrants," she said. "They may face greater challenges integrating in the job market relative to economic migrants who -- by definition -- chose their destination to maximize employment outcomes."

With enough planning and foresight, the U.S. "will be able to absorb and put to good work a wave of climate refugees," said Giovanni Peri, an economist at the University of California, Davis, who studies climate migration.

Natasha Lycia Ora Bannan, an associate counsel at LatinoJustice, an advocacy group in New York, got a call Sept. 26 from a friend on the island, asking if she could help him find a job in the city. She described him as "somebody I never imagined asking that."

For those who feel they need to leave the island, “this promise of economic opportunity elsewhere often does not lead to a job, or the job that they thought they would encounter,” she said. “I call it the forced migration.”

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## **Climate Shocks May Cost U.S. \$1 Billion a Day as Planet Heats Up**

*Posted September 27, 2017, 12:17 P.M. ET*

*By Joe Ryan*

Stronger hurricanes, hotter heat waves, more frequent wildfires and more severe public-health issues are all adding to the costs of climate change, which will reach almost \$1 billion a day in the U.S. within a decade, according to a report released Sept. 27.

Total costs to address the impact of rising temperatures will swell 50 percent by 2027, to \$360 billion annually, according to the study from the [Universal Ecological Fund](#). That equates to about 55 percent of expected economic growth in the U.S.

The report comes as the U.S. continues to reel from one of the costliest hurricane seasons in history. Hurricanes Harvey, Irma and Maria have inflicted an estimated \$173 billion in damage in Texas, Florida, Puerto Rico, and the U.S. Virgin Islands. On the West Coast, record dry conditions and heat have triggered wildfires in nine states. Unless the U.S. cuts fossil fuel use, the economic toll from such events will continue to rise, the study concludes.

“The increasing damage from climate-change related storms, wild fires, human health, agriculture loss and the like are taxing the potential of economic growth,” said James McCarthy, a Harvard University professor whose co-authors included Robert Watson, former chairman of the Intergovernmental Panel on Climate Change. The researchers weren’t paid for their work.

The study’s conclusion that fossil fuels exacerbate global warming and create a drag on economic growth runs counter to the view of the White House.

President Donald Trump, who has called climate change a hoax, has put oil, natural gas and coal production at the center of his economic agenda. Energy Secretary Rick Perry told a meeting of the National Petroleum Council Sept. 25 that fossil fuels are even saving lives in developing nations by increasing access to energy.

The economic toll of climate change is not limited to storms. Droughts in states including California, Texas and Oregon have led to \$56 billion in crop losses since 2012, according to the study, which used data from the National Oceanic and Atmospheric Administration, the Centers for Disease Control and Prevention, and other federal agencies. If global warming goes unchecked, corn and soybean production may fall as much as 30 percent in the next three decades, costing farmers as much as \$25 billion annually, according to the study.

For years, policy makers argued it was impossible to grow the economy without increasing fossil fuel use. Renewable energy has become more common, challenging that notion.

“That’s no longer true,” McCarthy said.

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## **World's First Green Exchange Lists \$74 Billion in Its First Year**

*Posted September 27, 2017, 9:13 A.M. ET*

*By Anna Hirtenstein*

The Luxembourg Green Exchange, the world's first bourse for securities related to climate change, listed 63 billion euros (\$74 billion) of bonds after one year.

"This far outstripped what we expected," Jane Wilkinson, head of sustainable finance at the Luxembourg Stock Exchange, said in a phone interview. "It clearly outstrips the growth we've seen in Luxembourg on the regular market, which was stable."

The Luxembourg Green Exchange, also known as the LGX, was set up as a place where investors could be certain that what they were buying was really a green bond. The industry is unregulated to date, although issuers can voluntarily follow frameworks such as the Green Bond Principles or the Climate Bond Initiative. The LGX obliges its issuers to provide full documentation, both before and after issuance.

The 63 billion euros makes up about 1 percent of the Luxembourg Stock Exchange, in terms of value of listed assets, according to Wilkinson. The global green bond market reached \$95 billion last year. After a record-breaking 2017 first half, Bloomberg New Energy Finance raised its 2017 forecast for issuance to \$130 billion from \$123 billion. Wilkinson said the figure could be as much as \$140 billion.

The LGX receives as many as two to three questions and requests daily from parties such as treasury departments and law firms that are interested in issuing green bonds, according to Wilkinson.

"There's definitely an increased interest by potential issuers," Wilkinson said. "New players that are waking up and thinking this could be an interesting market for us and starting to do their homework."

There is rising interest in China, U.S. municipalities and Latin American financial institutions, she said. Corporate issuers are also getting more involved.

"It's still a bit of a nascent market, if you're a big company I feel like they should lead the way," Wilkinson said. "I understand that they don't need to list because they have enough interest, but that kind of issuer can use their influence."

Some large companies in the clean energy industry haven't labeled their bonds as green, even if they could, such as Tesla Inc.'s recent \$1.8 billion offering. This may be because of the additional reporting that's generally expected from investors to prove that the funds raised are only being used for environmentally-focused projects, Wilkinson said.

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## **Now One of the World's Energy Powerhouses Has a Coal Squeeze**

*Posted September 27, 2017, 10:14 A.M. ET*

*By Perry Williams and Ben Sharples*

Australia's energy crisis keeps getting stranger.

The world's second-biggest seller of liquefied natural gas is already threatening producers with export curbs as it struggles to find enough supply for its own use. Now the country that ships more thermal coal overseas than almost any other is scrambling to replenish stockpiles at some power plants after they dwindled following a surge in demand and constrained supply.

It's the latest twist in the saga of how a global energy powerhouse is struggling to sustain reliable and affordable electricity for its own population. Power price spikes and gas shortages have already frustrated businesses and homes across the nation and put pressure on the government and generators to prioritize domestic customers over sometimes more lucrative export markets.

Coal inventories at Australia's three largest electricity providers—AGL Energy Ltd., Origin Energy Ltd. and CLP Holdings Ltd.'s EnergyAustralia—have shrunk over winter as they use more of the fuel to compensate for natural gas shortages. The closure of the Hazelwood coal-fired power plant in Victoria state also put further pressure on the nation's remaining generators to produce more power, eating through their stockpiles at a faster pace.

Against this backdrop, the power producers have struggled to get sufficient supplies as they compete with overseas buyers for lower-quality coal that was once considered too poor to export. Miners in Australia can command higher prices for coal known as high ash in China, South Korea and India.

"The high ash market has developed in North Asia over a number of years and that has caused complications for some power stations," said Robin Griffin, a research director at Wood Mackenzie Ltd. in Brisbane. "It means that miners can actually sell a much lower quality product into the export market."

Griffin estimates miners can probably sell coal to international customers at double the price sold to domestic utilities. Australia exported 116.1 million metric tons of thermal coal during the first seven months this year, compared with 114.4 million in the same period last year, according to government data.

"The local power producers have got a set delivery amount and they may be asking for more coal," he said. "It's going to be very difficult to convince miners to sell coal at a lower price to domestic utilities, it's just a no-brainer."

Strong Chinese imports and the price gap Australian producers can achieve by exporting coal rather than selling to local plants was a factor contributing to low stockpiles, according to Gavin Wendt, a senior resource analyst at MineLife Pty.

There's growing concern power supply disruptions may trigger blackouts during the peak summer demand period. Three of the biggest LNG producers on Wednesday guaranteed to supply more of the fuel to alleviate domestic shortages and lower spiraling prices after Prime Minister Malcolm Turnbull threatened to impose export curbs from their projects.

Australia has been scrambling to find additional sources of electricity since the national market operator said in March that gas-fired power shortfalls may be possible next year. The warning

spurred Turnbull to propose rules to restrict gas exports in the eastern state of Queensland amid concern outbound shipments had contributed to supplies being crimped and a tripling of Australia's wholesale gas price in the past two years.

#### **'Historic Lows'**

Coal accounts for 76 percent of Australia's power generation. Stockpiles at AGL's Liddell and Bayswater plants in New South Wales state fell to "historic lows" over winter as consumption rose due to limited natural gas supplies and the loss of power from the Engie SA-owned Hazelwood, an AGL spokesperson said in an emailed statement. International coal demand has also placed pressure on the rail lines that thread through the Hunter Valley region of the state, adding to constraints.

EnergyAustralia and Origin have struggled to procure sufficient quantities of the fossil fuel. The Mt. Piper power station, which supplies 15 percent of electricity demand in New South Wales, only has stockpiles to operate at "very low production levels" for a few months due to a legal dispute impacting mine supplies, EnergyAustralia said in an emailed statement.

Origin said its Eraring power station in the state "ran very hard" to meet demand over winter that created an issue with coal stockpiles, which now "needs to be managed." It has since sourced additional supply to replenish stocks and expects record coal to be delivered by rail to Eraring in September, according to Origin's general manager for energy supply and operations, Greg Jarvis.

The New South Wales government is working with the Australian Energy Market Operator to ensure there is sufficient fuel supplies this summer while also looking at how it may reduce demand on the power grid during heatwaves.

"There are many parallels with what is happening in the gas space and what's happening in the coal space right now and I think it's taken the market by surprise," MineLife's Wendt said in an interview Sept. 27.

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### **S.C. Regulators Asked to Review Rate Hikes for Canceled Project**

*Posted September 27, 2017, 9:43 A.M. ET*

*By [Jim Polson](#)*

South Carolina utility regulators are weighing a request to suspend previously approved rate increases for Scana Corp. related to its canceled V.C. Summer nuclear plant expansion.

The [request](#) by staff of the Public Service Commission of South Carolina cites a state attorney general's opinion that rate hikes for unfinished or abandoned power plant projects were approved under a "constitutionally suspect" state law. Customers may be due credits or refunds should the law be amended or deemed unconstitutional, according to the filing Tuesday. Scana will "vigorously contest the request," the Cayce, South Carolina-based utility owner said Sept. 27 in a separate [filing](#).

Scana and its partner, state-owned utility Santee Cooper, halted construction on two new reactors at the Summer plant after costs ballooned to over \$20 billion, a decision that leaves Southern Co. as the only utility building a nuclear plant in the U.S. Scana had asked utility regulators for permission

to recover \$4.9 billion in expenses for the project before withdrawing the request in August to give officials more time for review.

“This would be a severe, a huge financial blow to the utility,” Kit Konolige, a New York-based utility analyst for Bloomberg Intelligence said by phone Wednesday. “My guess would be, the commission won’t want to do that.”

Scana shares fell 2.1 percent to \$54.41 at 9:43 a.m. in New York.

The utility’s South Carolina Electric & Gas utility is collecting about \$445 million a year for the Summer project, Konolige said. Suspending rate hikes would save the average residential customer about \$27.03 a month, according to the staff filing.

The commission staff also cited allegations that Scana failed to disclose information that would have appeared to provide a basis for challenging rate increases. The utility “should not be allowed to continue to benefit from nondisclosure,” it said.

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## **Amazon.Com for Fuel Is How China Oil Wolves Battle State Tigers**

*Posted September 27, 2017, 8:18 A.M. ET*

*By [Alfred Cang](#) and [Serene Cheong](#)*

China’s oil-industry “wolves” want to help fuel buyers get rid of paperwork, and instead provide them with the Amazon.com experience.

Dongming Petrochemical Group, the biggest of China’s private refiners in the eastern province of Shandong, has set up a website where traders, factories and pump stations within a 300 kilometer radius can ask for fuel to be delivered within 12 hours. They can also choose to place orders via an app or even through instant messaging service WeChat. There’s a digital wallet payment option too. Chambroad Petrochemicals Co., another independent processor in the region, also has a similar service.

The strategy is part of their plan to take on more powerful state-owned refining giants such as Sinopec amid increased competition in the domestic market, while fuel demand is threatened by everything from electric vehicles to shared bikes. Moreover, while the state behemoths have government approval to export their oil products, the private companies, known as teapots, don’t—meaning they can’t access overseas markets for their merchandise.

Dongming says it’s having to sell fuel to its bigger state rivals at a discount of 1,200-1,500 yuan (\$180-\$226) per metric ton to market prices. Other private refiners outside Shandong province, such as Rongsheng Petrochemical Co., are also seeking to make their mark and are posing a threat to the independent processors within the region. Dongming will be part of a new \$5 billion group that’s banding together to better take on rivals and have support from the regional government.

“Independent refiners in Shandong think of themselves as wolves, alongside tigers that are the national oil companies,” Zhang Liucheng, vice president of Dongming Petrochemical, said in an interview in Singapore during the S&P Global Platts APPEC conference. “But with the emergence of other bigger independents that will soon bring new capacity online, they will become the wolves,

while the tigers remain, and we will be the sheep in their presence.”

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## **China’s New Silk Road Seen as Spur for Electric Cars in Europe**

*Posted September 27, 2017, 02:16 P.M. ET*

*By Jonathan Tirone*

China’s new silk road stretching into the heart of Europe may be what ultimately delivers more climate-friendly technologies like batteries and electric cars.

The trade route known in Beijing as the Belt and Road Initiative is spurring \$1 trillion of investment on rail, highways and ports linking Europe and Asia. China’s renewable-energy companies already are using the initiative to open new markets in southern Asia, the Middle East and Africa, according to Bloomberg New Energy Finance.

Austrian executives gathered outside Vienna to discuss the future of energy are banking on similar market-making effects in Europe. They anticipate the scale of manufacturing from China and quicker market access through the Belt and Road links to drive down the costs of electric cars and energy storage technologies in Europe.

“It’s not a question of if but when, because it’s happening,” Verbund AG Chief Executive Officer Wolfgang Anzengruber said Sept. 27 at a green energy conference in the small Alpine town of Fuschl, Austria. “If China says it, it is so.”

China’s market-making role in Europe extends beyond developing EVs and is striking at the heart of traditional European businesses, according to Wolfgang Hesoun, chief executive officer of Siemens AG’s Austrian unit, which employs 2,500 workers making trains and trolleys.

“The best ideas come from outside,” Ramon Vullings told the energy executives gathered in Austria. The Dutch consultant said he traveled China’s ancient silk road for 1 1/2 years in a bid to bring back new ideas to help Europe’s companies deal with transition to renewables.

European companies will only be able to challenge Chinese companies by developing “locally-oriented” supply chains that cultivate customer loyalty, Hesoun said at the event a day after Siemens merged its rail unit with Alstom SA.

Similarly, just how quickly European companies can develop things like the lithium-ion batteries—used in electric cars and grid-balancing systems— depends on how much demand there is for those things consumers in China at the other end of the Belt and Road.

Automakers who employ 300,000 in Austria—and supply German giants Volkswagen AG and Daimler AG—are looking for ways to use electric cars to tap into China’s market of 1.4 billion people.

“We need to start developing these technologies because if we don’t, others will,” World Energy Institute Secretary General Christoph Frei said, adding that China’s huge market is leading the green energy shift.

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## **Brazil Gets \$3.8 Billion Boost to Budget from Power Auction**

*Posted September 27, 2017, 02:28 P.M. ET*

*By [Vanessa Dezem](#) and [Rachel Gamarski](#)*

Brazil raked in 12.1 billion reais (\$3.8 billion) in revenue from a power plant auction that was key for efforts to hit a closely-watched budget goal.

The government sold concessions to operate four hydroelectric plants previously run by state-owned utility Cemig in an auction Sept. 27 that lasted less than an hour and beat policy makers' expectations of 11 billion reais in revenue. A separate auction for 287 oil exploration blocks is also underway, with that sale seen raising around 500 million reais.

The power auction results boost chances that President Michel Temer's administration will deliver its 2017 fiscal goal of a 159 billion reais deficit. Even after announcing plans to target a wider budget gap than previously forecast, policy makers are facing an up-hill battle as Latin America's largest economy recovers slowly from recession.

"In the short-term, the income will help deliver the target," Leonardo Costa, an economist at Rosenberg Associados, said in an interview. "But the pressure continues."

Since assuming the presidency last year, Temer has placed fiscal responsibility at the center of his strategy to woo back investors and spark growth. His government has cut spending, announced plans to postpone civil servant pay raises and said it will sell other assets including a lottery service run by state-controlled bank Caixa Economica.

Still, a series of corruption allegations against Temer have hindered the agenda. Lawmakers are now focused on voting on the second round of charges against the president, which will likely further delay deliberations on his flagship pension reform.

After the results were announced, Temer said on his Twitter account confidence in Brazil has been recovered. The government will use additional funds from the sale to help compensate any future disappointment in tax income, according to an official with direct knowledge of the matter.

The government expected to raise at least 11.05 billion reais with auction, while analysts from Goldman Sachs had an estimated range of 14.45 billion reais to 17.99 billion reais

China's State Power Investment Corp., known as SPIC, won the rights to operate the biggest of the hydroelectric dams being auctioned, Sao Simao. The bid was 7.18 billion reais, 6.51 percent above the set minimum

Engie SA won the contracts for Jaguarua and Miranda plants, paying 2.171 billion reais and 1.36 billion reais, respectively. The company paid the highest premiums for the assets in the auction

Enel SpA, Italy's biggest utility, had the winning bid on the Volta Grande dam for 1.419 billion reais

The plants have a combined 2,922 megawatts of installed capacity and are located in the states of Minas Gerais, Goias, and Sao Paulo. They were previously operated by Cia. Energetica de Minas

Gerais, a state-run utility known as Cemig

—With assistance from Ana Carolina Siedschlag.

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## **U.K. Opposition Steps Up Push to Nationalize Energy Companies**

*Posted September 27, 2017, 01:14 P.M. ET*

*By [Jessica Shankleman](#)*

Jeremy Corbyn's Labour Party is talking more about nationalizing Britain's energy companies, suggesting it could "take control" of major utilities like SSE Plc and Centrica Plc if the opposition wins the next election.

Key figures at the party's conference in Brighton the week of Sept. 25 hinted that Labour is poised to go beyond its current pledges of renationalizing local grid networks, a move they say would bring down costs for consumers and expand clean energy supplies.

To a standing ovation, Corbyn pledged "to take utilities back into public ownership" during his speech to the party conference Sept. 27. Shadow Chancellor John McDonnell on Sept. 26 vowed to bring energy companies under the "ownership and control" of "the people who use and work in them."

Their promises are broader than the manifesto pledge published in May to only change the licensing arrangements for regional grids in order to take them into public ownership and to make new publicly-owned grid companies that would compete with the Big Six utilities.

Rebecca Long-Bailey, the party's lawmaker who speaks on business, energy, and industrial strategy, explained some of these details at a energy-policy meeting on the sidelines of the conference. The party leadership may be banking on many members confusing the finer points of the manifesto with more popular pledges made on stage.

"We've said we want to set up regionally owned energy companies to rival the 'Big Six' energy companies and create competition in the market. But that's not the only thing we want them to do," Long-Bailey said. "In time we want them to be able to harness the ability to generate electricity on a local level alongside other business in the area."

CBI business group, which represents British industry, bristled at the idea.

"Forced nationalization of large parts of British industry will send investors running for the hills and puts misplaced nostalgia ahead of progressive vision," said Carolyn Fairbairn, the CBI's director-general.

The Conservative Party said Labour's entire nationalization plan of rail, mail, water, and energy networks listed in the manifesto could add at least 134 billion pounds (\$180 billion) to the public debt, citing figures from the non-partisan Institute for Fiscal Studies.

Chi Onwurah, a Labour lawmaker speaking on industrial strategy, said nationalizing energy companies wasn't "a backward step."

“What isn’t working is what we have now,” Onwurah said at an event at the conference on Monday. “Where we have private sector generation and distribution and a market which is supposed to be competitive but isn’t.”

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