Major Developments

Wind, Snow Storm Knocks Out Power to Over 590,000 Customers across Eastern U.S. April 2–3; 18,046 Remain Without Power April 4

A widespread, multi-impact storm system brought high winds across the Eastern U.S., including snow in some northern regions, beginning on Saturday and lasting into Sunday. Since Saturday, impacted utilities have reported at least 590,438 customers lost power as a result. Several utilities said strong wind gusts downed power lines and toppled trees. As of 3:30 p.m. EDT Monday, 18,046 customers remained without power. JCP&L, the hardest hit utility with 90,800 customer outages in New Jersey, expects full power restoration by midnight on Monday. PPL Electric, which reported 24,000 customer outages, said 14 tree crews were clearing wires so that line workers could restore power. The utility said some customers in this region may not be restored until 11:00 p.m. EDT on Monday.

The table below shows total affected customers and the latest reported outages by utility. The “Affected” column shows the total count of customers that lost power at one point or another over the course of the storm for each utility. These outages may not have occurred concurrently and are not the same as peak outages.

<table>
<thead>
<tr>
<th>Electric Utility</th>
<th>State</th>
<th>Affected</th>
<th>Latest Reported</th>
</tr>
</thead>
<tbody>
<tr>
<td>New England</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Eversource</td>
<td>CT</td>
<td>11,000</td>
<td>1,577</td>
</tr>
<tr>
<td>Eversource</td>
<td>MA</td>
<td>11,016</td>
<td>93</td>
</tr>
<tr>
<td>National Grid</td>
<td>MA</td>
<td>34,000</td>
<td>7</td>
</tr>
<tr>
<td>Central Maine Power</td>
<td>ME</td>
<td>31,157</td>
<td>77</td>
</tr>
<tr>
<td>Emera</td>
<td>ME</td>
<td>1,100</td>
<td>33</td>
</tr>
<tr>
<td>National Grid</td>
<td>RI</td>
<td>4,800</td>
<td>7</td>
</tr>
<tr>
<td>Green Mountain Power</td>
<td>VT</td>
<td>2,000</td>
<td>0</td>
</tr>
<tr>
<td><strong>New England Subtotal</strong></td>
<td></td>
<td><strong>95,073</strong></td>
<td><strong>1,794</strong></td>
</tr>
<tr>
<td>Central Atlantic</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pepco</td>
<td>DC</td>
<td>4,000</td>
<td>278</td>
</tr>
<tr>
<td>Delmarva Power</td>
<td>DE</td>
<td>12,000</td>
<td>119</td>
</tr>
<tr>
<td>BGE</td>
<td>MD</td>
<td>5,600</td>
<td>130</td>
</tr>
<tr>
<td>JCP&amp;L</td>
<td>NJ</td>
<td>90,800</td>
<td>4,337</td>
</tr>
<tr>
<td>Atlantic City Electric</td>
<td>NJ</td>
<td>3,000</td>
<td>188</td>
</tr>
<tr>
<td>PSE&amp;G</td>
<td>NJ</td>
<td>18,000</td>
<td>478</td>
</tr>
<tr>
<td>Orange and Rockland</td>
<td>NY</td>
<td>18,500</td>
<td>640</td>
</tr>
<tr>
<td>PSE&amp;G Long Island</td>
<td>NY</td>
<td>11,500</td>
<td>632</td>
</tr>
<tr>
<td>Central Hudson</td>
<td>NY</td>
<td>4,345</td>
<td>270</td>
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<tr>
<td>NYSEG</td>
<td>NY</td>
<td>4,000</td>
<td>436</td>
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<tr>
<td>PECO</td>
<td>PA</td>
<td>45,000</td>
<td>1,851</td>
</tr>
<tr>
<td>FirstEnergy</td>
<td>PA</td>
<td>11,000</td>
<td>1,657</td>
</tr>
<tr>
<td>PPL</td>
<td>PA</td>
<td>24,000</td>
<td>1,104</td>
</tr>
<tr>
<td><strong>Central Atlantic Subtotal</strong></td>
<td></td>
<td><strong>251,745</strong></td>
<td><strong>12,120</strong></td>
</tr>
<tr>
<td>Southeast</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Duke Energy</td>
<td>NC</td>
<td>5,000</td>
<td>476</td>
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<tr>
<td>Dominion</td>
<td>VA</td>
<td>56,020</td>
<td>367</td>
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<td>Appalachian Power</td>
<td>VA</td>
<td>18,000</td>
<td>256</td>
</tr>
<tr>
<td>NOVEC</td>
<td>VA</td>
<td>4,000</td>
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</tr>
<tr>
<td>Company</td>
<td>State</td>
<td>Outages</td>
<td>Customers</td>
</tr>
<tr>
<td>---------------------------------</td>
<td>-------</td>
<td>---------</td>
<td>-----------</td>
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<tr>
<td>Appalachian Power</td>
<td>WV</td>
<td>17,000</td>
<td>280</td>
</tr>
<tr>
<td>FirstEnergy</td>
<td>WV</td>
<td>1,000</td>
<td>18</td>
</tr>
<tr>
<td><strong>Southeast Subtotal</strong></td>
<td></td>
<td><strong>101,020</strong></td>
<td><strong>1,397</strong></td>
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<tr>
<td><strong>Midwest</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MidAmerican Energy</td>
<td>IA</td>
<td>9,000</td>
<td>75</td>
</tr>
<tr>
<td>Ameren</td>
<td>IL</td>
<td>6,000</td>
<td>77</td>
</tr>
<tr>
<td>ComEd</td>
<td>IL</td>
<td>2,500</td>
<td>75</td>
</tr>
<tr>
<td>Indianapolis Power &amp; Light</td>
<td>IN</td>
<td>33,700</td>
<td>952</td>
</tr>
<tr>
<td>Indiana Michigan Power</td>
<td>IN</td>
<td>17,000</td>
<td>209</td>
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<tr>
<td>Duke Energy</td>
<td>IN/OH</td>
<td>7,400</td>
<td>1,162</td>
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<tr>
<td>Kentucky Power</td>
<td>KY</td>
<td>4,000</td>
<td>13</td>
</tr>
<tr>
<td>AEP Ohio</td>
<td>OH</td>
<td>23,000</td>
<td>46</td>
</tr>
<tr>
<td>DP&amp;L</td>
<td>OH</td>
<td>40,000</td>
<td>126</td>
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<tr>
<td><strong>Midwest Subtotal</strong></td>
<td></td>
<td><strong>142,600</strong></td>
<td><strong>2,735</strong></td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td></td>
<td><strong>590,438</strong></td>
<td><strong>18,046</strong></td>
</tr>
</tbody>
</table>

*Total outages represent only electric utilities listed in this table.

Sources:
- [https://www.eversource.com/Content/](https://www.eversource.com/Content/)
- [https://www.comed.com/_layouts/comedsp/OutageMap.aspx](https://www.comed.com/_layouts/comedsp/OutageMap.aspx)
- [https://twitter.com/MidAm_EnergyCo](https://twitter.com/MidAm_EnergyCo)
- [https://www.midamericanenergy.com/OutageWatch/dsk.html](https://www.midamericanenergy.com/OutageWatch/dsk.html)
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- [https://twitter.com/KentuckyPower](https://twitter.com/KentuckyPower)
- [http://outages.firstenergycorp.com/nj.html](http://outages.firstenergycorp.com/nj.html)
- [https://twitter.com/jcp_l](https://twitter.com/jcp_l)
- [https://twitter.com/psegli](https://twitter.com/psegli)
- [https://www.psegliny.com/c.cfm/Outage](https://www.psegliny.com/c.cfm/Outage)
- [https://twitter.com/nationalgridsus](https://twitter.com/nationalgridsus)
- [https://twitter.com/AEPOhio](https://twitter.com/AEPOhio)
- [http://www.oru.com/advisories/?id=825](http://www.oru.com/advisories/?id=825)
- [https://www.pecono.com/_layouts/peco/OutageMap.aspx](https://www.pecono.com/_layouts/peco/OutageMap.aspx)
- [https://omap.prod.pplweb.com/omap#pg-tabular](https://omap.prod.pplweb.com/omap#pg-tabular)
- [https://stormcenter.novec.com/index.cfm](https://stormcenter.novec.com/index.cfm)
- [https://twitter.com/AppalachianPowe](https://twitter.com/AppalachianPowe)
- [https://www.appalachianpower.com/outages/outageMap.aspx](https://www.appalachianpower.com/outages/outageMap.aspx)
- [http://www.capecodtimes.com/news/20160403/power-has-been-restored-to-most-customers-on-cape-cod](http://www.capecodtimes.com/news/20160403/power-has-been-restored-to-most-customers-on-cape-cod)
Electricity

Rocky Mountain Power Reports Power Restored to Nearly 23,000 Customers Due to Downed Transmission Line in Utah April 3
Rocky Mountain Power reported 22,955 customers had power knocked out on Sunday evening due to a downed transmission line in Orem, Utah. The utility reported all power was restored by 11:00 p.m. MDT Sunday.
https://www.facebook.com/rockymountainpower
https://www.rockymountainpower.net/ed/po/uoi.html

Update: Energy Northwest’s 1,107 MW Columbia Generating Station Nuclear Unit in Washington at Full Power by April 3
On the morning of April 2 the unit was operating at 91 percent after restarting on March 31. The unit was shut from full power unexpectedly on March 28 in order to investigate an issue with a valve that was discovered during a maintenance test.
Reuters, 1:45 March 30, 2016
Reuters, 13:03 March 31, 2016

Ameren’s 1,125 MW Callaway Nuclear Unit in Missouri Reduced to 4 Percent by April 2
On the morning of April 1 the unit was operating at 86 percent.

Update: Entergy’s 1,207 MW Grand Gulf Nuclear Unit 1 in Mississippi Ramps Up to 88 Percent by April 2
On the morning of April 1 the unit was operating at 52 percent after restarting on March 31. The unit shut on March 29 from 30 percent due to a turbine trip.

Update: AES’s 226 MW Huntington Beach Gas-fired Unit 1 in California Returns to Service by April 2
The unit returned from an unplanned curtailment of 116 MW that began by March 31.
http://content.caiso.com/unitstatus/data/unitstatus201604021515.html

Update: SCE’s 239 MW Vincent Wind Unit in California Returns to Service by April 1
The unit returned from an unplanned outage that began by March 31.
http://content.caiso.com/unitstatus/data/unitstatus201604011515.html
TransCanada Shuts Its 590,000 b/d Keystone Crude Oil Pipeline after Minor Leak in South Dakota April 2; Restart Expected April 8
TransCanada Corp has shut down its Keystone crude oil pipeline on Saturday after reporting a spill of about 187 gallons near the Freeman pump station in South Dakota. The company said a potential incident was reported around 12:30 p.m. CDT on Saturday when crews found visible signs of oil. In a notice to shippers, the company said the earliest anticipated restart date is on Friday, April 8. The Keystone system is made up of several segments, which carry light and heavy crude from Hardisty, Alberta to Wood River and Patoka, Illinois; Cushing, Oklahoma; and Port Arthur, Texas. The segment that links Cushing and Port Arthur remains in operation.
Reuters, 11:59 April 4, 2016

Update: ExxonMobil Finalizes Agreement to Restart FCCU at Its 149,500 b/d Torrance, California Refinery April 2
ExxonMobil on Saturday finalized its agreement with California’s South Coast Air Quality Management Board to restart the fluid catalytic cracker unit (FCCU) at its Torrance refinery that went out of service in February 2015 following an explosion. The agreement with the Board requires ExxonMobil to pay $5 million in penalties for air pollution and violations that may occur during the unit startup. The 2015 explosion forced a shutdown of the FCCU and as a result, the plant was barely functional for the past year, operating at less than 20 percent capacity. Restoring the FCCU back to full power was expected to take several weeks.
Reuters, 11:40 April 3, 2016

Shell Reports Process Unit Incident at Its 316,600 b/d Deer Park, Texas Refinery April 4
Royal Dutch Shell reported an unspecified process unit incident at its Deer Park, Texas refinery. The company said the incident was being handled within the boundaries of its facility with no danger to the surrounding community, according to a community line alert.
Reuters, 11:58 April 4, 2016

Phillips 66 Reports Emissions at Its 146,000 b/d Borger, Texas Refinery April 2
Phillips 66 reported emissions from the unit 40 fluid catalytic cracking unit stack exceeded 35 percent opacity at its Borger, Texas refinery, according to a filing with the Texas Commission on Environmental Quality.
Reuters, 23:12 April 3, 2016

Tesoro Reports Unplanned Flaring, Breakdown at Its 240,000 b/d Carson, California Refinery April 4
Tesoro Corp reported unplanned flaring due to a breakdown at its refinery in Carson, California, according to a filing with the South Coast Air Quality Management District.
Reuters, 13:27 April 4, 2016

Chevron Reports Emissions at Its 245,271 b/d Richmond, California Refinery April 1
Chevron Corp reported a potential sulfur dioxide release may have occurred at its Richmond, California refinery, according to a filing with the California Emergency Management Agency. An ongoing flaring event occurred due to an upset condition in a flare gas recovery system.
Reuters, 23:11 April 3, 2016

Update: PHMSA Upholds $2.6 Million Fine against ExxonMobil over 2013 Oil Spill in Arkansas
The U.S. Pipeline and Hazardous Materials Safety Administration (PHMSA) on Friday upheld its $2.6 million fine against ExxonMobil Pipeline Co. over a March 29, 2013 oil spill in central Arkansas. ExxonMobil’s Pegasus Pipeline cracked, spilling tens of thousands of gallons of heavy crude oil into a neighborhood in Mayflower, drainage ditches, and a Lake Conway cove. PHMSA levied the fine after finding ExxonMobil had committed nine violations of federal safety regulations in connection with the spill.
Reuters, 13:31 April 2, 2016
Update: Laboratory Workers at ExxonMobil’s 560,500 b/d Baytown, Texas Accept Contract Extension – Union Official
The last group of union workers at ExxonMobil Corp’s Baytown, Texas, refining and petrochemical complex voted on Thursday and Friday to accept a contract extension, a union official said on Friday night. Laboratory unit workers, who make up about 10 percent of the 700 United Steelworkers union (USW) members working hourly jobs at Baytown, joined with refinery and chemical plant workers who had accepted the four-year extension in voting on March 24 and 25. After last week’s vote, the USW had asked ExxonMobil to renew the extension offer to give laboratory workers a second opportunity to vote on the proposal that provides a 3 percent increase in hourly wages in 2016 and again in 2017, and a 3.5 percent increase in 2018. The increases are equal to those agreed to by the USW and U.S. refinery owners following a national strike in 2015. The pay level in 2019 will be equal to what the USW and refinery owners agree to in talks expected to begin in January 2019.
Reuters, 22:48 April 1, 2016

ExxonMobil Conducts Initial Testing on Julia Project in Gulf of Mexico
ExxonMobil in March conducted initial tests on its deepwater Julia project in the Gulf of Mexico and anticipates initial production of 34,000 b/d of oil from the field, a company spokesman said on Friday. The initial development phase includes six wells with subsea tie-backs to the Jack & St. Malo production facility, which is operated by Chevron. ExxonMobil and Statoil Gulf of Mexico each have a 50 percent stake in the Julia project.
Reuters, 17:35 April 1, 2016

Natural Gas

DOE, DOT Announce Task Force to Look at Aliso Canyon Methane Leak in California
April 1
The Department of Energy (DOE) and the Department of Transportation’s (DOT) Pipeline and Hazardous Materials Safety Administration (PHMSA) on Friday launched an Interagency Task Force on Natural Gas Storage Safety in order to assess Southern California Gas Co.’s 86 Bcf Aliso Canyon storage field leak, country’s biggest ever accidental release of methane, which occurred over several months in Los Angeles, California. The task force will be chaired by officials from DOE and DOT’s pipeline safety office. The Aliso Canyon leak, which began October 2015 and was not plugged until February, made scores of people ill and forced the temporary relocation of more than 6,600 households from the northern Los Angeles community of Porter Ranch. Aliso Canyon, owned by Southern California Gas Co a division of Sempra Energy, is the country’s fourth largest gas storage field of its kind. The utility has minimized the extent of the greenhouse gas impact of the leak, citing early California state data, saying the release represented less than 1 percent of the state’s entire annual greenhouse gas emissions. DOE will hold workshops with industry, state and local leaders to develop practices for operation of storage facilities and ensure well integrity and response plans. Findings of the task force will be made public later this year.
http://energy.gov/articles/working-together-address-natural-gas-storage-safety
Reuters, 16:19 April 1, 2016

Southern Union Reports Burned Blower at Its Keystone Gas Plant in Texas April 1
Southern Union reported the recycle blower burned up at its Keystone gas plant. The entire blower assembly was replaced.
http://www2.tceq.texas.gov/oce/eer/index.cfm?fuseaction=main.getDetails&target=230519

Atlas Reports Emergency Shutdown Due to Power Loss at Its 200 MMcf/d Driver Gas Plant in Texas April 1
Atlas reported an emergency shut down was required at its Driver gas plant due to a fire on a support pole of the incoming electrical power system. This routed residue and inlet gas to the emergency flare, E-Flare. The plant was only shut down long enough to engage the tie breaker but after the plant was restarted it could only process 25 percent of normal feed rates. Efforts were made to reroute gas. After repairs were made, the plant was able to operate at 100 percent normal feed rates and flaring ceased.
http://www2.tceq.texas.gov/oce/eer/index.cfm?fuseaction=main.getDetails&target=230514

Energy Assurance Daily, April 4, 2016
**Other News**

Nothing to report.

**International News**

**Update: Iran to Continue Raising Oil Production, Exports – Oil Minister**

Iran will continue increasing its oil production and exports until it reaches the market position it was at before the imposition of sanctions, the Oil Minister was quoted by the semi-official Mehr news agency as saying. Last Friday, Saudi Arabia’s deputy crown prince said the country would agree to freeze crude oil production levels only if Iran and other major producers did so. OPEC and non-OPEC oil producers are set to meet in Doha, Qatar on April 17 to discuss a possible output freeze in order to prop up prices. Iran is working to regain market share, particularly in Europe, after the lifting of international sanctions in January. The sanctions had cut crude exports from a peak of 2.5 million b/d before 2011 to just over 1 million b/d in recent years.

Reuters, 1:43 April 4, 2016

**Energy Prices**

<table>
<thead>
<tr>
<th></th>
<th>April 4, 2016</th>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Today</td>
<td>Week Ago</td>
<td>Year Ago</td>
</tr>
<tr>
<td><strong>CRUDE OIL</strong></td>
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<tr>
<td>West Texas Intermediate U.S. $/Barrel</td>
<td>34.07</td>
<td>37.76</td>
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<tr>
<td><strong>NATURAL GAS</strong></td>
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<tr>
<td>Henry Hub $/Million Btu</td>
<td>1.87</td>
<td>1.72</td>
<td>2.59</td>
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Source: Reuters

**Links**

*This Week in Petroleum* from the U.S. Energy Information Administration (EIA)
http://www.eia.gov/oog/info/twip/twip.asp
Updated every Wednesday.

*Weekly Petroleum Status Report* from EIA
Updated after 10:30 AM & 1:00 PM ET every Wednesday.

*Natural Gas Weekly Update* from EIA
http://www.eia.gov/oog/info/ngw/ngupdate.asp
Updated after 2:00 PM ET every Thursday.
Energy Assurance Daily

Energy Assurance Daily provides a summary of public information concerning current energy issues. Published Monday through Friday to inform stakeholders of developments affecting energy systems, flows, and markets, it provides highlights of energy issues rather than a comprehensive coverage. Energy Assurance Daily is updated online Monday through Friday after 5:00 p.m. ET. For more information, visit the Infrastructure Security and Energy Restoration (ISER) website at: http://www.oe.netl.doe.gov/ead.aspx

Please direct comments and questions to: ead@oe.netl.doe.gov