Energy Seasonal Outlook

Monday September 24, 2018

October Trends Warmer; Slightly Colder November: Winter Unchanged

October 2018

Near Normal October Demand
- 273 Gas weighted HDDs (-9)
- Slightly warmer East
- Strongest warmth remains over the Interior West with strongest cold locked in Canada
- Analogs range from 200 to mid 300 HDDs

Prior Forecast

Preferred Analog Blend

Note: No two years exactly same, but this analog blend has more similarities to CWG outlook than others


November 2018

November Slightly Colder
- 545 HDDs (+5)
- Not as warm Southeast/Texas, slightly warmer California
- Warmer than 30-year, colder than 10-year

Prior Forecast

Preferred Analog Blend

Note: No two years exactly same, but this analog blend has more similarities to CWG outlook than others

Monthly Outlook

Primary Rationale and Expectations

Forecast moves slightly warmer across the East (current HDD total between the 10 and 30 yr norms, 252-292); coldest Oct since 2013

Cool Mid Continent, warm South and East early month; cooling more Midwest focused mid month

Risk range remains large depending on how much cooling can reach the East (~250-300 HDDs)

Persistent Alaska ridge should help send colder air into Midwest/East at times but SE sub-tropic ridge will work against

More negative NAO would help send cold farther South/East

CFS Monthly leans a bit colder mid con to Northeast; CFS and Euro Weeklies also colder mid to late month

Global Wind/MJO progression remain wildcards

Dry conditions out West could aid stronger heat there

Atlantic Hurricane Season

- Atlantic storm count is currently at 12 named storms, 5 hurricanes, and 1 major hurricane; increased our forecast due to more active season than expected thus far
- Slower El Niño transitions and warmer waters in the Atlantic basin have likely allowed for elevated storm storm numbers so far; Leslie (no threat to land) and Kirk (expected to strengthen to a tropical storm as it moves west) are the current Atlantic storms
Primary Rationale and Expectations

- **November** (+5) now 14 warmer than the 30-year normal; warmth focused more in the Mid-Atlantic; not as warm Southeast/Texas
- **December** warmth to start off the winter (830 HDDs vs. 867 HDDs for the 30-year); warmth stretches across the N. tier into Northeast; risks lean to the warmer side
- **January** features cold in the East and South; warmth in the West; 953 HDDs is 1 colder than 30-year normal
- **February** is still the favored coldest month of winter with risks even colder per some analogs (but would likely need help from solar minimum/blocking); 838 HDDs is 65 colder than the 30-year
- **Winter (Dec-Feb)** composite HDD total of 2621 is colder than 30-year normal (2592), would gain 107 HDDs vs. last winter
- Similar +ENSO years with maintained warmth in NE Pacific favor warm start, cold finish to winter; El Niño has been slow to develop thus far but should still warm into weak range in time for autumn/winter
- Warmer risks if blocking fails to materialize and/or strong Pacific jet materializes; 1994-95, 2004-05 and 2006-07 are weak/moderate El Niño cases that were warmer; risk exists for El Niño to fail but failure does not necessarily equal warmer risks

<table>
<thead>
<tr>
<th>National Natural Gas Weighted Heating Degree Days</th>
<th>2018-19</th>
<th>Change</th>
<th>Last Year</th>
<th>10-Year</th>
<th>30-Year</th>
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<td>Overall</td>
<td>3776</td>
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<td>3690</td>
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<tr>
<td>Dec-Feb</td>
<td>2621</td>
<td>-</td>
<td>2514</td>
<td>2549</td>
<td>2592</td>
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<tr>
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<td>20</td>
<td>652</td>
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<td>622</td>
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</table>

**Winter 2017-18 vs. 2018-19**

- **2017-18** 2514 HDDs
- **2018-19** Forecast 2621 HDDs
Renewables

- Slightly colder than normal for parts of Western and Central Europe, mainly mid to late winter; warmer lean for E Europe/Russia

- Colder risk if SSTs cool off in the Western Atlantic

- Forecast holds with a colder than normal look overall, but coldest conditions mid to late winter; Dec. warmer than normal

- Main risk is to colder side for Asia if warm pool in NW Pacific holds strong or intensifies and ENSO remains neutral positive

International

- While some precipitation is possible in the northwest, a mostly dry situation keeps streamflow well below normal.

- Variable wind anomalies the next three months. In ERCOT, winds are generally forecast normal to slightly above normal.