Transporters proposed approach for derivation of new seasonal normal basis for use in UNC NDM Demand Estimation: 1st October 2010 to 30th September 2015

Background

UNC Sections H1.4 and H1.5 states that it is the transporters responsibility to consult, review and revise if appropriate the definitions of CWVs and the seasonal normal basis and to do so every five years or more frequently if transporters think fit.

Transporters have consulted DESC on the CWV review and the approach to deriving the new CWV parameters has been set out and agreed.

Transporters have also undertaken extensive analyses of appropriate new seasonal normal bases. Initially a number of cases of fixed historical periods were considered, subsequently a historical breakpoint analysis identified a 12 or 8 year basis as potentially appropriate. These analyses have been presented to DESC.
Following Modifications 218 and 254 (and taking in to account the sentiments expressed in the discussions surrounding the adoption of those modifications) transporters have included forecast data (obtained from the Met Office) in their consideration of potential new seasonal normal bases. Moreover, transporters note that these Modifications were promoted at the time as enabling changes with the sponsors of these Modifications accepting that the ultimate decision was one remaining for transporters.

Transporters have proposed an approach that they believe is consistent with the formulation of the CWV, and with gas industry weather history while also including forecast data in its derivation. Transporters have undertaken analyses that show the impact of their proposed approach on NDM EUC profiles and have presented these also to DESC.

Summary of Transporters proposed approach

The proposed transporter approach to deriving the new seasonal normal basis may be summarised as follows:

1. Base the new seasonal normal basis on the mid year (2012/13) of the five year target period.

2. Use gas industry database historical temperatures and wind speeds combined with the forecast temperature increments for the target gas year (2012/13) from the EP2-WP8 project. The EP2-WP8 data is specified in terms of GMT while the new seasonal normal basis has to apply to prevailing clock time. Therefore the forecast increments are appropriately shifted by one hour during the period over which BST would apply.

3. Derive daily temperatures and wind speeds from within day values (2-hourly and weighted for temperatures and 4-hourly unweighted for wind speeds).

4. Apply EP2-WP8 temperature increments to individual years of gas industry data (36 years from 1971 to 2006) to get 36 different incremented daily forecast temperature streams for the target forecast year (e.g. 2012/13).

5. Wind speed data will be actual wind speeds for each of the gas industry base period days (no increments specified by EP2-WP8 for wind speed).

6. Thus, each forecast daily temperature data stream is also associated with a daily historical wind speed data stream. The historical wind speed data stream does not have a forecast component added to it.

7. Apply the revised definitions of CWV to the ensuing computations. Note that CWV definitions are based on the fit of daily values of demand to daily values of weather (temperature and wind speed).

8. Compute 36 different CWVs for each future day of the target gas year (2012/13) and average to a single value for each day of the gas year. Note that 29th February is ignored in all calculations. The SNCWV for 29th February is later set to the average of the values of the two adjacent days.

9. This gives an unsmoothed value of CWV for each day of the target year.

10. Smooth the computed CWV profile using the loess method of data smoothing to remove excessive day-to-day variation in CWV profile. Apply smoothing so as to ensure that the overall area under the curve is not altered (no additional warming or cooling introduced).

11. When smoothing ensure retention of the kinks and bumps evident in visual observation of the EP2-WP2 temperature curve.

12. This method has been undertaken for a single example instance (WM LDZ) to verify feasibility. The results, including the impacts on key NDM EUC profiles, has been assessed and presented to DESC.