

PREFILED EVIDENCE OF

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Union has forecast the 2004 general service demand by incorporating a change in its weather normalization method to a 20-year trend method from a 30-year simple average method.

Weather normalization is used to determine Union's demand forecast, storage and transportation allocations, gas supply planning and rate design activities. This summary itemizes changes to evidence previously filed twice with the Ontario Energy Board, most recently as part of the non-routine adjustments proposed in RP-2002-0130/EB-2002-0363 Exhibit B, Tab 2. The portion of the evidence (pp. 3 through 30) dealing with the change in weather method is adopted as part of this evidence. For convenience, it has been filed at Appendix A of this evidence.

The primary objective of an acceptable weather normalization method is to set a weather normal level that will best reflect what future weather is typically expected to be. Union and customers will then be kept neutral with respect to weather in the long term. The 20-year trend method meets these requirements. The twenty-year trend method was selected after researching climate issues and examining other normalization methods in use today.

1 Heating degree-days is the unit of measure for weather normalization¹. The key features of
2 Union's weather normalization method used to calculate heating degree-days are:

- 3
- 4 1. A trend equation. This is an equation representing a straight line drawn through the data,
5 using regression analysis and updated annually.
 - 6 2. The most recent 20-year historical period of actual annual heating degree-day data.
 - 7 3. Data from Environment Canada for the 12 weather stations in Union's delivery area.

8 Union will continue to use a volume weighted weather measure based on data obtained
9 from these 12 stations. The total regional throughput associated with each station weight
10 this data.

11

12 Figure 1 demonstrates how the 30-year average method consistently underestimates how warm
13 the typical weather will be with respect to what actually occurs. The 20-year trend method shows
14 a more balanced incidence of over and under forecasting the number of heating degree-days.

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1 Weather normalization using the number of heating degree-days is a predictor of the amount of natural gas that will be consumed. For more details on the definition and role of heating degree-days, please see Appendix A paragraphs 20 and 21.

Figure 1
Comparison of Actual versus Predicted Heating Degree Days
For the 30-Year Average and 20-Year Trend Methods

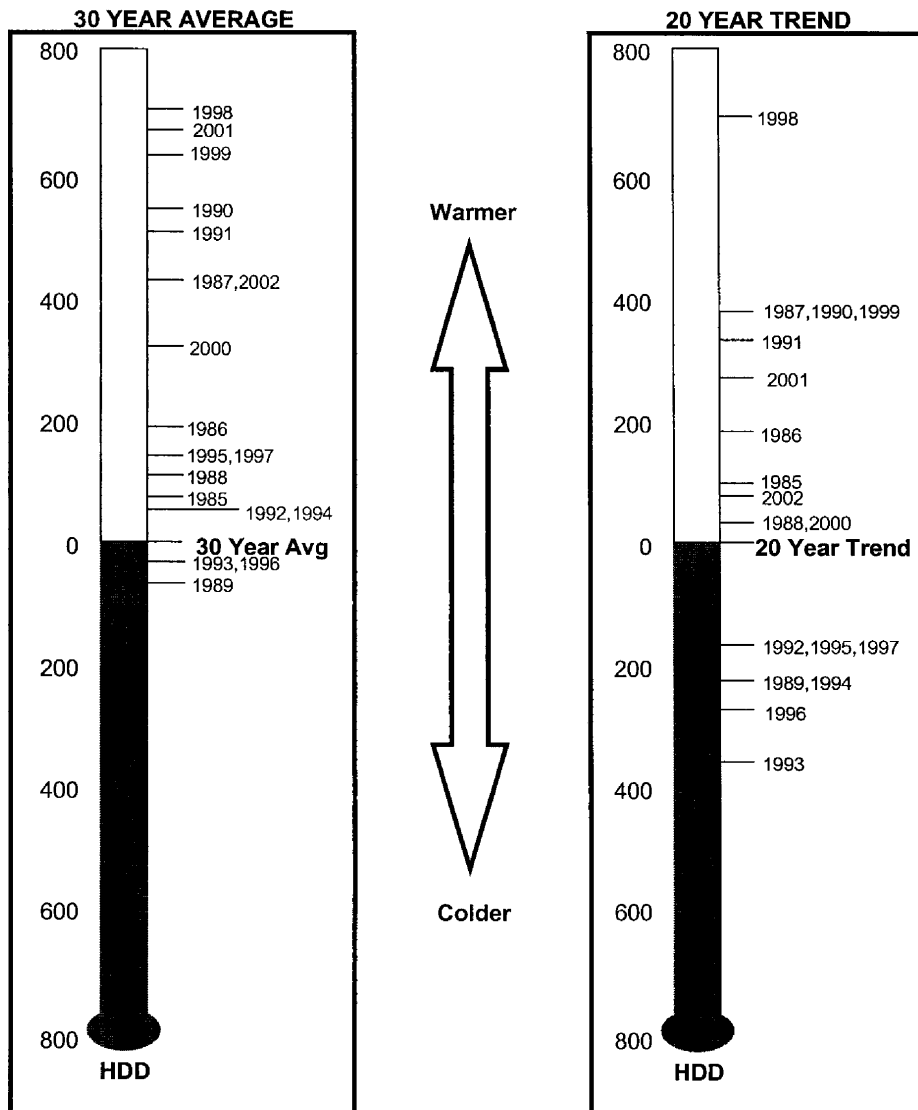
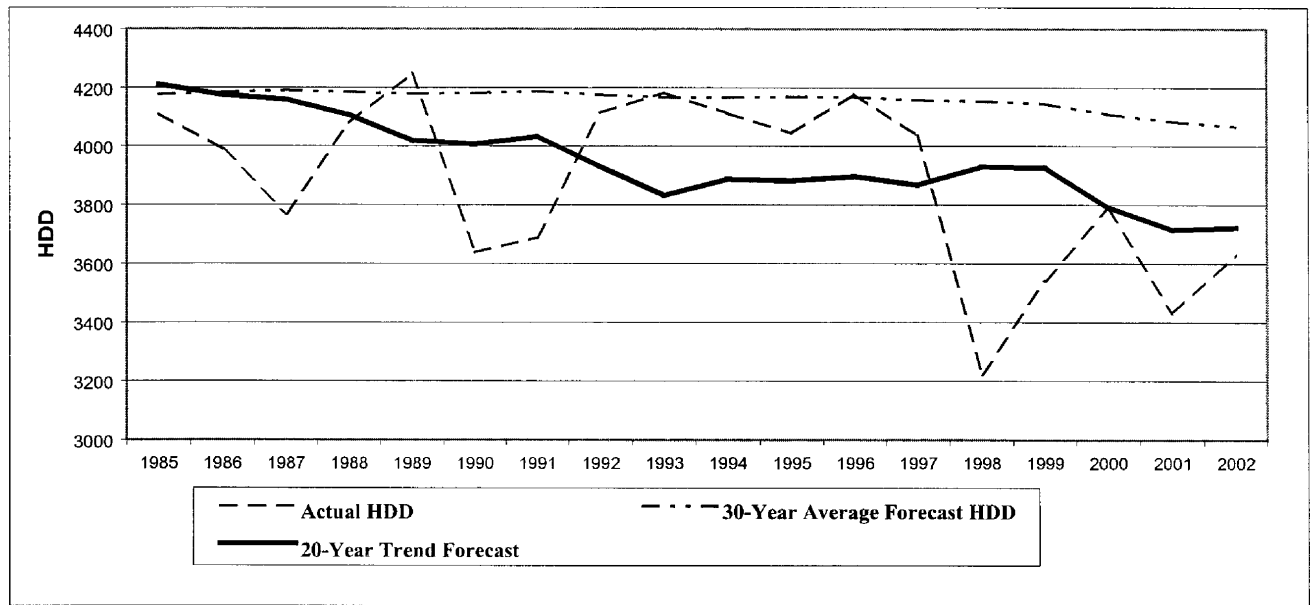


Figure 2 is a more graphical representation showing the 20-year trend method is more accurate than the 30-year simple average in predicting future year heating degree-days. The 20-year trend

method is also the more appropriate weather normalization method to use for forecasting,
capacity and commodity planning and operations.

Figure 2
Comparison of Normalization Methods



CHANGES FROM RP-2002-0130/EB-2002-0363 EXHIBIT B TAB 2

As indicated above, Union is relying on the evidence filed in RP-2002-0130/EB-2002-0363, Exhibit B, Tab 2 but has updated the weather normalization assessment.

UPDATE OF WEATHER NORMALIZATION ASSESSMENT

With the addition of 2002 actual weather information, the assessment of the 7 normalization methods was updated. Table 1 (revised version of Table 4, Appendix A, Page 24) details the ranking of the different methods. The updated table is shown below:

Table 1
Multi-Attribute Ranking of Weather Normalization Methods

Method	Accuracy		Symmetry		Stability	Sustainability	Simplicity	Weighted Total
	RMSE	MAPE	MPE	(Over: under)	Std. Dev.	Qualitative Ranking	Qualitative Ranking	
30-year average	4	4	3	3	7	3	5	29
20-year average	6	6	6	6	6	3	5	38
10-year average	2	2	9	12	4	3	5	37
Variable year weighted average trend	10	12	15	12	1	0	0	50
30-year trend	8	8	12	18	5	3	3	57
20-year trend	12	10	18	18	2	3	3	66
20-year trend with forecast information	14	14	21	21	3	0	0	73

It should be noted that the addition of one year of actual weather data has not changed the ranking of the methods. The two 20 year trend methods continue to rank highest. The 20-year trend ranks higher than the 30-year average weather normal because it is symmetric, more

1 accurate and more stable. The 30-year average is biased (the forecast errors are not evenly
2 distributed around the forecast) because it consistently overestimates the number of heating
3 degree days expected. The 30-year average is also ranked the lowest amongst all seven methods.

4
5 One other change is that the previously referred to 38-year weighted average trend method is now
6 referred to as the variable year weighted average trend method. This is because the company that
7 employs it recently changed the number of years in the methodology from 38 to 41 years. In
8 addition, the number of years is based on determining the smallest variability in the data. As
9 such, the number of years in the analysis can vary each time the weather estimate is updated.

10
11 **IMPACTS OF USING THE 20-YEAR TREND**

12
13 The effects on Union of using this method are significant. The weather normalization
14 assumption affects forecasted customer consumption, storage and transportation allocations, gas
15 supply planning and operations. Using a 20-year trend appropriately reduces the forecasted
16 volumes to a level more in keeping with actual experience and would increase rates in
17 comparison to using the 30-year simple average.

18
19 Union has been using the 20-year trend method for the past two years for planning and
20 operational purposes. The definition of normal weather and therefore its estimation is a
21 significant factor in the design and development of long and short term operational plans. It

1 provides support for the upstream capacity required to serve the entire Union system. Union has
2 been optimizing the upstream transportation requirements using the 20-year trend method. The
3 result is that the company has been purchasing or contracting for fewer assets than would be
4 required if Union continued to use the 30 year average method. This will result in an overall cost
5 reduction to in-franchise customers both in terms of the expense of that capacity and through the
6 avoidance of unabsorbed demand charges.

7
8 In addition, the use of 20-year trend has had a significant impact on establishing the delivery
9 obligation for direct purchase customers. Currently, the daily contract quantity (DCQ) for heat
10 sensitive customers is based on the past 12 months consumption weather normalized using the
11 20-year trend. This results in a lower DCQ than would be established using 30-year average
12 method.

13
14 Use of the 20-year trend method allows Union to plan and provide service in the most cost
15 effective manner to customers.