Verification Report

Independent Verification of Energy Performance Improvement at Microsoft Corporation Redmond, WA Campus: Buildings 85, 86, 87, 88, Arcade and Building 96/Studio B

SUMMARY

DNV GL Business Assurance USA, Inc. ("DNV GL") was commissioned by Microsoft Corporation ("Microsoft") to conduct an independent verification on the energy performance improvement at Microsoft's Redmond campus in Washington State, USA for Fiscal Year 2019 against Fiscal Year 2016 for EPEAT compliance.

The scope of the verification consists of the electricity and natural gas usages for Buildings 85 to 88, Arcade and Building 96/Studio B between FY2016 to FY2019 (Microsoft’s Fiscal year is July 1st through June 30 of the next year). The facilities in scope for this verification have significant responsibility (as determined by Microsoft), for the design of products declared to conform to the standard.

Following the procedures as outlined in the International Performance Measurement & Verification Protocol (IPMVP) Option C Whole Building method, DNV GL finds Microsoft achieved 15.9% electric savings and 6.7% natural gas savings between FY2016 to FY2019, and thereby, fulfills the EPEAT energy performance improvement requirements under 4.9.3.1 Part B.

METHODOLOGY

The scope of this verification is to verify the energy performance improvement for Buildings 85 to 88, Arcade and Building 96/Studio B of Microsoft campus between the base period, Fiscal Year 2016, and Fiscal Year 2019. All verification activities were conducted November – December 2019.

Throughout the past three years, Microsoft has implemented several energy efficiency measures on the building systems. Since most of the measures interact with each other, DNV GL has conducted the verification of energy performance improvement in accordance with IPMVP Option C Whole Building Method. The electricity and natural gas usage data was derived from the monthly utility bills supplied by Puget Sound Energy. Since the energy usage is weather dependent, it requires weather normalization to calculate the actual energy savings without the impact due to the different weather conditions in FY2016 and FY2019. Microsoft reports no significant changes to independent variables including occupancy rate for the buildings in scope.

To verify the energy performance achieved by Microsoft, DNV GL

- Reviewed energy data for the buildings in scope for FY2016 and FY2019
- Reviewed source data (e.g. energy invoices) for FY2016 and FY2019
- Recalculated the energy performance using degree day regression model to normalize the energy usage to Typical Metrological Year (TMY) weather data to eliminate the impact of different weather conditions on energy usage for FY2016 and FY2019.
- Compared the normalized electricity and natural gas usage in FY2016 and FY2019 to verify the energy savings.
• Recalculated the overall savings of the total site energy and source energy savings by applying site
to source energy conversion factor\(^1\) to account for the difference type of energy source.

**FINDINGS**

DNV GL has found that there is no significant deviation of data between the results provided by Microsoft
and verification results. The verification team has confidence in the annual saving information as detailed in
Table 1. In our opinion, the energy savings performance in scope meet the performance requirements under
4.9.3.1 Part B “Improved energy performance by at least 5% in the most recent three years (calendar or
fiscal)”. Based on the work conducted, DNV GL found the analyzed buildings achieved 15.9% electric savings and
6.7% natural gas savings from FY2016 to FY2019 as shown in Table 1. The overall site energy savings is
15.5% and the source energy savings is 15.7%.

<table>
<thead>
<tr>
<th>FY 16 Electric kWh</th>
<th>FY 19 Electric kWh</th>
<th>FY 16 Gas Therm</th>
<th>FY 19 Gas Therm</th>
<th>Electric kWh Savings</th>
<th>Gas Therm Savings</th>
<th>Site Energy Savings</th>
<th>Source Energy Savings</th>
</tr>
</thead>
<tbody>
<tr>
<td>46,121,915</td>
<td>38,784,509</td>
<td>82,589</td>
<td>77,033</td>
<td>15.9%</td>
<td>6.7%</td>
<td>15.5%</td>
<td>15.7%</td>
</tr>
</tbody>
</table>

Additionally, Figure 1 and Figure 2 show the detailed monthly energy usage comparison between FY2016
and FY2019.

\(^1\) ENERGYSTAR Site to Source Conversion Factor https://portfoliomanager.zendesk.com/hc/en-us/articles/216670148-
What-are-the-Site-to-Source-Conversion-Factors-
Figure 2 Natural Gas Usage Comparison