Final 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 Business Assurance USA, Inc. ("DNV") 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 Calendar Year 2018 against Calendar Year 2021 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 2018 to 2021. 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 finds Microsoft achieved 6.8% electric savings and 18.8% natural gas savings between 2018 to 2021, 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, Calendar Year 2018, and Calendar Year 2021. All verification activities were conducted during the period of May and June 2022.

Microsoft has implemented several energy efficiency measures on the building systems. Since most of the measures interact with each other, DNV 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 2018 and 2021.
Microsoft reports no significant operational change for the buildings in scope between 2018 and 2021 despite COVID-19 impact.

To verify the energy performance achieved by Microsoft, DNV:

- Reviewed energy data for the buildings in scope for 2018 and 2021
- Reviewed source data (e.g. energy invoices) for 2018 and 2021
- Recalculated the energy performance using degree day regression model to normalize the energy usage to Typical Metrological Year (TMY3) weather data to eliminate the impact of different weather conditions on energy usage for 2018 and 2021.
- Compared the normalized electricity and natural gas usage in 2018 and 2021 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 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 found the analyzed buildings achieved 6.7% electric savings and 18.8% natural gas savings from 2018 to 2021 as shown in Table 1. The overall site energy savings is 7.3% and the source energy savings is 7.0%.

Table 1 Summary of Energy Savings

2018 Electric kWh	2021 Electric kWh	2018 Gas Therm	2021 Gas Therm	Electric kWh Savings	Gas Therm Savings	Site Energy Savings	Source Energy Savings
41,182,980	38,364,400	76,914	62,483	**6.8%**	**18.8%**	**7.5%**	**7.1%**

Additionally, Figure 1 and Figure 2 show the detailed monthly energy usage comparison between 2018 and 2021.

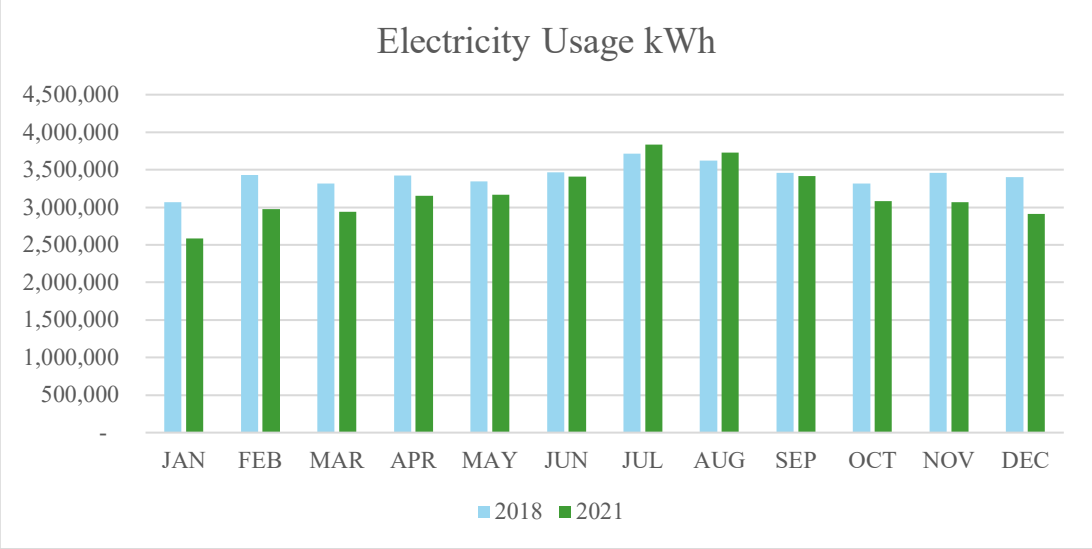

Figure 1 Monthly Electricity Usage Comparison

Note that the gas usage decreased for all months in the post period (2021).

[1] ENERGYSTAR Site to Source Conversion Factor https://portfoliomanager.zendesk.com/hc/en-us/articles/216670148-What-are-the-Site-to-Source-Conversion-Factors-

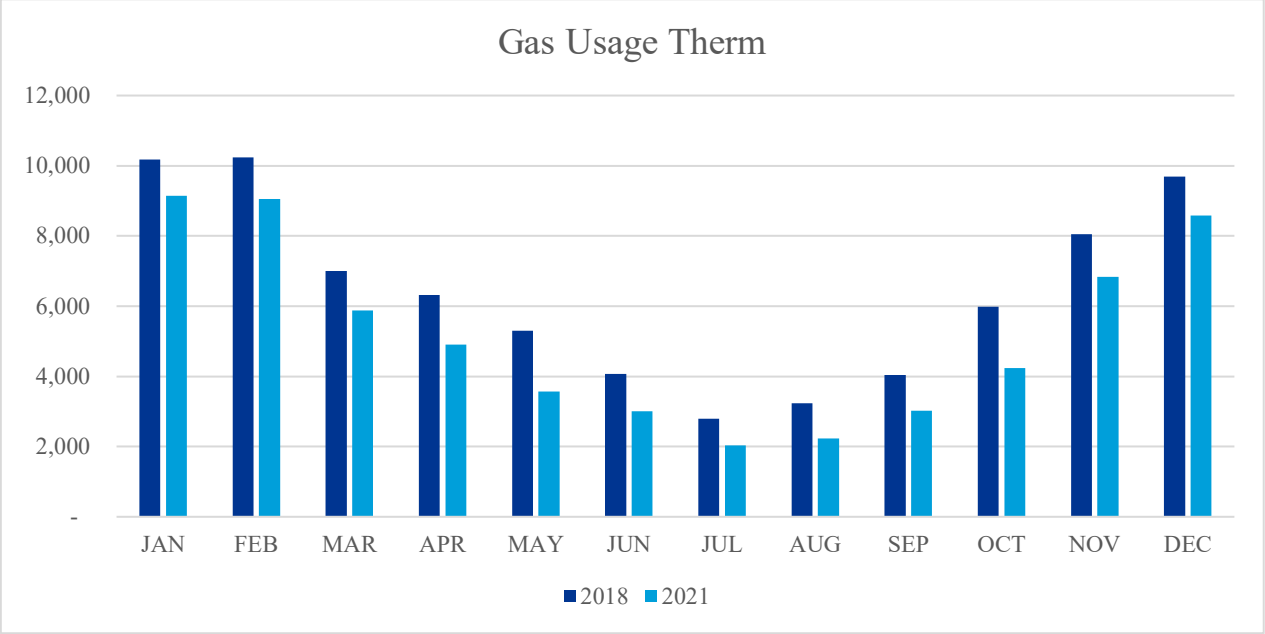

Figure 2 Natural Gas Usage Comparison

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