

# How energy and carbon intensive is your advanced education institution?

Compare with others in British Columbia



## 9<sup>TH</sup> ANNUAL PUMA BENCHMARKING SUMMARY

For BC Advanced Education: 2021 Calendar Year

# Scope

The sites included in the benchmarks are from the following BC Advanced Education Institutions that subscribed to monthly PUMA utility monitoring software and services during the calendar year 2021.



## About PUMA

PUMA comprises a combination of software and services that track over 23,000 electrical, natural gas, water, and other fuel accounts for government, commercial, and institutional customers. Since launching online in 2009, more and more organizations have enlisted PUMA to help track and analyze building energy use.

PUMA is currently used by over 20 Energy Managers, and more than 50 organizations across Canada. Our utility tracking software and services save time and money for owners of multiple properties by turning data into actionable information.

## About this Report

Each year the PUMA team puts together a benchmarking report for school districts, advanced education and local governments. Based on compiled data from PUMA, this report enables the comparison of similar sites across each sector.

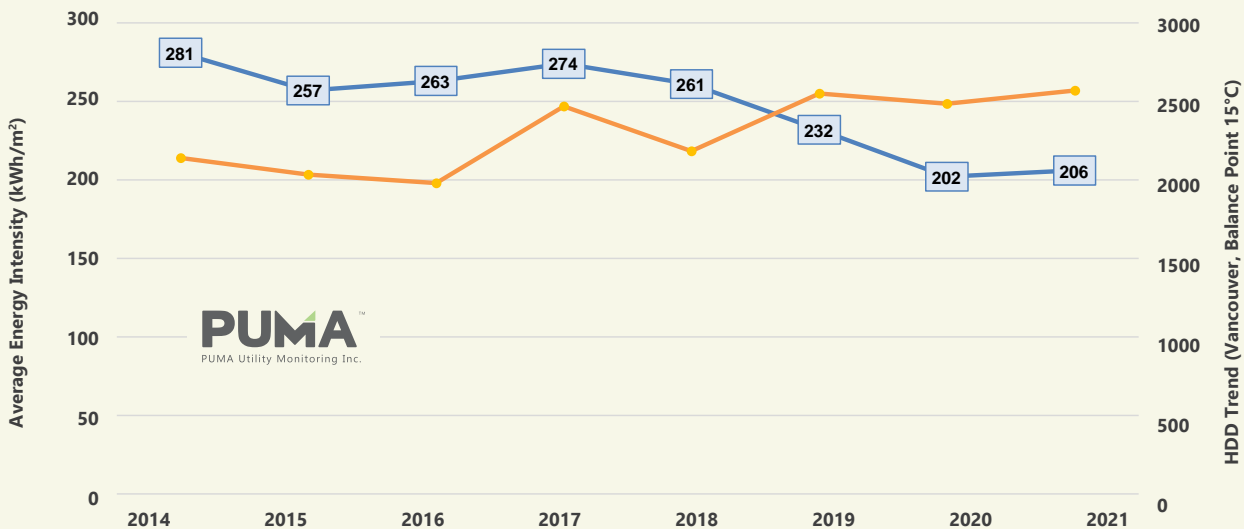
[www.pumautilitymonitoring.ca](http://www.pumautilitymonitoring.ca)

# COVID-19 and 2021 Benchmarks

With COVID-19 persisting through 2021, it has continued to affect our daily lives and, in turn, our building energy use. We have continued to quantify this impact to help our clients understand both increases and decreases in energy use. We believe [our presentation in April 2021<sup>1</sup>](#) on how our techniques can reveal the scale of changes remains relevant to our understanding of our energy use patterns in 2021.

Since **Benchmarking compares buildings during the same time period**, and the behaviour changes made in 2020 persisted across the sample area – British Columbia – **the comparison between how buildings performed remains valid**. In the chart below you can see that average energy use in 2021 is comparable to that of 2020. Comparisons with years prior to 2019 and 2020 are less informative, and require adjustment due to the [variability of the weather](#). However, with the significant changes we have all experienced over the past 2 years, the history of average performance provides important context and is shown below for this sector.

## Advanced Education Energy Use Intensity (EUI) Trend Over 8 Years



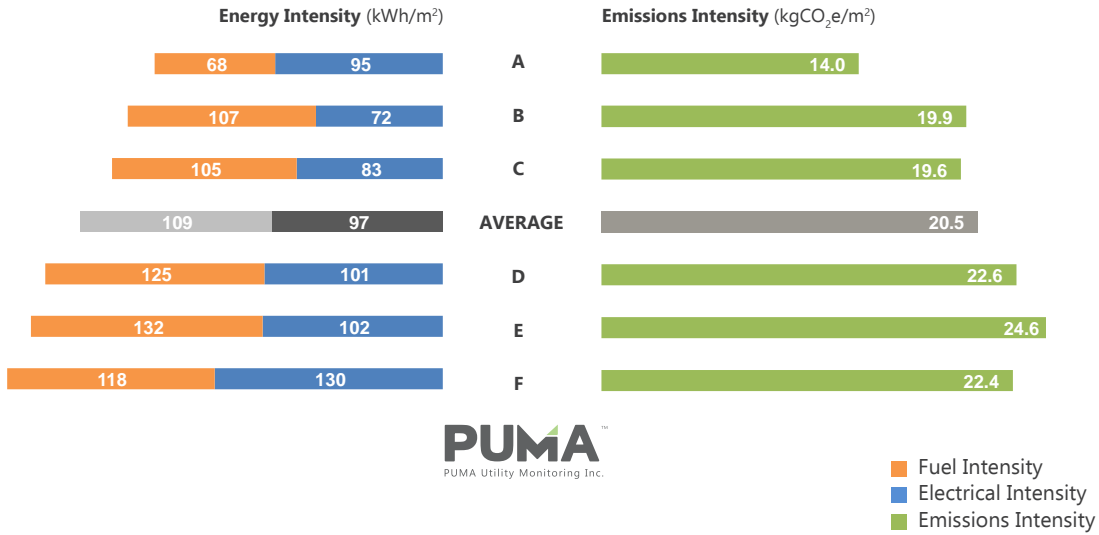
Plotting the EUIs from each year of the benchmarking report, we see an overall 'positive' downward trend in EUI in the face of relatively constant HDDs.

— Average Energy Use Intensity  
— Heating Degree Day (HDD): Measure of the weather impact on energy use.

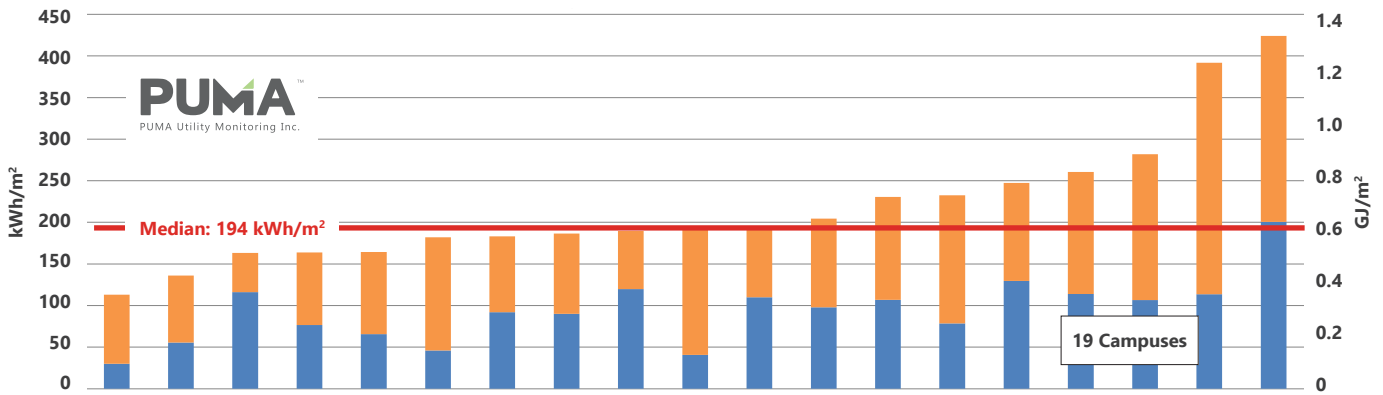
<sup>1</sup> View the presentation recording, "Quantifying the impact of COVID-19 on your energy bill": [www.pumautilitymonitoring.ca/news-2021/may](http://www.pumautilitymonitoring.ca/news-2021/may)

# How energy and carbon intensive is your institution?

## For 6 BC Institutions Calendar Year 2021



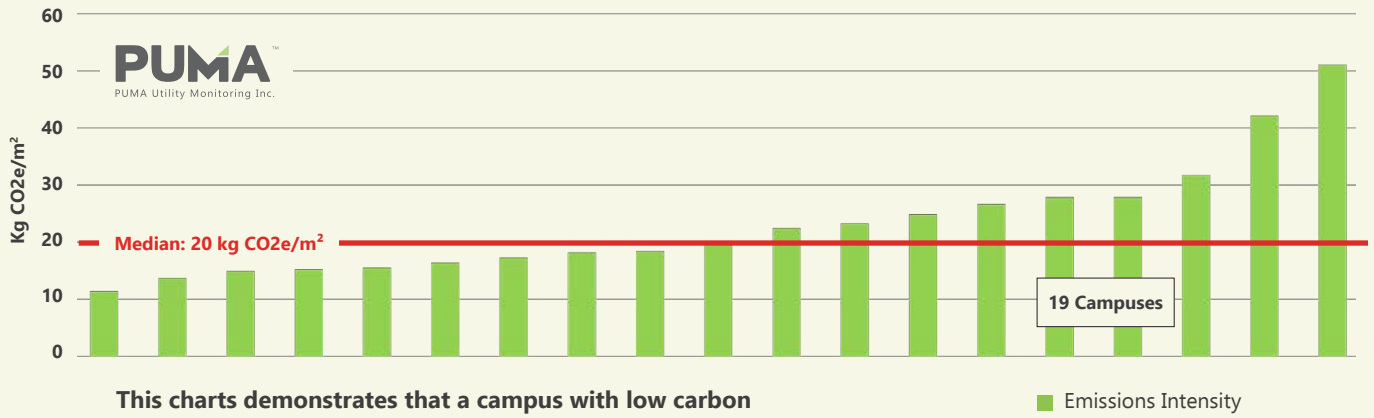
## BC Campuses EUI Calendar Year 2021



The two sites with the lowest EUI consumed less than 1/3 of the energy used by the two sites with the highest EUI.

- Fuel Intensity
- Electrical Intensity

## BC Campuses GHGi Calendar Year 2021



This chart demonstrates that a campus with low carbon heating systems uses 1/2 of the median and 1/4 of the maximum GHG on an intensity basis.



# 2021 Median Energy Use Intensity Summary

Building Type	Median Energy Use Intensity (EUI)	Median Emissions Intensity (GHGi)	Sample Size
Institution	Average 217 kWh/m <sup>2</sup>		n=6
Campus	Median 194 kWh/m <sup>2</sup>	20 kg CO <sub>2</sub> e/m <sup>2</sup>	n=19



**PUMA**<sup>TM</sup>  
PUMA Utility Monitoring Inc.

PUMA is an affordable and effective way to compare the performance of all the buildings in your portfolio, including the ability to normalize for weather.


[www.pumautilitymonitoring.ca](http://www.pumautilitymonitoring.ca)

Contact us to schedule a free demo:

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