

Climate Change Accountability Report

2023



EXECUTIVE SUMMARY

This Climate Change Accountability Report for the period January 1st, 2023, to December 31st, 2023. The report summarizes our emissions profile, the total offsets to reach net-zero emissions, the actions we have taken in 2023 to reduce our greenhouse gas emissions, and our plans to continue reducing emissions in the future.

Our Board of Education continues to support the BC Climate Action Legislation and the targets established by the Greenhouse Gas Reduction Targets Act of 2007 and considers climate change and sustainability as a District priority. The education of staff, students, and parents on the impact of our behaviors around energy consumption and conservation have become integrated into our daily actions. In 2023 we have continued to establish a culture of awareness and action to reduce our carbon footprint. The increasing financial and environmental costs of utility consumption, waste management, fuel and paper consumption remain a concern for our District leaders. These concerns are met using energy-conserving strategies that should not compromise indoor thermal comfort, lighting levels, or air quality.

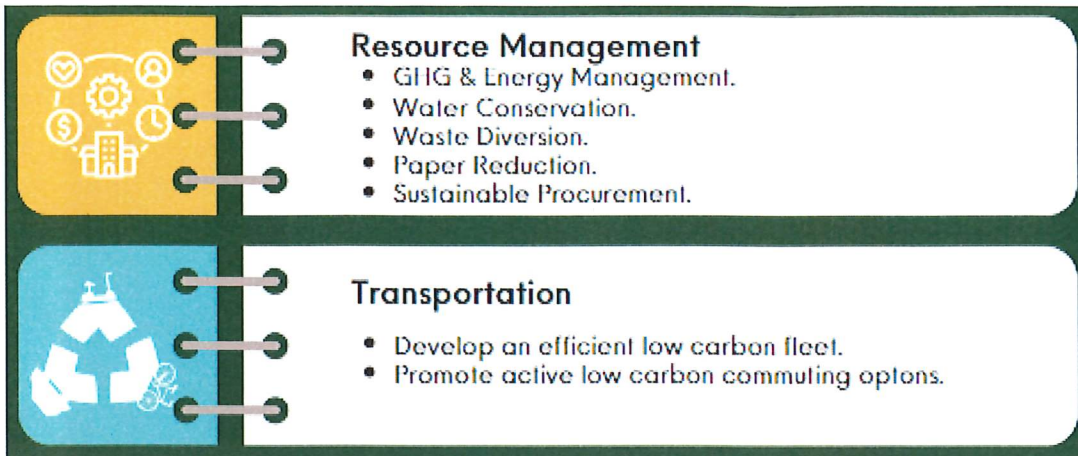
Coquitlam School District began taking comprehensive action against climate change by promoting environmentally sustainable designs for all schools. 2023 was the last year in a three year Strategic Energy Management Plan that has been our road map to energy and carbon reduction. In 2024 we will be taking further steps by developing a Low Carbon Sustainability Plan to further engrain resource conservation into the organization's procedures with senior management support. Further and to support our Net Zero journey. Our ongoing goal of reducing our overall energy consumption by 3% annually provides significant cost savings to the district and finances further energy conservation projects. Since 2010, total GHG emissions in SD43 have dropped by 36%.

Through the work of staff, students, and our larger community, Coquitlam School District will continue to implement further changes addressing climate action targets and will pursue carbon neutrality through its core beliefs and principles to develop and maintain safe, inclusive, and socially responsible learning communities.

Our sustainability mandate continues to be based on District guidelines that contribute to our overall pillars of energy management and environmental sustainability.

We recognize four main pillars:





PART 1: LEGISLATIVE REPORTING REQUIREMENTS

DECLARATION STATEMENT

This SD43's Climate Change Accountability Report for the period January 1, 2023, to December 31st, 2023, summarizes our greenhouse gas (GHG) emissions profile, the total offsets to reach net-zero emissions, the actions we have taken in 2023 to minimize our GHG emissions, and our plans to continue reducing emissions in 2024 and beyond.

EMISSION REDUCTIONS: ACTIONS & PLANS

SD43 has been a Power Smart Partner with BC Hydro since 2010, employing an Energy Manager and involving the District in the BC Hydro Energy Manager Program. The district also utilizes the Energy Specialist Program with FortisBC to employ an Energy Specialist which has added significant depth to our Energy Management portfolio.

The Energy Management team at SD43 has been collaborating with the Facilities department to develop a range of carbon reduction initiatives. These include lighting retrofits, HVAC upgrades, DDC (Direct Digital Controls) improvements, building energy studies and efficient building designs for new construction and additions. The team also works with our staff and students on numerous behavioral and educational initiatives to further our organizations and our communities understanding and adoption to sustainability and the reduction of our carbon footprint to mitigate climate change.

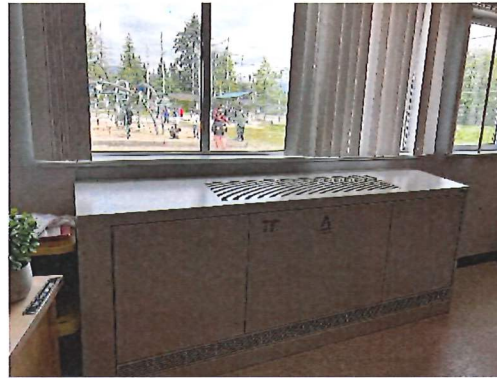
STATIONARY SOURCES

As our buildings age so do the assets in the buildings including boilers, DHW Heaters, Unit ventilators, RTUs, and Air Handlers. SD43 recognizes this and continually upgrades its buildings based on their needs and as funds become available. We aligned our energy projects with the Capital Upgrades planned by the district to ensure a synchronous approach to SD43's green objective. In 2023, the following upgrades were performed:

1. Gas Fired Hot water tanks were replaced with on demand gas water heaters at 9 schools to reduce gas consumption. This program will continue in 2024 with our Maintenance staff changing over these heaters with higher AFUE (approx. 97-99%) heaters.



2. Replaced old non efficient terminal heating units with newer terminal units along with the associated piping at **Central Elementary** to ensure proper operation of previously installed condensing boilers to improved energy performance of the building.



3. Replacing old atmospheric and non-condensing boilers with newer higher efficiency condensing boilers to reduce GHG Emissions and heat losses in both **Vanier Center and Millside Center**.



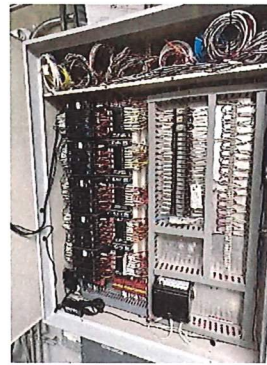
4. Investing in new technologies. Installed Gas Absorption Heat Pumps (GAHPs) in a pilot project with Fortis BC at Heritage Woods Secondary to gain first-hand knowledge of this technology in the hope of finding a more efficient replacement solution for boilers.



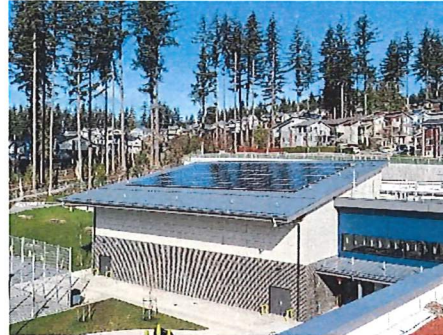
5. Continued to add “Endotherm” into boiler loops at three schools to improve heating performance while reducing Natural Gas consumption in school. This year, we introduced Endotherm at **Birchland Elementary, Glen Elementary, and Glenayre Elementary**. By adding Endotherm, we are seeing an overall gas savings of 13% over the baseline.



- Continued investing in DDC upgrades to improve the operations of equipment in schools. Thus, enhancing the equipment life while reducing energy costs to the district.



- Our newest school, **Coast Salish Elementary**, opened in 2023. The primary heat source at the Coast Salish school is an electric air source heat pump with high efficient gas-fired boilers as the backup. The gas purchased to fuel the boilers is 100% RNG (Renewable Natural Gas). In addition, there is a 52 KWP solar PV array on the roof. We consider this our first “Green School”.



- Building Envelop Upgrades. We invested in BEU at both **Rochester El. and Roy Stibbs El.** improving the insulation and installing new windows and doors at both schools to better improve the building efficiency and occupancy comfort.

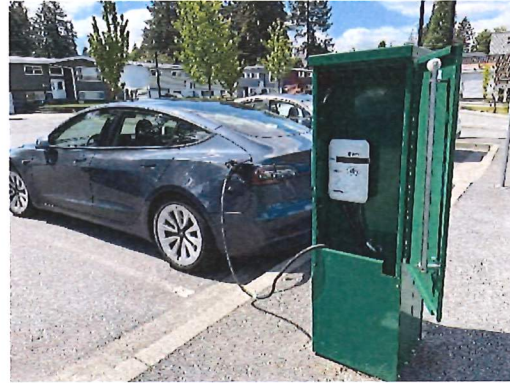


- Roof Replace. Every year we allocate funds to replace roofs. In 2023 we replaced roofs at 4 schools: **Walton El., Greater Heights Academy, Coquitlam River El., and Vanier Centre.**



MOBILE SOURCES

SD43 has taken a proactive approach towards reducing emissions by providing our staff and students with an extensive EV charging infrastructure. We now have a total of 43 EV chargers at 12 sites. These EV chargers are available exclusively to our staff and students. At this time, we have 129 staff and students registered to charge their EVs.



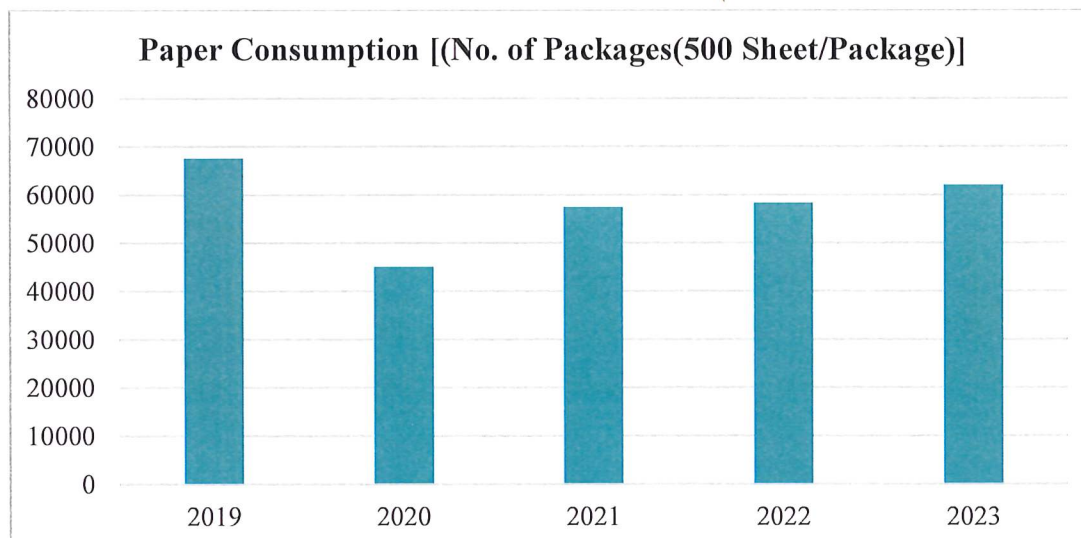
Our staff and students used 37,425 kWh in 2023 to charge their EVs at our stations. This equates to approx. 27,320 kg CO₂ eq of GHG savings. For this we generated 31 carbon credits which have been added to the 23 credits generated in 2022. We hope to sell these credits in 2024 and use the funds for further charging infrastructure investment.

Our District has full intention to convert its fleet over to 100% electric, though the availability of appropriate practical choices remains a challenge. SD43 currently has one fully electric fleet vehicle used for its Security runner. This is a LDV, whereas most of the fleet requirements are for HDV's. We have ordered our first electric HDV, a Ford Transit Van EV, which we expect to arrive in 2024. We look forward to appraising the value of the van and will continue to add EV to our fleet as replacements are required.

Finally, we are continuing to add "NO IDLING" signs across the district to encourage parents and employees not to run their cars when waiting.

PAPER CONSUMPTION

Coquitlam School District has been focused on reducing paper consumption and continues to work with teachers and administrators to reduce paper use and its consequent GHG emissions. With the return to classrooms after Covid we have seen our paper consumption rise by 38% w.r.t. 2020. The Coquitlam School district is in the process of finding ways to better reduce paper use by encouraging staff to go paperless using digital signing as a norm and setting printing to double-sided as the default on all our printers and good on one side paper tray maintained in all the offices across the district.



We are also in negotiation with our paper supplier to replace the most used (approx. 95%) 8.5” X 11” white paper, with Sugar Sheets. Sugar Sheets are manufactured from Sugarcane bagasse is a fibrous material containing cellulose as its main component. Therefore, no trees are cut in manufacturing this paper. If we compare the GHG Emissions footprint (based on the Report “Environmental Performance of Sugar Sheet Paper” prepared by Trucost), sugar paper has lower emissions than 100% PCR paper.

2023 GHG EMISSIONS AND OFFSETS SUMMARY TABLE

For the year 2023, our total emissions were 7359 tCO₂e. This is down 11% from 2022. We can attribute this to many factors including Lighting and heating systems improvement, and recommissioning.

An offset summary of GHG Emissions of our district for 2023 is tabulated below:

SD43 2023 GHG Emissions and Offsets Summary	
GHG emissions for the period January 1 - December 31, 2023	
Total BioCO ₂	20.9
Total Emissions (tCO ₂ e)	7,424
Total Offsets (tCO ₂ e)	7,359
Adjustments to Offset Required GHG Emissions Reported in Prior Years	
Total Offsets Adjustment (tCO ₂ e)	0
Grand Total Offsets for the 2023 Reporting Year	
Grand Total Offsets to be Retired for 2023 Reporting Year (tCO ₂ e)	7,359
Offset Investment (\$)	\$183,975

RETIREMENT OF OFFSETS

In accordance with the requirements of the Climate Change Accountability Act and Carbon Neutral Government Regulation, School District No. 43 Coquitlam (**the Organization**) is responsible for arranging for the retirement of the offset’s obligation reported above for the 2023 calendar year, together with any adjustments reported for past calendar years. The Organization hereby agrees that in exchange for the Ministry of Environment and Climate Change Strategy (**the Ministry**) ensuring that these offsets are retired on the Organization’s behalf, the Organization will pay within 30 days, the associated invoice to be issued by the Ministry in an amount equal to \$25 per tonne of offsets retired on its behalf plus GST.

PART 2: PUBLIC SECTOR CLIMATE LEADERSHIP

As a signatory to the climate action charter, SD 43 is committed to supporting continued planning for emission reduction and climate change adaptation initiatives across its operated schools. As part of this commitment, SD 43 has undertaken several initiatives mentioned below:

2A. CLIMATE RISK MANAGEMENT

Coquitlam School District (SD43) has started the process of creating a plan for emission reductions by acknowledging Climate Change and its risk.

In 2023 SD43 embarked upon the development of its Low Carbon Sustainability Action Plan (LCSAP) which we hope will be adopted by the Board of Education and engrained within its own Direction 2025. The LCSAP touches on all areas of the SD43 organization to create a focus on sustainability practices for all departments from new construction design, regular upgrades, maintenance, procurement, and education.

In 2021, SD43 modified its administrative procedure (AP 547) from “Resource Conservation” to “Energy and Resource Conservation”. SD 43 has a strong commitment to reducing its impact on the environment through many programs and initiatives. SD 43 uses resources in many ways through its day-to-day activities such as heating and lighting buildings, running equipment, mobilizing its’ fleet, water consumption, paper use, and others. These resources all have financial costs and environmental impacts, which if left un-scrutinized are a concern to the operations and management of the district. Moreover, as a signatory to the Climate Action Charter, Coquitlam School District is required to reduce Green House Gas (GHG) emissions. AP 547 focuses on resources including water, paper, fuel (gasoline/diesel), natural gas, and electricity.

Working with both the BC Hydro and the Fortis BC programs, maintains remains focused on energy and carbon reduction. Our 72-page Strategic Action Plan (SEMP) required by BC Hydro on an annual basis holds us accountable requiring an ongoing plan to achieve our reduction targets through a schedule of projects for the coming years.

2B: OTHER SUSTAINABILITY INITIATIVES

The SD43 energy management and sustainability team continues to develop and maintain sustainability initiatives to engage staff and students across the district. These initiatives are listed below:

1. District Sustainability Leadership (DSL) and Student Sustainability Council:

We continue to develop and empower sustainability contacts at every school. We hold regular monthly meetings with our Secondary school’s students who are interested in sustainability and green initiatives in schools and our community. Our students and staff have work with us on sustainability initiatives including the Earth Day engagement program (Earth Day Eco Challenge) with over 4500 students participating, Holiday Shutdowns, Tree plantation, Garden Clubs, Waste Audits, and a recycling program among others.

In 2023 a Student Sustainability Council was created by our secondary students to interact and share common ideas on sustainability that could be implemented at their schools.



2. Waste Audits and Recycling:

Working with Metro Vancouver two of our Secondary schools participated in a waste audit to find ways to improve our 4 streams of waste system to better divert waste from going to the landfill.

3. Garden Clubs:



Engaging our students with the environment and teaching the importance of plants and trees is a popular experience and one that SD43 recognizes. SD43 supplies schools with trees for outdoor learning areas and for shade. We also provide herbs and vegetables for the 40 plus Garden clubs throughout the district.

4. Holiday Shutdown

Each year before every long break we hold a Holiday Shutdown campaign wherein all the lights and equipment (including projectors, coffee makers, etc.) are unplugged or turned off. Schools with the show the highest number of turned-off or unplugged equipment are rewarded. These shutdown programs have become a constant before every long-term holiday, Winter, Spring and Summer.

5. Energy Wire Newsletter:

We publish a monthly newsletter called “Energy Wire” to highlight sustainability initiatives that are going on at our schools. These newsletters are published every month during the regular school months from September through to June. We have now published our 19th monthly Energy Wire Newsletter.

6. Training:

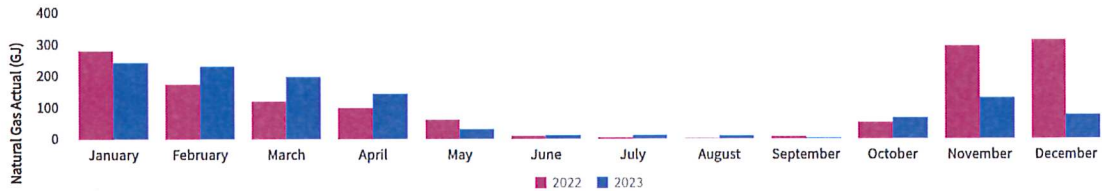
We continue to put on HVAC Training for our Trades Team. In 2023 the focus was on the new Gas Absorption Heat Pump (GAHP) which we bought and installed as a Fortis BC pilot project. The training also covered regular HP maintenance to better encourage the adoption of less carbon intense heating systems.



2C: SUCCESS STORIES

1. We were able to successfully recommission the Pitt River Middle School heating plant. Pitt River is a 10-year-old school designed to use water source heat pumps as its primary source of heat. However, the HP’s failed soon after the school opened making it entirely reliant on the backup boilers which were heavily tasked.

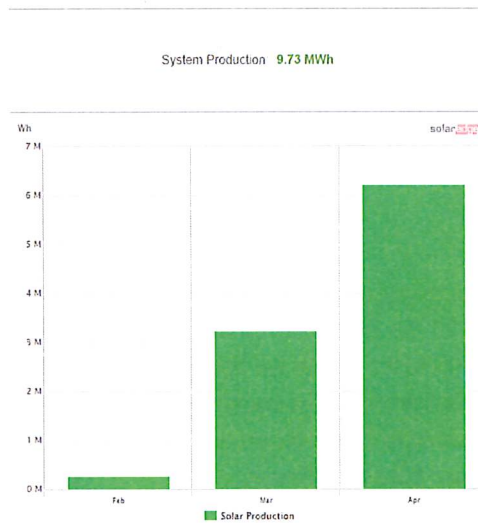
Through the BC Hydro and Fortis BC C.Op program we were able to have an engineer recommission the system and get the HP's back into full operation, drastically reducing the gas consumption and consequentially the emissions.



- The newest school in our District is Coast Salish Elementary. We consider this to be our first “Green School”, as it is primarily heated with a large electric Heat Pump, it has our first solar PV array at 52 KW which we expect will generate 55,754 kWh annually. The back up boilers and domestic water are fueled by Renewable Natural Gas.



ID	4165610
Name	Coast Salish Elementary
Address	Sheffield Avenue 3538, Coquitlam, British Columbia, C...
Installed	03/05/2024
Last Updated	05/14/2024 15:27
Peak Power	54 kWp



Environmental Benefits

CO2 Emission Saved

5,531.64 kg

Equivalent Trees Planted

165.1

EXECUTIVE SIGN-OFF

Signature

Date



May 22, 2024

Ivano Cecchini

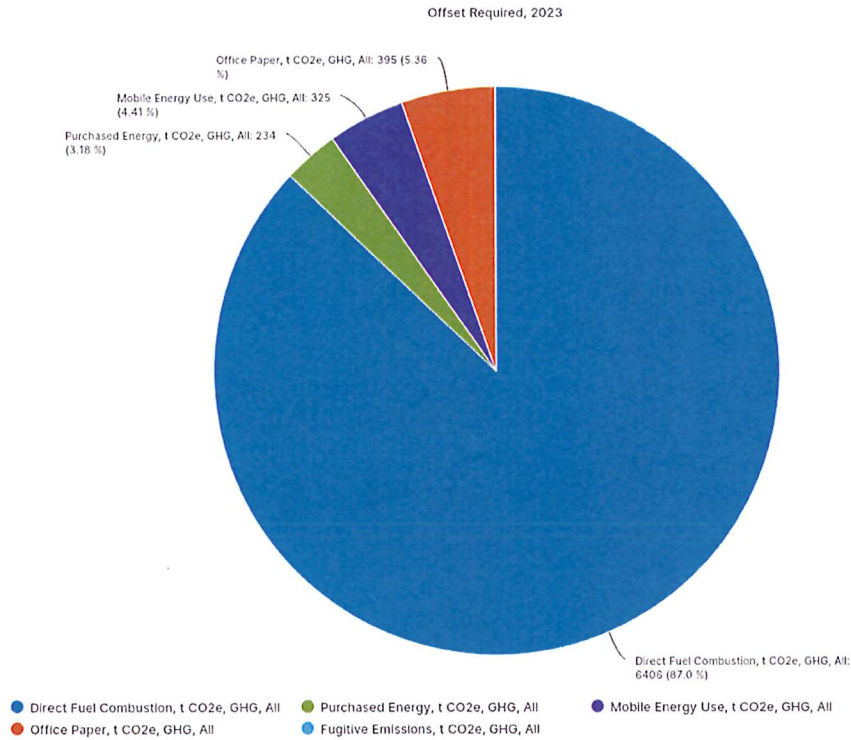
Title: Executive Director Facilities

*Signature by a senior official such as CEO, COO, Secretary-Treasurer, or Superintendent

A. GREENHOUSE GAS EMISSIONS SOURCE BREAKDOWN

The chart below shows the breakdown of Greenhouse Gas Emissions by source in 2023 at SD43.

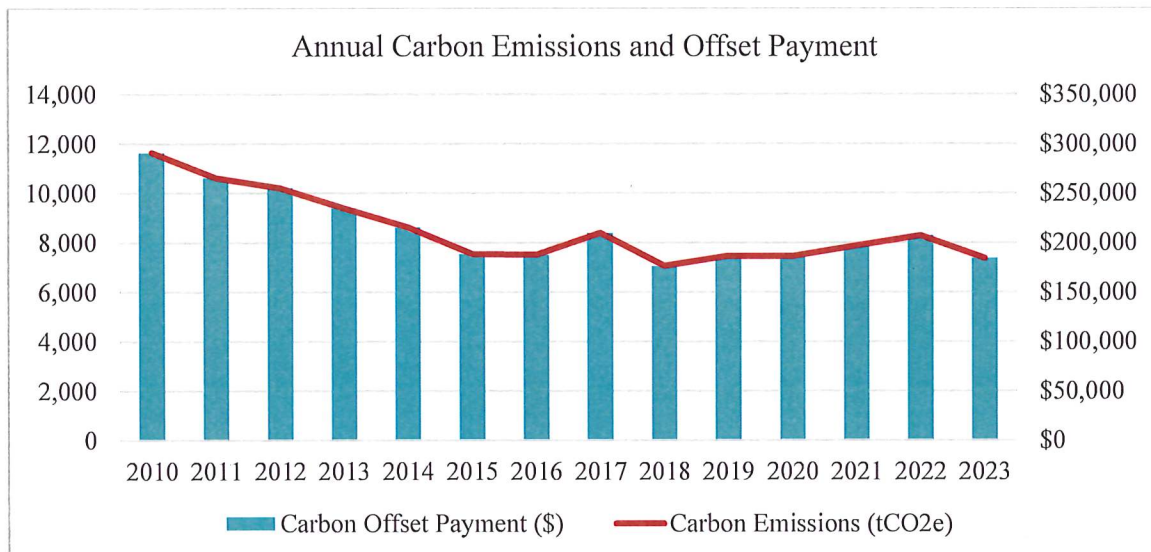
**School District 43 - Coquitlam
Greenhouse Gas Emissions by Source
for the 2023 Calendar Year (tCO₂e*)**



Total Emissions: 7359 tCO₂e

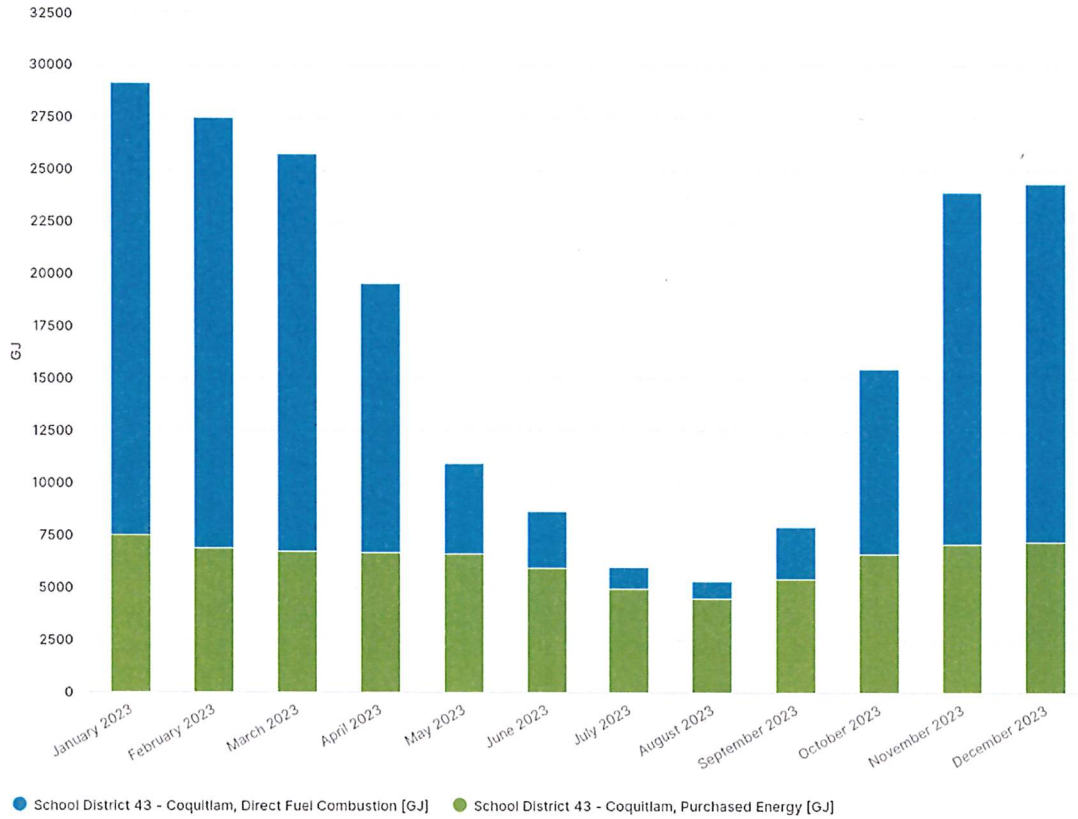
B. ANNUAL EMISSIONS AND OFFSETS YEAR OVER YEAR

The chart below shows the annual carbon emissions by the district and offset payments made.



C. STATIONARY ENERGY USE BY MONTH, 2023

The chart below shows the monthly gas and electricity consumption .



D. STATION ENERGY USE TREND, 2023

The chart below the trend of gas and electricity used from 2017 through 2023.

