



2021 PUBLIC SECTOR ORGANIZATION (PSO) CLIMATE CHANGE ACCOUNTABILITY REPORT (CCAR)

Title: 2021 PSO Climate Change Accountability Report

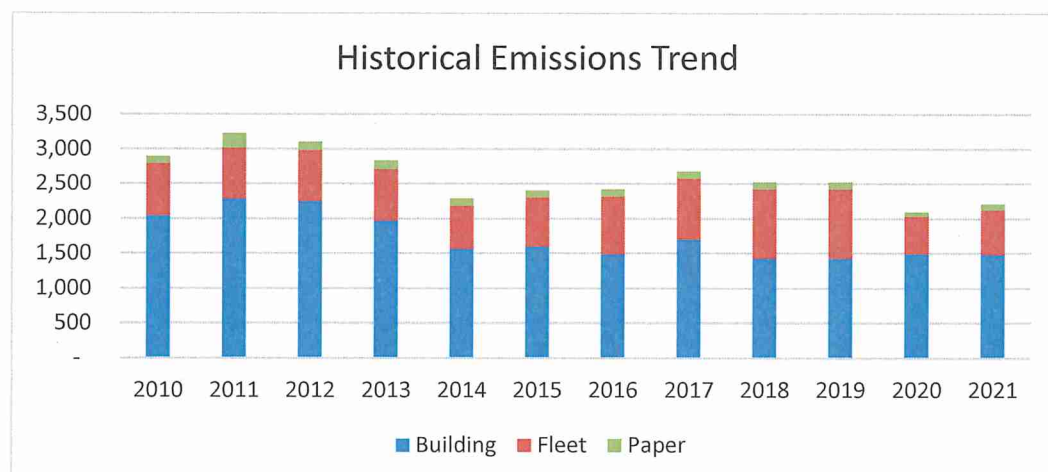
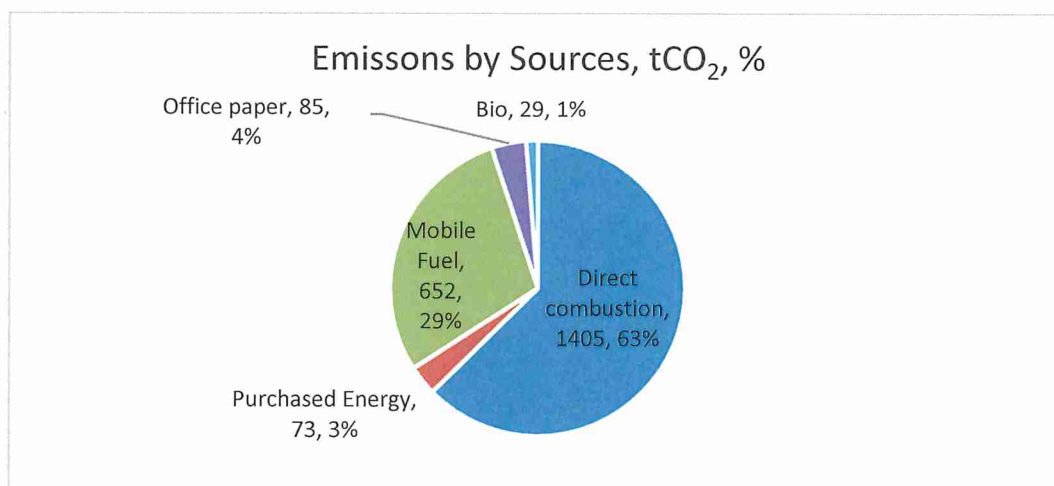
Organization: School District No.62(Sooke)

PART 1. Legislative Reporting Requirements

Declaration statement: This PSO Climate Change Accountability Report for the period January 1, 2021 to December 31, 2021 summarizes our greenhouse gas (GHG) emissions profile, the total offsets to reach net-zero emissions, the actions we have taken in 2021 to reduce our GHG emissions, and our plans to continue reducing emissions in 2022 and beyond.

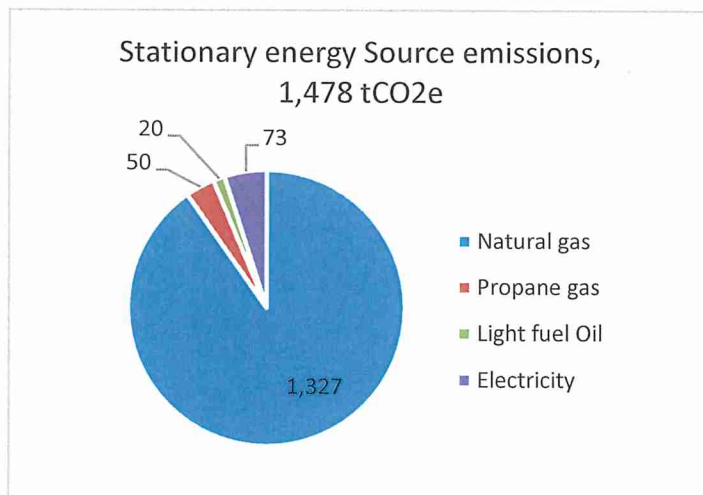
Overview:

To achieve carbon neutrality in the 2021 calendar year, School District applied carbon offsets of 1,754 tonnes of carbon dioxide(t CO₂e) with the prior year's adjustment, 0 t CO₂e included, in addition exempt offsets of 460 t CO₂e was identified for total emissions of 2,244 t CO₂e. School District No.62(Sooke)s' total offset investment is \$43,850, GST excluded, for the required offsets of 1,754 t CO₂e for the 2021 reporting year. SD62 has reduced emissions by 23.5% in 2021 from the base year 2010.



Emission Reductions: Actions & Plans

A. Stationary Sources (e.g. buildings, power generation)



The stationary source of the emissions in SD62 was 1,478 tCO₂ in 2021 with 67% of the total emissions, coming from using natural gas, propane gas, light fuel oil and electricity. 90 % of building emissions are from natural gas which is energy source for boilers, furnaces and heaters in most schools. Four schools have heat pumps for heating and cooling which contributes to the reduction of GHG.

Two schools and the District Board Office use propane gas and one school uses light fuel oil as fuels for primary heating plants.

SD62 has continued to upgrade and replace low efficient boilers and furnaces in existing schools and integrate air source heat pumps. They also designed and installed a geo thermal ground source system with heat recovery units in their two new schools to reduce greenhouse gas emissions. In 2021, stationary source emissions have been reduced by 27.5% from the base 2010 year.

Completed Energy Sustainability Plan

SD62 developed a key step in continuing the work accomplished to date and advanced sustainability for the by creating an Energy and Sustainability Plan. The plan describes strategies, goals, roadmaps and

recommendations to achieve future energy savings and greenhouse gas emission reductions. It identifies major envelope and air tightness, installing heat pumps, heat recovery systems and upgrading to LED lighting as reduction strategies in buildings and fleet electrification for the vehicles and school buses over the period of 2021-2030 and 2031-2050.

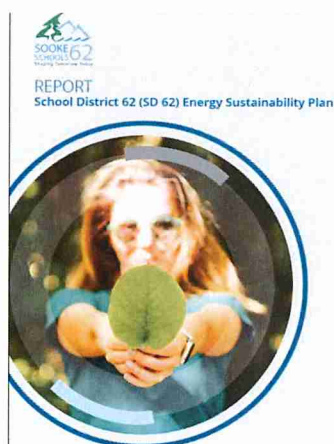


Table 3: Continual Improvement Emissions Milestone Summary

Milestone	Fleet	Facilities	Total
2030, tons CO ₂ e	449.7	1065.1	1514.8
2030, % change from base year	-40%	-50%	-47%
2050, tons CO ₂ e	104.0	549.7	653.7
2050, % change from base year	-86%	-74%	-77%

Upgrading heating and cooling systems with air source heat pump at Spencer Middle School

Spencer Middle School had the 2nd highest building emissions, using natural gas fired boilers for heating. We installed two air source heat pumps for heating and cooling in 2021 as the part of a project replacing end of the life chillers and rooftop H-Vac units. The project completed in February 2022 with the new ASHP's coming on line. Expected CO₂ emission reduction is about 120 t CO₂ from the reduction of natural gas consumption.

	Base	Post-Project	Reductions
Natural gas, GJ	2,798	318	(2,480)
Natural gas, tCO ₂	144	16	(127)
Natural gas, \$	30,773	3,503	(27,270)
Electricity, kWh	379,464	578,310	198,846
Electricity, tCO ₂	15	23	8
Electricity, \$	50,676	76,532	25,856
Energy Intensity, kWh/m ²	130	75	(55)
Total emission reduction			(119)

Upgrading boilers at David Cameron Elementary School

Replaced four inefficient Slant-Fin Caravan Series natural gas boilers with two FTX-725 Lochinvar condensing boilers and upgraded the DDC controls. Expected greenhouse gas emission reduction is 20 tCO₂.

AFTER PROPOSED UPGRADE

Annual Natural Gas Savings	(GJ)	398
Annual Electrical Savings	(kWh)	5,000
Annual Natural Gas Savings (a)	(\$)	\$4,000
Annual Electrical Savings	(\$)	\$500
Annual Utility Cost Savings	(\$)	\$4,500
Greenhouse Gas Reduction	(tCO ₂ e)	19.8

Installing DDC at Millstream/Saseenos/Sangster/Port Renfrew elementary School

Installed DDC (Direct Digital Control) for the classrooms and furnaces in the four elementary schools. It enables HVAC systems to provide the space with ventilation, heating as per demand for comfort and energy savings.

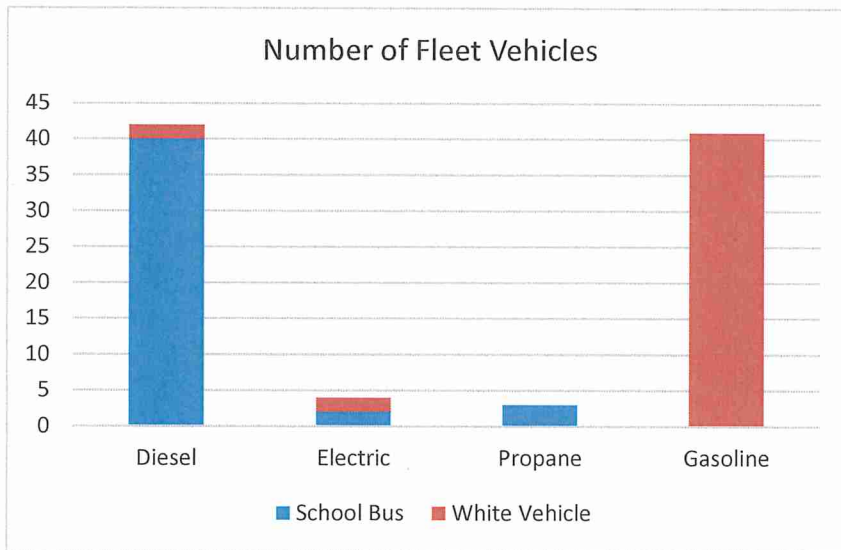
Upgrading Building Envelope at Hans Helgesen Elementary School

Replacing roof, windows, doors for better building envelope and this project is continuing in 2022. Completion is expected in June 2022

Upgraded lighting at Edward Milne Community School

Replaced 7 existing exterior lights with LED lighting outside theatre

B. Mobile Sources (e.g. fleet vehicles, off-road/portable equipment)



SD62 has 45 school buses and 46 fleet vehicles. SD62 started purchasing electric school buses and fleet vehicles 2021 and currently SD62 has 2 electric buses in operation and 4 more on order, and 2 electric fleet vehicles.

Total emissions from vehicles is 651 t CO₂e and school buses' emission is 460 t CO₂ which is exempted from carbon offset.

C. Paper Consumption

The emissions of paper in SD62 was 85 t CO₂ in 2021, its reduction is by 20% from the base year in 2010. SD62 has continued purchasing 30%/100% recycled papers.

Plans to continue reducing emissions in 2022 and beyond

School District No.62(Sooke) has an Energy and Sustainability Plan with the goal to be a Provincial leader in meeting GHG emission reduction targets set out in Clean BC. In cooperation with direction from the District's Board of Education and Executive we will identify and build strategies for effective energy savings projects planned to reduce GHG, energy use and energy costs. As SD62's expected growth continues, being energy efficient is one of the highest priorities of the School District.

Over the next several years SD62 will be continue to upgrade old and inefficient heating and cooling systems, building envelopes and lighting grids.

Planned projects for 2022

- Complete building envelope upgrades at Hans Helgesen
- Upgrading Roof top units at Spencer Middle School
- Upgrading to unit ventilators and replace windows at John Muir Elementary

Future projects to be completed when resources are available

- Replace and upgrade Boilers at Willway Elementary School, and Savory Elementary School
- Replace and upgrade ventilation units at Willway Elementary School, the District Board Office, Ruth King Elementary, David Cameron Elementary, Dunsmuir Middle School, Savory Elementary, Sooke Elementary, Wishart Elementary School
- Converting natural gas furnaces at Millstream, Sangster, Saseenos, John Muir Elementary Schools to air source heat pumps

2021 GHG Emissions and Offsets Summary Table:

School District No.62(Sooke) 2021 GHG Emissions and Offsets Summary	
GHG Emissions created in Calendar Year 2021	
Total Emissions (tCO ₂ e)	2,244
Total BioCO ₂	29
Total Offsets (tCO ₂ e)	1,754
Adjustments to Offset Required GHG Emissions Reported in Prior Years	
Total Offsets Adjustment (tCO ₂ e)	0
Grand Total Offsets for the 2021 Reporting Year	
Grand Total Offsets (tCO ₂ e) to be Retired for 2021 Reporting Year	1,754
Offset Investment (\$25 per tCO ₂ e)	\$43,850

Retirement of Offsets:

In accordance with the requirements of the *Climate Change Accountability Act* and Carbon Neutral Government Regulation, School District No.62(Sooke) (**the Organization**) is responsible for arranging for the retirement of the offsets obligation reported above for the 2021 calendar year, together with any adjustments reported for past calendar years (if applicable). 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 Leadership

2A. Climate Risk Management

SD62 hasn't conducted Climate Risk Assessment and there is no plan or strategies to guide Climate Risk Management. However, SD62 completed an Energy and Sustainability Plan in 2021 as a guide to achieve greenhouse gas emissions reduction targets which would contribute to Climate Risk Management. SD62 works with local municipal governments to assess risk in the community through staff sitting on municipal committees to provide input and learn about Climate Risk assessment. At this time the environment and climate SD62 deals with is stable and the risks are considered very low.

2B. Other Sustainability Initiatives

Staff and employees in SD62 travel with low carbon emissions by way like sharing cars, signing out electric vehicles and minimizing travel distance. All the buildings and schools follow local bylaws and are equipped with recycle stations to collect recyclable material such as paper, compost, plastics and batteries.

2C. Success Stories

In 2021, SD62 started upgraded Spencer Middle School's heating/cooling plants by installing two ASHPs to subsidize the natural gas boilers and replace the end of life chillers. 2021 is Phase-1 of 3 at the school to increase efficiency, reduce utility costs and replace end of life equipment. The expected CO₂ emission reduction is 120 t CO₂, 75% of emissions from Spencer Middle School using electricity rather than natural gas as a primary utility. Also, Energy Utilization Intensity (kWh per square meter) is expected to be lowered by 42% with higher energy efficiency of the air source heat pumps rather than chillers and natural gas boilers.

Executive Sign-off:



Signature

May 30, 2022

Date

Scott Stinson

Name (please print)

Superintendent

Title