

# *Innovations in the Transportation Sector*

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Program Manager, Fraser Basin Council





# Overview

- **BC Context**
- **Idle Free BC**
  - Taking the first steps
- **Biodiesel and BioFleet**
  - Latest from industry and issues of interest
- **E3 Fleet Rating System**
  - “LEED” for fleets

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# Context: BC Energy Plan

- Target – 33 % reduction in GHG's by 2020
- No rules yet
- **HOW would your fleet or community achieve this target?**



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# Idling Reduction

**TURN YOUR ENGINE OFF**



*For Our Health*

- Initial, low cost measure
- Potential for fuel savings of 10-20%



**TURN YOUR ENGINE OFF**



*Save \$ And Spare Our Air*

- Health benefits, given idling often occurs around people

**TURN YOUR ENGINE OFF**



*Spare Our Air*



# Strategies

**TURN YOUR  
ENGINE OFF**



*For Our Health*

**TURN YOUR  
ENGINE OFF**



*Save \$ And Spare Our Air*

**TURN YOUR  
ENGINE OFF**



*Spare Our Air*

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- Education and driver training
- Fleet policies
- Technology
- Bylaws



# Education and Driver Training

**TURN YOUR  
ENGINE OFF**



*For Our Health*

**TURN YOUR  
ENGINE OFF**



*Save \$ And Spare Our Air*

**TURN YOUR  
ENGINE OFF**



*Spare Our Air*

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- Ask the drivers for their input.
- Focus on health and environmental benefits
- Provide reinforcement (street signs, vehicle decals)
- Celebrate success!
- Ask for copies of materials for distribution ([www.idlefreebc.ca](http://www.idlefreebc.ca))
- Reinforce with fleet policies



Fraser Basin Council



Biodiesel. Powered by Nature.



Energy Environment Excellence

# Technology

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**TURN YOUR  
ENGINE OFF**



*Spare Our Air*

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- Idling is about myths and reality
- Find out why drivers are idling
  - Warmth? Lights? Radios?
- Consider technologies
  - Alternative Power Units (APUs)
  - Cab heaters
  - LED lighting
  - Battery backup
- Electrified truck stops
  - Infrastructure needed



# Bylaws

**TURN YOUR  
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*Save \$ And Spare Our Air*

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*Spare Our Air*

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- Approach being taken in some communities in BC
  - Vancouver, North Vancouver, Abbotsford, Gibsons, etc.
  - [www.idlefreebc.ca](http://www.idlefreebc.ca) for examples
- Important to combine with education and outreach



# Who's on board

**TURN YOUR  
ENGINE OFF**



*For Our Health*

**TURN YOUR  
ENGINE OFF**



*Save \$ And Spare Our Air*

**TURN YOUR  
ENGINE OFF**



*Spare Our Air*

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- City of Richmond
  - Driver outreach reduced fuel use by 10%
  - School District, YVR and other partners
- City of Williams Lake
  - Developed fleet policy
  - Monitoring results
- City of Prince George
  - Engaged partners -- Canfor, College of New Caledonia, Ministry of Environment, Northern Health Authority, Regional District, School District 57 and UNBC





# *Key Biodiesel Questions*

- What is biodiesel? What's it made from?
- Benefits from using biodiesel?
- Who is using it now, who makes it, where can you buy it, BQ9000 marketer
- How do you use it, which engines, fuel management, operational issues, cold weather issues, warranties, etc

Programs of:

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# BC BioFleet

- Provide resources to fleet managers and others prospective biodiesel users
- Website [www.BCBioFleet.ca](http://www.BCBioFleet.ca)
- Training
  - Workshops
  - DVD
  - Fleet Mgrs Manual
  - Calculator
- Fleets can join BC BioFleet, receive promotion & training
  - Vehicle decals, website



Programs of:

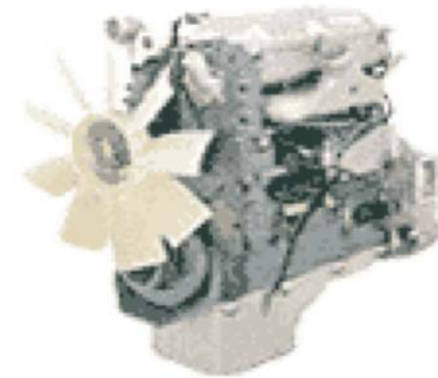
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# ***Biodiesel – Not A New Fuel***

- **1895**
  - Rudolf Diesel designed the "diesel-cycle" engine
- **First fuel?**
  - Biodiesel - Peanut oil
- **Supplanted by Petro-diesel**
  - Due to availability, distribution, consistent quality, pricing



Programs of:

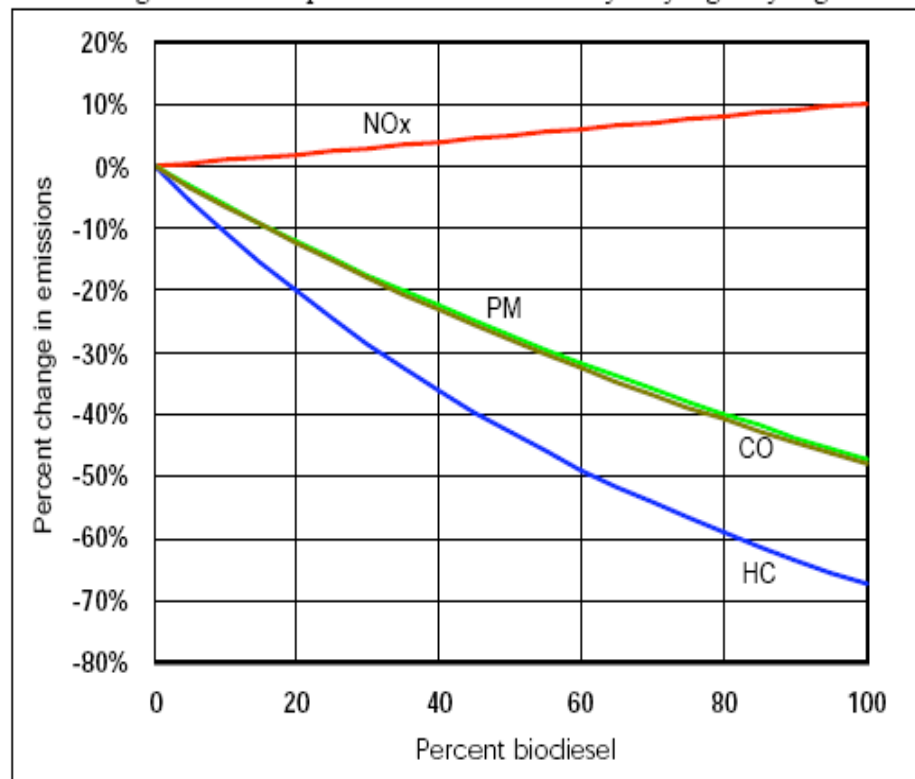
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# Biodiesel – Why Now?

Figure ES-A  
Average emission impacts of biodiesel for heavy-duty highway engines



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# *What is Biodiesel?*

## **Biodiesel:**

- An low-emissions, high lubricating alternative diesel fuel produced from renewable sources,
- Non-toxic, Biodegradable
- Can be combined at any level with petroleum diesel to fuel diesel engines.



## **Biodiesel is not:**

- Raw or refined vegetable oils, or recycled greases that have not undergone chemical processing.

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# Biodiesel – Feedstocks

- **Vegetable oils**
  - Soy, canola
- **Other oils**
  - Palm, coconut, fish
- **Animal fats**
  - beef tallow, sheep tallow, pork lard, poultry fats
- **Recycled waste grease**
  - yellow grease (used cooking oil)
  - trap greases



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# Biodiesel – New Users

## 55+ Fleets in BC

- BC municipalities
- BC Transit (Victoria)
- Rempel Concrete
- TSI (Port Terminals)
- Fish Farms
- Retail users
- Cruise Ships!



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# New BC Tax and Policy Information

*100% of the biodiesel portion of a blend of biodiesel and diesel is exempt from tax*

BC Energy Plan set a 5% biodiesel mandate for 2010

Federal mandate of 2% biodiesel by 2012, subject to verification



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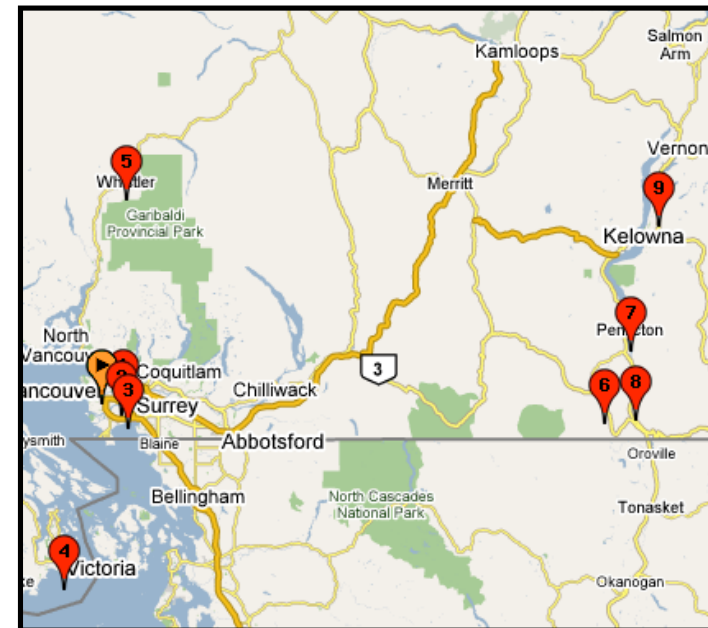
# BC Distribution

- **Distribution**

- Available now at 9 retail stations
- Vancouver racks for regional distribution
  - Infrastructure being developed by 4Refuel

- **Delivery Options**

- B100 delivered – Bulk and Tote (1000L)
- B5 - B50 blends delivered (pre-blended)
- B5-B100 delivered wheel to wheel or to storage tanks



Canada's Green Fuels Map  
[www.e3fleet.com](http://www.e3fleet.com)

Programs of:

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# Where to Buy

- **Suppliers in BC**

- 4 Refuel (Mini-Tankers) Canada Ltd.
- Agri-Green Biodiesel Inc.
- Canadian Bioenergy Corp -**BQ9000**
- Cascadia Biofuels Inc.
- Ecofuels Canada Inc.
- ProQuip Onsite Refueling Ltd.
- Recycling Alternatives
- West Coast Biodiesel Inc.



Programs of:

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# ***Biodiesel – Before you Buy***

- **Quality Control Standards**

- Supplier must deliver ASTM D6751/European EN14214
- Quality control (BQ9000) Producer/Distributor
- Full Chain of Custody
- Supplier/Distributor to provide:
  - Guarantee in writing that fuel meets ASTM
  - **Certificate of Analysis** for each batch delivered



Programs of:

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# ***BC Biodiesel Pilot Project***

- **BC Municipalities Group Pilot Project (2004)**
  - 6 Municipalities used a B20 blend (12,000 L B100)
  - Used in a number of conventional diesel engines
    - Cat, Cummins, Detroit, Kubota, Ford, International, GM, Peugeot, John Deere, New Holland
  - Blended and distributed the biodiesel on site
  - Conducted extensive emission testing
  - Funding FCM, GVRD and individual Cities.

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# Methodology & Results

- Talked to other users
- Worked with fuel suppliers & reviewed delivery methods
- Tested emissions & performance (Westport Innovations/Finning)
- Pilot was very successful

- 
- BC Municipal pooled purchasing group has option to purchase of up to 2 million L of B100 delivered as blended fuel
  - Largest single biodiesel supply contract in Canada



Programs of:

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# *Project Learnings - Overall*

- **VEHICLE MODIFICATIONS:** None
- **PERFORMANCE:** Minimal impact on torque, power and fuel economy
- **LUBRICITY:** Increased lubricity can improve vehicle life
- **IGNITION:** Higher Cetane values improves ignition quality
- **NOISE:** Vehicle runs more quietly
- **EXHAUST:** Tailpipe emissions are cleaner and smell better
- **SEALS & GASKETS:** May need upgrade if >B20 & <1994
- **FILTERS:** Change filter 2X for transition period

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# Warranties

- B5 - acceptable to all engine and fuel injector OEM's
- B20 - more and more OEM's
- Lots of interest in high blends



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# Winter Operations

- Biodiesel blending must be carefully managed at cold temperatures
- Cloud point is critical - ASTM Specifications.
- Fuel has been used in winter conditions across Canada:
  - Montreal - BioBus
  - Saskatoon – Bio Bus
  - Toronto Transit Commission



Programs of:

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# E3 Fleet Overview

- Integrated analysis & green rating system
- Drives improvements in
  - Energy... Energy use & efficiency
  - Environment... GHG Emissions
  - Excellence... Asset management & financial performance
- *Green Rating* system to recognize performance

Programs of:

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# E3 Fleet: Members

Auto-Gas Propane  
 BC Ministry of Environment  
 City of Coquitlam  
 City of Hamilton  
 City of Kelowna  
 City of North Vancouver  
 City of Vancouver  
 City of Williams Lake  
 Corp of Delta  
 Municipality of Whistler  
 District of Maple Ridge

Enbridge  
 Township of Langley  
 University of BC  
 BC Hydro  
 Novex Courier

**Newest member:  
 District of Saanich**

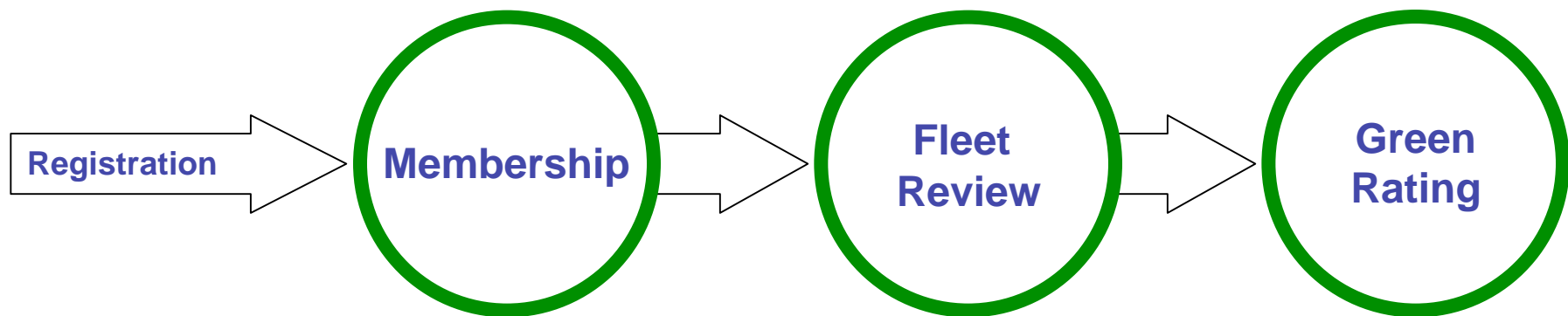


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# Main Features



- e-Newsletter

- Calculators
- BMPs
- Green Fuels Map
- Info. Resources
- Networking

- Fleet Assessment
- Sector Benchmarking
- Modeling / Scenarios
- Advisory Services

- Site Audit
- Bronze
- Silver
- Gold

Programs of:

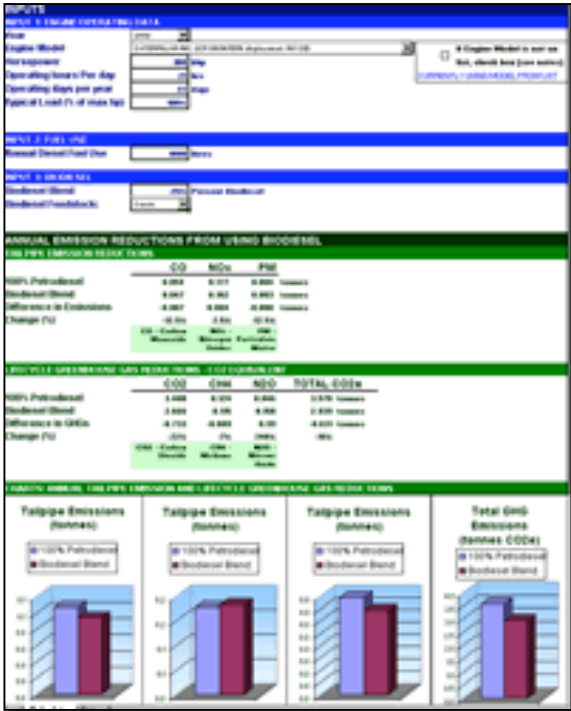
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# Membership

- Fleets can access:
  - Calculators:
    - Biodiesel calculator
    - Idling calculator
    - Life cycle cost calculator
    - Hybrid calculator
  - Newsletters
  - Green Fleet Guidelines



Programs of:





## *Membership: Green Fuels Map*

- Canada's Green Fuels Map
  - Biodiesel
  - E10
  - Hydrogen
  - Natural Gas
  - Propane






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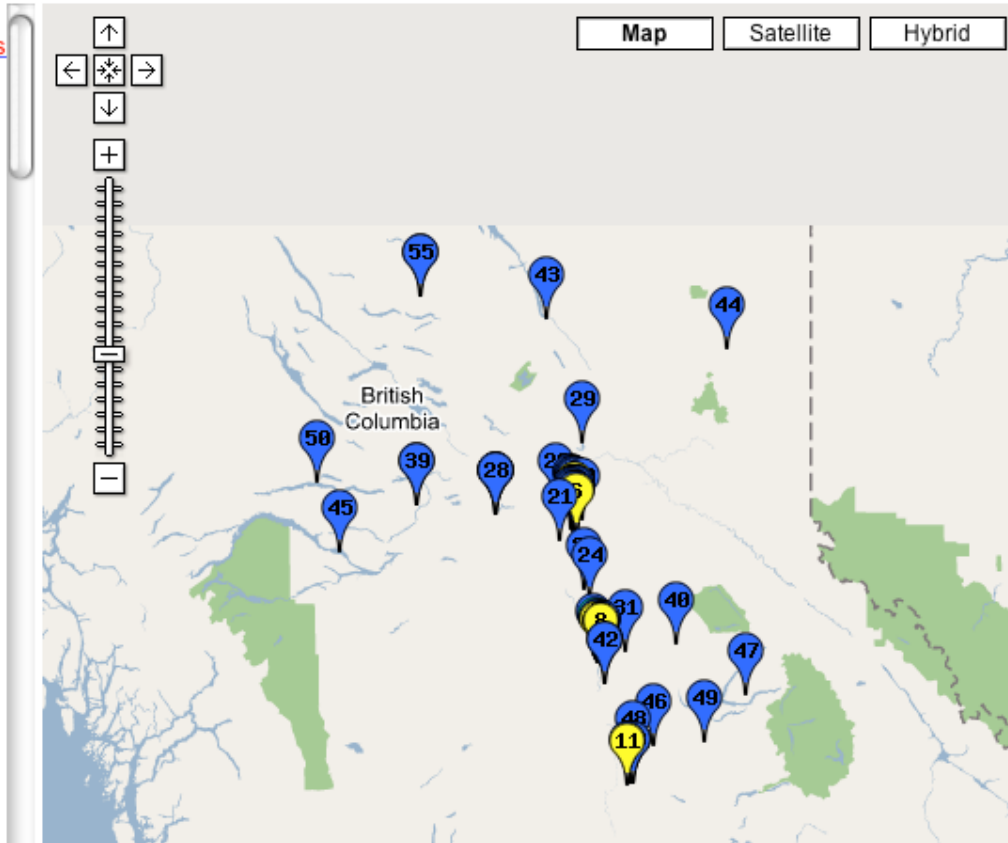


# Membership: Green Fuels Map

-  Biodiesel
-  Ethanol
-  Hydrogen
-  Natural Gas
-  Propane

Note: Your search generated more than 70 stations. Only the closest 70 stations are displayed.

-  1 [Mohawk, 835 Central Street W](#)
-  1 [Central Mohawk, 835 West Central St.](#)
-  1 [Central Mohawk, 835 Central Avenue W.](#)
-  2 [Husky, 999 Central Street](#)
-  2 [Shell, 1959 Nicholson St.](#)
-  3 [Super Save Gas, 950 Victoria St.](#)
-  4 [Shell, 4390 - 15Th Avenue](#)
-  2 [Prince George Taxi Assoc., 331 First Avenue](#)
-  5 [Hart Hwy Mohawk, 1746 Hart Hwy](#)
-  3



Programs of:





# E3 Fleet Review

- Economic and energy analysis
- Member provides data and receives valuable reports
- Expert review of results w/ report of strategic opportunities to improve E3 performance.
- **Three report levels:**

**I: Operational Review**

i.e. Fuel & emissions performance

**II: Fleet Asset Profile**

i.e. Total value, vehicles up for replacement

**III: Asset Management**

i.e. Operating costs, downtime, veh. operating cost by age

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# *Fleet Review: Benchmarking*

- ✓ Output data will be used for **benchmarking**:
  - **Apples to apples** comparison
  - Position within **sector**
  - Decision-making tool



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# Fleet Review: Input Form

Basic Info.				LEVEL II: Unit Asset Profile													LEVEL III: Unit Asset Management Profile					
				LEVEL I: Unit Operational Profile																		
Unit Number (enter unit number)	Fleet Name (enter fleet name)	Fleet Type (i.e.: municipal, utility, taxi, etc.)	Review Period (\$ of business days elapsed during measurement period)	Category (Please choose from standard categories below)	Fuel Type (Please choose from fuel type list below)	Fuel Used (enter litres of fuel consumed in measurement period)	KMs Traveled (enter KMs travelled in measurement period)	Fuel Cntr (enter fuel cntr for measurement period)	Engine Hrs. Operated (NOTE: Optional input - enter engine hrs. operated in measurement period if available)	Vehicle Make	Vehicle Model	Model Year (enter model year, YYYY)	Total KM run Unit	Leased or Owned (enter L or O)	Acquisition Date (enter date MM/DD/YY)	Planned Life Cycle (input \$ of estimated current value or book value of unit)	Net Present Value (NPV) (enter estimated current value of unit)	Lease cntr (enter total cost of any lease payments during measurement period)	Downtime (enter days vehicle was out of service due to breakdown for measurement period)	Cost of Downtime (enter estimated cost of downtime per day)	Repair Cntr (enter repair cost for measurement period)	Preventive Maintenance Cntr (enter PM cost for measurement period IF not included in 'Repair Cntr')
1																						
2																						
3																						
4																						
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# Fleet Review: Report Outline

## Avg. & Total for Fleet

- Fleet & Benchmark Data (in yellow)

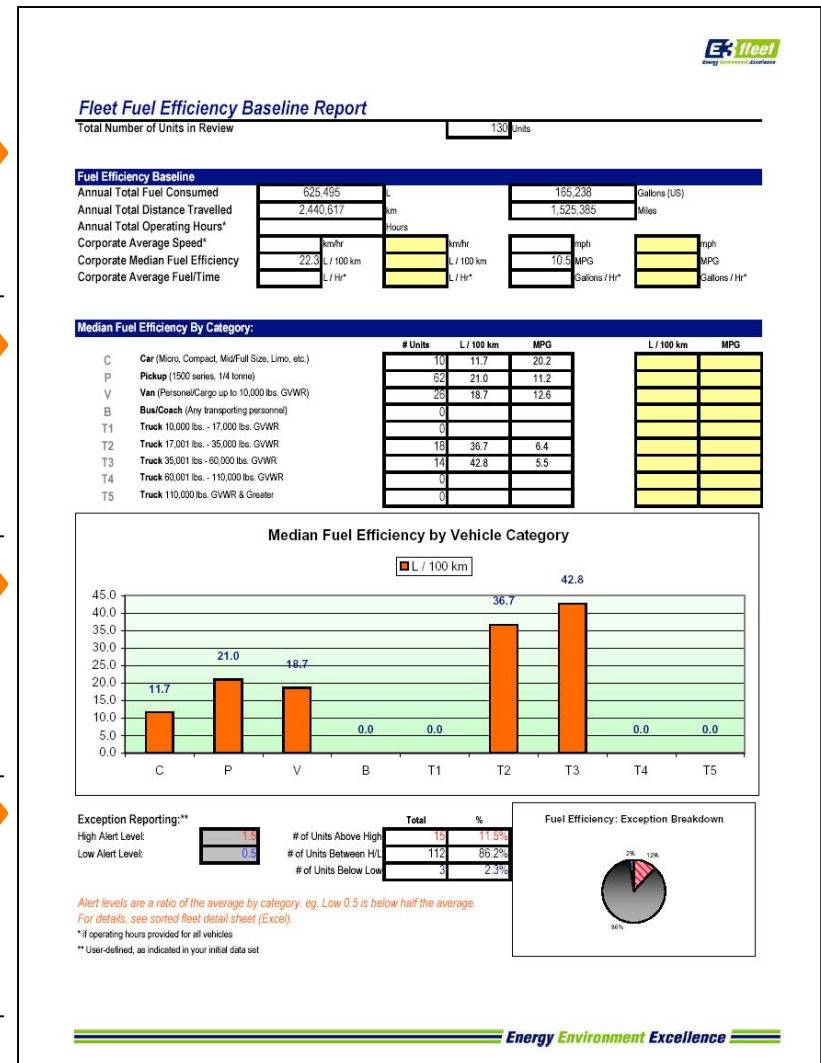
## Avg. and Total by Veh. Category

- Fleet & Benchmark Data

## Summary Bar Charts by Category

## Exception Report

- Avg. units, above avg. units & below avg. units (%)



# Fleet Review: Case Study

- Mixed Municipal Fleet
- 130 units in Fleet Review

**E3 fleet**  
Energy Environment Excellence

**Fleet Review - Results Summary**

Total Number of Units in Review: 130 Units

Fleet Performance Summary			
Current Average Age of Fleet	6	Years	
Current Net Present Value	\$1,659,408	CAD	\$1,723,399 USD
Total Annual Fuel Usage	625,495	L	165,238 gallons
Fleet Median Fuel Efficiency	22.3	L/100 km	10.5 MPG
Number of Units - High Fuel Use			
Total GHG Emissions	1,413	kg Tonnes CO2	1,567 kg Tonnes CO2
Overall GHG Intensity	0.579	kg/m	0.795 kg/mile
Number of Units - High GHGs	23		
Total Distance Travelled by Fleet	18,774	km	30,038 miles
Average Annual Utilization by km			
Total Annual Hours Operated			
Average Annual Utilization by hours			
Number of Units - Low Utilization	30		
Average Unit Availability	99.0	%	
Fleet Average Annual Downtime	3.5	Days	
Fleet Total Annual Downtime	454	Days	
Average Annual Cost of Downtime	\$54	CAD	\$74 USD
Total Annual Cost of Downtime	\$10,962	CAD	\$9,647 USD
Total Annual Cost of R/M, Fuel, Capital & Downtime	\$782,374	CAD	\$669,459 USD
Number of Units Due for Replacement	31		
Projected Capital Budget	\$1,380,000	CAD	\$1,214,400 USD
Estimated Cost of Capital (Cost of Capital & Lease)	\$97,333	CAD	\$85,653 USD

Performance Summary By Category:							
	# Units	Median L/100 km	Median MPG	Median GHG (tonnes)	Average Traveled (km)	Average Availability (%)	Total Costs
C	10	11.7	20.2	3.5	14327	97.0	\$ 25,637
P	63	21.0	11.2	9.3	20342	99.3	\$ 330,307
V	29	19.7	12.6	6.6	14036	99.2	\$ 65,566
B	0						\$ -
T1	0						\$ -
T2	19	35.7	6.4	16.1	19752	99.1	\$ 127,461
T3	14	42.8	5.5	24.3	22549	99.0	\$ 212,602
T4	0						\$ -
T5	0						\$ -

**Energy Environment Excellence**

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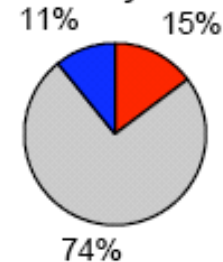
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# Langley Results: “Energy”

19 units show  
high fuel consumption...  
Why?

Fuel Efficiency: Exceptions



- ✓ **Are vehicles correctly matched to requirements ?**
  - *Review user requirements and specifications*
- ✓ **Are the vehicles old technology, aging units ?**
  - *Re-visit life cycle strategy, increase capital spending to lower average age*
- ✓ **Are there operational improvements that can be made ?**
  - *Idling program, driver training programs, route optimization, etc.)*
  - *Pooling, vehicle sharing, use of commercial carriers*
  - *Investigate internal charge-back systems (i.e.: user pay for fuel).*

Programs of:

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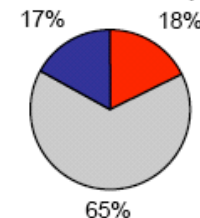


# Langley Results: “Environment”

23 units show  
high GHG output...

Why?

GHG Emissions: Exceptions



- ✓ **Do the vehicles have mechanical defects ?**
  - *Perform gas emissions analysis & effect repairs as necessary*
- ✓ **Are the vehicles old technology, aging units ?**
  - *Re-visit life cycle strategy, increase capital spending to lower average age*
  - *Consider alternate fuels (ethanol, CNG, biodiesel) & hybrid options*
- ✓ **Are there operational improvements that can be made ?**
  - *Idling program, driver training programs, route optimization, etc.)*
  - *Look into alternatives (i.e.: pooling, veh. sharing, commercial carriers)*

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BC BioFleet

Biodiesel. Powered by Nature.

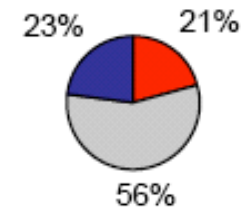




# Langley Results: “Excellence”

30 units show  
low utilization...  
Why?

km Travelled: Exceptions



- ✓ **Are these vehicles redundant in your operation today ?**
  - *Review situation with end users & determine correct requirements.*
- ✓ **Are vehicles correctly matched to requirements ?**
  - *Review user requirements, specifications*
- ✓ **Are there operational improvements that can be made ?**
  - *Investigate internal charge-back systems (i.e.: full cost recovery internal “lease” charges).*
  - *Consider corporate policies that set out minimum utilization standards*

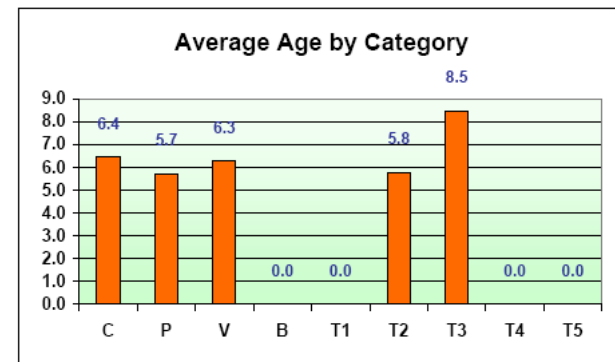
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# Langley Results: “Excellence”

Average age of  
T3 trucks 8.5 years...



✓ T3 trucks due for replacement represent largest portion (30%) of current capital budget requirements (~ \$400k)

- *Assess user needs before replacing units. Insist on valid business case.*

✓ T3 trucks due for replacement are currently costing 22% of total fleet op. costs (~\$170k)

- *Are units beyond their economic life cycle??*

✓ T3 trucks due for replacement are currently costing 21% of total fleet fuel costs (~\$94k)

- *Perform life cycle analysis. Consider replacement with more fuel efficient units.*

Programs of:

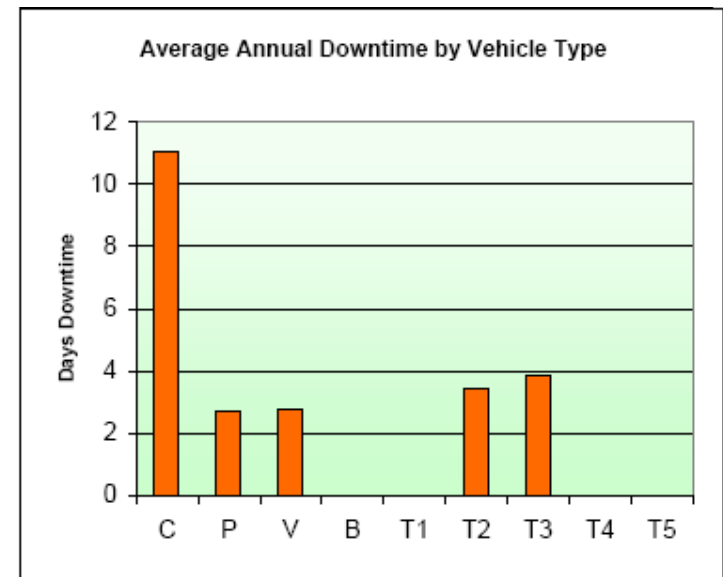
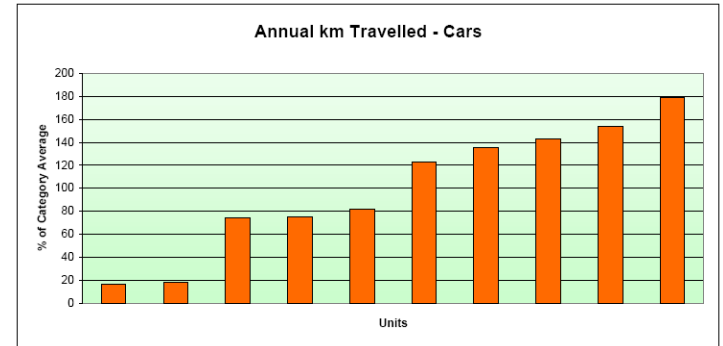
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# Langley Results: “Excellence”

Availability for category “cars” is low...

- Car Availability = 97% (99%)
- Avg. car downtime = 11 days (4 days)
- Avg. age of cars is 6.4 years
- Avg. utilization for cars is low (26% lower than corporate average)
- Utilization for cars ranges from very low to very high... some may be redundant
  - Retention strategies/life cycle cost analysis
  - Consider downsizing number of units
  - Look into alternate transportation methods
  - Consider corporate min. utilization standards



Programs of:





# Fleet Review: Summary

- Data collected and reported out are the **basic performance indicators** for **any** fleet
- Reports **enable scenario development** and **modeling** detailing costs and benefits
  - Eg. Biodiesel use for heavy duty vehicles
  - Eg. Replacement of cars with ‘Best in Class’ cars
  - Eg. 10% Hybrids, 50% of diesel trucks use Biodiesel, 45% of cars use E85
- Powerful decision **support** and **validation tool** for greening operations in a cost effective way

Programs of:

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# *E3 Fleet Green Rating*

***Fleets can be recognized  
for management practices  
& performance***

- **E3 Fleet Rating Guidelines are the basis for the rating system**
- **Point-Based System:**
  - 100 Points Total
  - 46 Required Points
  - 54 Optional Points
- **4 Performance Levels (Platinum Gold, Silver Bronze)**



Programs of:

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# E3 Green Rating

## Fleets can be recognized for management practices & performance

- Requires a site and record audit
- Detailed rating criteria based on E3 Fleet Rating Guidelines
- Checklist available for self-assessment
- Same checklist used for audit

Programs of:

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**E3 fleet Rating Checklist**

Fleet Name: \_\_\_\_\_  
Date: \_\_\_\_\_

	Formally in Place*	Formally in Place	Completed at One Time	Investigation Stage	Planning Stage	Not in Place
<b>1.0 Green Fleet Action Plan</b> <span style="float:right">XX Points Available (XX Required, X Optional)</span>						
Credit	R/O	Points	Indicate in Cells Below Point Value of Credit			
1.1 Fuel & GHG Emissions Baseline	Required	3				
1.2 Green Fleet Action Plan	Required	5				
1.3 Sr. Management / Council / Ownership Formal Approval	Required	1				
1.4 Fleet Action Communications / Communication Program	Required	1				
<b>2.0 Training &amp; Awareness</b> <span style="float:right">XX Points Available (XX Required, X Optional)</span>						
Credit	R/O	Points	Indicate in Cells Below Point Value of Credit			
2.1 Corporate Fuel Efficiency Policy Orientation Training	Required	3				
2.2 Driver Awareness Program (Fuel Efficient Driving Techniques)	Required	3				
2.3 Driver Training Program (Fuel Efficient Driving Techniques)	Optional	5				
2.4 Management Training Program	Optional	1				
2.5 On-going Training Program	Optional	1				
2.6 Driver Incentive / Reward Program (Fuel Efficiency and/or Idling)	Optional	3				
2.7 Innovation in Training & Awareness*	Optional	1				
<b>3.0 Idling Reduction</b> <span style="float:right">XX Points Available (XX Required, X Optional)</span>						
Credit	R/O	Points	Indicate in Cells Below Point Value of Credit			
3.1 Idling Cost Evaluation	Required	1				
3.2 Corporate Idling Reduction Policy	Required	3				
3.3 Idling Training & Awareness Program	Required	5				
3.4 Corporate Idling Reporting	Optional	3				
<b>4.0 Vehicle Purchasing</b> <span style="float:right">XX Points Available (XX Required, X Optional)</span>						
Credit	R/O	Points	Indicate in Cells Below Point Value of Credit			
4.1 Energy Efficient Vehicle and/or Component Purchasing Strategy	Required	3				
4.2 Functional & Operational Analysis	Optional	3				
4.3 Vehicle Usage and Replacement Criteria	Optional	1				
4.4 Standard Vehicle & Component Purchasing List	Optional	1				
<b>5.0 Fuel Data Management</b> <span style="float:right">XX Points Available (XX Required, X Optional)</span>						
Credit	R/O	Points	Indicate in Cells Below Point Value of Credit			
5.1 Fuel Consumption Data Management System	Required	5				
5.2 Fuel Consumption Monitoring & Reporting	Required	5				
5.3 Internal and/or External Benchmarking Program	Optional	3				

# E3 Fleet Rating

Points achievable in the following areas:

1. Green Fleet Action Plan
2. Training & Awareness
3. Idling Reduction
4. Vehicle Purchasing
5. Fuel Data Management
6. Operations & Maintenance
7. Trip & Route Planning
8. Utilisation Management
9. Fuel Efficiency
10. Emissions Performance

E3 fleet Rating Checklist		Formally in Place*		Normally in Place		Completed at One Time		Investigation Stage		Training Stage		Not in Place	
Fleet Name: _____		_____		_____		_____		_____		_____		_____	
Date: _____		_____		_____		_____		_____		_____		_____	
<b>6.0 Operations &amp; Maintenance</b>				<b>XX Points Available (XX Required, X Optional)</b>									
Credit	R/O	Points	Indicate in Cells Below Point Value of Credit										
6.1 Preventative Maintenance Program	Required	5											
6.2 Vehicle Fuel Efficiency Operating Procedures	Optional	1											
6.3 On-board Vehicle Data Analysis & Reporting	Optional	1											
6.4 Vehicle Emissions Testing	Optional	1											
6.5 Predictive Maintenance Program	Optional	3											
6.6 Recycle, Reuse, Recover, Reduce Program	Required	3											
6.7 Innovation in Equipment Operations*	Optional	1											
6.8 Innovation in Equipment Maintenance*	Optional	1											
<b>7.0 Trip &amp; Route Planning</b>				<b>XX Points Available (XX Required, X Optional)</b>									
Credit	R/O	Points	Indicate in Cells Below Point Value of Credit										
7.1 Route Planning	Optional	1											
7.2 Load Optimization	Optional	1											
7.3 Minimize Empty Trips	Optional	1											
7.4 Logistics / Dispatch	Optional	1											
7.5 Innovation in Trip Planning*	Optional	1											
7.6 Innovation in Route Planning*	Optional	1											
<b>8.0 Utilisation Management</b>				<b>XX Points Available (XX Required, X Optional)</b>									
Credit	R/O	Points	Indicate in Cells Below Point Value of Credit										
8.1 Utilization Benchmark & Exception Reporting	Required	1											
8.2 Vehicle Utilization Targets	Optional	3											
8.3 Utilization Monitoring Program	Optional	1											
8.4 Innovation in Utilisation Management*	Optional	1											
<b>9.0 Fuel Efficiency Improvements</b>				<b>XX Points Available (XX Required, X Optional)</b>									
Credit	R/O	Points	Indicate in Cells Below Point Value of Credit										
9.1 Demonstrated Improvements in Fuel Efficiency	Required	3											
<b>10.0 Greenhouse Gas Reductions</b>				<b>XX Points Available (XX Required, X Optional)</b>									
Credit	R/O	Points	Indicate in Cell Below Points for Credits										
10.1 Demonstrated Improvements in GHG Emissions	Optional	3											
10.2 Carbon Neutral Fleet	Optional	5											

Programs of:





# Conclusion

E3 Fleet tools and services works as a ‘road map’ for greening operations in a cost effective way (*‘how to do it’ vs. ‘what to do’*)

E3 Fleet Rating System provides meaningful opportunities to show ‘leadership’ (*corporately and w/in community*)

*Thank you! Questions?*

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Fraser Basin Council



BC BioFleet

Biodiesel. Powered by Nature.

