



Reducing Emissions from Municipal Fleets

Sustainable Procurement

&

The Role of Emissions in Life Cycle Costing



FEDERATION
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#SCC2011



metrovancover

Sustainable Procurement

Technology Neutral

Monetizes Emi\$\$ions

Involves “Right Sizing”

Total “cost of ownership”

Provides an objective decision tool

Moves focus from dollar\$ to the best choice



Metro Vancouver's Sustainable Procurement Model

Scores submissions using a 100 point system

30 points for “Technical ”

60 points for “Financial”

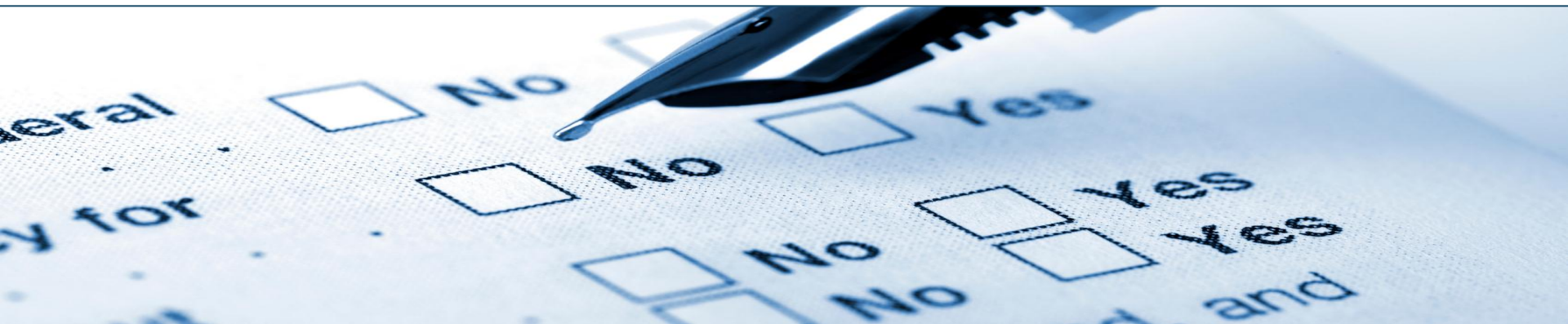
10 points for “Sustainable Content”



Technical (*Specification Compliance*)

Points are deducted when submission does not achieve
“Preferred Minimum Requirements”

- 1 point deduction for minor exceptions
- 2 point deduction for major exceptions





Financial (*Life Cycle Costing*)

Emissions valuations - GHG's and Particulate Matter
Preventative maintenance
Predictive maintenance
Fuel consumption
Training costs
Technical support costs
Warranty recovery
Downtime costs, etc



Monetizing Emissions – GHG's

- Metro Vancouver currently monetizes GHG's at a value of \$25 per tonne emitted over the lifetime of the asset
- This value is under review

The magic EPA formula for GHG's:

$2663 \text{ g CO}_2/\text{L} + (0.15 \text{ g CH}_4/\text{L} * 21) + (1.1 \text{ g N}_2\text{O}/\text{L} * 310)$

The results gives a volume of 3007 g (3 Kgs) of GHG's / L diesel

So valuation is:

projected fuel consumption (l/hr) x 3 Kgs/hr / (2.2 to get tonnes) x \$25





Monetizing Emissions – CAC's (Particulate Matter)

- Metro Vancouver currently monetizes Particulate Matter (PM)
- That value is \$813 per kilogram emitted over the lifetime of the asset
- This value represents an estimate of the health benefits which would result from each kilogram of PM reduced in our urban environment
- The estimate is a result of collaboration with our senior economist, air quality personnel, EPA documents, as well as studies from other jurisdictions

Another magic EPA formula

$$\text{PM Emissions} = (\text{Pop}) * (\text{Power}) * (\text{LF}) * (\text{A}) * (\text{EF})$$

Pop = engine population

Power = rated horsepower

LF = Load factor

A = Activity (hrs/year x life cycle)

EF = Emissions factor (gm/hp-hr)





Sustainable Content (*Social and Environmental Impact*)

Proponent's particular environmental practices

Proponent's particular social impacts

No points awarded for submission of the mandatory declarations.

Depending on the relevance and materiality of any convictions or determinations, points may be deducted from those awarded for favourable impacts.





THANK
YOU

QUESTIONS?

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