



# *Climate Change*

*global warming*

De Minimis and Simplified Estimation Methods  
October 24, 2008



## De Minimis in HB 2815

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“The rules must include a de minimis amount of emissions below which reporting will not be required for both indirect and direct emissions.”

Sec 5 (5a) - pg 8-9 ln 37-1



# What is De Minimis

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## Three ways to define de minimis:

1. Emissions excluded from reporting prior to reporting threshold determination
  - Can completely omit certain emissions or keep entity from reporting at all
2. Emissions excluded from reporting after reporting threshold determination
  - Must report, but can omit certain units or amounts
3. Simplified calculation methods
  - Must report everything, but relief in calculation methods



# De Minimis in Other Protocols

Protocol	Term	Exclusion – Pre Threshold	Exclusion – Post Threshold	Simplified Estimation Methods	No Specified De Minimis
WCI	Pending			X	
TCR	Simplified Estimation Methods			X	
CA – CARB	De minimis			X	
CA – CAR	De minimis			X	
Oregon	Categorically Insignificant Activity	X		X	
New Mexico	Insignificant Levels of GHG			X	
RGGI	NA				X
EPA	Pending	?	?	?	?
Canada	NA				X
EU ETS	De minimis			X	
UK ETS	De minimis	X		EU ETS	
Australia	Incidental Emissions			X	



# De Minimis Amounts in Other Protocols

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Protocol	Type	Amount of Permitted De Minimis (% of total or fixed amount, whichever is smaller)	Basis
WCI	Simplified Estimation Methods	pending	pending
TCR	Simplified Estimation Methods	5%	entity
CA – CARB	Simplified Estimation Methods	3% up to 20,000 MT CO <sub>2</sub> e	facility
CA – CAR	Simplified Estimation Methods	5%	entity
New Mexico	Simplified Estimation Methods	5%	facility
EU ETS	Simplified Estimation Methods	2% or 20,000 MT CO <sub>2</sub> e	facility
UK ETS	Exclusion – Pre Threshold	< 3 MW capacity	unit
Australia	Simplified Estimation Methods	25,000 MT CO <sub>2</sub> e or 100 TJ 50,000 MT CO <sub>2</sub> e or 200 TJ	facility entity



# TCR De Minimis

	GRP – October 29, 2007 DRAFT	GRP – May 2008 Version 1.1
<b>Type</b>	Partial Exclusion – Post Threshold	Simplified Estimation Methods
<b>Amount</b>	3% on entity basis	5% on entity basis
<b>Method</b>	Rough, upper bound estimate to verifier	Simplified, upper bound estimation and reporting



# TCR Simplified Estimation Methods

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- All emissions required to be calculated and reported
- Rough, upper-bound methods for estimating emissions
- Allowed amount calculated by source, type, gas, or any combination as long as total under threshold
- Total emissions = sum of Scope 1 (direct) and Scope 2 (indirect) emissions on entity CO<sub>2</sub>e basis
- Must be verified
- Must be identified by facility
- Subsequent years – emissions can be held constant as long as initial assumptions constant
- Must adjust if estimated emissions or total emissions change to the point that estimated emissions > threshold.



# WCI De Minimis

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- Protocol still in development
- Likely will not be called de minimis
- Consensus for simplified estimation methods similar to TCR
- Limited to a % of emissions plus a fixed cap, whichever is lower
- Amount not yet determined
- Consistency with WCI key for long term success of Washington's rule



# Problems with Exclusion De Minimis

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- Inconsistent with WCI and other protocols
- Not complete emissions report
- No significant cost savings – calculations would need to be made and submitted to verifier anyway
- Exclusion of 5% of emissions for reduction goals of 15% too high
- Possibility of future rule changes requiring recalculating emissions from prior years



# Reasons for Simplified Estimation Methods

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- Consistent with WCI and other protocols
- Complete emission footprint
- Must estimate emissions for verifier anyway
- Reduces reporting burden for small sources to maximum extent
- Does not allow simplified emissions over threshold value for large emitters



# Washington Rule De Minimis

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- Ecology may ask legislature to update de minimis section to be more consistent with current protocols
- Plan to use simplified estimation methods to reduce reporting burden instead of, or in addition to, exclusion de minimis
- Exclusion de minimis would likely be a small amount if included – function captured in simplified estimation methods



# Washington Rule Exclusion De Minimis

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- Post threshold determination exclusion de minimis
- Do not need to report exclusion de minimis emissions
- Must document and submit to verifier to confirm under exclusion de minimis threshold
- Small amount on a facility basis



# Washington Rule Simplified Estimation Methods

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- Simplified estimation methods
- Use TCR as a guideline
  - <http://www.theclimateregistry.org/downloads/GRP.pdf> - Chapter 11, pg 58
- Up to 5% or 10,000 MT CO<sub>2</sub>e, whichever is less
  - These values could change subject to WCI protocol
- On a facility basis



# Example – Ecology Fleet Emissions

	Fossil Fuel MT CO <sub>2</sub> e	Biogenic MT CO <sub>2</sub> e	Total MT CO <sub>2</sub> e	% of Total Emissions
CO <sub>2</sub>	1,884	4.1	1,888	88.6%
CH <sub>4</sub>	2.5	NA	2.5	0.1%
N <sub>2</sub> O	49.4	NA	49.4	2.3%
HFCs	190.2	NA	190.2	8.9%
Total	2,126	4.1	2,130	–

- Facility basis = statewide fleet
- CO<sub>2</sub> and HFC emissions > 5%, not eligible for simplified estimation methods
- CH<sub>4</sub> and N<sub>2</sub>O total 2.4% of emissions, eligible for simplified estimation methods



# Example – Calculation Methods

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- CO<sub>2</sub> – Tier B, fuel use with default emission factors by fuel type
  - Same as fleet emissions presentation
- HFCs – “Tier D”, TCR GRP Screening Method
  - Method exempt from simplified estimation method threshold
  - Same as fleet emissions presentation
- CH<sub>4</sub> & N<sub>2</sub>O – can choose simplified estimation method
  - Many methods to choose from or develop
  - Must meet quality and verification standards
  - This example: fuel use with literature emission factors by control technology



# Example – Simplified Estimation of CH<sub>4</sub> and N<sub>2</sub>O Emission Factors

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- WCI working on emissions/unit fuel use basis factors – not yet ready
- Greenhouse Gas Sources and Sinks in Canada 1990-2005
  - [http://www.ec.gc.ca/pdb/ghg/inventory\\_report/2005\\_report/2005\\_report\\_e.pdf](http://www.ec.gc.ca/pdb/ghg/inventory_report/2005_report/2005_report_e.pdf)
  - Table A12-7: Emission Factors for Energy Mobile Combustion Sources, pg 588
- Total gallons x emission factor (g/L) x (0.000001/0.264172052) conversion factor = MT emissions x GWP = MT CO<sub>2</sub>e emissions



# Example – Simplified Estimation of CH<sub>4</sub> Emissions

Vehicle Type	Gallons	Emission Factor (g / L)	MT CH <sub>4</sub>	MT CO <sub>2</sub> e
Gasoline passenger cars (Tier 1 & 2)	51,300	0.12	0.0233	0.49
Gasoline light trucks (Tier 0)	1,611	0.21	0.0013	0.03
Gasoline light trucks (Tier 1 & 2)	119,772	0.13	0.0589	1.24
Gasoline heavy duty vehicles (Non-Catalytic Controlled)	413	0.29	0.0005	0.01
Gasoline heavy duty vehicles (Three-Way Catalyst)	29,284	0.068	0.0075	0.16
Diesel light trucks (moderate control)	186	0.068	0.0000	0.00
Diesel light trucks (advanced control)	9,668	0.068	0.0025	0.05
Biodiesel light trucks	430	0.068	0.0001	0.00
Natural Gas Vehicles	149	9 x 10 <sup>-3</sup>	0.0000	0.00
Total	212,813	NA	0.0942	1.98



# Example – Simplified Estimation of N<sub>2</sub>O Emissions

Vehicle Type	Gallons	Emission Factor (g / L)	MT N <sub>2</sub> O	MT CO <sub>2</sub> e
Gasoline passenger cars (Tier 1 & 2)	51,300	0.16	0.0311	9.63
Gasoline light trucks (Tier 0)	1,611	0.66	0.0040	1.25
Gasoline light trucks (Tier 1 & 2)	119,772	0.25	0.1133	35.14
Gasoline heavy duty vehicles (Non-Catalytic Controlled)	413	0.047	0.0001	0.02
Gasoline heavy duty vehicles (Three-Way Catalyst)	29,284	0.20	0.0222	6.87
Diesel light trucks (moderate control)	186	0.21	0.0001	0.05
Diesel light trucks (advanced control)	9,668	0.22	0.0081	2.50
Biodiesel light trucks	430	0.22	0.0004	0.11
Natural Gas Vehicles	149	6 x 10 <sup>-5</sup>	0.0000	0.00
Total	212,813	NA	0.1792	55.57



# Total Emissions

	Fossil Fuel MT CO <sub>2</sub> e	Biogenic MT CO <sub>2</sub> e	Total MT CO <sub>2</sub> e	% of Total Emissions
CO <sub>2</sub>	1,884	4.1	1,888	88.4
CH <sub>4</sub>	2.0	NA	2.0	0.1
N <sub>2</sub> O	55.6	NA	55.6	2.6
HFCs	190.2	NA	190.2	8.9
Total	2,131	4.1	2,135	–



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Questions?