

**ESSB 6001 Stakeholder Committee
 October 23, 2007 Meeting
 Decision Matrix:
 “total emissions associated with producing electricity”**

Issue	What concerns are there (e.g. with current law)?	What approaches should be considered?	What is the reflected opinion (recommendation) of the committee?	What complicating factors (or minority opinions) are there?
1) RCW 80.80.040(5) In determining the rate of emissions of greenhouse gases for baseload electric generation, the total emissions associated with producing electricity shall be included.				
A. What is the scope of all emissions associated with producing electricity				
(1) Only those operations under the direct control of the generating unit owner? Actions within the site boundary of the plant 1.Point sources 2.Mobile sources 3.Fugitives sources 4.Coal mine for mine mouth operation?	Some of these are already included in operating permit. -direct or contractual control relationship -consider the added impact of “trivial” emissions	Include those things that have already been calculated in operating permit. -data that is already available -consider possible scenarios -total facility emissions/ total gross mwh		
(2) Include emissions from operations not under control of the generating unit owner? 1.Fuel transport				

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a. Locomotives, b. natural gas pipeline compressors 2. Fuel extraction a. Mining equipment, b. oil and gas collection systems 3. Fuel clean-up for use a. Coal cleaning, b. oil refinery, c. gas clean-up plants				
B. Ecology proposal: CO ₂ emissions from the stack, including effects of any CO ₂ from a SO ₂ control system.	What should the emissions be attributed to?	Confine to emissions associated with plants		
Do not include N ₂ O and methane emissions as trivial		Should be included because it is possible to calc. - fuel based calculations		
Disregard emissions from fuel extraction and transport where ever it occurs.	Consider other state's ex. California did not include upstream emissions			
2) RCW 80.80.010 (14) "Greenhouse gases" includes carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride.				
Should all of these chemicals be accounted	-consider the word include	-not include last three gases -mass balance calculations		

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for from electric generation?				
CO ₂ -Emitted directly and by some SO ₂ control systems				
Methane – a product of incomplete combustion, fugitive emissions from coal piles and leaks from natural gas systems	<ul style="list-style-type: none"> -measuring equipment is expensive but easy to maintain -consider intent of the law 	<ul style="list-style-type: none"> -If AP42 emissions factor available then should include methane and nitrous oxide. -emission factors used for both project permitting and monitoring (for these two gases) 	<ul style="list-style-type: none"> -Include Methane and Nitrous oxide as gases that need to be included in determining the EPS using existing emission factors from the EPA as they become available and are revised from time to time. If EPA emissions factors are not available use best available emissions factors industry or engineering standards, if available and document. -include fugitive emissions 	<ul style="list-style-type: none"> -consider that inside the power plant fence
Nitrous oxide – a product of combustion at lower temperatures – may be higher from combustion turbines than coal power plants.	<ul style="list-style-type: none"> -most technology is being created to capture CO₂ 		<ul style="list-style-type: none"> -in calculating whether or not we have compliance with the EPS should we use lbs or CO₂ equivalent? -reflected opinion of the committee is about half and half 	<ul style="list-style-type: none"> -legal authority -quality of methane and nitrous oxide emissions factors -intent of the law is the impacts of global warming -in response to concern about plants being knocked off, conduct additional analysis -market value in having identical emissions standard as California
Hydrofluorocarbons – refrigerants. Losses through fugitive leaks, maintenance activities and catastrophic losses.	<ul style="list-style-type: none"> -not associated with emissions production (below as well) -law does include DOE to consider cost 		<ul style="list-style-type: none"> -do not include and will explain in rule why we are not including. If technology changes we may include. 	
Perfluorocarbons – emissions associated with aluminum plants and semiconductor manufacturing plants				
Sulfur hexafluoride – fugitive losses from electrical switchgear,	-			

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tracer gas for some dispersion studies				

The law (ESSB 6001) requires sequestration of greenhouse gases¹. Carbon dioxide is the gas emitted in the greatest quantity, but is not the most potent gas. Carbon dioxide is also the gas upon which that the most research has been completed showing how to remove and sequester it. The 6 greenhouse gases that are described in the literature are Carbon dioxide, Methane, Nitrous oxide, Sulfur hexafluoride, HFCs, and PFCs. Each can be converted to a Carbon Dioxide equivalent, based upon their “greenhouse house gas potential” for warming.

I propose that we regulate in this rule only CO₂. The reason is that it is the far and away the most quantity of GHGs emitted. Further it is the one that we know how to control and inventory. This is an interim rule; it is sure to be amended in the next several sessions of the Legislature.

¹ Emphasis added.