

Transportation Protocols – Gravel and Lightly Surfaced Road
Rehabilitation- Keith Driver, Baseline Emissions Management Inc. (on
behalf of RoadBadger)

#	Comment by	Clause/Section Number	Type of Comment (general, technical, editorial)	Comment or Justification for Proposed Wording Change	Proposed Wording Change	Alberta Environment Decision
1	Jim Gavin – Alberta Infrastructure and Transportation		general	In the baseline are you accounting for removal and disposal of preexisting road surfaces?	Not accounted for, typically road is laid on top of old surface. Top dressing existing road – on gravel. In cold mix (oil and gravel) they will do some deconstruction and relay new surface.	
2	Jim Gavin – Alberta Infrastructure and Transportation		technical	<p>On rehabilitation definition described the project condition – be careful.</p> <p>Gravel roads and lightly surfaced roads are combined. Concern that this is normal business presently.</p> <p>Concern that we are currently using technologies very similar to this equipment.</p>	<p>For gravel surface this is unique however for lightly surfaced road this is not too unique. The roadway dictates what.</p> <p>This equipment reduces the amount of fracturing of the gravel and allows you to use the gravel. With certain technologies there is more/less material needed on sight – this is how it works for Gravel roads. When we look at lightly surfaced road, we have existing equipment that rehabilitates that road and it is normal business that we are looking at.</p> <p>Condition of the existing road is what determines what needs to and what gets added on top.</p> <p>Baseline will need to be adjusted. Keith Driver, Jim Gavin and Ray Gillard met during break to discuss and clarify cold mix definition. Definition to be circulated.</p>	
3	BJ Vickery – Millennium EMS		technical	Question regarding customization of other mixes (i.e. hot mix)	Decision was made fairly early that there is a difference between gravel and asphalt. Maybe cold mix needs to be separated as well. Baseline to address.	
4	Lorraine Brown – CH2mHill		general	Multiple reasons for recycling – what is the key factor for	This specific technology is not seen often 10% of the time. Financial additionality in the AB Context is not considered in this protocol.	

				determining that the substitution of material creates an offset. - Additionality		
5	Karen Haugen-Kozyra		general	The technical review team struggled with nomenclature	There is a problem with terminology and the definition of road rehabilitation. Perhaps consider separating out gravel and lightly surfaced. Perhaps consider Cold Mix/ Hot Mix and maybe Warm Mix need to be separated Baseline Emissions Mgmt Inc to address with subsequent posting of protocol	

Transportation – Freight Modal Switching – Stephan Wehr, The Delphi Group (on behalf of CN Rail)

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1	Len Eddy		general	Does transfer have to occur in AB?	Transfer could occur within AB or it could be outside of the province. The actual shift might occur outside of AB. Concern that the way that the AB system is set up, it doesn't account for activities outside of AB boundary however the activity isn't the actual transfer but the KMs traveled.	
2	Bob Coulter - ECC		General	Question regarding simplified approach: How does it impact your g/ tonne per KM?	If you use the simplified approach you don't need the origin and destination. If shipping W to E we can assume 540 – which is conservative.	
3	Bob Coulter - ECC		General	Still using the 114 g/ T KM?	114 g/ T KM is old but still considered the best available. Willing to update with new number as it becomes available.	
4	Rob Kemp - Levelton		General	Seems like selection of BL is arbitrary. No guidance around that. Potential to vary from year to year. If you can pick what ever baseline you want you can really game the system.	Intent is to have the three years immediately proceeding before you start your project. Hopefully it will level out the short term calculations. General agreement during technical review session on this matter.	
5	Bob Coulter - ECC		General	Why three years for baseline data?	Felt that 1 year was bad due to short term variability and gaming. There was some discussion, however three years was set. During technical review session, there was some interest in using 1 year but decided against. If a company wants to take advantage of the detailed approach it might push the limits on data available.	
6	Jim Gavin		general	How do you handle the case of a company that splits 50% truck and 50% rail? How do you	Won't be given credit for that as the protocol looks at ratio.	

				handle a doubling of business that still ships 50:50.		
7	Nathan Muegge – ICFI		General	Question regarding: LCA approach and different factors for off road and on road.	Yes, based on LCA. Use existing factors and although they aren't perfect they will work. Was identified in the technical review. In the full protocol the tables indicate where the emission factors are sourced from. Suggestion that some of the numbers that EC is using are more conservative	
8	Lorraine Brown-CH2MHill		General	Protocol is paid by CN given the tailoring for CN, how applicable is it for others to apply	CN sponsored the work but protocol isn't tailored to CN systems. Data management is specific to each shipper – not CN. It is just as easy for others to use. CP was invited to the technical review as well	
9	Allen Yee – City of Edmonton		General	With increased rail traffic in urban centers there is concern over increased cube times at rail crossing	There are always other impacts outside however if we are moving towards more rail, we will be seeking solutions to other problems.	
10	Kinga Uto - EPCOR		general	Have you considered using a moving baseline rather than locked in 3 year baseline?	If focusing on a company then it is a good idea to lock in. Recognize there are other ways to do a baseline. Might be worth examining site specific baselines.	
11	Bruce Herdman - IAG		general	Struggle on growth of economy and how it creates offsets.	Project based offsets systems don't capture everything. As time grows, we will get better at this but we have to start somewhere.	
12	Dwight McIntosh – Syncrude		General	Struggle with showing that you are shifting modes due to GHG. How does the price signal effect economics – where is the gain in that.	The value of these credits aren't enormous. We have established shipping behaviors and if the value of offsets credits helps to push us along then great. Desire to see <u>real</u> credits. This is a protocol that EC wants to see happen. We get a different story when we look at this nationally.	

Additionality in the freight protocol was the main issue identified throughout the room and an underlying issue in a number of comments.

WIND – Keith Driver, Baseline Emissions Management Inc. (on behalf of the Alberta Government)

#	Comment by	Clause/Section Number	Type of Comment (general, technical, editorial)	Comment or Justification for Proposed Wording Change	Response/Proposed Wording Change	Alberta Environment Decision
1	Eric Schmadtke - PetroCanada		General	Distinction between REC and GHG market –can you buy RECs and have them qualify as GHG? Can think of one example of a company that has RECs but not Offsets.	Not all RECS are created equal in terms of GHGs. You would still have to apply the GHG protocol. You can't just take a REC and apply a factor to turn into GHG – even more difficult for solar and hydro. RECs don't necessarily have 3 rd party verification. A company would have to apply the Wind Protocol and the regulatory requirements therein n order to get offsets. RECs are a voluntary market ..	
2	Chris Joy - ENMAX		General	If you convert RECs to Offsets, you would need to propose a project and outline a quantification protocol, etc?	Yes - It is a data management overlay, meeting the demands of Alberta's compliance-based system for offsets.	
3	Timo Makinen - Shell		General	Double counting	Helpful to have this in writing – clarify the conversion between RECs and Offsets clearer. To be clarified	
4	Rob Janzen – Climate Check		General	Unsure about EcoLogo and it costs \$1500 to get, it is essentially a marketing tool and not a rigorous assessment – are we sure EcoLogo is rigorous enough to meet our compliance market? Is it the right message?	To clarify – \$1500 is to meet the requirements of EcoLogo and get a statement to that effect, not a certification. The signal that we are trying to send is that this is best practice. Not that this would be the verification standard. Does the potential benefit from linking back to a federal program outweigh any other effects. It came from CASA Renewable Energy Team but the assumption of that time was that it needed to meet the criteria but not that it was required. If push came to shove you needed to demonstrate that it would meet that criteria.	
5	Chris Joy- ENMAX			EcoLogo might be a moot point		

				because when you apply for approval of a large facility – you’ve already met the requirements of EcoLogo. Unsure if you are getting anything additional to existing siting rules in AB.		
6	Theresa Howland – BullFrog power			Perhaps more applicable to other renewables, esp. hydro generation – you want to ensure you ID environmentally friendly generation. It is an easy process, don’t have to actually go through the process, just meet the definition.	At least in Wind, there really is no added value to EcoLogo – just creates more work. During Technical Review, there was some discussion about EcoLogo but no one said to take it out. Chris Joy – Although involved with Tech Review, upon closer examination of documents needed to EcoLogo, there is nothing additional to achieve EcoLogo than is required to meet Provincial Requirements.	
7	Timo Makinen - Shell			What happens to offsets that are generated from wind when Fed and provincial plans meet?	Crediting period of 8 + 5 so it shouldn’t be a huge consideration. Concern that potential offsets might be affected when generated by Wind which is not viewed favorably by Fed. An active lobby is trying to get Feds to acknowledge wind. Chris Joy – understanding that there has been some movement on Renewables in Feds Concern over double subsidizing of the Renewables industry i.e. Eco Energy Program. Needs to be either or – not both programs.	

					<p>Keith – any incentive given by provincial government will not be seeking offsets in return.</p> <p>Issue to be flagged for Environment as it doesn't add value as EcoLogo requirements do not provide additional value.</p>	
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Solar Electricity Generation Keith Driver, Baseline Emissions Management Inc.
(on behalf of the Government of Alberta)

- There is future work that needs to be done on solar thermal

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1	Eric Schmadtke - PetroCanada		technical	How is it intended – don't foresee that someone would be cutting down a forest to put in a solar farm	Specific to the case where there is some land management required for large scale application. This is applicable for large scale solar farms – it can be ignored for small scale installations. To be considered for removal as this work is unnecessary.	
2	Keith Driver – Baseline Emissions Management		General	Is the way we treated EcoLogo in Wind applicable here?	Similar issues – no sustained objection	
3	Matt McCulloch - Pembina		General	Marginal vs. average – when can this group expect guidance re: this?	0.65 uses the WRI methodology and there is a need for further communication and discussion/debate. WRI calculates the GIF using marginal and next build – uses the same basic theory of CDM. Keith Denman – three factors were considered: grid average, historic build and marginal build. They were combined to get to 0.65	
4	Kyle Kasawski – Conergy		General	In the case of new construction, there is a case that deforestation would have happened. Concern that solar install in a 1ha+ well site would be penalized for 1 ha deforestation when the actual footprint of solar is much smaller. WRT offgrid – need baseline. Because power choices can be generator	Intent of 1ha is that 1ha is the footprint of the solar unit in larger scale projects. To provide diesel, propane, gasoline factors for alternatives to offgrid.	

				or bring the grid in		
5	Bruce Herdman - IAG			Even if we provide a guidance number for diesel, we don't know what kind of diesel that generator will burn because the quality of diesel is changing.	Largely true – not sure if we can put an exact number in the protocol or point to a source of a number which might change over time (i.e. Environment Canada is the best source)	
6	Timo Makinen - Shell			Is there a separate protocol for solar hot water heating	It will be in development – possibly in the next round.	
7	Timo Makinen - Shell			How often is the GIF reviewed?	Every 5 years. Keith Denman	

Hydro Protocol - Keith Driver, Baseline Emissions Management Inc. (on

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1	Dale Friesen - ATCO Power			Definition of low impact hydro project is a good start but seems to exclude a lot of potential good projects (re: reservoirs).	Idea in CDM (and others) handles other types of projects –need to explore that this is the correct definition.	
2	Theresa Howland - Bullfrog Power			EcoLogo	With the definition of what is in the scope of the protocol, it is redundant. Keith Driver- Is there is no added value in	

behalf of the Alberta Government)

					EcoLogo? EcoLogo to be proposed to be taken out of all three renewable protocols. No sustained objection.	
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No higher level renewables discussion.

General Discussion of renewables focused on GIF and usefulness of EcoLogo Program.

Definition of Hydro needs to be revisited.

Acid Gas Injection – Aaron Schroeder, ICFI (sponsored by EPCOR)

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1	Timo Makinen - Shell			Did you look at Spectra energy project in NE BC? Industry submitted – was it a consortium of developers?	No EPCOR	
2	Herb Longworth - CNRL			Is there contemplation of a separate protocol that is just CO2? Not considering an sequestration	Unaware of any that are being developed. It was decided that this one was specific to H2S. There are two EOR protocols approved I the AB system.	
3	Rod Sikora- Keyera			Fuel process and extraction component – not sure how it applies at a gas plant. Appears to be double accounting because at a gas plant you have the fuel and aren't getting it from elsewhere. Unsure why it is in protocol.	Alternative would be to use sales gas on site. Calculation has to be included – it doesn't double count. Need to double check contingency quantification table in final protocol.	
4	Stephanie Trottier - ARC	Page 4 - bottom		Why is the statement Re: permanent elimination of CO2" in the protocol.	Others share this concern Likely because the CO2 still exists but that it is stored. To be clarified	
5	Rod Sikora – Keyera			Some concerns	ICFI to address	

				<p>surrounding calculation errors in the calculator.</p> <p>EPCOR approach considers thermal energy credit doesn't appear to be correct</p> <p>Calculations of KG CO₂ eq in the summary appears to add emissions of CO₂, CH₄ and N₂O without using GHG equivalency factor</p> <p>Many of the tabs, cell references in to the emission factors are incorrect</p>		
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Landfill Bioreactor – Keith Driver, Baseline Emissions Management Inc (Sponsored by SALT)

#	Comment by	Clause/Section Number	Type of Comment (general, technical, editorial)	Comment or Justification for Proposed Wording Change	Proposed Wording Change	Alberta Environment Decision
1	Timo Makinen- Shell			Need to ensure that it is clear that sampling can not be 4 consecutive days but should be spaced apart by season. Flux chamber – needs to be clarified	Quarters likely reasonable – ie every 3 months. Baseline to address	
2	Carol Nelson – Waste Management of Canada			Are there other methodologies other than flux chambers?	Ideally, fugitive emissions weren't going to be included. It was determined that flux chambers made sense and it was chosen. We should be open to more ideas should an equivalent be identified. Guidance to be provided on what is required in a methodology (but not explicit technology). Suggestions welcome –we'll wait for public comment period	
3	Lorraine Brown – CH2MHill			Are you going to use the same methodology as LFG protocol?	Using quantification protocol for LFG the denominator is methane production in landfill (potential). In a bioreactor, the potential is smaller.	
4	Carol Nelson – Waste Management of Canada			Model doesn't take into consideration that you are collecting gas.	Methane generation potential at T_0 is the amount of methane that can be produced theoretically over 100 years. Discussion and overview of P18	
5	Carol Nelson – Waste Management of Canada			This project is for proposed landfills that are already existing. Is this where the target is? Confused on how we can use protocols to older	You can get rid of a lot of problems but not fix everything. The protocol is intended for new and historic sites. Likely not to be used on large landfills as a way of calculating offsets but it is a way of calculating benefits – ie extending the life of landfills.	

				landfills that would not have some of the environmental controls.		
6	Allen Yee – City of Edmonton			If you look at a landfill over its entire life, under baseline condition, you probably couldn't get an amount of mass in the landfill. A lot of charm of the bioreactor landfill is a reduction in volume (thus freeing space). But under a baseline, you likely could have never got that mass in the landfill.	This is based on mass in situ. It's not the theoretical max of the landfill	
7	Stephan Wehr – Delphi Group			If you are able to process more in a landfill bioreactor, perhaps the baseline needs adjusting to say 1 + x times the mass.	Conservative not to include it. Concern due to time shift but stays on the cautious side.	
8	Carol Nelson – Waste Management of Canada			Timeframe for the project?	The crediting cycle is 8 years with renewable for possible of 5. This project is intended to move from cell to cell to cell – therefore it defies the 8 year cycle.	

Beef – Days on Feed – Keith Driver, Baseline Emissions Management Inc. (on behalf

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1	Rob Janzen, Climate Check		general	When you say IPCC equations, are they the same as those used in national inventory reporting?	Yes, we are using the best known. John Basarb and Tm McCallister reviewed the equations to ensure they apply. Tim McCallister sits on the IPCC working group that examines and develops equations. We are using IPCC 2006 values. The NIR will likely use these the next round of reporting.	

of the Government of Alberta)

Beef Edible Oils (Revised) – Keith Driver, Baseline Emissions Management Inc. on behalf of the Government of Alberta)

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1	Karen Haugen-Kozyra			Originally wanted to have distillers grains in the protocol however	it was determined during a scientific/technical review that the science isn't there yet. Hopefully in a couple of years we can reexamine this and add distillers grains.	
2	Doug McKell – Soil Conservation Council of Canada (SCCC)			Protocols for grazing and native pasture – are they coming? Grazing?	Shellah – we are considering some but haven't committed to anything yet. There is a possibility of private industry to take on some of this themselves. i.e. there is a reduced N protocol that has been proposed and is being partially funded by industry. This is at the technical seed document phase. During technical working groups of NOQT, we tried to approach grazing but it is difficult. It is an issue that needs to be reexamined.	
	Bob Coulter – ECC			How long until additional protocols (i.e. grazing, etc) are available?	Given the process involved in developing a protocol it can be anywhere from 3 months to a year and a half. It really depends on the level of science and maturity of science. If we are able to build on existing knowledge it might be 8 months.	
	Doug McKell - SCCC			Can you comment on soils protocol and it's reception by Ag producers in AB?	There has been a lot of activity surrounding the tillage protocol in AB. Probably about 10 companies that are actively aggregating soil carbon in AB. Keith Anderson (Parkland AgriServices) Carbon Offset Suppliers Association – Alberta (COSAA) is now about 4 months old and has around 10 companies that are actively engaged in AB offset market – esp. soils. A lot of education to be done given complexity of process. Bob Coulter (ECC) - 1000s of farmers have	

					<p>enrolled in an offset program and are expecting to share in the kickbacks.</p> <p>Perhaps it hasn't been an easy start due to multiple markets (i.e. CCX) and the substantial differences between the AB compliance based market and others.</p>	
3	Doug McKell – SCCC			<p>As far back as 1994, there were expectations that farms were going to be getting benefits from offsets. Farmers have been told for a number of years regarding sequestration rates. These rates have substantially decreased over the past years (from .4 to .16 and .08)</p>	<p>Reducing coefficients is a means of addressing additionality –to allow broader participation. Discounting the carbon gained to date prior to 2002 is a means of saying that it's incremental or new Carbon that's entering the system. It's justifiable.</p>	
	Doug McKell – SCCC			<p>What if baseline gets changed to 1996 (at national level)</p>	<p>If you look at tillage protocol and only allow new carbon going forward (incremental carbon going forward) and 2001 and 2006 census data, you will have lower carbon values as time moves on.</p> <p>In 1996, adoption rates were lower but it's a big battle.</p>	

Building - Residential – Duncan Kenyon, Baseline Emissions Management Inc. (on behalf of the Alberta Government)

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1	Timo Makinen - Shell			On the 3 point (on EGH) difference, what does it transfer to on an AB home in terms of CO2	Perhaps a tonne per house. Useful footnote. Need to put the whole Energuide Graph as an appendix	
2	Nathan Muegge - ICFI			Has there been any correction for degree days	Energuide has some correction for that. What will likely end up happening will be some correction on aggregation side. Do you have ideas on how to do this? Could look at exploring with developers what is the threshold size that this might be an issue. Could likely be applied as a factor and likely not hard to do. The only difficulty is arriving at that number. Stephan Wehr - Likely can easily be done given good practice guidance that exists. Keith Driver - Given the crediting period, it would likely net out over 8 years. The baseline is an average number (unless you are doing a new house)	
3	Nathan Muegge - ICFI			Do you envision individuals going through this protocol?	No, it will be developers and aggregators	
4	Lorraine Brown – CH2MHill			Who was on technical review team?	No large developers were involved during original technical review however they are involved now.	
5	Keith Anderson – Parkland AgriServices			Are there programs that if someone belongs to it overrides this one?	Not to our knowledge.	
6	Lorraine Brown – CH2MHill			Calgary Regional Home Builders Association – would be worth pursuing	agreed	
7	Gary Woloshyniuk – City of Edmonton			On the residential scale, Energuide does have a drop	It would handle the baseline and first audit, but now going forward we need to consider degree changes (because this protocol	

				<p>down for location – there is some correction within the program to take care of degree day – wouldn't this handle degree day concern.</p>	<p>does not require an Energuide audit every year). Energuide is location-based comparisons, not year to year/ Stephan Wehr – even though you are not doing the audit every year, you can back out those numbers from baseline and year one. Baseline to examine</p>	
8	Richard Caldwell			<p>One of the important factors is getting the orientation of the structure correct – is there anything in the protocol to encourage proper orientation?</p>	<p>No – even though there are recognized significant reductions to doing so. This protocol doesn't want to get prescriptive but people who know these sectors will know those best practices. Addition of one line that acknowledges that these best practices are there but are not captured in this protocol but might be added in the future when available.</p>	
9	Karen Haugen-Kozyra			<p>Question during the technical review was shouldn't there be some threshold (i.e. 4,500 ft² house)</p>	<p>Energuide doesn't punish big houses but gives a higher reward to smaller houses. If you are building under ~ 2000 ft² it gives higher rewards – it's built into the formula. Lorraine Brown – irrelevant because reward doesn't go to home owner.</p>	
10	Alex Joseph – EnerVision (via e-mail)			<p>How does the protocol deal with multi-residential? Suggestion to use EE4 model.</p>	<p>We are going to have to look at how we deal with multi-residential as it is a natural aggregation. Lawrence Bazen – Building in EE4 model is expensive given return. Not recommended.</p>	

**Building – Commercial/Institutional – Duncan Kenyon, Baseline Emissions
Management Inc.** (on behalf of the Alberta Government)

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1	Timo Makinen – Shell			How do you incorporate geothermal or solar HW heating?	There is interest in pursuing a geothermal protocol as a potential industry lead.	
2	Timo Makinen – Shell			How is material selection handled?	<p>That discussion arose during lifecycle discussion - this protocol looks at energy savings in buildings. Recognizing that looking at energy savings may not be the best way to look at GHGs.</p> <p>Keith Driver - By examining materials we are expanding the boundary of the project which will require us to look upstream at material production.</p> <p>Timo Makinen – Concern that we are building another silo- want to ensure that we are connecting protocols.</p> <p>Duncan Kenyon – can see a point in the future that we will not have these silos but have a much more comprehensive approach to technologies.</p>	
3	Aaron Schroeder – ICFI			Was AB Infrastructure engaged given that they have adopted LEED?	No	
4	Joe Rogers – The Delphi Group			Question about level of occupancy and type – can we quantify this?	If there is a fundamental change in the occupancy of the building – might need to look at the building occupancy in the protocol. May need to separate Commercial and Institutional, since there's more variability due to occupancy rate with commercial. To be examined	
5	Stephan Wehr – The Delphi Group			International performance measurement and verification protocol (IPMVP) offer different	It was discussed during 1st round of technical review.	

				approaches		
6	Nathan Muegge - ICFI			Good to quantify 'fundamental' or 'substantial' change – i.e. threshold – for the verifier		
7	Timo Makinen - Shell			Suggestion to have a look at the BC Power Smart	b	

Comment that this protocol is worth the effort but likely won't reach the March 31st deadline.