

Compilation of Stakeholder Comments to AUC Rule 012 Phase 2 Technical Review

The following is a compilation of feedback received by the AUC regarding technical Issues identified in relation to AUC Rule 012 Noise Control. Comments regarding each issue are located in the right column. New issues, identified by stakeholders are highlighted in yellow for emphasis. The issue number, provided in column 2, is used to track issues and does not correspond to section numbers in the rule nor does it reflect a priority for potentially implementing change.

Major Subject Area	Issue #	Specific Task	Comments
Clarify Objective of AUC Rule 012	1.0	The primary objectives of Rule 012 should be more clearly stated. The following is proposed for consideration. AUC Rule 012 is intended to ensure that noise emanating from AUC-regulated facilities is effectively managed to minimize nuisance to potentially affected parties.	
			Mainstream Renewable Power Ltd. Adopt the term "sound" instead of "noise" as it better represents the technical guidelines of Rule 12.
			Suncor Energy Services Inc. This statement should be expanded to include a definition of “potentially affected parties”. The AUC should confirm the scope of Rule 012 application – other comments in this spreadsheet imply that more than dwellings could be considered. This would introduce an inconsistency with ERCB Directive 038.
			Golder Associates Ltd. The wording of this statement should be consistent with the resulting definitions from this review. ‘Parties’ are not defined. Currently only ‘dwellings’ are defined. The use of ‘parties’ can be open to the interpretation that Rule 012 can apply beyond “dwellings”. We suggest that ‘receptor’ be defined and the following text used: AUC Rule 012 is intended to ensure that noise emanating from AUC-regulated facilities is effectively managed to minimize nuisance to potentially affected receptors.
			NaturEner Energy Canada Inc. "Potentially affected parties" should be replaced with "receptors", and defined within the glossary (see 20.1 & 20.2).

			<p>Greengate Power Corporation The term "potentially affect parties" opens the door to give equal weight to assumed future parties that may never exist. The language should be bound to "...effectively manage to minimize nuisance to existing and confirmed to inhabited infrastructure of potentially affected parties."</p>
			<p>Shell Canada Limited Shell supports the proposed wording.</p>
			<p>CAPP Industrial Hygiene Committee Agreed (to the change as proposed)</p>
			<p>GL Garrad Hassan We would prefer to have the word "impact" instead of "nuisance"</p>
			<p>AltaLink Management Ltd AML agrees that the objectives should be more clearly stated and agrees with the proposed clarification. AML further recommends that the Rule focus on defining the allowable noise contributions from the proposed AUC-regulated facilities versus the current method of considering cumulative noise impacts at a proposed location. AML contends that AUC-regulated facility proponents and the Commission have no influence or control over other noise sources. In the instance the Commission feels that solely focusing on individual noise contributions from proposed AUC-regulated facilities is inadequate to meet the Rule's intent, AML would support including other existing AUC-regulated facilities only but not any other noise sources in a NIA. Regulatory efficiency is one of the goals of the Commission. AML strongly encourages the Commission to adopt the necessary changes to the Rule to ensure its meets its efficiency goal and the objectives of the Rule. The Rule as it currently stands will put an extraordinary demand on the Facility Applications process for new proposed facilities as well as the process for handling noise levels for encroachment on existing facilities. This demand will further increase as development in Alberta increases in the coming years. The requirements are such that it will strain existing resources of facility proponents</p>
			<p>HFP Acoustical Consultants HFP agrees the primary objectives could be more clearly stated. However, we suggest there needs to be some statement about how the combination of AUC-regulated facilities and ERCB-regulated facilities will be handled. Which Agency is the lead</p>

			regulator? So to limit the objective to AUC-regulated facilities alone would be incorrect.
			<p>ENMAX Corporation</p> <p>... supports ... coordinated regulation of noise in the energy sector by the AUC and the Energy Resources Conservation Board (“ERCB”). However, this coordinated regulation has to acknowledge the uniqueness of the type of facilities that the AUC regulates. An applicant for AUC- and ERCB-regulated facilities must prepare a NIA for the nearest or most impacted dwelling that includes the potential noise impacts of the proposed facility under operating conditions. An applicant must ensure that its facility will not cause the overall sound levels to exceed the Permissible Sound Level (“PSL”). If the existing noise level in an area is already above the PSL, then the applicant must ensure there is no increase in the overall sound levels.</p> <p>Section 1.2.1 of ERCB’s Directive 038: Noise Control (“Directive 038”) acknowledges the need to balance the interests of both nearby residents and the applicant / licensee. Directive 038 explicitly states that it does not guarantee that a resident will not hear noises from a facility; rather, it aims to ensure that indoor noise levels for residents near a facility are not adversely affected. ENMAX proposes that this balancing of interests should be the underlying objective of AUC Rule 012.</p>
	1.1	Should Rule 012, similar to ERCB Directive 038, include statements that limit the scope of its application? Rule 012 does not impose limits on noise experienced by livestock or wildlife, nor does it address noise that may affect any occupant of a structure (i.e. not just dwellings). Are there any other limitations to the scope of Rule 012 that should be specified?	
			<p>Mainstream Renewable Power Ltd.</p> <p>Where there are limitations to the scope, they should be clearly stated to avoid confusion and incorrect interpretation.</p>
			<p>Suncor Energy Services Inc.</p> <p>Yes, statements that limit scope should be included. Wildlife, livestock, non-regulated commercial or industrial receptors should be specifically excluded, if AUC does not plan to develop separate regulations for them.</p>
			<p>Golder Associates Ltd.</p> <p>The Rule should have guidance statements that clearly define the scope or applicability</p>

			<p>from the receptor perspective. That may include statements similar to that in Directive 038 regarding exclusion of effects on wildlife or differentiating between noise control and audibility (it does not guarantee a facility will not be audible). A simple statement such as: 'Subject to Section 2.3, this Rule applies to a facility and the noise generated by a facility at a receptor during normal operation.' could be used in combination with strong definitions of facility (already in Section 1.1) and receptor (could be moved to Section 1.1)</p>
			<p>Alberta Wind Energy Corporation AWEC is opposed to any noise limits beyond those which affect human beings. Noise limits experienced by livestock or wildlife, etc, would introduce a complicated, unreasonable and unnecessary constraint on projects. Additionally, projects are subject to environmental reviews which cover disturbances to environmentally sensitive areas. Secondly, it would be nearly impossible to address noise that may affect the occupant of a structure because the noise experienced by such an occupant would be affected by such things as the materials that the structure is composed, noise within the structure and tolerance of the occupant to noise.</p>
			<p>Patching Associates Acoustical Engineering Agreed - it needs to be clear what are and are not considered under AUC jurisdiction. This would limit complaints about issues over which AUC does not have control. See response to point 8.1</p>
			<p>NaturEner Energy Canada Inc. Rule 12 should focus on firm receptors such as residences, hospitals, schools, etc, but not on transitory or migratory receptors such as livestock, wildlife (see 20.1 & 20.2) or transitory portable dwellings such as tents or recreational vehicles (unless located in approved areas specifically set aside for such use).</p>
			<p>Greengate Power Corporation The noise level with respect to livestock and wildlife should remain as is until studies confirming adverse effects, sanctioned by credible institutions, are available. Noise levels affecting humans are well documented in health and safety standards. With respect to the noise effect in humans, this rule should consider a practical alignment with existing health and safety rules.</p>
			<p>Shell Canada Limited Shell supports the concept of consistency with ERCB Directive 038 and the inclusion of statements that limit the scope of application of Rule 012 as applicable.</p>

			<p>TransAlta Corporation</p> <p>Section 1.3 implies that it only applies to dwellings, but consider making this more explicit. There is a confusion when "facility" in 1.1 (b) in combination with 1.1 (e) in the document there is reference to "energy-related facility". We take this to include oil/gas under jurisdiction of the ERCB. This needs to be resolved to either have Rule 12 include only those facilities within the jurisdiction of the AUC or to include those of the ERCB.</p>
			<p>GL Garrad Hassan</p> <p>Scope of application shall be clearly defined and left no room for interpretation. Dwelling is properly defined but it may be interesting to clarify the status of: playground, school, hospital, daycare, kindergarten, cemetery, church ... (see task # 20.1 and 20.2)</p>
			<p>AltaLink Management Ltd.</p> <p>AML recommends that this Rule should limit the scope of its application to be consistent with any other Rules (such as Rule 007) and/or Directives of the AUC. AML also recommends that the Rule be applicable for dwellings only as defined in the Rule and not to other receptors such as livestock or wildlife or anything else such as structures or urban industrial areas where there are no dwellings. AML also recommends there be additional clarification for what is not required to be considered in a NIA as well as identify any AUC regulated facilities that would be exempt from this Rule. AML recommends that all new and existing transmission lines either AC or DC, all new and existing telecommunication sites (with or without standby generators), all new and existing substation equipment except for transformers and AC/DC converter equipment, and temporary facility installations such as mobile substations be exempt from this Rule. AltaLink believes that none of its recommended exemptions significantly contribute to overall noise levels. Alternatively, the Commission should include an exemption/significance process in the Rule that would allow a facility proponent to demonstrate that certain facilities or equipment will not significantly contribute to overall noise levels under all circumstances such that these facilities would receive an exemption from the Rule.</p>
			<p>EDTI</p>

			EPCOR recommends that Rule 012 be clarified to identify that the scope of its application to substation facilities relates only to transmission designated substations. The substation definition in 1.1 (d) references the HEE Act. This substations definition would appear to exclude electrical distribution systems and distribution designated substations (i.e. substations with a primary operating voltage of less than 25 kV).
			HFP Acoustical Consultants See comments under 1.0 above. HFP believes Rule 012 should include the limitations suggested.
	1.2	Imperial Oil Resources Please clarify who has jurisdiction over a site that could fall under ERCB's Directive 38 and AUC's Rule 12 (ex. A well site with a gen-set, or a cogen site such as Imperial Oil Resources (IOR)'s Cold Lake Operations)	Imperial Oil Resources Memorandum of Understanding between the ERCB and the AUC that clearly states which document applies (ie. Directive 38 or Rule 12) at facilities where both documents would otherwise apply. IOR recommends that the AUC not only clarifies the issue of jurisdiction as precisely as possible, but that it also establishes a formal mechanism to provide industry with a means by which it can plead its case in the event of jurisdictional confusion or where the application of both D-38 and Rule 12 may impose unintended restrictions on industry.
Change management	2.0	Develop an implementation schedule for technical changes to Rule 012 to permit applications developed under the current version of Rule 012 to be evaluated under the current Rule 012, while avoiding an unreasonable delay to the adoption of a revised AUC Rule 012.	
			Mainstream Renewable Power Ltd. Applications already under review by the AUC should be subjected to the version of rules that were in force when the original application was made. It would be unfair to subject an applicant to new rules when the complete design of the power plant may require revision, costing extra money and time delays.
			Suncor Energy Services Inc. A delay in the adoption of the revised Rule 012 could be avoided by providing a "notice of issue" 60 days prior to implementation. We agree that applications developed under the current version of Rule 012 should be evaluated under the current version of Rule 012 if it is submitted to the AUC prior to the terms of the Notice (e.g. a proposed 60 days)

			<p>Golder Associates Ltd.</p> <p>Applications submitted prior to the issue of the revised Rule 012 should be evaluated against the version in effect on the date of the submission. We suggest a one month 'grace period' for applications to be required to comply with the revised Rule 012, once the Rule is issued.</p>
			<p>Alberta Wind Energy Corporation</p> <p>It would be an unreasonable request to change the requirements of projects already in the AUC process. Projects are designed considering the regulatory regime at the time of application. It would be completely unreasonable to subject projects already under review to a new set of regulations.</p>
			<p>Patching Associates Acoustical Engineering</p> <p>Good idea - the last rewrite of ERCB 038 took 5 years to implement. It needs to be clear to all that what is in the rule is binding, and what is not in the rule is not. In particular, the rule states that consideration of LFN is a secondary investigation to be undertaken only when there is a complaint. Under the rule, it is not a requirement of every NIA.</p>
			<p>NaturEner Energy Canada Inc.</p> <p>A phased implementation schedule would minimize development disruption and rework, and establish clear expectations. However, any applications filed before the effective date of the revised AUC Rule 012 should be reviewed under the current version of AUC Rule 012. Noise analysis modeling work associated with a particular project is completed prior to application filing and any implementation schedule that contemplates applying a revised AUC Rule 012 after application filing may require remodelling and/or redesign of the proposed facility.</p>
			<p>Greengate Power Corporation</p> <p>Not sure what the purpose of an implementation schedule is or would be with respect to the rules of assessment.</p> <p>The expectation of any investment is that its project is assessed within the framework of the approved rule at time of application. On this basis a proponent prepares an application addressing the specific of the rules as they apply and understood at that time.</p> <p>It is (or would be) unreasonable and unacceptable to assess a project on rules not yet approved as this approach leads to a distorted assessment with respect to the existing</p>

			<p>and approved rule on at the time an application was prepared. If a rule is unfinished or not complete, there is no reasonable or valid explanation to delay a project given that at that time there would be a valid rule fully enforced.</p>
			<p>Shell Canada Limited Shell supports immediate implementation of technical changes to Rule 012 for projects not yet applied for, and the development of a timeline to compliance for applications in progress.</p>
			<p>CAPP Industrial Hygiene Committee Agreed (to the change as proposed)</p>
			<p>AltaLink Management Ltd. AML agrees that an implementation schedule for technical changes should be developed and included in the Rule as proposed and possibly add an issue date and an effective date thereafter to allow an appropriate transition to the new requirements. AML further notes that "developed under current version of Rule 012" implies that the grandfathering concept would apply to applications not yet filed by a proponent, as well as those currently before the AUC for review during the effective period of a given version of the Rule. AML suggests that facility applications could include a statement: "at the time of application, the NIA was undertaken as per the requirements of Version X of AUC Rule 12" to provide further clarity for the Commission when processing facility applications during the transition period. AML strongly encourages the Commission to set up a stakeholder working group to further review the comments and proposed changes to the Rule before finalizing it. AML has already performed a number of noise calculations and studies with respect to its facilities and could share these calculations and studies with the Commission and/or a working group to assist in determining the requirements and applicability of the Rule to those facilities.</p>
			<p>HFP Acoustical Consultants HFP agrees some statements concerning how applications submitted during the review period will be handled would be very helpful. HFP recommends applications submitted under the current version be evaluated against the current version and applicants should not be required to update their noise impact assessments to address any new requirements in a new version.</p>
			<p>ENMAX Corporation</p>

			ENMAX believes that a grace period should be applied under circumstances when an application has been made or is imminent. In addition, ENMAX believes that a grandfathering clause should be applied to ensure NIAs already submitted to support existing facility applications and approvals are unaffected by subsequent administrative and technical Rule 012 changes.
Encroachment of dwellings near existing noise source (Section 1.4)	3.0	Modify Section 1.4 to ensure consistency with Section 1.4.2 of ERCB Directive 38. If a new dwelling is constructed within 1.5 km of an existing facility, the PSL at that new dwelling will be the existing noise level at the time of construction of the new dwelling.	
			Mainstream Renewable Power Ltd. Someone constructing a new dwelling within 1.5 km of a power plant is responsible for understanding that they may be affected by the noise emanating from the plant. It would be unreasonable to require a power plant to alter their operations once the investment to construct and operate has already been made. Rule 12 needs to clearly state this fact that the existing noise level at the location of the new dwelling is the new PSL for which the power plant is responsible.
			Suncor Energy Services Inc. We agree with this modification.
			Golder Associates Ltd. Agreed
			Alberta Wind Energy Corporation AWEC supports whereby any newly built dwellings, or any other structure, park, etc, must accept the existing noise level, regardless of the distance the structure is built from the existing facility.
			Patching Associates Acoustical Engineering The ERCB wording may be contradictory. As currently written the wording says that: "The EUB expects a licensee to be prepared to comply expeditiously with the requirements of this directive once it is aware that new developments result in the facility exceeding the PSL." but also states: "In cases where landowners, residents, or developers build dwellings near an existing facility and ignore the obvious noise impact, the PSL will be the existing noise level at the new dwelling coming from the facility." The statements seem to contradict each other and the test seems to be the

			<p>validity of the documentation used to communicate the current noise levels to new residents. This is gray and should be revised, also; clarify that noise modeling is acceptable as noise survey data is rarely available at all potential building sites.</p>
			<p>NaturEner Energy Canada Inc. Suggest clarifying the suggested sentence to read: "If a new receptor is constructed within 1.5 km of a facility for which an application has been filed with the AUC, the PSL at that new receptor will be the greater of the predicted or existing noise level at the time of construction of the new receptor, as applicable."</p>
			<p>Shell Canada Limited Shell supports the principle of the proposed modification, and suggests clarifying that this applies to existing and approved facilities. Suggested wording for this section is: "Where a dwelling is built near an existing or approved facility, the PSL will be the noise level at the new dwelling coming from the existing or approved facility. The Commission expects a licensee to be prepared to comply expeditiously with the requirements of this Rule once aware that changes in the facility result in the facility exceeding the PSL."</p>
			<p>Imperial Oil Resources Please ensure consistency between Directive 38 and Rule 12 by deferring to the conditions stipulated in Directive 38 surrounding encroachment. In addition, as written, this point states that if a new dwelling is constructed within 1.5 km of an existing facility, the PSL should be the level "at the time of construction". IOR suggests, to avoid misinterpretation, that this statement should be modified to state: "prior to construction".</p>
			<p>TransAlta Corporation This protection should be expanded to include facilities with AUC approval. If the facility has not yet been built, the PSL would then be the modeled sound level at the new dwelling, but only if this is greater than the normally determined PSL. The phrase "the PSL at the new dwelling will be the existing noise level" is based on the presumption that the actual sound level exceeds the normal permissible PSL. The PSL should only be able to increase from the normally determined PSL, not decrease.</p>

		CAPP Industrial Hygiene Committee Agreed (to change as proposed)
		CanWEA ... the current wording of section 1.4 of Rule 012 will unfairly restrict wind development in Alberta. The proposed modification is consistent with approaches in other jurisdictions in Canada and around the world. Support consistency with ERCB Directive 038. In addition, suggest that the section be amended to "...within 1.5 km of an existing or formerly approved facility" to provide clarity to applicants.
		AltaLink Management Ltd AML recommends the proposed modifications be adopted in the Rule in the instances where the existing noise level exceeds the PSL determined in accordance with Section 2. In the instances where the existing noise level is below the PSL determined in accordance with Section 2, the PSL value will apply. AML also recommends further clarification be included in the Rule when new "non-dwelling" facilities are constructed within 1.5 km of an existing facility such that the Rule does not apply in those instances. See 4.2. Clarify wording to "for dwellings constructed near existing facilities, the PSL at the new dwelling will be the existing PSL at the dwelling".
		HFP Acoustical Consultants HFP does not agree with this interpretation of Directive 038 for post-1988 facilities. Section 1.4.2 in Directive 038 is written so that the ERCB can decide to either side with the new residence (i.e. no protection for the facility against encroachment) or side with the facility (i.e. PSL = existing noise level). HFP agrees it is important to maintain consistency between Rule 012 and Directive 038 and recommends wording that mirrors that in Directive 038.
		ENMAX Corporation ENMAX supports the basic policy modification to Section 1.4 of Rule 012 whereby, if a new dwelling is constructed within 1.5 km of an existing facility, the PSL at that new dwelling will be the existing noise level at the time of its construction.
3.1	Clarify basic policy about encroachment. The PSL for a new dwelling is the existing sound level only if the facility is meeting the PSL at 1.5 km from original facility property line.	
		Mainstream Renewable Power Ltd. Someone constructing a new dwelling within 1.5 km of a power plant is responsible for

		understanding that they may be affected by the noise emanating from the plant. It would be unreasonable to require a power plant to alter their operations once the investment to construct and operate has already been made. Rule 12 needs to clearly state this fact that the existing noise level at the location of the new dwelling is the new PSL for which the power plant is responsible.
		Suncor Energy Services Inc. Rather than cite compliance at the 1.5 km from the original facility property line, the text should read “only if the facility is currently compliant”.
		Golder Associates Ltd. Agreed, however other receptors may also already exist. We suggest the following edit: “The PSL for a new dwelling is the existing sound level only if the facility is compliant at any existing receptors or, where there are no existing receptors at 1.5 km from original facility property line.”
		Alberta Wind Energy Corporation AWEC supports whereby any newly built dwellings, or any other structure, park, etc, must accept the existing noise level, regardless of the distance the structure is built from the existing facility.
		Patching Associates Acoustical Engineering This is good practice provided the facility is not grandfathered or was not designed and built prior to 2007 when the PSL at 1500 m was a guideline only.
		NaturEner Energy Canada Inc. Compliance with AUC Rule 012 needs to be set at the point of application. Predictability needs to be established for the development of facilities. Other AUC requirements stipulate consultation requirements that notify nearby landowners (within 2 km of the project area boundary) of project plans before an application is filed. As such, if a proposed facility models and predicts noise levels will meet the PSL for existing nearby receptors and meets the PSL at 1.5 km from the original facility property line or project area boundary, NaturEner agrees that the PSL for a new receptor should be the greater of the predicted or existing noise level at the time of construction of the new receptor.
		Shell Canada Limited Shell supports the proposed wording, but again would clarify that this applies to existing and approved facilities.

			<p>TransAlta Corporation</p> <p>Use fence line instead of property line. ie. "The PSL for a new dwelling is the existing sound level only if the facility is meeting the PSL at 1.5 km from original facility fence line". It may be worthwhile to define "fence line". It should be a conceptual boundary around the noise source, not based on arbitrary property boundaries or physical fencing. Rule 12 is "receptor based", and in that same vein should be "emitter based" when it comes to facility sound.</p> <p>As a matter of principle TransAlta believes that the sound level obligations of a facility are as approved when a facility is first constructed and operated. Subsequent developments over time near the facility should not change the original approved sound level obligation. Under no circumstances should the PSL for a facility be lowered from that as approved when first constructed. If subsequent developments seek a lower sound emission level from the facility then, if such reductions are possible, the mitigative measures should be at the cost of the subsequent developments and not the licensee. We highlight, for example, the wording in 2.3 (2) which seems to imply that if a complaint is received then the PSL is as per section 2.1 and not the PSL as approved. This needs clarification as the implications to the licensee are significant. As a matter of principle facilities should be "grandfathered" to the sound level requirements in effect when the facility was approved.</p>
			<p>AltaLink Management Ltd.</p> <p>This clarification seems to contradict the above Section 3.0 change and would suggest that mitigation is required for all existing facilities being encroached upon where the existing facilities do not meet the PSL at 1.5 km. AML recommends that the PSL at the new or existing dwelling will be the existing noise level regardless of whether or not the facility is meeting the PSL at 1.5 km. AML also recommends that the Rule should clearly indicate that the 1.5 km be measured from directly adjacent to the noise source versus fence line, property line, easement boundary, road allowance boundary, utility corridor boundary, etc. since in the majority of cases AML is not the property owner and the property line could be hundreds of metres from the potential noise source. (Is concerned about) The possibility that a NIA and mitigation may be required if a dwelling is constructed within 1.5 km of an existing transmission line and/or substation. Requirements such as these will significantly strain the efficiency of the Regulatory process for AUC-regulated facilities. Appropriate changes to the Rule will help ensure the Commission objectives are met.</p>

			<p>HFP Acoustical Consultants See comment under 3.0 above.</p>
	3.2	Clarify that if the facility property line changes, the PSL at an affected dwelling will remain at the level established from the original property line.	
			<p>Mainstream Renewable Power Ltd. Someone constructing a new dwelling within 1.5 km of a power plant is responsible for understanding that they may be affected by the noise emanating from the plant. It would be unreasonable to require a power plant to alter their operations once the investment to construct and operate has already been made. Rule 12 needs to clearly state this fact that the existing noise level at the location of the new dwelling is the new PSL for which the power plant is responsible.</p>
			<p>Suncor Energy Services Inc. This text is sufficient clarification.</p>
			<p>Golder Associates Ltd. Agreed</p>
			<p>Alberta Wind Energy Corporation AWEC supports whereby any newly built dwellings, or any other structure, park, etc, must accept the existing noise level, regardless of the distance the structure is built from the existing facility.</p>
			<p>Patching Associates Acoustical Engineering For an affected resident, PSL should remain which existed before the change in fence line. Until the house exists, there is no set PSL (cannot make compliance requirements retroactive).</p>
			<p>NaturEner Energy Canada Inc. Compliance with AUC Rule 012 needs to be set at the point of application. Predictability needs to be established for the development of facilities. Other AUC requirements stipulate consultation requirements that notify nearby landowners (within 2 km of the project area boundary) of project plans before an application is filed. If the facility property line (or project area boundary) changes, NaturEner agrees</p>

			that the consultation requirements will have to be satisfied for the new property line or project area boundary. In addition, the PSL for an affected receptor should remain at the level established for the original property line, unless there is a change to the location or characteristics of the noise source, thereby triggering a new NIA to be completed.
			Shell Canada Limited Shell supports this clarification.
			TransAlta Corporation Again, use conceptual "fence line" instead of "property line". And really if the conceptual fence line changes, the facility has probably been modified thus requiring a new NIA. Therefore, we are unsure whether this identified item should be part of Rule 12.
			AltaLink Management Ltd. AML recommends that the Rule states that the PSL of an affected dwelling will remain at the level established regardless of any boundary changes. Refer to second paragraph in 3.1.
			HFP Acoustical Consultants See comment under 3.0 above.
	3.3	Imperial Oil Resources Care should be taken when using the term encroachment.	Imperial Oil Resources Care should be taken when using this term (encroachment) because in almost all cases, no "encroachment" is involved. More specifically, when new houses/dwellings are constructed, they usually do not impinge on industry leases, so technically, no encroachment (in the land/legal sense) is involved. The issue of new dwellings being constructed within a specified noise isopleth or distance from a noise source is important but quite different. Several oil and gas companies have had similar discussions on this issue with the ERCB in the past. Please clarify this issue in a similar manner as it pertained to D-38.
	3.4	EPCOR Distribution & Transmission Inc. Location where noise measurements should be made to determine compliance.	EPCOR Distribution & Transmission Inc. For purpose of determining compliance with this rule, noise is measured at a distance of 15 m from the nearest or most impacted dwelling. If this results in the compliance measuring location being situated inside the property line of the proponent's facility, then the noise should be measured at the property line of the proponent.

			<p>EPCOR has concerns with the requirement in section 1.3 relating to the location where noise measurements should be made to determine compliance. The rule states "For the purpose of determining compliance with this rule, noise is measured at a distance of 15 m from the nearest or most impacted dwelling, rather than at the property line of the land on which the dwelling is located".</p> <p>Many of EPCOR's substations are located in densely populated residential areas (Garneau, Woodcroft, Petrolia, etc.) with the nearest or most impacted dwelling located within 15 meters of the substation property line. Based on the current wording in section 1.3, EPCOR would be required to take noise readings within the confines of energized substations and, in some cases immediately adjacent to noise generating equipment such as transformers. EPCOR recommends that paragraph 1.3 be revised to read "measured at a distance of 15 m from the nearest or most impacted dwelling, or at the facility property line, whichever distance is closest to the dwelling".</p>
	3.5	Consider eliminating section 3.5 specifying noise modelling parameters	<p>TransAlta Corporation</p> <p>In section 3.5, what does "consideration must be given to..." mean? We suggest either explaining what is required or, preferably, removing that part altogether.</p>
	3.6	TransAlta Corporation Section 3.6 requiring assessment of low frequency noise where data are available appears vague, consider removing	<p>TransAlta Corporation</p> <p>Section 3.6: "...to be considered...to identify and minimize the potential for low frequency noise impacts". Vague, consider removing this section.</p>
	3.7	TransAlta Corporation Section 3.1 (5) to ensure no increase in overall sound does not appear to be practical.	<p>TransAlta Corporation</p> <p>In 3.1 (5) it says that "its facility will not cause an increase in overall sound level." Any new facility will increase sound levels. This requirement does not appear to be practical. Consider defining the acceptable increase, e.g. +2dBA.</p>
Pre-1988 Facilities (Section 2.3)	4.0	Ensure AUC Rule 012 Section 2.3 is consistent with ERCB Directive 038, Section 2.2. For dwellings constructed after facility is existing, the PSL will remain at the existing level.	
			<p>Mainstream Renewable Power Ltd.</p> <p>Someone constructing a new dwelling within 1.5 km of a power plant is responsible for understanding that they may be affected by the noise emanating from the plant. It would be unreasonable to require a power plant to alter their operations once the investment to construct and operate has already been made. Rule 12 needs to clearly</p>

		state this fact that the existing noise level at the location of the new dwelling is the new PSL for which the power plant is responsible.
		Golder Associates Ltd. Agreed
		Alberta Wind Energy Corporation AWEC supports whereby any newly built dwellings, or any other structure, park, etc, must accept the existing noise level, regardless of the distance the structure is built from the existing facility.
		NaturEner Energy Canada Inc. Compliance with AUC Rule 012 needs to be set at the point of application. Predictability needs to be established for the development of facilities. If a proposed facility models and predicts noise levels will meet the PSL for existing nearby receptors and meets the PSL at 1.5 km from the original facility property line or project area boundary, NaturEner agrees that the PSL for a new dwelling should be the greater of the predicted or existing noise level at the time of construction of the new dwelling.
		Greengate Power Corporation Yes
		Shell Canada Limited Shell supports consistency with ERCB Directive 03, Section 2.2.
		TransAlta Corporation In relation to 2.3(2) we disagree with the concept that if a facility is deferred, it is only deferred in the absence of a noise complaint. "Grandfathering" is meant to reduce risk so that development can occur, and protect licensees from future regulatory changes. Our opinion is that the standards in place when the facility is approved should stay with that facility for its lifetime. That would apply to pre-1988 facilities, ERCB Directive 38 facilities, Rule 12 version 1 facilities (before the addition of ASL was required), and each subsequent iteration of Rule 12. If we get permission to construct a facility under this revised Rule 12, we expect some security from future changes. Similarly, we do not agree with the elimination of deferred status for pre-1988 facilities that is currently proposed in 2.3(5). TransAlta would point out that the only way to mitigate the sound level from a wind turbine is to reduce production up to and including turning off the wind turbine. This would be in contrast with a substation, for example, where sound abatement is possible through installation of barriers/baffles. The wind turbine example shows why the principle of abiding by the PSL as approved is

			important to the project developer and investor.
			HFP Acoustical Consultants HFP agrees it is important to maintain consistency between Rule 012 and Directive 038 and recommends wording that mirrors that in Directive 038.
	4.1	Clarify that the pre-1988 deferral of applying a PSL as calculated in section 2.1 applies to adjacent facilities only if the deferred facility is operating. If the deferred facility is suspended or abandoned, the PSL reverts to that calculated without the pre-1988 facility deferral.	
			Mainstream Renewable Power Ltd. Agreed (to change as proposed).
			Suncor Energy Services Inc. No comment at this time.
			Golder Associates Ltd. Agreed (to change as proposed)
			NaturEner Energy Canada Inc. NaturEner agrees that if a deferred facility is suspended or abandoned, the PSL should revert to that calculated without the pre-1988 facility deferral. Although, additional clarification is needed to define how and when a deferred facility is considered "suspended or abandoned".
			Shell Canada Limited Shell supports this clarification.
			AltaLink Management Ltd. AML agrees that clarification is required and recommends that in the instance that a suspended or abandoned facility comes back into service it is still considered a pre-1988 facility.
			HFP Acoustical Consultants HFP agrees with this comment.
	4.2	AltaLink Management Ltd	AltaLink Management Ltd

		Section 2.3 (3) applying pre-expansion PSL for pre-1988 facilities is inconsistent with Appendix 3 Noise Impact assessment summary form in the Rule, and ERCB Directive 38.	AML recommends Section 2.3.3 should read "The pre-expansion or pre-modified noise level will become the PSL for any expansion or modification to the facility subsequent to 1988 if the noise level is currently above the PSL determined in accordance with Section 2."
	4.3	EPCOR Distribution & Transmission Inc. EPCOR recommends that the deferred status for facilities built and in operation prior to 1988 not expire as indicated.	EPCOR Distribution & Transmission Inc. EPCOR recommends that the deferred status for facilities built and in operation prior to 1988 be eliminated when the existing equipment installed at the facility reaches the end of its useful asset life or when the facility owner modifies or carries out changes to the equipment covered under its existing Permit and License, whichever event occurs first. EPCOR has concerns with the section 2.3 (5) which states that, "Effective October 17, 2018, the Commission will eliminate the deferred status for facilities built and in operation prior to 1988". Unless paragraph 1.3 is revised as EPCOR has recommended above (i.e. compliance measurements are taken 15 meters from the impacted dwelling or at the facility property line, whichever is closest), EPCOR may not be able to meet the PSL levels defined in paragraph 2, even with substantial changes/rebuilds to EPCOR's existing substation facilities built prior to 1988. EPCOR also notes that substation equipment typically has an expected asset service life of 40-50 years. EPCOR has concerns that significant noise mitigating modifications may be required to bring facilities built prior to 1988 into compliance with Rule 012 by 2018 with no changes to the substation's operational capacity. Unless the proponent modifies or otherwise carries out changes to the equipment covered under its existing Permit & License or as specifically directed by the Commission, EPCOR recommends that the deferred status remain in place until the equipment has reached the end of its intended asset life.
Wind Turbines	5.0	For wind turbines clarify how to predict noise to represent "worst case" noise conditions and measure noise for compliance assessment.	
			Suncor Energy Services Inc. Suncor supports the idea of the AUC hosting a focused meeting and the development

			<p>of a separate guidance document related to wind turbines similar to the Technical Guidance documents available for eligible Offsets under the Alberta Specified Gas Emitters Regulation (http://environment.alberta.ca/02275.html)</p> <p>We note that “worst case” conditions have not been referenced in Rule 012 to date. This appears to conflict with “normal operating conditions” currently cited in the Rule.</p> <p>For noise predictions, Suncor supports an approach that includes conservatism in an assessment in order to address uncertainties associated with predictive modeling. Measurements should reflect realistic (and normal) operating conditions, not under worst case conditions. For specific details, we defer to the technical stakeholders.</p>
			<p>Golder Associates Ltd.</p> <p>We feel this would be a good topic for a meeting to discuss specific actions. Predictions and measurement are two different topics that need to be linked from an application perspective. We feel 'worst case' is not the philosophy presented in Directive 038 or Rule 012 and the term "representative conditions" would be more appropriate.</p> <p>For predictions, the philosophy must also consider that the current wording of Rule 012 and Directive 038 looks at 'normal operating conditions'. The key to defining expectations around noise predictions for wind turbines or any facility is to define the representative, expected noise level from 'normal' or realistic operating conditions.</p> <p>The absolute worst case noise from an operation may represent an unrealistic case that cannot occur (I.e., for wind turbines, a receptor being simultaneously downwind of turbines that are in multiple directions) or can only occur under specific conditions that are not part of everyday operation (e.g., an upset condition). If a philosophy of assessing for the absolute worst case is taken, compliance measurements of the conditions assessed may never be possible. This is because compliance measurements should be defined as measurement used to verify the representative noise levels from normal facility operation. Prediction modelling should be conducted such that compliance measurements of the condition modelled must be feasible. The current methods used (ISO 9613) for assessment are generally considered to be conservative. Model input choices tend to be conservative as a matter of due diligence. Predictions based on the 'worst case' add extra conservatism to an assessment. If this approach is assumed by the AUC to be acceptable, then specific operating conditions for noise compliance monitoring should be defined. This idea applies for all facilities, the defined operating conditions would be based on the type of facility. For wind turbines, the conditions that should be required for compliance monitoring are periods with very</p>

			stable atmosphere, so that there is a high hub height wind speed (matching the maximum sound power wind speed of the machine) and a low ground level wind speed, with the receptor downwind of the nearest turbine.
			Alberta Wind Energy Corporation AWEC supports more clarification in the regulations that streamline the process, add fairness for all proponents, and avoid delays.
			NaturEner Energy Canada Inc. The "worst case scenario" predictive modeling should include downwind condition and wind speeds at which the turbine generates the maximum noise level. The acoustic practitioner performing the modeling should assign values to the parameters that are outlined in the standard ISO 9613-2 based on their professional experience, and provide justification and/or explanation on how those parameters contribute to the "worst-case scenario" in the report.
			Greengate Power Corporation Manufacturers provide noise related information, i.e., parameters for Noise Impact Assessment derived from actual certification tests. Any deviation from vender parameters would constitute arbitrary choice of modeling data.
			Shell Canada Limited Shell wishes to engage with the AUC on this topic during proposed stakeholder sessions.
			TransAlta Corporation Worst case could include downwind conditions from all turbines (ie. ISO 9613-2) and giving results based on the wind speed where the sound levels peak. TransAlta would point out that the only way to mitigate the sound level from a wind turbine is to reduce production up to and including turning off the wind turbine. This would be in contrast with a substation, for example, where sound abatement is possible through installation of barriers/baffles. The wind turbine example shows why the principle of abiding by the PSL as approved is important to the project developer and investor."
			ENMAX Corporation ENMAX understands that a NIA must reflect operating conditions of the proposed facility. Therefore, the proposed change as it relates to predicting noise to represent "worst-case" noise conditions seems not to be consistent with the objective of AUC Rule 012.

	5.1	For assessing noise from wind turbines, does the rule need to specify that special environmental conditions (i.e. wind speed, direction, shelter belts, inversions, atmospheric stability) be used to predict noise when modelling and measuring noise for compliance?	
			<p>Mainstream Renewable Power Ltd. Yes, the rule should take into consideration that sound levels at receptors vary depending on the various directions that the wind turbines of a wind farm are facing. The modeling should be more representative of reality.</p>
			<p>Suncor Energy Services Inc. The conditions used in the modeling should support the philosophy of conservatism in assessments. For specific details, Suncor defers to the technical stakeholders.</p>
			<p>Golder Associates Ltd. The separate meeting described in topic 5.0 should include the discussion of these details. To provide specific responses to all environmental conditions that should be considered also requires the appropriate research. The Rule should define an acceptable range or basis for specific environmental conditions to be considered in the predictions and modelling of wind and conventional power projects. For wind projects, this should be site specific. We recommend the assessment of wind projects consider the on-site summer seasonal atmospheric stability data. The worst 10% of atmospheric conditions (e.g. intense inversions) could be excluded per section 4.7.2 (2) of the current Rule 012. The assessment would then be based on determination of the remaining atmospheric data and the conditions that would result in favourable sound propagation.</p>
			<p>Alberta Wind Energy Corporation AWEC supports more clarification in the regulations that streamline the process, add fairness for all proponents, and avoid delays.</p>
			<p>NaturEner Energy Canada Inc. Please see comment for 5.0, above.</p>
			<p>Greengate Power Corporation Yes, guidance needs to be provided to account for natural or man made obstacles to reduce noise.</p>

			<p>Shell Canada Limited Shell wishes to engage with the AUC on this topic during proposed stakeholder sessions.</p>
			<p>TransAlta Corporation Wind speed (use worst case), direction (ISO 9613-2 assumes downwind conditions), shelter belts (may increase perception but not actual sound levels) and atmospheric stability (wind shear is not particularly relevant to Rule 12 since the PSL is fixed for all wind speeds) are environmental conditions that do not need to be addressed separately within the context of Rule 12. Inversions can increase sound levels, but our opinion is that the modeling should be kept simple and based on normal conditions not rare occurrences. The onus is on the facility owner to meet sound requirements post construction, and there is enough conservatism built into ISO 9613-2 in order to compensate for exceptional circumstances like inversions. The guidelines on construction noise in 5.1 are clear, but it seems that IRs tend to focus on this aspect in great detail. Please update the section so that an applicant knows what is desired in the application.</p>
	5.2	How should wind noise be determined when measuring noise from wind turbines? The maximum sound power of a wind turbine is at wind speeds above the maximum recommended for sound level measurement. Could an increment for wind noise be added relative to ambient noise (e.g. Ontario approach) or should a physical barrier be used to screen wind for measurement of other noise when determining the noise from a wind turbine at a receptor?	
			<p>Suncor Energy Services Inc. Suncor does not support the current Ontario approach which uses an incrementally increasing ambient as this proved problematic for our Ripley Wind Project in Ontario because of the difficulty it introduced to proving compliance. However, Suncor understands that a measurement method is currently being developed that may provide guidance for ensuring compliance. This effort is being championed by the Ontario Ministry of the Environment (MOE). For more detailed measurement methods, Suncor defers to technical stakeholders.</p>
			<p>Golder Associates Ltd. We do not recommend that an incrementally increased background noise level be</p>

			<p>considered unless there is well documented evidence that the occurrence of stable atmospheric conditions (high hub height wind versus low ground level wind) is below an acceptable frequency. There are a number of technical papers that support the use of measurement methods during high wind such as outlined in IEC 61400-11 (International Electro technical Commission (IEC). 2002. <i>IEC 61400-11: Wind Turbine Generator Systems - Part 11: Acoustic Noise Measurement Techniques</i> . Switzerland).</p>
			<p>Patching Associates Acoustical Engineering Also IEC 61400-11</p>
			<p>NaturEner Energy Canada Inc. When determining "worst case" conditions, site-specific elements will affect the noise measurements obtained. In some cases, a physical barrier to screen wind for measurement of other noise when determining the noise from a wind turbine may be the most appropriate approach. In other cases, due to site-specific constraints or contributors, the use of an increment for the wind noise added relative to ambient noise, may be the best course of action. NaturEner recommends that AUC Rule 012 allow for and accommodate either approach and allow the professional acoustic practitioner to determine the appropriate methodology and provide justification and/or explanation in the report. For instance, <i>IEC 61400-11 Wind turbine generator systems – Part 11: Acoustic noise measurement techniques</i> may serve as a good reference.</p>
			<p>Greengate Power Corporation Convolutated question. The short answer is to review well established IEC noise certification protocols. There is a second component to this question for above rated wind speed operation. AUC needs to keep in mind that for above rated wind speeds, for equipment safety purposed turbines are removed from operation.</p>
			<p>Shell Canada Limited Shell wishes to engage with the AUC on this topic during proposed stakeholder sessions.</p>
			<p>TransAlta Corporation The Ontario approach has led to confusion and noise issues at receptors, we prefer the Rule 12 approach based on 40 dBA nighttime. In the absence of an IEC standard for measuring sound levels at distant receptors, we suggest using IEC standards to test the turbine sound levels (ie. at 50 metres distance) and relying on modeling results to confirm compliance.</p>

			<p>HFP Acoustical Consultants A physical barrier may also impact the measured contributions from the wind turbine(s).</p>
	5.3	<p>GL Garrad Hassan Clarify height of wind speed measurement.</p>	<p>GL Garrad Hassan The rule 12 should specify the height each time a wind speed is specified. There may be a huge difference between wind speed @ 1.5 m (wind induced noise for measurement), @ 10 m (as used in IEC 61400-11) and @ 80 m (hub height of the turbine, height which defines the acoustic power of the turbine)</p>
	5.4	<p>GL Garrad Hassan Model wind turbine noise using maximum acoustic power.</p>	<p>GL Garrad Hassan To simplify the task and avoid issue on the wind shear measurement, the wind turbine noise shall be modeled using their maximum acoustic power Section 3.7 (3) : the worst case condition is defined as follow: the turbines are producing @ their maximum acoustic power AND the wind speed @ 10 m is low (no background noise). The worst case is strongly related to the wind shear conditions. regardless of the wind speed</p>
	5.5	<p>GL Garrad Hassan Section 3.7 (4) : A cut-off distance should be specified for the cumulative effect of a wind turbine.</p>	<p>GL Garrad Hassan See Ontario guideline which specify a cut-off distance of 5,000 m</p>
Low Frequency Noise (S 4.2 and Appendix 5)	6.0	Section 4.2(1) requires determination of LFN and identification of a tone. Is the two-part requirement necessary? Is there a concern about LFN that does not have a tone? If so how should it be determined, measured and managed?	
			<p>Acoustical Consultants Inc. It may be a good idea to investigate removing the dBC-dBA criteria altogether. There are easily many situations where there is a definite annoying tone present that meets the 1/3 octave tonal requirements, but not the dBC-dBA requirements. However, just using a dBC-dBA criterion alone is not enough to warrant LFN penalties.</p>
			<p>Suncor Energy Services Inc. Suncor defers to technical stakeholders.</p>
			<p>Golder Associates Ltd. This is another good topic for a focused discussion or meeting as a specific response requires the appropriate research. The two part requirement is not necessary. LFN</p>

			<p>without tone should be considered just as tones without LFN should be considered. Although, it can be argued that former versions of the EUB Directive did assume sources were tonal in the development of the 40 dBA criteria so the argument could be made that tones are already considered. This could be restated to address the issue of tones. Prediction and measurement of LFN would be best addressed as a specific section in Rule 012 with separate standards and measurement requirements.</p>
			<p>Patching Associates Acoustical Engineering Yes. Definition of LFN requires 1/3 octave analysis; this is not usually possible at NIA stage. Is assessment of LFN a routine requirement of NIA or not? Rule says no, yet AUC IRs seem to always demand it. Under the definition, unless dBC-dBA >20, LFN cannot exist. Dave DeGagne of ERCB work for many years to develop this definition, and it is consistent with international practice. As to measurement of tone, I suggest 1 minute L90 or L50 statistical level reading of 1/3 octaves - if it is not there for a goodly portion of the time, it is not a consistent problem (in my humble opinion). With the current "two part" wording it is technically possible for the following scenario to occur: Tonal component (eg 40 Hz), Leq=37 dBA, dBC-dBA=21. This scenario is not uncommon for facilities that have installed traditional noise control measures (IE cooler silencers, upgraded muffler, but have not upgraded building walls). In this case an operator would only have to open a door to increase the dBA while not impacting the dBC much, reduce the dBC-dBA term and eliminate the "technical" exceedances while not dealing with the problem tone. In addition, it is common for the louder nights of a CSS to show dBC-dBA values in the 15 dB range, while on "quieter" nights the dBC-dBA range is 20 dB or above. This is mainly due to increase mid to high frequency propagation during ideal environmental conditions (temp inversion or downwind) and not necessarily because the low frequency component is changing significantly.</p>
			<p>AltaLink Management Ltd. AML believes the current method in the Rule is sufficient, as AML has experienced no landowner concerns in this noise area.</p>
			<p>HFP Acoustical Consultants HFP believes that the two-part test is appropriate. Our experience has shown that a LFN tonal component is usually required to cause a complaint. As a result, HFP does not agree that broad-band LFN requires management within the Rule.</p>

			<p>Hatch Associates Ltd. Most jurisdictions that have them use separate tonal, impulse and low frequency corrections, although usually only one applies. Why are they combined (in part) here?</p>
6.1	Is the identification of LFN as dBC-dBA > 20 dB sufficient? Some transformers have a 125 Hz tone which causes annoyance, but the dBC-dBA level is < 20 dB due to the difference in A-weighting correction. Also this approach may not account for ambient noise that contains LFN. The calculation could be changed to a cumulative LFN value to be consistent with compliance assessment.		
			<p>Acoustical Consultants Inc. See above comment.</p>
			<p>Suncor Energy Services Inc. Suncor defers to technical stakeholders.</p>
			<p>Golder Associates Ltd. See response to 6.0. Tones should be separate from LFN. The LFN assessment should either look at a ceiling value or find a way to be cumulative with ambient. However, the latter would require that AUC allow use of measured ambient data or define an ambient spectrum that corresponds with the various values in Table 1 of the Rule.</p>
			<p>Patching Associates Acoustical Engineering Some international guideline recommend requiring only 15 dB difference. May want to tighten this threshold for specific types of equipment (difficult where there are mixed kinds of equipment). During a comprehensive sound survey the residual Leq should be used to assess LFN. A short duration wind event would skew the dBC values and one single dog bark, bird chirp, or high speed vehicle passage would skew the dBA values thereby changing the dBC-dBA values.</p>
			<p>AltaLink Management Ltd. AML believes the current method in the Rule is sufficient, as AML has experienced no landowner concerns in this noise area.</p>
			<p>HFP Acoustical Consultants HFP agrees the analysis of LFN needs to consider whether there is ambient LFN not related to the facility. HFP does not understand what the cumulative LFN value would be - is this the overall isolated dBC value? In any event, HFP does not agree with changing the calculation.</p>

	6.2	Is there a need to adopt a dBC noise threshold limit such as that used in other jurisdictions?	
			Suncor Energy Services Inc. Suncor defers to technical stakeholders.
			Golder Associates Ltd. A threshold limit of 20 dBA above the PSL is implied by the current method for any compliant location. To exclude questions about ambient conditions, the threshold could be 20 dBA above the allowable facility contribution (essentially a ceiling of 58.3 where the PSL is 40 and facility contribution limited to 38.3)
			Patching Associates Acoustical Engineering Problem with wind-generated noise corrupting readings, leading to incorrect evaluation of the noise problem. dBC itself is not necessarily a problem.
			Greengate Power Corporation No Comment
			TransAlta Corporation No, our understanding is that dBA best represents human perception.
			AltaLink Management Ltd. AML does not believe there is a need to adopt a dBC noise threshold limit as proposed and feels that the existing LFN assessment is adequate to identify and address LFN concerns. AML recommends that the Rule continues with the existing LFN assessment.
			HFP Acoustical Consultants HFP does not agree with setting a dBC threshold.
	6.3	Are there facility types that generate low frequency noise and therefore, require a routine assessment of LFN as a standard application requirement?	
			Suncor Energy Services Inc. Suncor defers to technical stakeholders.
			Golder Associates Ltd. Any mechanical installation is capable of generating LFN. Current methods for assessment and monitoring include spectral consideration so no additional requirements should be necessary.

			<p>Patching Associates Acoustical Engineering Unless these are identified, requiring LFN analysis for a standard NIA is in violation of Rule 12. If implemented, the wording in the complaint investigation section should be changed as that section stated explicitly that LFN is a secondary investigation not and not necessarily required. Is LFN consideration a requirement of an NIA? Similar to above, if it is not required then the "secondary investigation" implication in Section 4 should be clarified. If LFN is a requirement of an NIA then it should be noted that ISO 9613 states: "The estimated errors in calculating the average downwind octave-band sound pressure levels, as well as pure-tone sound pressure levels, under the same conditions, may be somewhat larger than the estimated errors given for A-weighted sound pressure levels of broad-band sources in table 5". Table 5 indicates that the expected error for dBA predictions is ± 3 dB for receivers 1000 m or less and does not give uncertainty information for dBC values (although these can be calculated from octave band data provided pure tones are close to octave band center frequencies. In addition, some noise modeling software packages do not calculate 1/3 octave bands making a full LFN assessment difficult.</p>
			<p>AltaLink Management Ltd. AML feels that the existing LFN assessment and complaint investigation process are adequate to identify and address LFN concerns.</p>
			<p>HFP Acoustical Consultants Most acoustical consultants have the ability to provide model predictions in both dBA and dBC, thus allowing the "dBC - dBA" difference to be routinely included in the noise impact assessment. Therefore, the majority of noise impact assessments will include this assessment.</p>
Noise Impact Assessment NIA form (Appendix 3)	7.0	Is a Noise Impact Assessment Summary Form appropriate as the only document required in an application? If so, need to provide rationale. Refer to S19.	
			<p>Suncor Energy Services Inc. Suncor supports use of a report rather than a form for it's wind power projects although understands a summary form may be useful for regulators.</p>
			<p>Golder Associates Ltd. No. Based on the Rule requirements in Section 3.8 to indicate the methods, model</p>

		inputs and analysis, a simple form is not considered sufficient for an application. We suggest removing the form or limiting the use to specific, defined scenarios.
		<p>Patching Associates Acoustical Engineering In practice, full NIA, with order ranked sources and LFN, seems to be required by the auditors, in spite of stated requirements in Rule 12. Need to be consistent, one way or another. The NIA summary form as applicable when licensees were conducting NIA's in-house using 6 dB/doubling type methods. The form is not really long enough to provide the info required in Section 3.8</p>
		<p>NaturEner Energy Canada Inc. NaturEner believes that the Noise Impact Assessment Summary Form should be included in an application if a comprehensive noise impact assessment report is not included that covers all the reporting requirements listed in AUC Rule 012.</p>
		<p>Greengate Power Corporation Yes. Provided that a summary of predicted noise at the existing targets is signed and stamped by a professional engineer certified to practice in Alberta.</p>
		<p>CAPP Industrial Hygiene Committee This form does not address all the information required for an application and would seem to have limited value.</p>
		<p>FFA Consultants in Acoustics and Noise Control Ltd. No the form by itself is not appropriate as the only documentation. It would be better to have the actual full NIA document so that any concerned stakeholder would have all of the information required to undertake a review of the NIA findings.</p>
		<p>AltaLink Management Ltd. AML believes it should be allowed to submit the actual NIA in lieu of the form if it prefers (as long as it contains the same information). AML has done this on a number of recent applications.</p>
		<p>HFP Acoustical Consultants HFP does not believe Appendix 3 is appropriate as a complete noise impact assessment document. Based upon the additional information typically asked by the AUC in their review of applications, submission of just Appendix 3 would generate a long list of additional questions. HFP suggests it needs to be made clear Appendix 3 does not represent a complete noise impact assessment. HFP would actually prefer if Appendix 3 was deleted to avoid confusion. Section 3.8 provides a list of the required information, which can serve as a "check list "for the novice reader.</p>

	7.1	Are any modifications required to the Noise Impact Assessment Summary Form?	
			Suncor Energy Services Inc. No comment at this time.
			Golder Associates Ltd. Removal of the form and providing a standardized outline for an NIA would help improve consistency across applications. If removal of the form is not practical, the form should be altered at the start to allow a separate NIA document to be referenced, for multi-source NIAs. The remainder of the form could then represent a simplified (-6 dB per doubling distance) NIA. The simple approach is only acceptable for a single receptor/single source situation so extra rows in the PSL and New Equipment tables should be removed. The existing equipment table should also be removed as it would not apply to a simple (-6 dB per doubling distance) assessment.
			Patching Associates Acoustical Engineering I have a feeling that any NIA submitted solely on the form may be difficult to evaluate from a technical perspective, especially for situations with public resistance.
			Greengate Power Corporation Yes
			AltaLink Management Ltd. AML questions the need for a summary form at all. However, if the form is required, AML believes there is a need to define "major sources of noise from the facility" in part 2 of the form. Other proposed adjustments to the form include expanding the lines in #3 and #4; move #4 to the second page and add a footer note with the version date.
			HFP Acoustical Consultants HFP recommends deleting Appendix 3 to avoid confusion and make sure applicants do not assume Appendix 3 is appropriate as a complete noise impact assessment.
Measurement of noise	8.0	Clarify requirements for determining when a road is considered to be "heavily travelled." Clarify which supporting documentation needs to be submitted with NIA. If traffic volume diminishes over time and a road is no longer heavily traveled , does the PSL revert to a lower level?	

			<p>Acoustical Consultants Inc. Further to the comments about heavily traveled, what if a road is originally deemed to be not heavily traveled, but then becomes so over time and a new application of a facility (either brand new or modified existing facility) is filed. Do the PSLs suddenly rise for the new or modified facility?</p>
			<p>Mainstream Renewable Power Ltd. The supporting required documentation must be clearly identified in the Rule to determine whether a road is heavily travelled or not. Is a traffic study required or are the various highway designations sufficient? This issue would be solved if the pre-construction ambient sound level was used as a baseline. An operating power plant would have to be compensated for having to change its operating characteristics if the change in traffic volume was not of its doing.</p>
			<p>Suncor Energy Services Inc. Suncor defers to technical stakeholders.</p>
			<p>Golder Associates Ltd. Alberta traffic data should be used. If none available, on-site traffic data should be collected to verify the usage of PSL adjustments. Adjustments to a PSL once it has been established should be considered based on changing environments. Increasing or decreasing a previously established PSL, whether initiated by the AUC or a proponent, would require a defined process that includes detailed measurement and justifications.</p>
			<p>Patching Associates Acoustical Engineering Once set, PSL should not change. This would make control requirements retroactive - impractical. Suggested practice for HTR using typical urban experience of 10% at night plus margin of safety due to rural roads having different statistics - if AADT less than 1800 vehicles per day (or some other specific), it is not heavily travelled, unless can show from actual traffic counts, classifications and modeling.</p>
			<p>NaturEner Energy Canada Inc. NaturEner agrees that the criteria for when a road is considered to be "heavily travelled" should be clarified and that changes to traffic volume should be allowed to be considered for a revision to the PSL to be applied. NaturEner suggests using a more straight-forward definition, e.g., consider all provincial highways as "heavily travelled roads", and maintain a list of those on the AUC website, such that it can be easily accessible and used by applicants.</p>

			<p>Greengate Power Corporation No need to clarify, in fact this issue should NOT be part of this AUC rule. This issue is more of a traffic flow & safety coordination question as opposed to a noise question. It is solely a temporary issue that should remain governed by the municipalities manage through their development permits.</p>
			<p>TransAlta Corporation Consider using "paved road" or "numbered highway". Regardless of definition, the applicant needs to be assured that if the road is deemed category 2 or 3 when approved then that standing cannot revert to category 1 during the project lifetime (ie. "grandfathering").</p>
			<p>AltaLink Management Ltd. AML agrees that this needs to be clarified in terms of what traffic volume reference should be used. (See 14.0 below). AML recommends that the PSL not be lowered for reductions in road use. Having the PSL reduced if traffic volume diminishes over time could require AML to mitigate noise from existing facilities where the operating conditions of AML's facilities have not changed. External changes in the environment such as traffic noise are completely out of AML's control and could potentially lead to significant cost implications. Additionally, if there were a number of energy or non-energy related facilities in the area and the change in road use made all of these facilities non-compliant, it is not clear who would need to mitigate their noise production. AML also recommends that the Rule allow for an increase in the PSL if there is an increase in road use. Otherwise, facility proponents may be faced with trying to meet a PSL that is unachievable or extremely costly to mitigate.</p>
			<p>HFP Acoustical Consultants HFP agrees clarifying what supporting documentation should be submitted would be helpful. HFP agrees the last question about revision of PSLs is an interesting one. A similar question would be what happens if the traffic volumes increase to the point where the road would now be classified as "heavily travelled". Revising the PSL at a dwelling is always going to be difficult because one party (either the resident or the facility) will be unhappy. This situation is best dealt with on a case-by-case basis by the AUC.</p>
8.1		For Class A seasonal adjustments, winter conditions are defined as "There is snow, ice, or frozen ground cover and temperatures are below 0° C ". Is that definition sufficient? How should NIA's	

	be submitted and evaluated where in certain areas some of these conditions do not occur in the winter time?	
		Suncor Energy Services Inc. Suncor defers to technical stakeholders.
		Golder Associates Ltd. Theoretical NIAs are required to consider summer conditions only. For an NIA or complaint investigation requiring consideration of a winter condition, this definition is sufficient as it refers to the conditions that can change sound propagation the most based on season. Any NIA should be clear on stating the weather conditions it is based on. If the defined winter condition can occur and the sound sources or complaint only occurs during these weather conditions, then the Class A seasonal adjustment should apply. If the conditions do not occur, or the source operates over multiple weather conditions, the Class A seasonal adjustment would not apply.
		Patching Associates Acoustical Engineering Have had complaints that some people are active outside during winter, so this should not apply. I recommend clarifying that the guideline is to protect people sleeping inside buildings.
		Greengate Power Corporation This is a safety issue not a noise issue. Remove from rule.
		TransAlta Corporation This comment is irrelevant since the A1 adjustment cannot be used for design purposes.
		AltaLink Management Ltd. AML does not use Class A seasonal adjustments and thus AML believes the current definition is sufficient.
		HFP Acoustical Consultants HFP agrees this definition could be improved.
8.2	When assessing ambient noise levels (e.g. for an A2 adjustment), isolation analysis to remove non-facility noise tends to be minimal. Consequently, forecasts tend to increase the ambient noise levels as compared to isolation analysis for comprehensive noise surveys conducted when measuring for compliance. Is	

	there a more accurate means of isolation analysis that would result in consistency of forecasts? Should statistical isolation analysis be adopted?	
		Suncor Energy Services Inc. Suncor defers to technical stakeholders.
		Golder Associates Ltd. If assessing ambient noise for an A2 adjustment, we recommend the L90 be used to evaluate the validity of the adjustment. When measuring noise for an A2 adjustment, no existing regulated facility noise should be present. Therefore, there would be an expectation that minimal isolation analysis would be required as only extraneous events would be removed. If a regulated facility is present, the existing facility should be measured separately and also isolated from the ambient measurements. When measuring for compliance, the same isolation analysis should apply and there should not be a discernable difference in the amount of data removed when reviewing multiple cases or sites. If a trend of increasing isolated data from measurement of true ambient versus compliance has been noted by the AUC, the AUC should present its findings to the acoustic community as an observation. Clear specific definitions of what may be isolated would increase consistency between projects.
		Patching Associates Acoustical Engineering There is an inconsistency here in the interpretation of CNL. Is it to evaluate the total noise level, or to assess the contribution from the facility? If the former, no isolation should be allowed, as that would isolate parts of the ambient as well. If it is to evaluate the facility contribution, need to isolate ambient spikes. Do we need a separate index, or is isolated CNL adequate for facility noise?
		NaturEner Energy Canada Inc. NaturEner believes that the provision for statistical isolation should be allowed by AUC Rule 012 as an option by the applicant to further refine the noise impact assessment, as applicable and appropriate.
		Greengate Power Corporation This is a safety issue not a noise issue. Remove from rule.
		AltaLink Management Ltd. AML recommends that the Rule deal specifically with noise contributions from the proponent's facility only versus attempting to incorporate noise levels from other

			noise sources. The proponent has no control or influence over any other noise sources, AUC-regulated or otherwise.
			HFP Acoustical Consultants HFP agrees that adopting statistical isolation analysis would result in more consistent forecasts. However, it may not be applicable in certain situations (e.g. transient noise from facility).
	8.3	Is there value in adopting other statistical measures of noise such as L ₉₅ , L ₉₀ , L _{dn} ?	
			Suncor Energy Services Inc. Suncor defers to technical stakeholders.
			Golder Associates Ltd. Using a statistical value such as L90 would provide a better definition of ambient or the 'noise floor' at a receptor. This would be useful in decision making surrounding the A2 adjustment or for determining compliance; however, the L90 would be used in concert with the Leq. The Rule has been based on the concept of an established ceiling criteria that is a measureable value. The L90 fits that definition, however the Ldn does not - it is a calculated value based on measured data.
			Patching Associates Acoustical Engineering Earlier studies (Shultz, et al) in the 70's and 80's indicated that Leq was the best index for human annoyance, but only by a narrow margin. If we want a direct index of facility contribution, and the facility is close enough that the noise level is steady, then L90 or L50 might work. If far enough away that environmental factors are significant or plant noise varies, would need to use higher index (L10, L35?) in which case, don't see a benefit. Practically, all equipment can now give Leq, but not all give stats. This would force the use of consultants with sophisticated equipment. Evaluation of intermittent sources, such as railroad traffic. If Leq is not the best indicator, Traffic Noise Index {TNI= 4(L10-L90)+L90-30} may be an option (stats measured over 24 hours). Comment - Some problems are likely unsolvable using numbers - some people will never be satisfied, as long as there is some noise, or their relationship with the proponent is bad. Further, opening up the process to other methods throws out some 25 years of development and use - we (consultants and industry) need a fixed target, not a moving one, and accepting that changing the method will only quantify a perhaps intractable problem. Sometimes, it may be the case of setting the target, and saying "This is the

			line in the sand".
			NaturEner Energy Canada Inc. Since the permissible sound levels are applicable to L50, providing additional statistical measures will lead to confusion. Since wind farms do not continuously operate at wind speeds that generate maximum sound power level due to variable wind speeds in nature, reporting predicted sound level using the maximum sound levels from turbines is already conservative. Providing L95 and L90 can improperly create an impression with the general public that wind farms generate a high level of noise
			Greengate Power Corporation This is a safety issue not a noise issue. Remove from rule.
			FFA Consultants in Acoustics and Noise Control Ltd. It is highly suggested that statistical measures of noise are not used as any lay persons as well as other stakeholders who are not acousticians find these statistical levels hard to understand. The noise values as they presently stand with cumulative level form the ambient addition are already hard for stakeholders to understand. The Leq parameter being an average is all that should be used.
			AltaLink Management Ltd. AML believes the current method in the Rule is sufficient and sees no value in adopting other statistical measures.
			HFP Acoustical Consultants HFP understands the merit in considering other metrics, but recommends staying with Leq.
	8.4	Hatch Associates Ltd. Include dry roads in Table 4 Favourable summertime weather conditions.	Hatch Associates Ltd. Table 4 does not list Dry Roads as a requirement for ambient measurements. This makes a significant difference when the ambient is dominated by traffic noise, as it is in most urban areas and along highways.
	8.5	Hatch Associates Ltd. Modify wind speed specified Table 4 Favourable summertime weather conditions.	Hatch Associates Ltd. The cut-off wind speeds for monitoring look low to me. We usually use 20 km/h forecast winds at a nearby station as our limit. This answers the important question of whether to go out or not.
	8.6	Hatch Associates Ltd. Modify modes of Isolation Analysis.	Hatch Associates Ltd. Section 4.7.2 (Isolation Analysis) should also list turning sources on and off as an allowable isolation procedure. In some cases this is possible, in others impossible or very expensive.

	19.3	<p>TransAlta Corporation May not be possible to meet requirements of section 2.1(5)(c) Preparation of a Noise Impact Assessment.</p>	<p>TransAlta Corporation In 2.1(5)(c) it says that "An ambient sound survey must be conducted without any energy-related facility components." Given that the ownership and operation of such energy facilities may be by others than the proponent, e.g. say oil/gas facilities whereas the proponent is developing a power plant, this requirement may not be possible to meet.</p>
Noise Complaint Investigation (Section 4)	9.0	Clarify that if there are no residents, the PSL is applied at 1.5 km from facility property line.	
			<p>Suncor Energy Services Inc. We agree with this modification.</p>
			<p>Golder Associates Ltd. Agreed, although 'fence line' is the term currently used in Section 1.3 of the Rule. Property line or fence line should be used consistently and a definition provided, particularly for power plants located within larger industrial developments - is the property line that of the full development or the limits of the plant area? Some remote ERCB developments use the resource lease as the 'fence line'. AUC expectations should be defined. We suggest that 'property line' be used, with a definition that allows for interpretation beyond a legal land description.</p>
			<p>Patching Associates Acoustical Engineering Need clarification where there are other facilities in the area, but no residences. This is particularly important where there are AUC facilities mixed with ERCB facilities.</p>
			<p>NaturEner Energy Canada Inc. See comment to 3.2</p>
			<p>Shell Canada Limited Shell supports this clarification but notes that the "facility property line" is called the "facility fence line" elsewhere in Rule 012. Terminology should be defined and consistent.</p>
			<p>TransAlta Corporation Use conceptual "facility fence line" not "property line".</p>
			<p>CAPP Industrial Hygiene Committee Agreed (to change as proposed)</p>
			<p>AltaLink Management Ltd. AML agrees clarification is needed here. AML also recommends that the Rule should</p>

		clearly indicate that the 1.5 km be measured from directly adjacent to the noise source versus fence line, property line, easement boundary, road allowance boundary, utility corridor boundary, etc. since in the majority of cases AML is not the property owner and the property line could be hundreds of metres from the noise source.
		HFP Acoustical Consultants HFP agrees with this comment.
		Acoustical Consultants Inc. The document references a 1.5 km noise limit of 40 dBA in the absence of receptors any closer. Where is this 1.5 km dimension to be measured from? the noise sources on site, the fence-line, or from the boundary of the land owned by the applicant? For some projects in remote locations, the applicant owns several sections of land with their project right in the middle. Obviously there is a large difference where the 1.5 km boundary is depending on where you start from in these situations
		AltaLink Management Ltd. AML recommends that the Rule should clearly indicate that the 1.5 km be measured from directly adjacent to the noise source versus fence line, property line, easement boundary, road allowance boundary, utility corridor boundary, etc. since in the majority of cases AML is not the property owner and the property line could be hundreds of metres from the potential noise source. Using the property line would significantly expand the scope of the NIA study area to be considered to meet the requirements of the Rule. (emphasis NOT added)
		ATCO Structures & Logistics Ltd. ATCO believes that clarification is required as to where the PSL applies in situations where two or more facilities are within 3000 m of each other and there are no receptors in the area. ... suppose you have a proposed facility [A] and an existing facility, [B]. [A] must prepare an NIA and take into account the cumulative noise level of the ASL including the contribution from [B]. ... (occasionally) compliance with 40 dBA would be impossible as the existing ASL would be well above this. As a proposed resolution, ATCO recommends that in situations as such where there are no receptors, then the NIA be completed as if [B] did not exist.
		Hatch Associates Ltd. A limit of 40 dBA at 1.5 km corresponds roughly to a single diesel crane (or other diesel construction equipment) in operation at the top of a hill or in a flat area. This would be

			fairly restrictive where there may be no residence for miles.
	9.1	Clarify that when isolating facility noise for comparison to the PSL, the noise from all energy-related facilities that contribute to total noise are included and only extraneous noises are excluded, such as dogs barking close to the microphone.	
			Suncor Energy Services Inc. We agree with this modification.
			Golder Associates Ltd. Agreed, see response to topic 8.2 above. When comparing a measurement to the PSL, normal ambient must also be included, not isolated out.
			Patching Associates Acoustical Engineering RP- Problem here with definition. Is the total CNL to be compared to the PSL, or is it the plant contribution plus steady ambient (i.e., isolated CNL) that is to be compared? Needs clarification.
			AltaLink Management Ltd AML agrees clarification is required here and recommends that the Rule consider noise contributions from an individual facility and exclude all other noise sources.
			HFP Acoustical Consultants HFP agrees with this comment.
	9.2	Clarify that for determining compliance of facilities that operate only for short periods of time (e.g. wind turbines, peak shaving units) the L_{eq} is calculated based on noise generated for the duration of operation and not averaged over the entire night time or day time period.	
			Suncor Energy Services Inc. Suncor currently assesses it's wind projects in this manner.
			Golder Associates Ltd. A conservative assumption made for theoretical assessments is to assume that non-continuous sources operate consistently (i.e. wind turbines). However, the current wording in Table 1 states that the PSLs are applied over the nighttime period - not that compliance is based on every hour (or minute?) within that period. Therefore

		compliance should be based on the measurement of the nighttime (or daytime) period Leq. The definition of 'normal operating conditions' for a facility needs to consider cyclic activity where known.
		Patching Associates Acoustical Engineering The times when the facility is not operating would not be considered representative.
		NaturEner Energy Canada Inc. NaturEner agrees, that it needs to be clarified that Leq is calculated based on the noise generated for the duration of the short period of time, and not at an average over the night time.
		Greengate Power Corporation Turbine noise is variable or intermittent and an average seems both reasonable an appropriate. Note that background noise is an average values determined generally wind speed in combination with other background noise occurrences during the monitoring period.
		FFA Consultants in Acoustics and Noise Control Ltd. This consideration must be thought through carefully. Noise studies with 038 have always been the nighttime average. The sound from even a continuously operating facility can go from very easily heard to not heard of at all, we have seen 20 dB shift in level from the wind changing direction 180 degrees. Once this type of change occurs stakeholders may then be wanting only the loud periods of the noise survey from a continuous operating facility to be used as the number rather than the nighttime average.
		AltaLink Management Ltd. AML believes Leq should be averaged out over the entire day/night time period. Since community noise constantly changes it levels and durations, Leq should be employed as defined in the Rule.
		HFP Acoustical Consultants HFP does not agree with this comment. HFP believes it is most appropriate to calculate the facility contribution based upon its contribution to the overall daytime or nighttime Leq value.
9.3	Rule 012 has specific requirements that restrict noise inside dwellings. How should noise complaints about noise outside of dwellings be addressed?	

			<p>Suncor Energy Services Inc. Suncor would find the application of the PSL at a deck or porch attached to the swelling acceptable, as the PSL is the noise level outside the house anyway. We do not agree with applying the PSL farther from the dwelling.</p>
			<p>Golder Associates Ltd. While the intent of the original Directive 038 and thus Rule 012 was to prevent sleep disturbance and minimize noise annoyance inside dwellings, this is achieved based on an outdoor noise criterion that assumes outside noise will travel inside through open windows. Therefore the current PSL criteria should suffice for any noise complaint regarding receptor living areas (decks or patios). General complaints farther from dwellings regarding the outdoor environment are not within the scope of Rule 012. See also the response to Topic 1 regarding limiting application of Rule 012. Decks or Patios could be included in the definition of receptor.</p>
			<p>Patching Associates Acoustical Engineering This is not correct. Noise measurements are all exterior at 15 metres away from the dwelling (i.e., what is impacting the property, not what is inside after being affected by the attenuation of the structure.) No reference to interior or inside noise levels.</p>
			<p>NaturEner Energy Canada Inc. It is NaturEner's view that the definition of receptors should include a buffer, e.g. 10 m around residences (at the discretion of the applicant), and that there should be a separate set of PSLs for exterior space.</p>
			<p>Shell Canada Limited Shell suggests consistency with the ERCB approach.</p>
			<p>Imperial Oil Resources It is not clear to IOR why this would be raised. Both Rule 12 and D-38 are receptor-based (noise measured or calculated as originating at a facility and propagating to a receptor). Non-industry noise outside the dwelling should not affect industry's right to add a specified number of dBs.</p>
			<p>TransAlta Corporation We are not sure what this question means. Rule 12 applies to dwellings only.</p>
			<p>FFA Consultants in Acoustics and Noise Control Ltd. The inside requirement has always been based on disturbing sleep, that is why the PSL only referred to dwellings as opposed to other land uses such as schools or churches. An adjustment was made to an acceptable inside level for sleep that was then used to</p>

			establish an outdoor PSL. This has worked well over the many years and we do not recommend trying to change this rational.
			AltaLink Management Ltd. The Rule focuses on noise outside of dwellings and has a complaint process defined in the Rule. There is no reference or consideration for noise <i>inside</i> a dwelling in the Rule.
			HFP Acoustical Consultants HFP is confused by this comment. Is the comment supposed to indicate the specific requirements are OUTSIDE and should noise complaints INSIDE a residence be addressed? If the revised wording is the actual comment, then HFP believes the Rule is appropriate as it currently stands - there is no need to address interior sound levels if the exterior sound levels meet the Rule 012 requirements.
			ENMAX Corporation ERCB's Directive 038 explicitly states that it does not guarantee that a resident will not hear noises from a facility; rather, it aims to not adversely affect indoor noise levels for residents near a facility. The directive sets PSLs for outdoor noise, taking into consideration that the attenuation of noise through the walls of a dwelling should decrease the indoor sound levels. ENMAX agrees with this approach and recommends that the AUC adopt the ERCB approach on outdoor and indoor dwelling noise and any associated noise complaints. This will ensure coordinated regulation from both regulators.
	9.4	Clarify duration of monitoring required for Comprehensive Sound Level (CSL). In section 4.1, subsection (7), the first sentence indicates that at least 9 hours of monitoring is required; however, the second sentence has been interpreted to mean that only 6 hours of monitoring is required.	
			Suncor Energy Services Inc. Suncor defers to technical stakeholders.
			Golder Associates Ltd. Duration of monitoring would depend on each project. For wind turbines, specific weather conditions are the determiner for duration of a measurement. The amount of monitoring required could be refined to state that a certain number of hours of valid monitoring data under downwind conditions is required.

			Patching Associates Acoustical Engineering Pertinent for 9.2 as well
			TransAlta Corporation 4.1(7) clashes with the comment in 9.2 above if, for example, a wind turbine is operating intermittently.
			AltaLink Management Ltd. AML believes the Rule as proposed is clear and no further clarification is required. AML understands that at least 9 hours of monitoring is required with at least 3 continuous hours of acceptable data for the nighttime period and 3 continuous hours for the daytime period.
			HFP Acoustical Consultants HFP agrees with this comment.
	9.5	GL Garrad Hassan Section 4.4: the wind speed measurement height should be specified. What is the rational for these Wind speed? Wind induced noise can be minimized through the use of a wind screen and its effects/limitations can/shall be documented by the specialist in charge of the measurement.	To assess the wind induced noise, the height of wind speed measurement is usually 1.5 m.
	9.6	GL Garrad Hassan Table 4 : The height of the wind speed must be specified.	
Complaint Investigation Form	10.0	Clarify the use of the Complaint Investigation Form. When complainant is reluctant to communicate with a facility operator, how would the operator determine conditions representative of the complaint?	
			Suncor Energy Services Inc. Suncor supports use of the current Complaint Investigation Form and looks for the AUC to assist in communication in cases where a complainant is uncommunicative.
			Golder Associates Ltd. Agreed. AUC role as facilitator should be defined.
			Patching Associates Acoustical Engineering Operator could keep a log of when complaints were received, and what the operating

			and weather conditions were at the time. If nothing else, this would prove due diligence on the part of the company. Standardizing monitoring criteria (i.e. wind conditions etc.) would get away from extreme duration studies to address very narrow weather conditions identified by the resident. Also, stating that any survey lasting longer than X nights would automatically be representative regardless of the environmental conditions identified by the complainant.
			NaturEner Energy Canada Inc. The AUC should consider being a facilitator in these cases to allow for investigation of the complaint and application of adaptive management techniques to mitigate the conditions that may be contributing to the complainant's discomfort.
			Greengate Power Corporation The complaint mechanism is rarely initiated from complainant to facility owner. The complainant generally brings these issues/complaints to the county administrator.
			Shell Canada Limited Shell supports clarification of the use of the Complaint Investigation Form.
			FFA Consultants in Acoustics and Noise Control Ltd. If the complainant does not want to communicate with the facility operator it is questionable whether the complaint should proceed. The best approach would then be to have someone from the AUC act as a go between.
			AltaLink Management Ltd. 4.1.1 states "if the complainant does not participate in the completion of the Noise Complaint Investigation Form, the licensee must submit documentation of its attempts to directly engage the complainant in the completion of the form." AML recommends that the complaint investigation be terminated if the complainant does not cooperate participate in the Noise Complaint Investigation.
			HFP Acoustical Consultants In these types of cases, the person conducting the comprehensive sound survey is responsible for determining the representative conditions. That usually ends up being light downwind conditions with no precipitation or unusual ground cover.
10.1		There is inconsistency between isolation analysis used for ambient noise surveys (e.g. for an A2 adjustment) compared to isolation analysis used for comprehensive noise surveys. Is there a more precise (consistent) means of isolation analysis that could be used? Should statistical isolation analysis be considered?	

			<p>Suncor Energy Services Inc. Suncor defers to technical stakeholders.</p>
			<p>Golder Associates Ltd. If assessing ambient noise for an A2 adjustment, no existing regulated facility noise should be present. Therefore, there would be an expectation that minimal isolation analysis would be required as only extraneous events would be removed. When measuring for compliance, the same isolation analysis should apply and there should not be a discernable difference in the amount of data removed when reviewing multiple cases or sites. If inconsistencies have been identified by the AUC in the types of data isolated from measurement of true ambient versus compliance, the AUC should present its findings to the acoustic community as an observation or as clearer definitions within the rule. Clear specific definitions of what may be isolated could increase consistency between projects. Yes, statistical analysis can be a useful tool.</p>
			<p>Patching Associates Acoustical Engineering See response to 8.2 and 9.1 For ambient, there should be no isolation, just identification, unless the source is completely overwhelming (dog bark next to microphone, cow knocking it over, etc).</p>
			<p>NaturEner Energy Canada Inc. See comment to 8.2</p>
			<p>HFP Acoustical Consultants HFP agrees there has always been an inconsistency between the isolation analysis completed for ambient sound surveys and the isolation analysis completed for comprehensive sound surveys. However, given the limited use of the A2 Adjustment and the requirement to get AUC approval to use the A2 Adjustment, it has turned out to be less of an issue than HFP expected it to be. Statistical analysis is worth considering, however it may not be applicable in some cases.</p>
Noise Management Plans (Section 5)	11.0	A Noise Management Plan may be accepted if a comprehensive noise survey is not practical. Should we determine when a comprehensive noise survey is not practical?	
			<p>Golder Associates Ltd. Based on the assumption that 'noise management plan' refers only to a regional context, agreement with AUC on use of such a plan should be reached prior to pursuing this method of managing noise. AUC should allow for a site specific noise</p>

		management plan to be acceptable if a comprehensive noise survey is not practical (e.g., if the facilities are very large while the complaints are very specific, or there are too many non-regulated facilities that are not accessible).
		<p>Patching Associates Acoustical Engineering This should be left to the discretion of the staff, and the staff must be given that discretion. As a guideline, I would suggest that, as was included in earlier versions of the ERCB directive, if the resident refuses to allow comprehensive measurements or provide a complaint investigation form, the complaint be dismissed! Alternately, at that time a management plan would be accepted.</p>
		<p>NaturEner Energy Canada Inc. The applicant should be allowed to make that determination within established guidelines and provide the justification and/or explanation in any resultant report.</p>
		<p>Greengate Power Corporation The principles to determine "impractical" need to define clearly to avoid arbitrary rulings.</p>
		<p>AltaLink Management Ltd AML believes more clarification here may be helpful. However, there will always be unforeseen situations that render a comprehensive noise survey (CNS) impractical. AML recommends that any clarification be flexible enough to provide for other circumstances not identified in the Rule.</p>
		<p>HFP Acoustical Consultants HFP believes that any noise management plan would be discussed with the AUC and/or the ERCB before implementation. The determination of when a comprehensive noise survey would be determined at that time based upon a site-specific analysis.</p>
		<p>Northeast Capital Industrial Association ... very important that AUC Rule 012 mirror the language of ERCB Noise Control Directive 038 in regard to Regional Noise Management Plans so that there are not two different interpretations of what a Noise Management Plan is or needs to be. ... under D 038, either PSLs OR a Noise Management Plan must be met or in place to demonstrate compliance...not both. AUC Rule 012 (is) somewhat confusing in this regard and some clarification may be needed in that area. Section 5.1 (3) of AUC Rule 012 seems to require that PSLs be determined even for a Regional Noise</p>

			Management Plan which is not consistent with Section 5.1(3) of ERCB Noise Control Directive 038 and I would suggest AUC Rule 012 needs to be amended in this regard. Noise Control Rules and Directives need to be flexible enough ... for all parties to manage noise from a best practices perspective.
	11.1	Clarify the use of the term Noise Management Plan? Do we need a different term to distinguish between a Noise Management Plan developed for a region and a facility-specific noise compliance plan?	
			Suncor Energy Services Inc. No comment at this time.
			Golder Associates Ltd. The term 'Noise Management Plan' needs to be refined or defined. We suggest changing it to 'Regional Noise Management Plan' which is more self explanatory and would not conflict with convention in most other environmental disciplines where the term 'Management Plan' refers only to facility based compliance plans.
			Patching Associates Acoustical Engineering How about calling it 'A Plan for The Management of Noise', or 'A Regional Plan for the Management of Noise'?
			NaturEner Energy Canada Inc. It is NaturEner's view that it would be useful for stakeholders to have a clear differentiation between region and facility specific compliance plans. NaturEner therefore suggests different terms, i.e. Facility Noise Management Plan and Regional Noise Management Plan.
			AltaLink Management Ltd. AML agrees more clarity is required and that the Rule should only refer to the proponent's facility specific Noise Management Plan.
			HFP Acoustical Consultants HFP does not see a need to have a different term for noise management plans developed for a region compared to a single facility. HFP agrees that a different term may be required for a facility's own noise compliance approach within a regional noise

			management plan.
	11.2	Imperial Oil Resources Will the AUC allow self-monitoring programs as proof of compliance with Rule 12? Is self-monitoring considered a "Noise Management Plan"? IOR currently has a Compliance Self-Assessment Agreement with the ERCB for its Cold Lake Operations. This ERCB has ruled that this Agreement meets the intentions and requirements of Directive 38.	Ensure consistency with Directive 38 by allowing self monitoring programs such as the one in place at IOR's Cold Lake Operations under Rule 12. The unique self-monitoring agreement that IOR has with the ERCB is extremely important and is key to allowing Cold Lake Operations to effectively manage its noise issues over a very large area. IOR strongly encourages the AUC to allow a similar arrangement.
Cumulative Noise from energy related facilities (Section 3.4)	12.0	Define "energy-related facility". Should the definition include any facility approved by the AUC and ERCB and whose noise is subject to regulation? Should the list of facilities also include NEB-regulated facilities? Any others?	
			Mainstream Renewable Power Ltd. The term "energy-related facility" must be clearly defined as those facilities subject to regulation.
			Suncor Energy Services Inc. Our current understanding of this definition is that "energy-related facilities" include AUC and ERCB facilities whose noise is subject to regulation. Suncor supports including NEB regulated facilities as well.
			Golder Associates Ltd. Yes, but extending the definition of noise sensitive receptor would also require that the PSL determination for each alternate type of receptor be reconsidered. Current PSLs may be found to be adequate for the dwellings only, but the review would be needed.
			Alberta Wind Energy Corporation Definitions must be clear in the regulations.
			Patching Associates Acoustical Engineering List the types of facilities covered by AUC, and another list indicating those under ERCB jurisdiction, to clarify who does what (see section 1.1).

			<p>NaturEner Energy Canada Inc. NaturEner agrees that the definition of an "energy-related facility" should be clarified. In addition, the distance should be defined within which the energy-related facilities should be held accountable. Furthermore, NaturEner suggests that it would be helpful to assist industry to establish consistent and applicable standards during both noise modeling and measurements if the AUC were to compile a database of the licensed/approved facilities showing their locations, contacts, and their previously submitted NIA reports.</p>
			<p>Greengate Power Corporation There should be a list of exclusions for energy facilities, i.e., metering stations, valve stems, etc.</p>
			<p>Shell Canada Limited Shell supports defining "energy-related facility" to include any facility approved by the AUC and ERCB and whose noise is subject to regulation.</p>
			<p>TransAlta Corporation The definition should include any facility whose noise is subject to regulation by the AUC. We note in several places that there remain references to "energy-related" industry or facility. For clarity the AUC needs to distinguish between facilities within their jurisdiction and "energy-related" facilities and the obligations of a licensee of the AUC. The definition of "ambient" is confused as to whether it excludes only "facilities" or excludes all "energy-related" facilities. This confusion permeates the rule in how ASL is used and sometimes includes or excludes "energy related" facilities. In the rule except for the adjustment section 2.1 (5) ASL should not be used but the term ambient should be. Ambient is inferentially defined as 5 dB below the BSL in section 2.1. We suggest, for example, that section 3.4 (1) could simply state "The cumulative noise level must not exceed the PSL." There are many other sections where ASL is used and should be clarified.</p>
			<p>AltaLink Management Ltd. AML believes this approach is inappropriate and recommends that the Rule includes the noise contributions from the proponent's facilities only. The resource implications of locating all facilities and undertaking a comprehensive NIA of all ERCB/AUC/NEB regulated facilities or other noise sources is extremely involved and has potential for significant resource and cost increases to projects, at ratepayer expense. This is</p>

			particularly a concern when, in many cases, the transmission facilities of AML would be the lowest noise contributor in comparison to other noise sources such as pump stations and generators. . Beyond the extensive effort required to complete the NIA, AML has no influence or control over the noise levels produced from other facilities or other changes in environmental conditions at these locations.
			HFP Acoustical Consultants HFP agrees there needs to be a definition for "energy-related facility". It should specifically list what is included and excluded so it is clear. Including NEB facilities may, on the surface, appear to be appropriate. However, the NEB does not have a comprehensive noise regulation similar to the AUC and ERCB. Until NEB facilities are being evaluated on the same basis, it may not be appropriate to include them.
			Hatch Associates Ltd. Given that the AUC and ERCB have similar rules (which is a good idea) why not form a new group which can regulate all industrial noise in Alberta using the same rules?
	12.1	Forecasts and measurement of cumulative noise includes proposed facilities. Clarify if "proposed facilities" includes wells & facilities licensed/approved, even if not yet built, as well as those for which an application has been submitted to the AUC, ERCB and NEB but not yet approved? Should any other energy-related facilities be included?	
			Mainstream Renewable Power Ltd. The term "proposed facility" needs to be clearly defined. What trigger qualifies a facility to be officially proposed (e.g. submission to AUC, development permit, etc.)? Also, a mechanism must be put in place to determine which facility is required to take corrective mitigation due to the cumulative noise of neighbouring proposed facilities. Is there a queue at the AUC? Is the queue reflective of the proposed AESO connection date? This needs to be clearly addressed so that developers can plan accordingly.
			Suncor Energy Services Inc. The clarification should state that "proposed facilities" should include wells & facilities licensed/approved, even if not yet built, as well as those for which an application has been submitted to the AUC, ERCB and NEB. A 'grace period' should be identified for the possible scenario if two neighbouring application arriving at the AUC within a close

		time frame (within a couple of weeks). It is Suncor's expectation that within this grace period, the later application would need to provide an updated NIA (through the IR process) to consider the neighbouring project. The second (later) application should not be deemed deficient, rather supported through the IR process.
		<p>Golder Associates Ltd.</p> <p>We agree that the definition of proposed facilities should include all approved, even if not yet built, and any planned project where applications have been submitted to the AUC within a set time limit prior to submission of an application (we suggest 2 months). Planned projects where an application has not been submitted should not be considered. AUC and ERCB should keep an up-to-date database of approved and submitted applications.</p>
		<p>Alberta Wind Energy Corporation</p> <p>Definition of a proposed project must be clear and specific. Furthermore, to be deemed a "proposed facility", there must be a certain level of confidence that this project will eventually be built. Therefore, the requirements for a project to be considered 'proposed' should be relatively arduous, such as having an active AUC application.</p>
		<p>Patching Associates Acoustical Engineering</p> <p>Very hard to quantify projects which have not been built, or are from companies in competition with the client. It would be useful if all NIA's were available to future applicants for inclusions, particularly now that the AUC and ERCB seem to be requiring complete PWL information. This would allow analysis of all current projects, and those which are under application, to be included in future NIA's.</p>
		<p>NaturEner Energy Canada Inc.</p> <p>Since not all applied facilities, e.g. oil jack, are actually built, including all applied facilities may be over-conservative. However, NaturEner believes that just as PSL for a new receptor should be the greater of the predicted or existing noise level at the time of construction of the receptor, proposed facilities should include those for which an application has been submitted. As such, the definition of "proposed" facilities should be clarified and the AUC should provide a database of proposed facilities, e.g. filed applications. However, complications to this approach may result. For instance, if multiple facilities are "proposed" within the same area, should the first "proposed" facility need to account for the later "proposed" facilities in the PSL? Also, should the order of priority of the proposed facilities be based on the submission date of the</p>

		permit application?
		<p>Greengate Power Corporation How does the AUC propose the wind power plant applicant to manage the integration of facilities not built yet into their NIA? If the wind power plant were to be able to identified said not yet built plant what is the obligation of the not yet built facility to provide relevant noise parameters to wind power applicant.</p>
		<p>Shell Canada Limited Shell supports including wells and facilities that have been licensed/approved and those for which an application has been submitted.</p>
		<p>TransAlta Corporation Only include facilities regulated by the AUC. Include existing facilities and those approved by the AUC. It would be nice to included proposed facilities (AUC application submitted) but we are already seeing incomplete, speculative applications and this could lead to more of them. Could the AUC adopt a system where a facility with a complete application graduates to "proposed" status? If not, revert to using only AUC-approved facilities.</p>
		<p>CAPP Industrial Hygiene Committee Agreed (to change as proposed)</p>
		<p>FFA Consultants in Acoustics and Noise Control Ltd. It would very difficult to try and include facilities that are planned but not approved as the detailed information required to complete the NIA would not be available as well one competing company may not want to provide the required information to another competing company. If a facility is only proposed it may never actually be built.</p>
		<p>AltaLink Management Ltd. AML recommends that the Rule focus on the proponent's facilities only at the time of a facility application. If AML were required to identify "applied for" facilities as well as existing facilities, it would greatly increase the effort level required to complete a NIA at a cost of time and money. Also, AML is unclear as to as how it would become aware of planned or proposed facilities. This could have significant impacts to AML's agency consultation for a project, and result in significant delays in providing transmission facilities to customers.</p>
		<p>HFP Acoustical Consultants HFP agrees with this comment, although the NEB is now being brought into the picture, which does not have the same noise regulations.</p>

	12.2	Clarify that if noise from "other proposed facilities" is not included in the assessment of cumulative noise, the NIA is incomplete and therefore, the application is deficient?	
			Mainstream Renewable Power Ltd. Once the term "proposed facility" is clearly defined it is appropriate to determine an application deficient for not completing a cumulative assessment, just as in the case of any other requirements by Rule 12 that aren't met would make an application deficient.
			Suncor Energy Services Inc. Please see comment for topic 12.1 for further text regarding this clarification.
			Golder Associates Ltd. AUC should indicate their intent.
			Alberta Wind Energy Corporation All proponents must be kept to the same standard of regulation. If cumulative noise assessments are required, it must apply equally for all proponents.
			Patching Associates Acoustical Engineering How is the applicant supposed to know what other facilities are being proposed, until their NIA's are submitted, and if the information contained therein is publically accessible?
			NaturEner Energy Canada Inc. Section 1.4 of Rule 12 requires existing facility to "communicate existing noise levels" that is "extrapolated to the proposed building site". NaturEner suggests that the licensee should also provide the background documentation on how the "existing noise levels" was derived. In the case when the noise pressure/power levels of the existing facility are not have available, please clarify if literature-based values are sufficient.
			Greengate Power Corporation This is an unfair clause, given wind power facilities layout designs are driven by the clear knowledge and understanding of "all" sources of noise. A prior approval to a plant that remains dormant for sometime would have a devastating impact on a wind power facility. Furthermore, a plant seeking approval (plant 1) ahead and adjacent to another participant (plant 2) may not build. How will the AUC manage these situations? Will a queue mechanism be developed?

			<p>Shell Canada Limited Shell supports this clarification.</p>
			<p>FFA Consultants in Acoustics and Noise Control Ltd. If a facility is only proposed it may never actually be built so therefore the application would then become sufficient? A better approach would be to point out that there is knowledge of a future proposed facility and that the sound level may increase. It would be up to the company with future proposed facility to make sure that their facility does not cause the level to increase above the PSLs.</p>
			<p>AltaLink Management Ltd. AML strongly disagrees and recommends that the requirements of the Rule focus on the noise contributions of the proponent's facilities when preparing a NIA for a facility application.</p>
	12.3	<p>When there are two or more AUC (or energy-related) facilities within 3000 metres of each other in an area without any receptors, clarification is required as to where the PSL must apply. The 1500 m radius from one site may be quite near the other site(s), and thus the cumulative ASL at these locations could be well above 40 dBA.</p>	<p>ATCO Structures & Logistics Ltd. In such circumstances where two or more facilities are within 3000 m of each other <u>without</u> any receptors, it is recommended that the proposed facility prepare an NIA as if there were no other facilities contributing to a cumulative ASL at its 1500 m radius.</p>
Noise modeling	13.0	<p>Clarify the use of absorption coefficients used in modelling noise (based on ISO 9613). Is the use of one or zero as an absorption coefficient appropriate?</p>	
			<p>Suncor Energy Services Inc. Suncor defers to technical stakeholders.</p>
			<p>Golder Associates Ltd. No data is currently available that definitively measures ground attenuation in rural Alberta in order to further define appropriate ground attenuation factors. Whatever factor is used should be justified. A recent study related to wind turbines indicates the selection of intermediary values for ground attenuation across grassy fields provides more realistic or conservative results than the value of 1 suggested by the ISO 9613 standard.</p>

			<p>NaturEner Energy Canada Inc. NaturEner suggests AUC to include a table of global value ground absorption coefficients for typical ground cover and atmospheric attenuation coefficients from of the standard ISO 9613 in Rule 12. The acoustic practitioner should elect values for the absorption coefficients based on site conditions, and provide explanation in the report.</p>
			<p>TransAlta Corporation We would agree with AUC-prescribed parameters for: 1) Height of above ground of dwelling for modelling purposes; 2) atmospheric absorption coefficients; 3) Ground absorption coefficient. For all three of these, we would prefer that AUC standards be created rather than attempting to calibrate in the field, which would be unreliable since absorption depends on season, etc and for houses it is often impossible to gain access. Creating standards would suffice.</p>
			<p>HFP Acoustical Consultants HFP believes the use of various ground absorption coefficients specific to the site is appropriate. Some models consider a ground factor of 1 to represent porous soil, which would be appropriate in many cases. Similarly, a ground factor of 0 would be appropriate to represent a body of water or a smooth frozen surface.</p>
			<p>Scantek Inc ... concrete and asphalt are very hard- anything else is a crapshoot. Perhaps furrowed, tilled soil might be 0.0. Or maybe something in-between. The reality is no one really knows because the ground (natural or person-made) is neither homogenous nor isotropic. My take- want to be conservative, pick 0.0 and sound may be quieter than estimated.</p>
	13.1	Add and clarify the meaning of noise modeling parameters specified in Directive 038 Section 3.5.1 (13) but missing from Rule 012. Directive 038 states: "Predictions must be field calibrated, frequency-specific predictions performed, and operational conditions quantified." How are predictions field calibrated when only model predictions are required for applications?	

			<p>Suncor Energy Services Inc. Suncor defers to technical stakeholders.</p>
			<p>Golder Associates Ltd. Directive 038 Section 3.5.1 13) refers to how 'representative conditions' are established in the modeling. The first bullet in that text actually reads: prediction models must be field calibrated where practical. This would be a practical expectation where there are existing approved facilities. Field calibrations for purely theoretical projects are not considered practical.</p>
			<p>Patching Associates Acoustical Engineering This field calibration is possible if a facility is to be expanded or modified, but not for a green-field project. Also, does field calibration imply adjusting the sound power levels or other propagation parameters; combination of both would be most appropriate but relies HEAVILY on modellers' professional judgment and may be difficult to evaluate from a regulatory perspective without intimate knowledge of the project.</p>
			<p>NaturEner Energy Canada Inc. NaturEner suggests to exclude "field-calibration" from the statement, since it is applicable only when applicants are requesting for Class A2 adjustments to the permissible sound level.</p>
			<p>TransAlta Corporation No field calibration necessary, rely on internationally accepted modeling techniques (ie. ISO 9613-2). Where possible, manufacturer sound specifications are based on field tests using IEC specifications, but sometimes only theoretical data is available. In this case, the facility owner already takes on the risk of complying with Rule 12. We suggest that this wording should remain absent from Rule 12.</p>
			<p>FFA Consultants in Acoustics and Noise Control Ltd. A better approach for this is having a model provide some indication of the validity of the model being used. It is our experience that whenever there is terrain involved, that is conditions that are not flat ground, the models that are commonly in use vary greatly in predicted sound levels. Predicted sound levels could be confirmed only after a facility is completed and actual sound levels, both at the facility as well as receptor locations.</p>
			<p>AltaLink Management Ltd. AML uses standard industry tools and models that have confirmed to be effective over many years. AML suggests these models are sufficient and each application should not</p>

			require field verification.
			HFP Acoustical Consultants HFP agrees this is missing from Rule 012. HFP also agrees it is impossible to field calibrate a theoretical model being submitted for a new facility.
	13.2	Need to define "major" noise sources, in section 3.8.	AltaLink Management Ltd. AML agrees that "major" noise sources need to be defined. AML also believes all new and existing transmission lines either AC or DC, all new and existing telecommunication sites (with or without standby generators), all new and existing substation equipment except for transformers and AC/DC converter equipment, and temporary facility installations such as mobile substations are not major noise sources and thus these facilities should be exempt from this Rule.
Heavily travelled roads	14.0	Clarify the information required to determine if a road is heavily travelled. How to ensure that the required information is available to applicants?	
			Mainstream Renewable Power Ltd. The supporting required documentation must be clearly identified in the Rule to determine whether a road is heavily travelled or not. Is a traffic study required or are the various highway designations sufficient? This issue would be solved if the pre-construction ambient sound level was used as a baseline.
			Suncor Energy Services Inc. Suncor defers to technical stakeholders.
			Golder Associates Ltd. Heavily travelled roads' are defined in the Rule 012 glossary as having an average of at least 10 vehicles per hour during the nighttime period. Traffic data is available on-line from Alberta Transportation - the web link could be added to the Rule or a statement clarifying the source of data other than counts conducted by the proponent.
			Patching Associates Acoustical Engineering See response 8.0 Traffic volumes and classifications for highways are available from Alberta Transportation's website.
			NaturEner Energy Canada Inc. See comment to 8.0
			Greengate Power Corporation This is a traffic safety issue not a noise issue. Remove from rule.

			<p>TransAlta Corporation See comment for 8.0 above.</p>
			<p>FFA Consultants in Acoustics and Noise Control Ltd. We have found that the definition in 038 works well, that is 10 vehicles per hour at night. The traffic data available online from Alberta Infrastructure can be used for get AADT and then a rule of thumb of 10% for nighttime volume can be used. Anyone preparing an NIA must be able to support the use of a road correction and if in doubt the road correction should not be used unless actual vehicle counts are used.</p>
			<p>AltaLink Management Ltd. AML recommends using Alberta Transportation's Highway Transportation Histories which is what AML is currently using. The Rule 012 definition would have to be changed from a nighttime average of 10 vehicles per hour to align with the way that Alberta Transportation presents its data (average annual daily traffic). Alberta Transportation's documents only contain information on numbered highways.</p>
			<p>HFP Acoustical Consultants Volume statistics are available from the Alberta Government for all numbered highways in Alberta. In addition, some cities offer traffic counts on major roads (e.g. City of Edmonton website)</p>
	14.1	If the use of a road changes over time and that road is no longer heavily-travelled, does the PSL revert to that PSL without a heavily-travelled road adjustment?	
			<p>Acoustical Consultants Inc. Further to the comments about heavily traveled, what if a road is originally deemed to be not heavily traveled, but then becomes so over time and a new application of a facility (either brand new or modified existing facility) is filed. Do the PSLs suddenly rise for the new or modified facility?</p>
			<p>Mainstream Renewable Power Ltd. An operating power plant would have to be compensated for having to change its operating characteristics if the change in traffic volume was not of its doing.</p>
			<p>Suncor Energy Services Inc. Suncor defers to technical stakeholders.</p>

			<p>Golder Associates Ltd. Alberta traffic data should be used. If none available, on-site traffic data should be collected to verify the usage of PSL adjustments. Adjustments to a PSL once it has been established should be considered based on changing environments. Increasing or decreasing a previously established PSL, whether initiated by the AUC or a proponent, would require a defined process that includes detailed measurement and justifications.</p>
			<p>Alberta Wind Energy Corporation Projects are designed considering the regulatory regime at the time of application. It would be completely unreasonable to expect a project to alter its operations due to a change outside of the control of the proponent. This could also make it difficult to finance a project with such an operational risk outstanding.</p>
			<p>Patching Associates Acoustical Engineering Also 8.0</p>
			<p>NaturEner Energy Canada Inc. See comment to 8.0</p>
			<p>Greengate Power Corporation This is a traffic safety issue not a noise issue. Remove from rule.</p>
			<p>TransAlta Corporation See comment for 8.0 above.</p>
			<p>AltaLink Management Ltd AML believes the PSL should not be reduced with reductions in road use. Please refer to 8.0.</p>
			<p>HFP Acoustical Consultants See comments under 8.0 above.</p>
A2 adjustment	15.0	Is the A2 adjustment consistent with the objective of AUC Rule 012?	
			<p>Golder Associates Ltd. The concept of the ambient adjustment is consistent with the objective of Rule 012,</p>

		which is to limit the increase in noise levels experienced a receptor to within a tolerable value, using criteria that allow a simple measurement to demonstrate compliance.
		<p>Patching Associates Acoustical Engineering Depends on whether the objective is to strictly limit noise emissions or keep them within reasonable limits given the existing environment. In cases where high ambient noise levels exist from steady highway noise (say 44 dBA) and the receiver is more than 500 m from an excessively traveled road (IE QEII). It would be impossible to prove compliance (without the use of an A2 adjustment) for a facility nearby because the traffic noise could not be isolated from the data set. Therefore some process for A2 adjustment needs to be in place to keep the Rule enforceable for areas with higher ambient noise levels.</p>
		<p>Greengate Power Corporation This is a traffic safety issue not a noise issue. Remove from rule.</p>
		<p>TransAlta Corporation We are not sure if the A2 adjustment is consistent with the objective of Rule 12. Some clarifications are needed: 1) is it only for a licensee to use, or could an intervener call upon it to lower the PSL? 2) When can it be used, only during modeling stage or post-construction?</p>
		<p>AltaLink Management Ltd. AML believes the A2 adjustment is consistent with the objective of the Rule. In the event that an area has an especially low ambient sound level, a lower level of noise produced by an "energy-related facility" could be considered a nuisance. Conversely, in an industrial area, a higher level of noise might be produced before it is considered a nuisance.</p>
		<p>HFP Acoustical Consultants HFP believes the A2 Adjustment should be maintained, even though its use is expected to be infrequent. There will always be exceptional cases which may require the use of an ambient monitoring adjustment.</p>
		<p>ENMAX Corporation Yes. Compliance with a PSL cannot be achieved when the Basic Sound Levels ("BSLs") are already higher than the PSL. If the existing noise level in an area is already above the PSL, then the applicant must ensure there is no increase in the overall sound levels. The applicant must ensure that its facility does not adversely affect indoor noise levels</p>

			for the nearest or most impacted dwelling.
	15.1	Are any changes to AUC Rule 012, Table 1 needed? Clarify the situation where it would be correct to use A2 adjustment to the PSL?	
			Golder Associates Ltd. Experience has indicated that Rule 012, Table 1 is representative of proximities to one major transportation corridor, but not multiple corridors. It was designed around a rural environment and should be adjusted or revamped to represent different levels of urban development.
			Patching Associates Acoustical Engineering Just a stylistic comment. It would be more intuitive if the parameter on the bottom of the graph (the abscissa) was the Ambient (ASL) minus the Basic (BSL) {i.e., reverse the order} - that way, where the ambient exceeds the basic, A2 is positive, where it is less, A2 is negative. I have had problems explaining the order to clients (seems like a double negative).
			TransAlta Corporation Rejection of the pre-application request or rejection by the Commission to use the A2 adjustment should be accompanied by rationale.
			HFP Acoustical Consultants HFP believes the values in Table 1 are appropriate and have been successful for over 20 years.
			FFA Consultants in Acoustics and Noise Control Ltd. Rule 012 in its present form works well as long as the nighttime PSL of 40 dBA in rural Alberta is met under all environmental conditions. Recommend to our clients that a facility should have a 3 to 5 Db safety factor on the predicted number that has already been predicted with a wind, thus this is more likely to result in meeting the 40 dBA PSL at night under worst case environmental conditions.
			ENMAX Yes. ENMAX recommends that changes to Table 1 are needed when making an adjustment to the BSLs for proximity to transportation noise sources. Table 1 does not adequately recognise the actual noise adjustment needed when in proximity to different types of transportation sources and the cumulative effect of proximity to multiple transportation sources.

		<p>ENMAX would like to propose that the technical issue of how to treat facilities being developed in an urban environment be added to the AUC <i>Rule 012</i> review process, in addition to the A2 adjustment component. It is our understanding that AUC <i>Rule 012</i> was developed to typically deal with facilities located in a rural setting and as such, facilities located in an urban setting (i.e., areas impacted by non-energy industrial activity) could apply to use an A2 adjustment. ENMAX believes that AUC <i>Rule 012</i> needs to be reviewed so that the actual sound environment for urban development is appropriately considered in the Noise Impact Assessment (“NIA”), potentially without the need for the approval of an A2 adjustment. ENMAX believes that the use of Table 1, Table 2 and Figure 1 in AUC <i>Rule 012</i> are not adequate to fully characterize the actual urban sound environment. This could require that a new section be added to AUC <i>Rule 012</i> that deals with developing facilities in an urban environment. ENMAX would like to comment on situations when the BSLs are already higher than the PSL. ENMAX believes it is then appropriate to use an A2 adjustment. This situation can arise when an area has non-energy facilities (i.e., facilities not regulated by the AUC or ERCB) that have impacted the existing noise levels in the area. This situation is further compounded with the difference in noise standards between the local municipality (through its noise bylaw) and the AUC / ERCB noise requirements. ENMAX acknowledges that there may be other situations when the use of an A2 adjustment is appropriate.</p>
15.2	Clarify the information that must be provided in support of the use of an A2 adjustment.	
		<p>Golder Associates Ltd. An A2 adjustment should consider both the Leq and L90 noise levels during both the daytime and nighttime periods of the representative 24-hour period according to the rule. Digital sound recordings and detailed weather data at the measurement location should also be required for determining validity of data.</p>
		<p>Patching Associates Acoustical Engineering Agreed, very similar to CSS but with regulated facility not running. Allow for flexibility to model the ASL (highway noise or other facilities not covered by AUC/ERCB) in cases where regulated facilities can not practically be turned off or in areas with higher population densities where measuring at each residence would be prohibitive.</p>

			<p>NaturEner Energy Canada Inc. NaturEner suggests AUC to provide guidelines on measurement procedures and the minimum number of measurement locations, especially for wind projects which involves multiple noise sources and receptors over a large area.</p>
			<p>AltaLink Management Ltd AML agrees this requires further clarification for the instances that the A2 adjustment is applicable.</p>
			<p>HFP Acoustical Consultants HFP agrees with this comment.</p>
15.3	What is the process for a pre-application request for an A2 adjustment?		
			<p>Suncor Energy Services Inc. No comment at this time.</p>
			<p>Golder Associates Ltd. The process should be a list of requirements added to Rule 012 so that pre-applications can be appropriately scheduled during Project development. Any consultation requirements or data requirements should be clearly defined in the Rule. We look forward to AUC's input to this topic.</p>
			<p>Patching Associates Acoustical Engineering Currently, AUC has required a formal application for use of A2. This needs to be expedited. One previous project took 4 months for approval of its use. The method of getting approval for use of the A2 must be expedited. I had a project where a formal application was demanded, and it still took 4 months for approval.</p>
			<p>NaturEner Energy Canada Inc. NaturEner suggests AUC to include typical review time for class A2 adjustment request.</p>
			<p>HFP Acoustical Consultants HFP agrees it would be helpful to provide applicants with some guidance on this subject.</p>
			<p>ENMAX CORPORATION Respectfully submits that the AUC <i>Rule 012</i> requirement that the applicant must obtain pre-application approval from the Commission to apply an ambient sound adjustment is not appropriate. The information needed by the Commission to</p>

			determine whether an ambient sound adjustment is required is contained in the NIA. The appropriateness of an ambient sound adjustment cannot be reasonably determined prior to the submission of the NIA, which is part of a facility application. If an ambient sound adjustment is required by the applicant, the NIA should be presented with and without the ambient sound adjustment
Submitting octave band information S 3.8(2)	16.0	Clarify the purpose of requiring octave band information.	
			Suncor Energy Services Inc. Suncor defers to technical stakeholders.
			Golder Associates Ltd. This is achieved through addressing topic 13.1 above. In addition, technical submissions in support of regulatory applications should be reproducible under a peer review. Therefore spectral data should be one part of information supplied, just like model parameters. ISO 9613 requires the input of spectral data as do other internationally recognized technical standards.
			Patching Associates Acoustical Engineering Agreed. Unless this information is to be made public (see response 12.1 and 12.2 above) so that others can do proper cumulative impact assessments, this should not be necessary, except for identifying incompetent analysts. This has only been required by the EUB, and now the ERCB, for the last couple years.
			FFA Consultants in Acoustics and Noise Control Ltd. Octave band information allows for more accurate modelling and allows a stakeholder to undertake there own check of an NIA if they desire to undertake such a check.
			AltaLink Management Ltd. AML recommends that the Rule clarify that octave band information is only required in the instances that it is used in the calculations to determine sound pressure levels.
			HFP Acoustical Consultants HFP agrees the requirement to submit octave band data should be justified. Please note HFP believes it is appropriate to use octave band data for modeling. HFP is unsure why submission of that octave band data is helpful in the AUC review process.
	16.1	Are there any facility types for which submission of octave band data should be specified as an application requirement? If yes, how to process applications where octave band data is not	

		available.	
			Suncor Energy Services Inc. Suncor defers to technical stakeholders.
			Golder Associates Ltd. Topic 13.1 above implies that spectral source data is a requirement of acceptable NIAs.
			Patching Associates Acoustical Engineering For many facilities, this information is excessive in the NIA - it is necessary in order to do environmental modeling properly, but that is no reason to require it in the summary report. Until the early 1990's manufacturers' octave band data was not always available. Requirements for this data from clients led to manufacturers supplying this regularly. If it is required, in order to sell their products, they will supply. Otherwise, there are readily available modeling tools.
			NaturEner Energy Canada Inc. In the case where manufacturer can only provide maximum sound power level of equipments, NaturEner suggests to use octave-band values obtained from literature or use octave-band values of similar equipments, and adjusted to the applicable maximum sound power level.
			TransAlta Corporation Acquiring octave band data for transformers is difficult since manufacturers are not required to specify this under CSA standards. As well, this information for the actual transformers used could not be available until after the facility approval. Transformers of power plants size are custom manufactured and are not standard. Is there perhaps room for a receptor sound level threshold to determine how much detail is required? For example, if the nearest receptor is below 35 dBA sound level from the equipment, is that much detail required?
			AltaLink Management Ltd. AML is not aware of any facility types where this information is required. AML recommends this be provided on a case by case basis.
			HFP Acoustical Consultants HFP does not see any facility types that should be singled out to provide such data over other facilities. In order to maintain consistency, all applications should have the same data submission requirements. If the comment in 13.1 is implemented (frequency-specific predictions performed), then there would be a requirement to

			model in octave bands. This would require all applications to have octave band data, although submission of that data remains a concern.
	16.2	GL Garrad Hassan Tone identification process should be separated from LFN issue.	Any kind of tone, whatever the frequency is, may be a source of annoyance and a penalty (+ 5 dB) should be applied.
Examples provided in Rule 012	17.0	Review and update the examples provided and include electrical facilities.	
			Mainstream Renewable Power Ltd. Agreed (to change as proposed)
			Suncor Energy Services Inc. Suncor would like to see a wind project example.
			Golder Associates Ltd. This could be achieved within a focused meeting.
			Patching Associates Acoustical Engineering Examples should reflect facilities under AUC jurisdiction only.
			NaturEner Energy Canada Inc. Please consider providing an example on predicting construction noise at a receptor if AUC determines that such calculation should be included in the NIA.
			AltaLink Management Ltd. AML believes updating the examples would be beneficial but not necessary.
			HFP Acoustical Consultants HFP agrees with this comment.
		17.1	Consider re-doing example 1 Rule 012, Appendix 6. Example no. 1 shows how the A2 adjustment is applied. A2 adjustments are rare and therefore, the example tends to send the wrong message.
			Suncor Energy Services Inc. Suncor defers to technical stakeholders.
			Golder Associates Ltd. Agreed. The A2 adjustment example could be removed.

			<p>Patching Associates Acoustical Engineering Just because it is rarely used is not a reason to exclude a good clear example of when it can and should be used. May want to add notes indicating that it is rarely used, and that a formal application to the AUC will be required in order to use it.</p>
			<p>AltaLink Management Ltd. AML agrees with this comment.</p>
			<p>HFP Acoustical Consultants HFP agrees with this comment.</p>
References provided in Rule 012 (Appendix 8)	18.0	Should Rule 012 contain a list of technical reference material, standards and protocol, or acronyms? If yes, does the current list (Appendix 8) need to be updated and expanded? Any suggested references to be included?	
			<p>Suncor Energy Services Inc. Suncor defers to technical stakeholders.</p>
			<p>Golder Associates Ltd. Suggested, relevant standards should be added/updated with a caveat that the list was valid at the time of issue. Additions suggest by Golder are: 1. Technical Report HAR32TR-040922-DGMR20 Harmonoise WP3 Engineering Method for Road Traffic and Railway Noise after Validation and Fine-tuning (January 20th, 2005); 2. International Electro technical Commission (IEC). 2002. <i>IEC 61400-11: Wind Turbine Generator Systems - Part 11: Acoustic Noise Measurement Techniques</i>. Switzerland; 3. The Institute of Electrical and Electronics Engineers, Inc. 2006. <i>IEEE Standard Test Code for Liquid-Immersed Distribution, Power, and Regulating Transformers</i>. New York, USA</p>
			<p>NaturEner Energy Canada Inc. IEC 61400-11 Wind turbine generator systems – Part 11: Acoustic noise measurement techniques</p>
			<p>Greengate Power Corporation Yes</p>
			<p>Shell Canada Limited Shell supports updating and expanding Appendix 8.</p>

			<p>Imperial Oil Resources If technical references were to be supplied, IOR encourages the AUC to provide such a list OUTSIDE the covers of Rule 12. Regulations are intended to define the standards; industry should then be able to meet these standards in a manner as they see fit, or employ certified professionals/ consultants to provide that expertise. Technology changes (improves) over time - if the AUC were to provide a listing of key technical references, how would they plan on keeping it reasonably up-to-date?</p>
			<p>AltaLink Management Ltd. AML agrees that the Rule should contain reference material.</p>
			<p>HFP Acoustical Consultants This comment may have been at least partially addressed in the Phase 1 - Administrative Changes completed earlier this year.</p>
			<p>Scantek Inc. ISO 9613-2 is being rewritten</p>
Requirements to submit a Noise Impact Assessment	19.0	Should NIAs be required for all facility types or are certain facility types exempt from the requirement of a full NIA? Should the AUC introduce a significance test to evaluate the need for an NIA to include minor noise sources, discontinuous noise sources, equipment that replaces existing noisy equipment with quieter equipment, etc.? Specifically consider small power plants < 1 mW, wind turbines that are defined as Microgeneration in AUC Rule 024, and lower voltage transformers/substations?	
			<p>Mainstream Renewable Power Ltd. Not all facility types should require a full NIA. For example photovoltaic facilities should be exempt, as should small power plants. A comprehensive list is required to show what types of facilities are exempt.</p>
			<p>Suncor Energy Services Inc. No comment at this time.</p>
			<p>Golder Associates Ltd. The smaller applications such as small power plants < 1 maw, wind turbines that are defined as Microgeneration in AUC Rule 024, and lower voltage transformers/substations should require some level of assessment. The level of detail</p>

		should be consistent with other planned documents such as an ERCB application.
		<p>Alberta Wind Energy Corporation Certain facilities that inherently have low noise levels should be exempt from the need to file an NIA. These facilities could include photovoltaic facilities and small scale power plants.</p>
		<p>Patching Associates Acoustical Engineering Note: power criterion is 1 MegaWatt, not 1 milliWatt. Would <100kW wellhead power generation fall under AUC or ERCB? These units have the potential to produce as much noise as a 1 MW facility.</p>
		<p>NaturEner Energy Canada Inc. If AUC concludes to exempt certain facility types from a full NIA, AUC should clarify if these facilities should be accounted for in cumulative noise analysis submitted by others. If yes, these facilities should maintain a record of their sound power/pressure levels of their noise sources.</p>
		<p>AltaLink Management Ltd. AML believes some facilities should be exempt from this Rule because they are not a significant noise source. Rule 007 specifies (TS34) that Noise Impact Assessments are required for "new substations and transformer additions within existing substations". Rule 012 should be consistent with Rule 007, limiting NIAs to applications involving new substations and transformer additions. AML has performed a number of calculations and studies on its transmission facilities and the results of those studies indicate that the majority of these facilities are not a significant contributor to overall sound levels AML believes the following transmission facilities should be exempt from this Rule:</p> <ul style="list-style-type: none"> • all new and existing transmission lines including AC and DC lines; • all new and existing telecommunication sites (with or without standby generators); • all new and existing substation equipment except for transformers and AC/DC converter equipment; and • all temporary facility installations such as mobile substations.
		<p>HFP Acoustical Consultants HFP agrees this is a topic worthy of discussion. However, without clear guidance in the Rule, who will decide what is significant? It could introduce confusion to applicants if a "partial NIA" is developed for some types of facilities, with applicants unsure of which category they fall into.</p>

			<p>AltaLink Management Ltd.</p> <ul style="list-style-type: none"> • The requirement for a Noise Impact Assessment (NIA) for every Facility Application AML files with the Commission even though the proposed facilities are an insignificant noise source or where there would be no increase in noise levels (e.g., replacement of existing facilities); • The need to perform a complete NIA for the addition of new transmission lines. Performing such analysis along the entire length of these lines (possibly hundreds of kilometres), could include identification and location of all noise sources within a 1.5 km radius, location and proximity of dwellings within that same radius, and modeling and analysis for the entire length of the proposed line. This is would be an extremely large and expensive effort for facilities that AML considers an insignificant noise source.
			<p>ENMAX Corporation</p> <p>...proposes that certain facility types should be exempt from the requirement of a full NIA. In situations where it can be reasonably demonstrated that equipment replacement will result in a quieter piece of machinery replacing a nosier piece, then ENMAX believes it appropriate that a full NIA is not required. ENMAX believes it is neither practical nor appropriate that micro-generation units undertake a full NIA. The installation of micro-generation units are so customers can generate their own renewable or alternative electricity. This initiative should be encouraged not stifled by requiring an expensive NIA that would have to be paid for by residential and commercial customers. ENMAX believes that a review of the manufacturer's specifications can appropriately demonstrate that a micro-generation unit will not cause an increase in overall sound levels.</p>
			<p>Husky</p> <p>OPTION 1: All generator installations less than 75-100 KW that are not being connected to utility power should be exempt from licensing with the AUC. (According to section 1.3 of rule 7,</p> <p>OPTION 2: Husky will request an exemption to the requirement of NIAs to be completed for generator applications under 75-100 KW. Husky will complete a NIA on the largest single well equipment configuration (largest engine / generator combination w/ shack and muffler) and submit it to the AUC to determine if the noise impact is of concern. If the noise levels are reasonable, anything smaller that the</p>

			approved equipment configuration will not require a NIA to be completed for each application. As well, Husky will continue its method of working with landowners and addressing their noise concerns.
	19.1	Is it reasonable to file a separate NIA to the AUC when the AUC facility is minor part of a much larger project and where the larger project is a regulated facility (E.g. Oil sands processing plant, or an unregulated facility (e.g. pulp and paper plant)?	
			Mainstream Renewable Power Ltd. Documentation should be required to show that the additional facility does not add to the sound emissions of the larger regulated facility. If it does add, then a combined NIA should be submitted for review.
			Suncor Energy Services Inc. Suncor supports use of an NIA form for combined applications. This summary form could focus on information contained in the NIA from the AUC perspective.
			Golder Associates Ltd. We would like to see an MOU or agreement between AUC and ERCB to prevent the need for dual reviews. If the initial review is done by one regulator, a second review should not be required. This is dependant on Rule 012 remaining consistent with Directive 038.
			Patching Associates Acoustical Engineering The principle of no net increase could be adjusted to include 'no significant increase', which could be taken to mean an increase of less than (number chosen for example only) 0.05 dBA or whatever other number is deemed appropriate. Adding a pump jack which would give 19 dBA to an area where the existing is 50 dBA adds effectively nothing - an NIA should be submitted, but the level of analysis could be limited.
			Imperial Oil Resources A Noise Impact Assessment should only have to be filed with the regulator that has jurisdiction (to be determined in a Memorandum of Understanding between the ERCB and AUC, as previously suggested). As well, it was previously suggested in Item 1.2 that the AUC and the ERCB have a formal mechanism in place to provide industry with a means by which it can plead its case in the event of jurisdictional confusion or where the application of both D- 38 and Rule 12 may impose unintended restrictions on industry.

			<p>CAPP Industrial Hygiene Committee</p> <p>We would like to see coordination between AUC and ERCB to prevent the need for dual reviews. If the initial review is done by one regulator, a second review should not be required. It would seem reasonable that the primary regulator of the facility be responsible for the review (e.g., oil sands cogeneration plant noise would be assessed by ERCB, in conjunction with other facility noise). When installing stand-alone small electrical power plants as part of an oil and gas facility, a second (Rule 007) application must be submitted to the AUC... The process is onerous and duplicates much of the work (consultation, notification and noise assessment) that the company completed when licensing the facility with the ERCB. The AUC process often takes months to complete ... Provide an exemption within the AUC Rule 007 for small generation plants at a KVA level that will allow typical gen-sets at oil and gas facilities to be exempt, where there is no interconnection with the AB Electrical Grid. The ERCB has a clear process and regulations within its jurisdiction that requires consultation and notification, as well as appropriate noise assessment to be conducted. (Directive 038) This would allow for less time consuming regulation by a third party.</p>
			<p>AltaLink Management Ltd.</p> <p>AML recommends that a NIA not be required for a new industrial substation within a larger plant complex because the noise produced from a new substation will be insignificant compared to the industrial facility.</p>
			<p>HFP Acoustical Consultants</p> <p>HFP believes a separate NIA for the AUC regulated portion alone is not reasonable for a large project with other portions being regulated by the ERCB. HFP expects a complete NIA, including both the AUC and ERCB portions of the overall facility would be required by both the ERCB and the AUC to review cumulative noise effects. This reaffirms the need for consistency between Directive 038 and Rule 012. As stated under 1.0, it is recommended that some protocol be developed to determine who is the lead regulator responsible for noise issues and NIA review in these cases. For the case of the AUC facility being part of an unregulated facility, HFP believes it is reasonable to file an NIA that shows the AUC-regulated portion of the facility meets Rule 012. HFP does not believe it is appropriate to require the unregulated portion of the entire facility to meet Rule 012.</p>
	19.2	<p>GL Garrad Hassan</p> <p>Modify the requirements for submitting a map of noise</p>	<p>Iso countours of predicted cumulative sound level may be added to the required map.</p>

		isocontours.	
Appendix 1 Definitions	20.0	Rule 012 limits noise at a dwelling. Consider including other noise receptors in addition to a dwelling. Should the term "receptor" be defined as a generic term or should some other term be defined?	
			Mainstream Renewable Power Ltd. The term to be used should be receptor to include buildings that are not only dwellings.
			Suncor Energy Services Inc. "Receptor" has become a commonly used term to refer to dwellings or points assessed for noise. We do not suggest changing the use of receptor as a general term.
			Golder Associates Ltd. The term 'receptor' has become standard terminology in Alberta when discussing noise and should be defined. Changing the usage is not necessarily practical.
			Alberta Wind Energy Corporation AWEC is opposed to any noise limits beyond which there is an expectation of quiet. This expectation would include residences (dwellings), hospitals and long term care facilities where quiet during overnight stays is expected.
			Patching Associates Acoustical Engineering Does this mean campgrounds, or is someone trying to include consideration of wildlife?
			NaturEner Energy Canada Inc. Agree to replace "dwelling" with "receptor", see comment to 20.1
			Greengate Power Corporation Yes
			Shell Canada Limited Shell suggests using "receptor" as a generic term, but also keeping the term "dwelling" so that it can be distinguished from other noise receptors.
			FFA Consultants in Acoustics and Noise Control Ltd. Dwelling used for sleeping purposes is a good definition in most cases.
			AltaLink Management Ltd. AML recommends that the Rule be applicable for noise at the most impacted dwelling

			and not include other noise "receptors". Many receptors would be transient or temporary. Changing the Rule to include other "receptors" would significantly increase the amount of resources required to monitor and mitigate. Also, AML does not support consideration of non-dwelling "receptors" as this would also expand the definition of "directly affected".
			HFP Acoustical Consultants HFP believes it is appropriate to set limits at locations near a dwelling. If the definition of a receptor is opened up, we believe we will end up with a property line criterion very quickly. A property line criterion has never been the intention of Rule 012 and Directive 038. HFP therefore believes it would not be appropriate to consider other noise receptors, as this would represent a fundamental shift in philosophy.
Definition of Receptor	20.1	Should Rule 012 restrict noise at public institutions where noise may affect users of overnight stay locations, such as hospitals, extended care facilities and/or other locations without over night stay, such as schools and libraries?	
			Mainstream Renewable Power Ltd. Yes, Rule 12 should apply to other institutions, not just public, however the PSL may be different than dwellings. The daytime regulations should also apply to facilities without overnight stays as an energy facility may impede the work or service being provided at those institutions.
			Suncor Energy Services Inc. Suncor would support including nursing homes or extended care facilities as "dwellings" as these are the primary dwellings for a sensitive portion of a community.
			Golder Associates Ltd. Yes, but extending the definition of noise sensitive receptor would also require that the PSL determination for each alternate type of receptor be reconsidered. Current PSLs may be found to be adequate for the dwellings only, but the review would be needed.
			Alberta Wind Energy Corporation AUC must clearly define receptors. The test of whether or not a location is a receptor should not be so broad as to include all locations where there <i>could</i> be overnight stays, but rather locations where quiet during overnight stays is <i>expected</i> . In other words, it seems reasonable to expect noise restrictions at residences, hospitals and long term

		care facilities. It is not reasonable to have the same noise restrictions at a location such as a school, library, hotel or campsite where an overnight stay is <i>voluntary</i> . Should the AUC decide to restrict the noise levels at these locations, it should be at a significantly higher PSL.
		Patching Associates Acoustical Engineering Is a hospital or hotel considered a dwelling? There are serial occupants, even if they are not permanent. In the past, these have not been considered as dwelling (or at least sleeping quarters), but probably should be. In campgrounds, people chose to be in accommodations with very low TL walls, but this is not true for hospitals and hotels.
		NaturEner Energy Canada Inc. NaturEner suggests AUC to provide more detail guidelines on construction noise reporting. For instance, AUC has requested for further information regarding construction fleet noise source, activities and schedule of a typical construction day, speed limit, etc. in the information requests. NaturEner also suggests AUC to provide references to construction noise reporting, such as references to construction fleet noise source.
		Shell Canada Limited Shell suggests applying the Health Canada guidance with regards to other types of receptors where there is a reasonable expectation of quiet.
		AltaLink Management Ltd. Please refer to response in 20.0.
		HFP Acoustical Consultants HFP believes the AUC currently has enough flexibility that they can choose to apply Rule 012 in those cases suggested in the comment.
20.2	Should Rule 012 restrict noise at commercial or public buildings such as hotels motels, churches, offices, restaurants, movie theatres?	
		Mainstream Renewable Power Ltd. Yes, as above.
		Suncor Energy Services Inc. Suncor does not support expanding the definition of noise sensitive receptors to include commercial or public buildings with the current criteria.

			<p>Golder Associates Ltd. We do not agree that Rule 012 should restrict noise at commercial or public buildings based on current PSL levels and methods.</p>
			<p>Alberta Wind Energy Corporation As stated above, residents should expect quiet at their homes. However, noise restrictions at commercial or public buildings such as hotels motels, churches, offices, restaurants, and movie theatres should be less restrictive because overnight stays are voluntary.</p>
			<p>Patching Associates Acoustical Engineering The rule protects levels during day and night, which should not disturb sleeping (at night), and should not be a problem in the day. If a movie theatre has trouble with 50 dBA, they would not be able to operate anywhere in a city where the ambient are much higher! Motels and hotels - different matter, as they do provide sleeping quarters and high industrial noise could impact hotel business.</p>
			<p>Greengate Power Corporation No. Alternatively noise levels representative of the institutions, i.e., well above 40 dB</p>
			<p>Shell Canada Limited Shell suggests applying the Health Canada guidance with regards to other types of receptors where there is a reasonable expectation of quiet.</p>
			<p>AltaLink Management Ltd. Please refer to response in 20.0.</p>
			<p>HFP Acoustical Consultants HFP does not believe Rule 012 needs to specifically restrict noise at all commercial and public buildings. There is enough flexibility within Rule 012 that the AUC can decide to impose the PSL limits on a case-by-case basis if they believe it is necessary.</p>
	20.3	If no to Items 20.1 and 20.2, how should the AUC respond when a noise complaint is received by someone other than a dwelling occupant?	
			<p>Suncor Energy Services Inc. Suncor is a responsible corporate neighbour. Should a noise complaint be received from a location not defined as a dwelling, Suncor would work with that neighbour to try to achieve an agreeable solution. If the AUC received the complaint, Suncor would expect to be notified of the concern but that AUC would not be required to be</p>

			involved.
			Golder Associates Ltd. It is up to AUC to decide on the level of involvement required. AUC could encourage dialogue between the parties, but should not be accountable for resolving the issue.
			Patching Associates Acoustical Engineering Suggest that such a complaint be considered irrelevant (unless it is the dwelling's non-resident owner, complaining on behalf of potential residents).
			Greengate Power Corporation There are typical noise levels for the institutions outlined within the presented questions. Perhaps Rule 012 should include this baseline to monitor and test complaints.
			AltaLink Management Ltd. AML suggests that the Rule should not apply in this instance.
			HFP Acoustical Consultants HFP believes such a complaint will have to be dealt with on a case-by-case basis.
Definition of dwelling and dwelling unit	20.4	The term dwelling unit is no longer used in Rule 012. Should this definition be deleted or combined with "dwelling"?	
			Mainstream Renewable Power Ltd. The term dwelling unit should be deleted as it only adds confusion.
			Suncor Energy Services Inc. We suggest deleting unused terms to increase clarity.
			Golder Associates Ltd. If the term is not used, delete it.
			Alberta Wind Energy Corporation Term "dwelling unit" should be combined with "dwelling" for consistency.
			Patching Associates Acoustical Engineering Same thing, unless unit implies that townhouse or multi-family buildings are to be considered separately (due to higher inherent ambient from shared building? This may apply to motels and hotels as well). I don't think that these need to be separated.
			Shell Canada Limited Shell suggests that if the term is not used, it should be deleted.
			AltaLink Management Ltd. AML recommends that "dwelling unit" and "dwelling" be combined and used

			consistently as "dwelling" throughout the Rule. AML also recommends that the definition for dwelling unit and dwelling be combined and revised to be consistent with ERCB Directive 38.
			HFP Acoustical Consultants HFP found several references to "dwelling unit" in Section 2 and Table 1. HFP does not see a need to either delete the definition or combine with "dwelling".
	20.5		EPCOR Distribution & Transmission Inc. Does the definition of 'dwelling' mean the exterior wall of a building intended primarily for the ongoing habitation and use by people? How do patios or attached decks fit into the definition of 'dwellings'?
Construction Noise	21.0	Existing PSLs should not be used to assess construction noise.	HFP Acoustical Consultants HFP does not believe the PSL's established for continuous facility operations in Section 2 are appropriate noise limits for construction activity. Therefore, HFP recommends changing the statement to indicate Rule 012 is not applicable to construction noise, similar to Directive 038. HFP believes consistency between the 2 regulations is important. In section 1.2, it is stated the Rule applies to "... the operation of a facility including noise related to construction of a facility". How will construction noise be evaluated? Does this mean the daytime PSL's (with the possible inclusion of a temporary activity adjustment) apply in the event of a complaint? (it would be daytime PSL's because Section 6 has already restricted construction activities to daytime only)
	21.1	Timing of construction problematic – replace “must” statements.	HFP Acoustical Consultants HFP recommends revising Section 6 to match Directive 038, where licensees "should attempt" rather than "must". In Section 6 (1), it states licensees "must" "conduct construction activity between the hours of 07:00 and 22:00 to reduce the duration impact of construction noise". Is daytime only construction too restrictive? Does daytime only construction actually extend the duration of the construction period,

			rather than reduce the duration impact?
Noise modeling	22.0	Is it appropriate to adjust predicted noise by using wind rose data?	<p>HFP Acoustical Consultants</p> <p>Some consultants are using wind statistics (wind roses) to adjust the predicted sound levels, especially for wind farms. In all cases where wind statistics are being used, the predictions at residences will be lowered by anywhere from 0 to 5 dBA (with a typical reduction not exceeding 2 dBA) compared to the standard case of downwind from all noise sources.</p> <p>HFP is not necessarily opposed to using wind statistics to adjust the predicted sound levels, especially for wind farms (where it is physically impossible for a residence located in the middle of a wind farm to be simultaneously down wind from every wind turbine). However, HFP is concerned such an adjustment is not in keeping with the spirit of the Rule and does not meet the requirements of Section 3.5 (2), which requires the wind direction to be from the facility to the receptor(s). In order to level the playing field among all applicants, it is recommended the AUC clarify its position on the use of wind statistics to adjust the predicted sound levels for wind farms. For other facilities which have all the noise sources located at one central location, HFP does not believe it is appropriate to be using such adjustment factors.</p>
Complaint Investigation Form	23.0	<p>HFP Acoustical Consultants</p> <p>Section 4.1 (6) has a typo.</p>	Section 4.1 (6) should refer to "Part 1" not "Part 2". Part 1 of the complaint investigation form is the portion used to determine representative conditions. Part 2 is an event log to be used by the resident.
Measurement of noise	24.0	There is no guidance on microphone height anywhere in the rule.	<p>HFP Acoustical Consultants</p> <p>HFP recommends including guidance on the recommended microphone height in Section 4.9.4. HFP believes an appropriate height is 1.2 m to 2 m ("ear level"), but recognizes that the AUC may want to use a broader range such as 1 m to 10 m to cover off unusual situations, yet recommend the "ear level" as guidance.</p>
Appendix 1 Definitions	25.0	There is no definition for "combined sound level". Section 3.3 can also specifically refer to "combined sound level".	<p>HFP Acoustical Consultants</p> <p>HFP recommends adding a definition for "combined sound level" as follows:</p> <p>The predicted sound level that is the logarithmic addition of all the predicted facility(s)</p>

			contributions and the assumed average rural ambient sound level. The predicted combined sound level is compared to the PSL to determine compliance in a noise impact assessment.
Cumulative Noise Assessment	26.0	When there are no dwellings within 1.5 km of a facility, and that facility's 1.5 km boundary overlaps with an adjacent facility's 1.5 km boundary, should cumulative impacts be assessed?	HFP Acoustical Consultants HFP recommends that in these cases, cumulative impacts from other facilities should not be included in the predicted noise levels. Only the contribution from the applicant's facility should be evaluated at 1.5 km from the facility.