THE OIL SANDS ADVISORY GROUP ("OSAG")
RECOMMENDATIONS ON IMPLEMENTATION OF THE OIL SANDS EMISSIONS LIMIT ESTABLISHED BY THE ALBERTA CLIMATE LEADERSHIP PLAN ("ACLP")
May 8, 2017

EXECUTIVE SUMMARY

This report describes the consensus recommendations developed by Oil Sands Advisory Group ("OSAG") on how best to implement the oil sands emissions limit established by Alberta's Climate Leadership Plan ("ACLP").

The OSAG was created by the Alberta government to provide advice on the implementation of the emissions limit as it relates to oil sands, and to help Alberta's energy industry achieve the goal of being one of the most environmentally progressive and socially responsible in the world.

The ACLP describes several key related environmental, social and economic competitiveness outcomes for the oil sands sector. It is important that key elements of the ACLP, including the emissions limit, be implemented in an integrated manner so as to achieve these intended outcomes. These consensus recommendations represent an important component of the overall set of integrated actions that will be required to effectively implement the ACLP.

In summary, the approach recommended by OSAG for implementing the emissions limit satisfies the key design criteria established by OSAG for implementation of the emissions limit and consists of:

a) A series of actions intended to work in concert with the carbon levy and other elements of the ACLP to deliver significant improvements in GHG efficiency in the oil sands, such that the likelihood of the emissions limit being reach is significantly diminished;
b) Ensuring that oil sands operations and production growth under the emissions limit are not constrained by the emissions limit prior to the emissions limit being reached; and,
c) Providing Alberta with the option of managing Emissions Scarcity, if and when it arises, through either delaying the commencement of construction of new projects or requiring specified reductions in the emissions of those oil sands facilities falling in the two worst performing quartiles in terms of GHG efficiency.

As an overall package these consensus recommendations enjoy the support of OSAG members and are the product of intensive problem solving discussions. Building on the work to date, OSAG believes it will be important and helpful for OSAG to be appropriately involved by the government in the process of developing the regulations required to implement the emissions limit.

OSAG fully understands that final decisions on how the emissions limit is implemented rest with the government, and that the government of Alberta will take the lead in consultation relating to the regulatory and policy direction they intend to follow in implementing the emissions limit. OSAG is willing to provide any assistance the government would find helpful when undertaking public consultation, or consultation with First Nations and Metis.

Finally, OSAG believes the narrative established in relation to implementation of the emissions limit will be a critical element in securing broad-based support for the proposed implementation mechanism and that there would be value in the government involving OSAG in the development of that narrative. The

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narrative should address the substance of policy and regulatory direction, as well as its underlying intent.

BACKGROUND

The Honourable Rachel Notley, Premier of Alberta, requested OSAG to provide her with the following advice in relation to implementation of the oil sands emissions limit established by the Alberta Climate Leadership Plan:

a) The list of facilities that should be subject to the emissions limit (so that there is clarity on monitoring and compliance with the *Oil Sands Emissions Limit Act*).
b) The mechanism OSAG believes will most effectively implement the emissions limit, based on an assessment of the following:
    i) The range of potential mechanisms that could be used (in a distinct or integrated manner) to implement the emissions limit;
    ii) The criteria that OSAG used to assess the relative merits of each of the potential mechanisms (i.e. what objectives should the design of the implementation mechanism seek to achieve); and
    iii) An assessment of the range of potential mechanisms against those criteria;
c) The manner in which the recommended mechanism could be implemented (e.g. through legislation, policy, regulation, etc.);
d) Any changes required to the current regulatory and operating environment that facilitate effective implementation of the emissions limit;
e) Any changes required to the current system of reviewing and approving applications for oil sands development to effectively implement the emissions limit; and
f) Any other advice OSAG believes important in terms of ensuring the emissions limit is effectively implemented in a manner that secures broad support from stakeholders.

OSAG believes it has delivered on most elements of the above Mandate, recognizing that some specific details should be addressed following initial feedback on the recommendations from the GoA.

CONSENSUS RECOMMENDATIONS

The recommendations set forth in this report reflect consensus recommendations supported by all members of OSAG. This consensus is conditional on the following understandings:

a) These are strategic level recommendations reflecting the level of detail necessary to have confidence the recommendations are robust and that there is a clear and common understanding of underlying intent. Implementation of these recommendations will, in many circumstances, require a greater level of detail in the regulation and policy required to make them operational. OSAG understands that once the government decides on how it wishes to implement the emissions limit, the GoA intends that OSAG will have an opportunity to review and comment upon the regulation and policy developed by the government in this regard (NOTE: As described later in these recommendations, OSAG believes there is value in engaging OSAG more proactively in the regulatory drafting process, versus simply consulting OSAG once a draft of the regulation and supporting policy has been completed by the legislative drafters).
b) The OSAG consensus is in relation to the overall package of recommendations that must work in concert with the overall ACLP and with other recommendations to follow from OSAG Task Team 2. Consensus may or may not exist with respect to different elements of the package on a stand-alone basis or if the government chooses to implement the emissions limit in a manner that is materially different than the substance of these recommendations. The government can expect a strong level of support if the emissions limit is implemented in a manner that is materially consistent with these

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recommendations. Where there are substantive departures the level of consensus support will depend on the nature of those departures.

c) OSAG understands that all final decisions on how the emissions limit is implemented rest with the government, and that OSAG does not have a special role in the GoA's subsequent consultation process.

WORKPLAN AND PROCESS

Work to develop the recommendations set forth in this report was undertaken at multiple levels including:

a) Discussions at the OSAG table at the November, January, February and April meetings;
b) Numerous face to face meetings and conference calls (November through May) by the Emissions Limit Task Team established to assist OSAG in developing these recommendations
c) A workshop held on February 16, 2017 with a number of individuals with recognized expertise in emission limit management systems (e.g. cap and trade systems) and associated issues (e.g. possible business and investor confidence implications of different approaches);
d) An intensive two-day meeting of the Task Team on March 20-21, 2017; and
e) Very extensive and concerted effort at the Task Team, Caucus and Co-Chair levels through the months of March and April.

A more detailed description of the work undertaken in support of developing these recommendations is provided in the Status Report delivered on March 10, 2017, a copy of which is attached as Appendix "B".

OVERARCHING CONTEXT, DESIGN CRITERIA AND POTENTIAL IMPLEMENTATION RECOMMENDATIONS REVIEWED

Early on, OSAG Members agreed the overarching goals in implementing the emissions limit are to concurrently: (i) ensure the oil sands emissions limit established in the ACLP will not be exceeded, and (ii) maximize the development potential of Alberta's oil sands resource within that emissions limit. Within this context, OSAG Members also agreed that implementation of the emissions limit should be designed in a manner that clearly establishes: (i) a set of actions that decrease the likelihood of the emissions limit actually being reached, and (ii) a set of actions that ensure if the emissions limit is reached, it is not exceeded.

In designing the mechanism to implement the emissions limit, OSAG approached this task within the context of the following framework derived from OSAG's understanding of the ACLP insofar as it relates to Alberta's oil sands and the Terms of Reference establishing OSAG:

a) The vision is that Alberta's energy industry, including oil sands, is viewed as one of the most environmentally progressive and socially responsible in the world (viewed within context of the environmental, social and economic competitiveness dimensions of the issues and opportunities OSAG is addressing).;
b) Within this context, three key outcomes imbedded within the ACLP in relation to the oil sands industry within the ACLP are:
    i) Ensuring the emissions limit is not exceeded;
    ii) Maximizing the development potential of oil sands growth within the emissions limit; and
    iii) Incenting technology and innovation that will drive further reductions in emissions intensity;
c) The above outcomes need to be delivered through a policy and regulatory platform that is consistent with the objectives of political durability and administrative efficiency

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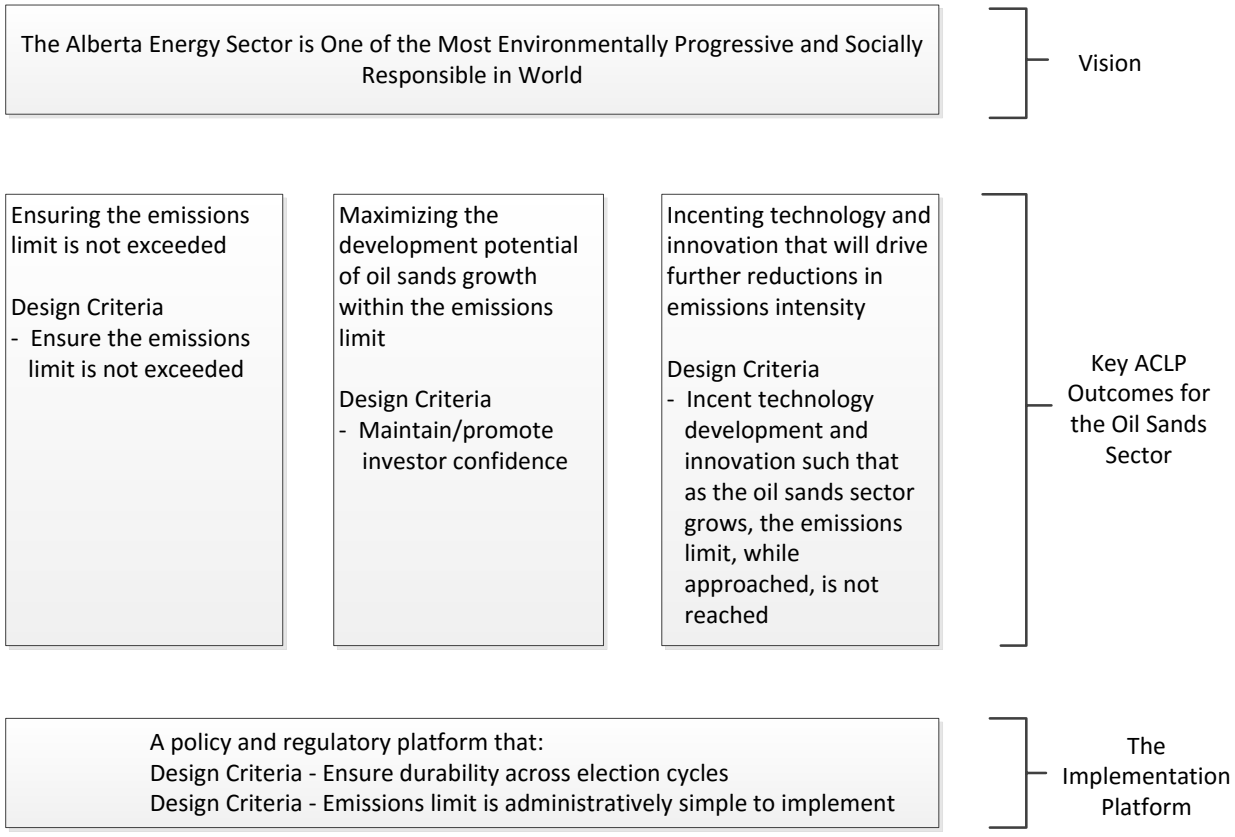
Based on an preliminary set of designed criteria developed early on in its deliberations (see the March Status Report attached as Appendix "A"), OSAG developed prioritized design criteria to guide the assessment of potential approaches to implementation of the emissions limit. These agreed design criteria are:

a) Ensure the emissions limit is not exceeded;
b) Maintain / promote investor confidence;
c) Ensure durability across election cycles;
d) Incent technology development and innovation such that, as the oil sands sector grows, the emissions limit, while approached, is not reached; and
e) Emissions limit is administratively simple to implement.

The following diagram illustrates how each of the above priority design criteria fit within the framework described in the previous section (Overarching Context) describing the objectives of the ACLP insofar as it relates to Alberta's oil sands.



The key message in the above diagram is that the ACLP outlines several key outcomes for the oil sands sector and the various elements of the Plan, including the emissions limit, must be implemented in an integrated manner so as to achieve these outcomes.

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RECOMMENDED APPROACH TO IMPLEMENTING THE EMISSIONS LIMIT

The background to development of the recommended approach to implementation of the emissions limit is outlined both above and in March Status Report and attached as Appendix "B".

As OSAG examined the two different approaches outlined in the March Status Report, and in particular each of their specific attributes within the context of Alberta's oil sands, the ACLP, and the prioritized design criteria described above, an approach emerged that drew from elements of each of the approaches originally under consideration. OSAG believes this recommended "made in Alberta" approach most effectively implements the emissions limit in the specific context of the oil sands and the ACLP. It has also been developed with consideration for leading frameworks elsewhere in the world.

Following is a high level overview of the approach OSAG recommends for implementing the ACLP Emissions Limit. This description can form the basis of an easy to understand, non-technical narrative to explain the recommended approach and supporting intent of the specific recommendations. Attached as Appendix "B" is a more detailed description that provides an example of how the recommended approach could be implemented in a manner consistent with the intent described herein.

Consistent with the approach OSAG has taken to this report and the more detailed Appendix "A", we strongly recommend the materials prepared by the GoA for the purposes of future consultation on the implementation of the emissions limit address both the specifics of the regulations and related policy directives as well as the underlying intent of those provisions.

Overview

At its simplest, the recommended approach provides for a series of actions intended to work in concert with the carbon levy and other elements of the ACLP to deliver significant improvements in GHG efficiency in the oil sands such that the likelihood of the emissions limit being reached is significantly diminished, to ensure that oil sands operations and production growth under the emissions limit are not constrained by the emissions limit pre-scarcity, to provide Alberta with the option of managing emissions scarcity if and when it arises through either delaying the commencement of construction of new projects or requiring specified reductions in the emissions of those oil sands facilities falling in the two worst performing quartiles in terms of GHG efficiency, and in a manner that is administratively simple to implement.

Emissions Limit

For the purposes of the recommendations, the term emissions limit has the meaning described and with the attributes used in the Oil Sands Emissions Limit Act and related legislation, including, but not limited to, the exclusions of the GHG emissions associated with primary production, enhanced recovery, experimental schemes, co-gen, and up to 10 MT of new upgrading capacity or expansion of existing upgrading capacity

Implementation Vehicle

OSAG recommends that this approach be implemented through a new regulation, the Oil Sands

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Emissions Limit Implementation Regulation ("OSELIR") and, to the extent necessary, amendments to related legislation and regulations and any accompanying Directives or Guidance the Government of Alberta deems necessary to effectively and efficiently implement this recommended approach.

Implementing Agency

While OSAG expects the AER will continue to be the primary regulator for oil sands, it also believes ACCO will take on an increasing role in relation to administration of the emissions limit and advancing innovation in relation to the sector. It is expected the respective roles of AER and ACCO in this regard will be defined during development of the specifics of the OSELIR.

Emissions Forecasting

OSAG recommends requiring two different types of forecasting take place on an annual basis. First, each oil sands facility that intends to operate in any given year will be required to submit a forecast of its expected emissions for that year ("Annual Facility Level GHG Forecasts"). These forecasts should be the same as any annual facility level forecasts used for the purposes of implementing the carbon levy. Second, the Regulator will be required to prepare and publish on an annual basis a 10-year long term GHG emissions forecast for the oil sands sector ("Annual Long Term Oil Sands Emissions Forecast"). Protocols and standardized methodology are to be established for both forecasts.

Definition of Emissions Scarcity

OSAG recommends establishing a definition for emissions scarcity. This is necessary as the approach to compliance pre- emissions scarcity is more straightforward than the approach post- scarcity. Emissions scarcity is defined as existing in any year where the Annual Long Term Oil Sands Emissions Forecast published by the Regulator (see above) shows that the projected oil sands industry GHG emissions exceed the Emissions Limit sometime in the first five years of that forecast.

Emissions Authorizations

OSAG recommends requiring that OSELIR establish Annual Authorizations that authorize an oil sands facility to emit a specified amount of GHGs in a calendar year, that the Regulator cannot establish in any year Annual Authorizations that exceed the Emissions Limit, and that no oil sands operator can emit in that year GHG emissions greater than its authorizations for that year under OSELIR (with provisions for addressing variances reasonably inherent within emissions forecasting, start-up conditions and unplanned operational events that were not reasonably foreseeable). Prior to the emissions limit being reached, facilities in compliance with the carbon pricing regulation (including the associated forecasting requirements) would be unrestricted in their authorizations and therefore be in compliance with the emissions limit.

Compliance Prior to Emissions Scarcity

OSAG recommends requiring that in the period prior to Emissions Scarcity each oil sands operator will be allocated Annual Authorizations equal to its emissions for that year. OSAG further recommends there be no discretion by the Regulator in this regard.

Compliance at Emissions Scarcity

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OSAG recommends that once Emissions Scarcity is reached, any approved new project (including expansion of existing projects) that has not commenced construction at that time will require government permission to proceed to construction.

OSAG recommends that the government then have two options to ensure the emissions limit is not exceeded. These options are not intended to be mutually exclusive (i.e. the government should have the ability to use either or both options depending on the circumstances that exist at the time scarcity is reached).

OSAG recommends that one option is that the government could elect to restrict new projects from commencing construction until such time that Emissions Scarcity no longer exists. The definition of emissions scarcity has been defined in a manner intended to ensure sufficient time to notify project proponents of such a decision before significant capital has been invested. Furthermore, decisions to spend capital on approved projects prior to the commencement of construction should be made in a manner that is fully informed and should avoid stop orders in the midst of construction. It is intended that this is an option only (i.e. this is not intended as a mandatory requirement) with the government having the ability to make the decision on whether to exercise this option based on the circumstances in existence at the time Emissions Scarcity is reached. If this option is selected by the government at any point in time, the effect is that the likelihood of the Emissions Limit being reached will be significantly diminished or eliminated.

The other option recommended by OSAG is that the Regulator be required to restrict the allocation of Annual Authorizations to oil sand facilities in the two worst performing quartiles in terms of GHG efficiency (Q3 and Q4), to the extent necessary in any given year to ensure the Emissions Limit is not exceeded. OSAG further recommends that 1/3 of the required emissions restriction come from those facilities in Q3 and 2/3 of the required emissions restrictions coming from Q4. The extent to which this option will need to be used by the Regulator will be impacted by the extent to which the government elects to restrict new projects from commencing construction at the time Emissions Scarcity is first reached. OSAG intends that implementation of these options by the Regulator be mandatory to the extent necessary to ensure the Emissions Limit is not exceeded in any given year.

Operational Reserve

OSAG recommends that an Operational Reserve be established when aggregate annual forecast emissions first exceed 90 Mt. This Operational Reserve would be based on a review of historical variances between forecast and actual emissions at the aggregate industry level and would then be administered annually to provide for operational variances between forecasts and actuals at Emissions Scarcity. The determination as to how best to populate the Operational Reserve would also be made at 90 Mt, taking into consideration the full range of options available at that time under the policy context then in effect. The Operational Reserve is not relevant prior to Emissions Scarcity.

Complementary Measures Effective Immediately

OSAG recommends requiring a number of actions be taken immediately that will contribute to the oil sands sector achieving lower GHG intensity (e.g. amending resource conservation policy such as Directive 82, using ERA and other innovation acceleration vehicles to drive additional innovation stimulus in the oil sands and incremental GoA funding (with that incremental funding coming from

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revenue generated by the carbon levy on oil sands), creating an oil sands sector carbon marginal abatement cost curve and technology roadmap to better inform decisions, etc.). OSAG recommends the specific actions required in this regard be those described in the more detailed description attached as Appendix "B" and as further defined by OSAG Task Team 2.

Developing and deploying technology solutions within the sector is an integral component of the OSAG framework recommendation. Government has a role in supporting innovation and technology to drive solutions for GHG emissions reductions at source within the oil sands sector, and to demonstrate that support through organizational structure and funding.

Complementary Measures Effective at 80 MT

OSAG recommends requiring that if / when oil sands emissions reach 80 MT, a number of further actions be taken to increase the preparedness of current and future oil sands Operators for emissions scarcity and further catalyze actions that will contribute to the oil sands sector achieving lower GHG emissions intensity. These recommended actions are detailed in Appendix "B".

Complementary Measures Effective At 95MT

OSAG recommends requiring that if / when oil sands emissions reach 95 MT, a number of actions be taken to further increase the preparedness of both the Regulator and current and future oil sands operators for Emissions Scarcity (e.g. a review of the standards to be used by oil sands facilities developing their Annual Facility Level GHG Forecasts, requiring the Annual Long Term Oil Sands Emissions Forecast prepared by the Regulator to place increasing attention on the oil sands emissions trend and the potential impacts on existing operators and new projects in the event emissions scarcity is reached).

Changes to the Process for Project Approvals and Approval Renewals and Extensions

OSAG recommends requiring that: (i) the approval process for new projects (both new facilities and expansions of existing facilities) and extensions or renewals of approved projects not currently under construction all be amended to introduce both a BATEA determination and require the submission of a GHG management plan that contains specified information, (ii) the EPEA renewal process for projects currently operating or under construction be amended to require the submission of a GHG management plan that contains specified information, and (iii) current BATEA principles used by the GoA be reviewed/updated within the context of these recommendations.

Penalties and Remedial Actions

OSAG recommends existing legislation be reviewed to ensure the Regulator has the power necessary to take actions required to ensure oil sands operators do not emit more GHG's than authorized under OSELIR. If not, OSAG recommends the OESLIR specify that powers of the Regulator currently used in non-compliance situations should be available where necessary.

OSAG recommends penalties be established for those circumstances where the emissions of an oil sands operator exceed the Annual Authorizations allocated to that operator for any given year in which the Emissions Limit is reached. Penalties are not relevant during the pre-scarcity period (i.e., total actual aggregate emissions are below 100 Mt). The OSAG recommends the penalties be established at a level

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that represents a significant and effective deterrent and that payment of the penalty will not bring oil sands operators into compliance (penalties therefore cannot be viewed as a "cost of doing business").

It is important that the penalty provisions be clear that they will not apply in circumstances where an Operator, acting in accordance with the forecasting protocols and standardized methodology exceeds the variability normally inherent in emissions forecasting and/or where the variance is due to forecasting of start-up conditions, and/or where the variance is a result of unforeseen operational interruptions that are beyond the reasonable control of the operator.

Transparency

OSAG recommends transparency provisions be adopted in relation to a number of matters (e.g., the facility and industry level annual forecasts undertaken pursuant to OSELIR, actual facility and industry level emissions that take place in each year, and the GHG management plans submitted by Operators). Furthermore, OSAG recommends these transparency requirements respect proprietary or confidential information.

Cogeneration

OSAG recommends OSELIR establish a deemed electricity emission methodology for the purposes of excluding emissions associated with the electricity portion of cogeneration and that the specifics of that methodology be developed by the Regulator through further engagement with OSAG.

Exclusions

OSAG recommends OSELIR prescribe exclusions for primary production, enhanced recovery, and experimental schemes with the definition of each of these prescribed exclusions being taken from existing regulations.

Internationally Transferred Mitigation Options

There was significant discussion by OSAG regarding the potential use of internationally transferred mitigation options (offsets) as a tool to be used in the implementation of the emissions limit. Since the time the ACLP was announced by Alberta, the use of offsets as a tool in the delivery of climate policy has continued to evolve (e.g. the Paris agreement, the Pan-Canadian Framework). A diversity of views were expressed by OSAG members in relation to the use of offsets and continue to exist. However, all OSAG members agree that the potential use of offsets as a tool in implementing the emissions limit does not become relevant until the emissions limit is approached. OSAG members further note there are a number of measures built into both the ACLP and their recommended approach for implementing the emissions limit that are designed to decrease the likelihood that the emissions limit will in fact be reached (e.g. the various provisions directed at incenting innovation and technology development and deployment). OSAG believes that a decision on whether, and if so how best, to incorporate the use of government purchased offsets as a tool in implementing the emissions limit is a decision best made by the Alberta government at the time the emissions limit is approached (i.e. if and when it becomes necessary to do so) with a consideration for the broader policy context at that time (e.g. international agreements, pan-Canadian agreements, Alberta's climate goals at that time).

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Future Exemption of Certain Projects

OSAG recommends in the event the emissions limit is approached at some future date, and provided that Canada and Alberta are on track to meeting their 2050 GHG emissions reduction targets (where those targets have been established in a manner that enjoys broad based support), the emissions limit should be amended by the government at that time as necessary to ensure that production from any project that has an emissions intensity better than the competing barrel in the U.S. market (on a wells to tank basis) is not constrained.

Other Considerations

OSAG provides the following clarifications and observations as part of its recommendations:

a) The economy-wide carbon price should apply to oil sands;
b) The carbon pricing system, and specifically the output-based allocation methodology, is complementary to the recommended emissions limit system as part of the integrated carbon policy framework, but should be maintained as discrete mechanism; and
c) The definition of upgrading included in the emissions limit should be further reviewed to ensure that the necessary flexibility is being provided to enable emissions associated with value-adding upgrading activities to be included within the 10 Mt upgrading provision.

RATIONALE AND EVALUTATION AGAINST THE PRIORITIZED DESIGN CRITERIA

Following is a brief evaluation of the recommended approach against the core Design Criteria described earlier in this report.

Ensures the Emissions Limit is Not Exceeded

The recommended approach outlines a number of actions that complement the carbon levy and OBA in incenting a shared commitment to technology development and innovation designed to enhance the GHG efficiency of the oil sands sector. These actions are the first line of defense, in that they decrease the likelihood that the emissions limit will be reached. Next, the recommended approach provides credible options for the Regulator to act in the event forecasts indicate that the Emissions Limit is to be exceeded. Collectively, these options provide the Regulator with the range of actions that will ensure the Emissions limit is not exceeded. Finally, the recommended approach provides responsible operators with the required flexibility to address forecasting variances and unforeseen operational circumstances, while also providing penalty provisions and other powers that can be exercised by the Regulator if / when necessary to address non-compliance.

Maintains/Promotes Investor Confidence

Within the context of oil sands development, investor confidence will flow primarily from the design of the proposed system that: (i) provides clarity as to the rules regarding implementation of the emissions limit, (ii) rewards strong facility level and industry GHG performance, while also respecting the basis upon which prior investment decisions were taken, and (iii) establishes a framework that decreases the likelihood of oil sands emissions ever reaching the Emissions Limit. More specifically, investors will understand there are measures in place to promote technology development and deployment and innovation within the sector (thereby providing the opportunity for companies to grow oil sands production within the limit). The recommended approach can be readily described to investors. There

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are several measures built into the recommendations that ensure investors will have the ability to make informed and timely investment decisions going forward.

Ensures Durability across Election Cycles

OSAG recognizes durability across election cycles cannot be assured, but that the best way to enhance durability is to design a system that drives desired outcomes, enjoys broad support, and is enhanced by inherent design flexibility that enables decisions at the right time with the right information (i.e., appropriate flexibility is a strength of the system rather than a weakness). OSAG believes the recommended approach strikes the right balance in terms of achieving the foregoing.

Incents Technology Development and Innovation within the Oil Sands Sector

Improved GHG performance is very important to Alberta's oil sands sector, not just in the context of remaining within the emissions limit over time, but also in terms of remaining globally economically competitive. Taken together, the carbon pricing scheme established by the Carbon Competitiveness Regulation, the Complementary Measures effective immediately, and many of the recommended enhancements to the approval process, will drive significant additional innovation and technology development specifically directed to improving oil sands GHG emissions performance.

It is important to recognize that the emissions limit is only one element, albeit a very important one, of the overall Climate Leadership Plan. Investment in innovation as it relates to GHG performance is another integral element that needs to support and enable the objectives inherent in the design of the emissions limit implementation. OSAG Task Team #2 will be providing recommendations in this regard by end-June. These recommendations will address both opportunities to improve the overall innovation system as it relates to oil sands and the issue of funding levels and partnering opportunities to ensure a shared commitment to improvement in oil sands GHG emissions performance.

Is Administratively Simple to Implement

The recommended approach is designed so as to leverage and build on other processes and to avoid duplication (e.g. the annual forecasts required under the system are forecasts that will be required in any event for the purposes on implementing the OBA). In terms of administrative simplicity, the recommended approach compares favourably with other options examined.

SECTORAL INPUT

OSAG has not e conducted any formal consultation with respect to implementation of the emissions limit. Some OSAG Members have, however, conducted informal engagement within their sectors. The results of this informal engagement can be summarized as follows.

Informal Engagement with Environmental Interests

The ENGO members of OSAG have done little informal outreach to the environmental community given the required need for non-disclosure during the development of these recommendations. However, we have consulted on the key aspects of this recommended approach and are confident that it is consistent with the intent of the ACLP to limit growth in oil sands emissions to that required. Completion and implementation of this limit will also allow us to begin the discussion with government and industry

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about how Alberta and Canada can both meet our 2030 emissions commitments but also begin the rapid de-carbonization necessary after that to reach 80% emission reduction by 2050. In our view this will require significant reduction of the 100 MT emissions limit after 2030 so that the oil sands will be allocated a reasonable share of Canada's emission budget. This is why engaging in the Pathways to 2050 analysis recommended by OSAG is important as it will send an important signal that Alberta intends a peak and decline in GHG emissions post 2030 while maintaining the ability to benefit from innovation and technology development.

Informal Engagement with Indigenous and Community Interests

The Indigenous and Community members of OSAG have not, as of yet, undertaken any significant informal engagement with indigenous and community interests more broadly. The Indigenous and Community members of OSAG see both public consultation and First Nations and Metis consultation (as discussed later in this report) as being an important part of developing broad based support.

Informal Engagement with Industry Interests

As these recommendations were being developed, industry members on OSAG informally engaged with oil sands industry representatives (a cross-section of CEOs, executives and technical staff) regarding their perspectives on implementation of the oil sands emissions limit. As required by the non-disclosure agreements signed by OSAG members, no discussion took place regarding the final or near-final form of this recommendation (the focus was on the perspectives industry OSAG members would bring to the discussion).

Although there continues to be concern among some oil sands operators and developers regarding the inclusion of the emissions limit in the ACLP, for the most part industry has constructively engaged in discussions regarding implementation of the emissions limit and there is broad industry support for a system that:

a) Recognizes the importance of accelerating oil sands technology and innovation, and of government, industry and other interests partnering (organization, funding, technology development and deployment, etc.) in this regard to achieve desired outcomes;
b) Provides for policy and regulatory measures that encourage and enable performance improvement over time, with increasing expectations in this regard if / as the emissions limit is approached.
c) Is compatible with, but differentiated from, the Carbon Competitiveness Regulation and the associated carbon pricing mechanism;
d) Addresses competitiveness, in order to ensure that carbon leadership does not have undue or unintended consequences in terms of the economic competitiveness of the oil sands industry in Alberta;
e) Defines a compliance pathway that provides confidence oil sands investment and production will continue under the emissions limit;
f) Leaves open the option for the government of the day to make a future decision on the use of offsets (or similar mitigation options) if and when the emissions limit is reached and for that decision to be made with a consideration for the broader policy context at the time;
g) Provides the necessary assurances that the overall system is durable and that the emissions limit will not be exceeded, while allowing flexibility for the government of the day to exercise its judgement, based on the circumstances of the day, as to the best mechanism(s) to be utilized to constrain emissions at or below the emissions limit;
h) Strikes the right balance between encouraging entry of new projects, with potentially better GHG

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intensity performance, and the interests of prior investors / incumbent capital that is subject to requirements for ongoing improvement;

i) Takes the right action at the right time, within a transparent framework that provides the necessary confidence to the investment community to continue to attract investment to the oil sands (other things being equal); and
j) Provides the necessary clarity for industry and the investment community as to what types of investments are more likely to be successful in this policy / regulatory regime.

The proposed approach to implementation of the emissions limit as described in these recommendations reflects the above. It reinforces the integrated nature of the ACLP - carbon pricing, oil sands growth within the emissions limit, accelerating technology and innovation, maintaining competitiveness, etc., while encouraging leadership in GHG performance.

In the judgement of the OSAG Industry Caucus, broad oil sands industry support for the proposed methodology for implementation of the emissions limit can be established, given ongoing OSAG engagement in the drafting of the regulations (or equivalent), adequate time for consultation and with the proviso that the broader OSAG plenary members collectively support this direction. Most importantly, the OSAG member companies and the broader oil sands industry will be focused on the manner in which the overall ACLP "package" is implemented and its impact, along with other actions by the government of Alberta, on the cumulative cost burden and overall competitiveness of the oil sands sector. This will largely influence investor confidence in the oil sands and in Alberta, relative to competing supply sources.

RECOMMENDED NEXT STEPS

In addition to the above substantive recommendations on the specific mechanism to be used to implement the emissions limit, OSAG has the following recommended next steps from a process perspective.

OSAG Engagement in the Regulatory Drafting Process

OSAG understands that the final decision on how to implement the emissions limit rests solely with the government, the approach ultimately decided upon by government may depart from what is recommended, and the drafting of all required regulation and policy will be a task undertaken by government officials. In that context:

a) While OSAG understands it will have an opportunity for input on draft regulations developed by the government before they are finalized, OSAG believes there would be significant value in a small team from OSAG being engaged collaboratively by the GoA throughout the drafting process (vs. waiting until there is a draft product to review); and,
b) OSAG sees the objective of such engagement being to provide continuity and expertise to improve the efficiency / effectiveness of the drafting process in terms of assisting the drafters with understanding as to the intent of the OSAG recommendations.

First Nation, Metis and Public Consultation

OSAG expects that the GoA will, in the normal course, undertake consultation with regard to its proposed policy and regulatory direction regarding the implementation of the emissions limit. OSAG strongly recommends the materials prepared by the GoA for the purposes of the foregoing

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consultations address both the specifics of the regulations and related policy directives it intends to establish to implement the emissions limit as well as the underlying intent of those provisions.

Problem Solving How Best to Address Sensitive or Controversial OSAG Recommendations

OSAG recognizes that there are certain elements of the recommended approach that may be sensitive or controversial. Further, the supporting rationale and narrative established in relation to these recommendations, should the GoA decide to proceed with them, is absolutely critical in terms of overall support for OSAG's recommendations and support for subsequent GoA direction on policy and regulations related to the implementation of the emissions limit.

For these reasons, OSAG recommends that decisions as to how best to successfully advance these recommendations will be significantly enhanced by a collaborative problem solving discussion involving a small OSAG committee (including Co-Chairs) and senior GoA officials. OSAG therefore strongly recommends that these recommendations be kept strictly confidential until such time as this problem solving discussion has taken place.

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APPENDIX "A"
RECOMMENDED APPROACH TO IMPLEMENTING THE EMISSIONS LIMIT

Following is a detailed description of the framework being recommended by OSAG for implementation of the ACLP oil sands emissions limit. It is intended that this framework be used to assist with the drafting of any regulations based on these recommendations.

GENERAL

1. OSAG recommends (i) a regulation to implement the ACLP emissions limit (the "Oil Sands Emissions Limit Implementation Regulation" or "OSELIR") be established in a manner that reflects the actions outlined in this framework, and (ii) this regulation be drafted in language that ensures there is a clear and common understanding of intent of each section.

2. OSAG expects the AER will continue to be the primary regulator for oil sands, but that ACCO will take on an increasing role (supported with the necessary capacity and funding) with respect to administration of the emissions limit and advancing innovation as it relates to carbon emissions from oil sands. For the purposes of this framework, the term "Regulator" applies to either AER or ACCO, as applicable, with the expectation that during the process of translating the recommendations into specific regulation and policy, additional clarity will be provided recommending which organization will be responsible for each of the required actions.

THE RECOMMENDED MECHANISM FOR IMPLEMENTING THE OIL SANDS EMISSIONS LIMIT

Definitions

3. OSAG recommends that the OSELIR define:
   a) "Emissions Limit" as having the meaning described and with the attributes used in the Oil Sands Emissions Limit Act and related legislation, including, but not limited to, the exclusions of the GHG emissions associated with primary production, enhanced recovery, experimental schemes, co-gen, and up to 10 MT of new upgrading capacity or expansion of existing upgrading capacity[1];
   b) "Emissions Scarcity" as existing in any calendar year where the Annual Long Term Oil Sands Emissions Forecast published by the Regulator for the prior calendar year shows projected oil sands industry emissions exceeding the Emissions Limit at some point in the first five years of that forecast[2];

[1] INTENT STATEMENT: The definition of upgrading included in the emissions limit should be further reviewed to ensure that the necessary flexibility is being provided to enable emissions associated with value-adding upgrading activities to be included within the 10 Mt upgrading provision.
[2] INTENT STATEMENT: Five years has been selected as the time between commencement and completion of construction an oil sands facility (which is relevant for the purposes of Paragraph 8(b)) is normally less than five years. It also provides a reasonable time frame for the switch from pre to post scarcity mechanism for implementing the Emissions Limit.

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c) "Expansion Projects"[3] as consistent with how production forecasting is done for the sector (i.e. the projects that are included in a typical production forecast) and to include all significant capital stock turnover or major modifications that would require OSCA or EPEA amendment; and
d) "Under/Commenced Construction" as projects that have completed detailed engineering and passed a Class 3 cost estimate or having a final investment decision. Prior to this stage, the projects are still in development.

Emissions Forecasting

4. OSAG recommends OSELIR and/or other relevant regulation should:
   a) Require the Regulator to establish:
      i) a protocol and standardized methodology for the Annual Facility Level GHG Emissions Forecasts to be prepared each year by oil sands operators as required under Paragraph 5(d) *(NOTE: The intent is that the* Annual Facility Level GHG Emissions Forecasts and *the annual forecast required for the purposes of carbon levy compliance be the same forecasts and, as such, the protocol and standardized methodology should be the same for both)*;
      ii) a protocol and standardized methodology for the Annual Long Term Oil Sands Emissions Forecast to be prepared each year by the Regulator as required under Paragraph 5(b) (seeking to ensure that the standardized methodology ensures the highest degree of accuracy possible for the initial five years of the forecast); and
      iii) standards for allowable annual emissions forecasting variability in Annual Facility Level GHG Emissions Forecasts for the purposes of Section 10(a) ("Emissions Forecasting Variability Standards");
   b) Require that within a time period prescribed in the regulation, each oil sands facility that plans to be operational in the following calendar year (including those that are under construction but not yet operational) will prepare (in a manner consistent with the protocol and standardized methodology established under Paragraph 4(a)(i)) and submit to the Regulator a forecast of its best estimate of the GHG emissions it expects the facility will emit in the following calendar year (an "Annual Facility Level GHG Emissions Forecast"). *(NOTE: The intent is that the Annual Facility Level GHG Emissions Forecasts* and *the annual forecast required for the purposes of carbon levy compliance be the same.)*
   c) Require the Regulator to prepare (in a manner consistent with the protocol and standardized methodology established under Paragraph 4(a)(i)[4]) and publish each year, a long term GHG emissions forecast for the oil sands industry of at least 10 years (the "Annual Long Term Oil Sands Emissions Forecast"); and
   d) Require the Regulator to annually report actual GHG emissions for each year at both the facility level and the oil sands industry level *(NOTE: this reporting is to be undertaken in a manner consistent with, and not duplicative of, reporting required for carbon levy compliance)*.

Emissions Authorizations

5. OSAG recommends OSELIR:

[3] INTENT STATEMENT: This definition should be checked for consistency with the definitions used by the GoA to trigger an EPEA or OSCA amendment (the intent is that this definition is consistent with those definitions.
[4] INTENT STATEMENT: It is not intended that this be done in a manner that respects the proprietary nature of the software used by the GoA for forecast purposes. The intent is that the key assumptions built into the forecasts and general methodology be described

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a) Establish annual authorizations for oil sands facilities to emit GHGs ("Annual Authorizations") that entitle the entity receiving that authorization to emit, in the calendar year the authorization applies to, the quantum of GHGs specified in the authorization;
b) Require that the GoA cannot allocate aggregate Annual Authorizations in any given calendar year greater than the Emissions Limit including the mechanisms and exclusions defined in section 3(a); and
c) Specify that no oil sands facility can make GHG emissions in any given calendar year greater than the aggregate Annual Authorizations allocated to that oil sands facility for that year under Paragraphs 6, 7, , 9, 10, and/or 11 ;

Compliance Prior to Emissions Scarcity

6. OSAG recommends OSELIR require that, in any calendar year where there is no Emissions Scarcity as defined in[5] Paragraph 43the Regulator will allocate to each oil sands facility operating in that calendar:
   a) Annual Authorizations equal to that facilities Annual Facility Level GHG Emissions Forecasts for that calendar year; plus
   b) Annual Authorizations equal to that facility's actual emissions for that year less the Annual Authorizations allocated under sub-paragraph (a).

Compliance at Emissions Scarcity

7. OSAG recommends OSELIR require that for any given calendar year where the aggregate Annual Facility Level GHG Emissions Forecasts submitted for that year under Paragraph 4(b) is less than or equal to the Emissions Limit, the Regulator must provide to each oil sands facility that submitted an Annual Facility Level GHG Emissions Forecast for that year Annual Authorizations equal to the Annual Facility Level GHG Emissions Forecast it submitted for that year.

8. OSAG recommends OSELIR provide that in any calendar year where there is Emissions Scarcity as defined in Paragraph 3:
   a) No approved project (either a new facility or expansion of an existing facility) that is not yet in construction can proceed to construction without authorization of the Regulator; and
   b) The Minister may direct the Regulator to not authorize commencement of construction of any approved projects (either a new facilities or expansions of existing facilities) in that year.

9. OSAG recommends OSELIR require that for any given calendar year where the aggregate Annual Facility Level GHG Emissions Forecasts submitted for that year under Paragraph 4(b) is greater than the Emissions Limit, the Regulator must take one or more of the following actions such that all of the aggregate Annual Authorizations permissible for that year under Paragraph 5(c), but no more, are allocated as follows:
   a) For each oil sands facility that submitted an Annual Facility Level GHG Emissions Forecast for that year that has a GHG emissions intensity that falls within the two best performing quartiles[6] (i.e. Q1 and Q2), the Regulator must allocate to that facility Annual Authorizations equal to the Annual Facility Level GHG Emissions Forecast it submitted for that year;

[5] INTENT STATEMENT: The intent is that pre-scarcity, oil sands facilities will receive Annual Authorizations equal to their emissions for that year.
[6] INTENT STATEMENT: "Quartiles" are to be determined on the basis of emissions intensity as the ranking methodology and aggregate emissions as the basis for quartile position (e.g. Paragraph

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b) For each oil sands facility that submitted an Annual Facility Level GHG Emissions Forecast for that year that has a GHG emissions intensity that falls within the third quartile (i.e. Q3)[7], the Regulator must allocate to that facility Annual Authorizations equal to the Annual Facility Level GHG Emissions Forecast submitted by that facility for that calendar year less a share of 1/3 of the difference between A and B as specified OSELIR[8] where:
   i) A = aggregate Annual Facility Level GHG Emissions Forecasts submitted for that calendar year under Paragraph 4(b);
   ii) B = the Emissions Limit; and

c) For each oil sands facility that submitted an Annual Facility Level GHG Emissions Forecast for that year which has a GHG emissions intensity that falls within the worst performing quartile (i.e. Q4)[9], the Regulator must allocate to that facility Annual Authorizations equal to the Annual Facility Level GHG Emissions Forecast submitted by that facility for that calendar year less a share of 2/3 of the difference between A and B as specified OSELIR[10] where:
   i) A = aggregate Annual Facility Level GHG Emissions Forecast submitted for that calendar year under Paragraph 4(b); and
   ii) B = the Emissions Limit.

10. OSAG recommends OSELIR require that in each calendar year, the Regulator must allocate to an oil sands facility operating in that year additional Annual Authorizations to the extent necessary to address:
    a) Any discrepancies for that calendar year between emissions forecasting undertaken for that oil sands facility for that calendar year and the actual emissions of that oil sands facility for that calendar year that fall within the boundaries specified in the Emissions Forecasting Variability Standards established under Paragraph 4(a)(iii); and
    b) Any incremental emissions for that calendar year arising out any unplanned operational shutdowns/restarts or other unplanned operational interruptions that were not reasonably foreseeable (i.e. emissions that occur as a result of such circumstances that are greater than the emissions that would have occurred if the planned operations of the facility had not been interrupted in a manner that could not be reasonably foreseen).

11. OSAG recommends an operational reserve be established in OSELIR (Operational Reserve") and used as follows:
    a) When aggregate Annual Facility Level GHG Emission Forecasts prepared and submitted under Paragraph 4(b) first exceed 90MT, the Regulator will:
       i) use the data on the variability in the historical Annual Facility Level GHG Forecasts submitted under Paragraph 4(b) and the variability of actual facility and industry level emissions historically reported under Paragraph 4(d) to determine the appropriate size of the Operational Reserve; and

[7] INTENT STATEMENT: The 3rd quartile refers to those facilities that have an emission intensity greater than Q2 facilities but less than the "worst performing quartile" facilities and which contribute ½ of the emissions between 50 MT (i.e. the emissions from Q1 and Q2) and the total Annual Facility Level GHG Emissions Forecast.
[8] INTENT STATEMENT: The manner in which each share is to be determined (e.g. pro-rate, sliding scale that increases the further away from OBA a facility
[9] INTENT STATEMENT: The worst performing quartile refers to the highest intensity sector emitters that contribute to ½ of the emissions between 50MT and the total Annual Facility Level GHG Emission Forecast.
[10] INTENT STATEMENT: The manner in which each share is to be determined (e.g. pro-rate, sliding scale that increases the further away from OBA a facility is etc.) will be determined during the regulatory drafting process.

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ii) determine how best to populate the Operational Reserve taking into consideration the full range of options available at that time under the broader policy context then in effect; and

b) The Annual Authorizations distributed by the Regulator under Paragraph 10 will:
   i) be administered according to paragraph 6(b) if the actual emissions are less than 100Mt; or
   ii) come from the Operational Reserve if Paragraph 11(b)(i) does not apply.

IMPROVING THE GHG PERFORMANCE OF THE OIL SANDS SECTOR AND OTHER COMPLEMENTARY ACTIONS

Effective Immediately

12. OSAG recommends relevant regulations and or policy be amended to:
    a) Identify and implement amendments resource recovery regulations (e.g. Directive 82, Oil Sands Conservation Act) so as to change the framing from one of resource conservation to one of environmental and economic efficiency, with the effect of no longer compelling Operators to extract those parts of reservoirs with higher GHG intensity;
    b) Use the ERA and other innovation acceleration vehicles to drive additional innovation stimulus in the oil sands and incremental GoA funding using funds generated by the carbon levy from oil sands[11]; and
    c) Create, through an innovation convener, a regional carbon marginal abatement cost curve and technology roadmap to better inform decisions [12]
       i) A formal review of technology application to better understand the nature of the challenge, barriers, and enablers to implementation;
       ii) Development of a plan to deliver reduced costs/risks for near-commercial abatement technologies for the oil sands; and
       iii) Identification and consideration of enabling policy to accelerate technology development and deployment.

When Oil Sands Emissions Reach 80 MT

13. OSAG recommends OSELIR and/or amendments to other relevant regulations and/or policy require the following when actual emissions from the oil sands sector (as defined in the Oil Sands Emissions Limit Act) reach 80 MT:
    a) The Annual Long Term Oil Sands Emissions Forecast prepared and published by the Regulator under Paragraph 4 (c) will both include increasing scrutiny on the potential impact of new projects on the overall oil sands emissions trajectory and draw increasing attention to the potential impact on existing operators and new projects under OSELIR at that time in the event the Emissions Limit is reached;
    b) The Regulator is required to conduct a formal assessment of industry progress on developing and implementing carbon reduction technology to determine if there should be any change in focus or priorities for innovation and technology development in the oil sands sector (*NOTE: The purpose of this formal assessment is to better understand application, costs and timing and to provide the basis for decisions regarding changes in priorities and/or mandating potential additional mechanisms in the OSELIR to accelerate technology development and deployment.*

[11] INTENT STATEMENT: It is expected that recommendations such as this will be advanced through work of the OSAG Innovation Task Team

[12] INTENT STATEMENT: It is expected that recommendations such as this will be advanced through work of the OSAG Innovation Task Team

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Examples of the types of changes in priorities and/or potential additional mechanisms that could be made as a result of the formal assessment include the Regulator making programs available to operators to accelerate or enable the implementation of emissions reductions and to more effectively target the funding of technology development and deployment and/or the Regulator using increased carbon revenue to accelerate or enable the implementation of large-scale reduction technologies).

When Oil Sands Emissions Reach 95 MT

14. OSAG recommends OSELIR and/or amendments to other relevant regulations and/or policy require the following when emissions from the oil sands sector (as defined in the Oil Sands Emissions Limit Act) reach 95 MT:
    a) The Regulator will review the Emissions Forecasting Variability Standards within the context of a review of data collected on annual projected vs actual facility level emissions for each year since the proclamation of OSELIR with the intent of updating the accuracy of those standards;
    b) The Annual Long Term Oil Sands Emissions Forecast prepared and published by the Regulator under Paragraph 5 (c) will both include a very strong focus on the potential impact of new projects on the overall oil sands emissions trajectory and draw detailed attention to the potential impact on existing operators and new projects under OSELIR at that time in the event the Emissions Limit is reached;
    c) The Regulator will undertake an evaluation of the broader context within which the oil sands industry is operating at that time including technology advancement, carbon intensity of oil sands versus other global oil supply, and global oil markets (e.g. global demand and supply, global carbon regimes and oil sands competitiveness);
    d) Within the context of the evaluation undertaken in Paragraph 14(c), and the options inherent in Paragraphs 8 and 9, the Regulator will initiate actions necessary to be prepared to respond in a timely manner if the aggregate Annual Facility Level GHG Emissions Forecasts submitted for a year under Paragraph 4(b) reach the Emissions Limit, specifically forewarning approved projects (new facilities and expansions) not yet under construction that construction authorization may not be forthcoming under Paragraph 8(a) and/or specifically forewarning other facilities then operating or under construction of the potential for emissions constraints, if any, under the provisions of Paragraphs 19(b) and 9(c)).

CHANGES TO THE PROCESS FOR PROJECT APPROVALS AND APPROVAL RENEWALS AND EXTENSIONS

15. OSAG recommends OSELIR and/or amendments to other relevant regulations and/or policy require:
    a) Best Available Technology Economically Achievable (BATEA) determinations that will apply to new facilities, expansions of existing facilities, and extensions or renewals of existing regulatory approvals that are not yet under construction – developing these BATEA determinations will include:
        i) A review of 2011 Alberta Guidance Document for Assessing BATEA and Developing Technology Based Standards;
        ii) Developing standardized parameters to ensure consistent economic evaluation; and
        iii) Recognizing that not all technologies are applicable at each facility, therefore BATEA is different for each facility;
    b) The approval process for new facilities (i.e., Expansion Projects or new projects) to provide for the following:
        i) A requirement that all applications for new facilities include specified GHG information;

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ii) A requirement that all new facilities meet the BATEA determination set under Paragraph 15(a);
iii) A requirement that all applications for new facilities include, for the information of the Regulator, a forward-looking GHG management plan that meets specific content requirements identified in the regulation (it is not intended that the GHG management plan require Regulator approval – the Regulator will only assess whether the content requirements have been met and may order that any content deficiencies be rectified); and
iv) A requirement that regulatory approvals for new facilities will provide clarity that the approval is subject to the provisions of the OSELIR and related policy and regulation;

c) EPEA renewal requirements for operating and in-construction projects be developed, that include, inter alia:
i) a requirement that a forward looking GHG management plan that meets specific content requirements identified in the regulation be submitted to the Regulator (it is not intended that the GHG management plan require Regulator approval – the Regulator will only assess whether the content requirements have been met and may order that any content deficiencies be rectified); and
ii) a requirement that all approvals of renewal applications provide clarity that the renewal is subject to the provisions of OSELIR and related regulations and policy;

d) The approval process for extensions or renewals of approvals for projects (facilities or expansions) that have an existing regulatory approval not yet under construction to provide for the following:
i) A requirement that the project demonstrate that it meets the BATEA determination set under Paragraph 15(a);
ii) A requirement that the project submit, for the information of the Regulator, a forward looking GHG management plan that meets specific content requirements identified in the regulation (it is not intended that the GHG management plan require Regulator approval – the Regulator will only assess whether the content requirements have been met and may order that any content deficiencies be rectified); and
iii) A requirement that all approvals of applications for extensions or renewals provide clarity that that the extension or renewal is subject to the provisions of OSELIR and related regulations and policy; and

e) For existing, under construction, or already approved facilities, or expansions, and applications for amendments of the same, a process to expedite regulatory approvals for applications intended to achieve a significant improvement in projected GHG emissions will be established (this is intended only to expedite the process, not to change any of the substantive elements of the approval process).

COGENERATION

16. OSAG recommends (i) OSELIR specify that for the purposes of excluding emissions associated with the electricity portion of cogeneration, a deemed electricity emission methodology established by the Regulator be used (ii) the deemed electricity intensity specified within the methodology be determined through further engagement with OSAG.

EXCLUSIONS

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17. OSAG recommends OSELIR prescribe exclusions for primary production, enhanced recovery, and experimental schemes with the definition of each of these prescribed exclusions being taken from existing regulations.[13]

PENALTIES AND REMEDIAL ACTIONS

18. OSAG recommends OSELIR specify that:
    a) No oil sands facility will be subject to a penalty in any year where actual emissions for the oil sands for that year is less than the Emissions Limit, an operator exceeds their forecasted emissions in any given year as a result of the variability normally inherent in emissions forecasting, or as a result of unplanned operational interruptions that are beyond the reasonable control of the Operator;
    b) If an oil sands facility emits in any given calendar year GHG emissions greater than the total Annual Authorizations allocated to that facility for that year under Paragraphs 10, and 11, that facility shall be subject to a penalty in relation to the emissions that exceed such Annual Authorizations (*Note: penalty provisions will not apply in circumstances where an Operator, acting in compliance with the forecasting protocols and standardized methodology exceeds the variability normally inherent in emissions forecasting, and/or where the variance is due to forecasting of start-up conditions and/or where the variance is a result of unforeseen operational interruptions that are beyond the reasonable control of the operator*)[14]; and
    c) the quantum of the penalty specified in the OSELIR should be established at a level that will act as a significant and effective deterrent and in a manner that takes into account the escalating nature of the carbon levy established under the CCR (e.g. a fine equal to the greater of $200/tonne and multiple (to be determined in the regulatory drafting process) of the carbon levy then in effect under the CCR); and
    d) Payment of a penalty does not bring a facility into compliance; and
    e) To the extent not already provided for in legislation or other regulation, where the Regulator has reasonable grounds to believe that an oil sands facility will emit in any given calendar year an amount greater than the Annual Authorizations issued to that facility for that year, plus whatever additional authorizations that facility is likely to be entitled to under Paragraph 11 for that year, or where an oil sands facility has emitted an amount greater than the Annual Authorizations for that facility, the Regulator has the power to order that oil sands facility to reduce its emissions intensity or reduce its production or both to the extent necessary to ensure compliance.[15]

TRANSPARENCY

19. OSAG recommends OSELIR require that the following information be publically transparent:
    a) The annual report developed by the Regulator under Paragraph 4(d) on actual oil sands GHG emissions at both the facility level and industry level;

[13] INTENT STATEMENT: For clarity, the recommendations for implementing the emissions limit as described in this recommended approach are not intended to apply to any emissions that fall within the categories of emissions that are excluded.
[14] INTENT STATEMENT: Is in not intended that an operator be penalized if they are acting in compliance with all of the protocols, directives and regulations associated with the limit.
[15] INTENT STATEMENT: This is intended as a gap assessment to ensure that the necessary powers to enforce OSELIR exist in other relevant legislation and regulation.

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b) The Annual Long Term Oil Sands Emissions Forecast developed by the Regulator under Paragraph 4(c);
c) The Annual Facility Level GHG Emissions Projections submitted to the Regulator under Paragraph 5(d);
d) The maximum aggregate Annual Authorizations the GoA is able to distribute in a given year under Paragraph 5(d);
e) The Annual Authorizations issued each year under Paragraphs 6, 7, 9, and 10;
f) The formal assessment of industry progress on development and implementation of carbon reduction technology prepared by the Regulator under Paragraph 13(b);
g) The contextual evaluation prepared by the Regulator under Paragraph 14(c); and
h) GHG Management plans submitted by oil sands facilities under Paragraphs 15(b)(iii), 15(c)(i), and 15(d)(ii).

20. OSAG recommends OSELIR specify that the transparency requirements in relation to Paragraphs 19 be undertaken in a manner that protects information that is proprietary or confidential in nature, as applicable.

OTHER

21. OSAG recommends that in the event the emissions limit is approached at some future date, and provided that Canada and Alberta are on track to meeting their 2050 GHG emissions reduction targets (where those targets have been established in a manner that enjoys broad based support), the emissions limit should be amended by the government at that time with a view to adjusting the emissions limit as necessary to ensure that production from any project that has an emissions intensity better than the competing barrel in the U.S. market (on a wells to tank basis) is not constrained.

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APPENDIX "B"
March 2017 OSAG Status Report

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ADVICE TO MINISTERS

OIL SANDS ADVISORY GROUP
UPDATE RE: STATUS OF DEVLEOPMENT OF RECOMMENDATIONS ON HOW BEST TO IMPLEMENT THE ALBERTA CLIMATE LEADERSHIP PLAN (ACLP) OIL SANDS EMISSIONS LIMIT
March 10, 2017

BACKGROUND

OSAG understands the Mandate Letter it will be provided on relation to the emissions limit will request OSAG to provide the Premier with advice on the following:

a) The list of facilities that should be subject to the emissions limit (so that there is clarity on monitoring and compliance with the *Oil Sands Emissions Limit Act*);
b) The mechanism OSAG believes will most effectively implement the emissions limit, based on an assessment of the following:
    i) The range of potential mechanisms that could be used (in a distinct or integrated manner) to implement the emissions limit;
    ii) The criteria that OSAG used to assess the relative merits of each of the potential mechanisms (i.e. what objectives should the design of the implementation mechanism seek to achieve); and
    iii) An assessment of the range of potential mechanisms against those criteria;
c) The manner in which the recommended mechanism could be implemented (e.g. through legislation, policy, regulation, etc.);
d) Any changes required to the current regulatory and operating environment that facilitate effective implementation of the emissions limit;
e) Any changes required to the current system of reviewing and approving applications for oil sands development to effectively implement the emissions limit; and
f) Any other advice OSAG believes important in terms of ensuring the emissions limit is effectively implemented in a manner that secures broad support from stakeholders.

SUMMARY OF WORK UNDERTAKEN TO DATE

Work to develop consensus OSAG recommendations on how best to implement the emissions limit has been undertaken at multiple levels including:

a) Discussions at the OSAG table at the November, January, and February meetings;
b) Numerous face to face meetings and conference calls (November through February) by the Emissions Limit Task Team established to assist OSAG in developing recommendations on how best to implement the emissions limit; and
c) A workshop held on February 16, 2017 with a number of individuals with recognized expertise in emission limit management systems (e.g. cap and trade systems) and associated issues (e.g. possible business and investor confidence implications of different approaches).

Work undertaken thus far in support of developing consensus recommendations on how best to implement the emissions limit includes the following:

a) The identification of two different conceptual approaches for implementing the emissions limit, one based on a regulatory backstop approach supported by actions that would take place at established triggers and at the threshold i.e. the 100 MT emission limit and one based on an allocation/auction ("permissions to emit") approach.
b) The completion of a comprehensive policy scan of systems used both in other jurisdictions and in Alberta to implement "limits" (this was focussed on systems consistent with each of the two approaches. The purpose of this policy scan was to identify and understand the range of different

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ADVICE TO MINISTERS

mechanisms potentially available, how they worked/functioned, the context within which they were applied, and a sense of any specific challenges encountered in their implementation).

c) The development of a set of design criteria to be used by OSAG in guiding its development of recommendations on a system to implement the emissions limit and to assess different approaches under consideration and the different elements of those approaches.
d) An assessment of the two different approaches against those design criteria and an examination of how each approach can meet each of the key design criteria.
e) A workshop involving OSAG Members, members of the OSAG Emissions Limit Task Group, and a group of experts to review the approaches under consideration by OSAG and the assessment of those approaches against the design criteria established by OSAG.

This status report reflects the consensus views of the OSAG participants with consideration for all of the above inputs.

CURRENT STATUS OF OSAG WORK ON FINALIZING RECOMMENDATIONS ON HOW BEST TO IMPLEMENT THE ACLP EMISSIONS LIMIT

Overarching Context

Early on, OSAG Members agreed the overarching goal in implementing the emissions limit is to concurrently (i) ensure the oil sands emissions limit established in the ACLP will not be exceeded, and (ii) maximize the development potential of Alberta's oil sands resource within that emissions limit. Within this context, OSAG Members also agreed that implementation of the emissions limit should be designed in a manner that clearly establishes (i) a set of actions that decrease the likelihood of the emissions limit actually being reached *("speed bumps to decrease the likelihood of the emissions limit being reached"*) and (ii) a set of actions that ensure if the emissions limit is reached, it is not exceeded *("barriers to ensure that the emissions limit, if reached, is not exceeded")*.

In designing the mechanism to implement the emissions limit, OSAG is approaching this task within the context of the following framework derived from the OSAG's understanding of the ACLP insofar as it relates to Alberta's oil sands and the Terms of Reference establishing OSAG:

a) The vision is that Alberta's energy industry, including oil sands, is viewed as one of the most environmentally progressive and socially responsible in the world (viewed within context of the environmental, social and economic competitiveness dimensions of the issues and opportunities OSAG is addressing).;
b) Within this context, three key outcomes imbedded within the ACLP in relation to the oil sands industry within the ACLP are:
    i) Ensuring the emissions limit is not exceeded;
    ii) Maximizing the development potential of oil sands growth within the emissions limit; and
    iii) Incenting technology and innovation that will drive further reductions in emissions intensity.
c) The above outcomes need to be delivered through a policy and regulatory platform that is consistent with the objectives of political durability and administrative efficiency

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Design Criteria

OSAG initially agreed on the following preliminary design criteria to guide the development the mechanism best suited to implementing the emissions limit and assessing the different options in this regard[1]:

a) Ensures the emissions limit will not be exceeded
b) Is durable across election cycles[2]
c) Is administrative simple to implement and easy to communicate
d) Incents development of low emissions technology development (within both new and existing oil sands facilities) to the greatest extent possible
e) Does not create barriers to collaboration in relation to technological innovation
f) Incents investment in oil sands development and innovation (within the context of the 100 MT emissions limit)
g) Increases the likelihood that new investment in oil sands development focuses on projects with lower GHG intensity
h) Ensures there is always opportunity within the 100 MT emissions limit for new projects, and expansion of existing projects, with lower GHG intensity
i) Creates a level playing field for amongst oil sands operators (i.e. equivalent applications of the rules to everyone vs. application of the rules to everyone in a manner that results in equivalent impact)
j) Minimizes potential crown liability in relation to existing approvals or new approvals in excess of the 100 MT limit
k) Provides a high level of clarity on the rules that will apply over the life of project (particularly within the context of project approval, sanction, development, and operating decisions)
l) Allows for effective linkage and integration with other elements of the Alberta Climate Leadership Plan[3]
m) Creates external trust in both the mechanism and the overall system
n) Minimizes/avoids adverse competitiveness impacts from an economic, policy, and carbon perspective
o) Creates transparency in the context of monitoring and enforcement
p) Has flexibility to deal with any changes to the emissions limit post 2030
q) Results in the ACLP Emissions Limit and the emissions limit implementation mechanism being viewed as a global model

In subsequent discussion, OSAG recognized and concluded that many of these design criteria were linked and there was value in developing a consolidated/prioritized list of criteria. At present, the list of prioritized design criteria guiding the work of OSAG include the following:

a) Ensures the emissions limit is not exceeded (on the assumption it is implemented as intended);
b) Maintains/promotes investor confidence (such that investors remain willing to invest in oil sands development up to the emissions limit);
c) Ensures durability across election cycles;
d) Incents technology development and innovation such that as the oil sands sector grows, the emissions limit, while approached, is not reached; and

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[1] It is intended that these design criteria be used to assist OSAG in developing recommendations on how best to implement the Emissions Limit (i.e. what mechanism to use). It is not intended that any of the criteria serve as recommended direction to the GoA to apply in implementing the emissions limit over time unless they are specifically included in the formal OSAG recommendation in a manner the expressly stipulates that this is the intent.
[2] Within this context, "durable" is understood to mean that the substance and intent of the emissions limit is not changed by successive governments in a manner inconsistent with the spirt and intent of the emissions limit as enacted.
[3] Particularly within the context of Design Criteria (e), (f), (g), (h), (i), (j) and (l).

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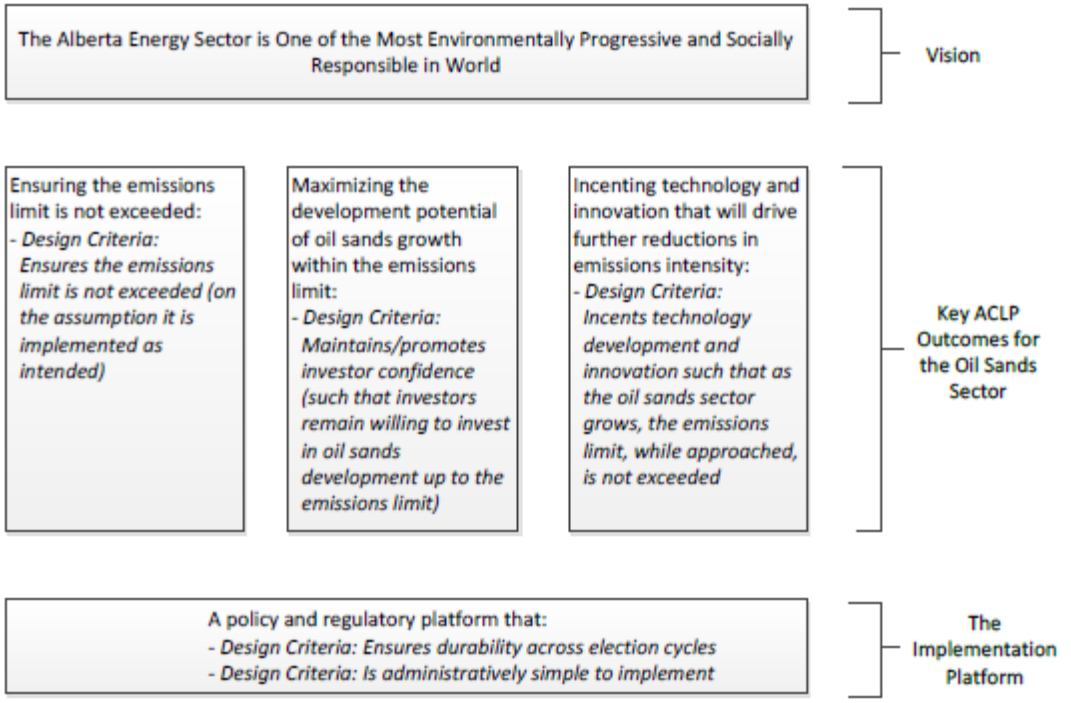
e) Is administratively simple to implement.

The foregoing list is not intended to suggest that the remainder of the identified design criteria are no longer relevant, simply that the above list is understood to be the priority criteria and that most of the remaining criteria can be viewed as a subset of the above five priority design criteria.

The following diagram illustrates how each of the above priority design criteria fit within the framework described in the previous section (Overarching Context) describing the objectives of the ACLP insofar as it relates to Alberta's oil sands.



The Range of Potential Implementation Mechanisms

In canvassing the range of potential implementation mechanisms for the emissions limit established for the oil sands by the ACLP, OSAG identified two primary approaches, one referred to as a "regulatory backstop" approach, and the other referred to as "permissions to emit" approach. Both are generally described as follows (listed in alphabetical order) and described in greater detail in Appendix "A" (this being the document used for purposes of the Experts Workshop. It is to be noted that the description of both systems has evolved since then and are continuing to evolve as OSAG discussions directed at finalizing their recommendations continue).

The Permissions to Emit Approach is one whereby "permissions to emit" up to 100 MT are created and are allocated to existing operators and/or new entrants (either by way of allocation and/or auction). Oil sands operators would be required to hold or obtain sufficient total permissions to emit to cover all their annual greenhouse gas emissions. No oil sands operator may have annual emissions that exceed the total

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permissions to emit that they hold. Under this system, allocations would commence immediately and would be free up to some trigger point (e.g. 75 to 90 MT)

The Regulatory Backstop Approach is one that identifies both (i) actions that would take place when emissions reach 100 MT to ensure that the annual emissions cannot exceed 100 MT (e.g. a set of actions based on clearly defined criteria prescribed in regulation that has the effect of curtailment, with emissions intensity likely being a primary criteria), and (ii) actions that would take place once annual emissions reach certain specified trigger levels below 100 MT, or reach other specified triggering conditions or events (e.g. a specified date) where such trigger levels require actions aimed at significantly decreasing the likelihood of annual emissions reaching the 100 MT limit (e.g. an increase in the carbon price exposure faced by oil sands operators based on a set of clearly defined criteria prescribed in regulation). The foregoing would be supported by a set of additional immediate actions designed to further reduce future oil sands missions (e.g. creation of a regional marginal abatement cost curve and technology roadmap to inform and support technology prioritization and funding and better inform decisions on future and existing GHG emission control requirements).

Both of the above approaches would (i) be fully established through regulation at the time of implementation, (ii) clearly define oil sands greenhouse gas emission, and exclusions to oil sands greenhouse gas emissions, in a manner consistent with the *Oil Sands Emissions Limit Act* and with other Acts and Regulations including the *CCR, the Oil Sands Conservation Act*, the *Oil and Gas Conservation Act*, and regulations under those Acts, (iii) describe how offsets will be incorporated if the GoA at some future date decides to purchase offsets in a manner consistent with the OSAG recommendation on offsets included in the October 12, 2016 OSAG feedback on the draft enabling legislation for the emissions limit, (iv) establish clear monitoring and enforcement mechanisms, and (v) describe how existing approvals for projects not yet under construction and/or the process for applications for new projects will be changed going forward, if at all.

While it likely goes without saying, out of an abundance of caution it should be noted that no OSAG Member should be construed on the basis of this status report as having agreed in whole or in part to either of the two approaches described above. While OSAG is reasonably confident that an aligned perspective is emerging, no inferences in this regard should be relied upon until a final OSAG Recommendation is forthcoming and OSAG Members have confirmed a final consensus in this regard.

Assessment of the Potential Implementation Mechanisms Against the Design Criteria

It is important to note the two approaches described above are not viewed by OSAG as necessarily being mutually exclusive. It was recognized from the outset that it would be important to understand how each of these approaches functions/performs both pre-scarcity and post-scarcity (scarcity being defined as the point at which there is a reasonable prospect that without active management projected emissions from the oil sands for a defined period of time may exceed the emissions limit) and how each approach measures up against the core design criteria. OSAG is operating under the assumption that fully understanding the foregoing will assist OSAG in developing an approach that most effectively achieves the overall objectives of the ACLP.

OSAG is actively engaged in both assessing the two approaches described above against the agreed upon design criteria and problem solving how each of the two different approaches could potentially be designed in a manner that meets each of these design criteria.

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As a result of the assessment undertaken to date, OSAG has determined that both approaches can be designed in a manner that meets many, if not most, of the detailed design criteria. In particular, there is agreement that, on the assumption they are implemented as intended/designed, both approaches can ensure that the emissions limit is not exceeded. Within this context, OSAG is in the process of seeking to determine the extent to which there are inherent differences between the two different approaches that cannot be addressed through design specifics. In this regard, the key criteria on which there remain some differences of perspective are ensuring political durability and ensuring /maintaining investor confidence and incenting innovation. The expectation is that a disciplined adherence to interest based problem solving has the potential to address these outstanding issues.

NEXT STEPS

OSAG is focused on continuing with an objective evaluation of the two general approaches identified thus far against the design criteria. The particular focus will be on political durability and ensuring/maintaining investor confidence and collaboratively problem solving any identified differences between the two approaches in this regard. The expectation is that part of this work will be undertaken by the Emissions Limit Task Group and part will be undertaken through "facilitated shuttle diplomacy". In addition, to maximize the likelihood of alignment, problem solving oriented leadership level meetings are planned amongst several of the organizations represented on OSAG. The currently expectation is that these discussions will take place between now and the end of March, with OSAG then being able to deliver final recommendations at the conclusion of the April OSAG meeting (scheduled for April 21/22, 2017).

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Appendix "A"
Description of Conceptual Approaches

Following is the

Oilsands Advisory Group Emissions Limit Task Group

Implementation of the Emissions Limit
A Description of Two Conceptual Approaches

Combined Caucus Version
February 10, 2017

The following is intended strictly as a starting point for further discussion based on the discussions by the Emissions Limit Task Group ("ELTG"). The following has not necessarily been agreed to in whole or in part by any members of the Task Group. The specific examples of how each approach could work are strictly for illustrative purposes and to serve as a basis for assessment against the OSAG Design Criteria and ongoing collaborative problem solving by the ELTG directed at identifying an approach that best achieves the Design Criteria established by OSAG. The approach recommended by the ELTG to OSAG may ultimately be different than either of the approaches described below and/or incorporate elements of both approaches.

Background

i. One element of the Alberta Climate Leadership Plan ("ACLP") is the establishment of an annual 100MT emissions limit for oil sands operations. This limit will be in place until at least 2030. The emissions pathways for oil sands post 2030 will be defined in a subsequent process.

ii. One task assigned to OSAG by the GoA is the development of recommendations on how best to implement the emissions limit established in the Alberta Climate Leadership Plan. Within this context, two different conceptual approaches to implementing the emissions limit have emerged in early OSAG discussions namely:
   a) An approach based on the use of a the OBA/CCR carbon pricing regulation with specified actions to increase effort to remain below a regulated 100 MT emissions backstop (the "Regulatory Backstop Approach"); and
   b) An approach based on the creation and distribution of "permissions to emit" totalling up to 100MT annually (the "Permissions to Emit Approach").

iii. Implementation of the oil sands emissions limit will take place within the context of the carbon levy established for oil sands under the Carbon Competitiveness Regulation ("CCR") under which (i) an output based allocation ("OBA") will be established for oil sands operations based on a benchmark emission intensity for each type of oil sands development (e.g. the top quartile of ranked oil sands sites) and (ii) oil sands operations will pay the carbon levy established in the CCR for each tonne of $CO2_e$ they emit in any year in excess of their output based allocation.

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iv. The purpose of this document is serve as a starting point for ongoing discussion in finalizing a conceptual description of each of these two approaches such that there is a clear and common understanding on how each is intended to function with the expectation that this description can be used to:
   a) Serve as a baseline description of the two approaches for the purposes of the experts workshop set for February 16, 2017;
   b) Anchor a preliminary assessment of each approach against the Design Criteria established by OSAG; and
   c) Anchor a preliminary assessment of the key differences between the two approaches.

v. It is to be noted that the following is intentionally restricted to the conceptual level and that, once there is alignment on which conceptual approach to pursue, significant additional detail in terms of design specifics will need to be addressed. It is recognized that the approach ultimately adopted may be different than either of the conceptual approaches described in this document and/or include elements of both. The objective is to identify an approach that best achieves the Design Criteria established by OSAG.

Regulatory Backstop Approach

i. The Regulatory Backstop Approach is one that identifies both (i) actions that will take place at the 100MT threshold such that annual oil sands emissions of 100MT cannot be exceeded and (ii) actions that will take place at different specified annual emissions levels of less than 100MT to significantly decrease the likelihood of annual emissions reaching the 100 MT threshold.
ii. A well-defined path forward will provide project operators, proponents and investors with the certainty needed to make investment decisions, including emission reduction technologies.
iii. The combined CCR and OBA emissions pricing regime is the market mechanism that will most effectively drive the continuous energy intensity improvements required, through both operational and break-through technology implementation. By imposing larger costs on those with higher intensities, the emissions pricing regime will also send an effective price signal that can be incorporated into the economics of those projects and influence their sanction.
iv. The Regulatory Backstop Approach currently under consideration has the following key elements:
   a) *Step One* - Oil sands greenhouse gas emissions, and exclusions to oil sands greenhouse gas emissions, are clearly defined and the definitions are consistent with the *Oil Sands Emissions Limit Act* and with other Acts and Regulations including the *CCR, the Oil Sands Conservation Act*, the *Oil and Gas Conservation Act*, and regulations under those Acts.;
   b) *Step Two* - Establish the immediate actions that will be taken to reduce future oil sands emissions:
      i. Create a regional marginal abatement cost curve and technology roadmap to inform and support technology prioritization and technology fund investment to better inform decisions
      ii. Ensure that carbon revenue generated from the oil sands carbon pricing regime is allocated to funding emission reduction innovation and technology development and deployment.
      iii. Establish a standardized methodology for forecasting emissions and production, reporting on emission reduction projects, and project economic evaluations.
      iv. Enhance the new project approval process to require project proponents seeking approval to provide detailed GHG emissions assessment in EIA, including application of the best available technology economically achievable (BATEA), and economic

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evaluation of project that includes impact of carbon price under current assumptions (e.g. D60 Section 2.9.1).

c) *Step Three* –Clearly identify specified emissions levels of less than 100MT, or other conditions or events (e.g. specific dates), (collectively referred to as "triggers") that will require additional specified actions designed to reduce the likelihood of the 100MT limit being reached;
   i. Triggers would be set at intervals that allow for appropriate evaluation of anticipated production and emission trajectories and allow adequate time for increased actions to reduce emissions and create an inflection point in the emissions trajectory.
   ii. Triggers should also incorporate and link to actions being taken under the complementary measures such as CCR review periods.

d) *Step Four* – Clearly define the actions that will take place at each of the triggers established under Step Three – examples of the types of potential actions to be taken in this regard (i.e. to decrease the likelihood of ever having to rely upon the Regulatory Backstop in Step Five) include:
   i) The ACCO conducts a formal review of the oil sands emissions, including a forecast of the future emissions trajectory based on the oil sands emission forecast methodology set under Step Two. If the results of the forecast indicate that oil sands emissions will remain below the limit no further action needs to be taken until the next review period or trigger is reached.
   ii) In the event that the results of the forecast indicate that oil sands emissions will exceed the limit by 2030, the following actions may be taken:
      - An increase in the carbon price exposure faced by oil sands operators based on a set of clearly defined criteria established in regulation;
      - The ACCO revises the regional marginal abatement cost curve and technology roadmap based on higher carbon price.
      - ACCO has the discretion to mandate an emission reduction plan from operators in order to assess optimal emission reduction opportunities across industry.
      - ACCO has the discretion to provide an incentive program available to operators to implement emission reductions.
      - ACCO has the discretion to increase and more effectively target the funding of technology development and deployment.
   iii. At subsequent triggers, closer to the 100 MT limit, if the ACCO evaluation indicates that the limit is likely to be reached by 2030, additional action may be taken:
      - Based on a then -current regional marginal abatement cost curve and technology roadmap, the ACCO will have the discretion to increase the carbon price exposure to a level that drives required efficiency/technology.
      - The ACCO may take focused action to use incremental carbon revenues to accelerate or broaden the implementation of promising technologies
      - The ACCO may use increased carbon revenues to incent or implement large scale reduction technologies such as carbon capture, if applicable.
      - Decline approval of all new projects unless carbon intensity is demonstrated to be below other sources of crude oil

e) *Step Five* - Clearly define those actions that will take place as the 100 MT limit is approached or met that will create certainty that the 100MT cannot be exceeded – examples of the types of potential actions to be taken in this regard (i.e. to bring emissions back to 100MT or less) include:

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i. Commence production curtailment based on a set of clearly defined criteria established in regulation (with emissions intensity likely being a primary criteria);
ii. Negotiate compensation / support for early retirement of high emitting facilities;
iii. Require technology and/or process changes that will reduce emissions within relevant time frames; and/or
iv. Deploy other agreed mechanisms within their authority to maintain the limit.

f) *Step Six* – Establish clear monitoring and enforcement mechanisms to enhance facility level accountability – examples of the types of potential actions to be taken in this regard include:
   i. Using AEP/AER compliance tools to enforce actions directed under Step Three; and
   ii. establish financially punitive fines for an operator failing to curtail as directed;

Permissions to Emit Approach

The Permissions to Emit approach is one whereby "permissions to emit" up to 100 MT are created and are allocated to existing operators and/or new entrants (either by way of allocation and/or auction). Oil sands operators must hold or obtain sufficient total permissions to emit to cover all their annual greenhouse gas emissions. No oil sands operator may have annual emissions that exceed the total permissions to emit that they hold.

The Permissions to Emit Approach currently under consideration has the following key elements:

a) *Step One* – Oil sands greenhouse gas emissions, and exclusions to oil sands greenhouse gas emissions, are clearly defined and the definitions are consistent with the *Oil Sands Emissions Limit Act* and with other Acts and Regulations including the *CCR, the Oil Sands Conservation Act*, the *Oil and Gas Conservation Act*, and regulations under those Acts.
b) *Step Two – Create "permissions to emit" with clearly defined rights.* The total of the permissions to emit cannot exceed a total of 100MT. A permission to emit:
   i. is a permit to emit one tonne of GHG in a specified calendar year;
   ii. expires at the end of the calendar year for which it is issued and cannot be carried over; and
   iii. is tradeable.
c) *Step Three – Initial distribution of the permits to emit.*
   i. Currently operating facilities:
      - Option 1: Initial free allocation of permissions to emit are guaranteed for a 5 to 10 year period based on a forecast of expected production and emissions intensity for that facility. As long as the total number of permissions to emit is below a specified level (e.g.90 MT), the permissions are allocated at no cost. Anomalies outside of the normal range of emissions intensity are subject to scrutiny before permissions to emit are issued. Actual emissions are reconciled at year end and additional required permissions to emit are allocated on a pre-established methodology.
      - Option 2: Initial permissions to emit are allocated at no cost based on the facility's output based allocation under the *CCR*. Facilities sell excess permissions to emit or acquire additional permissions to emit through auction. The regulator may offer an additional number of permissions to emit to allow facilities to acquire needed permits and at a level that creates a competitive market.
   ii. Approved/proposed facilities not yet operating: Initial permissions to emit are issued at no cost based on the forecast production and emissions intensity for the first 5 years. Proposed

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facilities must have an emissions intensity at or below the benchmark emission intensity (e.g. in the top quartile of low emissions intensity producers). After five years, new facilities are treated the same as currently operating facilities.

d) *Step Four – other initial actions.*
   i. This approach relies on the price signal of the OBA and *CCR* to influence emissions in the early years. This approach assumes an increasing carbon levy under the *CCR* over time and a prescribe reduction in the OBA over time;
   ii. Other regulatory mechanisms such as new methane reduction regulations will operate to reduce emissions;
   iii. Under Step Three, Option 1 above, operators receiving permissions to emit at no cost will be required to submit a continuous improvement/best practice greenhouse gas emission management plan for their facility which will be considered in determining the level of no cost permissions to emit that the facility will receive.
   iv. Operators will be advised, possibly through their regulatory approvals, that there is no guarantee that: initial allocations of permissions to emit will continue to be issued at no cost; that there will be sufficient permissions to emit to cover all operators' emissions; and that the benchmark emissions intensity will not be lowered.

e) *Step Five – Actions as the 100 MT limit is approached.* When the initial allocations for permission to emit for both existing and new facilities are forecast to exceed a specified level (e.g. 90 MT), initial allocations will be reduced on a pro rata basis such that the total initial allocations in any year for all operating, approved and proposed facilities do not exceed the specified level.

f) *Auctions (applies to Step 3, Option 2 and Step Five):* Facilities with excess permissions to emit may offer the permissions for auction. Facilities requiring additional permissions to emit may purchase them at auctions. The regulator may offer up to 5 MT of permits for sale by auction over the year. Proceeds of the auction go to the party who offered the permit for auction. Auctions are held on a frequency sufficient to allow facilities to adjust to actual emissions and to dispose/acquire permits as needed over the year (quarterly? semi-annually?). A final auction is held after the year end to allow facilities to reconcile permissions held with actual emissions (the regulator will hold back 5 MT of permits for the final auction).

g) *Step Six* – Establish clear monitoring and enforcement mechanisms, for example:
   i. The regulator may order any facility to reduce emissions intensity, reduce production or both if the regulator believes that the facility cannot acquire the necessary permissions to emit or to prevent the total emissions from exceeding 100 MT;
   ii. Significant financial penalties that are a multiple of the carbon levy price or the auction price for emissions in excess of the permission to emit.

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