Topic	Question	Answer	Receiver
General	What do you mean when you say a full cycle regulator?	Full lifecycle regulator. Energy development projects, no matter what resource is involved, have a life cycle consisting of four stages. The first is initiation and that includes some sort of an assessment and then an application review process, as well as things like statements of concern or hearings. The next stage is construction and operation. Closure is a really important part of the life cycle, and it includes the project's end of life obligations and that includes suspending production and removing equipment and properly abandoning and decommissioning the site, and then finally remediation and reclamation. We regulate activities at all of those stages to ensure safe, efficient, orderly and environmentally responsible development.	AER
Capacity	We are aware that AER staffing is not sufficient to monitor Oil and Gas as it is. How will this be addressed if you are moving staff into mineral monitoring? Do you see this as an area of concern for monitoring/regulations especially in remote rural areas? How will we be assured staffing levels will be sufficient?	With the expansion of our mandate, we're including new areas of resource development and the government has recognized the need for ADR to expand our resources. So we did receive additional funding to support the work that was separate from the oil and gas fees. And so we should be able to ensure that we're resourcing in accordance with the need to ensure that safe, efficient and orderly development. We've got over 80 years of experience regulating and energy and resource development and AGS for even more than this industry. So I think drawing on our existing expertise will help us respond as this starts to ramp up.	AER

Environment	Due to the damaging and long-term effect of salt water on soil will there be any extra precautions taken to prevent or contain any potential leaks or contamination from happening, especially during the initial experimentation phase when brine water will be stored in tanks on site?	We already regulate saltwater storage because a lot of oil and gas sites are producing saltwater along with the oil and gas. Just like our other regulations we risk inform how we regulate these fluids. We have set back requirements from water bodies and requirements for how the salt water is contained. And we layer on additional requirements as volumes of water stored go up. We might require higher berms, double-wall containment, leak detection, and additional spill control measures on-site. So, you might not need a double-walled tank and a higher-than-normal berm if you are storing a small volume, like a barrel of salt water. But if you wanted to store a larger volume you might. This is part of our compliance program. We see newer operators and newer technologies as higher risk, not because they are inherently bad, but because we haven't built up the experience with them. So we have our staff work on the front end to make sure that new operators fully understand requirements and so we can be confident that they can comply. We have our inspectors visit sites more frequently through construction and operation to verify everything is going as expected.	AER
Resource Potential	Is there an estimate on the volume of resources? Can you provide a breakdown of the resources?	The volumes involved could be variable depending on the formation hosting the resource and the volume of brine-water. The AER knows about activities because of the exploration activity of industry, and the volumes that they have calculated and reported to the AER.	AER

Brine-hosted Resource Development	Are there examples of current operations within Alberta that manage brines at an industrial level?	There are 3 operations in Alberta that manage brines at an industrial level: Calling Lake, Mistue in the Slave Lake area, and Sunnynook near Drumheller. All of the operations produce calcium chloride from brines. These operations include a well, well-site facility and upgrading facility located somewhere else.	AER
Reputation	The presentation shows AER claiming great expertise and reputation. The responses to the Coal Commission show that a large proportion of the population does not hold AER in a favourable light. How does AER propose to overcome this public perception that AER is not a trustworthy regulator? Please note that this position may be strongly influenced by the recent court decision affirming that AER is not responsible to protect the public interest.	We've got a lot of great people working on this behind the scenes and we have a lot of history we can draw from, and we can leverage our learnings and we can approach this with a with a clean slate to get it right to start with. The AER has over 80 years of experience regulating oil and gas. We've got over a century at the AGS looking at and researching minerals in this province. AER staff are excited, passionate, and committed to help create and apply the regulatory framework. Input is being sought from our stakeholders so we can have consideration for the concerns and consider your input as we proceed.	AER

Environment	What does that mean in terms of spill management when accidents happen, transportation of the brines on Alberta roads and corrosion protection of wellbores and pipelines?	When a release occurs, companies must report to the AER immediately. They must take steps to contain a spill and the AER sends inspectors to the site to ensure steps are being taken to protect the public and the environment. Companies must come up with a plan for how the spill will be cleaned up and how they will meet the soil and water quality requirements. And the AER works proactively to monitor companies' progress, to make sure that affected members of the public receive the support and information that they need. In terms of corrosion protection, this is one of those spaces where the AER is already regulating wells and pipelines that are producing and transporting brine water that would be involved in mineral production. Companies are required to use appropriate materials for wellbores and pipelines. Where they make sense, the AER requires pipeline operators to have leak detection programs and corrosion mitigation plans in place.	AER
Regulation	Does AER plan to align with NI 43-101?	FOLLOW-UP	AER
Environment	What are the water requirements for exploration and development of the proposed mining? Are water requirements for freshwater?	It's a bit early to talk about water requirements for mining. However, when we look at what we know about brine-hosted mineral operations, we might look differently about how we talk about water requirements. The brine operations we've seen are pumping really salty water to surface, taking out the mineral and then pumping the less salty water back into the same reservoir. So there is not a lot of water that is being taken out of the system per	AER

		se. And what we are seeing does not have high freshwater requirements.	
Waste Management	What is the waste product (i.e. wastewater) generated through these mining activities? Is there an existing method for treating or recycling waste products? Or will it require new/different disposal methods? And, will these methods need to be developed? Are they already developed?	We don't have specific applications in front of us now. And usually, waste products are going to vary based on the specific technologies and processes that are used. But what I can say is that we have an existing framework for waste handling, storage, and disposal. Again, this is risk based. Operators are required to assess the physical, chemical, and toxicological characteristics of a waste stream. We have classification systems for the types of waste and based on these requirements for everything from how far away wastes must be spaced, identification of wastes, spill prevention and leak detection apply. There are classes of waste that can be bioremediated or recycled depending on their classification, but other classes cannot be considered for these actions and will have to go to landfill. We have not seen any proposals for new disposal technologies at this point, but we are trying to ensure that any framework we develop can effectively regulate new disposal technologies.	AER

Regulation	What is the AER doing, if anything, to lobby the federal government to allow flow-through eligibility of lithium extraction from brine?	The GoA understand the federal government has announced a couple incentive programs or tax incentives for mineral development as part of their budget 2022. We recognize that there are some concerns about the eligibility of brine-hosted manuals for some of the tax incentive programs, and we are working with our federal counterpart to see what the rationale is. The federal government designs and administers their tax incentive programs.	Energy
Brine-hosted Resource Development	Are there any potential brine-hosted minerals in the mountain/foothills areas south of Calgary down to Waterton?	There is currently no data about brine-hosted mineral potential in those areas.	AER
Tenure	How does the AER plan to protect the mineral brine resources under exploration or production from other operational contamination?	From the tenure side, there's no active discussion on protecting one type of right versus another. DOE is focused on updating how to administer rights specific to brine-hosted minerals alongside other rights and interest holders.	Energy
Waste Management	How does the AER plan to protect the mineral brine resources under exploration or production from other operational contamination?	Typically, applicants demonstrate that there is no migration out of reservoirs used for waste disposal as part of their approval. So typically, we wouldn't expect to see anything coming out of that formation other than what's being produced out of a reservoir. Secondly, if a company wants to conduct a subsurface activity, they need a scheme approval from the AER. Part of the application process that companies need to notify other parties with a subsurface activity in the area. So, if you've got an oil and gas operation that wants to inject water for some reason, and a mineral producer next door, they're going to have to notify that mineral producer. Operators have an opportunity to work out with	AER

		each other if there is going to be any negative interaction, so there's a mechanism already in place for that.	
Consultation	Will Métis people be meaningfully consulted on proposed lithium projects in Alberta?	Indigenous communities have been engaged throughout the development of the mineral strategy and the legislation and the regulations. There have also been several one-on-one engagement opportunities with Indigenous communities. Requirements or detailed requirements work is underway on the consultation requirements for the next phase of the implementation for the Mineral Resource Development Act. We could also highlight that the Mineral Resource Development Act is really an enabling legislation, and the details are being advanced in the implementation stage. Opportunities for further engagement are available. Indigenous perspectives are important to us to inform the implementation of the legislation.	GOA
Environment	With respect to baseline environmental condition assessments, will the AER/AEP be providing prescriptive requirements for environmental assessments for all proponents? Or will it be up to the proponent to determine the necessary level	It will be up to the proponent to determine the necessary level of effort based on predicted impacts. Alberta Environment and Parks is evaluating risks, mitigation measures, requirements.	AEP

	of effort, based on predicted impacts?		
Environment	With respect to baseline environmental condition assessments, will the AER/AEP be providing prescriptive requirements for environmental assessments for all proponents? Or will it be up to the proponent to determine the necessary level of effort, based on predicted impacts?	Environmental assessments help our decision makers whether it be to regulate or regulators make good decisions in the public interest about the impacts that a proposed project may have on the environment. For now, what we know from the analysis that we've conducted is that mineral extraction from brine has similarities to oil and gas, and so we're applying what we know from the current regulatory framework to brine-hosted minerals development and working to identify gaps. We look at an environmental assessment and what becomes required or what is discretionary are usually informed by the severity and the complexity of that risk.	AER
Sub-surface	Will introduction of a regulatory framework for brine-hosted minerals impact use of saline groundwater or downhole injection into saline aquifers?	The creation of the framework will address the use of the reservoirs that contain the brine. As we get applications in the future, we will be looking at the circumstances around each of those and make decisions in the public interest.	AER

Tenure	Will protected lands that are currently excluded from metallic and industrial mineral permits be included in the new brine mineral tenure system?	DOE won't issue any new rights for minerals in caribou ranges. Some restrictions, such as wildlife habitat, are not necessarily reserved from disposition, though. There are certain operating conditions that are applied, and the GOA is not looking at making any changes to restricted areas. In the future, however, the GOA could potentially be looking at whether surface access may be issued. Sometimes, mineral rights can be issued underneath certain restricted areas without permitting surface access. Any permits that would be issued would have to be consistent with the regional plan, sub regional plans and conditions as well as requirements within the species at risk recovery plans.	GOA
Co-production	Is there an expectation that there will be additional requirements for current oil and gas producers that generate brine water as part of their normal production operations?	Once an oil and gas producer acquires the mineral rights and then starts to produce that mineral for the purpose of selling it, we are looking at the mineral framework that we're developing to carve that out. We consider this type of activity co-productions. Rather than regulating mineral development under the Oil and Gas Conservation Act, we will regulate those activities under the mineral framework that we're building right now. Currently, we're trying to understand what the implications are around how we manage liability and how we account for the resource within that.	AER
Brine-hosted Resource Development	Can the AER comment on the recent challenges that coal mining has faced in recent years, how will extraction of minerals either through brine or mining be any different?	AER has recognized the concerns that have been expressed by Albertans about mineable resources and so while the brine-hosted minerals are not mineable, we are going to look more closely at some of those issues as we continue to develop regulations.	AER

Public Geoscience	I would like to know what the government is going to do with the minerals portion of the AGS in future with the oil and gas industry not wanting to fund it. In a new mineral regime there will be a need for a mineral division devoted to geology of these resources.	Increased public geoscience is one of the six key areas of the mineral strategy. The Government of Alberta recognizes the importance of easily accessible and reliable public geoscience information. The information will help the government, public, landowners, Indigenous communities, and other interested parties. Public geoscience will inform decisions on land use and resource development. Public funding has been provided to the AGS, and some mineral mapping work is underway. The Government of Alberta strive to have sustainable public geoscience support.	Energy
Public Geoscience	The AER does not provide freely accessible subsurface data unless fees are paid for data preparation. This is a barrier to entry for small start-ups and will slow the development of new energy resources such as brine hosted minerals and geothermal for example. Does the AER have plans to implement a more accessible system like what the BCOGC offers?	The AER and the GOA are in discussions to understand what the deliverables are regarding public geoscience. The AGS and AER websites will be updated to reflect changes.	AER
Regulation	How does the proposed regulatory environment surrounding brine production compare to other jurisdictions? Will this new regulatory system slow down or assist in accelerating development of these critical minerals?	There are few jurisdictions that have regulatory frameworks already in place to accommodate not only the types of mineral development but also the types of technologies that we're anticipating. As such, the AER is trying to use guiding principles including protect the environment, protect the people of Alberta, and act in the best interests of Alberta. But we're also not trying to introduce any undue regulatory burden, so we are referring to the current regulatory regime for oil and gas and adapting them for minerals.	AER

Regulation	Will the provincial strategy include and promote development for all areas of the province and not just what seems to be the hotbed areas that are already seeing development and jobs? (i.e., northwest corner of the province)	The Government of Alberta's approach is to provide clear policy direction and regulatory requirements to provide greater certainty and clarity to investors and stakeholders who are interested in investing to Alberta. The strategy itself is inclusive of all metallic industrial minerals and all the areas across the province. It will be up to industry to decide where in the province to invest.	Energy
Co-production	These brine minerals offer a spectrum of potential value. How can we ensure this framework remains flexible to novel concepts and technologies? An example of this would be ensuring that these regulations function effectively with prospects for geothermal energy development.	The AER will explore multiple types of activities to occur on the same site. For example, utilizing the same well bore so operators can maximize the value of that single wellbore of that single site. Our counterparts that are working on the geothermal deployment are having similar discussions and we're testing these ideas with them. The goal is not to over-regulate. The AER is trying to find ways that companies can explore new technologies as well.	AER
Indigenous Engagement	Will there be any form of meaningful indigenous engagement?	The AER will have workshops planned in the coming weeks. We're also having targeted conversations that are meaningful and recognizing unique interests of all of our stakeholders including the indigenous communities.	AER
Environment	How will AER be involved in regulating the footprint created by exploration for brine-hosted minerals, including how that footprint adds to existing and future cumulative effects on the landscape?	Brine mineral exploration is almost indistinguishable from brine production. This is because operators explore for the brine by pumping it to the surface. The AER doesn't expect brine-hosted mineral exploration to look like other types of mineral exploration.	AER

Environment	How will AER be involved in regulating the footprint created by exploration for brine-hosted minerals, including how that footprint adds to existing and future cumulative effects on the landscape?	Footprint management is one of the components of the Alberta Energy Regulator's Regulatory review, and it involves evaluating the site plans of proposed infrastructure that are submitted. Applications are subject to the same land use planning and regional plans that exist, which won't be changing. The GOA is not making any exceptions for mineral extraction, including minerals from brines.	AEP
Funding	Can you please elaborate on the AER government grant? Such as: amount, length, distribution of funds on overlapping tasks among other GoA departments, and insurance of mineral-related expenditures.	The AER received about $25 million in the last year to undertake public geoscience work and to support the development of the regulatory framework. Spending under the grant will be tracked so that the AER can be accountable to the public about how the money is being spent.	AER
Brine-hosted Resource Development	There was a comment that brine projects will not be approved until 2023. Can companies drill exploration wells into brine before this timeline when the AER will be ready to approve projects to test mineral concentration?	The AER do not expect to be able to accept commercial scale applications for brine-hosted mineral resource development until early into 2023. We do have brine wells in the province right now, and brine wells that are licensed under the AER. Those existing operations are jointly regulated. If there's a surface extraction type facility processing facility, those are regulated by AEP. The current framework exists, and companies can bring projects forward. Getting project approvals is a collaborative effort across Government of Alberta departments, so if somebody wanted to come in and drill some wells to explore quality of brines, they should engage the AER about the project.	AER

Brine-hosted Resource Development	Will there be approval differences to industries who use or repurpose existing infrastructure vs. creating new footprint?	There will be a difference in how projects are approved because the AER will want to receive additional information about the existing approvals prior to deciding on a new application. There may not be a separate regulatory framework meant to incent that type of activity because the AER's interest is mitigating risks to public safety, the environment and resource conservation.	AER
Red Tape Reduction	Previously, the Mines and Minerals Act was regulated by AB Energy and AEP. Now its AER, AB Energy, and AEP. How does this reduce legislation and create one-stop regulation?	Government of Alberta introduced Bill 82 Mineral Resource Development Act and the intent of that new legislation, the bill is the ability to create a single regulator of Alberta's mineral resources. This includes the introduction of new legislation as well as several consequential amendments to existing legislation including the Pipelines Act, Natural Resource Conservation Board Act, and others. Bill 82 is to establishes the mandate and the powers of the AER to be the full life-cycle regulator of minerals. Amendments to other legislation is to integrate and streamline all the regulatory functions that are currently kind of shared across different departments and ministries to be the to be the AER. This gives the AER the authority to develop rules and directives to regulate activity. The Department of Energy is still primarily responsible for issuing tenure rights and collect royalties. The AER will continue to work with its partners in government to ensure an efficient and effective regulatory process.	Energy

Environment	How will cross contamination of subsurface aquifers be prevented?	We already have wells that pass through multiple subsurface features. So that involves requirements for how wells are drilled, cased and for assuring well bore integrity. These requirements are lifecycle requirements so that means that they are specific to construction, operation, as well as when wells are suspended or abandoned. So, we would likely leverage these requirements and figure out if it makes sense in this space and conducting risk assessment to ensure an appropriate regulatory framework.	AER
Co-production	Brine water generated by normal production operations is generally deemed to be a waste by-product and not a sales product. Would these new requirements affect this type of production? In other words, should oil and gas producers expect enhanced water management requirements to the current activities and does that not go against the current Red Tape Reduction that both the AER and the Alberta government has mandated?	The AER is building a regulatory framework for mineral resource development that works in partnership and conjunction with the existing oil and gas framework. If an oil and gas operator has secured the right to a brine-hosted mineral and has the intention of selling it, then the mineral framework will apply because we want to conserve brine-hosted minerals. If an operator wants to store produced water and process it for brine-hosted minerals later, that is also an option.	AER
Funding	Is there a funding model for the AER regulating of the brine-hosted minerals -- where will these funds come from?	Thanks guys, that's a great question and I think given the dedicated grant funding while we while we build and enhance the current framework for this, that is a question that remains. Some options include application fees and levies. More work is underway to address this question.	AER