

29 April 2021

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Ms Chloe Hicks  
Director Energy Infrastructure and Zones  
Energy, Climate Change and Sustainability  
Department of Planning, Industry and Environment  
Locked Bag 5022  
PARRAMATTA NSW 2124

Dear Ms Hicks

**Re: Central West Orana Renewable Energy Zone Access Scheme Issues Paper**

Thank you for the opportunity to respond to the issues paper on the Central-West Orana (CWO) Renewable Energy Zone (REZ) Access Scheme published in March 2021. This submission outlines ATCO's response to a number of questions in the paper for stakeholder input.

ATCO commends the NSW Government on the Energy Infrastructure Roadmap and the REZ initiative and is appreciative for the opportunity to discuss the REZ Access Scheme. The issues paper raises important issues that need to be considered in developing an Access Scheme to apply to REZs in NSW. There are critical elements of the scheme that are outside of the scope of this issues paper, such as the process for allocating access rights and setting access fees, which are important for stakeholders to understand in making a fully informed choice between access scheme options.

In consideration of information currently availability at this time, ATCO's preference is for Option 1 (Limited physical connection model). Our preference is primarily driven by improving investor confidence through avoiding complexity that will introduce uncertainty and risk. The level of certainty Option 1 provides to the market for transmission access and in combination with electricity price signals, will help deliver the required investment in generation and storage. Whilst more complex solutions may be available, in our view, the urgency of the required investment means that certainty should be prioritised over the complexity inherent in design and utilisation perfection.

Our response is framed around the following points that we consider are important in the design the REZ Access Scheme:

- **Storage incentives should be available to projects outside of the REZ** - A wider system view would ensure that the electrical flows to Sydney are maximised at least cost, which would deliver maximum benefit to consumers. This requires the NSW Government to lift its network perspective from single line focus to a system wide view. In doing so, storage obtained from locations outside of the REZ upgrade may maximise cost effective energy flows into greater Sydney thus maximising the consumer benefit. For example, ATCO's Central West Pumped Storage Hydro project has a role in unlocking electrical constraints at Mount Piper which has wider benefits to the REZ. Any storage incentives available in the CWO REZ should also be available to such projects outside the REZ that can provide this benefit.
- **Pumped hydro requires long term certainty** - ATCO believes consideration should be given to the unique time to develop different technologies and the lifespan of the infrastructure. For example, pumped hydro requires long term certainty due to its long development timeframe and long technology life.

- **Large scale, long duration storage should be exempt from Access Payments** – ATCO considers that long duration storage can be exempt from Access Payments as it can play a role in unlocking transmission capacity as a non-network solution that may form part of a hybrid solution to provide benefits to the REZ and the shared network.

ATCO considers that the complexity of Options 2A (Financial compensation model) and 2B (Enhanced financial compensation model) will override the benefits from these options and create uncertainty and higher transaction costs in the market that will discourage investment.

## About ATCO

Established in Canada in 1947 and now a \$22 billion global company, ATCO has a long history of partnering with communities and indigenous groups, energising industries, and delivering customer focussed infrastructure solutions.

With almost 60 years' experience in Australia - having entered the market in 1961 - ATCO understands the Australian environment and is a trusted, long-term partner of many large and respected Australian companies.

Leveraging a 70+ year legacy of power generation, transmission and distribution networks operation and maintenance in Canada, ATCO has been providing gas-fired power generation in Australia for more than 20 years and is actively investigating investments across the entire energy value chain, including renewable generation, transmission, distribution and storage infrastructure for the national electricity market. ATCO is eager to apply its international expertise and experience in electricity, natural gas, water, storage and structures to its continued operations across Australia.

Experienced in building, owning and operating pipeline infrastructure globally, ATCO has successfully managed the Western Australian natural gas distribution network since 2011, and will apply its global capability and know-how to expand into solutions across transmission, storage and processing. In mid-2020, ATCO was selected, as a partner to rebuild Puerto Rico's electricity system; with a plan to modernise and operate the system for the next 15 years.

ATCO has invested in alternative and renewable energy solutions for 30 years. ATCO will continue to respond to disruption in the energy sector through investing in a range of projects that utilise new technologies and business models to provide energy solutions for a low carbon future. Activities in this area include renewable generation, microgrids, storage and hydrogen.

ATCO is a global leader in providing modular solutions to the community; from regional mining developments through to urban infrastructure development and provides a diverse range of services and products throughout various markets in Australia.

If you have any questions or would like to discuss any of these issues further please contact me or Ben Bolot, Executive General Manager Business Development on [REDACTED]

Yours sincerely



**J.D. Patrick Creaghan**  
Managing Director & Chief Operating Officer

## Response to Questions

*Question 2 - What, if any additional benefits should the CWO REZ Access Scheme deliver to provide value to connecting generation and storage projects.*

The CWO REZ Access Scheme should provide a clear pathway to progress transmission connections and coordinate access to transmission within the REZ Access Scheme from competing market participants. If this is introduced, then generation and storage development projects in the REZ will benefit additionally from the certainty provided by a clear and coordinated connection process through reduced project delays and schedule risk.

A wider system view would ensure that the flows to Sydney are maximised at least cost. Projects outside the REZ boundary/route should be part of the broader framework from a REZ planning perspective. The Access Scheme should consider benefits to generation and storage projects within the REZ that arise due to projects locating near the CWO REZ. For example, ATCO's Central West Pumped Storage Hydro Project has important regional benefits to the CWO REZ and the potential to unlock transmission constraints at Mount Piper. The CWO REZ Access Scheme should expand any storage incentives available in the CWO REZ to also be available to projects which can enhance the export capability of that REZ such as the Central West Pumped Storage Hydro Project.

*Question 4 - Which of the shortlisted models presented is preferred? Which best balances the need to deliver value to investors with the need to maximise utilisation of the REZ, and together achieve the access scheme's objectives?*

*In particular, does the 'non-firm' connection right, under Option 1 provide sufficient certainty to investors to be of value? If it does not, is this outweighed by the increased utilisation of the REZ that would result under such non-firm connection rights?*

ATCO's preference for the options under consideration is Option 1 (Limited physical connection model). While Option 1 does not provide firm access or incentivise the shape of utilisation of the REZ Shared network, the level of certainty and its simplicity supports investor confidence. The level of certainty Option 1 provides to the market for transmission access and in combination with electricity price signals, will help determine the most efficient investment in generation and storage.

Option 1 (Limited physical connection model) has the potential to be implemented in a timely manner by not requiring the development of a complex administration system for financial transfers between projects and could be achieved in the near term.

Whilst we accept that the other options may ultimately provide the most efficient economic outcomes, the need to design and execute the REZ in a timely manner requires investors to have confidence that the framework can be implemented in a timely and cost effective manner. The benefits that may result from the other options do not, in our view, justify the complexity and implementation risk that will be passed onto investors. Simplicity and timeliness of implementation are key to obtaining investor confidence in the adoption of any REZ Access Scheme.

*Question 6 - How could the characteristics of either Option 1, 2A or 2B be adjusted to improve them in a manner that achieves the access scheme's objectives?*

Storage incentives should be available to projects outside of the REZ. In order to deliver maximum benefit to consumers a wider system view would ensure that the flows to Sydney are maximised at least cost. This requires the NSW Government to lift its perspective from a REZ by REZ focus to a system wide view. In doing so, storage obtained from locations outside of the REZ transmission infrastructure may maximise cost effective energy flows into greater Sydney thus maximising the consumer benefit. For example, the Central West Pumped Storage Hydro project plays a role in



unlocking constraints at Mount Piper which has wider benefits to the REZ. Therefore, any storage incentives available in the REZ should also be available to such projects outside the REZ that can provide this benefit.

*Question 10 - Is there a minimum term (in years) for which access rights would need to apply to benefit project finance?*

ATCO considers the time to develop different technologies and the asset life of each project to be factors worth taking into account in determining the duration of access rights, with a specified term of access provided to underpin the initial development of the project. These factors will be unique to each project under development within the CWO REZ. For example, pumped hydro requires long term certainty due to its long development timeframe and long technology life. These unique project parameters should be taken into account when determining a minimum term for access rights.

The ability for projects to enter contracts that provide secure stable longer tenor project finance will benefit from a longer minimum term of access rights, that will effectively lower overall project costs. The minimum period for access rights should be long enough to enable refinancing over a number of periods and match the operational life of the asset, optimising the prospects for refinancing and the payback period.

*Question 21 - How valuable is the ability to trade access rights, and in what circumstances would this be useful?*

Competition between market participants for access and selling electricity should not be impacted by the ability to trade access rights. For example, a market participant should not be able to hold access rights in order to curtail a competing market participant to develop a project within the REZ. The practice would obviously adversely impact the efficiency of the CWO REZ resulting in higher prices for consumers. ATCO supports the introduction of “use it or lose it” conditions considered in Question 34. ATCO considers that access rights should only be provided to registered energy market participants and trading potentially allowed between generators to improve efficiency in utilisation of the REZ transmission network.

*Question 24 - For generation projects connecting to the REZ, how important is it that storage is required to purchase access rights (ie that total connecting storage capacity is limited)? If storage was not to be required to purchase access rights, how high is the risk of storage competing with (ie curtailing) generation dispatch?*

It is not essential at this stage for storage to purchase access rights, as storage should be allowed to compete across the wider energy market, and the REZ access regime should be wary of the risks associated with predicting and controlling the physical and financial nature of storage into the future.

Equally, there may be economic value in the CWO REZ Access Scheme maximising the output of variable renewables, but firmed with storage closer to the load such as provided by the ATCO Central West Pumped Storage Hydro project.

*Question 26 - Would prevailing market signals provide sufficient and appropriate incentive for storage to operate in a manner that is aligned with the needs of the REZ? If not, then what REZ-specific types of incentive mechanisms should be considered to incentivise load and storage to consume electricity when the REZ Shared Network is congested?*

Storage incentives should also be available to projects outside of the REZ. In order to deliver maximum benefit to consumers, a wider system view would ensure that the flows to Sydney are maximised at least cost. This requires the NSW Government to lift its perspective from a REZ by REZ

focus to a system wide view. In doing so, storage obtained from locations outside of the REZ upgrade may maximise cost effective energy flows into greater Sydney thus maximising the consumer benefit. For example, the Central West Pumped Storage Hydro project plays a role in unlocking constraints at Mount Piper which has wider benefits to the REZ. Therefore, any storage incentives available in the REZ should also be available to such projects outside the REZ that can provide this benefit.

*Question 28 - How should the treatment of storage under the CWO REZ Access Scheme account for differences between long-duration storage and fast-firming technologies?*

The market will require both long-duration storage and fast-firming technologies. However, the characteristics of these differ and require different economic signals and treatment.

Pumped hydro provides a unique role in offering system security services:

- Improves power system reliability by providing dispatchable generation capability to assist in meeting peak power demands including when no Variable Renewable Energy (VRE) generation is available.
- Provides dispatchable energy storage, synchronous inertia and fast frequency response over a significant lifetime (>50 years), responding to variations in supply and demand within minutes, with no degradation in storage capacity or efficiency over the service life to support the intermittent and variable dispatch of VRE generation
- Storage capability complements the intermittent nature of wind and solar generation by shifting energy from periods of high VRE to periods of low VRE when additional supply may be required.

Additional benefits of the Central West Pumped Storage Hydro project include:

- Spinning Reserve (Synchronous Condenser Operation)
- Black Start Generation
- Automatic Generation Control (AGC)
- Voltage and Power Factor Correction
- Frequency regulation and load following
- Bulk Energy Storage on daily cycles
- Intermittent operation
- Immediate pumping response
- Immediate generation response

These benefits could be realised by exempting large scale pumped hydro from access charges and offering an incentive to charge at times of high congestion on the network between the CWO REZ and greater Sydney, in the region of Mount Piper. This includes the ATCO Central West Pumped Storage Hydro Project.

This wider system view would ensure that the flows to Sydney are maximised at least cost, which would deliver maximum benefit to consumers. Storage obtained from locations outside of the REZ upgrade may maximise cost effective energy flows into greater Sydney thus maximising the consumer benefit.

*Question 34 - If “use it or lose it” provisions were introduced, how should the utilisation requirements be set/measured? What exemptions or concessions should be considered?*

ATCO supports the ‘use it or lose it’ provisions but consideration should be given to the time requirements of different technologies in the case where underutilisation occurs. For example, the construction of a pumped hydro project could take five years with significant development risks, whilst battery construction could take six months.

Each generation and storage project will have a risk profile relative to the development of each investment. Provisions of this nature need to consider the relative risks of each project profile in setting utilisation requirements.

A sunset period would require that access rights be returned (for compensation) or sold if a connecting project does not reach a particular milestone (e.g. date of financial close or commissioning) by a particular date; and minimum utilisation requirements which could require access rights be returned (for compensation) or sold if determined to be underutilised after the access right is acquired. For example, this may include a generator closure or mothballing, or a generator developed to a lower capacity than initially planned.

*Question 37 - What are your views on the appropriateness of the principles for managing the interface between the CWO REZ Access Scheme and common DCAs/DNA? How could consistency between the CWO REZ Access Scheme and access policies on DCAs and DNAs best be achieved?*

The CWO REZ Access Scheme should provide a clear pathway to progress transmission connections and coordinate access to transmission within the REZ Access Scheme from competing market participants. If this is introduced, then generation and storage development projects in the REZ will benefit additionally from the certainty provided by a clear and coordinated connection process by reduced project delays and schedule risk.

Having different access policies on DCAs and DNAs creates complexity that will erode investor confidence in the CWO REZ Access Scheme. Any obligations placed on the owners or operators of DCAs/DNA should not encroach on their ability to effectively manage their asset.

*Question 40 - What opportunities exist for the NSW Government to improve connection processes in the CWO REZ? What improvements would deliver greatest value?*

ATCO agrees that improving connection processes in the CWO REZ presents a significant opportunity that would have far reaching benefits across NSW. Improvements to timeliness, shared use of a single consultant/expert and shared access to the Power System Computer Aided Design (PSCAD) network models would provide the greatest value. Where a project shows significant benefits to the REZ and the wider REZ region, it should also obtain access to a prioritised connection process.