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Ref: C050-IPX-LE-70044

27 June 2024

Ms. Bronwyn Ray
Branch Head
Decarbonisation Initiatives Branch
Net Zero Industries Division
Department of Climate Change, Energy, the Environment and Water
GPO Box 787
CANBERRA ACT 2601

Sent via email: CCUS@dcceew.gov.au, Bronwyn.Ray@dcceew.gov.au>

Dear Ms. Ray

Re: *Transboundary Movement of CO2 Industry Consultation*

INPEX welcomes the opportunity to engage with the Department of Climate Change, Energy, the Environment and Water (DCCEEW) to support transboundary movement of CO2 policy development. Given the inaugural nature of offshore carbon capture and storage (CCS) in Commonwealth waters, there are benefits for close collaboration and consultation between Government and industry to ensure the establishment of policy and regulatory settings are fit for purpose and encouraging of future investment.

For context, INPEX CORPORATION is Japan's flagship energy company and has been an active member of the Australian business community since 1986. INPEX is the largest Japanese investor in Australia and operator of Ichthys LNG, one of Australia's largest and most complex energy developments. INPEX's Australian portfolio also includes participating interests in Van Gogh and Coniston, Ravensworth, Prelude FLNG and Bayu-Undan/Darwin LNG.

INPEX considers climate change to be a critical business issue. While gas will have a critical role to play in both energy security and in the transition to net zero by 2050, INPEX is committed to an interim target of 30 per cent reduction in scope one and scope two net carbon intensity over 2019 levels by 2030.

INPEX supports the Australian Government's updated commitments and intentions made in June 2022 under the Paris Agreement. We are also supportive of the government's Future Gas Strategy, released in May this year (2024). We were pleased to see recognition in the Strategy of CCS as an effective way to help Australia meet its emissions reduction targets.

In 2022, we released our business strategy roadmap INPEX Vision@2022, setting out our plan to achieve the target of net zero emissions by 2050, while also ensuring stable supply of diverse and clean energy sources is maintained. Decarbonisation of existing assets is a high priority for INPEX and CCS, as a highly effective means of reducing emissions from LNG production, forms a critical part of our decarbonisation strategy.

INPEX has already commenced plans to establish CCS in Australia. The Australian Government has awarded a greenhouse gas storage assessment permit to INPEX with joint venture partners TotalEnergies CCS Australia and Woodside Energy. Our plan to develop a world-class carbon capture and storage project, Bonaparte CCS (BCCS), will see INPEX as operator, develop a world-scale geological storage project in the Petrel Sub-Basin, 250km

northwest offshore of Darwin by 2030. Once operational, BCCS will allow us to reduce greenhouse gas emissions of Ichthys LNG by up to 40 percent.

However, we view the BCCS project as more than just a means of decarbonising Ichthys LNG. Instead we consider it to be a step toward a world-scale CO2 storage operation that would not only underpin expansion plans for Ichthys LNG, but also support development of the Middle Arm Sustainable Development Precinct in Darwin and the Northern Territory CCUS Hub. The hub concept offers the potential to facilitate carbon reduction for third party operations and underpin the development of new energy such as hydrogen.

The potential for the BCCS project to become a global CO2 storage operation will require effective and efficient policy and regulatory settings, including bilateral arrangements with potential international customers and consideration of transboundary CO2 movements. INPEX welcomes the Department's efforts to consult with industry in the development of these settings and arrangements. However, we would encourage an expedient development of policy and legislation to enable transboundary CCS activities, noting that Australia is competing globally for investment in CCS including against other clean energy initiatives such as the US Inflation Reduction Act.

We acknowledge INPEX will likely be one of the first operators in Australia to undertake and operate offshore CCS facilities. To date, more than fifty Commonwealth and Territory approvals have been identified as being required to support the BCCS project, for which the current approvals pathway appears to be 8-10 years - decidedly beyond the timing INPEX is seeking to realise the project.

Already, a one-year delay has been incurred due to delays in securing Environment Plan approvals. It is estimated the impact of this delay will mean up to 3 million tonnes of CO2 emissions a year will continue to contribute to Australia's GHG emissions, likely requiring INPEX to acquire offsets to meet our Safeguard Mechanism exposure.

INPEX continues to seek certainty from the Australian Government and lead federal agencies, the Department of Industry, Science and Resources (DISR) as well as from your own Department (DCCEEW), on CCS approvals and timing associated with environmental and other plans and approvals. This includes planning and timing for settings regarding CO2 transboundary movements and country to country bilateral arrangements. Consequently, the current consultation and movement of this matter is welcomed.

Attached is our submission providing responses to questions raised by the DCCEEW in the Industry Roundtable Consultation Paper and workshop it hosted as part of the GCCSI Australia and Southeast Asia Forum on CCS in March 2024.

Thank you for the opportunity to participate in the Government's consultation process. If we can assist further, please contact John Williams, Government Affairs and Approvals Manager, on 0412 422 636 or via email john.w@inpex.com.au.

Yours sincerely,

Bill Townsend
Senior Vice President Corporate

INPEX Comments

1. Roles and Responsibilities between Government and industry

a) How does industry see their split of roles and responsibilities?

b) How could government best engage with industry to establish these requirements?

INPEX sees the role of Government to as both regulator and moderator within this area.

The Commonwealth will need to moderate country to country bilateral discussions – seeking to negotiate through FTA or other mechanisms the perimeters of transboundary CO2 movements from other countries to (or from) Australia.

Open and transparent consultation with industry to ensure bilateral arrangements and any associated policy or regulations remain fit for purpose and non-inhibitive is also recommended, recognising the role of industry as CCS owner and operator, and the relationships between operators and clients from other nations.

INPEX expects Government to act as regulator and owner of related policy settings – developed and established in consultation with industry.

For example, INPEX expects Government to suggest preferred quantification methodology for risks and liabilities related to transboundary CO2 movements. This would include defining jurisdiction responsibility, changeover and possible crossover of responsibility – in particular in relation to leakage risk. We seek to discuss and clarify with the Australian Government on how roles and responsibilities of each party (governments of each country, operator, client etc) regarding risk would work, and settings that could support the limitation of risk and liability to industry around CO2 transboundary movements.

An example of a framework established overseas is the UK's CCS business model, which defines a "Government Support Package (GSP)" that is composed of a Supplemental Compensation Agreement (SCA) and a Discontinuation Agreement (DA).

The SCA provides certain payments to the Transport & Storage Joint Venture (T&S JV) to ensure the return of the asset to a sustainable operation if commercial insurance is unavailable. Comparatively, the DA defines compensation to T&S JV's debt and equity in the case of asset stranded events and CO2 leakage which prevents commercial operation, even after support provided through the SCA. This framework provides a limit to the level of liability and risk exposure that industry would face should an event such as a CO2 leak occur. INPEX welcomes similar policy and regulatory settings in Australia to help Australian industry manage its risk and liability and note the usefulness of this to industry when deciding on CCS business investment.

Ongoing communication between Government and industry is recommended, including Government's role to ensure a level of regularity for these opportunities.

INPEX acknowledges the likelihood our Bonaparte CCS project will be one of Australia's first offshore CCS facilities and notes the Commonwealth's endorsement for offshore CCS. Given the relative new nature of an emerging offshore CCS industry in Australia to Government and the associated issues of transboundary CO2 movements, INPEX suggests there is a role for industry to compliment and support the Government's technical capabilities. In recognition of the established and pre-existing knowledge and experience in offshore CCS held by INPEX and other industry partners.

INPEX strongly recommends a government / industry working group be established to oversee the development of offshore CCS and transboundary CO2 movement policies and regulations.

2. Environmental Management

a) What does industry see as best practice for mitigating and managing environmental risks?

INPEX notes existing best practice environmental management frameworks can be found at various levels across international, national, regional and local jurisdictions - with international agreements often supported by related laws, regulations, and guidelines. These guidelines, in turn, provide more detailed information on specific performance requirements or standards. Examples we would encourage DCCEEW to consider include the Kyoto Protocol (1997) and the Prevention of Marine Pollution by Dumping of Wastes and Other Matters (London Convention) (1972).

When reviewing best practice environmental management frameworks, many are seen to follow a similar approach, aligned to the principles of the ISO14001 International Standard for Environmental Management Systems. ISO14001 follows the well-established Plan-Do-Check-Act (PDCA) cycle. The approach is as follows:

(i) Plan

- identify elements that may interact with the environment and assess the risks of these interactions.
- assess legal and other requirements.
- establish objectives, goals and targets.

(ii) Do

- develop and implement control measures and management procedures.
- maintain operational control.

(iii) Check

- measure and monitor performance.
- undertake assurance and verification activities.

(iv) Act

- evaluate performance to ensure objectives are being met.
- implement corrective actions as required.
- continuously improve.

In Australia, many agencies adopt an outcomes-based approach to environmental regulation, whereby the desired outcome is expressed specifically and in a way that can be measured. Performance measures are used to evaluate whether the outcomes are being achieved.

It is important to note outcomes-based conditions may include prescriptive elements (i.e. where there are recognised standards that are appropriate), system-based elements (i.e. focusses on the management of an activity), or performance-based (i.e. uses data to monitor and measure performance in support of an outcome). Where performance standards are used, they should outline the performance levels and measures that are generally considered to be achievable in new facilities by existing technology at reasonable costs.

The Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2023 requires activities occurring in Commonwealth waters to be undertaken in a manner that reduces environmental impacts and risks to a level that is as low as reasonably practicable (ALARP) and acceptable. ALARP is achieved when all practicable measures have been implemented and any further measures are demonstrated to be grossly disproportionate in cost when compared to the expected reduction in impact or risk. Acceptability considers

the level of environmental impact that can be tolerated, considering the level of sensitivity or resistance to change of specific individuals, communities or other features.

b) What are the challenges that industry sees in complying with the Australian regulatory environment?

c) How could the Australian Government best help industry to solve these challenges?

INPEX notes that without the ability to review a draft framework outlining proposal(s) for how the environmental permitting and approvals between countries could work, and in the absence of other examples, it is extremely challenging to provide responses to these questions.

It is understood Australia will need to enter into bilaterial agreements/arrangements with interested parties (countries) that outline and agree on roles and responsibilities of importing/exporting CO2. Only where these arrangements/agreements exist can transboundary CO2 movements and associated sea dumping applications be submitted or commence. A delay in securing these agreements or arrangements will impede industry's ability to position Australia as a CCS global contender and may see interested parties go elsewhere. Arrangements / agreements which are unnecessarily arduous or with policy settings subject to change would also impede the establishment of an Australian CCS industry. As such, INPEX encourages a level of urgency be applied to the establishment and implementation of CCS related policy, regulatory settings and bilateral agreements/arrangements.

Further to this submission, INPEX remains open to continuing consultation and discussions with DCCEEW to support this development and to share information and knowledge around CCS as required. INPEX would further encourage DCCEEW and associated Departments to consider prioritising the establishment of bilateral arrangement/agreements with countries based on existing FTA and known interest in utilising CCS. As an example, INPEX would encourage Japan as one of the first countries.

In relation to country-to-country bilateral arrangements/agreements that will need to be established around sea dumping and transboundary CO2 movements. INPEX notes the need for a clear definition on the roles and responsibilities of each party, and where the liability associated with permit responsibilities transfers across the value chain (i.e. where does the liability/responsibility of CO2 import into Australia start and end for each party?).

Consistency between country/country agreements/arrangements will be essential to streamline the process (i.e. no duplication of information required by each country – sharing of information arrangements are needed) to ensure clarity on the process.

A further challenge INPEX perceives relates to timing of approvals. DCCEEW have advised processing of a sea dumping permit may take up to 12 months depending on the complexity of the permit. If a permit was required for each individual import into Australia (i.e. each import is treated as a new CO2 stream) this would result in an unworkable scenario for companies seeking to become a CCS import business servicing multiple parties. Further, there is uncertainty on how the permit system will address/manage the various changes in custody of a CO2 import into Australia (i.e. overseas importer, CO2 receiving terminal/transport to hub infrastructure, and hub infrastructure/CO2 sequester). Consideration needs to be given to how these issues will be managed.

An option to mitigate these issues would be for permits to be issued to a single overseas aggregator and the company responsible for sequestration of the CO2. The permit should include a "nominal"/range CO2 composition (NAL compliant) to accommodate variances in the CO2 composition as additional sources are added to the aggregation facility over time.

d) How could industry best help the Australian Government to solve these challenges?

INPEX encourages a collaborative and co-design approach be taken to address these challenges and to the development of policies and regulations proposed for CCS and associated areas.

Industry is in a unique and fortunate position of being able to take policy and other guidance under development and apply it to practical situations to assess whether it achieves the desired outcomes. In doing so, it is also possible to identify any unintended consequences associated with proposed changes. This practical application of new and emerging policy is essential to deliver benefits that are mutually beneficial.

The following principles are also suggested as useful when considering how industry and governments could work together to solve potential challenges:

- Certainty – consistent and predictable outcomes with clear milestones for review.
- Communication and consultation – early and regular communication and engagement with relevant stakeholders.
- Flexibility – outcome-oriented approach that recognises changing expectation, technology and standards.
- Integrity – utilising science-based decisions, with appropriate consideration of technical, social and economic aspects.
- Practicality – adopting a collaborative approach, which includes clear outcomes and interim targets for long-term objectives.

3. Liability Provisions

a) What other types of liabilities is industry facing, and how are they being managed? Is there a role for government? If so, what?

b) How are your business models considering various scenarios of liabilities?

INPEX notes there will several areas for liability in relation to sea dumping and CO2 transboundary movements. Government will play a critical role in addressing these, working with industry to ensure they remain fit for purpose. It is expected Government will clarify:

i. how to quantify risks and liabilities?

ii. who are responsible entities for each risk and liability?

iii. who to take risks and liabilities if industry cannot accept?

There will also be a need to clarify the allocation of costs, risks and liabilities during the monitoring period following the completion of CO2 injection. It is expected Government would lead this discussion.

Finally, we understand general project liabilities through construction and operation (e.g. damage to a third party (i.e. port, fishing resources, etc.) including properties by leakage, and repayment delay of loan because of leakage, will be covered by insurance and guarantee.

4. Accounting and Inventory Management

a) What is industry's level of understanding of Australia's international emissions reporting obligations and national emissions reporting systems such as the NGER scheme?

b) Is it clear how national reporting through the NGER scheme fits in to Australia's international reporting obligations within UNFCCC reporting frameworks (if not, how so)?

c) Do you see a gap or emerging need for more education around emissions reporting obligations for CCS projects, including target accounting and inventory methods (for example more regulator consultations)?

INPEX notes its excellent understanding of Australia's international emissions reporting obligations and national emissions reporting systems as it relates to INPEX's Ichthys LNG plant. However, in so far as how these obligations and reporting requirements would work in relation to cross-border CO2 transport – inclusive of how national reporting through the NGER scheme and Australia's international reporting obligations within UNFCCC reporting frameworks – no, we do not have a clear understanding of this and welcome further clarification and education.

5. Industry Risks and Barriers to Deployment

a) What does industry see as the biggest needs, to provide fiscal/investor certainty for CCS projects?

Liability identification and quantification are noted as the immediate needs in policy settings to provide fiscal and investor certainty into CCS projects. Ensuring appropriate risk sharing arrangements between industry and government will also be a key enabler for the development of CCS as a commercial import industry in Australia.

b) What does industry see as being the urgent policy interventions, apart from the work that we have discussed, which are needed to help progress CCUS projects?

INPEX suggests three urgent policy interventions be considered and established:

(i) liability identification & quantification.

(ii) bilateral instrument development timelines.

(iii) streamlining of CCS regulatory approvals.

6. Economic Benefits / volumes and demand

a) How might establishing an offshore transboundary CCS industry here in Australia drive further capital and investment in Australia?

Climate change is a global issue and the transition to Net Zero by 2050 and commitments to the Paris Agreement, is one shared by many more countries than just Australia. Just as there is a role for Australia to play in ensuring energy security for its partner countries unable to provide this for themselves, so too is there the opportunity for Australia to support its neighbours and international partners to reduce emissions.

Australia is home to significant geological CCS storage volume potential. Meanwhile, many of Australia's southeastern and east Asian neighbours and partners do not have similar levels of access adequate to their current or future needs. This gap and the proximity of many of Australia's proposed offshore CCS sites in the North of Australia (inclusive of INPEX's BCCS) to international shipping lanes, provides an opportunity for the Australian Government to work with its industry to position Australia as a regional leader and preferred storage location for CCS in Southeast Asia, and for East Asian partners such as Japan or Korea.

Achieving a transboundary CCS industry in Australia would require substantial investment in infrastructure development. INPEX notes the interest of its Tokyo global head office and the investment already provided to date towards the proposed BCCS development. Should this project proceed, significant further levels of capital and investment would be required.

b) Will there be a demand for an offshore transboundary CCS industry in 10-, 20-, 30-, or 50-years' time (considering predicted increased use of other emissions reduction technologies)?

Yes. INPEX notes there is an already growing demand for offshore transboundary CCS in Japan as well as other Asian countries. This need will only continue to expand.

According to its "CCS Long-term roadmap", Japan will need 120 - 240MTPA of CO2 storage by 2050; however, there is inadequate storage capacity in Japan to achieve this given its geological limitations. Both South Korea and Taiwan are also in similar situations to Japan. This indicates a demand for CCS access and interest has already been expressed by parties in each domain. Similar may also exist with South-East Asian partners closer to Australia.

This need already exists and is expected to be largely ongoing. It is anticipated to continue in acknowledgement of the different rates of energy security and transition that exists and is forecast for different countries relative to their current and forecast populations and economic development.

c) How does industry envision the transitioning of workers into new industry?

Like the LNG industry, an offshore CCS industry would need to operate with a highly skilled workforce that is dependent on long-term planning to deliver the necessary skills and experience critical to maintaining safe operations.

While workforce shortages are acknowledged across multiple industries, INPEX notes the similarities and likelihood of transferrable skills from the oil and gas industry and a CCS one. CCS technology, project development and operations are similar to Oil & Gas E&P activities, indicating likely skills overlap of Oil & Gas industry workers and the required workforce for the CCS industry.

Over the next 5 - 10 years INPEX considers there is significant potential for the migration and transition of oil and gas industry workforce to the CCS industry, more so if transboundary CO2 movement is appropriately facilitated.

INPEX has commenced assessing pathways to sustainably transfer the knowledge and skills of its workforce to the CCS industry, thereby leveraging the expertise gained from its E&P operations.

INPEX would also encourage Government to consider the needs of a CCS workforce when reviewing and developing its skilled visa programmes, and in the activities of institutes such as Jobs Skills Australia.

Further, the workforce needs of associated industries required to facilitate offshore CCS and transboundary movements should also be given consideration.

In 2023, INPEX commissioned and worked in partnership with the three Australian Maritime Unions (MUA, AIMPE and AMOU) and the Australia Resources and Energy Employer Association (AREERA) to prepare a research paper that explored in greater depth skills issues identified within Australia's maritime sector. The paper also included direct collaboration with the Maritime Industry Association Limited (MIAL) to access Seafaring Skills Census Data.

Findings from the paper, identified that with the absence of a coordinated, strategic plan for the maritime sector, there has been a steady reduction in the level of training for new entrant, and upskilling of existing, maritime workers. Globally, the maritime industry might require up to an additional 89,510 officers by 2026, however in Australia, total marine transport professionals reducing by 23 per cent in the last 12 months alone.

While INPEX is committed to the development and training of Australian mariners and makes significant investment in this area, there is a need for a consolidated view as to how the issue of maritime skill shortages can be addressed at a sectoral, rather than an individual company level. This will also factor into transboundary movements related to CCS.

7. Maritime Shipping

a) What are industry views on this position?

b) Is there a need to address any regulatory uncertainties in the bilateral instrument?

There is a need to address regulatory uncertainties in bilateral instruments to provide certainty for industry and potential investors as we move towards FID.

International legislative framework including the ratification of the London Protocol Amendment and execution of bilateral instruments with exporting countries are critical requirements needed as soon as possible to enable industry to construct a CCS business structure, discuss commercial terms and conditions with customers, and move on to FID. The international legislative framework would need to clarify risks, liabilities, and its allocation as well as inventory count.