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19 MAY 2021

Re : Concerns regarding SK E&S's investment in Barossa-Caldita Project in Australia

Dear All,

We, the undersigned organizations, aiming to protect the ecosystem from the damages caused by climate change and to support a transition to a sustainable, low carbon economy, are writing this letter to express our grave concerns on SK Group's affiliate company SK E&S's final investment decision ("FID") on the Barossa-Caldita natural gas development project in Australia, March 2021.

Barossa-Caldita gas field is the most CO₂-rich gas field in Australia and developing this field will be disastrous to the climate. Particularly, SK E&S's plans for so-called "CO₂-Free LNG" with carbon capture and sequestration ("CCS") is not only grossly misleading but also lacks economic or technical

feasibility. The project also raises serious questions on damages to the sensitive marine ecosystem and the local community.

Last November, SK Group Chairman Chey Tae-Won publicly announced that ESG will be the leading value for the Group, and it will slash its carbon emissions by two-thirds and plan a transformation away from fossil fuel.¹ The tremendous amount of greenhouse gas from the Barossa-Caldita project will raise serious doubts on SK Group's ESG initiative, and more importantly, it will undermine the global efforts to mitigate climate change by reducing greenhouse gas emissions.

Below, we will explain in detail the environmental and economic problems of the Barossa-Caldita Project and why SK Group and SK E&S must withdraw its investment on the gas field development and the related facilities including the Darwin LNG terminal.

Climate change cannot be stopped without stopping fossil fuel development.

Climate change is expected to bring serious impact to human society and economy as well as the ecosystem. Particularly in Australia, impacts of climate change has already become a reality. The 2019 wildfire continued for more than six months: burned down forests larger than the size of South Korea and took lives of more than one billion wildlife.

The “carbon budget”, the amount of greenhouse gas we can afford to add to the atmosphere before climate change threatens our survival, is running out. 197 nations, including South Korea, agreed in 2015 to limit the temperature rise well below 2°C and strive to limit it to 1.5°C in the Paris Agreement. However, the temperature has already risen by 1.1°C, and the carbon budget is expected to be depleted within 7 years without sharp decline in global greenhouse gas emissions.

Natural gas, along with coal and oil, is a major contributor to climate change and needs to be reduced immediately. Intergovernmental Panel on Climate Change (“IPCC”) warns that even if coal consumption eliminated today, the fossil fuel from existing oil and gas wells will exceed the carbon budget for 1.5°C target.² According to the United Nations Environmental Plan (“UNEP”), fossil fuel production must decline by 6% every year to meet the 1.5°C target. However, it is still growing by 2% year after year.³

International Energy Agency (IEA) also announced that 2050 Net Zero energy roadmap does not need

¹ [Financial Times, 'South Korea's 'M&A king' SK group pursues path away from fossil fuels', 22 Nov 2020](#)

² [IPCC, 「Special Report on Global Warming of 1.5°C」, Summary for Policymakers, Oct 2018](#)

³ [UNEP, 「Production Gap Report 2020」, Dec 2020](#)

any new investment on fossil fuel, including oil and natural gas.⁴ Nations around the world are continuously strengthening their climate targets. For a corporation, this means fossil fuel investments entail serious financial risks. Reduction of fossil fuel production from the mines, oil and gas wells is inevitable if we are to meet the climate targets, and this means the project and facility investment is exposed to “stranded asset risks.” Total stranded asset risk of oil and gas business is estimated at USD 900 billion under the 1.5°C scenario.⁵

For this reason, investing in new gas development project is not only unethical but also financially irresponsible. European Investment Bank (“EIB”) and United Kingdom Export Finance (“UKEF”) has already announced its plans to end fossil fuel investment, including natural gas. United States, since the election of President Biden, has begun taking measures to limit new fossil fuel development on public lands. Global companies are also moving towards transitioning their business portfolio into renewable energy sources and away from fossil fuels.

Barossa-Caldita Project is a climate disaster.

LNG produces significant amount of greenhouse gas during its extraction, processing, liquefaction, transportation, and regasification in addition to the emission from final consumption. According to Natural Resources Defense Council (“NRDC”), the amount of greenhouse gas emitted during production process of LNG is comparable to the amount produced by combustion of LNG. LNG may be cleaner than coal or oil in terms of air pollutant emission, but LNG does not qualify as an alternative source of energy for coal or oil in relation to climate mitigation.

LIFE-CYCLE STAGE	UPSTREAM	LIQUEFACTION	TANKER TRANSPORT	REGASIFICATION	POWER PLANT OPERATIONS
% of life-cycle emissions	16-34%	6-10%	2-11%	1-3%	55-66%

Figure 1. Life-Cycle Emission for LNG⁶

⁴ [IEA, 「Net Zero by 2050, A Roadmap for the Global Energy Sector, SPM」, May 2021](#)

⁵ [Financial Times, Lex in depth : the \\$900bn cost of ‘stranded energy assets’, Feb 04, 2020](#)

⁶ [NRDC, 「Sailing to Nowhere : Liquefied Natural Gas is not an Effective Climate Strategy」, Dec 2020](#)

Reservoir CO₂ becomes particularly problematic for a gas development project. When a gas well is developed, the CO₂ trapped underground together with natural gas (or methane) is also extracted and released to the atmosphere. According to Institute of Energy Economics and Financial Analysis (IEEFA), Barossa field has reservoir CO₂ rate of 18%, which is higher than any other gas fields in Australia, or even around the world.

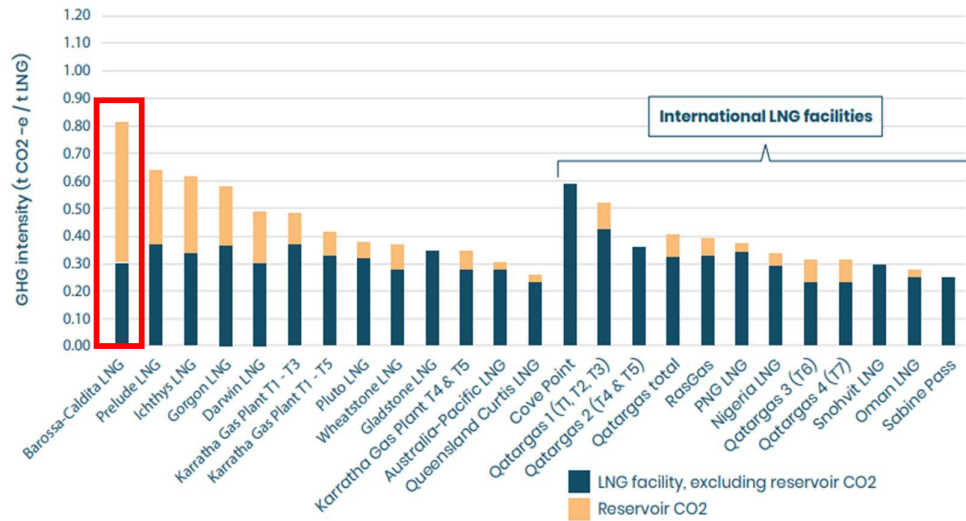


Figure 2. CO₂ Emissions from LNG Projects around the world⁷

According to the submission made to NOPSEMA by ConocoPhillips, the former developer of the project,⁸ significant portion of the CO₂ from the Barossa-Caldita field will be released at the offshore plant (FPSO), and the rest will be released during the processing cycle at the Darwin LNG terminal. Also taking into account the CO₂ emissions from fuel consumption at these facilities, the project will be producing 5.4 million tons of CO₂ every year in order to produce 3.7 million tons of LNG.

Considering that 3.7 million tons of LNG creates 10 million tons of CO₂ when consumed,⁹ the project will effectively add 15 million tons of CO₂ into the atmosphere every year, for its projected life of 20 years. Such amount easily surpasses yearly emissions of typical large-scale coal-fired power plant (2,000MW), and the aggregate emissions of the project over 20 years amount to yearly emissions of an entire nation such as France or Italy.

Barossa-Caldita gas project will go down as the worst fossil fuel extraction project in history. SK Group and SK E&S will face severe criticism from the world for its irresponsible investment into a fossil fuel

⁷ [IEEFA, 「Should Santos' Proposed Barossa Gas 'Backfill' for the Darwin LNG Facility Proceed to Development?」, Mar 2021.](#)

⁸ [ConocoPhillips, 「Barossa Area Development Offshore Project Proposal」, 5 Mar 2018](#)

⁹ 1 ton of LNG will produce 2.693 tons of CO₂ when consumed as fuel according to IPCC methodology.

project that produces more greenhouse gas than fuel, while the reality demands immediate and sharp reduction of existing fossil fuel sources. Please refer to the attached IEEFA report for further details on this issue.

“CO₂-Free LNG” is an egregious greenwashing.

SK E&S announced that it will produce “CO₂-Free LNG” by setting off the greenhouse gas emissions from the Barossa-Caldita project with carbon capture and storage (“CCS”) to be implemented with its partner Santos. However, the claim on so-called “CO₂-Free LNG” is dangerously misleading because the planned CCS will only set off small portion of the total emissions, and the technological and economic feasibility of the CCS project is extremely questionable.

Santos has been developing the Moomba CCS project in Cooper Basin since 2007.¹⁰ After 14 years, the project has only reached a “proof-of-concept” level with 100-ton injection,¹¹ and the review process for technical standards and methodology for carbon credits are still incomplete. It is unclear whether Santos will be able to inject 1.7 million tons of CO₂ through this venture, and more importantly, even if it does, it will only cover 1/3 of the emissions produced by the Barossa-Caldita project. It should also be noted that Moomba CCS is an ‘enhanced oil recovery (EOR)’ project where CO₂ is injected into existing oil wells to increase oil production. Because EOR projects contribute to increased production of fossil fuel, its contribution to climate change mitigation is also limited.

SK E&S indicated plans to capture the CO₂ from the Barossa-Caldita project and store it in adjacent depleted gas wells. This idea also has faced significant challenges in terms of technology and economics. For example, Gorgon LNG project in Australia had invested 24 billion USD in CCS project that captures the CO₂ from the gas well and injects it underground. However, the project faced unexpected pressure related issues during construction which significantly delayed the project. The project capacity only runs at 1/3 of its planned capacity subject to the order from the regulatory authority, DMIRS. As a result, Chevron is now required to look for other offset credits to meet the carbon offset requirements from the state environmental authority.

In conclusion, SK E&S’s so-called “CO₂-Free LNG” has no factual grounds, and even if SK E&S’s plans are implemented, it does not change the fact that the Barossa-Caldita gas development will cause tremendous amount of greenhouse gas emissions. We do acknowledge that development and

¹⁰ [Energy News Bulletin, ‘Moomba touted for worlds biggest CCS project’, 14 June 2007](#)

¹¹ [Santos, ‘Moomba Carbon Capture and Storage Injection Trial Successful’, 22 Oct 2020](#)

implementation of CCS technologies would be increasingly important for climate mitigation. However, any attempt to “greenwash” fossil fuel development with unverified plans for CCS lacking technological or economic feasibility is unacceptable.

The project will cause significant damage to the ecosystem and the local communities.

We also have grave concerns regarding the damages to the ecosystem and the local communities. The gas field and the 260km pipeline that connects the field to the onshore terminal intersects the habitat of the endangered Olive Ridley sea turtle and the Australian Flatback sea turtle, and therefore is likely to cause serious threat to the endangered species in Australia once the construction commences.

The gas field also sits in two of the main commercial fishing grounds that supply Australian markets with tropical snapper and the gas pipeline runs through important fishing grounds close to the local communities, threatening the livelihood and the food supply of the local fishers.

The First Nations People living in the Tiwi Island, where the pipeline goes through, was not provided with due procedures for compensation. The project developers failed to provide sufficient information or opportunity for discussion during the consultation procedure in 2017, and they did not provide any support for people whose first language is not English. Please refer to the attached report by Jubilee Australia Research Centre, Australia Institute and The Environment Centre NT regarding this issue.

We ask SK Group and SK E&S to carry out their ESG initiative.

Last year, South Korean government announced its 2050 carbon neutrality goals, and SK Group and its affiliate companies presented its forerunning climate package including RE100, fossil fuel divestment, and 2/3 carbon reduction. We believe SK’s decision is based on the acknowledgement that no corporation can be sustainable without immediate efforts to mitigate climate change. The Barossa-Caldita gas project is one of the most carbon-intensive fossil fuel projects in history and sits on the exact opposite side of this vision. Backing this project will raise irreparable damage to SK Group’s value and reputation in the international community. We strongly urge that SK Group and SK E&S immediately reconsider its position on the Barossa-Caldita project.

The undersigned organizations respectfully ask SK Group and SK E&S to use all available lawful means to withdraw its investment in the Barossa-Caldita gas development project. We kindly ask you to

provide us a written response by **6 June 2021**, and we wish to continue the discussion on this matter. Please contact Luke Fletcher (luke@jubileeaustralia.org), Dina Rui (dina@jubileeaustralia.org), or Kirsty Howey (kirsty.howey@ecnt.org) for your response and any inquiries.

Respectfully,



350.org Australia



AbibiNsroma Foundation



Action Aid Australia (AAA)



Australian Conservation Foundation (ACF)



Australian Religious Response to Climate Change (ARRCC)



BigWave



Centre for Climate Safety



Climate Action Moreland



Climate Youth Emergency Action



Conservation Council of Western Australia (CCWA)



Environment Centre NT



Friends of the Earth Australia



Friends of the Earth Japan



Friends of the Earth US



Greenpeace Seoul



Gyugnam Climate Emergency Action Network



Gyugnam KFEM



JACSES



Jubilee Australia Research Center



Korea Federation for Environmental Movements (KFEM)



Mekong Watch



Natural Resources Defense Council (NRDC)



Neighbours United for Climate Action



Oil Change International



Solutions for Our Climate



The Australia Institute (TAI)



Urgewald