

Hydrogen Energy Supply Chain (HESC) Project

Final Report

COMMERCIAL-IN-CONFIDENCE

March 2022

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Overall Pilot HESC Project progress

This section reports on the overall progress of the Pilot HESC Project and all Other Funded Elements for the Period.

The following sections are NON-Confidential

Executive Summary

The Pilot HESC Project is progressing well overall, and original activities in Australian Portion is close to complete. In response to the extension of Japanese Portion, discussions for the extension of Australian Portion (namely Pre-Commercialisation Phase – PCP phase) has been commenced between Project Partners and States government.

In terms of Latrobe Valley site (SC1-2), Gasification test, including biomass gasification trials was completed on 25th January 2022. Hydrogen was stably generated at Latrobe Valley from gasified Victorian brown coal and biomass. The produced 99.999% pure hydrogen was loaded into the transportation device (SC3). In terms of Hastings site (SC4-5), totally S 47 of hydrogen gas derived from brown coal and biomass was liquefied and stored in LH2 container. Various coordination was conducted to receive LH2 ship (Suiso Frontier) at Hastings, including a risk consultation meeting with relevant authorities and coordination meetings with ship operator prior to the ship arrival. Suiso Frontier arrived at Hastings on 20th January 2022, and LH2 loading operation commenced from 21st January after the ship arrival event. LH2 loading operation completed without any major issues by 24th January, and totally S 47 of LH2 was loaded onto the ship. The ship departed Hastings on 28th January after provision and fresh water supply and garbage removal. In Japanese funded portion, after the manufacturing and commissioning work of the liquefied hydrogen carrier ship (SC6), the ship performed domestic navigation demonstration and completed in October 2021. The remaining approval "ship registry" was obtained on 3rd December 2021, and departed Kobe terminal to sail to Australia on 24th December 2021. After loading operation which is described in above SC4-5 section, the ship arrived at Kobe terminal on 25th February. In terms of Kobe unloading terminal (SC7), various demonstration activities together with SC6 were conducted including LH2 loading and unloading test, which is beneficial to gain sufficient skill for LH2 terminal operation.LH2 carrier ship left Kobe terminal for the port of Hastings on 24th December 2021. After loading liquefied hydrogen derived from brown coal, the ship returned on 25th February 2022.

In terms of the budget, though we are experiencing cost overrun in items of SC2 and ineligible project expenditures for Shared Cost items, the total costs including expenditures to be incurred until the completion of Pilot Project are expected to be within the original budget despite 9 months extension of Pilot Project.

The following provides a summary of the highlights and major milestones achieved (or missed) across the overall Pilot HESC Project in the Period, including:

- Detailed design and engineering:
  - SC1 – Detailed design and engineering were completed.
  - SC2 – Detailed design and engineering were completed.
  - SC3-5 – Detailed design and engineering were completed.
  - SC6-7 – Detailed design and engineering were completed.
- Procurement, Manufacturing and Construction:
  - SC1-2 – Procurement, Manufacturing and Construction works were completed at Previous Period.
  - SC3-5 – Procurement, Manufacturing and Construction works were completed at Previous Period.
  - SC6 – Procurement, Manufacturing and Construction works were completed at Previous Period.

- SC7 – The site construction work for Unloading Terminal (SC7) was completed. Additional modification work for loading arm was completed at the Previous Period.

- Commissioning and Operation
  - SC1-2 – Gasification test, including biomass gasification trials was completed on 25th January 2022. Hydrogen was stably generated at Latrobe Valley from gasified Victorian brown coal and biomass. The produced 99.999% pure hydrogen was loaded into the transportation device.
  - SC3-5 – After the completion of commissioning activities, periodic maintenance operation (i.e. weekly hydrogen liquefier operation) has been carried out. Various demonstration operation according to Operations Plan has been completed in this Period, and the results and findings has been summarized to Operation and Test Report, Appendix-E Totally approx. S 47 of hydrogen gas derived from brown coal and biomass was liquefied and stored in LH2 container. From 21st to 28th January 2022, LH2 loading operation had been carried out and successfully completed to load S 47 of LH2 including S 47 of LH2 derived from brown coal and biomass. (Milestone 18.1 "Demonstration of liquefied hydrogen loading" was achieved.) Liquefaction facility preservation activities have been carrying out after the successful completion of LH2 loading operation.
  - SC6 – Domestic navigation with CCS(Cargo Containment system : LH2 tank of LH2 Carrier) fully filled with LH2 and all tests of technical demonstration for LH2 Carrier was completed in October 2021. The ship registry approval was obtained on 3rd December 2021 after the completion of all demonstration activities in Kobe terminal. Japan (Kobe) – Australia (Hastings) first international voyage was successfully completed with the following schedule.
    On 24th December 2021, departed from Kobe terminal
    On 20th January 2022, arrived at Hastings
    On 28th January 2022, departed from Hastings after the completion of LH2 loading
    On 25th February 2022, arrived at Kobe terminal
  - SC7 – Suiso Frontier berthed on 19th June 2021, the demonstration activities started with Suiso Frontier. After the berthing, joint disaster drills were conducted twice with terminal and ship. Various demonstration activities were completed successfully, including nitrogen gas purging for cargo tank with hydrogen gas, cool-down test for cargo tank, loading test and unloading test. During previous period, due to ship repair works and bad weather such as typhoon, the ship left the shore and we conducted reconnecting the loading arm for multiple times. This allowed us to gain sufficient skill for berthing and loading arm connection. Domestic navigation with cargo tank fully filled with LH2 was started on 15th September 2021 and successfully completed on 3rd October 2021. Ship registration was completed on 3rd December 2021. LH2 carrier vessel left Kobe terminal on 24th December 2021. After loading liquefied hydrogen from brown coal, the ship returned on 25th February 2022. Export and import operations for liquefied hydrogen were completed during this period for the first time in the world.

- Regulatory approvals:
  - SC1-2 – All required approvals were obtained by Previous Period.
  - SC3-5 – All required approvals were obtained by Previous Period.
  - SC6 – The application process for ship registry was obtained on 3rd December 2021 after the completion of domestic navigation demonstration on 3rd October 2021. All the other required approvals were obtained by Previous Period.
  - SC7 - All required approval was obtained by previous period.

- Purchase orders issued:
  - SC1-2 – Procurement works for SC1-2 were completed.
  - SC3-5 – Procurement works for SC3-5 was completed.
  - SC6 - Procurement works for SC6 was completed.
  - SC7 – Procurement works for SC7 was completed.

- Coal Preparation Work:

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- Contracts:
  - Upon the extension of the Pilot Project up to the end of March 2022 which was endorsed by the State, further extension of the contract between HEA and Cox inall Dentsu came to be needed. And then it was endorsed by all parties through the circular resolution dated on 3 February 2022.
  - Specified decision for HEA to get the engagement with PwC in accounting, audit, tax and labour professional consulting services for the fiscal year ended June 2021 and June 2022 was endorsed by all parties at 14th Co-ordination Committee.
- Commercialisation Plan:
  - Marubeni prepared and distributed the draft Final Commercialisation Plan to the Project Partners for review and submitted for approval to the co-ordination committee held on 22 September 2021. After the approval, the Final Commercialisation Plan was submitted to Invest Victoria on 24 September 2022.
  - On 23 February 2022, Marubeni had a meeting with Invest Victoria, Aurecon, and KPMG to discuss the report "Project HESC Commercialisation Pathways Summary" prepared by Aurecon. The four parties confirmed that a number of uncertainties remain in the commercialisation of the project at this time and that the Commercialisation Plan in the HESC Pilot, Milestone 22.1 in the Funding Agreement, was closed. And it was also confirmed that the Milestone 23 post-pilot continuation report would focus on four critical issues described in the Aurecon's report.
    - Intensity of focus on offtake
    - Assessment and mitigation of risks related to CarbonNet
    - Project cost updates and completion
    - Connection between project viability, commercial structure and financing
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After submitting the Technical Due Diligence Report, several meeting have been taken place between Sumitomo and CarbonNet mostly to discuss the next action (deep dive) based on the pending items proposed from HESC in May 2021. Other meeting topics are mentioned as below;
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- Stakeholder Engagement and Communications:

With the departure of the Suiso Frontier from the Port of Hastings on the 28th of January 2022, carrying Australia's first-ever cargo of liquid hydrogen, the Australian end of the HESC Pilot Project was complete.

Supporting the technical and logistical success of the HESC Project was a Community and Stakeholder Engagement (CSE) program that sought to smooth the path for HESC's operational activities.

Since the beginning of the CSE project in 2018, HESC's communications advisors have taken a structured approach to engage with communities and stakeholders to build a social licence, over the three distinct phases the pilot project has been through. These phases are:

The Establishment Phase: This phase was characterised by structured engagement with local government and other authorities in Latrobe Valley and the Mornington Peninsula to secure planning consent for HESC facilities.

The Operational Phase: This phase kept community and stakeholders informed of project progress and success.

The Success Phase: This phase started with the successful production of hydrogen gas in the Latrobe Valley in March 2021 and continued up to the arrival of the Suiso Frontier to collect Australia's first export cargo of liquid hydrogen in January 2022.

Activity was guided by a best practice framework to achieve a social licence for HESC to operate both during the Pilot Project and into the future.

The strategic approach to CSE was reviewed and refined by using insights and learnings gained from community and stakeholder engagement activity being completed during the evolution of the pilot project.

Over the past two years, as the project evolved from the Operational Phase towards the Success Phase, the CSE team worked with Project Partners to reshape the project narrative around 'clean hydrogen' towards 'carbon neutral hydrogen'.

Through active media engagement and the regular release of targeted communications, HESC has developed a robust reputation as a visionary and world-first hydrogen energy supply chain project.

Most recently the CSE team delivered a very significant event marking the arrival of the world's first liquefied hydrogen carrier, the Suiso Frontier. With attendance by leading Australian Federal and State government representatives as well as the Japanese Ambassador to Australia and the Consul General in Melbourne, the event was covered by local and international media with an estimated reach of over 2 billion people. The predominantly positive reception to the project and the acceptance of HESC into the Australian hydrogen energy sector as the most advanced project is testament to the establishment and acceptance of the project here and abroad.

- Government Engagement

The HESC Project enjoys a superlative level of support across the entire Australian political spectrum. Targeted government engagement since 2013 has built trust with the Commonwealth and Victorian Governments (the Australian Governments), both at the strategic (ministerial) and tactical (bureaucracy) levels, which was a key factor in the substantial financial investment the two governments made towards the Pilot Phase of the HESC Project in 2018.

Since the official launch of the HESC Project, HESC Project Partners have been continuing their government engagement activities to ensure ongoing support towards the HESC Project over the course of the Pilot Phase from March 2018 to February 2022. Despite the fluid nature of the political and COVID-19 landscape, the HESC Project's formal Government Engagement Plan provided the guiding structure for government engagement and the following overarching objectives which were delivered upon throughout the entire Pilot Phase:

OBJECTIVE 1: Maintain government support as a key element to the social licence to operate the HESC Project;

OBJECTIVE 2: Ensure key government stakeholders are regularly updated on progress and actively invested in the successful delivery of the HESC Project; and

OBJECTIVE 3: Foster a regulatory environment, both domestically and internationally, conducive to the successful delivery of the HESC Pilot Phase and its commercialisation.

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- Emergency Management
  - Cox Inall (CI) developed the Crisis Communications Plan (CCP) including Crisis Scenarios and Media Responses, align with a project-wide HESC Crisis and Emergency Management Plan (CEMP), in October 2020, and has updated it as per comments from HESC Project Partners.
  - The simulation training session were held twice, on 16 April and 10 May 2021.
  - Please refer to Appendix F for the CCP

- The purpose of crisis management and effective communications is to protect an organisation and its stakeholders from threats and being prepared to prevent or lessen the damage a crisis can do to the HESC project and its reputation. The CCP is process driven and to effectively manage a crisis, it can be defined into three phases: pre-crisis; crisis response; and post-crisis.
- When a crisis occurs, no matter the severity of the incident, it is important to understand what has occurred and the impact it may have on employees, residents, the community and stakeholders. An important component of the prevention and preparedness framework is to have a crisis communications plan in place to address concerns by the community, media and stakeholders.
- This CCP has been reviewed to ensure it is up-to-date and addressing any concerns that may have arisen. It is also the overarching media and stakeholder response document that provides an approved approach for the HESC Partners will respond to incidents that may occur during the pilot project.

➢ Regulatory Approvals

- In November 2021, Sumitomo concluded a service agreement with Aurecon for Regulatory Approvals and Site Option (RASO) study Phase 3. RASO 1 and 2 considered the HESC Full Scale-Commercial Project (FCP) concept. RASO 3 is considering the additional intermediate phases as outlined below.
  ■ Pre-Commercialisation Phase (PCP) from 2021 to 2023 where the Project Partners will undertake design and cost estimates for the CDP, prepare for regulatory approvals and confirm the structure for the Commercialisation Demonstration Phase (CDP) FEED.
  ■ CDP - 2023 to 2033 is a scaled down version of the FCP assets, including lower hydrogen production and transport through the supply chain elements SC1 to SC5 with the addition of domestic supply of hydrogen.
- Considering that Parties made a decision to promote the HESC project to be selected as the hydrogen supply source for the Green Innovation Fund project, the scope of work of RASO 3 was amended to prepare the required document for the Green Innovation Fund project.
- In December 2021, Sumitomo engaged s47B for legal review work in terms of regulatory approvals.

➢ Funding Agreement and s47

- Milestone 21, submission of the report on the Coal Preparation work, was not achieved yet though it is due in September 2021. J-Power sent a draft of the final report to Scientific Advisory Board (SAB) and Office of Projects Victoria (OPV) on 20 August 2021 for their review prior to the formal submission to the State. SAB provided their feedback on the draft report on 14 October 2021 and OPV did on 25 October 2021. In response to those comments, J-Power refined the final report and submitted again on 8 December 2021 and are still awaiting for further comments from these organisations.
- Milestone 22.1, submission of the final Commercialisation Plan, was achieved on 24 September 2021, after the final Commercialisation Plan was endorsed for submission in the 15th Co-ordination Committee on 22 September 2021. The final Commercialisation Plan is now under the State's review and has not approved yet.
- Due to the pandemic, KHI experienced the delay in building the marine vessel, Suiso Frontier, and it gave an impact on the project schedule on Australian side. Therefore HEA requested the State to extend the due date of relevant Milestones and the State issued the letter on 24 November 2021 to accept the request for extension. Now the Completion Date under the Funding Agreement is considered the end of March 2022 and both Milestone 18 and Milestone 20 are due on the end of March 2022.
- Milestone 18.1, demonstration of liquefied hydrogen loading, was achieved successfully and submitted to the State on 2 February 2022. It is still under the State's review.

- JPLV Latrobe Valley is home to 4 full-time and 1 part-time JPLV staff. There were no personnel changes.
- For the PCP activities, the State proposed to undertake PCP activities even before the completion of the Pilot Project with the financial source of the unused funding of the Pilot Project. Then HEA submitted the updated Project Plan for the Pilot Project on 4 October 2021, including the scope of a part of PCP activities and the State accepted it with the letter issued on 6 October 2021. Co-ordination Committee members endorsed the budget for PCP activities through a circular resolution on 14 October 2021.

➢ Preparedness for coal to hydrogen

- Regarding activities in J-POWER portion, after various reviews and tests, CSIRO completed their works and finalised the report. JPOWER has submitted the report to Invest Victoria on 4th August for a review by Scientific and Engineering Advisory Group.

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Milestones

Status of each project milestone is shown in below table.

No	Milestone or Deliverable	Demonstration Deliverable is Complete	Planned completion date	Status with Forecast / actual Completion date
1	1.1 Communication Strategy	Submission of a HESC 'Communication Strategy, Stakeholder Engagement Strategy, Implementation Plan' as per Schedule 9 and approved by the State and such approval by the State shall not be unreasonably withheld or delayed.	June 2018	**Done** 29th June 2018
	1.2 Coal Preparation Work Plan	Submission of the Scope of Works for the Coal Preparation Work and a detailed project plan for the first stage of the work consistent with Schedule 12 and approved by the State, such approval by the State not being unreasonably withheld or delayed.		
	1.3 Project Employment	Employ (and/or second) at least 3 Victorian based Full-Time-Equivalent employees.		
	1.4 VIPP Compliance	Completion and approved by the State of the initial LIDP, in accordance with Schedule 10 such approval by the State shall not be unreasonably withheld or delayed.		
2	2.1 Contracts for Design, Construction and Major Equipment Signed.	Evidence that contracts to the value of at least $10 million in aggregate have been entered into for engineering, design, purchase of equipment or construction for the Project including: • Hydrogen Liquefier Package ordered; and • Contracts signed to complete the detailed design for gas refining package (SC2)	June 2018	**Done** 29th June 2018
3	3.1 Project Plan update and Progress Report Submission	Submission of an updated: • Project Plan consistent with Schedule 2; and • a Progress Report,	September 2018	**Done**

		and then approved by the State, such approval not being unreasonably withheld or delayed.		27th September 2018
	3.2 Submission of an annual report demonstrating progress towards implementation of the VIPP Commitments.	The Recipient may comply with the annual reporting obligation by submitting a report in the form of the LIDP Monitoring Table.		
4	4.1 Project Plan update and Progress Report Submission	Submission of an updated: • Project Plan consistent with Schedule 2; and • a Progress Report, and then approved by the State, such approval not being unreasonably withheld or delayed.	March 2019	**Done** 19th March 2019
5	5.1 Engineering and Site Works at Hastings (SC4 and SC5)	Detailed design for the hydrogen liquefaction and loading terminal in Hastings is complete including: • all planning, building, environmental, occupational health and safety, land access and use approvals or any other approval, permit or licence required to lawfully commence construction of the facilities in Hastings (SC4 and SC5) have been acquired; • all engineering, drawings, models and designs at Hastings are complete and issued to constructors at 'Approved for Construction' status; • the above is made up of: ○ Process design; ○ Process flow diagrams; ○ Process and instrumentation drawings; ○ General arrangement drawings; ○ Earthworks and civil, concrete and structural drawings; ○ Mechanical drawings; and ○ Electrical schematics and diagrams; and • copies of all drawings referred to above to be provided to, or viewable by the State.	June 2019	**Done** 27th June 2019

6	6.1 Engineering and Site Works at Latrobe Valley (SC1A and SC2)	Detailed design for the gasification and gas refining plant in Latrobe Valley is complete including: all planning, building, environmental, occupational health and safety, land access and use approvals or any other approval, permit or licence required to lawfully commence construction of the facilities in Latrobe Valley (SC1A and SC2) have been acquired; • all engineering, drawings, models and designs at Latrobe Valley are complete and issued to constructors at 'Approved for Construction' status; • the above is made up of: ○ process design; ○ process flow diagrams; ○ process and instrumentation drawings; ○ general arrangement drawings; ○ Earthworks and civil, concrete and structural drawings; ○ Mechanical drawings; and ○ electrical schematics and diagrams; and • copies of all drawings referred to above to be provided to, or viewable by the State.	June 2019	**Done** 27th June 2019
7	7.1 Collaboration with Australian Research Organisations	Submission of a report on engagement with Australian Research Organisations including: • details of any MoU for collaboration; and • list of research project proposals and status of the proposals.	June 2019	**Done** 27th June 2019
8	8.1 Commercialisation Plan	Submission of an initial Commercialisation Plan consistent with Schedule 3 and approved by the State in accordance with clause 7, such approval not being unreasonably withheld or delayed.	July 2019	**Done** 31st July 2019
	8.2 Coal Preparation Work	Submission of a report on the Coal Preparation Work, including the following elements as more particularly set forth in Schedule 12; • outcomes on the first stage (desktop review); • detailed project plan for second stage (laboratory work); and • status on third stage (field testing).	July 2019	**Done** 31st July 2019

9	9.1 Project Plan update and Progress Report Submission	Submission of an updated: • Project Plan consistent with Schedule 2; and • a Progress Report, and then approved by the State, such approval not being unreasonably withheld or delayed.	September 2019	**Done** 30th September 2019
	9.2 Submission of an annual report demonstrating progress towards implementation of the VIPP Commitments.	The Recipient will comply with the annual reporting obligation by submitting a report in the form of the LIDP Monitoring Table.		
10	10.1 Commercialisation Plan	Submission of an updated Commercialisation Plan consistent with Schedule 3 and then approved by the State, such approval not being unreasonably withheld or delayed.	December 2019	**Done** 23rd December 2019
11	11.1 Commissioning: Latrobe Valley	Construction is practically complete in Latrobe Valley (SC1A and SC2). Certified copies of certificates of practical completion have been provided by the SPC engaged constructor and approved by the SPC, showing that the plant is ready for commissioning.	December 2020 (varied by a request from J-POWER)	**Done** 18th December 2020
12	12.1 Commissioning: Hastings	Construction is practically complete in Hastings (SC4 and SC5). Certified copies of certificates of practical completion have been provided by the KHI engaged constructor and approved by KHI, showing that the plant is ready for commissioning.	June 2020	**Done** 30th June 2020
13	13.1 Project Plan update and Progress Report Submission	Submission of an updated: • Project Plan consistent with Schedule 2; and • a Progress Report, and then approved by the State, such approval not being unreasonably withheld or delayed.	March 2020	**Done** 30th March 2020

14	14.1 Commercialisation Plan	Submission of an updated Commercialisation Plan consistent with Schedule 3 and then approved by the State, such approval not being unreasonably withheld or delayed.	December 2020 (varied by a request from J-POWER)	**Done** 24th April 2021
15	15.1 Demonstration of hydrogen generation	Evidence satisfactory to the State (acting reasonably) that hydrogen has been generated at Latrobe Valley from gasified Victorian brown coal and loaded into the transportation device.	August 2020	**Done** 24th April 2021
16	16.1 Project Plan update and Progress Report Submission	Submission of an updated: • Project Plan consistent with Schedule 2; • a Progress Report, and then approved by the State, such approval not being unreasonably withheld.	September 2020	**Done** 29th September 2020
	16.2 Submission of an annual report demonstrating progress towards implementation of the VIPP Commitments.	The Recipient will comply with the annual reporting obligation by submitting a report in the form of the LIDP Monitoring Table.		
17	17.1 Commercialisation Plan	Submission of an updated Commercialisation Plan consistent with Schedule 3 and then approved by the State, such approval not being unreasonably withheld or delayed.	December 2020	**Done** 27th December 2020
18	18.1 Demonstration of liquefied hydrogen loading	Evidence satisfactory to the State (acting reasonably) that gaseous hydrogen has been transported to Hastings, and liquefied hydrogen has been generated at Hastings and loaded onto the Liquefied hydrogen carrier ship.	March 2022 (varied by a variation letter)	**Done** 2nd February 2022 (awaiting for the state approval)
19	19.1 Project Plan update and Progress Report Submission	Submission of an updated: • Project Plan consistent with Schedule 2; • a Progress Report,	March 2021	**Done** 31st March 2021

		and then approved by the State, such approval not being unreasonably withheld or delayed.		
20	20.1 Completion of demonstration operation (SC1-SC7)	Completion of each element of the Pilot HESC Project (as detailed in the Project Plan), the Final Report being submitted to the State and then approved (such approval not being unreasonably withheld or delayed).	March 2022 (varied by a variation letter)	To be achieved by acceptance of this Final Report and final LIDP monitoring table
	20.2 Audit Opinion	Submission of an audit opinion consistent with Schedule 5 to the State and then approved, such approval not being unreasonably withheld or delayed.		
	20.3 Submission of the LIDP monitoring table	Submit to the State • a report in the form of the LIDP Monitoring Table; and • a statutory declaration in the form of Attachment 3 to Schedule 10.		
21	21.1 Completion of the Coal Preparation Work	Submit to the State a report on the Coal Preparation Work, including; • outcomes on each stage of the task; and. • details of future activities required to commercialise prospective coal preparation technology/ies.	March 2022 (varied by a variation letter)	June 2022 (Submitted report is under reviewing by the government.)
22	22.1 Submission of the final Commercialisation Plan	Submit the final Commercialisation Plan consistent with Schedule 3, and then approved by the State such approval not being unreasonably withheld or delayed including: • provides evidence that the Recipient or a Participating Organisation has tested (or will test) the domestic Australian market for interest in offtake agreements, • provides details of the opportunities and avenues for Australian industry participation in and access to a domestic supply from the commercial hydrogen energy supply chain; and • detailed timeline and activities required towards a Final Investment Decision for a commercial HESC.	September 2021 (varied by a variation letter)	Submission of the final commercialisation plan approved at 15th Co-ordination Committee on 22nd September 2021. Awaiting for the approval from the state government

23	23.1 Reports on activities performed pursuant to the Commercialisation Plan	The Recipient will provide a written report to the State's reasonable satisfaction outlining activities performed pursuant to the Commercialisation Plan in accordance with clause 7.8 until the earlier of 30 June 2025 or an investment decision has been made.	December 2021 to the earlier of 30 June 2025 or an investment decision is made	To be reported in future
24	24.1 Report on the Outcome of consideration of Commercialisation Plan	The Recipient will provide a report to the State, as per Clause 7.9, detailing the outcome of the investment decision by the earlier of 10 days of the decision or 30 June 2025.	June 2025	To be reported in future

Health, Safety and Environment

The following health, safety and environmental statistics were recorded for the Period:

Health, Safety and Environmental statistic	Number of occurrence for Period
First Aid Injuries	0
Lost Time Injuries	0
Medical Treatment Injuries	0
Near Misses	0
Environmental Events	0

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SC-1: Gasification

This section reports on the progress of SC-1: Gasification for the Period. It is noted that this section will contain high level and non-confidential information only.

The following sections are Non-Confidential

Executive Summary

The following provides a summary of the highlights and major milestones achieved (or missed) for SC1 in the Period, including:

- Overall progress is on the revised schedule which is set out in the amended Schedule.4 of Funding Agreement (Milestones, Timing and Payments)
- Gasification test, including biomass gasification trials was completed on 25th January 2022.
- Hydrogen was stably generated at Latrobe Valley from gasified Victorian brown coal and biomass.
- The produced 99.999% pure hydrogen was loaded into the transportation device.

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SC-2: Gas Refining

This section reports on the progress of SC-2: Gas Refining for the Period. It is noted that this section will contain non-confidential information only.

The following sections are Non-Confidential

Executive Summary

The following provides a summary of the highlights and major milestones achieved (or missed) for SC2 in the Period, including:

- Overall progress is on the revised schedule which is set out in the amended Schedule.4 of Funding Agreement (Milestones, Timing and Payments).
- Gasification test, including biomass gasification trials was completed on 25th January 2022.
- Hydrogen was stably generated at Latrobe Valley from gasified Victorian brown coal and biomass.
- The produced 99.999% pure hydrogen was loaded into the transportation device.

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SC-3-5: Transportation, Liquefaction and Storage & Loading

This section reports on the progress of SC-3-5: Transportation, Liquefaction and Storage & Loading for the Period.

The following section is Non-Confidential

Executive Summary

The following provides a summary of the highlights and major milestones achieved (or missed) for SC3-5 in the Period, including:

- Detailed design and engineering work was completed by Previous Period.
- Procurement, Manufacturing and Construction work were completed by Previous Period.
- All required approvals were obtained by Previous Period.
- All completion of commissioning activities were completed by Previous Period.
- After the commissioning activities, periodic maintenance operation (i.e. weekly hydrogen liquefier operation) has been carried out. Various demonstration items using facility according to Operations Plan has been carried out and the results and findings has been summarized to Operation and Test Report, Appendix-E.
- Total approx S 47 f hydrogen gas derived from brown coal and biomass was liquefied and stored in LH2 container.
- Coordination meeting for LH2 Carrier arrival and LH2 loading operation with local authorities, ship operator and shipping agent were arranged for smooth operation.
- From 21st to 28th January 2022, LH2 loading operation had been carried out and successfully completed to load S 47 of LH2 including S 47 of LH2 derived from brown coal and biomass. (Milestone 18.1 "Demonstration of liquefied hy en loading" was achieved.)
- Liquefaction facility preservation activities have been carrying out after the successful completion of LH2 loading operation. Various stakeholders and authorities including Federal Government, Mornington Peninsula Shire Council visited the liquefaction site and jetty.

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SC-6-7: LH2 Shipping and Unloading and Storage

This section reports on the progress of SC-6-7: LH2 Shipping and Unloading and Storage for the Period.

The following sections is Non-Confidential

Executive Summary

The following provides a summary of the highlights and major milestones achieved (or missed) for SC6-7 in the Period, including:

SC6

- Detailed design and engineering work for SC6 was completed by Previous Period.
- Procurement works for SC6 was completed by Previous Period.
- Construction work for SC6 was completed by Previous Period.
- Domestic navigation with CCS (Cargo Containment system: LH2 tank of LH2 Carrier) fully filled with LH2 and all tests of technical demonstration for LH2 Carrier was completed in October 2021.
- The ship registry approval was obtained on 3rd December 2021 after the completion of all demonstration activities in Kobe terminal.
- On 24th December 2021, LH2 Carrier departed from Kobe terminal for the first voyage to Hastings.
- On 20th January 2022, LH2 Carrier arrived at Hastings.
- On 28th January 2022, LH2 Carrier departed from Hastings after the completion of LH2 loading.
- On 25th February 2022, LH2 Carrier arrived at Kobe terminal.

SC7

- Detailed design and engineering work for SC7 was completed by Previous Period.
- Procurement work for SC7 was completed by Previous Period.
- Site construction work for Unloading Terminal was completed, then facility was transferred to HySTRA from KHI by Previous Period.
- Final inspection of High Pressure Gas Facility by Kobe City Fire Department was completed by Previous Period.
- Commissioning and performance test of LH2 tank were completed by Previous Period.
- All commissioning activities were completed by Previous Period, including self-pressurizing vaporizer, BOG compressor, BOG tank, BOG heater and LAS.
- All regulatory application was approved by Previous Period.
- First Annual inspection was completed by Previous Period.
- The demonstration between LH2 ship and terminal have been started from 19th June 2021.
- LH2 loading and unloading test was completed during Previous Period.
- Domestic navigation with cargo tank fully filled with LH2 was started on 15th September 2021 and successfully completed on 3rd October 2021.
- Support for ship registration completed on 3rd December 2021.
- Export and import operations for liquefied hydrogen were completed during this period for the first time in the world.

- LH2 carrier vessel left Kobe terminal on 24th December 2021. After loading liquefied hydrogen derived from brown coal, the ship returned on 25th February 2022.
- Second Annual inspection was completed in December 2021.

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Common Tasks and Shared Cost Items

This section reports on the progress of the Common Tasks (including Stakeholder Engagement and Communications and Emergency Management (to the extent that it impacts multiple Parties Relevant Portions)) and Shared Cost Items (where relevant) for the Period. It is noted that this section will contain non-confidential information only.

Stakeholder Engagement and Communications

1. Introduction

With the departure of the Suiso Frontier from the Port of Hastings on the 28th of January 2022, carrying Australia's first-ever cargo of liquid hydrogen, the Australian end of the HESC Pilot Project was complete.

Supporting the technical and logistical success of the HESC Project was a Community and Stakeholder Engagement (CSE) program that sought to smooth the path for HESC's operational activities.

This report details and analyses HESC CSE activities in Australia from 2018 to the end of January 2022.

Since the beginning of the CSE project in 2018, HESC's communications advisors have taken a structured approach to engage with communities and stakeholders to build a social licence, over the three distinct phases the pilot project has been through. These phases are:

The Establishment Phase: This phase was characterised by structured engagement with local government and other authorities in Latrobe Valley and the Mornington Peninsula to secure planning consent for HESC facilities.

The Operational Phase: This phase kept community and stakeholders informed of project progress and success.

The Success Phase: This phase started with the successful production of hydrogen gas in the Latrobe Valley in March 2021 and continued up to the arrival of the Suiso Frontier to collect Australia's first export cargo of liquid hydrogen in January 2022.

Activity was guided by a best practice framework to achieve a social licence for HESC to operate both during the Pilot Project and into the future.

The strategic approach to CSE was reviewed and refined by using insights and learnings gained from community and stakeholder engagement activity being completed during the evolution of the pilot project.

Over the past two years, as the project evolved from the Operational Phase towards the Success Phase, the CSE team worked with Project Partners to reshape the project narrative around 'clean hydrogen' towards 'carbon neutral hydrogen'.

Through active media engagement and the regular release of targeted communications, HESC has developed a robust reputation as a visionary and world-first hydrogen energy supply chain project.

Most recently the CSE team delivered a very significant event marking the arrival of the world's first liquefied hydrogen carrier, the Suiso Frontier. With attendance by leading Australian Federal and State government representatives as well as the Japanese Ambassador to Australia and the Consul General in Melbourne, the event was covered by local and international media with an estimated reach of over 2 billion people. The predominantly positive reception to the project and the acceptance of HESC into the Australian hydrogen energy sector as the most advanced project is testament to the establishment and acceptance of the project here and abroad.

This report provides a detailed record of CSE activities and outcomes as the HESC CSE team and Project Partners work towards creating a social licence for the project.

2. Building a social licence

Social licence definition: The level of acceptance by local communities and stakeholders of technologies, organisations and their operations.

Three principles of working towards a social licence guided CSE activity.

Those principles were and continue to be:

- Creating a shared narrative (between the project team, communities and stakeholders)
- Earning community and stakeholder trust
- Becoming a credible voice

This framework underpinned CSE strategies and work plans approved by HESC Project Partners.

Figure 1: CSE Strategy Framework

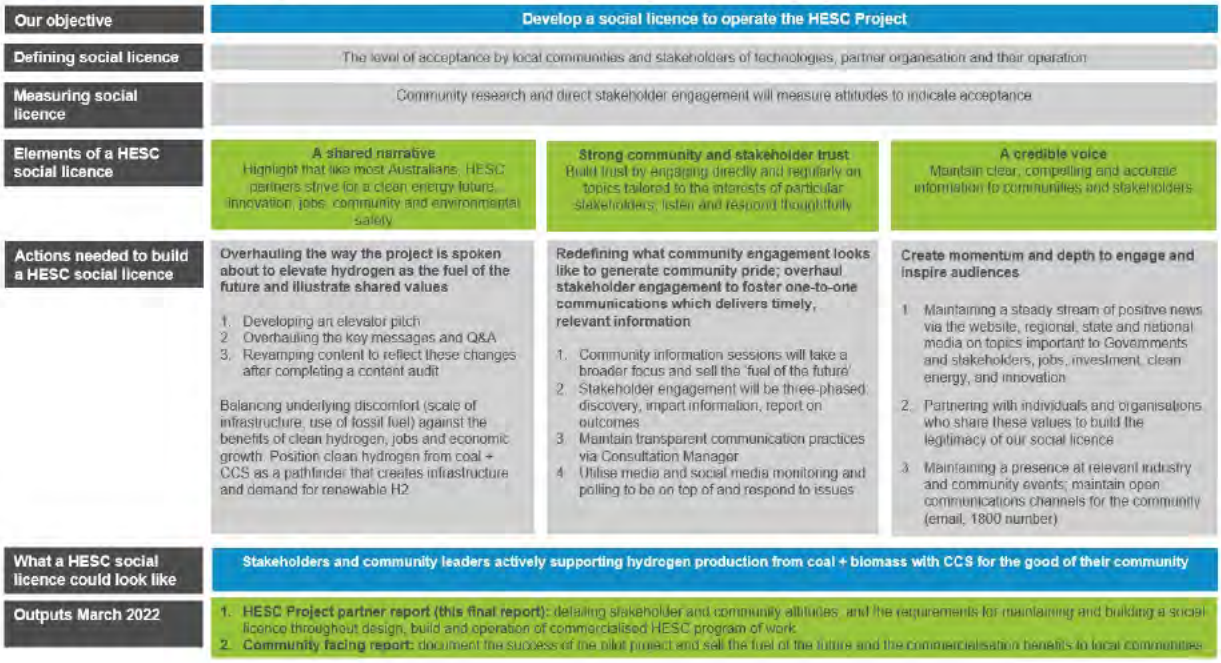

Table 1: Brief analysis of social licence activity

Pillars	Snapshot evaluation
Creating a shared narrative Overhauling the way the project is spoken about to elevate hydrogen as the fuel of the future and illustrate shared values 1. Developing an elevator pitch 2. Overhauling the key messages and Q&A	• Project messaging was overhauled to refer to brown coal and generally coal less frequently – the project's use of coal is inarguably the largest barrier to community acceptance • Project Partners reshaped the project narrative around 'clean hydrogen' towards 'carbon neutral hydrogen' after J-Power/JPLV introduced biomass into the gasification process – early insights show that acceptance would grow if larger quantities of biomass were to be used in the hydrogen gasification process

3. Revamping content to reflect these changes after completing a content audit Balancing underlying discomfort (scale of infrastructure, use of fossil fuel) against the benefits of clean hydrogen, jobs and economic growth. Position clean hydrogen from coal + CCS as a pathfinder that creates infrastructure and demand for renewable H2.	• The three key messages which were developed and have been used as part of the shared narrative over the past three years are: ○ The world-first Hydrogen Energy Supply Chain (HESC) aims to safely produce and transport clean hydrogen from Australia's Latrobe Valley in Victoria to Kobe in Japan. ○ Australia could be the first country to create a thriving hydrogen export industry with huge local economic benefits and contribute to global environmental goals. ○ In a commercial phase, HESC will reduce global CO2 emissions by 1.8 million tonnes per year, the equivalent of taking 350,000 cars off the road. • Please refer to the Content section of this report [6. Content] to see variations of content produced to effectively communicate the project to various audiences • To address underlying discomfort around the use of fossil fuels and uncertainty of CCS, HESC Project Partners have been transparent around their support for shifting to renewable hydrogen – when economically viable and scalable. Important key messages that have been used to demonstrate this include: ○ The infrastructure created by the HESC Project to transport, liquefy, store and ship hydrogen is the same infrastructure renewable hydrogen projects will need. The highly skilled workers it will create shall be job-ready for the future energy sector. ○ This project will contribute to creating markets for hydrogen used in fuel cell vehicles (FCV) and power generation in Japan, and Australia. These are the same markets renewable hydrogen needs to see developed to become viable.
Earning community and stakeholder trust Redefining what community engagement looks like to generate community pride; overhaul stakeholder engagement to foster one-to-one communications which delivers timely, relevant information 1. Community information sessions will take a broader focus and sell the 'fuel of the future' 2. Stakeholder engagement will be three-phased: discovery, impart information, report on outcomes	• The CSE teams undertook extensive research and analysis to identify critical stakeholders to engage with over the three pilot project phases. • With assistance from KPMG and existing Project Partners relationships, high profile briefings have been held with members of government across all levels. • Community engagement was difficult with the challenges of COVID-19. • To overcome this challenge and ensure locals could engage with project representatives, a two-part webinar was held in 2021 with 235 people registered and 187 people attended the webinars, for the 10 am session — the attendance rate was 71.25%. The industry average is less than 50% indicating this webinar was above industry standard • Face to face community drop-in sessions were held in Morwell, Traralgon and Hastings allowing first-hand interactions with members of the community.

3. Maintain transparent communication practices via Consultation Manager 4. Utilise media and social media monitoring and polling to be on top of and respond to issues	• Project partners have engaged with local environmental groups, trades, local business organisations and employment organisations to discuss the project (face to face and online) – by project representatives and supporters proactively engaging, showing up and making themselves available for questions, and for stakeholders to be felt like they are being heard, trust has slowly been built with many key figures across the whole supply chain • Stakeholder engagement effectiveness has been measured by evaluating perceived support and sentiment before engagement and then reflecting on that shift after project partners have engaged - By analysing sentiment and support from stakeholders who have been engaged throughout the lifetime of the HESC Pilot Project, there is a majority of demonstratable and ongoing support for HESC reaching an adequate level of acceptance to operate in a commercial phase. • A stakeholder presentation was revamped to talk to stakeholders about the challenges of climate change and how producing hydrogen now, can help with urgent emissions reductions • S 47
Becoming a credible voice Creating story momentum and depth to engage and inspire audiences 1. Maintaining a steady stream of positive news via the website, regional, state and national media on topics important to Governments and stakeholders, jobs, investment, clean energy, and innovation. 2. Partnering with individuals and organisations who share these values to build the legitimacy of our social licence 3. Maintaining a presence at relevant industry and community events; maintain open communications channels for the community (email, 1800 number)	• Increasing positive media stories secured by the CSE teams has delivered HESC with a robust reputation as a visionary and world-first hydrogen energy supply chain project. • Most recently the CSE team delivered a very significant event marking the arrival of the world's first liquid hydrogen carrier, the Suiso Frontier. With attendance by leading Australian Federal and State government representatives as well as the Japanese Ambassador to Australia and the Consul General, the event was covered by local and international media with an estimated reach of over 2 billion people. The predominantly positive reception to the project and the acceptance of HESC into the Australian hydrogen energy vernacular is testament to the establishment and acceptance of the project here and abroad. • Jeremy Stone (J-Power), Yuko Fukuma (KHI) and Hirofumi Kawazoe (HEA) have extensively participated in broad and focused hydrogen forums – putting faces and voices to the HESC Project and representing HESC Project Partners

3. Community issues and outcomes

3.1. Macro community concerns

Within the two key regions of Latrobe Valley and Hastings awareness of the HESC Project and what the project aims to achieve is high.

The two regions are very different from a land use, economic and population perspective.

Hastings, although home to a commercial port, forms part of the Mornington Peninsula tourist region in Victoria's south and borders environmentally sensitive marine parks.

The Latrobe Valley has been the heart of Victoria's coal industry for over 100 years. The main issues identified, based on community engagement and stakeholder meetings, centre on economic factors and job growth as the region transitions way from being the centre of Victoria's coal-powered electricity sector. The region has been in economic decline for several years.

Yallourn power station is due to shut in 2028 and Loy Yang A and Loy Yang B are both scheduled to shut in 2047, although recent commentary suggests this date may be brought forward to the early 2030s.

The Latrobe Valley has been subject to a range of potential job-generating industrial projects promised for the region, many of which never came to fruition or were cancelled.

There are a limited number of groups within the Latrobe Valley that do not support the use of fossil fuels and are against CCS, however, the predominant sentiment in the 'Valley' is one that supports HESC.

Support for HESC has been steady over the past four years. Most government, community, and stakeholders that HESC engaged with have remained consistent in their view that the project is good for the region, particularly the opportunity to revitalise the local economy and lead to job growth.

A potential challenge that HESC has recently identified lies with the region's key stakeholders – Council, educational and business groups – examining options to develop 'green' hydrogen programs. HESC's revised messaging highlighting the carbon neutrality that the project could achieve through the blending of biomass with coal softens the image of HESC as a coal-driven project. In addition, HESC's clear messaging that it is the only hydrogen project to have successfully demonstrated an integrated supply chain is understood and accepted by local Latrobe Valley stakeholders.

Other concerns such as HESC's reliance on CCS and the general perception that CCS is unproven have been actively countered through a) working closely with CarbonNet to ensure all messages are aligned and agreed and b) through communicating our messages through local media at every opportunity.

In the Mornington Peninsula, the commercial Port of Hastings has operated for 150 years, however changing demographic and socioeconomic characteristics of the region, mainly due to the increased development of the peninsula as an upmarket holiday and wealthy retirement destination, mean that further development plans, even in existing commercial areas, are highly scrutinised.

Small and targeted local environmentalist groups in the area, as well as more organised, generic anti-coal/ pro-sustainable industry groups have identified HESC as a project of interest. Opposition to the project, though minimal, has manifested through social media predominantly and media articles questioning the viability/appropriateness of the project - down to specific concerns around marine life.

A selection of common issues and concerns regarding the HESC Project with ongoing HESC mitigation activities is shown in Table 2:

Table 2: Analysis of broad community concerns

Community Concern	HESC Activities to Mitigate Concerns
There is general public concern about the operational and economic viability of CCS	Ongoing communication with CarbonNet, CO2CRC and the Global CCS Institute has seen messaging on CCS bolstered across all external communication activity. HESC has worked to develop a strong and collegiate relationship with CarbonNet. This has ensured close alignment of messaging and helped secure the presence of Ian Filby in the 2019 HESC webinar. HESC actively engages with CarbonNet when undertaking media activities.
Economic and technical viability of the HESC Pilot Project	While one purpose of the pilot is to explore whether our hydrogen production method is viable, communications has sought to elevate the vast technical experience of all six project partners to give the community confidence in the project's feasibility.
The most common concern raised about HESC is around its use of brown coal to extract hydrogen.	HESC has developed a sophisticated suite of messages that address the rationale for the project and its use of brown coal, based on the resource base available, proximity to a world-class CCS project and the need for a jobs transition in the Latrobe Valley.

3.2. Summary analysis of community concerns in the Latrobe Valley and HESC activities to mitigate concerns

Over the past four years, the main concerns around HESC in the Latrobe Valley have been about the project 'remaining' and fulfilling its promises to the region.

The CSE team and project representatives in the Latrobe Valley have built a strong level of community and stakeholder trust. A respective relationship has also been built by local environmental groups who would be classed as some of the most unsupportive stakeholders in the region.

Furthermore, stakeholders such as Latrobe City Council and the Gippsland Trades and Labour Council have bought into the narrative that has been created around new industry and jobs for the region.

Throughout the project, the CSE team and project partners have developed and implemented a range of communications programs and stakeholder management activities to counter the concerns raised in the Latrobe Valley.

Table 3: Analysis of concerns in the Latrobe Valley

Areas of Concern	HESC Activities
How will HESC contribute to the future economic growth of the region?	KPMG produced an economic modelling report to model the impact that a commercialised HESC project would have on job creation and skill requirements over the life of the project. The report found that over the life of a commercialised HESC project, it would contribute some 30,000 jobs to the Latrobe Valley and Mornington Peninsula regions.

	Stakeholder meetings, a community webinar and a media campaign will support the report's findings and give insight to the community on what kind of opportunities HESC will create in the coming years. HESC has worked actively with educational groups and Council to identify future skills needs and provide relevant information that the region will be able to use to develop a future, local workforce
Concern about by-products from the gasification process. This has not been a significant concern within communities, having been raised only one or two times in community drop-in sessions.	The HESC project has analysed all potential by-product elements and risks and has developed a comprehensive set of Q&As, provided to Project Partners for all public speaking engagements and/or interviews, designed to explain what by-products the project produces and how HESC is managing them in safe and environmentally appropriate ways.
Water usage for the pilot and commercial project	Work was undertaken in this reporting period to agree on a suitable response to this question. This response is only offered on a reactive basis and to date and has satisfied stakeholder queries to date.
The dangers associated with transporting hydrogen. 34% of Latrobe Valley polling respondents raised this issue unprompted	In media interviews and stakeholder/community meetings, we now explicitly talk about the historically safe transport of hydrogen by road to give the community confidence in this activity.
24% of Latrobe Valley polling respondents said they were concerned about increased CO2 emissions	Ongoing communication continues to help locals understand how our project can be deemed clean. Many are receptive to HESC Project Partners support of the certificate of origin scheme which will give the customers a transparent view of the CO2 emissions generated from hydrogen production.

3.3. Summary analysis of community concerns in Hastings and HESC activities to mitigate concerns

Over the past four years, the main concerns around HESC within the Hastings and Mornington Peninsula regions have remained relatively stable and consistent. There are five key areas of concern, which are outlined below.

Throughout the project, the CSE team have developed and implemented a range of communications programs and stakeholder management activities to counter the concerns raised in and around Hastings.

Table 4: Analysis of concerns in Hastings

Areas of Concern	HESC Activities
Concerns for marine parks in the Westernport Bay area, particularly the potential for the introduction of marine pests into the area due to the Suiso Frontier.	In response to concerns around the potential introduction of marine pests into the area, HESC commissioned marine pest monitoring to be undertaken before the arrival of the Suiso Frontier, and then again three months after the ship departed (scheduled for April 2022). HESC will release findings of its analysis in mid-2022 to allay concerns of local environmental groups.
The successful campaign by local environmentalists to halt the AGL Crib Point development and the desire to stop any future developments of infrastructure around the port of Hastings.	Despite the proximity of Crib Point to Port of Hastings, polling showed almost no community members confused the HESC Project with the AGL Crib Point Gas Import Jetty. All relevant planning activities in or around the Hastings area are closely monitored by Cox Inall as a matter of best practice process. Throughout the project, HESC has adopted a structured approach to the early identification and adoption of risk mitigation activities where it believes community groups or detractors may be able to leverage planning decisions. HESC will continue to provide clear messaging to differentiate itself from other project planning processes and reactively counter communications from local activists. The Hastings Western Port - Environment and Social issues Facebook page is assumed to be run by members of the community groups that HESC has engaged with. With a following of just over 1K and little to no engagement on posts, the Facebook page frequently uses any article written about or related to HESC as an attempt to discredit the project. Given this account reaches community members around Hastings, we aim to correct misinformation published on this page when meeting with local community groups (whom we understand contribute to this page). HESC is in active communication with environmental groups to provide information, and counters misinformation when it is identified.
The possibility that HESC will need to dredge for a commercial-scale project and that there will be a substantial increase in ship traffic.	The latest technical advice is that dredging will not be necessary if the Long Island Point at the Port of Hastings becomes the site of an export terminal for commercial. If this view is sustained as HESC moves through the FEED stage, then a significant concern of environmental groups will be addressed. HESC key messages responded to concerns about a substantial increase in ship traffic by highlighting those preliminary plans indicate only one ship voyage per month in a commercial scale HESC. In recent stakeholder meetings, these concerns have not been raised as significant issues, and if raised, stakeholders were satisfied with HESC responses.
The negative perceptions around Carbon Capture and	There is a widespread belief that CCS does not work or is unproven and costly. Through our key messages and regular media interviews, HESC has countered the misconceptions

Storage (CCS) and HESC's reliance on CCS.	about CCS. HESC points to the 27 operational CCS projects underway worldwide and the fact that Australia's most prominent CCS project, Gorgon, has sequestered 5 million tonnes of CCS.
General opposition to fossil fuel-generated energy.	In response to public opposition to fossil fuel use in the extraction of hydrogen, HESC has developed a narrative that the project. Our consistent public message is: HESC's vision is to produce carbon neutral hydrogen by using a mix of Latrobe valley coal and biomass as feedstock, capturing and storing CO2 via CarbonNet and optimising energy efficiency in the HESC supply chain. HESC will reduce global CO2 emissions by 1.8 million tonnes per year, the equivalent of taking 350,000 cars off the road, and create 30,000 jobs in the Latrobe Valley and Mornington Peninsula regions. The public discussion around hydrogen has evolved over the past four years. Key players such as Fortescue Future Industries have promoted electrolysis as the best and only acceptable hydrogen energy production solution. HESC has begun countering this narrative through repositioning itself as a clean, carbon neutral energy solution and a pathfinder project for other forms of hydrogen. This approach is fully aligned to the Federal Governments drive to establish a Guarantee of Origin (GO) scheme, which supports a technology neutral approach, i.e. all technologies for producing clean hydrogen should be included in the scheme, to encourage transparency on carbon intensity of hydrogen. HESC has publicly stated that it supports and will participate in the GO scheme trial in 2022.

4. Community sentiment and awareness of the HESC project

4.1. 2020 Polling results

HESC commissioned a survey in late 2020 to establish a baseline of community awareness about the project with polling conducted in both Latrobe Valley and the Westernport Bay (WPB) area. Some key findings from the polling were as follows:

- Awareness of the project was similar across the two regions surveyed, with around a third being aware of the project. However, message take-outs were quite different by region with WPB region respondents more likely to be aware of the shipping process (25% vs. 9% of Latrobe residents) and opposition to the project (8% vs. 0% in Latrobe Valley), Latrobe Valley region respondents were more likely to be aware of the process involved for creating and converting hydrogen.
- Overall support for the use of hydrogen fuel as a possible solution for energy and environmental challenges was strong (at 60% in the Latrobe Valley region and 58% in the WPB region),

although significantly weaker when generated from coal - particularly among the WPB region respondents at just 23% support.

- Around a quarter of both regions surveyed were unsure (reporting neither) regarding their support towards hydrogen as a fuel source and almost a third were on the fence (again reporting neither) regarding their support or opposition for hydrogen production from coal suggesting there is opportunity to inform and educate about why hydrogen from coal.

Key take-outs from HESC community polling:

The process of using coal to produce hydrogen was considered a satisfactory steppingstone to more environmentally favourable production methods among 72% of Latrobe Valley region respondents and 59% of WPB region respondents:

QUESTION	ANSWER CODE	LATROBE %	WPB %
Q6 If the process of producing hydrogen using coal and capturing carbon was a stepping stone until it was economically possible to extract it from water, would you be more likely to support it?	Yes	72%	59%
	No	23%	36%

Of the three main methods of hydrogen production, over half of WPB region respondents felt hydrogen should not be produced until it was possible to be produced using renewables and electrolysis only. The three methods were preferred equally among Latrobe Valley region respondents:

QUESTION	ANSWER CODE	LATROBE %	WPB %
Q7 Which of these statements you would most favour.	Hydrogen should not be produced until it's possible to be produced using renewable energy and electrolysis only	29%	56%
	Hydrogen should be produced using fossil fuels, where the carbon is captured and stored, until it is viable to use renewable energy instead	32%	30%
	It is OK to produce hydrogen using fossil fuels into the future, as long as the carbon is captured and stored	33%	20%

A third (36%) of Latrobe Valley region respondents and 47% of WPB region respondents were content with the bulk of the hydrogen produced being exported, with preference for Australian resources being used in Australia (although 77% in both regions were more supportive of hydrogen production if it were to be used in Australia). Those community members who were unsupportive of export were asked why, and many said they believe it will lead to Australians paying too much for hydrogen as is now the case with natural gas.

Among Latrobe Valley region respondents, almost two in three (63%) supported producing Hydrogen gas with Latrobe Valley coal (19% opposed and 17% neither opposed nor supported). Concerns focussed primarily on dangers associated with transporting hydrogen (mentioned unprompted by 34% of respondents) and increased CO2 emissions (24%). Some 43% of WPB region respondents expressed concern regarding hydrogen gas being compressed and cooled into liquid form inside a secure facility at the Port of Hastings (17% very concerned and 26% quite concerned), with more residents opposing than supporting hydrogen being shipped overseas from the Hastings commercial jetty (30% support vs 45% oppose). Concerns were predominantly environmental.

Many Latrobe Valley region respondents foresaw increased employment (mentioned unprompted as a prospective benefit by 64% of respondents) and economic benefits (33%, again unprompted) from producing hydrogen with Latrobe Valley coal. While WPB region respondents could also see these benefits to a lesser degree (37% and 22% respectively), they were more likely to report no benefits at all (32% vs. 11% of Latrobe Valley region respondents).

4.2. 2022 Polling Results

As this report was being prepared, top line results were available from polling conducted in February/March 2022 to replicate the questionnaire and sample from 2020. The final report from this polling will be presented in late March.

Top line findings were:

- Project awareness had increased from 37 % to 52% in Latrobe Valley, and, 35% to 42% in the Mornington Peninsula
- Support for hydrogen energy was largely consistent over the two years (60% support in the Latrobe Valley and 55% in the Mornington Peninsula).
- Support for hydrogen made from fossil fuels with CCS until renewables become available was consistent in Latrobe Valley at 32% across both polling periods. In Mornington Peninsula, there was a slight dip from 30% to 27% on this measure, but a slight increase in support for fossil fuels into the future with CCS; both changes in this region were within the margins of survey error so need to be examined further when polling is complete.

4.3. Shaping the CSE Program based on polling insights

The 2020 polling findings influenced community and stakeholder engagement activity in several ways. In response to polling insights, HESC initiated several activities including:

- A significant, sustained and strategic focus on securing media coverage in the Latrobe Valley Express. Four news stories were secured in this local publication from 2020 to 2021 after it was found this was the most popular channel for locals to hear about the project (53% of locals indicated this). Additional local media coverage was secured in the Gippsland times, Gippsland FM, WIN TV and ABC Gippsland.
- HESC stories published in the Latrobe Valley Express resulted in a direct increase in organic HESC website traffic and new website visitors.
- In response to survey findings (19% of respondents said marine pests are a concern) and representations from Westernport environmental groups, KHI/HEA commissioned a marine pest survey in the Western Port Bay (WPB) area before the Suiso Frontier arrival.
- In all stakeholder briefing meetings, HESC has discussed hydrogen/hydrogen truck transport safety in response to 34% of Latrobe Valley polling respondents raising this concern unprompted.
- In response to 56% of respondents from the WPB area agreeing with the statement 'hydrogen should not be produced until it's possible to be produced using renewable energy and electrolysis only', key messages have been tweaked to communicate that the project is a transition project to hydrogen from renewable resources when economically and technically possible.
- 77% of respondents from both areas said they would be more supportive of the project if the hydrogen is used in Australia. A newly developed commercial phase infographic illustrates that liquid and gaseous hydrogen could also be used domestically in Australia. Interactions with stakeholders highlights that the commercial use case for HESC hydrogen was still being developed and discussions with potential customers in Australia and Japan were ongoing.

5. Community and Stakeholder Engagement

Over the past four years, community and stakeholder engagement activities have evolved in line with HESC's development phases.

The early stages of the project required engagement activities align to planning and building activities and were predominantly focused on ensuring that communities were informed of the different stages of the project's rollout and of establishing a baseline understanding of what HESC was, the timeframe for design, build and operate activities, and creating awareness of the project's objectives and benefits.

As HESC moved further into the operational phase through the early stages of 2020 and gained greater public exposure, the Project Partners realised the need to realign communications and engagement activities beyond understanding the project and its activities towards becoming something that stakeholders and communities would actively accept and support.

Accordingly, for the past two years, community and stakeholder engagement activities have worked towards building a social license for HESC.

This realignment of focus resulted in the development of a new narrative – 'the fuel of the future', the 'vision to produce carbon neutral hydrogen' and be 'the world's first hydrogen energy supply chain' – and a more structured and targeted approach to engaging with and managing the media. Despite the onset of the pandemic making it for the most part impossible for direct engagement activities such as drop-in sessions, or in-person meetings, community and stakeholder activities continued through Zoom calls, webinars and direct electronic contact.

The below table illustrates the different stages of the community and stakeholder engagement approach over the past four years, providing illustrative samples of the different priorities and identified community concerns:

Table 5: Stakeholder and Community Engagement Highlights 2018 - 2022

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6. **Submissions and Proactive Community Activities**As part of its ongoing community and stakeholder engagement program, HESC has demonstrated its commitment to working with government and local stakeholders on issues through the preparation of submissions and the commissioning of scientific analysis.

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Commercialisation Plan

This section reports on the progress of the Commercialisation Plan for the Period.

The following section is Non-Confidential

Executive Summary

The following provides a summary of the highlights and major milestones achieved (or missed) in respect of the Commercialisation Plan in the Period:

- Marubeni prepared and distributed the draft Final Commercialisation Plan to the Project Partners for review and submitted for approval to the co-ordination committee held on 22 September 2021 After the approval, the Final Commercialisation Plan was submitted to Invest Victoria on 24 September 2022.
- On 23 February 2022, Marubeni had a meeting with Invest Victoria, Aurecon, and KPMG to discuss the report "Project HESC Commercialisation Pathways Summary" prepared by Aurecon. The four parties confirmed that a number of uncertainties remain in the commercialisation of the project at this time and that the Commercialisation Plan in the HESC Pilot, Milestone 22.1 in the Funding Agreement, was closed. And it was also confirmed that the Milestone 23 post-pilot continuation report would focus on four critical issues described in the Aurecon's report.
    - Intensity of focus on offtake
    - Assessment and mitigation of risks related to CarbonNet
    - Project cost updates and completion
    - Connection between project viability, commercial structure and financing

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Preparedness for coal-to-hydrogen collaboration

This section reports on the progress of the Preparedness for coal-to-hydrogen collaboration work stream for the Period.

The following section is Non-Confidential

Executive Summary

The following provides a summary of the highlights and major milestones achieved (or missed) in respect of Preparedness for coal-to-hydrogen collaboration in the Period, including:

[Activities of J-POWER/JPLV portion with CSIRO]

- CSIRO completed the final report and JPOWER submitted it to Invest Victoria on 4th August for a review by Scientific and Engineering Advisory Group. Scientific and Engineering Advisory Group is currently reviewing the report.

[Activities of KHI/Iwatani portion with CSIRO]

- CSIRO completed planned commissioning activities in November 2021. After activity-3: commissioning of test facility was completed, CSIRO prepared a milestone report for activity-3. The report was approved by KHI and Iwatani after a review meeting on 8th December.
- CSIRO prepared a final report which includes all past 3 milestone reports and phase-2 proposal at early February. The report was approved by KHI and Iwatani after a review meeting on 25th February 2022.
- Discussions about phase-2 planning was conducted with CSIRO, KHI and Iwatani a couple of times, and CSIRO finalized the phase-2 proposal in December.
- CSIRO prepared a final report which summarises all past 3 milestone activities and phase-2 proposal at early February. The report was approved by KHI and Iwatani after a review meeting on 25th February 2022.

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Collaboration with Australian Research Organisations

This section reports on the Project Partner's collaboration activities with Australian Research Organisations during the Period.

The following section is Non-Confidential

Executive Summary

The following provides a summary of the highlights of the Project Partners collaboration activities with Australian Research Organisations during the Period, including:

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