

# ***INPEX***

## Investor Day 2023

November 27, 2023



Date and time: Monday, November 27, 2023; 14:30 (JST) start, 17:35 (JST) close  
 Venue: Bellesalle Yaesu (and live-streamed online in both Japanese/English)

| Time        | Program                    | Speakers   |
|-------------|----------------------------|--|
| 14:30-14:35 | Opening Remarks            | Representative Director, President & CEO<br>Takayuki Ueda  |
| 14:35-14:50 | Ichthys LNG Project        | Senior Managing Executive Officer, Senior Vice President, Oceania Projects<br>Hitoshi Okawa  |
| 14:50-15:05 | Q&A                        |  |
| 15:05-15:20 | Abadi LNG Project          | Managing Executive Officer, Senior Vice President, Asia Projects<br>Akihiro Watanabe   |
| 15:20-15:35 | Q&A                        |  |
| 15:35-15:40 | Break                      |  |
| 15:40-15:55 | Renewable Energy Business  | Director, Senior Executive Vice President,<br>Senior Vice President, Renewable Energy & New Business<br>Kenji Kawano   |
| 15:55-16:10 | Q&A                        |  |
| 16:10-16:25 | Hydrogen and CCUS Business | Director, Managing Executive Officer, Senior Vice President, Hydrogen & CCUS Development<br>Toshiaki Takimoto  |
| 16:25-16:40 | Q&A                        |  |
| 16:40-16:55 | Break                      |  |
| 16:55-17:35 | General Q&A                | Representative Director, President & CEO<br>Director, Senior Managing Executive Officer, Senior Vice President, Corporate Strategy & Planning<br>Director, Managing Executive Officer, Senior Vice President, Finance & Accounting<br>Takayuki Ueda<br>Kimihiisa Kittaka<br>Daisuke Yamada |

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Ueda: Hello everyone. I am Ueda, the President. Thank you very much for gathering here today in the cold weather. We would also like to thank those who are joining us via Zoom.

This Investor Day is the first of its kind for our company. I would like to briefly discuss the reasons for holding this event. In August, the Company announced its concept on measures to enhance sustainable growth of corporate value.

We believe that it is necessary to promote these three pillars in an integrated manner and will continue to work on them: changing management to be more conscious of capital efficiency, deepening investors' and shareholders' understanding of our growth strategies, and promoting shareholder returns and dialogue with investors.

Today, we have set aside this time to provide domestic and foreign investors with a deeper understanding of our company's current status, future strategies, and thinking.

Today, we will explain the current status of several major projects, including the Ichthys LNG Project, the Abadi LNG Project, and others such as hydrogen, followed by a Q&A session. At the end, we will answer questions about other projects and the Company's overall strategy during the comprehensive session in which I will also participate.

Although there might be some imperfections in today's event, we would like to continue to hold this kind of event in the future. We would like to receive your candid feedback after today's briefing and will strive to make improvements based on it. Thank you in advance for joining this marathon event.

## Ichthys LNG Project

Senior Managing Executive Officer,  
Senior Vice President, Oceania Projects  
**Hitoshi Okawa**



# History of the Project



Okawa: My name is Hitoshi Okawa, Senior Vice President of Oceania Projects. I would like to explain the Ichthys LNG Project. I have just recently returned to Japan after an 18-year stint in Perth, Western Australia.

Although I returned to Japan once during the project, I was in Perth from the launch of the project in 1998 until early November 2023. I will look back on the history of the project with various episodes during that time, and explain the current status of the project, challenges, and future efforts.

The Company acquired its interest in the concession in 1998 and began production in 2018. The last 20 years have been very difficult times with nothing but expenditures. The slide states "start with three staffs" and I am one of these three people. At first, with no base at all in Western Australia and no bank, I was stationed there with a provisional cash of JPY1 million.

First, an office was opened and the project was launched with the directive to finish the first drilling campaign. We drilled three wells in 2000 and achieved exploration success in drilling with all three wells. The site was very excited about the drilling results, and I reported them to the Tokyo headquarters. However, I was told, "What are you going to do when you find halfway gas in a remote area?" With great disappointment, I returned to Japan after my first stint. This is how this project began.

In 2008, we built an LNG plant base in Darwin. I remember very well that it was very painful up to this point. We discovered gas off the coast of Western Australia, so we decided to develop it on land in Western Australia. But at the time, several other companies, so-called the majors, besides us, were trying to develop projects in Western Australia. As you know, Australia is a very strict place to obtain environmental permits. Due to the excessive impact on the environment, we were all requested to develop as a hub in one location. With each company having a different development concept, different timing, and different financial strength, we could not accept this hub concept.

In this situation, as we approached 2008, the Northern Territory government asked us if we would be interested in starting up an LNG plant in Darwin. This was against the backdrop of the Darwin LNG Project, for which ConocoPhillips Company was already the operator.

They said "Darwin in the Northern Territory is gas-ready," and an environment of strong support from the Northern Territory government was created.

However, as you all know, we had to install 890 kilometers of pipeline. The last question was whether this was technically feasible, but when we received word from the technical headquarters that it was okay, we decided to go to Darwin.

As for the 2008 to 2012 FID, we, including the Company, realized that the Ichthys LNG Project was a substantial find, and with the encouragement of various companies, we were able to get to the FID. That is where we started EPC. The first problem, however, was that we had to utilize contractors from around the world to construct modules, which eventually had to be taken to Darwin and offshore.

Under these circumstances, the project was built with the efforts of 3,300 companies in 41 countries, and ultimately about

30,000 people.

Naturally, it was a very difficult EPC period, but we were confident that by going with proven technologies that did not use any undeveloped technology, we would eventually complete the project. However, this project was launched under difficult circumstances of delayed schedule and increased costs. Production then began in 2018 and continues to this day.

The important points in this history are the decision on the construction site and the lack of human resources. As you all know, INPEX was not known in the world at that time. This period was the most difficult because it was a time when politicians had the image of INPEX as a weak company and it was said that there was no way the Japanese could do it.

Although it took time and incurred cost during the EPC, it has been in stable operation for the past five years since its completion.

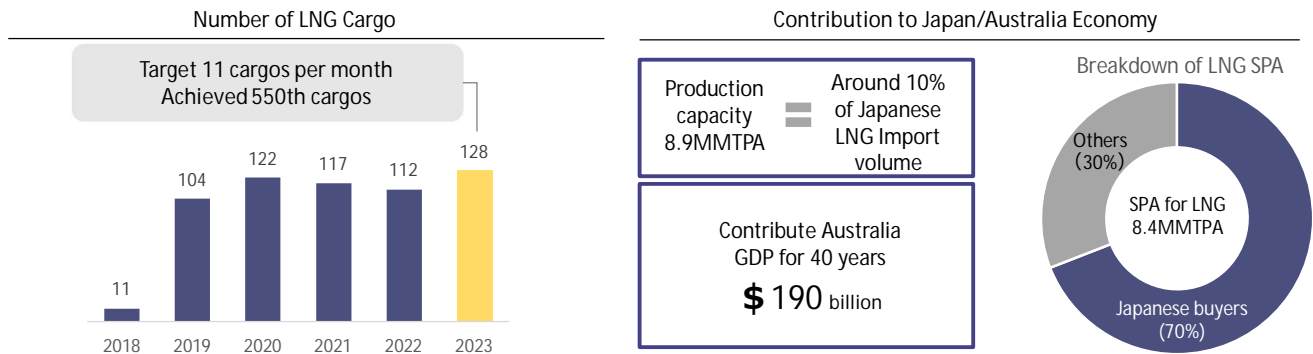
# Current status of Ichthys Project



Aim to increase the LNG production capacity for stable production of 9.3million tons per year

- Improvement on the equipment that constrains facility capacity
  - Upgrading cooling systems at onshore LNG facilities
  - Countermeasures for the vibration of equipment
- Confirmed the improvement of facility capacity. Continue further improvement of the utilization rate of the facilities

Supply of gas to the Northern Territory at any time



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I will explain the current situation in detail. Regarding the establishment of a stable production framework of 9.3 million tons per year, as communicated in the mid-term management plan, the annual production volume is determined by the production capacity of the offshore wells, the processing capacity of the onshore facilities, and then the ratio of operation.

If the average annual onshore production capacity, which is also matched by offshore capacity, is, for example, 108% and the utilization rate is 86%, 9.3 million tons per year can be achieved.

Currently, our onshore facilities have 108% capacity and are in constant production, which means that we can produce that volume at 86% capacity utilization without any accidents. After five years of production, we are currently at 998 cargos and will celebrate 1,000 cargos by the end of the year.

This 1,000 cargoes is not only LNG, but also includes LPG and offshore and onshore condensate cargoes. This will be accomplished in early December. I, too, am deeply moved by the fact that we have been able to operate stably for five years.

The challenge for the future is the need to take on the challenge of stable production. Over the past two years, we have undertaken a major shutdown and other measures to improve the health and strength of the facility. Due to the complexity and enormity of the facility, the challenges will not go away. We will continue to consider risks in our assignments, but small-scale problems will occur.

Production in 2023 was also slightly lower than originally planned due to a series of small-scale problems. Nevertheless, we expect to be able to produce 128 cargos in 2023. It is a sign of increased production capacity compared to the past years.

## Ichthys development project

- Drilling additional production wells
- Confirm good reservoir property of deeper reservoir
- Construction of additional equipment at offshore facility for the stable production

## Development study of the surrounding area

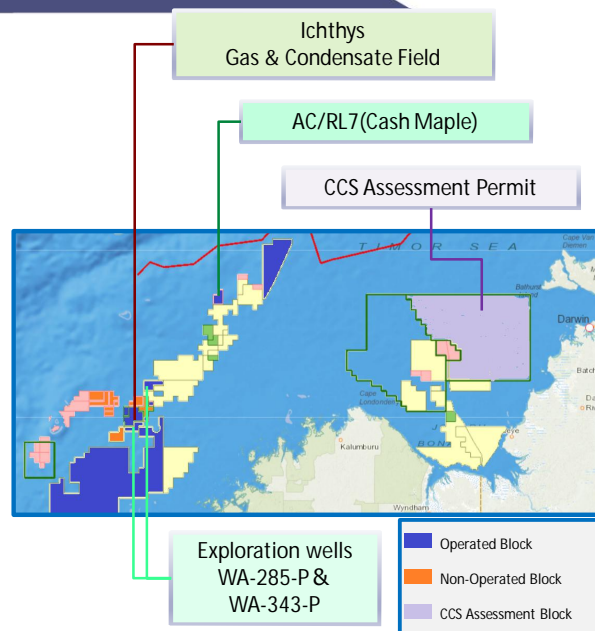
- Acquired stake in AC/RL7 Block (Cash Maple), the discovered and undeveloped Gas-condensate Field located approximately 250 kilometers northeast of the Ichthys Gas-condensate Field
- Assuming to connect to the Ichthys facility and start production in the 2030s

## Exploration activities in the surrounding area

- Commenced exploration drilling around the Ichthys Field
- Continuing evaluations for other blocks and area

## 3<sup>rd</sup> train expansion

- Continuing evaluation targeting start-up in the 2030s



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We are often asked about our future growth strategy. First, let me talk about the additional development of the Ichthys Project. As production continues, reserves and production will naturally decline. In order to continue a plateau production of 8.4 million tons, we must ensure that we do not lose reserves or production.

What is needed for this is an additional development called backfill. One method is to develop from the gas reservoirs within the actual holdings, and the other is to keep production level by utilizing another already discovered undeveloped structure, or by exploration.

In all, Ichthys plans to drill 50 wells. We have now finished drilling 26 wells and are producing from 22 wells. Since drilling all 50 wells would be quite costly, we are trying to optimize the wells in this regard.

There are also two gas layers in the Ichthys. One of them is the Brewster formation, which is our mainstay, with many condensate. CO2 content is about 8% to 9%.

The layer below that is the Plover formation. The CO2 content of this formation is as high as about 15%, so if the Plover formation is to be comprehensively developed, CO2 control measures must be taken. We are currently working on that.

Regarding the work to study the development of the surrounding blocks, we need to take on various challenges to maintain the plateau production, not only using our own blocks. We recently acquired a previously discovered undeveloped structure from a company. We believe this will extend the plateau period by about three years.

The acquisition of this block was driven by the hope that, since there are good prospects in the surrounding area, it would be possible to develop them together to extend their lifespan a bit more.

Regarding exploration activities in the surrounding area, two exploration projects are currently planned in the vicinity of Ichthys, and one exploratory drilling has begun. We will reach the target formation by the end of this week.

Even if a small amount is found, it can be commercialized by connecting it to Ichthys. This is a huge advantage.

Although there is a risk of exploration, we dare to take the risk seeking to develop the project.

Third train expansion has become a very important issue. We are looking to expand, first of all, with plateau production well maintained by backfill. Specific progress has already been narrowed down and we are in the process of acquiring a block.

As we begin the process of acquiring interests in Q1 and Q2 of FY2024, I believe our company's name will be disclosed to the public during that process. Until then, please be patient as we will not be able to release any information. However, please understand that we are certainly working on the third train expansion.

As a part of our challenge to achieve net zero emissions by 2050, we aim to supply a stable clean energy.

In addition, as a responsibility to continue operations in Australia, we will promote decarbonization initiatives.

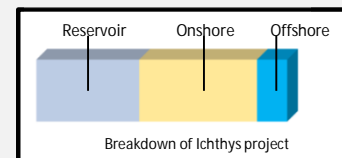
## Specific measures

### 1. CCS project

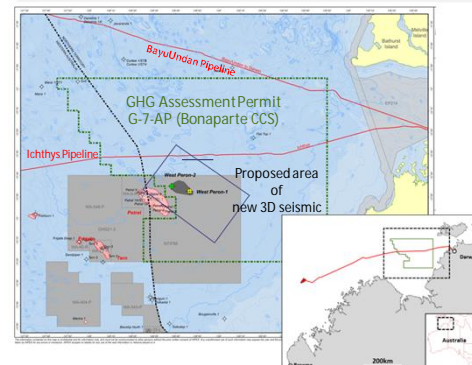
- GHG Assessment permit (G-7-AP) was awarded. The permit is located near Darwin.
- Preparing for new 3D seismic data acquisition and drilling appraisal wells
- Aiming to inject and store underground native CO<sub>2</sub> from the Ichthys Field, following capture at Ichthys LNG onshore facility.
- Also support the realization of a Darwin-based CCS hub project, proposed by Northern Territory Government.

### 2. Further reduction

- Commenced afforestation project via the Wheatbelt Connect JV
- Purchase of ACCUs
- Improving the operation efficiency for LNG facility to reduce GHG
- Under consideration of introducing renewable electricity etc. into LNG facility



Breakdown of Ichthys project  
 July, 2021~June, 2022  
 NGER report (Scope 1)  
 6,739,077 (tCO<sub>2</sub>-e) Top 12<sup>th</sup>



So far I have talked about the production of Ichthys. As you know, there is a very strong wind against us. Without a firm commitment to addressing climate change, the very survival of Ichthys itself will become difficult. As we say, "Maintain license to operate," we are in a situation where we must firmly address climate change as part of our responsibility to continue to operate in Australia. Therefore, we are currently considering three pillars. One is to conduct CCS (Carbon dioxide Capture and Storage) well and bury the CO<sub>2</sub> that comes out in the ground. Second, both offshore and onshore facilities burn fuel, which produces CO<sub>2</sub>. We are considering electrifying this and we need to proceed with de-carbonization of this CO<sub>2</sub>. We believe that these alone is not enough, and as a third initiative, we are currently promoting a tree-planting project in Western Australia. We would like to combine these three pillars to address CO<sub>2</sub> emissions in the future.

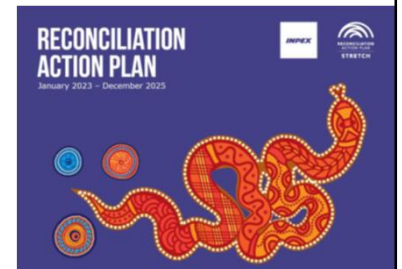


Employer of Choice : Be conscious of continuous employment and a desirable workplace

Partner of Choice : Be the company of choice for governments, industries and stakeholders  
Strengthening relationships, support for strengthening ESG, etc.

Contribution to Local Communities

- 1) Reconciliation Action Plan 2023-25
  - Further improvement of two-way relationships     ■ Promoting reconciliation
  - Promoting understanding of culture and history     ■ Improve employment outcomes
  - Creating opportunities for educational, economic and social development
  - Support for social, cultural and economic opportunities
- 2) Larrakia Ichthys LNG Foundation Trust
  - A\$24 million benefits agreement with the Larrakia people of Darwin committed over 40 years
- 3) Scholarship Program by the INPEX Scholarship Foundation
  - From Australia to Japan, from Japan to Australia



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So far I have talked about technicalities. As I mentioned at the beginning, INPEX was unknown and it was very difficult to attract human resources. However, once the final investment decision was made and the project began, we were able to give the impression that the project was the real deal, and from then on we gradually began to attract talent.

However, even if we attract talent, the Australian market for human resources is fluid, and without a solid retention strategy in place, talent will rapidly leave us.

The motto we have adopted in this context is "Employer of Choice" or "Company of Choice." In other words, it means that we should make company-wide efforts to make people want to work for the Company. Currently, this is spreading and the number of people in Australia who feel that INPEX is a good company and want to leave other companies to join INPEX is increasing greatly. Therefore, the concept of "Employer of Choice" has become much more widespread.

Another motto is "Partner of Choice." It is very important that our partners feel that they want to work with INPEX. In particular, addressing climate change, etc., has become a common issue for the industry, and it would be very inefficient to tackle this issue separately for each company. I think it is extremely important to work with other companies when conducting businesses by leveraging each other's strengths and synergies.

And finally, human resources. Since the winners are those who secure good human resources, we will not only secure good human resources, but will also consider how to retain them.

Regarding the contribution to the local community, the presence of traditional owners is important, slightly different from Japan. Aside from our offshore sites, the indigenous people are recognized as traditional owners for the onshore sites.

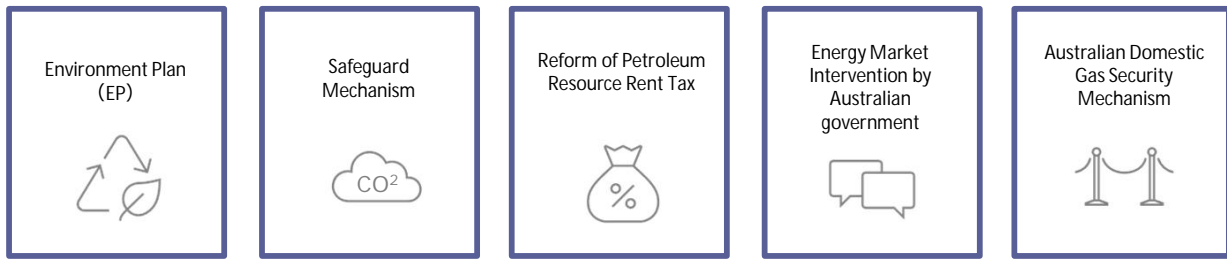
Traditional owners in Darwin do not have native title. Even if they don't have native title, we should not ignore them. So, we proposed a package of AUD24 million over the next 40 years for their future, knowing that they do not have native titles.

From what I have heard, some Western companies are somewhat rough. It seems that many companies only paid the money and asked the traditional owners to follow their lead, which is not a good impression of energy companies.

Therefore, when we first met with them, we had a knee-to-knee discussion about what they need most. We asked them to come up with a wish list and we communicated with them what we could do as a business. They were very respectful of the elderly and had some requests regarding care for them, which we decided to incorporate.

We also discussed the need to educate the younger generation for the future, and we have a very good relationship with them.

I believe that many companies have been working on this, but I think there is a unique Japanese approach. The Japanese have a culture of respect for different cultures and older people, and we have a very close mindset with them, which has resulted in good relationships. We are also promoting other initiatives such as the scholarship programs. Through these initiatives, we are working to solidify our position in Australia.



Various policy changes by the Australian government and others are a challenge for the energy business. Valuing the relationships we have built up so far, we will favour sustainable investment decisions. We will actively work with government and other organizations to maintain trust.

As you are all aware, Australia has a new policy now that the government has changed to the Labor Party. There are five as noted on the slide, but none of them support our business.

Two of these have a particularly large impact. First is the environment plan. For example, when drilling a well, we assess how far the impact of an oil leak would extend to. We initially had to include Indonesia, which is beyond the borders of the country. The laws were very bad and various companies struggled to deal with them, and as a result, contractors and others fled the country, wondering if future development would be difficult in Australia.

However, we have long consulted thoroughly on this point. We were the first to be able to get the approval of the assessment process after the introduction of stricter environmental impact assessment. And we were able to enter into the exploration activities I mentioned earlier.

We will not let our guard down and will continue to strengthen our engagement with stakeholders, as there is a possibility of severe tightening within the Australian government in the future.

Next is the safeguard mechanism. There are several problems here. The Australian government has basically set a goal of net-zero emissions by 2050, and there is a baseline regarding CO2 emissions. They are penalizing those that exceed the baseline, which puts pressure on our economics.

However, as I mentioned earlier, we have always believed that we must work to reduce CO2 emissions from the beginning, and that is why we as operators have been working all along toward the task of burying CO2 at Bonaparte CCS. Therefore, this change has made the policy more stringent, but it is not something to panic about, as we had foreseen it.

Thus, the Australian government has been tightening its policies mainly on environment and others.

Recently, the world, including you, has felt that the promotion of renewable energy has gone too far, and there is a growing awareness that gas will be the main source of energy for the foreseeable future. So, I have the impression that the Australian government has slightly changed course and is now ready to enter into a dialogue with us.

Going forward, we will not be able to meet Australia's emissions standards without CCS. So, with the help of the Japanese government, and with subsidies from the Australian government, we will work to improve the economics and make CCS a business. That is all for my brief explanation.

## Question & Answer

### Q&A: Exploration and Development and Third Train Expansion

Participant: Thank you very much for your first IR Day, which began with a very frank discussion, and you told us so many different stories that I thought you were starting the evening's reception.

I have two questions. The first question relates to what you said at the beginning about exploration and development to maintain plateau production. You mentioned the number of wells.

I think this also relates to the term. How many wells will need to be drilled and for how long? There was also the acquisition of the Cash Maple concession this time. Please let me know if ongoing CapEx will be required to maintain stable production, including the acquisition of additional wells.

Second point, regarding the third train, I would like to know the anteroposterior relation with the Bonaparte CCS, as I believe it is also a major project. You mentioned that there could be concrete steps in the future for the third train expansion. On the other hand, as you explained at the end, I believe that

emission counting is very strict, especially for new exploration, considering the safeguard mechanism. I imagine that the Bonaparte CCS must be in operation before the third train. What is your view on the anteroposterior relation?

Okawa: I will answer your first question first. We are currently conducting two drilling projects. The reason we are doing this now is that we originally thought that production would drop off around 2030. However, we believe that the plateau production will lengthen naturally because recent well productivity has been quite strong.

Our initial assumption was to start drilling wells in 2023 to make up the shortfall around 2030. We assume that the actual production will be ready and recorded a little before 2030.

We are actually planning a well, and CapEx will vary significantly depending on whether this well will succeed or not. In a little while we will see the results and I would like to talk about CapEx based on the development plan including these in the future.

I will answer your second point about the relationship between CCS and the third train. As you say, the third train that is to start up will, I believe, have to be carbon neutral to get a permit.

I believe there are two ways to go carbon neutral. For one thing, it is a prerequisite that the CCS is absolutely up and running. On top of that, another thing is that the facility itself must be carbon neutral, such as electrification, rather than gas or steam turbines.

How to launch such a thing is a challenge for the future. Contractors are already coming up with various proposals because they know it is an absolute requirement. I believe that if we proceed with their suggestions, a carbon-neutral facility will be launched.

Since CCS is the trump card for CO<sub>2</sub> reduction, the calculation is to launch CCS earlier than 2030 by evaluating how CO<sub>2</sub> will eventually be buried underground and how much CO<sub>2</sub> can actually be put into the ground.

The Company asks me, "Can't you do it faster?" I would like to do this as soon as possible, but technical verification is required. And because of liability, the CO<sub>2</sub> we put in must be permanently sealed. Testing, including monitoring, will be required for this purpose. We hope to launch this before 2030.

Q&A: How competitive is Ichthys?

Participant: What is the competitiveness of Ichthys? I believe that when Ichthys first started production, some people said that you were not competitive enough, simply due to your production capacity and the amount of investment.

What are your thoughts on competitiveness among current LNG plants, given the various current regulations, the increased production of the third train, the extension of the plateau, and the fact that it is producing more than it originally did?

Okawa: At first, we received some harsh comments like, "How can INPEX do as an operator with no experience?" Not only in Japan, but also in Australia, they looked at us that way and said, "INPEX will eventually ask us for support."

Production began in 2018, with a focus on stable operations. Other projects that were launched in the same way had various troubles and dealt a considerable blow to the stable supply of energy.

As you know, we have a mission to provide a stable supply of energy to Japan, so our first priority was to continue operations no matter what. That is why, as I told you earlier, we used proven technologies when we began the EPC.

Because of our lack of experience, our approach has been based on the policy of not challenging ourselves too much in order to ensure stable operations. As a result, as I reported earlier, we have been in stable operation for five years and are about to reach 1,000 cargoes.

While troubles do occur even when the majors become operators, the fact that the weak INPEX has operated successfully for five years has forced not only the Australian government but also our competitors to recognize our competence. We believe that this stability is widely recognized and has resulted in considerable competitiveness. Our partner TotalEnergies acknowledges this point.

The challenge going forward is operating costs. There has been a negative legacy of postponing maintenance work due to problems and COVID-19.

We believe that once the maintenance work is completed, operating costs will come down and settle at a certain level. TotalEnergies also acknowledges this. From now on, we would like to reduce costs and

increase production to be more competitive.

We started with a capacity of 8.4 million tons, increased this to 8.9 million tons, and are now up to 9.3 million tons. We understand that by aiming even higher, our competitiveness, including unit costs, will be further enhanced.

Q&A: Initiatives and Evaluation on "Employer of Choice"

Participant: You mentioned that your company's motto, "Employer of Choice," to remain a desired workplace, has been spreading. Please tell us what specific initiatives you are working on and how they are being evaluated.

Okawa: When we set "Employer of Choice" as our goal, the most important thing was the corporate culture. As you know, in Australia, everyone does as they please. For example, when I at the top say, "Let's go right," they look up, down, left, or diagonally.

The challenge was to create an organization in which everyone turned to the right when I said, "Let's go right."

The challenge was that, as we say information silo, the people in charge of the project hold information and the team was not able to feel united. Therefore, we started by completely breaking down the information silo.

Some thought that by passing their information and domain to others, it might lead to losing their jobs, so we encouraged sharing information with everyone to increase synergy and raise the level of organizational strength. 70% of the day was devoted to such communication.

The first thing I found important in this process was to never bring the Japanese way of doing things. I thought that if we suddenly brought Japanese practices into Australia, we would fail because Australia has Australian practices. However, gradually some things had to be changed.

The first Japanese words used in English were "ringi" (request for decision) and "nemawashi" (behind-the-scenes work). These words resonated well with the team. We had frequent meetings, but during the meetings, an agenda item that no one had prepared would suddenly come up, we would argue it, and the discussion would end with, "We have discussed this a lot today" without a conclusion.

I have encouraged that there should be no surprise agenda item, and that through behind-the-scenes works, the results will be achieved more quickly.

Other efforts included a Christmas party. Unlike in Japan, Christmas parties are very important for Western companies. We were unknown at the time, and we focused on getting our partners to come to the Christmas party and think that we were a good company. That is how it spreads by word of mouth. It was the only way. Therefore, we held a Christmas party and tried to create an atmosphere of "good company" and "togetherness" anyway.

As a result, as I briefly mentioned earlier, there are recently many people from other companies who want to work at INPEX. In some cases, we have had people, especially substantial senior people, who are at the executive level of a certain company, want to come to INPEX. However, the dilemma is that now that the organization is in a perfect state, we cannot easily provide such a position. I expect that personnel will be reassigned as the project progresses and the business environment changes.

# Abadi LNG Project

Managing Executive Officer  
Senior Vice President, Asia Projects  
**Akihiro Watanabe**



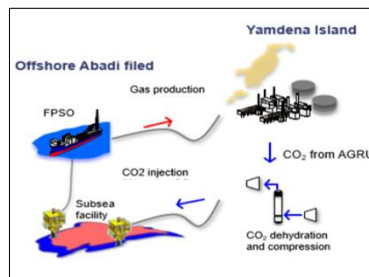
# Abadi LNG Project Outline

- I Competitive and clean project through comprehensive cost optimization and CCS
- I Investability to be maintained/increased through FEED period



Project Economics

Aim to achieve an IRR in the mid 10% range



Stable supply of clean LNG

LNG: 9.5 MTPA  
Pipeline gas: 150 mmscfd



New partners

Contribution to energy security in Asia with national E&P companies (Pertamina and Petronas)

Watanabe: My name is Watanabe, Senior Vice President of Asia Projects. Thank you. Let me explain about the Abadi LNG Project. It is difficult to explain after the very successful Ichthys, but first let me explain what Abadi is. Abadi is an Indonesian word meaning "eternity." The Abadi gas field was discovered in 2000, the same year as the Ichthys discovery.

At that time, our seniors named the project "Abadi" with the hope that it would be something that would "light a fire forever," "contribute forever to the development of our company's business," and "contribute forever to the friendly relationship between Japan and Indonesia."

The Abadi gas field is a huge gas field that can support our business development for a long period of time, although not forever, and can provide a stable supply of LNG over the long term. However, in discussions with the Indonesian government, I have had the experience of being teased many times that "Abadi means to discuss forever," and "Abadi means not to be developed forever."

Here we are finally in a business environment where we are ready to prepare for a launch the project, and today I would like to report on such a situation. We are not looking to do anything reckless, but to develop Abadi as a contribution to our business strategy.

The slides summarize the current status of the project as described in the INPEX Vision @2022, which is to promote the project as a competitive and clean project with the aim of starting production in the early 2030s.

The keywords are competitiveness, or business economics, and cleanliness, or CCS. As you all know, our partner, Shell, decided to withdraw from the project, so we were tasked with finding a new partner. This slide describes the economics of the project, CCS as clean LNG, as well as partnering issues.

First, with regard to the competitiveness, the economics of the business, we are aiming for an IRR in the mid 10% range, as announced in August 2023.

We are not merely aiming for this goal, but have already started discussions with the Indonesian government. While we cannot provide details here on what kind of discussions we are having because it is a negotiation matter, the Indonesian government is well aware of what we are trying to achieve.

We also have a common understanding of the framework for how to achieve this, and when and what to negotiate and discuss.

Next, I would like to discuss CCS. As we have already announced, we submitted a revised Plan of Development (POD) to the Indonesian government in April of this year, which includes CCS in the project scope.

You may be thinking, "It's already been more than six months and it still hasn't been approved," however, we have been in ongoing discussions with the Indonesian government since our submission in April. We continue to discuss and revise the document and

submit replacement versions, including how the text could be revised to make it easier for them to approve.

Based on the results of recent discussions, we cannot give you a specific date, but we have strong hopes that a revised POD will be approved in the very near future.

In addition, as you know, with regard to partners, two new partners are replacing Shell, Pertamina and Petronas. They are state-owned oil and gas companies in Indonesia and Malaysia, respectively. Pertamina has overwhelming experience in oil and gas development in Indonesia.

As for Petronas in Malaysia, it has extensive experience in LNG projects not only in Malaysia but also globally. We also recognize that each of the two companies has a strong demand for LNG as well, and we believe that we have really good companies to partner with this time.

Going forward, INPEX, Pertamina, and Petronas intend to cooperate with each other in the early development of Abadi.

## Floating Production, Storage and Offloading Facility (FPSO)

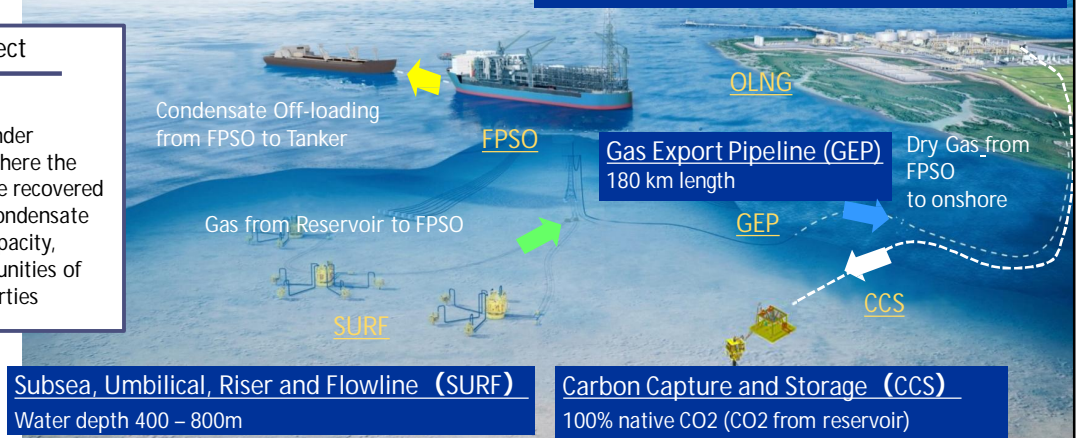
- Receiving reservoir gas from SURF
- Condensate stabilization and offloading to tankers
- Dehydration, dew point control and dry gas export to onshore LNG plant

## Onshore LNG Plant (OLNG)

- Dry gas receiving from FPSO via GEP
- Acid gas removal, dehydration and mercury removal
- LNG production 9.5 mtpa and natural gas supply 150 mmscfd
- LNG storage and offloading

## Adding CCS to the project

- Cleaner LNG project
- 1<sup>st</sup> CCS bundled project under Indonesian PSC scheme where the CCS-associated cost can be recovered from the produced gas/condensate
- With its huge reservoir capacity, potential business opportunities of CCS for CO<sub>2</sub> from third parties



**Subsea, Umbilical, Riser and Flowline (SURF)**  
Water depth 400 – 800m

**Carbon Capture and Storage (CCS)**  
100% native CO<sub>2</sub> (CO<sub>2</sub> from reservoir)

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This is the development concept for the Abadi LNG Project. As for the Abadi project, its development concept was changed by the Indonesian president in 2016 to onshore LNG from the offshore FLNG concept we were pursuing at the time.

In reality, however, as shown in the slide, Abadi's development concept includes both offshore development centered on an FPSO and onshore development centered on an onshore LNG plant, making it an integrated offshore/onshore project.

As you may have noticed from the picture on the slide, this development concept is extremely similar to that of Ichthys.

I believe there are two main differences. One is the offshore floater. In Ichthys, there are two floating production facilities, a CPF and an FPSO, but in Abadi they are integrated into one FPSO due to differences in gas properties.

Second, Abadi has a pipeline about one-fifth the length of Ichthys, which is very similar to Ichthys but a bit shorter than Ichthys.

In addition to that, Abadi is considering adding CCS to its LNG production facilities from the beginning and plans to start CCS at the same time LNG production begins.

This is the content of the revised POD that we have recently submitted to the Indonesian government. If we obtain the approval of the Indonesian government for this content, and if it is actually realized, we believe that this will be the first project of its kind in Indonesia in the two points that I am about to share with you.

The first is that the project is to implement CCS as soon as production begins. The second point concerns the cost of CCS. We are engaged in the LNG development business based on a Production Sharing Contract (PSC) with the Indonesian government. The cost of this CCS will be recovered from future production revenues as a PSC eligible project.

We believe that this will be the first CCS project in Indonesia in that the cost of CCS will be recovered by the PSC. In terms of starting CCS at the same time as production begins, this will lead to the cleaner LNG that we have set forth. In addition to this, we believe that the economics of the business are maintained and strengthened in the future in that costs are recovered through production.

I will go back to the approximation with Ichthys. Since we are pursuing a similar development concept to that of Ichthys, we are considering mobilizing personnel in Perth who have experience in Ichthys development to work on Abadi.

Also, I mentioned earlier that our two partners have extensive experience. We hope to gain seconded staff from those companies as well and utilize their experience and strengths.



I Drive the project with partners toward early production start while keeping due consideration for the project economics



Present

- n New partners
- n Revised Plan of Development
- n Production Sharing Contract Amendment



On-site survey

~Final Investment Decision (Mid 2020s)

- n Engineering (G&G surveys, FEED)
- n Marketing (Securing gas buyers)
- n Financing
- n Permits (Environment, Land procurement)
- n EPC tenders (Pulling in capable contractors)
- n Project economics (Ensuring profitability (IRR))



~ (Early) Production start

- n EPC implementation (Schedule and cost management)

Here is a summary of our efforts to start production in the future. The specifics are described in somewhat greater detail on the next page and will be explained later.

See lower left of slide. At this time, the new partners have been brought on board and we are awaiting approval of the development plan. Once the POD has been approved, we are considering amending the production sharing contract itself to ensure that the CCS costs will be recovered in the production sharing contract.

As soon as the foundation for implementation of the current project is solidified, we would like to start actual project activities at the end of this year or beginning of next year, and move steadily toward FID.

|           | Item                           | Deliverable/target   | Until FID<br>(Engineering phase)  | Until Production start<br>(Construction phase)                        |
|-----------|--------------------------------|--|---|---|
| Technical | On- / Off-shore<br>G&G Surveys | G&G surveys for plant site<br>and pipeline route               | Incorporating the detailed data into<br>FEED                                  | —   |
|           | FEED                           | Optimize engineering for<br>construction                       | Engineering / Design competition<br>among contractors                         | —   |
|           | EPC                            | Project management to<br>maintain planned schedule<br>and cost | •EPC contracting strategy<br>•Tenders to evaluate technical and<br>commercial | Construction and management<br>by seasoned and capable<br>contractors |
| On-site   | Environment<br>Permits         | Meet the local and<br>international standards                  | Construction/operation planning in line<br>with the standards                 | Complying with the<br>construction-related standards                  |
|           | Land Procurement               | Secure suitable site   | Land securing for LNG plant and<br>offloading facility                        | —   |
|           | Local Community                | Support for community<br>development                           | Implementing community<br>development plans                                   | Creating jobs associated with<br>construction activities              |

The work to be performed is summarized on two slides. We believe there are four major pillars. The first is the project activity itself. After the basic design, called FEED, is done, the construction work, called EPC, is carried out.

Second, we are considering the work of obtaining permits and licenses as the basis for implementing project activities. In addition to environmental matters such as environment plan and obtaining environmental approvals, we would like to work on land acquisition such as plant sites, as well as, in order to maintain social license to operate, local response and community contribution activities, which were also introduced earlier for Ichthys.

We also believe that such activities are extremely important for fundraising.

|                | Item                         | Deliverable/target                        | Until FID<br>(Engineering phase)   | Until Production start<br>(Construction phase) |
|----------------|------------------------------|---|--|--|
| Commercial     | Contracts with gas buyers    | Long-term contracts with credible buyers  | Negotiation on price, quantity, contract period and so forth   | —  |
|                | Financing                    | Financing for LNG facilities construction | Securing support from governmental financial institutions and banks                                    | —  |
|                | Economic competitiveness     | Achieve an IRR in the mid 10% range       | Re-evaluation of the project economics with Indonesian Government based on FEED results                | Maintaining planned schedule and cost          |
| Carbon Neutral | CCS for CO2 from reservoir   | Carbon reduction by CCS                   | Detailed engineering   | Construction management of related facilities  |
|                | CCS for CO2 from 3rd parties | CCS service provision business            | Business development planning, support for regulatory development about carbon credits, CCS hubs, etc. |  |
|                | Other than CCS               | Contribution to carbon neutral/reduction  | Planning of carbon neutral/reduction activities such as tree planting                                  |  |

Third, we are considering all commercial activities, including financing, and marketing of LNG. We will be moving forward with the project activities, permits, and commercial-related activities I just told you about towards FID.

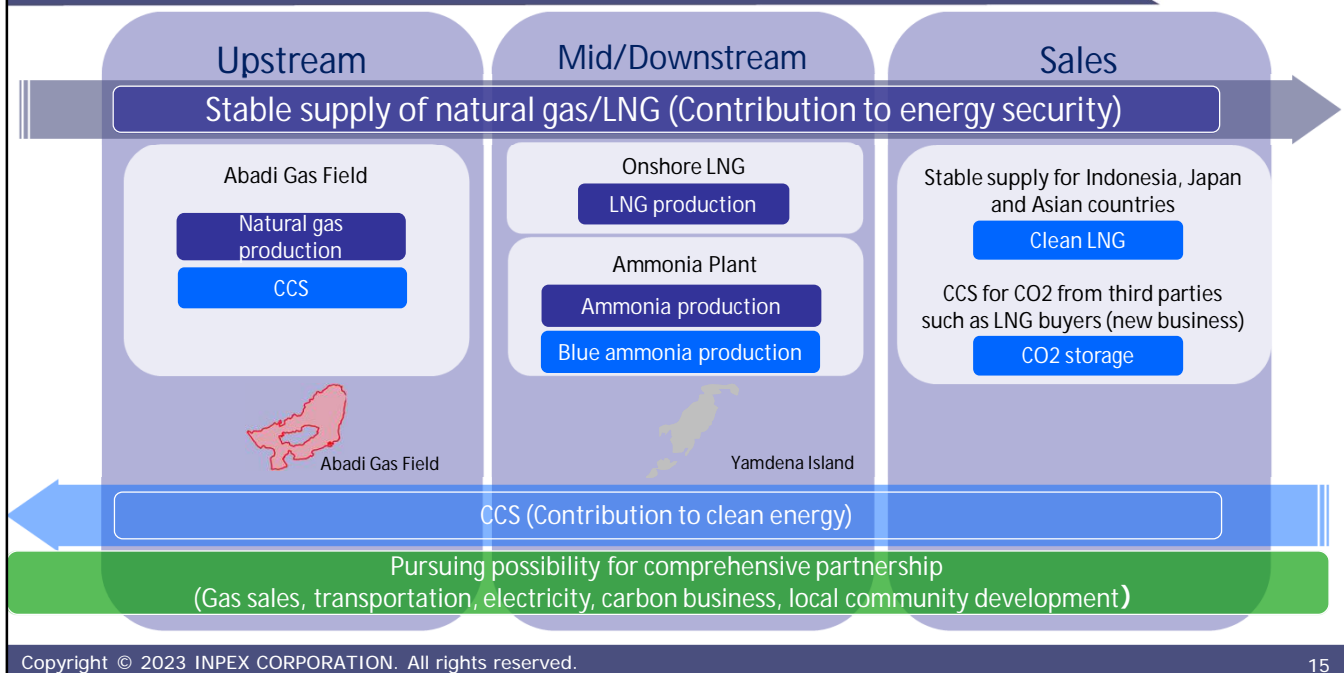
As a result of this process, we believe that we will be able to update our cost and schedule projections, understand how much gas we are likely to sell for, and what form of money we are likely to be able to borrow.

Therefore, we would like to compile this new information and re-evaluate the economics of the project after FEED is over and before FID to determine if it is a potential investment.

In making such investment decisions, it is of course important that they meet our investment criteria. But not only that, we have also agreed to work jointly with the Indonesian government on such a task.

Based on the results, we would like to negotiate revised financial terms or additional incentives from the Indonesian government, if necessary. If all goes well, we will conduct FID, followed by development work known as EPC, and hope to start production in the early 2030s.

Finally, the fourth pillar of the project is the work on CCS and other clean LNG measures. The next slide describes future aspirations for business development leveraged by Abadi's CCS.



We would like to implement what is known as a CCS hub, whereby CCS is initially performed for the project itself, but then CO2 is collected from other companies, etc., and CO2 is injected on behalf of such companies.

As part of this, we hope to build a fertilizer plant or ammonia plant next to the LNG plant to produce blue ammonia and offer it as clean fuel.

Of course, our immediate task is to get Abadi up and running, and that is where we are putting all of our energy. However, to ensure that we do not miss out on future possibilities by concentrating too much on these areas, we are also involved in seed-planting activities, such as talking with related companies about these issues, conducting joint studies, and explaining to the Indonesian government and lobbying for the necessary legislation.

That is all for my explanation. Thank you for your attention.

## Q&A: Investment amount and LNG sales destination

Participant: First, let me ask you about investments. Regarding the investment amount, as of 2019, the estimated development cost for the Indonesian government was between USD18.5 billion and USD19.8 billion.

Regarding this, I don't think a specific amount is yet available of course, as various concepts such as CCS have come in this time, partners have changed, and the cost of materials has gone up due to inflation. Please let me know what assumptions I should make.

The second question is also about future and is about where LNG will be sold. Like for Ichthys, I feel that LNG is a very important part of the energy transition. I know you can't disclose specifics yet, but can you give us a sense of your feeling about your sales partners?

Watanabe: I understand that both of your questions are directly related to Abadi's issues. The status of the project is of course important, but the first thing I must tell you is that, as I mentioned earlier, we are allowed to operate in Indonesia through production sharing contracts.

In other words, since we are a contractor in the eyes of the Indonesian government, what we can tell you is strictly controlled. In this context, we are aware that the Indonesian government is disclosing a variety of information on the amount of investment, more than we have been able to explain.

In this context, I am very sorry, but I believe that some Indonesian government officials have stated slightly different figures in the Indonesian domestic press than what I have just explained. We are aware that many of the figures they are referring

to are based on the results of a study that was done some time ago, around 2019.

As you pointed out, we will need to examine how much validity there is in such costs through our future FEED work, given the recent changes in the market environment.

However, recent changes in market conditions have been so volatile and intense that it is difficult to assume at this point, for instance, how many times the cost will increase and so on. After FEED is over, we would like to have another discussion with the Indonesian government about how to evaluate economic viability and investment potential, and we have agreed to such a framework.

At that point, we would like to re-evaluate whether we can make the investment. This may not be a direct answer, but we have similar concerns, and we are considering how to proceed with the project while recognizing this as a risk, and have agreed on the scheme I have just described with the Indonesian government.

Regarding the second point, the sale of LNG, I believe there are several points to be made. First, unlike Ichthys, we need to raise funds to start the project from scratch. So, we believe that the issue is whether we can secure LNG sales contracts to support the procurement.

In this context, although we feel that the recent energy transition trend has not been very much of a tailwind, recently there has been an increase in the number of companies that say they can purchase our products under long-term contracts compared to a few years ago, partly because of the growing interest in energy security due to the situation in Ukraine and other factors.

Pertamina and Petronas are also interested in purchasing LNG. In addition to the traditional Northeast Asian market, sales in Southeast Asia through them are possible, and the Indonesian government has strong expectations for domestic supply, especially in Indonesia.

While combining these items, we hope to secure a sales destination that will also support our fundraising efforts. We are feeling a lot of challenges, but are hopeful that if we work hard enough, we can make a breakthrough.

Q&A: Reasons for Shell's withdrawal and the Indonesian government's stance

Participant: First, can you tell us how your company sees Shell being left out? I know there are things you don't know, but please tell us as much as possible including your supposition.

Second, it is not clear from the outside what the Indonesian government's stance is. As you mentioned, expectations are probably high because of the gas supply to the country, but on the other hand, the Indonesian government does not seem to be actively encouraging the project.

You might answer that Indonesian time is such a thing. To the extent possible, please tell us what is the current stance of the Indonesian government on the Abadi project.

Watanabe: Regarding the first point about Shell, I think the answer would be, "I am not in a position to answer that question because it is about another company." However, we had been partners with Shell for nearly a decade and communicated with them almost daily.

My impression is that rather than the project itself, they seriously considered how to position the Indonesian upstream business in Shell's overall corporate strategy and, since we are the operator, how the non-operator business should be prioritized in their portfolio. I believe that they have come to their conclusion after seriously considering those points.

While there is no way to guarantee that this is correct, I imagine that it is less a risk to the project itself and

more that there were other priorities in their portfolio strategy.

Regarding the second point, the Indonesian government has designated the Abadi project as one of its national strategic projects. There are only four oil and gas development projects that have this designation, so I am sure that it is of some importance.

In our negotiations with the Indonesian government, we have always been asked to develop the project as soon as possible. At the forefront of the negotiations, I was always negotiating under considerable pressure.

In addition, the Indonesian government has set a goal of achieving production of 1 million barrels per day of crude oil and 12 billion cubic feet per day of gas by 2030. We understand that it should not be unimportant to them, because when Abadi starts production in the future, it will produce 2 billion cubic feet per day at its peak, or one-sixth of the government's goal.

However, like our company, the Indonesian government does not believe that development is all that is required.

Upon Pertamina's joining, we also had ongoing opportunities to consult directly with the Indonesian government. They have also always said that they want the product to be developed in a way that makes economic sense and does not harm the finances of Pertamina, which is a state-owned company. Therefore, we understand that it is in the same position and facing the same direction as our company.

#### Q&A: Cost competitiveness

Participant: Since August of this year, you have had a target IRR for Abadi in the mid 10% range. This appears to be a fairly ambitious level of profitability for an LNG project.

I see that the ROIC figures and other information by segment are quite challenging compared to Ichthys this time. Since the revised POD has also been issued, I believe that this figure is based on a certain amount of accumulation, but I also believe that Abadi would have to be a very cost-competitive gas field for this to be achieved.

I remember the president's previous explanation about the efficiency of the gas coming out of one well. I know it is still difficult to explain quantitatively, so please just give us some points as to what aspects of the project may be cost competitive.

Then, although you may not be able to be more specific, please also explain what market assumptions you envision and whether the figures are based on some kind of plan.

Watanabe: This is also the very challenge that the Abadi project is facing. I understand that your question is about the cost competitiveness of Abadi and, as a related issue, what kind of economics and market conditions we are assuming.

Regarding cost competitiveness, I believe that when we do FID, we have the challenge of saying, "We will be authorized to invest at such and such cost," and whether we can maintain that cost throughout the development and construction period.

Regarding the latter, as I told you earlier, I understand that what we are trying to do this time is like a smaller scale of Ichthys.

I believe that we need to take such an approach that we create a system within our company to manage costs and schedules well, while taking advantage of the experience gained at Ichthys, including both good

things and things that need to be reflected on.

Regarding costs at start-up, it was mentioned earlier that Ichthys will drill 50 wells. While the number of wells needed to start production in Abadi will need to be refined, we believe it will only be about one-fifth of that number.

We also believe that the need for additional development is not strong, and we would like to make the most efficient use of such a gas formation, assuming it is available.

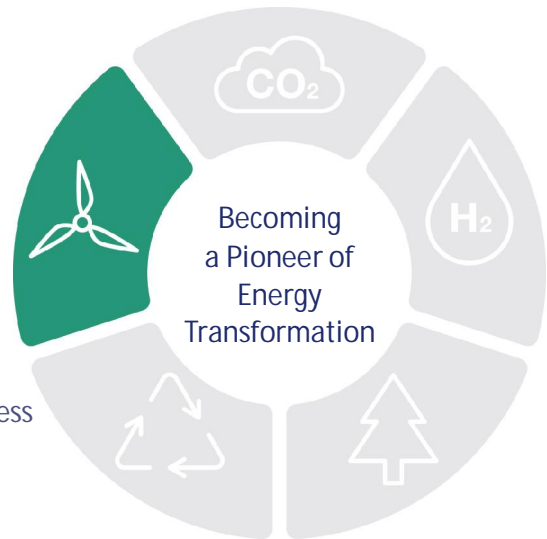
We believe that we cannot be lax in our economic assumptions for Abadi alone. As explained earlier, we are aware that there are competitors within our company, such as Ichthys' third train, and we would naturally rather win the internal competition or be on par with it.

In particular, if we want to do business in Indonesia, we have to obtain a government permit and sell gas under the terms of that permit. Even if we use our own absurd assumptions and recognize that it is economically viable, the government can see the whole thing.

Therefore, while I cannot give you specific figures, I believe that our company will suffer later unless we are transparent and make assumptions that are acceptable to various people. Therefore, although it may not be appropriate to say so, you do not need to worry about it; we believe that we will be able to make investment decisions based on economic evaluation using reasonable assumptions for everyone.

# Renewable Energy Business

Director, Senior Executive Vice President,  
Senior Vice President, Renewable Energy & New Business  
**Kenji Kawano**





## Value up in renewable energy business

### Business expansion in core regions

- n In Australia, agreed to a strategic collaboration with Enel, the world's largest renewable energy company.
- n Not only developing renewable energy power plants, but also building a value chain for renewable power supply.
- n To speed up business expansion, pursue M&A of renewable energy companies in other core regions that can be a platform in the region.

### Synergies with upstream & green hydrogen business

- n Promoting decarbonization of upstream projects utilizing renewable energy, e.g. Hywind Tampen (floating offshore wind farm in Norway)
- n Participate in renewable energy with green hydrogen projects, mainly in Europe, aiming to build an integrated business model in the future

### Aiming to...

- ü establish as a future source of stable earnings
- ü pursue projects that can achieve a ROIC above the WACC

Kawano: My name is Kawano, and I have been in charge of the renewable energy business since January. Our company, as you know, has acquired projects in Indonesia and Europe in 2021 and 2022.

All are brownfields, so-called already in production or nearly in production, and naturally some sales have been recorded. In addition, due to the situation in Ukraine and other factors, we have been conducting our business in a situation where prices have calmed down considerably this year. We are thinking about various ways to develop the projects as our main theme for the future.

As you know, when BP or Shell hold briefings, I believe that they give rather vague explanations in the areas of renewable energy and net-zero. Today I will focus on two main points.

The first point is our future direction for renewable energy. Secondly, as it relates to the direction we are going in the future, this year we formed a company in Australia with Enel on a 50-50 equal footing. We have successfully signed the contract and are in the process of getting it up and running right now. I will talk some about this as well.

First, let me talk about our future direction. Business expansion in core regions is shown on the left side of the slide. As you know, we believe that if you are going to develop a business, you should do it where you know it.

Since there are many political risks and other issues involved in doing business in unfamiliar countries, we would like to continue to do business within the five major hubs we have designated as upstream core areas: Japan, Australia, Southeast Asia, Abu Dhabi, and Europe.

As a first point, we have agreed to work with Enel on a 50/50 basis on what we call a pipeline of potential, still in the structuring stage, deals in Australia with very little goodwill. This is one of the business strategies in our core regions.

Second, basically, we believe that the renewable energy business in the future should not just be about selling electricity. One of the main reasons is that Australia, for example, does not have a subsidy system like Japan's FIT, or a so-called guaranteed minimum price, and is a completely free market. This is also true in the United States.

Therefore, the second round of offshore wind in Europe and Japan will surely take the form of virtually no minimum price in the future. So, we need a different business style. Through our business with Enel, we felt compelled not only to generate electricity, but also to adjust prices, both retail and trading.

As you know, for example, the operating rate of solar power is about 20% at night. The utilization rate for offshore wind is slightly higher than that, a little over 40%, and for geothermal, about 90%, but in any case, our own retail and eventually hedging may be necessary to sell well in the liberalization process.

I think now is a good time to think about such matters, and I believe other companies are thinking about many things as well. Naturally, we do not believe we are competent enough. Since we can send quite a few people to this Australian project, we would like to study such points and develop our business beyond simply selling things for the next project.

Third, although not yet concrete, I believe that M&A should be considered when the right time comes in the future. We know that it is not a good idea to miss the timing, and we want to do so with a clear idea.

See the right side of the slide. The first point is about synergies with the upstream business, which we also do in Australia. We would like to create a kind of value chain within our company in order to cover the energy required for upstream operations with renewable energy and other sources.

Specifically, we are participating in the Snorre oil and gas field in Norway. We have been using the output of Hywind Tampen, a floating offshore wind turbine with an output of 88 megawatts, to operate Snorre since this year. Although capacity is still only about 35% of the total, this is the first project of its kind worldwide.

Thus, we recognize the need for upstream business in the future. I also believe that we have a mission to promote renewable energy projects that will lead to such so-called low-carbon development.

Second, it states "mainly in Europe," but not only in Europe. There are many ways to make hydrogen and ammonia, but in any case, electricity is needed if CO<sub>2</sub> is to be taken through direct air capture in the future.

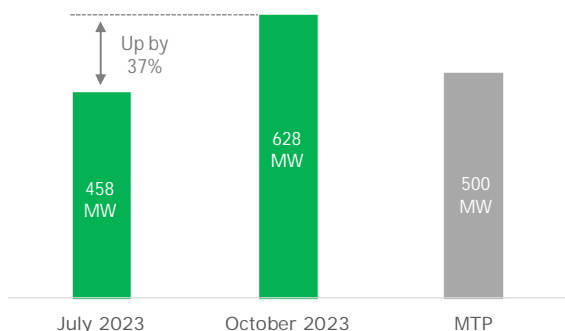
The time will surely come when we will be forced to do such things with renewable energy. We intend to create a value chain by using what we generate directly to make hydrogen or to use it for different things, and we intend to work on renewable energy in these two ways.

As noted at the bottom of the slide, we will naturally move forward with projects that have ROICs that exceed the WACC. I am sure Mr. Yamada will explain ROIC in other areas later.

Also, as I will explain later, there are target figures such as gigawatts in the mid-term management plan, but it is not a question of capacity.

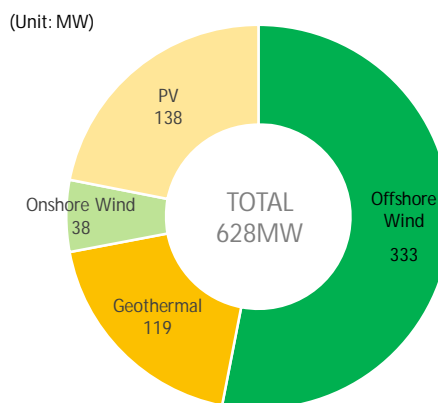
As I mentioned earlier, we hope to increase profitability by the way we proceed with the project or by creating a value chain, so that we can create a project that will surely generate stable earnings in the future without being constrained by capacity.

## Net Generation Capacity



- n Increased through collaboration with EGP
- n Achieved the MTP target of 500MW

## Breakdown (As of Oct 31, 2023)



- n Enhanced involvement in solar and onshore wind power development after commencement of collaboration with EGP

Let me briefly explain our current situation. The left side of the bar graph on the slide is before the collaboration with Enel in Europe. The generating capacity has increased from 458 megawatts to 628 megawatts.

The goal of the mid-term management plan, which will end in December 2024, was 500 megawatts. As it happens, we are achieving our goals. However, as I just mentioned, let me tell you that we are not going forward with capacity as our goal.

The breakdown is shown in the pie chart on the right side of the slide. This is our share of what is in operation. Perhaps in the future, this breakdown will include Enel's new one, which I will discuss later. Naturally, we believe that batteries will be one key addition to this area.

# Renewable Energy Projects (net capacity in brackets)



Europe  
(333MW)



Indonesia  
(113MW)



Japan  
(11MW)



Australia  
(171MW)

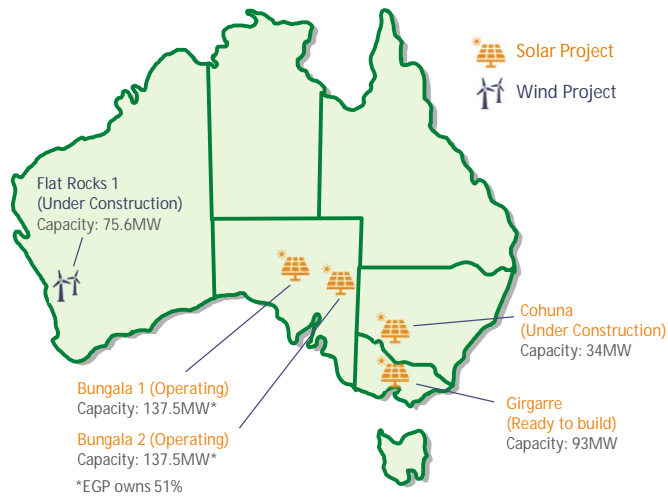


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This is about renewable energy projects. In Indonesia, we are the largest foreign investor in terms of equity capacity.

## EGPA Assets



## Enel Green Power

World's largest renewable energy company in Italy

21 countries  
12,000 sites

Capacity  
**60GW**

## Enel Green Power Australia

PV  
(in operation)  
**309MW**

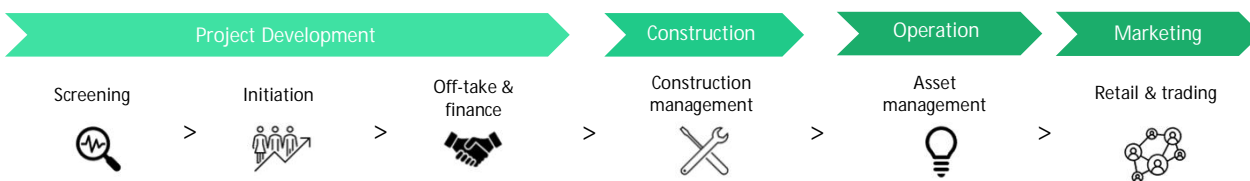
Pipeline of  
several GW

Overview of Enel Green Power Australia. The figure on the left side of the slide shows projects that have almost started operation. The total amount of electricity generated is 309 megawatts. Enel Green Power currently has 60 gigawatts of generating capacity worldwide, making it the Company with the largest equity capacity in the renewable energy industry. We work with this company.

## Initiatives for higher profitability



## Value chain for renewable power supply



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Somewhat overlapping with what I mentioned earlier, I would like to talk about Enel's efforts to become highly profitable, and how it will invest. As you can see on the left side of the slide, we hope to invest about JPY100 billion by 2030. This has to do with whether the project under composition that I mentioned earlier is really possible and whether the economics fit.

As noted in the center of the slide, we have agreed with Enel not to implement any project that does not have a certain return. Naturally, we will join them in determining, based on their experience, how to build the retail and trading value chain in order to increase value outside of power generation. By doing so, we hope to increase the profitability of the Enel business.

If this project goes well, perhaps one-third will be storage batteries, one-third solar power, and one-third onshore wind power. We still believe that the last retail and trading activities will not be possible unless we inevitably incorporate batteries into our business. That is all from me.

Q&A: How did the collaboration with Enel Green Power come about and how competitive is it?

Participant: Regarding the collaboration with Enel Green Power, what led to the establishment of the JV? You mentioned that the relationship was 50-50 equal and there was not much of a big burden of goodwill.

The Company has a significant presence, especially in the renewable energy industry. Please tell us about the background of the negotiations that led to a favorable alliance with such a company and the establishment of a structure that allows your company to do business in Australia on an equal footing.

On top of that, I believe that there are naturally some local companies in Australia. Compared to such companies, what do you see as Enel Green Power's competitive advantage in renewable energy development?

Kawano: Regarding the first point, the negotiation process took about a year. As you know, Australia's goal is to increase its renewable energy ratio from about 20% today to just over 80% by 2030. In this sense, the country has high expectations for renewable energy.

As such, Enel has expanded into Australia. However, they had little experience in Australia and not much equity capacity yet.

In this context, we are a very well-known company in Australia with Ichthys. The amount of investment is also number one among Japanese companies. Therefore, Enel gave us the right to negotiate preferentially, although it was in the form of bids. After all, we believe that our presence in Australia has made it possible for us to conclude a win-win agreement with Enel.

In terms of the second point, competitiveness, they have 60 gigawatts of clean energy, so they are creating different business models in different countries.

As I mentioned earlier, Enel does not simply sell through corporate PPAs, etc. In fact, the retail trading company is also a

subsidiary of Enel Green Power. Naturally, we have that right as well. I think that will differentiate us from other vendors. After all, it is not impossible to just generate electricity, but we hope that how we do it afterwards will be our strength.

Q&A: Specific returns and approach to government assistance

Participant: Two points, please. First, in your policy on renewable energy projects, you mentioned ROIC over WACC. I don't care if it is Australian or global, but please tell us specifically what level of return you intend to achieve.

I think it would indeed be difficult to do as much as E&P, but on the other hand, if you were to go as far as trading, you would be taking on a certain amount of risk. I would like to know the level.

Second, you mentioned storage batteries earlier. What are your thoughts on how much government support you could expect from the renewable energy business or the storage battery business?

Unlike Japan, Europe, the US, and perhaps even Australia, are a world where renewable energy is bought and sold in the marketplace, while Europe has a Green New Deal-like context and the US has an IRA.

I also see that things like government support are to some extent linked to competitiveness. Isn't that the case, or do you think it is important to make good use of government support? Please tell us what you expect the market to be like in the long run.

Kawano: Regarding the WACC for the renewable energy business, this is a very difficult question, but our current WACC is probably hovering around 6%. There may be an explanation later, but we still want to go above that somehow first.

I'm sure there are many cases, but for example, the project rate-of-return must be at least 8% to achieve this WACC. It is very difficult to give you a certain number with interest rates going up, but that is the way we see it.

Regarding the second point, I have heard that in Japan, subsidies are being provided for research and development of various types of batteries, and various developments are underway.

We, too, believe that we must engage in new fields of business, such as the next generation of storage batteries. It would be very difficult to do this with government assistance alone.

In the long run, it would be nice if it were subsidized, of course, but this is not always the case. In Australia, for example, there are some subsidies, but the biggest support is for moves such as building transmission facilities and lines.

We are not totally free of subsidies, but we believe that we cannot conduct a sustainable business unless we can be as self-reliant as possible.

Q&A: Timeline to increase value outside of power generation

Participant: Could you please explain in what kind of time frame you are trying to achieve value enhancement outside of power generation?

Kawano: I will answer including retail and trading, for example. The ones that are already in operation in Australia are so far mainly using basically corporate PPA.

However, we are currently working with Enel to consider various other challenges for the next year and beyond. Some of them will already be in operation next year, and we would like to work on those as soon

as possible.

Naturally, we will have to take risks, but I believe that we will not be able to survive in the future unless we take on new challenges. In terms of time frame, we are looking to acquire such technology and know-how well through the project by around 2030.

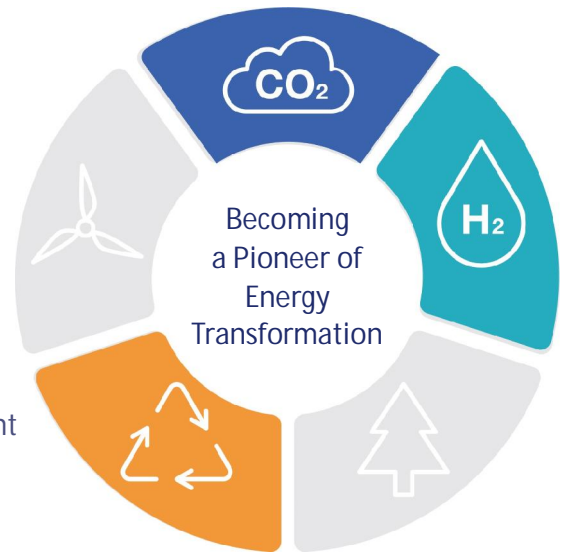


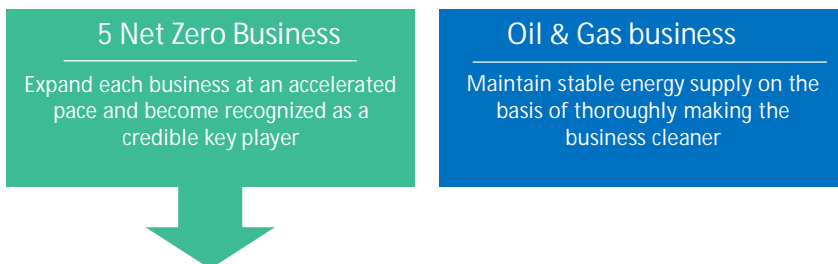
| Projects                      | Country         | Status       | Capacity (MW) | Net Capacity (MW) |
|-------------------------------|-----------------|--------------|---------------|-------------------|
| INPEX Joetsu PV               | Japan           | Operation    | 4.0           | 4.0               |
| Oyasu geothermal              | Japan           | Construction | 15.0          | 6.4               |
| Goto Offshore Wind            | Japan           | Construction | 16.8          | ..(*)             |
| Sarulla Geothermal            | Indonesia       | Operation    | 330.0         | 60.2              |
| Muara Laboh Geothermal        | Indonesia       | Operation    | 85.0          | 25.5              |
| Rantau Dedap Geothermal       | Indonesia       | Operation    | 98.4          | 26.9              |
| Luchterduinen Offshore Wind   | The Netherlands | Operation    | 129.0         | 64.5              |
| Borssele III/IV Offshore Wind | The Netherlands | Operation    | 731.5         | 109.7             |
| Moray East Offshore Wind      | United Kingdom  | Operation    | 950.0         | 159.0             |
| Bungala 1&2 PV                | Australia       | Operation    | 275.0         | 70.1              |
| Cohuna PV                     | Australia       | Operation    | 34.0          | 17.0              |
| Girgarre PV                   | Australia       | Construction | 93.0          | 46.5              |
| Flat Rock Onshore Wind        | Australia       | Construction | 75.6          | 37.8              |
| Total                         | -               | -            | 2,837.3       | 627.6             |

(\*) Not disclosed based on the arrangement between joint venture partners. Total net capacity of 627.6MW does not include net generation capacity of Goto Offshore Wind.

## Hydrogen and CCUS Business

Director, Managing Executive Officer,  
Senior Vice President, Hydrogen & CCUS Development  
**Toshiaki Takimoto**





Target of Hydrogen/CCUS

| CCS•CCUS   |  | e-methane  |   | Hydrogen   |  |
|--|--|--|---|--|--|
| <p>Around 2030</p> <p>CO2 Injection<br/>2.5 MTPA</p> | <p>Around 2050</p> <p>Commercialization of<br/>CCUS Business</p> | <p>Around 2030</p> <p>Production Volume<br/>10,000Nm<sup>3</sup>/h<br/>(60,000TPA)</p> | <p>Around 2035</p> <p>Production Volume<br/>60,000Nm<sup>3</sup>/h<br/>(360,000TPA)</p> | <p>Around 2030</p> <p>&gt;=3 projects<br/>100,000TPA</p> | <p>Around 2050</p> <p>Supply 10%<br/>demand in Japan</p> |

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Takimoto: My name is Toshiaki Takimoto, Senior Vice President of Hydrogen & CCUS Development. Thank you.

The figure on the slide shows hydrogen in light blue, CCS/CCUS in dark blue, and e-methane as a carbon recycling project in orange. In addition to the renewable energy explained by Mr. Kawano, I would like to introduce our efforts related to these three in terms of cleaner energy and our next-generation energy supply business.

Although much of this information has already been made public, I will briefly explain the status of our initiatives.

Last year, we announced our vision of building on our oil and natural gas operations while simultaneously engaging in net-zero operations. In other words, our foundation is to provide a stable supply of oil and natural gas on the premise of thoroughly making the business cleaner.

We would like to use the proceeds to promote cleaner energy through CCS and invest in hydrogen and ammonia in terms of supplying the next generation of clean energy. In this way, we hope to build on our foundation as a supplier of clean energy.

In the vision we announced last year, we set the numerical targets shown at the bottom of the slide. For the CCS/CCUS business, we aim to achieve an annual injection and storage volume of 2.5 million tons for our own concession by 2030. And by 2050, we aim to increase the size and profitability of our CCS and CCUS businesses.

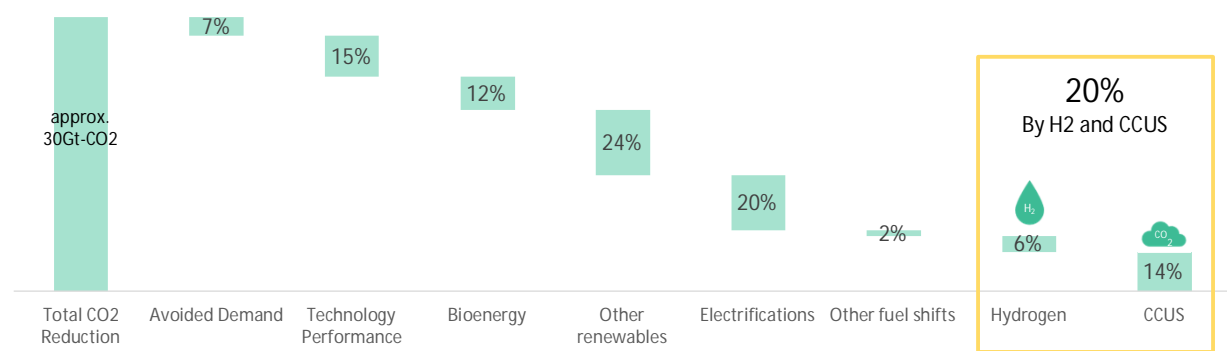
We will produce 60,000 tons of LNG-equivalent e-methane per year by 2030. The scale of the manufacturing operation is 10,000 Nm<sup>3</sup> per hour. As for scaling up commercialization, we are aiming for 360,000 tons of LNG equivalent per year around 2035, and for 60,000 Nm<sup>3</sup> per hour as the scale of production operations.

We aim to commercialize at least three hydrogen projects by 2030 and to produce 100,000 tons of hydrogen equivalent per year as our concession production volume.

In 2050, when new fuels will be widely used, we would like to become a supplier of clean energy, such that we will be responsible for 10% of the domestic demand. These KPIs are presented.

# Why Hydrogen & CCUS?

Hydrogen & CCUS contribution to global CO<sub>2</sub> reduction in 2050



Note: INPEX created based on "Energy Technology Perspective 2020" (IEA)

H<sub>2</sub> and CCUS will play an important role toward 2050, as the benefits of H<sub>2</sub> and CCUS deployment will account for more than 20% of the global CO<sub>2</sub> reductions in 2050.

For INPEX, CCUS is not only a way to reduce CO<sub>2</sub> from its own upstream operations and to obtain a Social License to Operate, but also to create a new business pillar by supplying clean energy to customers.

INPEX aims to be a first mover to gain first-mover advantage, and to commercialize multiple projects by around 2030.

I would like to briefly touch on why we are in the clean energy or decarbonization business.

Carbon dioxide emissions from energy sources are shown on the left side of the graph, and are said to be 26.8 billion tons according to IEA data. We are trying to reduce this to net zero by 2050. Both the Japanese government and our company are committed to this.

How to reduce to net-zero, some of the reductions are described on the slide. There is energy conservation, technological evolution, bio- and renewable energy use, and electrification. Of this total of 30 billion tons, 20% is expected to be covered by hydrogen and CCS.

As part of this effort, we believe that hydrogen and CCS are important to our decarbonization and cleaner-energy efforts. Therefore, we will first reduce CO<sub>2</sub> emissions from our oil and natural gas operations through CCUS.

The other is for CO<sub>2</sub> emitted by third parties. We would like to work on offering our CCS business as a commercialization project to steel makers, power producers, cement companies, and other businesses in need, which are called hard-to-abate.

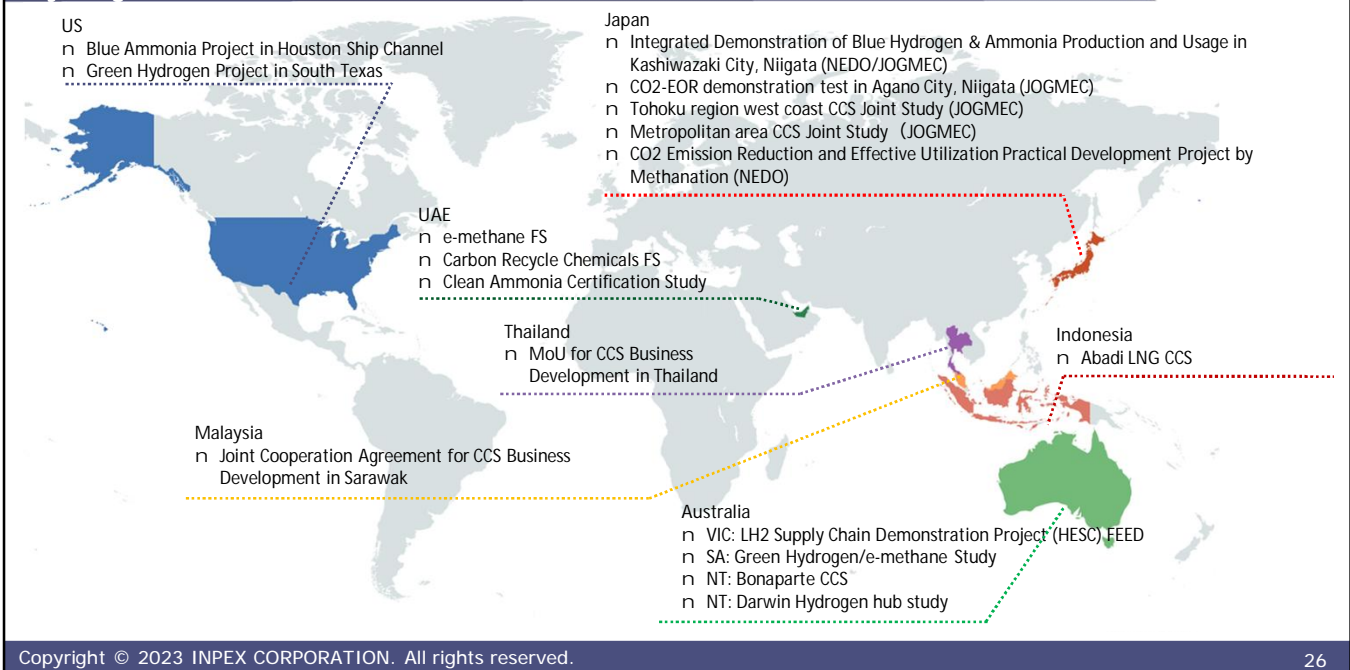
In hydrogen and ammonia, we are currently considering a number of projects to become a supplier of clean energy, and we are considering commercializing some of these projects.

Our goal is to be a first mover and pioneer in this kind of hydrogen, ammonia, and CCS value chain. By 2030, we expect to commercialize 20% to 30% of the projects currently under consideration.

We believe that becoming a first mover and entering the value chain earlier allows us to use our technology more, which is a concrete way to gain pioneer advantage.

## INPEX Activities Hydrogen/Ammonia/e-methane

**INPEX**



With this in mind, this slide shows an overview of the hydrogen, ammonia, and CCS projects currently under consideration on a world map.

As mentioned earlier, our vision states that we will concentrate our business in five core areas. We believe that by conducting hydrogen, ammonia, and CCS business on these core areas, INPEX can be more distinctive and advantageous. We are first considering hydrogen and CCS business projects in Australia, the Middle East, Abu Dhabi, Southeast Asia, and Japan.

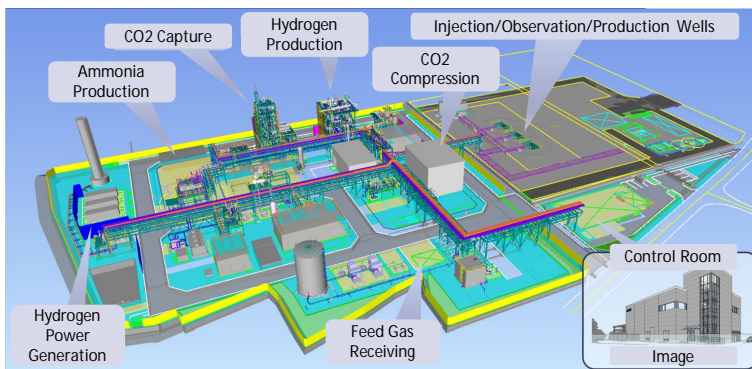
In addition to this, as you all know, the Inflation Reduction Act was enacted in the US last August. We would like to advance our hydrogen and CCS business in the US in addition to our core areas, as it is very competitive compared to our business in other countries.

The major ones are listed here, but two projects that are one step ahead of the others are listed at the top of the Japan area: the integrated demonstration plant for blue hydrogen in Niigata Prefecture, and the construction of a demonstration plant for e-methane, also in Niigata Prefecture.

In addition, regarding advanced CCS projects in Japan that were adopted this year, we are already discussing specific initiatives and projects to implement CCS in Japan.

In Australia, we have Bonaparte CCS, which I mentioned earlier, and we also recently announced our entry into the HESC business, which is a liquefied hydrogen business. In addition, as we announced last month, we have begun studying a blue ammonia project in the US with the aim of commercializing it in Houston. Specific examples of some of these will be presented on the next and subsequent slides.

# INPEX Activities - 1 Kashiwazaki Integrated Demonstration Project



Overview

Schedule

- I Demonstration project of blue Hydrogen/Ammonia production with CO2-EGR, with full utilization of existing assets
- I NEDO supports Hydrogen/Ammonia production and CO2 capture, JOGMEC supports CO2-EGR
- I INPEX is the operator, JGC and Daiichi Jitsugyo (Ammonia production) take construction work

|           |   |
|-----------|---|
| Oct. 2022 | : FID   |
| Jul. 2023 | : Commencement of construction of surface plant |
| Mar. 2025 | : Commissioning (planned)                       |
| Aug. 2025 | : Completion (planned)                          |

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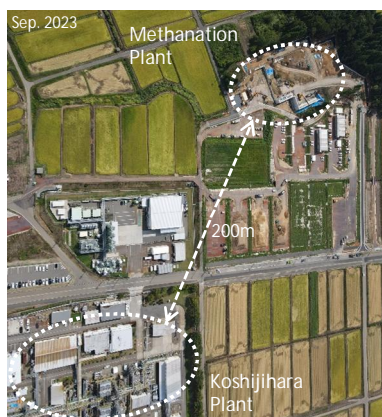
The first, announced in July of this year, is the construction of an integrated blue hydrogen and ammonia production demonstration plant that began in Kashiwazaki City, Niigata Prefecture. The photo on the left side of the slide shows the construction site as of the end of September this year, and the right side is a 3D perspective of the expected completion.

We use gas from our Minami-Nagaoka gas field, the largest gas field in Japan, to make blue hydrogen and blue ammonia on our East Kashiwazaki gas field land. This is a project to store the CO2 produced at that time in our East Kashiwazaki gas field, and I think it is a demonstration plant that is unique to our company, making full use of our existing assets in Japan.

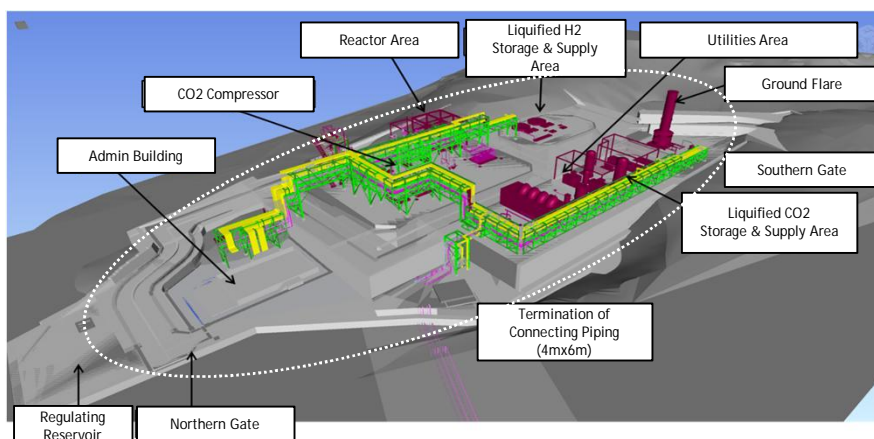
Hydrogen and ammonia production and CO2 capture are subsidized by NEDO, and CO2 sequestration is subsidized by JOGMEC. The Company is the project owner, and JGC HOLDINGS CORPORATION and DAIICHI JITSUGYO CO., LTD. will be responsible for construction. The plant will start operation in August 2025, and will demonstrate integrated hydrogen and ammonia production and CO2 sequestration.

Specifically, the main objective is to conduct long-term test runs of technologies such as JGC's HiPACT and Tsubame BHB Co., Ltd.'s new efficient ammonia production technology.

## INPEX Activities - 2 Nagaoka Methanation Pilot Project



Overview



Schedule

|  |  |
|--|--|
| I Methanation test facilities, producing 400 Nm <sup>3</sup> /h, equivalent to the amount of methane consumed by 10,000 households in Japan  | Oct. 2023 : Commencement of construction |
| I NEDO supports the project, INPEX is the operator, Osaka Gas develops reaction process technology, Nagoya University develops simulation technology and Chiyoda takes construction work | 2025 : Commissioning & Start-up          |

The second is the Methanation Demonstration plant in Nagaoka City, Niigata Prefecture, which was similarly announced last month and has begun construction. We have begun construction of a production facility near our Koshijihara plant, a gas processing plant that is one of the largest in the world at this time, with a capacity of 400 Nm<sup>3</sup> per hour.

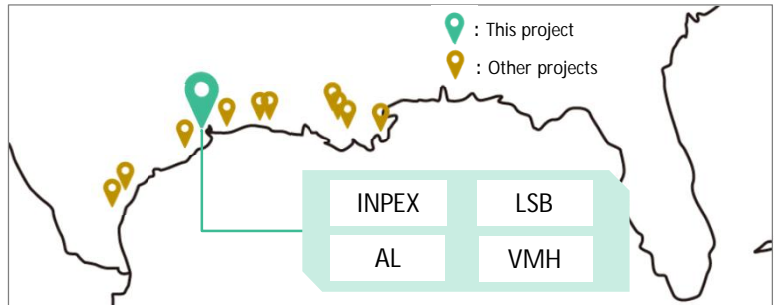
This is a demonstration plant where e-methane and natural gas are produced and injected into our pipeline system for the equivalent of 10,000 households.

Construction has begun to demonstrate the long-term durability of the catalyst, the feasibility of larger scale, and the technology for synthesizing CO<sub>2</sub> and hydrogen. This plant is a joint project with Osaka Gas Co., Ltd., with Nagoya University in charge of developing the simulation technology and Chiyoda Corporation in charge of construction. The plant is expected to be operational during FY2025 and in early 2026.

In the lower left of the photo on the left side of the slide is our Koshijihara plant, and the demonstration plant is being constructed 200 meters away in the upper right.



Overview



Schedule

- I INPEX, Air Liquide Group(AL), LSB Industries, Inc.(LSB), and Vopak Moda Houston LLC(VMH) have agreed to collaborate on the pre-FEED for the development of a large-scale, blue ammonia production and export project on the Houston Ship Channel
- I The port is close to the open ocean, and there are existing infrastructures such as natural gas/hydrogen/CO2 pipeline, etc.
- I Discussing with potential Asian off-takers incl. Japan

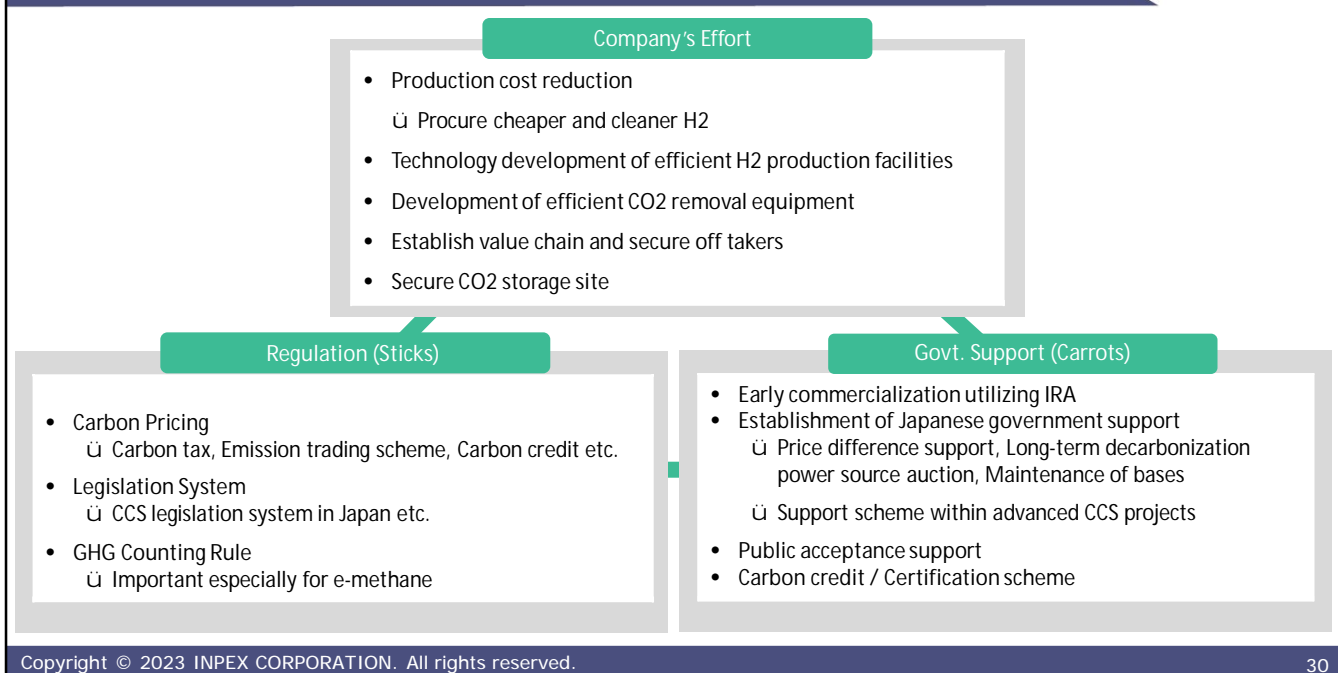
- I Targeted to produce more than 1.1MTPA of blue ammonia by the end of 2027

The previous two are demonstration plants that have already begun construction, followed by the Blue Ammonia project in Houston, USA, which we aim to commercialize. This was also published last month. The project is being carried out by a four-company entity with Air Liquide Group of France, LSB Industries, Inc., a US ammonia operator, and Vopak Moda Houston LLC, which is in charge of port facilities in the United States.

We will build a blue ammonia plant in an industrial area in Houston called the Ship Channel and bring blue ammonia to Japan or Southeast Asia because of the proximity to the open ocean from there.

The production scale is 1.1 million tons per year, and we are currently discussing sales with potential off-takers in East Asia, including Japan. We intend to be a production and supply-driven business.





I have given several examples, but for clean energy and CCS projects, it is necessary to develop demand.

Clean hydrogen and clean ammonia projects are made from existing fuels. Therefore, they will always be more expensive than currently existing fuels, for example, natural gas, coal, and petroleum. We believe that the key to increasing demand will be to determine who will bear the price gap that arises, which we call the green premium.

We believe that for this demand to grow, for the world to move toward decarbonization, for Japan to move toward decarbonization, and for our company to be able to contribute to decarbonization projects, the three things shown on the slide will need to be in place.

One is to reduce the price gap as much as possible through technological development, which the private sector can do independently.

What is needed for start-up is government support in its infancy, as shown in the lower right-hand corner of the slide. In order to fill this price gap, we believe that this system needs to be enhanced in order to have the government pay part of the green premium.

The bottom left of the slide is about regulations. I think it will be necessary to introduce carbon pricing and related legislation. Recently, there has been a lot of talk at conferences about carrot and stick. We believe that the combination of these three elements, namely, the carrot-and stick policies and the technological development by the private sector, will enable us to move forward with our clean energy business.

That is all for your explanation.

Q&A: Timeline for legislation and support systems

Participant: I would like to ask about issue recognition. It states company's effort, regulation, and government support; as you say, I believe that all three are indispensable. In this context, what are your thoughts on the time frame?

For example, the CCS project law will be around this year or next year, and I am sure there will be talk about such things as support programs for such projects. I believe that only if something like this is done first, the most significant manufacturing cost reductions, the Company's effort, will work concurrently.

What is your perception of the time frame for monetizing? It is obvious that you want support as soon as

possible, but can you tell us about the time frame in which you would like that support?

Takimoto: I believe this is very important. As a business, we believe it is important to have these things in place as quickly as possible. Regarding the CCS project law you just asked about, the Ministry of Economy, Trade and Industry is currently discussing it, and we, as a business, are also providing input on what we would like to see done. At this time, we anticipate that it will be passed in next year's ordinary Diet session.

As for regulations, we believe that carbon pricing or carbon tax will be introduced in Japan by 2028. Currently there is a very cheap carbon tax-like by law only regarding the promotion of global warming countermeasures. We believe that a carbon tax or carbon price with a more concrete and practical price will be introduced in the future.

Regarding the time frame for success, we currently consider 2030 as one major milestone. We hope to launch the blue ammonia and CCS businesses mentioned earlier, as well as other hydrogen and liquefied hydrogen businesses, by 2030.

Since 2030 is a major milestone in government targets and other oil companies' goals, we hope to achieve commercialization by 2030.

Participant: I recognize that it would be difficult to move forward from, say, 2030 to 2028 or 2029. Do you consider the 2030 milestone to be a very difficult hurdle as well?

Takimoto: From a practical standpoint, I think that 2030 is just about the limit, but we would also like to move it up as much as possible. We do not know if we will be able to meet the 1.5-degrees Celsius target, but we would like to move forward as much as we can to meet the standards demanded by our global stakeholders.

For this to happen, the legislation and support system mentioned earlier must be launched as soon as possible. Since the construction work will take a certain amount of time after the systems up and running, we still believe that the time frame is 2029 or 2030 at the earliest.

Q&A: Support for CCS, hydrogen, and e-methane and business independence

Participant: With regard to government support, I would like to ask how much difference is there between renewable energy and CCS/hydrogen/methanation?

Vice President Kawano gave a presentation on how it is sustainable to promote renewable energy as independently as possible, and you mentioned WACC and ROIC as well. Compared to that, please let me confirm that your company positions hydrogen/CCUS as a demonstration stage, a little before commercialization.

On that note, I believe that as far as CCS/CCUS is concerned, carbon pricing and government support will probably follow no matter where you go in the future.

Does your company expect that hydrogen and e-methane will be similar to renewable energy in the future, and that they can be self-sustaining without support? Or do you see hydrogen and e-methane in a slightly different category from renewable energies, similar to CCS and requiring government support?

One of the issues you mentioned at the end of your talk was how to pay the green premium. I understand that your company believes that the green premium for renewable energy can be taken in the market. In contrast, what are your thoughts on CCS, hydrogen, and e-methane, including whether they are positioned differently?

Takimoto: First, you asked whether support for CCS/hydrogen is different from renewable energy. As for the support measures that we can see at this point, for example, for the advanced CCS project I mentioned earlier, we believe that a significant portion of CapEx, OpEx, etc. will be supported by the government. The

remaining portion of the project will be examined to determine if it can be commercialized as a private project.

One example is Northern Lights, a large CCS project in Norway, where 80% of both CapEx and OpEx are financed by government support. I think it is important to start with such a place, find large scale reservoirs and develop the technology to lower the cost of CCS.

We also believe that there are three types of CCS: CSS to reduce CO2 emissions from our operations such as Ichthys and Abadi, CCS to produce blue hydrogen, and CCS that is contracted by a third party to commercialize.

Perhaps each will have a different approach to support. In particular, with regard to the third one, commercializing CCS, we believe it is necessary to introduce carbon pricing, which I mentioned earlier.

To be more specific, if the carbon price is JPY10,000 per ton, we need to come up with a system whereby if we undertake a project for JPY8,000, people will ask us to do it.

The second question was whether hydrogen/e-methane can be self-sustaining. One of the issues we discussed was how much we or the oil companies could lower the price of clean energy through technological development and how low the price gap could be.

We believe that if we can get large emitters to want to use our hydrogen and ammonia, we can become self-sustaining, but even if we reach that point, it will still be more expensive than existing natural gas and coal. Since we need to use such fuels for decarbonization, we still believe that we will need government support and programs for the initial start-up.

Q&A: Returns in commercialization

Participant: You have set goals for commercialization in 2030 and 2050, but what are your current assumptions about the returns on commercializing these products?

Takimoto: We believe this is also very important in commercializing clean energy. We will discuss this in our meetings with other oil companies, including the majors, but at this point we believe that if we can secure a double-digit return, about 10%, we can proceed with this as a commercialization.

It is still potentially less risky than oil and natural gas projects, but even so, it has not been established that the value chain is currently secure, that hydrogen and ammonia can be produced on a firm basis on a large scale, or that CCS can be buried in large quantities.

In that sense, it would be riskier than renewable energy, so we are working toward our goal of securing double-digit returns, as discussed earlier with regard to the WACC.

Whether or not this can be achieved depends on the three conditions I mentioned earlier being addressed in a three-pronged manner, and on the progress of such activities in accordance with the demands of society.