

Santos press release (English and Tetum) begins on ninth page, after Upstream, Tatoli (English & Tetum) and SMH articles.

Santos and East Timor sign pact for potential \$1.6bn CCS scheme at Bayu Undan

EnergyVoice, 14 September 2021. By Damon Evans

Australia's Santos today announced that it has signed a memorandum of understanding (MoU) with East Timor's regulator ANPM to progress a carbon capture and storage (CCS) project, estimated to cost \$1.6 billion, at the ageing Bayu Undan field in the Timor Sea. But low returns and high complexity threaten the viability of the proposed scheme.

"The MoU details the areas the Bayu-Undan Joint Venture and the ANPM, with the support of the Timor-Leste Government, will work on collaboratively to test the viability of repurposing the existing Bayu-Undan facilities and using the Bayu-Undan reservoir for CCS. These include sharing technical, operational and commercial information, assessing the regulatory framework, evaluating local capacity opportunities and establishing a decision timeline," Santos said in a statement today.

Significantly, Santos needs to offset carbon emissions from its Barossa project, which was [recently sanctioned](#). The offshore Barossa gas field development off Australia's Northern Territory has [the unfriendly tag of having more carbon dioxide than any gas currently made into liquefied natural gas \(LNG\)](#), according to a report from the Institute for Energy Economics and Financial Analysis (IEEFA).

"It feels more like a public relations, feel good move, to me, rather than a genuine project," Bruce Robertson, an Australian-based analyst at IEEFA told Energy Voice earlier this year.

Robertson said there were several barriers to the CCS project offshore East Timor, also known as Timor Leste, proceeding. Including, firstly, a long and expensive pipeline will need to be built to ship the carbon dioxide (CO₂) from Barossa or the LNG facility in Darwin, northern Australia, to Bayu Undan. Secondly, Bayu Undan is not in Australian waters, meaning Santos will produce CO₂ in Australia, but bury it under East Timor's seabed, with the aim of generating Australian carbon credits. This will require a unique regulatory solution.

Indeed, according to a recent internal document from Santos seen by Boiling Cold, Santos' plan to bury CO₂ and delay decommissioning at the Bayu-Undan gas project is challenged by low returns and will require numerous deals with governments and various partners to succeed, reported Boiling Cold.

Analysis from IEEFA suggests LNG from Barossa will generate much more emissions than any other Australian LNG project. Therefore, Santos plans to store CO₂ from Barossa at the soon-to-be depleted Bayu Undan field. This simultaneously helps offset emissions and delays a massive \$1.1 billion decommissioning bill in East Timor by decades, said Boiling Cold.

According to the internal document, the CCS project is estimated to cost \$1.6 billion, but there are numerous technical and economic challenges to overcome.

As noted by Boiling Cold, the East Timor government could prove to be the biggest hurdle. “It will want revenue from CCS and assurance there will be money available mid-century when the delayed decommissioning of Bayu Undan occurs.”

Santos has also called on the Australian government to provide low-cost financing for CCS projects.

Moreover, Santos internal analysis signalled that storing 2.3 million tonnes of CO₂ per year from the Barossa reservoir resulted in an excessive cost per tonne. Santos said today that CCS at Bayu Undan has potential capacity to store 10 million tonnes per year of CO₂.

The CCS project would need additional income from storing four million tonnes of CO₂ per year from Inpex’s Ichthys LNG project that has its liquefaction facilities near Santos’ Darwin LNG plant. But Inpex prefers a different storage site and is progressing CCS at a slower pace than Santos, said Boiling Cold.

Notably, Santos’ chief executive, Kevin Gallagher, told analysts last month that there is a “bit of water to go under the bridge” before CCS at Bayu Undan becomes a possibility. That appears to be an understatement.

But Santos is eager to hit its net-zero emissions target by 2040 and kick its decommissioning liabilities at Bayu Undan down the road by a couple of decades. As a result, it seems likely Santos will keep doggedly pursuing the proposed CCS scheme, despite the low returns and high complexity indicated by the internal analysis leaked to Boiling Cold.

Still, East Timor seems interested to explore the opportunity.

ANPM president Florentino Soares Ferreira said “this is a milestone for Timor-Leste. With the signing of the CCS MoU between Santos (representing its Joint Venture partners) and ANPM proves that Timor-Leste is proactively taking the lead in integrating its oil and gas sector towards Timor-Leste’s commitment of accelerating decarbonisation and meeting the UN net zero target by 2050.”

“Despite Timor-Leste being one of the lowest emission countries in the world, and that the Paris Agreement provides waiver or concession to the developing and less developed nations such as Timor-Leste; we understand that carbon trading or carbon credits market is an integral part of our future economy. We don’t want to miss this opportunity; and I believe this will become one of the largest CCS projects in the Southern Hemisphere. This will enable both Timor-Leste and Australia to exploit its untapped resources in meeting energy demands as well as offsetting its carbon emissions and transitioning towards carbon neutral economies.”

Santos has a 43.4% operated interest in Bayu-Undan. The remaining interest is held by SK E&S (25%), Inpex (11.4%), Eni (11%) and Tokyo Timor Sea Resources (9.2%).

Timor-Leste signs up in support of reshaping Bayu-Undan field

Field owners and Timor-Leste to work on CCS solution for ageing field

Upstream Online By Russell Searancke, 14 September 2021



Florentino Soares Ferreira: the president of Timor-Leste regulator ANPM Photo: ANPM

The Santos-led owners of the Bayu-Undan gas and condensate field offshore the Timor Sea have signed an agreement with the Timor-Leste petroleum regulator to progress carbon capture and storage at the field.

A memorandum of understanding signed by Santos and Timor-Leste's National Authority for Petroleum and Minerals (ANPM) details the areas the two sides, with the support of the Timor-Leste government, will work on collaboratively to test the viability of repurposing the existing Bayu-Undan offshore production facilities and using the Bayu-Undan reservoir for CCS.

"CCS at Bayu-Undan has potential capacity to safely and permanently store approximately 10 million tonnes per annum of CO₂ and could build a new job-creating and revenue-generating industry for TimorLeste," said Santos chief executive Kevin Gallagher.

"This has the potential to be a win-win; good for the environment, good for industry and opening up an exciting opportunity for the people of Timor-Leste, so we look forward to progressing this MoU in partnership with the ANPM."

Gallagher outlined recently that CCS at the Bayu-Undan field would contribute to decarbonizing Santos' Barossa gas project from project start up, "as well as opening up other resource opportunities and complementary industry opportunities in Northern Australia".

"We'll be looking to take around 2.3 million tonnes (per annum of CO₂) from Barossa and Darwin every year."

Santos also has a partnership with Italian energy giant Eni working on CO₂ capture and storage or utilization (CCUS) options in the Darwin area of northern Australia.



Infill drilling: at the Bayu-Undan field offshore Timor-Leste Photo: SANTOS

The Darwin LNG plant, which receives feedstock gas from Bayu-Undan, is located in Darwin.

Eni is the operator of the very large Evans Shoal gas field in the Timor Sea which has a high CO₂ content.

Santos and Eni are also partners in Bayu-Undan, along with SK E&S, Inpex and Tokyo Gas.

The president of the ANPM, Florentino Soares Ferreira, said of the partnership with Santos: "This is a milestone for Timor-Leste. With the signing of the CCS MoU between Santos (representing its joint venture partners) and ANPM proves that Timor-Leste is proactively taking the lead in integrating its oil and gas sector towards Timor-Leste's commitment of accelerating decarbonization and meeting the UN net zero target by 2050."

"We understand that carbon trading or carbon credits market is an integral part of our future economy. We don't want to miss this opportunity; and I believe this will become one of the largest CCS projects in the Southern Hemisphere. This will enable both Timor-Leste and Australia to exploit its untapped resources in meeting energy demands as well as offsetting its carbon emissions and transitioning towards carbon neutral economies." [\(Copyright\)](#)

ANPM-Santos sign an agreement on carbon capture and storage project



The President of ANPM, Florentino Soares Ferreira (Image Tatoli/Francisco Sony)

DILI, 13 september 2021 (TATOLI) – The National Petroleum and Minerals Authority (ANPM) and Santos signed an agreement on the Carbon Capture and Storage (CCS) Project at Bayu-Undan Field.

The President of ANPM, Florentino Soares Ferreira said that the signing of the agreement was a milestone for Timor-Leste: “ANPM proves that Timor-Leste is proactively taking the lead in integrating its oil and gas sectors towards its commitment of accelerating decarbonization and meeting UN net-zero target by 2050.

Soares said that despite Timor-Leste being one of the lowest emission countries in the world and that the Paris Agreement provides waiver or concession to the developing and less developed nation such as Timor-Leste: “We understand that carbon trading or carbon credit market is an integral part of our future economy.”

“I believe this CCS hub will become one of the largest CCS in the Southern Hemisphere,” Soares made the comments after signing the agreement at ANPM’s office, in Dili, on monday.

He said the project will enable Timor-Leste and Australia to exploit its untapped resources in meeting energy as well as offsetting its carbon emissions and transitioning towards carbon-neutral economies.

“The increasing energy demands in South Korea and Japan as well as in the region and beyond; and the instance for carbon-neutral LNG –It opens up the opportunities for Timor-Leste’s 18 blocks that we are currently promoting in our second licensing round. Our blocks are now more than ever could become more attractive, as we are integrating our oil and gas industry into this decarbonization commitment and carbon trading economies,” he said.

Soares affirmed that the project will put Timor-Leste on the world map as one of the leading countries in the decarbonization efforts towards a net-zero target by 2050: “I look forward to the benefits that this project would bring for Timor-Leste, including job creation, revenue to the government, partnership opportunities, and knowledge transfer as well as capacity building in Timor-Leste – particularly a partnership with our National Oil Company TIMOR GAP, E.P.”

“In achieving all of these, both Santos and ANPM will put forward a tangible timeline and qualified team as well as allocating adequate resources to meet the deadlines that have been set for this project. By the end of the day we hope that we could achieve FID in a year or two as well as RFSU within four to five years’ time,” he added.

Journalist: Filomeno Martins Editor: Nelia Borges Rosario

ANPM-Santos asina entendimentu kaptura no armazena karbonu iha Bayu-undan

DILI, 13 setembru 2021 (TATOLI)—Autoridade Nasionál Petróleu no Minerál (ANPM) no empreza petrolífera australiana, Santos, asina nota entendimentu hodi bele kaptura no armazena (rai) karbonu (CCS-*Carbon Capture and Storage*) iha kampu Bayu-undan bainhira produsaun hotu.

Seremónia asinatura ne'e realiza via virtúal entre Prezidente ANPM, Florentino Soares Ferreira no Diretor Ezekutivu Santos Kevin Gallagher.

Biban ne'e, Prezidente ANPM, hateten, inisiativa ne'e atu dezenvolve iha futuru, bainhira kampu Bayu-undan maran.

“Entendimentu ne'e atu foka liu oinsá hatuur enkuadamentu hodi halo diskusaun ho Santos, nune'e prepara Bayu-undan sai hanesan saida maka ita bolu *Carbon Capture and Storage*, ne'ebé hatudu ba ita oinsá halo sustentabilidade ba indústria petrolífera Timor-Leste,” Prezidente ANPM hateten iha edifisiu Aitarak-laran, segunda ne'e.

Nune'e mós, kompañia Santos hanesan operadór ba Bayu-undan sei haree hamutuk ho ANPM kona-ba kualidade rezervatóriu kampu petrolífera hodi rai dióxidu karbonu (CO₂) no explora enkuadamentu tékniku no komersiál ba projetu CCS ne'e rasik.

Prezidente ANPM dehan, kuandu produsaun kampu petrolífera hotu, maka TimorLeste bele dezenvolve oportunidade seluk ba redusaun CO₂.

“Daudaun ita haree katak, ita prodús de'it hosi kampu ida (Bayu-undan), tanba ne'e iha futuru bainhira produsaun iha kampu hotu, ita atu dezmantela ka tãka de'it ne'e lae, maibé atu haree oportunidade seluk atu hatama reseita ba Estadu liuhosi dióxidu karbonu,” nia akresenta.

Iha mundu internasionál, daudaun empreza barak maka muda sira-nia an hosi empreza mina no gas, tanba ezijsia akordu Paris, ne'ebé mensiona kona-ba país tomak iha mundu tenke adota medida no meta abisioza atu kombat mudansa klimatika.

“Iha akordu Paris ne'e rasik, husu empreza sira kontribui ba redusaun emisaun dióxidu karbonu iha atmosfera. Entaun Timor-Leste la lakon informasaun ida-ne'e no aproveita kedas hodi fó investimentu maka'as ba petrolífera, nune'e bele kria kampu traballu no fó reseita adisionál ba ita,” nia subliña.

Florentino Soares konsidera inisiativa ne'e nu'udar pasu importante ba Timor-Leste, tanba liuhosi entendimentu ne'e, Santos ne'ebé reprezenta ninia konsórsiu iha Bayu-Undan ho ANPM, hatudu katak Timor-Leste pro-ativu tebes hodi lidera no integra iha setór mina no gas liuhosi komprimisu hodi aselera dekarbonizasaun.

“Maski Timor-Leste hanesan país kiik no emisaun kiik tebes iha mundu, maibé akordu Paris fó insentivu ka konsesaun ba país ne'ebé dezenvolve hela no menus dezenvolvidu sira hanesan Timor-Leste. Ami hatene katak negósiu karbaun no kréditu karbaun nia merkadu mak hanesan parte integradu ida hosi ekonomia iha futuru,” nia hatutan.

Iha parte seluk, ho parseria ne'e fó oportunidade ba timor-oan atu hetan kapasitasaun no koñesimentu kona-ba kaptura no armazena karbonu.

CCS hanesan teknolojia atu kaptura no armazena karbonu iha rai-laran, ne'ebé konsidera hanesan esforsu ne'ebé halo atu halo redusaun emisaun CO₂ iha atmosferu no hosi kampu gas balun ne'ebé iha kontíudu CO₂ barak tebes.

Inisiativa ne'e nu'udar esforsu ne'ebé ANPM halo atu kontinua fó sustentabilidase ba reseita hosi indústria petrolífera no integra Timor-Leste iha redusaun CO₂ iha mundu, maski hanesan país kiik maibé hatudu ba mundu katak Timor-Leste bele lidera iha prosesu sira-ne'e.

Seremónia ne'e, partisipa mós hosi Ministru Petróleu no Minerál, Vítor da Conceição Soares, Embaixadór Austrália iha Timor-Leste, Peter Roberts, inklui ezeutivu senior ANPM.

Jornalista : Natalino Costa Editora : Julia Chatarina

Santos, Timor-Leste team up to bury carbon under the sea

Sydney Morning Herald, Sept. 14, 2021 By Nick Toscano

Australian energy giant Santos has signed a deal with Timor-Leste authorities to advance a project designed to bury carbon dioxide beneath ageing gas fields in the Timor Sea.

Santos, which has reached a merger agreement with rival Oil Search to form a \$21 billion company, on Tuesday said it would collaborate with the Timor-Leste government to re-purpose the jointly owned Bayu-Undan facilities 500 kilometres north of Darwin for a carbon capture and storage (CCS) project.

Managing director Kevin Gallagher said the reservoir had the potential to bury up to 10 million tonnes of carbon dioxide a year. “We believe the Bayu-Undan reservoir and facilities have the potential to be a world-leading CCS project,” Mr Gallagher said.

The Bayu-Undan deal comes as Santos closes in on a final decision on a further-progressed CCS project at South Australia’s Moomba gas plant, which could have the capacity to bury 20 million tonnes a year.

CCS – which traps carbon dioxide emissions produced by factories or power plants before they are emitted into the atmosphere and buries them underground – has been a divisive area of climate policy in Australia. Critics say CCS is not economically proven and could prolong the life of fossil fuel assets.

The world’s biggest CCS project, Chevron’s Gorgon venture in Western Australia, this year failed to meet a crucial target of capturing and burying an average of 80 per cent of the carbon dioxide produced from its gas reservoirs, fuelling even further scepticism about the technology’s prospects of successfully functioning at scale.

Supporters of CCS technology, including oil and gas producers and the Morrison government, argue it is a necessary and unavoidable component of the world’s decarbonisation goals to avoid the worst and most immediate impacts of global warming.

Mr Gallagher pointed to forecasting from the International Energy Agency (IEA) suggesting it would be “virtually impossible” for the world to achieve the Paris Agreement’s 2050 climate targets without CCS because the transition to renewable energy would not cut emissions in time.

Florentino Soares Ferreira, head of Timor-Leste regulator Autoridade Nacional do Petróleo e Minerais, said the nation was one of the lowest-emitting countries in the world but saw the carbon trading market as a potentially significant part of its future economy.

“We don’t want to miss this opportunity,” he said. “I believe this will become one of the largest CCS projects in the Southern Hemisphere.”

Santos is awaiting a decision from Australia’s Clean Energy Regulator to finalise the methodology for CCS to qualify for federal carbon credits, which would be needed for its Moomba project to stack up economically.

Macquarie analysts said the regulator had signalled support for the approval, and Bayu-Undan may also qualify for the credits if it ultimately went ahead.

“Whilst public consultation is still underway, accreditation appears likely and Santos would then take [a] final investment decision on Moomba CCS by year-end,” Macquarie said.

14 September 2021

Bayu-Undan Joint Venture and Timor-Leste's ANPM sign MOU on Bayu-Undan Carbon Capture and Storage

Santos, as operator of the Bayu-Undan Joint Venture, today announced it had signed a Memorandum of Understanding (MOU) with the Timor-Leste regulator Autoridade Nacional do Petróleo e Minerais (ANPM) to progress Carbon Capture and Storage (CCS) at Bayu-Undan in the Timor Sea.

The MOU details the areas the Bayu-Undan Joint Venture and the ANPM, with the support of the Timor-Leste Government, will work on collaboratively to test the viability of repurposing the existing Bayu-Undan facilities and using the Bayu-Undan reservoir for CCS. These include sharing technical, operational and commercial information, assessing the regulatory framework, evaluating local capacity opportunities and establishing a decision timeline.

Santos Managing Director and Chief Executive Officer Kevin Gallagher said: "We believe the Bayu-Undan reservoir and facilities have the potential to be a world-leading CCS project and we are delighted to be working together with the ANPM and the Timor-Leste Government to progress this opportunity.

"CCS is recognised by the International Energy Agency and the Intergovernmental Panel on Climate Change as being a critical technology to achieve the world's climate goals. Santos' experience with the globally-competitive Moomba CCS project in outback South Australia will bring invaluable experience to the project.

"CCS at Bayu-Undan has potential capacity to safely and permanently store approximately 10 million tonnes per annum of CO₂ and could build a new job-creating and revenue-generating industry for Timor-Leste.

"This has the potential to be a win-win; good for the environment, good for industry and opening up an exciting opportunity for the people of Timor-Leste, so we look forward to progressing this MOU in partnership with the ANPM."

ANPM President Florentino Soares Ferreira said: "This is a milestone for Timor-Leste. With the signing of the CCS MOU between Santos (representing its Joint Venture partners) and ANPM proves that Timor-Leste is proactively taking the lead in integrating its oil and gas sector towards Timor-Leste's commitment of accelerating decarbonization and meeting the U.N. net zero target by 2050.

"Despite Timor-Leste being one of the lowest emission countries in the world, and that the Paris Agreement provides waiver or concession to the developing and less developed nations such as Timor-Leste; we understand that carbon trading or carbon credits market is an integral part of our future economy. We don't want to miss this opportunity; and I believe this will become one of the largest CCS projects in the Southern Hemisphere. This will enable both Timor-Leste and Australia to exploit its untapped resources in meeting energy

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demands as well as offsetting its carbon emissions and transitioning towards carbon neutral economies.”

Santos has a 43.4% operated interest in Bayu-Undan. The remaining interest is held by SK E&S (25%), INPEX (11.4%), Eni (11%) and Tokyo Timor Sea Resources (9.2%).

Ends.



This ASX announcement was approved and authorised for release by Kevin Gallagher, Managing Director and Chief Executive Officer.

14 Setembru 2021

Bayu-Undan Joint Venture no ANPM Timor-Leste asina MOU Konaba Kaptura no Armazenamentu Karbonu iha Kampu Bayu-Undan

Santos, hanesan operador husi Bayu-Undan Joint Venture, loron ohin anunsia katak kumpania ne'e asina ona Nota de Entendementu (MOU) ho regulador Timor-Leste nian, Autoridade Nacional do Petróleo e Minerais (ANPM) hodi halo progresu ba Kaptura no Armazenamentu Karbonu ou Carbon Capture and Storage (CCS) iha kampu Bayu-Undan lokaliza iha Tasi Timor.

MOU ne'e deskreve detallus sobre areas mak Bayu-Undan Joint Venture no ANPM, ho suporta husi Governu Timor-Leste, sei servisu kolaborativu hodi halo teste viabilidade husi aproveita fila fali facilidade Bayu-Undan mak ejiste ona no uza rezervatoriu Bayu-Undan ba fali CCS wainhira produsaun remata. Ne'e inklui fahe informasaun ba malu sobre asuntu tekniku, operacional no komersiu, avalia enkuandramentu regulatoriu, oportunidade ba kapasidade lokal no estabeselese tempu hodi halo desijaun.

Santos Managing Director no Chief Executive Officer Kevin Gallagher hateten: "Ami fiar katak rezervatoriu no facilidade Bayu-Undan iha potensia hodi sai hanesan líder mundial ba projetu CCS no ami kontente hodi servisu hamutuk ho ANPM no Governu Timor-Leste hodi halo progresu ba oportunidade ida ne'e.

"CCS hetan rekuinesimentu husi International Energy Agency and the Intergovernmental Panel on Climate Change hanesan teknolozia kritiku ida hodi alkansa metas mudial sobre mudansa klimatika. Santos ninia esperensia kompetetivu-mudial ho projetu CCS Moomba iha area rezional parte Sul Australia nian sei lori esperensia inestimável mai projetu ne'e.

"CCS iha Bayu-Undan iha kapasidade potensial hodi rai maizoumenus 10 milhões toneladas CO2 kada tinan no bele hamosu kampu trabalho foun no kria industria hodi jere retornu ba Timor-Leste.

"Ida ne'e iha potensia hodi sai win-win; diak ba meu-ambiente, diak ba industria no loke oportunidade emocionante ba Timor-oan sira, ne'eduni ami hein hodi halo progresu ba MOU ne'e ho parseria hamutuk ho ANPM."

Presidente ANPM Florentino Soares Ferreira dehan: "Ida ne'e hanesan pasu importante ba Timor-Leste. Asinatura MOU ba CCS entre Santos ne'ebe representa ninian konsorsiu iha Bayu-Undan no ANPM prova katak Timor-Leste pro-ativu tebes hodi lidera no integra ninia setor mina no gas liu husi komprimisiu hodi aselera dekarbonizasaun no atinzi ONU ninian net zero iha tinan 2050.

"Mesmu Timor-Leste hanesan pais ki'ik oan no emisaun ki'ik tebbebes iha mundo, no Akordu Paris fo incentivu ou konsesaun ba pais ne'ebe dezenvolve hela no menus desenvolidu sira hanesan Timor-Leste; ami komprende katak negosiu karbonu no kreditu karbonu ninian

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merkadu mak parte integradu ida husi ekonomia futuru nian. Ami lakohi lakon oportunidade ida ne'e; no hau fiar katak ida ne'e sei sai hanesan projetu CCS ida bo'ot liu iha hemisfériu Sul. Ne'e sei hamosu oportunidade ida ba Timor-Leste no Australia hodi esplora ninia rekursu mak seidak bo'ok durante ne'e hodi alkansa demande enerjia nomos kompensa emisaun karbonu no halo tranjisaun ba ekonomia ne'ebe neutru karbonu."

Santos iha 43.4% interese operasaun iha Bayu-Undan. Interese restante husi SK E&S (25%), INPEX (11.4%), Eni (11%) no Tokyo Timor Sea Resources (9.2%)

Remata.



This ASX announcement was approved and authorised for release by Kevin Gallagher, Managing Director and Chief Executive Officer.