



# Consulta Público Lao Hamutuk

Peskiza Sismika Tasi

Dili, 17 Fevereiro 2025

# Introdusaun ba ekipa Eni



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# Tansa ami hasoru ita bo'ot?

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Reasons for this engagement

# Tansa ami hasoru ita bo'ot?



## □ Halao tuir Diploma Ministerial No. 47/2017

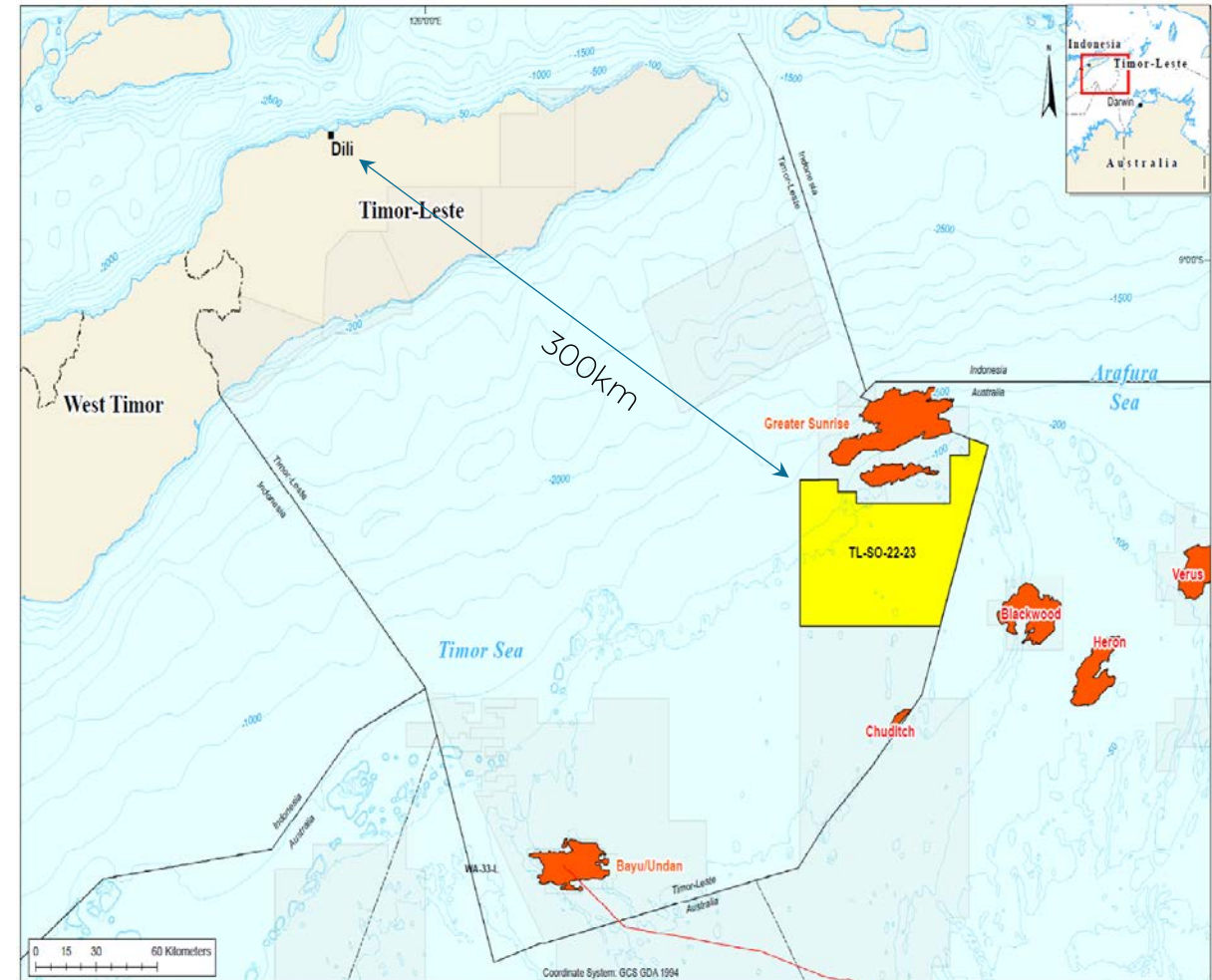
- Ami identifika Lao Hamutuk nudar organizasaun nebe karik iha interesse ba aktividade peskiza sismika iha tasi

## □ Ami halao servisu iha Tasi Timor

- Projekto ne'e klasifika nudar Kategoriya B
- Ami prepare hela Declaração de Impacto Ambiental Simplificada (DIAS) do Plano de Gestão Ambiental (PGA)
- Ita bo'ot nia komentario importante mai ami durante preparasaun DIAS no PGA

## □ Ami hakarak fahe informasaun konaba peskiza sismika iha Tasi

- Ami hatene katak, importante tebes atu koalia ho entidade ka grupo ka ema nebe bele hetan impakto hosi ami nia aktividade





# Se mak Eni? (About Eni)

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Eni in Australia & Timor-Leste

# Introdusaun ba Eni SpA



Integrated Energy company  
HQ in Italy



Working in 61 countries  
32,000 employees globally



101 employees in Australia & Timor-Leste



Eni believes in contributing to community in places it operates

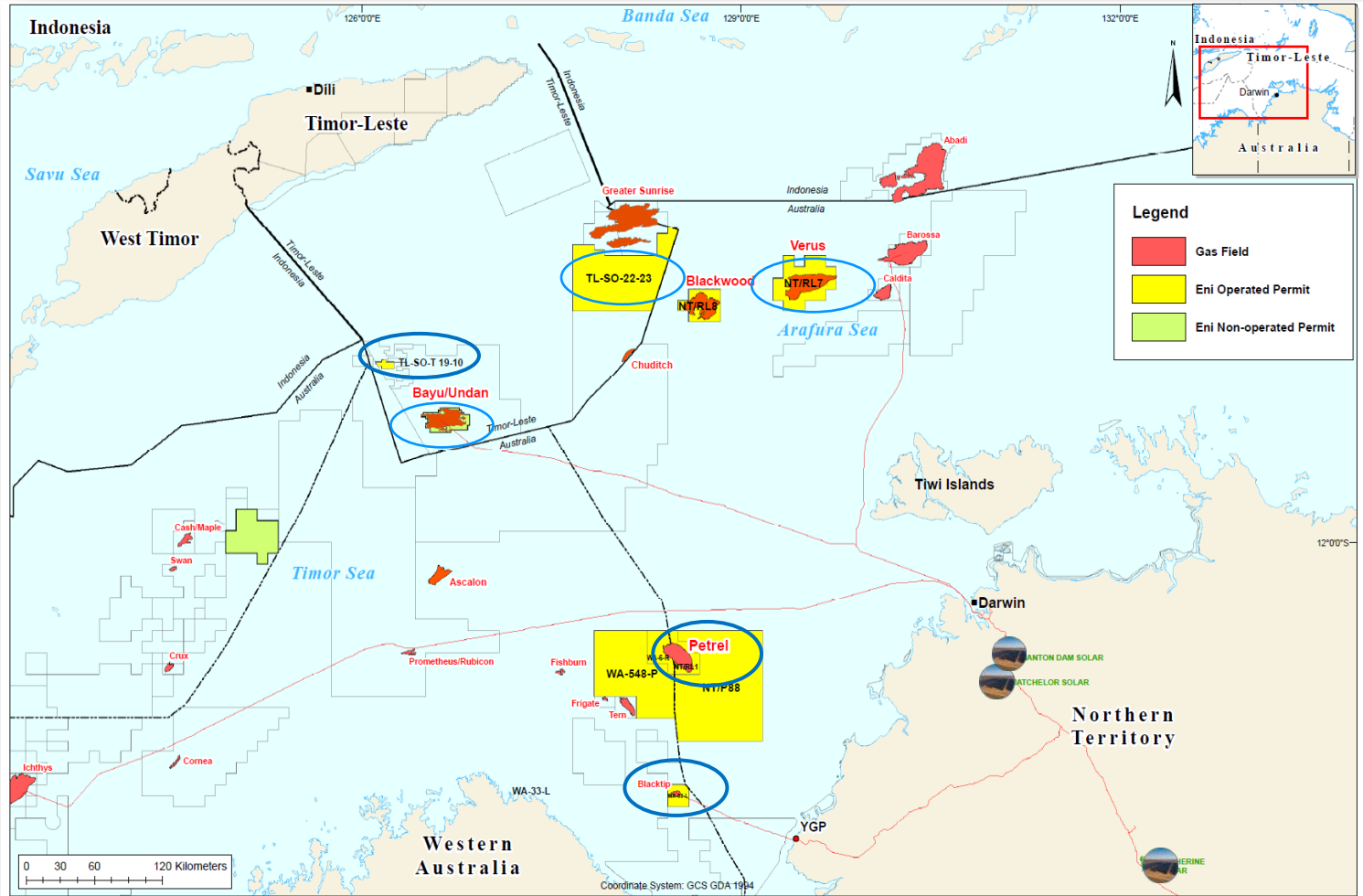
<https://www.eni.com/en-IT/sustainability/our-commitment.html>



Offices:

- Dili
- Perth
- Darwin
- Yelcherr Gas Plant (Wadeye)

# Eni nia aktividade



## TL-SO-22-23 (Exploration)

- PSC signed in December 2023
- Effective date 22 April 2024
- Eni Timor 22-23 B.V. (Eni) is the titleholder (currently 100%)

## Kitan

- Production from Oct. 2011 until Dec. 2015
- In preparation for P&A/decommission
- Several Local Content programs were completed
- National Library as remaining obligation

## Bayu - Undan

- Eni as a Joint Venture Partner

## Projects in Australia

- Blacktip field – Commenced gas production in 2009. Gas produced for NT domestic energy use.
- Petrel – Acquired in Feb. 2024.
- Verus (Offshore)
- Renewables – 3x Solar Plants with total capacity 59 Megawatts (Katherine, Batchelor, Manton Dam)



# People, Environment, Assets and Reputation



- Eni, hanesan mos kompania mina no gas sira seluk, sempre kria no implementa plano servisu nian nebe rigorous no tuir pratiku di'ak liu iha mundo.
- Ezemplo hosu plano nebe Eni persija kriak mak hanesan safety case, EIS, EMP, ERP,plano contiudo local no seluk tan.
- Maioria hosi plano servisu sira ne'e persija submete ba ANP hodi hetan aprovasaun.
- Ida ne's prinsipio importante ba protesaun ema, ambiente, propriadade no reputasaun.





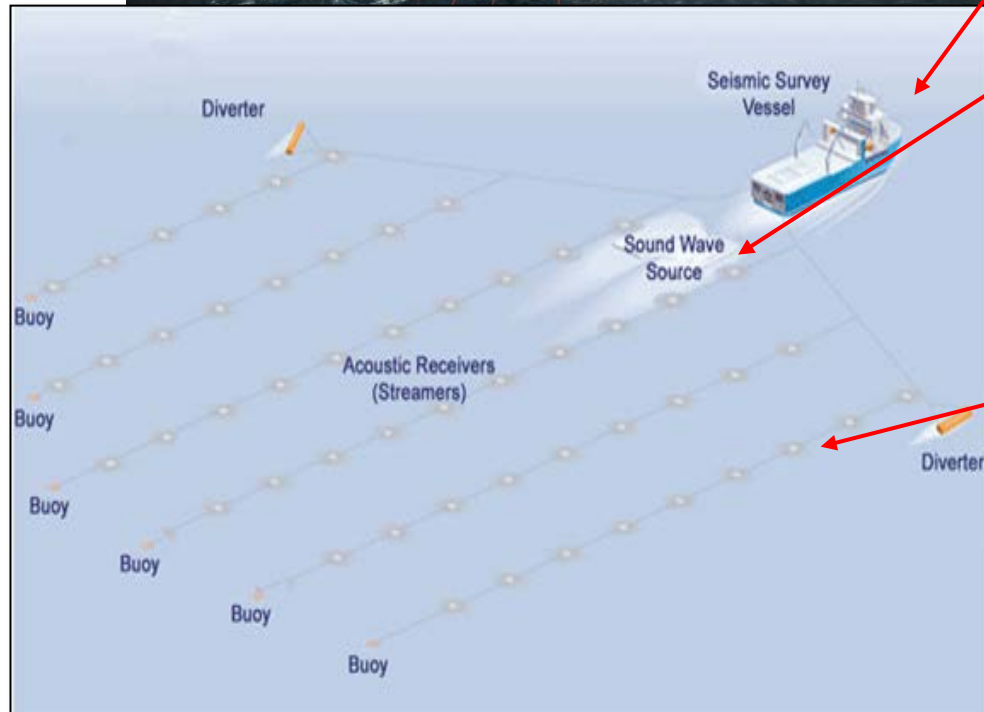


# Peskiza sismika iha tasi

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Diploma Ministerial No. 47/2017 – Art. 8

# Saida mak peskiza sismika iha tasi?



## Vessel

- Large specialised vessels that tow streamers & soundwave sources
- Hulls are designed for stability and minimal vibration to avoid distortion in the seismic data.
- Often feature noise-reduction technologies, including specially designed hulls or anti-vibration mounts for sensitive equipment.

## Soundwave Source

- The seismic source is generated by air guns which create acoustic pulses/waves that propagate through the sea floor and into the underlying sediment and rock
- The waves travel through different geological layers, and when they hit changes in rock density, they are reflected back to the surface.
- The sound sources will be towed at a depth of around 8m. The air guns will fire at a maximum interval of 37.5m with an 8 second recording length

## Streamer

- These are long (km-scale), flexible cables towed behind a seismic survey vessel, equipped with an array of sensors (usually hydrophones) that detect the reflected seismic waves.
- Between 8-12 streamers connected to the vessel
- The data collected by the streamers is transmitted back to the vessel, where it is typically processed in real time using onboard computers.

# Exemplo ro sismika



Nudar exemplo ba typo ro nian :

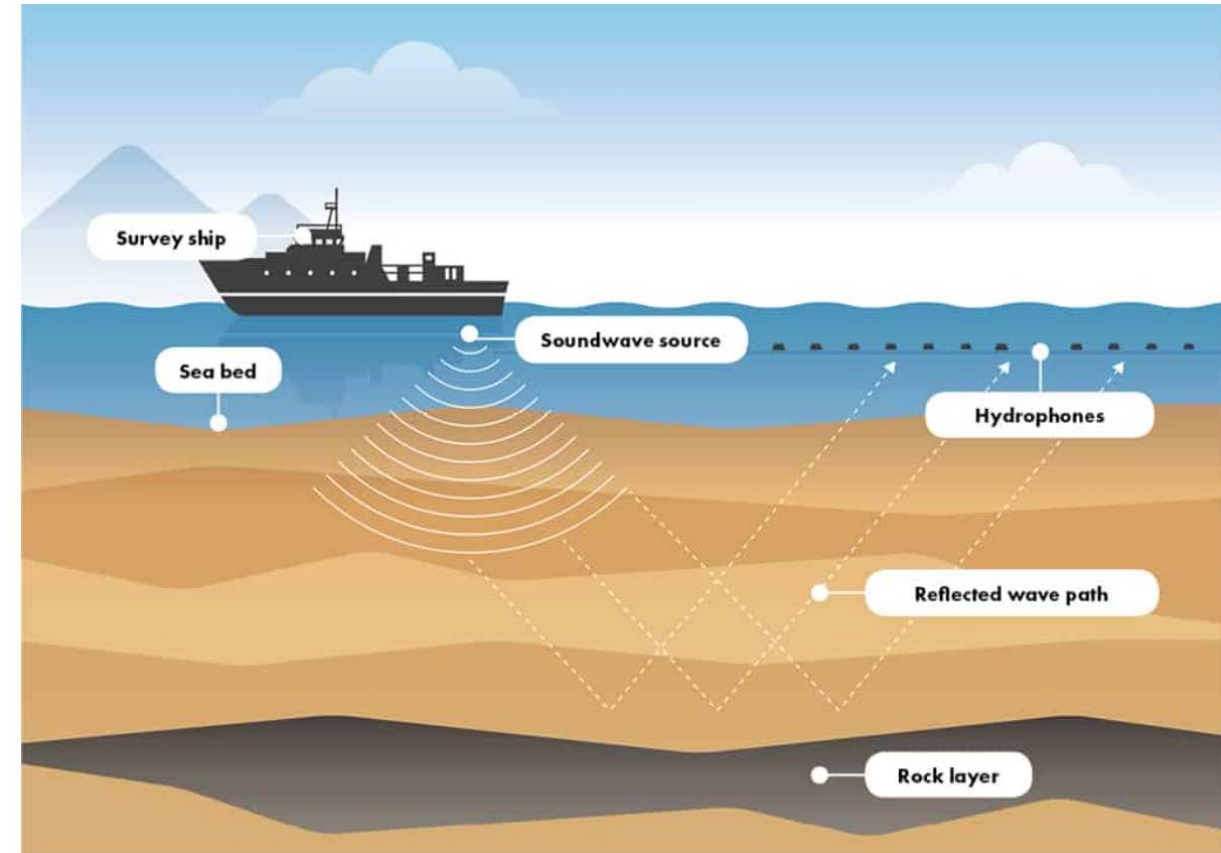
- Naruk: 90-105m
- Luan: 40m
- Klean/Draft 7-8m
- Accommodation: 50-100 berths
- Helideck

Spesifikasaun sei konfirma depois de proseso tender ramata





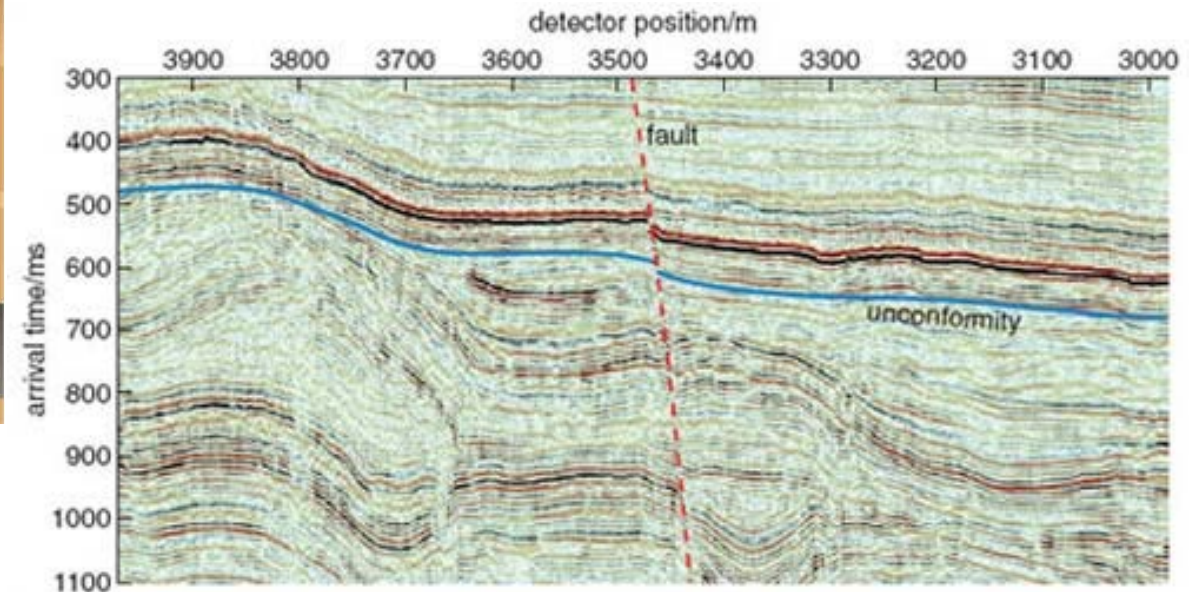
# Tansa halo peskiza sismika ?



Schematic of seismic acquisition

## Objektivu

- Pesikiza sismika sei fo imajen konaba sediment sira no fatuk sira iha taso okos
- Fo idadus konaba estrutura geologoka no ihatudu kompojzisaun fatuk sira (e.g. sandstone, mudstone, limestone)
- Dadus nebe prosesa ona sei uza atu bele produs imajem sismika iha format 2D no 3D nebe sei interpreta fali atu kria mapa geologika.
- Uza imajem sira ne hodi hetan fatin nebe bele iha akumulasaun hidrokarboneru (mina no gas)

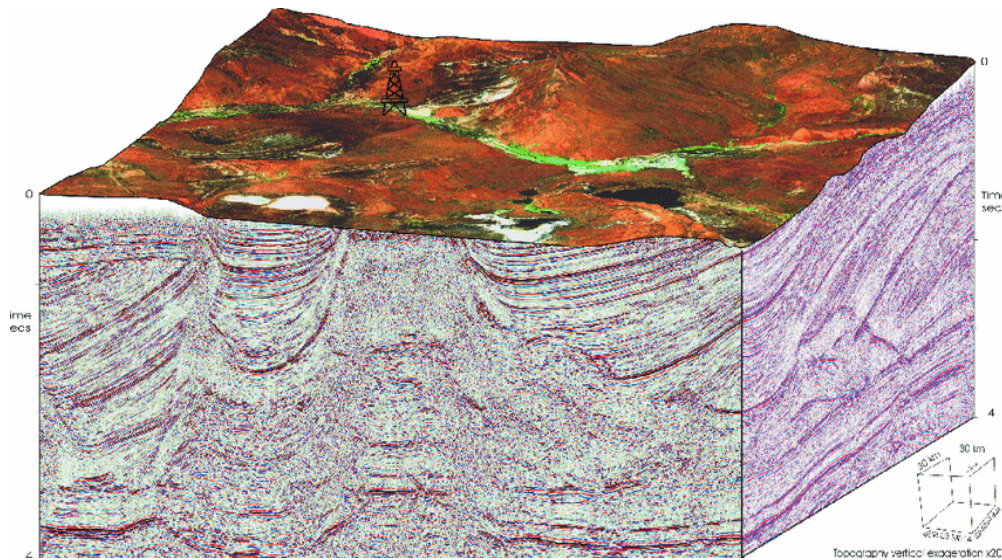


Example seismic line

# Tansa halo peskiza sismika?



- Hetan dadus nebe bele suporta desijaun atu hili fatin ba perfurasaun
- Atu bele identifika fatin ba perfurasaun iha futuru
- Identifika fatin nebe di'ak liu sei aumenta possibilidade diskobre mina no gas
- Objektivu final hosi projekto ne mak diskobre mina no gas iha tasi Timor

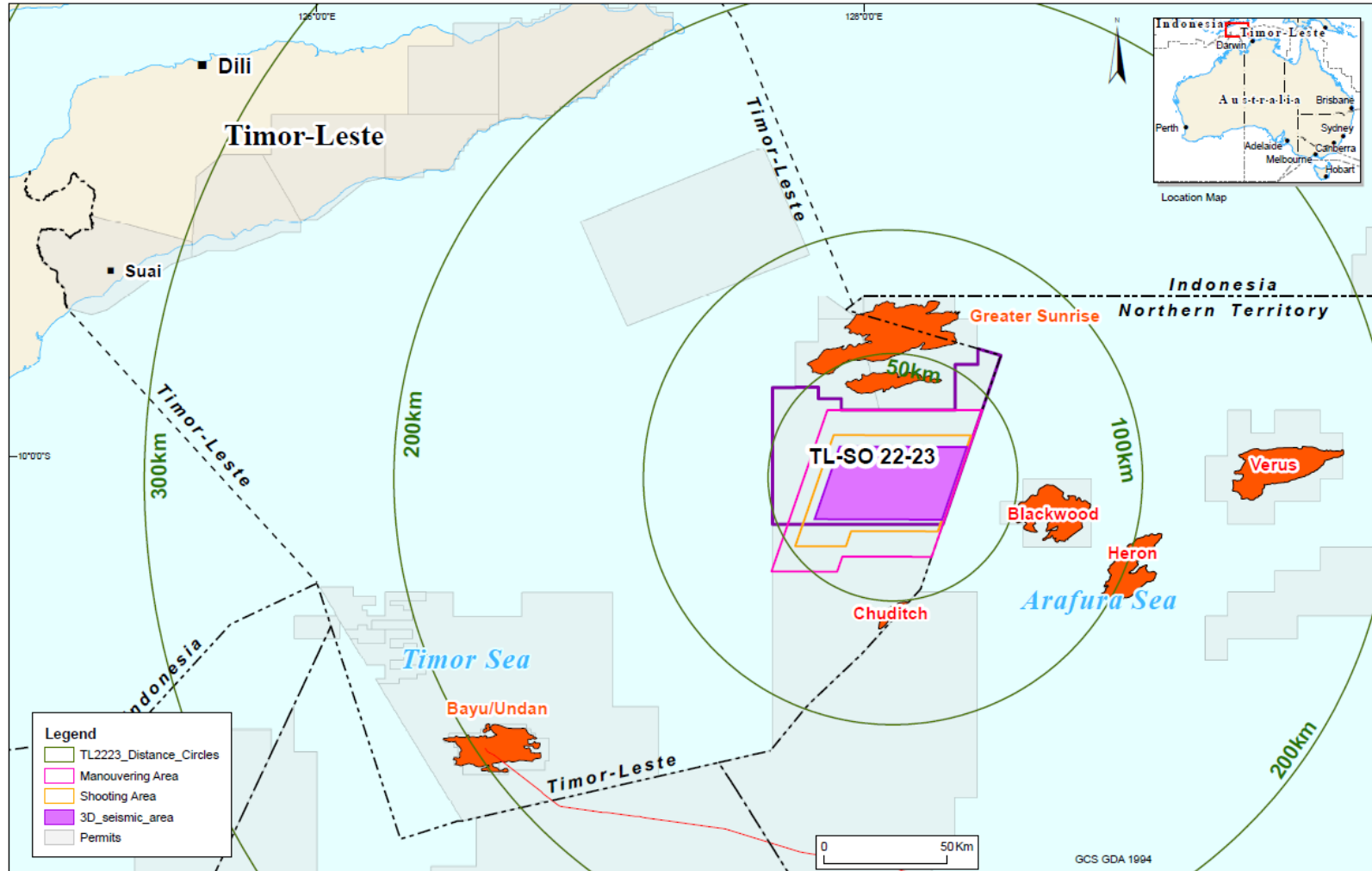


Example of 3D seismic map



Schematic – Drilling rig

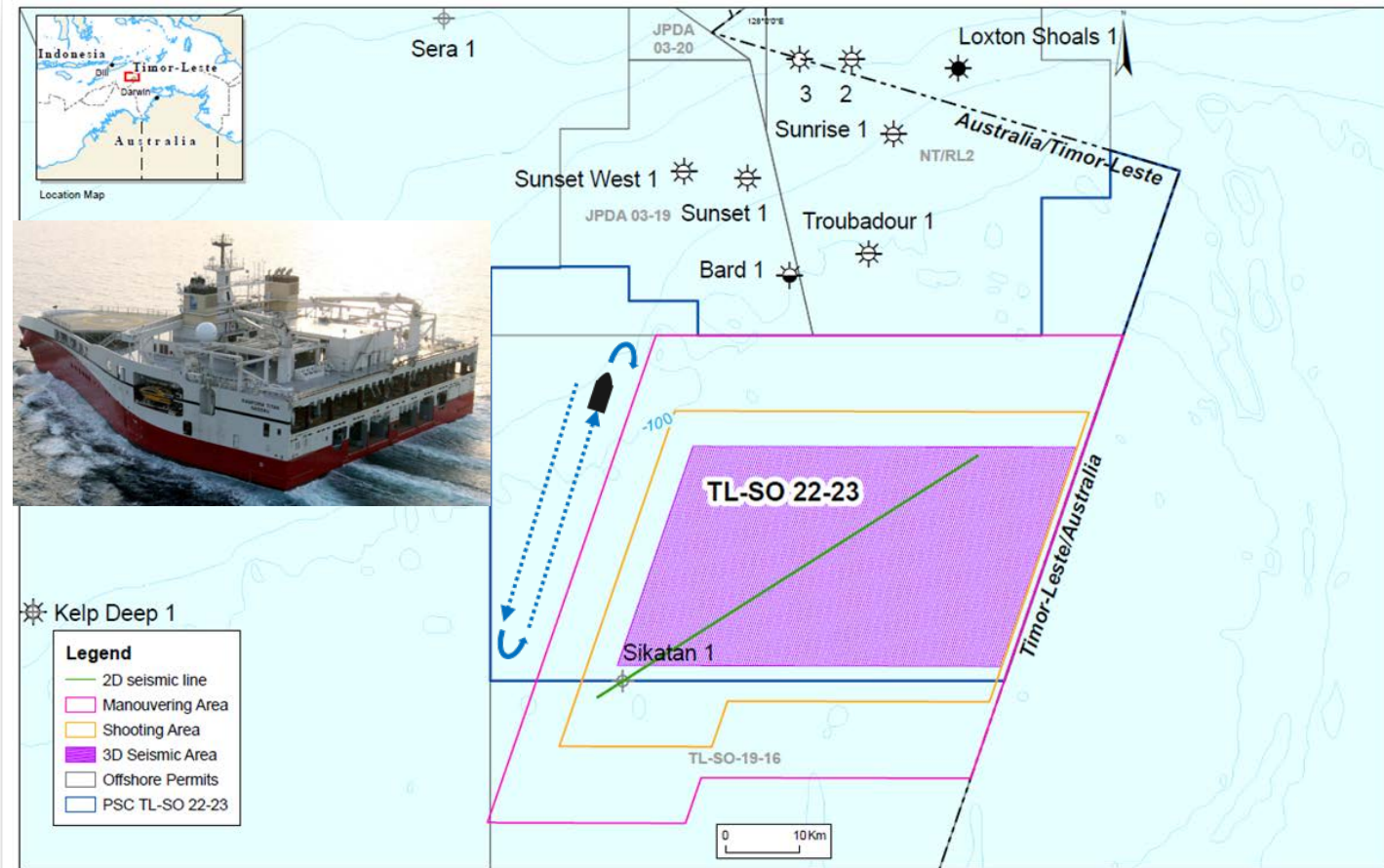
# Fatin Peskiza Sismika



- Bloco ba PSC TL-SO 22-23 ne iha Tasi Timor.
- Fatin aktividade ne, lokaliza iha 175 km hosi costa sud-este Timor nian, no 300 km hosi sudeste Dili
- Aktividade ne sei cobre 1,500 km<sup>2</sup> (50 km x 30 km)
- Iha tasi nebe nia klean entre 40 m to 180m (fatin peskiza nia klean maioria 70-90m)
- Diretamente iha bloco Sunrise-Troubadournia okos
- Diretamente iha Sundagas nia fatin PSC TL-SO 19-16 (Chuditch discovery) nie leten
- 130km NE hosi kampu Bayu-Undan
- 30km oeste hosi bloco NT/RL8 Blackwood (Eni operated)



# Durasaun Peskiza



- Tuir plano, peskiza sismika nebe atu halao iha PSC TL-SO-22-23 **ne'e sei komesa iha Q3 2025**
- Peskiza ne'e bele han **tempo entre semana 4 to 8**, nebe inklui ona transito ro nian, aquizasaun dadus, no aktividae seluk
- Durante peskiza halao hela, dadus sismika mos koleta nafatin hosi dader to'o kalan.
- Ro sei para iotuan ka lao neneik, karik hetan ikan bot sira mai besik fatin peskiza ou karik tempo la di'ak.
- Ro sismika sei akompanha ho ro kik 3 no ro suporta 1
- Iha momento nebe data ba peskiza konfirmado ona, informasaun ne'e sei komunika ba entidade nebe relvante



# Parametro ba peskiza sismika



Sail lines  
~31 km  
long and  
375-600m  
apart

Manoeuvring Area

Shooting Area

Full Fold Area

Acquisition Simulation



## STREAMER CONFIGURATION (tbc)

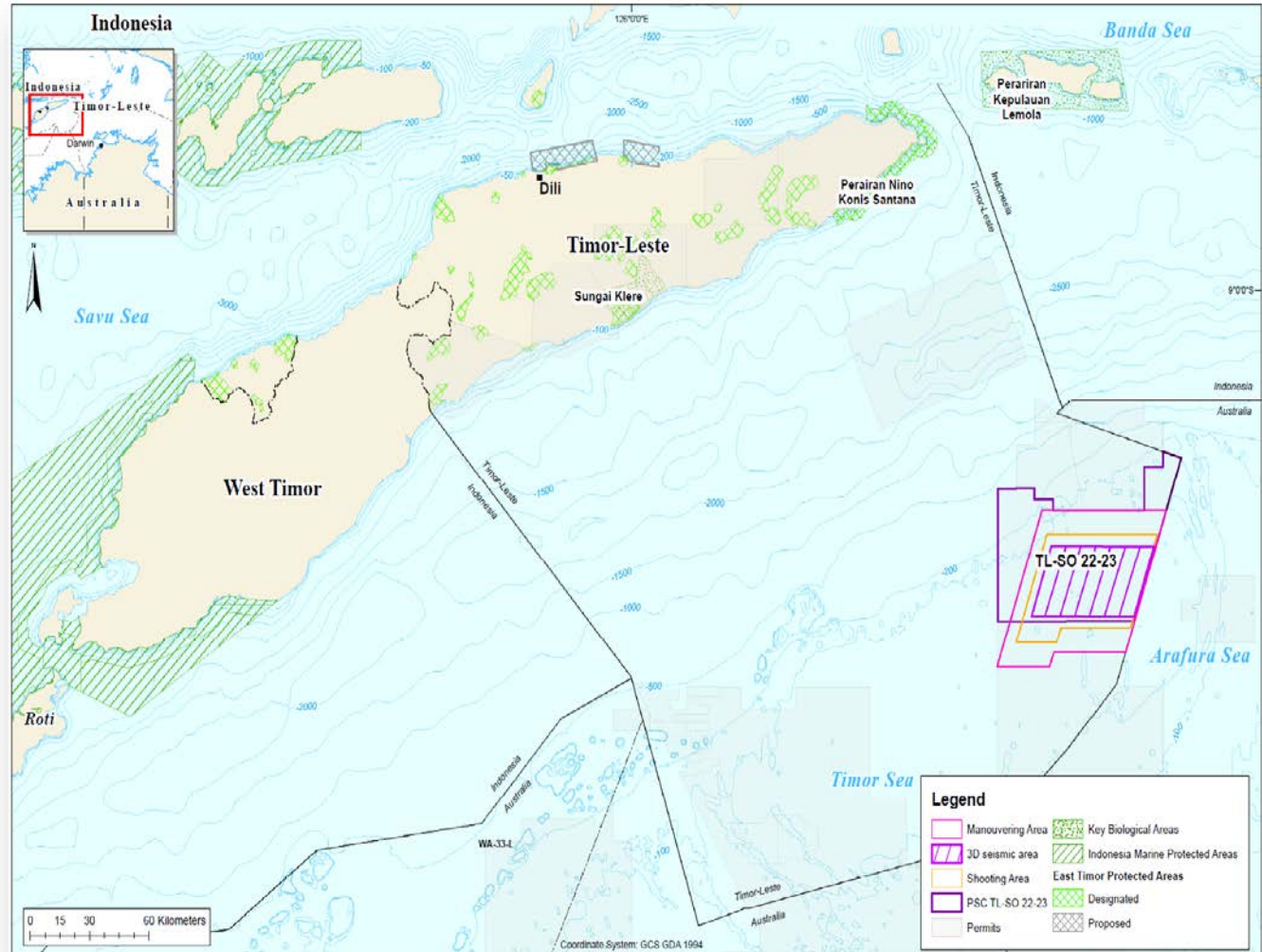
- Primary seismic vessel towing 8 to 12 streamers
- 75 to 112m spacings between streamers
- Up to 8km long
- Streamers towed at depth of ~20m
- Each streamer will have tail buoy attached to ensure it remains straight and afloat.
- Will also provide a visual reference for seismic survey crew and GPS

## SOURCE CONFIGURATION (tbc)

- Triple source array
- ~8m tow depth
- Air guns as the sound source with volume up to 3,500in<sup>3</sup>

***Final source and streamer configuration will be confirmed following award of the seismic contract***

# Karik iha impakto Ambiental hosi peskiza sismika?



## Estudos konaba biodiversidade iha fatin peskiza

- **Benthic habitats:** Key benthic habitats within the TL 22-23 seismic survey area include mostly flat and featureless shelf rise habitat and small areas of likely rocky reef
- **Marine mammals:** Whales, such as sperm and sei whales, have been recorded in the greater region but are unlikely to be found within the TL 22-23 seismic survey area
- **Marine reptiles:** There are six marine turtle species that may be found in PSC the TL 22-23 seismic survey area including green, hawksbill, leatherback, flatback, olive ridley and loggerhead turtles. Low numbers are expected to be found in the seismic survey area due to the distance offshore and lack of suitable habitat types.

## Resultado provisorio

- Aktividade peskiza la iha impakto signifkativo ka impakto nebe permanente ba ambiente.
- La iha indikasaun katak peskiza sismika nebe atu halao ne'e sei iha impakto ba populasaun spesie animal sira nian no estadu konsersasaun
- Expektative ba impakto emisaun estufa sei montante kik tebes
- La iha indikasaun katak peskiza sismika sei iha impakto signifkativo ba ekonomia ka qualidade moris populasaun nian



# Karik iha impakto seluk ruma?

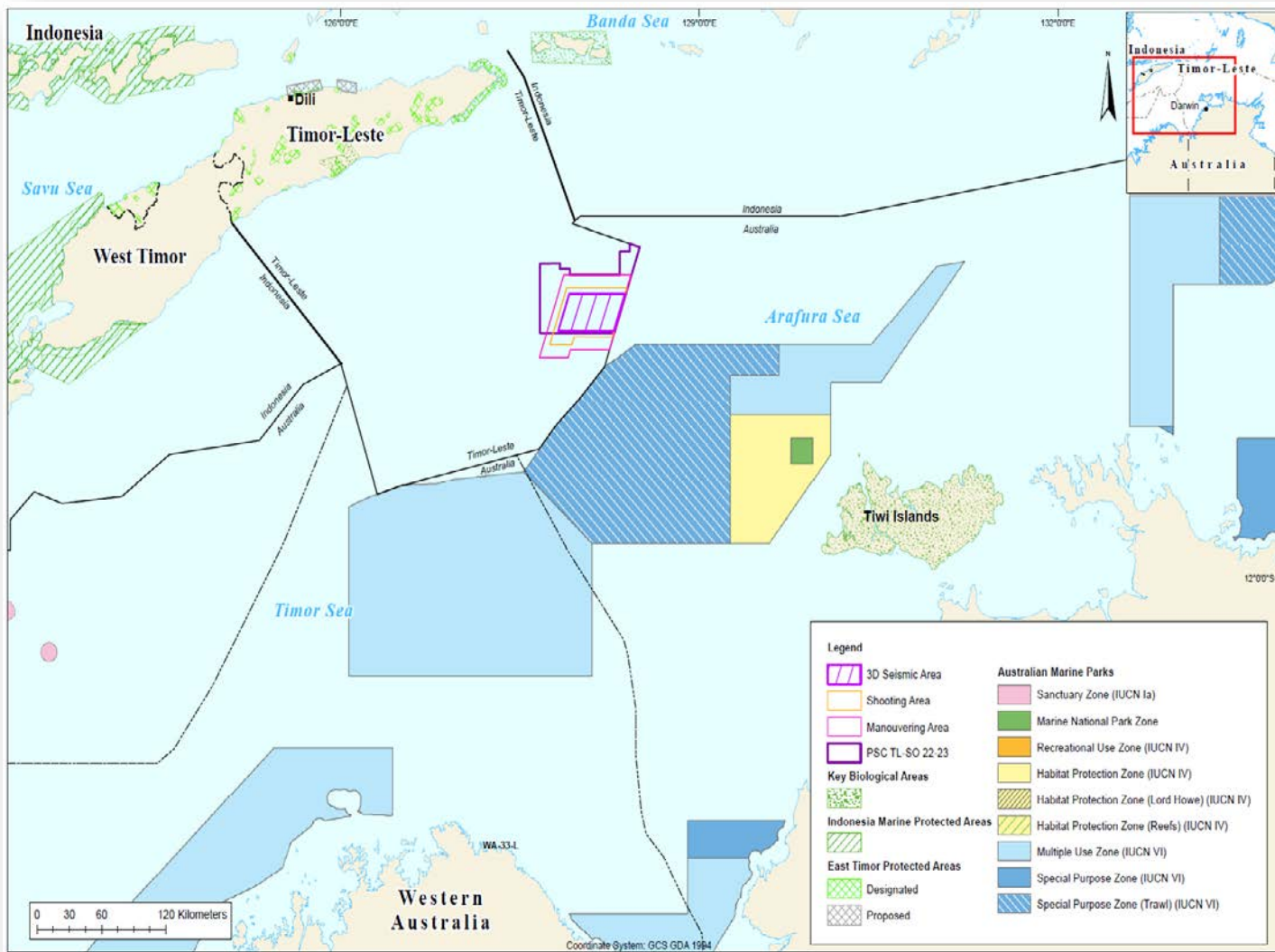


## Estudos nebe halao dadaun

- Cross-border impacts may occur from the underwater noise. Cross-border impacts and receptors are expected to be the same as those in Timor-Leste.
- No significant impacts to current users of the sea are expected.
- Potential short-term impacts to local fishers may occur.
- Adverse impacts to the local population and their quality of life are not expected given the distance from populations and communities.
- No adverse impacts to existing hydrocarbon exploration and operations as a result of the project.
- Minor seismic acquisition and manoeuvring may extend into the northwestern part of PSC TL-SO-19-16, although no adverse impacts are expected given the minimal operations within the area.
- The project is expected to provide positive economic benefits to Timor-Leste through employment opportunities and potentially provide a future opportunity for hydrocarbon development.

## Resultado provisorio

- While Low or Medium impacts to the environment are possible, no unacceptable impacts to the environment are anticipated to occur.
- Enkuantu iha possibilidade ba impakto kik ka mediu ba ambiente, la antisipa atu iha impakto la aseitavel ba ambiente.



# Matrix ba kalkulasi risiko ambiental



Consequence					Likelihood or Annual Frequency					
Severity	Company Reputation	People (Health & Safety)	Environment	Assets / Project	0	A	B	C	D	E
					0 - Non credible / Could happen in E&P industry (Freq <10 <sup>-6</sup> /y)	A - Rare / Reported for E&P industry (Freq 10 <sup>-6</sup> to 10 <sup>-4</sup> /y)	B - Unlikely / Has occurred at least once in Company (Freq 10 <sup>-4</sup> to 10 <sup>-3</sup> /y)	C - Credible / Has occurred several times in Company (Freq 10 <sup>-3</sup> to 10 <sup>-1</sup> /y)	D - Probable / Happens several times per year in Company (Freq 10 <sup>-1</sup> to 1 /y)	E - Frequent / Several times per year at one location (Freq > 1 /y)
1	1-Slight impact	1-Slight health effect / injury	1-Slight effect	1-Slight damage	Low	Low	Low	Low	Low	Low
2	2-Minor impact	2-Minor health effect / injury	2-Minor effect	2-Minor damage	Low	Low	Low	Medium	Medium	Medium
3	3-Local impact	3-Major health effect / injury	3-Local effect	3-Local damage	Low	Low	Medium	Medium - High	High	High
4	4-National impact	4-PTD or single fatality	4-Major effect	4-Major damage	Low	Medium	Medium - High	High	High	High
5	5-International impact	5-Multiple fatalities	5-Extensive effect	5-Extensive damage	Medium	Medium - High	High	High	High	High

# Proseso avaliasaun ba risiko ambiental



## Risiko nebe identifika no kontrolo sira nebe sei implementa

Risk Source/ Scenario	Aspect	Residual Risk Rating	Controls
Planned Activities	Interaction with Other Marine Users	Low	<ul style="list-style-type: none"> <li>• Navigational lighting on the vessels will be implemented in accordance with international requirements</li> <li>• Chase vessels will be used to deter non-project vessels from the area (assign by vessel contractor)</li> </ul>
	Underwater Noise - Seismic Source	Medium	<ul style="list-style-type: none"> <li>• Vessels will adhere to the JNCC Guidelines for Minimising the Risk of Injury to Marine Mammals from Geophysical Surveys. These guidelines include:                             <ul style="list-style-type: none"> <li>• Visual and passive acoustic monitoring measures for marine mammals (including personnel training / experience recommendations)</li> <li>• Standard airgun mitigation procedures including pre-shooting searches and actions if marine mammals are detected in mitigation zones</li> <li>• Marine mammal observation reporting</li> <li>• Procedures for managing seismic survey risk to marine mammals at night time and in low visibility conditions</li> </ul> </li> <li>• Marine mammal observers and Passive Acoustic Monitoring (PAM) will be used on the vessel to search for Marine Mammals in the mitigation zone</li> <li>• Marine megafauna interaction requirements included in project inductions</li> <li>• No seismic equipment testing will be undertaken outside the seismic survey area.</li> </ul>
	Noise Emissions - Vessels and Mechanical Equipment	Low	<ul style="list-style-type: none"> <li>• Vessels will undergo routine maintenance in accordance with vessel planned maintenance system to ensure equipment operates in accordance with the manufacturer specifications</li> </ul>
	Atmospheric Emissions	Low	<ul style="list-style-type: none"> <li>• Vessel will adhere to international air emissions reduction / fuel specification requirements (MARPOL Requirements)</li> <li>• Ozone depleting substances will not be deliberately released to the environment (MARPOL Requirements)</li> </ul>
	Light Emissions	Low	<ul style="list-style-type: none"> <li>• Lighting will only be as necessary under international requirements</li> </ul>
	Planned Vessel Discharges	Low	<ul style="list-style-type: none"> <li>• Sewage, oily water and waste managed in accordance with MARPOL requirements</li> <li>• Vessel will have in place a valid oil pollution prevention certificate, which confirms that required measures to reduce impacts of planned oil discharges are in place</li> <li>• Vessels will have and be compliant with a Garbage Management Plan in accordance with MARPOL 73/78 Annex V, as appropriate to vessel class</li> </ul>

# Proseso avaliasaun ba risiko ambiental



## Risiko nebe identifica no kontrolo sira nebe sei implementa

Risk Source/ Scenario	Aspect	Residual Risk Rating	Controls
Unplanned Events	Vessel Collision or Entanglement with Marine Fauna	Low	<ul style="list-style-type: none"> <li>Vessels will adhere to the JNCC Guidelines for Minimising the Risk of Injury to Marine Mammals from Geophysical Surveys.</li> <li>Marine megafauna interaction requirements included in project inductions</li> <li>Any vessel strike incident to marine mammals shall be reported to the ANP as soon as possible</li> </ul>
	Loss of Equipment and Dropped Objects	Low	<ul style="list-style-type: none"> <li>Wastes will be managed in accordance with MARPOL requirements, including appropriate storage and segregation of waste materials</li> <li>Waste materials lost will be recovered where safe and practicable to do so.</li> <li>Streamers will be deployed in accordance with approved procedures</li> <li>Streamers will be fitted with equipment designed to prevent loss / facilitate recovery and will undergo routine maintenance and inspections</li> </ul>
	Non-Hazardous and Hazardous Waste Loss to Marine Environment	Low	<ul style="list-style-type: none"> <li>Wastes will be managed in accordance with MARPOL requirements, including appropriate storage and segregation of waste materials</li> <li>Waste materials lost will be recovered where safe and practicable to do so.</li> </ul>
	Minor Hydrocarbon or Chemical Leaks	Low	<ul style="list-style-type: none"> <li>Spill response plan in place for vessels and spill response kits located in proximity to hydrocarbon storage/bunkering areas</li> <li>Wastes will be managed in accordance with MARPOL requirements, including appropriate storage and segregation of waste materials</li> <li>Waste materials lost will be recovered where safe and practicable to do so.</li> <li>Eni's chemical selection process will be followed where relevant to the proposed activity</li> <li>Hydrocarbon or chemical storage containers will be properly stored with lids that are tightly secured to prevent spillage during vessel movement or rough weather</li> <li>Storage containers will be managed in a manner that provides for secondary containment in the event of a spill or leak</li> <li>Storage containers will be labelled with the technical product name as per the Safety Data Sheet (SDS)</li> <li>Hazardous substances will be stored, segregated, handled and used in accordance with the product's SDS</li> <li>Vessels to be maintained in accordance with the applicable planned maintenance system</li> </ul>



# Proseso avaliasaun ba risiko ambiental

## Risiko nebe identifica no kontrolo sira nebe sei implementa

Risk Source/ Scenario	Aspect	Residual Risk Rating	Controls
Unplanned Event	Introduction of Invasive Marine Species	Low	<ul style="list-style-type: none"><li>• Vessels will comply with Timor-Leste entry requirements and the IMO international Convention for the Control and Management of Ships Ballast Water and Sediments, 2004, along with MARPOL requirements (as appropriate to vessel class) including:<ul style="list-style-type: none"><li>• Ballast water exchanges conducted &gt;50 nm from land and in &gt;200 m water in depth.</li><li>• International Convention on the control of harmful anti-fouling systems on ships, which requires vessels (applicable to vessels only, of appropriate class) have a valid international anti-fouling systems (IAFS) certificate.</li><li>• Implementation of invasive marine species risk assessment tool (by Eni Logistics).</li><li>• Compliance with Ballast Water Management Plan, aligned with the International Convention for the Control and Management of Ships' Ballast Water and Sediments.</li></ul></li></ul>
	Marine Diesel Oil (MDO) Spills to Sea	Low	<ul style="list-style-type: none"><li>• Navigation equipment and procedures on vessels compliant with international requirements</li><li>• Fuel type used (marine diesel) will follow specifications contained in MARPOL Annex 73/78 VI.</li><li>• Refuelling transfer procedures to prevent bunkering spills.</li><li>• Vessel Spill Response Plan in place for vessels.</li><li>• Oil Spill Contingency Plan in place for activity</li><li>• Support and chase vessels used to deter non-project vessels from area</li></ul>



# Conclusion/ Ramata



- ❑ Nudar operador ba PSC TL SO-22-23 Eni hakarak komesa ho aktividae ne iha Q3 2025
- ❑ Aktividade nebe ami plano atu halao ne'e importante ba parte hotu nebe involve
- ❑ Sukseso hosi projekto ida ne'e sei fo benefisio ba ema hotu
- ❑ Iha proseso kria DIAS no PGA , ami sei konsider ita bo'ot nia komentario/informasaun nebe relevante
- ❑ Karik persija tan informasaun rume, bele kontaktu Eni
- ❑ Karik iha perguntas bele hato'o mai

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Obrigada