



COMMONWEALTH OF AUSTRALIA

Sections 226 and 708
Offshore Petroleum and Greenhouse Gas Storage Act 2006

APPLICATION FOR VARIATION OF A PIPELINE LICENCE – NT/PL1

I, **GRAEME ALBERT WATERS**, the National Offshore Petroleum Titles Administrator, on behalf of the Commonwealth–Northern Territory Offshore Petroleum Joint Authority hereby give notice pursuant to sections 226 and 708 of the *Offshore Petroleum and Greenhouse Gas Storage Act 2006* that an application has been received from

Santos NA Darwin Pipeline Pty Ltd
(ACN 093 316 959)

Santos Timor Sea Pipeline Pty Ltd
(ACN 003 111 573)

Inpex DLNGPL Pty Ltd
(ACN 104 124 192)

Eni Gas & Power LNG Australia B.V.
(ACN 104 468 617)

JERA Darwin LNG Pty Ltd
(ACN 104 226 673)

Tokyo Gas Darwin LNG Pty Ltd
(ACN 104 002 708)

SK E&S Australia Pty Ltd
(ACN 158 702 071)

for the variation of Pipeline Licence NT/PL1 in the offshore area of Northern Territory, as set out below.

Pursuant to subsection 226(3) of the Act, a person may make a written submission to the Titles Administrator about this application within 30 days from the date of this notice.

This notice takes effect on the day on which it appears in the
Australian Government Gazette.

Made under the *Offshore Petroleum and Greenhouse Gas Storage Act 2006*
of the Commonwealth of Australia.

GRAEME ALBERT WATERS
TITLES ADMINISTRATOR
ON BEHALF OF THE COMMONWEALTH–NORTHERN TERRITORY
OFFSHORE PETROLEUM JOINT AUTHORITY

APPLICATION FOR VARIATION OF PIPELINE LICENCE NT/PL1

The variation application seeks to give effect to the following amendments to the licence relating to the proposed future use of Pipeline Licence NT/PL1 (NT/PL1) associated with the tie-in of Pipeline Licence NT/PL5 (Barossa Gas Export Pipeline). The proposed Barossa tie-in would involve removal of an approximately 100 metres section of the Bayu Undan pipeline and the installation of additional infrastructure as referenced below. These activities would occur after current petroleum conveyance operations from the Bayu-Undan Field have ceased.

The variation also provides basis of design details relevant to the current pipeline proposed to be included in 'Specifications' as outlined below.

ROUTE OF PIPELINE

1. The Route of Pipeline is varied by deleting the current text and replacing with the following description and tables of coordinates:

"The route of the pipeline while still in use for conveyance of petroleum from the Bayu-Undan Field, commences from the boundary of the offshore areas of Western Australia and Northern Territory (being a point at about 266 404mE, 8 754 578mN) and ending at the boundary of the offshore area of the Northern Territory with Northern Territory Coastal Waters (being a point at about 619 280mE, 8 659 685mN).

Following cessation of conveyance of petroleum from the Bayu-Undan Field, the portion of NT/PL1 proposed to be initially isolated and flooded shall be that section of pipeline which starts from a point at about 266 404mE, 8 754 578mN to a point at or about 598 711mE, 8 670 621mN.

The portion of NT/PL1 proposed to be reused for Barossa Tie-in shall be that section of pipeline which starts from a point at about 598 745mE, 8 670 574mN to a point at or about 619 280mE, 8 659 685mN."

The route is further described in the tables of coordinates below and the map at Attachment A."

<i>Current Route of NT/PL1 pipeline</i>				
<i>Feature name</i>	<i>KP</i>	<i>Easting</i>	<i>Northing</i>	<i>Radius (m)</i>
<i>Boundary of offshore areas of Western Australia and Northern Territory</i>	<i>34.2</i>	<i>266 403.5</i>	<i>8 754 577.5</i>	<i>N/A</i>
<i>Turning Point 6 Start</i>	<i>34.5</i>	<i>266 642.1</i>	<i>8 754 141.7</i>	<i>3000</i>
<i>Turning Point 6 End</i>	<i>34.5</i>	<i>266 696.8</i>	<i>8 754 100.6</i>	
<i>Turning Point 7 Start</i>	<i>37.1</i>	<i>268 765.5</i>	<i>8 752 506.8</i>	<i>3000</i>
<i>Turning Point 7 End</i>	<i>38.7</i>	<i>270 196.8</i>	<i>8 751 910.0</i>	
<i>Turning Point 8 Start</i>	<i>51.8</i>	<i>283 145.0</i>	<i>8 750 170.0</i>	<i>15000</i>
<i>Turning Point 8 End</i>	<i>52.8</i>	<i>284 138.0</i>	<i>8 750 002.4</i>	
<i>Turning Point 9 Start</i>	<i>53.6</i>	<i>284 975.9</i>	<i>8 749 831.9</i>	<i>5000</i>
<i>Turning Point 9 End</i>	<i>54.6</i>	<i>285 907.6</i>	<i>8 749 732.0</i>	
<i>Turning Point 10 Start</i>	<i>56.2</i>	<i>287 517.2</i>	<i>8 749 711.0</i>	<i>10000</i>
<i>Turning Point 10 End</i>	<i>57.4</i>	<i>288 718.8</i>	<i>8 749 622.7</i>	
<i>Turning Point 11 Start</i>	<i>68.2</i>	<i>299 444.1</i>	<i>8 748 181.4</i>	<i>6000</i>
<i>Turning Point 11 End</i>	<i>69.2</i>	<i>300 451.4</i>	<i>8 748 131.6</i>	

<i>Turning Point 12 Start</i>	<i>69.7</i>	<i>300 905.7</i>	<i>8 748 147.3</i>	<i>3000</i>
<i>Turning Point 12 End</i>	<i>70.7</i>	<i>301 901.6</i>	<i>8 748 013.5</i>	
<i>Turning Point 13 Start</i>	<i>71.7</i>	<i>302 335.6</i>	<i>8 747 878.3</i>	<i>6000</i>
<i>Turning Point 13 End</i>	<i>72.1</i>	<i>303 320.3</i>	<i>8 747 660.5</i>	
<i>Turning Point 14 Start</i>	<i>103.5</i>	<i>334 384.2</i>	<i>8 743 486.0</i>	<i>10000</i>
<i>Turning Point 14 End</i>	<i>105.1</i>	<i>335 977.3</i>	<i>8 743 137.7</i>	
<i>Turning Point 15 Start</i>	<i>135.5</i>	<i>364 989.2</i>	<i>8 734 263.6</i>	<i>12000</i>
<i>Turning Point 15 End</i>	<i>137.1</i>	<i>366 567.8</i>	<i>8 733 895.3</i>	
<i>Turning Point 16 Start</i>	<i>144.6</i>	<i>373 966.8</i>	<i>8 732 688.6</i>	<i>6000</i>
<i>Turning Point 16 End</i>	<i>146.2</i>	<i>375 570.7</i>	<i>8 732 644.4</i>	
<i>Turning Point 17 Start</i>	<i>147.8</i>	<i>377 178.7</i>	<i>8 732 816.5</i>	<i>4000</i>
<i>Turning Point 17 End</i>	<i>150.0</i>	<i>379 271.2</i>	<i>8 732 475.2</i>	
<i>Turning Point 18 Start</i>	<i>151.6</i>	<i>380 741.3</i>	<i>8 731 801.3</i>	<i>6000</i>
<i>Turning Point 18 End</i>	<i>153.2</i>	<i>382 276.1</i>	<i>8 731 333.6</i>	
<i>Turning Point 19 Start</i>	<i>172.5</i>	<i>401 323.2</i>	<i>8 728 227.4</i>	<i>15000</i>
<i>Turning Point 19 End</i>	<i>175.3</i>	<i>404 068.4</i>	<i>8 727 507.7</i>	
<i>Turning Point 20 Start</i>	<i>200.3</i>	<i>427 479.0</i>	<i>8 718 932.1</i>	<i>3000</i>
<i>Turning Point 20 End</i>	<i>200.6</i>	<i>427 821.2</i>	<i>8 718 829.4</i>	
<i>Turning Point 21 Start</i>	<i>202.8</i>	<i>429 933.8</i>	<i>8 718 330.4</i>	<i>3000</i>
<i>Turning Point 21 End</i>	<i>203.2</i>	<i>430 276.0</i>	<i>8 718 227.7</i>	
<i>Turning Point 22 Start</i>	<i>205.6</i>	<i>432 579.7</i>	<i>8 717 383.8</i>	<i>3000</i>
<i>Turning Point 22 End</i>	<i>205.7</i>	<i>432 683.9</i>	<i>8 717 347.9</i>	
<i>Turning Point 23 Start</i>	<i>206.4</i>	<i>433 337.9</i>	<i>8 717 135.3</i>	<i>3000</i>
<i>Turning Point 23 End</i>	<i>206.5</i>	<i>433 441.9</i>	<i>8 717 099.3</i>	
<i>Turning Point 24 Start</i>	<i>208.7</i>	<i>435 520.2</i>	<i>8 716 338.0</i>	<i>3000</i>
<i>Turning Point 24 End</i>	<i>209.2</i>	<i>435 962.7</i>	<i>8 716 133.8</i>	
<i>Turning Point 25 Start</i>	<i>210.8</i>	<i>437 312.0</i>	<i>8 715 372.4</i>	<i>3000</i>
<i>Turning Point 25 End</i>	<i>211.3</i>	<i>437 754.5</i>	<i>8 715 168.1</i>	
<i>Turning Point 26 Start</i>	<i>215.6</i>	<i>441 873.0</i>	<i>8 713 659.5</i>	<i>15000</i>
<i>Turning Point 26 End</i>	<i>217.7</i>	<i>443 881.6</i>	<i>8 713 078.9</i>	
<i>Turning Point 27 Start</i>	<i>253.2</i>	<i>478 536.4</i>	<i>8 705 633.5</i>	<i>4000</i>
<i>Turning Point 27 End</i>	<i>253.3</i>	<i>478 615.8</i>	<i>8 705 617.3</i>	
<i>Turning Point 28 Start</i>	<i>259.4</i>	<i>484 581.4</i>	<i>8 704 461.4</i>	<i>4000</i>
<i>Turning Point 28 End</i>	<i>261.3</i>	<i>486 287.1</i>	<i>8 703 683.4</i>	
<i>Turning Point 29 Start</i>	<i>262.3</i>	<i>487 130.3</i>	<i>8 703 023.0</i>	<i>6000</i>
<i>Turning Point 29 End</i>	<i>264.3</i>	<i>488 874.3</i>	<i>8 702 074.1</i>	
<i>Turning Point 30 Start</i>	<i>340.4</i>	<i>560 742.2</i>	<i>8 677 293.9</i>	<i>5000</i>
<i>Turning Point 30 End</i>	<i>341.0</i>	<i>561 341.8</i>	<i>8 677 128.1</i>	
<i>Turning Point 31 Start</i>	<i>341.7</i>	<i>561 992.5</i>	<i>8 676 991.1</i>	<i>5000</i>
<i>Turning Point 31 End</i>	<i>342.3</i>	<i>562 592.2</i>	<i>8 676 825.3</i>	
<i>Turning Point 32 Start</i>	<i>346.2</i>	<i>566 301.6</i>	<i>8 675 546.3</i>	<i>8000</i>
<i>Turning Point 32 End</i>	<i>347.6</i>	<i>567 634.4</i>	<i>8 675 211.6</i>	
<i>Turning Point 33 Start</i>	<i>348.6</i>	<i>568 689.7</i>	<i>8 675 041.2</i>	<i>4000</i>
<i>Turning Point 33 End</i>	<i>350.3</i>	<i>570 227.7</i>	<i>8 674 449.0</i>	
<i>Turning Point 34 Start</i>	<i>351.0</i>	<i>570 811.7</i>	<i>8 674 070.5</i>	<i>8000</i>
<i>Turning Point 34 End</i>	<i>352.9</i>	<i>572 554.8</i>	<i>8 673 220.9</i>	
<i>Turning Point 35 Start</i>	<i>356.1</i>	<i>575 549.2</i>	<i>8 672 188.4</i>	<i>5000</i>
<i>Turning Point 35 End</i>	<i>357.9</i>	<i>577 252.6</i>	<i>8 671 915.9</i>	
<i>Turning Point 36 Start</i>	<i>375.8</i>	<i>595 230.6</i>	<i>8 672 180.3</i>	<i>4000</i>
<i>Turning Point 36 End</i>	<i>379.6</i>	<i>598 506.7</i>	<i>8 670 557.4</i>	
<i>Turning Point 37 Start</i>	<i>384.9</i>	<i>601 635.4</i>	<i>8 666 322.1</i>	<i>3000</i>
<i>Turning Point 37 End</i>	<i>386.7</i>	<i>603 026.9</i>	<i>8 665 294.0</i>	
<i>Boundary of offshore area of the Northern Territory with NT Coastal Waters</i>	<i>403.9</i>	<i>619 280.3</i>	<i>8 659 684.9</i>	<i>N/A</i>

Route of portion of NT/PL1 pipeline proposed to be isolated and flooded following cessation of conveyance from Bay-Undan field				
Feature name	KP	Easting	Northing	Radius (m)
Boundary of offshore areas of Western Australia and Northern Territory	34.2	266 403.5	8 754 577.5	N/A
Turning Point 6 Start	34.5	266 642.1	8 754 141.7	3000
Turning Point 6 End	34.5	266 696.8	8 754 100.6	
Turning Point 7 Start	37.1	268 765.5	8 752 506.8	3000
Turning Point 7 End	38.7	270 196.8	8 751 910.0	
Turning Point 8 Start	51.8	283 145.0	8 750 170.0	15000
Turning Point 8 End	52.8	284 138.0	8 750 002.4	
Turning Point 9 Start	53.6	284 975.9	8 749 831.9	5000
Turning Point 9 End	54.6	285 907.6	8 749 732.0	
Turning Point 10 Start	56.2	287 517.2	8 749 711.0	10000
Turning Point 10 End	57.4	288 718.8	8 749 622.7	
Turning Point 11 Start	68.2	299 444.1	8 748 181.4	6000
Turning Point 11 End	69.2	300 451.4	8 748 131.6	
Turning Point 12 Start	69.7	300 905.7	8 748 147.3	3000
Turning Point 12 End	70.7	301 901.6	8 748 013.5	
Turning Point 13 Start	71.7	302 335.6	8 747 878.3	6000
Turning Point 13 End	72.1	303 320.3	8 747 660.5	
Turning Point 14 Start	103.5	334 384.2	8 743 486.0	10000
Turning Point 14 End	105.1	335 977.3	8 743 137.7	
Turning Point 15 Start	135.5	364 989.2	8 734 263.6	12000
Turning Point 15 End	137.1	366 567.8	8 733 895.3	
Turning Point 16 Start	144.6	373 966.8	8 732 688.6	6000
Turning Point 16 End	146.2	375 570.7	8 732 644.4	
Turning Point 17 Start	147.8	377 178.7	8 732 816.5	4000
Turning Point 17 End	150.0	379 271.2	8 732 475.2	
Turning Point 18 Start	151.6	380 741.3	8 731 801.3	6000
Turning Point 18 End	153.2	382 276.1	8 731 333.6	
Turning Point 19 Start	172.5	401 323.2	8 728 227.4	15000
Turning Point 19 End	175.3	404 068.4	8 727 507.7	
Turning Point 20 Start	200.3	427 479.0	8 718 932.1	3000
Turning Point 20 End	200.6	427 821.2	8 718 829.4	
Turning Point 21 Start	202.8	429 933.8	8 718 330.4	3000
Turning Point 21 End	203.2	430 276.0	8 718 227.7	
Turning Point 22 Start	205.6	432 579.7	8 717 383.8	3000
Turning Point 22 End	205.7	432 683.9	8 717 347.9	
Turning Point 23 Start	206.4	433 337.9	8 717 135.3	3000
Turning Point 23 End	206.5	433 441.9	8 717 099.3	
Turning Point 24 Start	208.7	435 520.2	8 716 338.0	3000
Turning Point 24 End	209.2	435 962.7	8 716 133.8	
Turning Point 25 Start	210.8	437 312.0	8 715 372.4	3000
Turning Point 25 End	211.3	437 754.5	8 715 168.1	
Turning Point 26 Start	215.6	441 873.0	8 713 659.5	15000
Turning Point 26 End	217.7	443 881.6	8 713 078.9	
Turning Point 27 Start	253.2	478 536.4	8 705 633.5	4000
Turning Point 27 End	253.3	478 615.8	8 705 617.3	
Turning Point 28 Start	259.4	484 581.4	8 704 461.4	4000
Turning Point 28 End	261.3	486 287.1	8 703 683.4	
Turning Point 29 Start	262.3	487 130.3	8 703 023.0	6000
Turning Point 29 End	264.3	488 874.3	8 702 074.1	
Turning Point 30 Start	340.4	560 742.2	8 677 293.9	5000
Turning Point 30 End	341.0	561 341.8	8 677 128.1	

Turning Point 31 Start	341.7	561 992.5	8 676 991.1	5000
Turning Point 31 End	342.3	562 592.2	8 676 825.3	
Turning Point 32 Start	346.2	566 301.6	8 675 546.3	8000
Turning Point 32 End	347.6	567 634.4	8 675 211.6	
Turning Point 33 Start	348.6	568 689.7	8 675 041.2	4000
Turning Point 33 End	350.3	570 227.7	8 674 449.0	
Turning Point 34 Start	351.0	570 811.7	8 674 070.5	8000
Turning Point 34 End	352.9	572 554.8	8 673 220.9	
Turning Point 35 Start	356.1	575 549.2	8 672 188.4	5000
Turning Point 35 End	357.9	577 252.6	8 671 915.9	
Turning Point 36 Start	375.8	595 230.6	8 672 180.3	4000
Turning Point 36 End	379.6	598 506.7	8 670 557.4	
Upstream Decommissioning Skid Flange Face	379.8	598 710.86	8 670 620.6	N/A

Route of Portion of NT/PL1 pipeline proposed to be reused for NT/PL5 Barossa Tie-In				
Feature name	KP	Easting	Northing	Radius (m)
Downstream Valve Skid Inboard Hub Face	379.8	598 745.31	8 670 573.86	N/A
Turning Point 37 Start	384.9	601 635.4	8 666 322.1	3000
Turning Point 37 End	386.7	603 026.9	8 665 294.0	
Boundary of offshore area of the Northern Territory with NT Coastal Waters	403.9	619 280.3	8 659 684.9	N/A

2. Insert the heading 'SPECIFICATIONS' under the 'ROUTE OF PIPELINE'.
3. In 'SPECIFICATIONS' insert the following Basis of Design table and relevant design and manufacture codes and standards:

Basis of Design			
Parameter	Value Prior to Pipeline Cut	Value after Pipeline Cut KP000 – KP380	Value after Pipeline Cut KP380 – KP502
Pipeline Length (km)	502.3	380 (TBC)	102 (TBC)
Volume of gas (m ³)	151,000	0	36,765
Design pressure (MPa)	19.8		
Maximum Allowable Operating Pressure (MPa)	19.4		
Maximum Design Temperature (° C)	90		
Minimum Design Temperature (° C)	0		
Design Flow Rate (MMscf/d)	750		
Wall Thickness of 28" Riser and Tie-in Spool (mm)	25.8		
Wall Thickness of 26" Section (mm)	For temperature de-rated section (KP 0.327 to KP 34): 20.7 For non-temperature de-rated section (KP 34 to KP 502): 20.1		
Wall Thickness Corrosion Allowance (mm)	1.5		
Material	Carbon Steel		
Material Grade	API 5L X65		
Anode Type	Al-Zn-In		
Anode Spacing	Not greater than every 12 joints		
Internal Coating	Epoxy (flow coating)		
Internal Coating Thickness (µm)	75		
Weight Coating	High Density Concrete		
Weight Coating Thickness (mm)	40-120		

<i>Connections at Valves and Terminations</i>	<i>Flanged</i>		
<i>Design Life (years)*</i>	25		
<i>Beach Valve</i>	<i>ANSI Class #1500 Manual Ball Valve</i>	<i>N/A</i>	<i>ANSI Class #1500 Manual Ball Valve</i>

** design life originally 25 years (up to 2030), pipeline since re-rated to 2050.*

The Bayu-Undan Pipeline was designed and manufactured in accordance with the following main codes and standards (revisions current at that time):

- *API 5L Specification for Line Pipe (42nd Edition)*
- *DNV-OS-F101 Submarine Pipeline Systems (2000 Edition, limited to mechanical testing and welding/MUT qualification requirements)*
- *DNV-RP-E305 (1998) On-bottom Stability Design of Submarine Pipelines*

The tie-in will be designed and manufactured in accordance with the following main codes and standards (with current revisions):

- *DNVGL-ST-F101 (2017) Submarine Pipeline Systems*
- *AS/NZ 2885.1 (2018) Pipelines—Gas and liquid petroleum Part 1: Design/Build*
- *AS/NZ 2885.4 (2016) Pipelines—Gas and liquid petroleum Part 4: Offshore Submarine Pipeline Systems*
- *DNV-RP-F107 (2019) Pipeline Protection*
- *DNV-RP-F111 (2017) Interface Between Trawl Gear and Pipelines*
- *DNVGL RP B401 (1993) Cathodic Protection Design*
- *DNVGL-RP-F116 (2019) Integrity Management of Submarine Pipelines Systems*
- *NORSOK M-501 Surface preparation and protective coating (6th Edition, 2012)*
- *ASME B31.8 (2016) Gas Transmission and Distribution Piping Systems*
- *DNVGL RP B401 Cathodic Protection Design (2017 Edition)*
- *AS 2885.4 (2016) Gas and Liquid Petroleum Pipelines, Part 4 Submarine Pipeline Systems*
- *DNVGL-ST-F101 (2017) Submarine Pipeline Systems*
- *ASME B31.8 (2020) Gas Transmission and Distribution Piping Systems*
- *ASME B31.3 (2020) Process Piping*
- *ISO 14723 (2009) Petroleum and natural gas industries – Pipeline transportation systems – Subsea pipeline valves*

4. The pipeline route maps are deleted and are replaced with the map at **Attachment A**.

Attachment A

