## Annex 5H

Main Risk Contributor to Potential Loss of Life associated with the Proposed Project Facilities

Table 5H.1 Main Risk Contributor to PLL for LNGC and FSRU Vessel Transit to the LNG Terminal at Operational Year (2020)

Ranking	Event	Description	PLL	Percentage
1	Collision_1500_LNGC_	Flammable effect (pool fire and	1.43E-06	57.1
	A	flash fire) of a large hole size		
		(1,500 mm) release scenario due to		
		collision for LNGC during marine		
		transit approaching the LNG		
		Terminal		
2	Collision_1500_LNGC_	Flammable effect (pool fire and	4.19E-07	16.7
	E	flash fire) of a large hole size		
		(1,500 mm) release scenario due to		
		collision for LNGC during marine		
		transit departing the LNG Terminal		
		due to bad weather, emergency		
•	C 111 1 1500 TAYOO	events	0 4 6 E 0 E	10.0
3	Collision_1500_LNGC_	Flammable effect (pool fire and	3.46E-07	13.8
	T	flash fire) of a large hole size		
		(1,500 mm) release scenario due to		
		collision for LNGC during marine transit		
4	Collision 750 I NCC T	Flammable effect (pool fire and	9 74E 09	3.5
4	Collision_750_LNGC_1	flash fire) of a medium hole size	0.74E-00	3.3
		(750 mm) release scenario due to		
		collision for LNGC during marine		
		transit		
5	Collision 1500 FSRU E	Flammable effect (pool fire and	8.07E-08	3.2
		flash fire) of a large hole size		
		(1,500 mm) release scenario due to		
		collision for FSRU during marine		
		transit departing the LNG Terminal		
		due to bad weather, emergency		
		events		
	Other		1.45E-07	5.8%
	Total		2.51E-06	100.0%

Table 5H.2 Main Risk Contributor to PLL for LNGC and FSRU Vessel Transit to the LNG Terminal at Operational Year (2030)

Ranking	Event	Description	PLL	Percentage
1	Collision_1500_LNGC_ A	Flammable effect (pool fire and flash fire) of a large hole size (1,500 mm) release scenario due to collision for LNGC during marine transit approaching the LNG	1.69E-06	57.3
2	Collision_1500_LNGC_ E	Terminal Flammable effect (pool fire and flash fire) of a large hole size (1,500 mm) release scenario due to collision for LNGC during marine transit departing the LNG Terminal due to bad weather, emergency	4.92E-07	16.7
3	Collision_1500_LNGC_ T	events  Flammable effect (pool fire and flash fire) of a large hole size (1,500 mm) release scenario due to collision for LNGC during marine	4.00E-07	13.5
4	Collision_750_LNGC_T	transit Flammable effect (pool fire and flash fire) of a medium hole size (750 mm) release scenario due to collision for LNGC during marine transit	1.01E-07	3.4
5	Collision_1500_FSRU_E	Flammable effect (pool fire and flash fire) of a large hole size (1,500 mm) release scenario due to collision for FSRU during marine transit departing the LNG Terminal due to bad weather, emergency events	9.59E-08	3.3
	Other		1.70E-08	5.8%
	Total		2.95E-06	100.0%

Table 5H.3 Main Risk Contributor to PLL for LNG Terminal at Operational Year (2020)

Ranking	Event	Description	PLL	Percentage
1	HKOLNGT_06_LR_FB	Fireball of a line rupture scenario	3.49E-06	75.5%
		for Natural gas from Regasification		
		Unit, via metering, to Jetty		
		(including HP Gas Loading Arm)		
2	HKOLNGT_01_L_PF	Pool fire of a large leak scenario for	8.65E-07	18.7%
		LNG Loadout from LNGC, via		
		Jetty, to LNG Storage Tank in FSRU		
		Vessel		
3	HKOLNGT_05_LR_FB	Fireball of a line rupture scenario	7.75E-08	1.7%
		for Regasification Trains		
4	HKOLNGT_04_M	Flammable effect (jet fire and flash	1.83E-08	0.4%
		fire) of a medium leak scenario for		
		LNG Booster Pump to		
		Regasification Unit		
5	HKOLNGT_03_L	Flammable effect (jet fire and flash	1.71E-08	0.4%
		fire) of a large leak scenario for		
		LNG Transfer from LNG Storage		
		Tank Pump to LNG Booster Pump		
6	HKOLNGT_04_L	Flammable effect (jet fire and flash	1.63E-08	0.4%
		fire) of a large leak scenario for		
		LNG Booster Pump to		
		Regasification Unit		
7	HKOLNGT_07_LR_FB	Fireball of a line rupture scenario	1.56E-08	0.3%
		for Natural gas in Jetty to ESDV of		
		Riser for BPPS Subsea Pipeline		
8	HKOLNGT_10_LR_FB	Fireball of a line rupture scenario	1.56E-08	0.3%
		for Natural gas in Jetty to ESDV of		
		Riser for LPS Subsea Pipeline		
9	HKOLNGT_04_S	Flammable effect (jet fire and flash	1.54E-08	0.3%
		fire) of a small leak scenario for		
		LNG Booster Pump to		
		Regasification Unit		
10	HKOLNGT_08_LR_FB	Fireball of a line rupture scenario	1.14E-08	0.2%
		for Riser for BPPS Subsea Pipeline		
	Other		8.24E-08	1.8%
· · · · · · · · · · · · · · · · · · ·	Total		4.62E-06	100.0%

Table 5H.4 Main Risk Contributor to PLL for LNG Terminal at Future Scenario Year (2030)

Ranking	Event	Description	PLL	Percentage
1	HKOLNGT_06_LR_FB	Fireball of a line rupture scenario	4.15E-06	75.5%
		for Natural gas from Regasification		
		Unit, via metering, to Jetty		
		(including HP Gas Loading Arm)		
2	HKOLNGT_01_L_PF	Pool fire of a large leak scenario for	1.03E-06	18.7%
		LNG Loadout from LNGC, via		
		Jetty, to LNG Storage Tank in FSRU		
		Vessel		
3	HKOLNGT_05_LR_FB	Fireball of a line rupture scenario	9.22E-08	1.7%
		for Regasification Trains		
4	HKOLNGT_04_M	Flammable effect (jet fire and flash	2.18E-08	0.4%
		fire) of a medium leak scenario for		
		LNG Booster Pump to		
		Regasification Unit		
5	HKOLNGT_03_L	Flammable effect (jet fire and flash	2.03E-08	0.4%
		fire) of a large leak scenario for		
		LNG Transfer from LNG Storage		
		Tank Pump to LNG Booster Pump		
6	HKOLNGT_04_L	Q .	1.94E-08	0.4%
		fire) of a large leak scenario for		
		LNG Booster Pump to		
		Regasification Unit		
7	HKOLNGT_07_LR_FB	Fireball of a line rupture scenario	1.86E-08	0.3%
		for Natural gas in Jetty to ESDV of		
		Riser for BPPS Subsea Pipeline		
8	HKOLNGT_10_LR_FB	Fireball of a line rupture scenario	1.86E-08	0.3%
		for Natural gas in Jetty to ESDV of		
		Riser for LPS Subsea Pipeline		
9	HKOLNGT_04_S	Flammable effect (jet fire and flash	1.83E-08	0.3%
		fire) of a small leak scenario for		
		LNG Booster Pump to		
10	111/O1 NOT 00 1 7 77	Regasification Unit	4.055.00	0.50
10	HKOLNGT_08_LR_FB	Fireball of a line rupture scenario	1.35E-08	0.2%
	O.I	for Riser for BPPS Subsea Pipeline	0.00= 00	1.00
	Other		9.80E-08	1.8%
	Total		5.50E-06	100.0%

Table 5H.5 PLL for BPPS Subsea Pipeline at Operational Year (2020)

Segment	Description	PLL (/yr)	Percentage
X	Jetty Approach to South of Soko Islands	6.49E-06	11.11%
A	Southwest of Soko Islands	2.82E-06	4.83%
В	Southwest of Fan Lau	2.35E-06	4.03%
C	Southwest Lantau	4.07E-05	69.67%
D	West of Tai O	1.89E-06	3.23%
E	West of HKIA	7.31E-07	1.25%
F	West of Sha Chau	2.79E-08	0.05%
G	West of Lung Kwu Chau	3.09E-08	0.05%
Н	Lung Kwu Chau to Urmston Anchorage	1.30E-06	2.22%
I	Urmston Road	1.59E-06	2.71%
Total		5.84E-05	100.0%

Table 5H.6 PLL for BPPS Subsea Pipeline at Future Scenario Year (2030)

Segment	Description	PLL (/yr)	Percentage
X	Jetty Approach to South of Soko Islands	6.50E-06	10.99%
A	Southwest of Soko Islands	2.83E-06	4.78%
В	Southwest of Fan Lau	2.60E-06	4.40%
C	Southwest Lantau	4.08E-05	68.94%
D	West of Tai O	1.89E-06	3.20%
E	West of HKIA	8.11E-07	1.37%
F	West of Sha Chau	3.50E-08	0.06%
G	West of Lung Kwu Chau	3.57E-08	0.06%
H	Lung Kwu Chau to Urmston Anchorage	1.41E-06	2.39%
I	Urmston Road	1.72E-06	2.91%
Total		5.91E-05	100.0%

Table 5H.7 PLL for LPS Subsea Pipeline at Operational Year (2020)

Segment	Description	PLL (/yr)	Percentage
A	Jetty Approach to South of Shek Kwu Chau	1.54E-07	1.76%
В	South of Cheung Chau	2.81E-06	32.21%
C	West Lamma Channel	3.74E-06	42.85%
D	Alternative Shore Approach	2.02E-06	23.18%
Total		8.73E-06	100.0%

Table 5H.8 PLL for BPPS Subsea Pipeline at Future Scenario Year (2030)

Segment	Description	PLL (/yr)	Percentage
A	Jetty Approach to South of Shek Kwu Chau	1.90E-07	2.09%
В	South of Cheung Chau	3.00E-06	33.11%
C	West Lamma Channel	3.77E-06	41.59%
D	Alternative Shore Approach	2.10E-06	23.21%
Total		9.07E-05	100.0%

Table 5H.9 Main Risk Contributor to PLL for Construction Year (2020) at the BPPS

Ranking	Event	Description	PLL	Percentage
1	GRS_01_LR_IF_FB	Fire ball scenario due to a line rupture	2.53E-07	15.51%
		of Above ground piping from shore end		
		to pig receiver of Y13-1 GRS		
2	GRS_05_LR_IF_FB	Fire ball scenario due to a line rupture	2.30E-07	14.09%
		of Piping from gas heaters to pressure		
		reduction station, including PRS of Y13-		
		1 GRS		
3	GRS_04_LR_IF_FB	Fire ball scenario due to a line rupture	2.04E-07	12.46%
		of Piping from inlet gas filter separator		
		to gas heater of Y13-1 GRS		
4	GRS_18_LR_IF_FB	Fire ball scenario due to a line rupture	1.52E-07	9.32%
		of Piping from PRS to manifold,		
		including HIPPS of Dachan GRS		
5	GRS_03_LR_IF_FB	Fire ball scenario due to a line rupture	1.00E-07	6.13%
		of Piping from slug catcher to inlet gas		
		filter separators of Y13-1 GRS		
6	GRS_06_LR_IF_FB	Fire ball scenario due to a line rupture	9.17E-08	5.62%
		of Piping from pressure reduction		
		station to outlet gas filter separator of		
		Y13-1 GRS		
7	GRS_02_LR_IF_FB	Fire ball scenario due to a line rupture	8.64E-08	5.29%
		of Piping from receiver to slug catcher		
		of Y13-1 GRS		0.
8	GRS_12_LR_IF_FB	Fire ball scenario due to a line rupture	7.04E-08	4.31%
		of Piping from receiver to gas filter of		
0	CDC 44 LD IE ED	Dachan GRS	4 FFF 00	4.04.0/
9	GRS_11_LR_IF_FB	Fire ball scenario due to a line rupture	6.55E-08	4.01%
		of Above ground piping from shore end		
10	CDC 00 LD IE ED	to pig receiver of Dachan GRS	( 4 ET. 00	2.770/
10	GRS_08_LR_IF_FB	Fire ball scenario due to a line rupture	6.15E-08	3.77%
	Other	of Pig receiver of Y13-1 GRS	2 105 07	10 E0/
	Total		3.19E-07 1.63E-06	19.5%
	TOLAL		1.03E-U6	100.0%

Table 5H.10 Main Risk Contributor to PLL for Operational Year (2020) at the BPPS

Ranking	Event	Description	PLL	Percentage
1	GRS_01_LR_IF_FB	Fire ball scenario due to a line rupture	2.17E-07	11.58%
		of Above ground piping from shore		
		end to pig receiver of Y13-1 GRS		
2	GRS_05_LR_IF_FB	Fire ball scenario due to a line rupture	1.79E-07	9.58%
		of Piping from gas heaters to pressure		
		reduction station, including PRS of		
		Y13-1 GRS		
3	GRS_04_LR_IF_FB	Fire ball scenario due to a line rupture	1.62E-07	8.66%
		of Piping from inlet gas filter separator		
		to gas heater of Y13-1 GRS		
4	GRS_18_LR_IF_FB	Fire ball scenario due to a line rupture	1.38E-07	7.38%
		of Piping from PRS to manifold,		
		including HIPPS of Dachan GRS		
5	NGRS_05_LR_IF_FB	Fire ball scenario due to a line rupture	1.07E-07	5.73%
		of WBH piping of New GRS		
6	NGRS_07_LR_IF_FB	Fire ball scenario due to a line rupture	1.05E-07	5.61%
		of Piping from Pressure Reduction		
_		Station to Mixing Station of New GRS		=
7	NGRS_04_LR_IF_FB	Fire ball scenario due to a line rupture	8.34E-08	4.45%
		of Piping from Metering Station to		
0	CDC 00 ID IE ED	WBH of New GRS	E 00E 00	2.200/
8	GRS_03_LR_IF_FB	Fire ball scenario due to a line rupture	5.98E-08	3.20%
		of Piping from slug catcher to inlet gas		
0	CDC 10 LD IE ED	filter separators of Y13-1 GRS	E 40E 00	2.02.9/
9	GRS_12_LR_IF_FB	Fire ball scenario due to a line rupture of Piping from receiver to gas filter of	5.49E-08	2.93%
		Dachan GRS		
10	NCRS ON I D IE EE	Flash fire scenario due to a line	5.10E-08	2.72%
10	NGNO_04_LIX_IF_FF	rupture of Piping from Metering	J.10E-06	∠.1∠/0
		Station to WBH of New GRS		
	Other	oution to Whit of New GRO	7.14E-07	38.2%
	Total		1.87E-06	100.0%

Table 5H.11 Main Risk Contributor to PLL for Future Scenario Year (2030) at the BPPS

Ranking	Event	Description	PLL	Percentag
				e
1	GRS_01_LR_IF_FB	Fire ball scenario due to a line rupture	2.23E-07	11.56%
		of Above ground piping from shore		
		end to pig receiver of Y13-1 GRS		
2	GRS_05_LR_IF_FB	Fire ball scenario due to a line rupture	1.87E-07	9.70%
		of Piping from gas heaters to pressure		
		reduction station, including PRS of		
0	CDC 04 ID IE ED	Y13-1 GRS	1 (OF OF	0.51.0/
3	GRS_04_LR_IF_FB	Fire ball scenario due to a line rupture	1.68E-07	8.71%
		of Piping from inlet gas filter separator to gas heater of Y13-1 GRS		
4	GRS_18_LR_IF_FB	Fire ball scenario due to a line rupture	1.43E-07	7.42%
<b>T</b>	GR5_10_ER_II*_I*D	of Piping from PRS to manifold,	1.4515-07	7.42/0
		including HIPPS of Dachan GRS		
5	NGRS_05_LR_IF_FB	Fire ball scenario due to a line rupture	1.10E-07	5.71%
		of WBH piping of New GRS		
6	NGRS_07_LR_IF_FB	Fire ball scenario due to a line rupture	1.10E-07	5.70%
		of Piping from Pressure Reduction		
		Station to Mixing Station of New GRS		
7	NGRS_04_LR_IF_FB	Fire ball scenario due to a line rupture	8.60E-08	4.46%
		of Piping from Metering Station to		
		WBH of New GRS		
8	GRS_03_LR_IF_FB	Fire ball scenario due to a line rupture	6.20E-08	3.21%
		of Piping from slug catcher to inlet		
0	CDC 40 LD IE ED	gas filter separators of Y13-1 GRS	E EEE 00	2.050/
9	GRS_12_LR_IF_FB	Fire ball scenario due to a line rupture	5.55E-08	2.87%
		of Piping from receiver to gas filter of Dachan GRS		
10	NGRS_04_LR_IF_FF	Flash fire scenario due to a line	5.21E-08	2.70%
10	NGN3_U4_LI\_If_FF	rupture of Piping from Metering	J.ZIE-00	2.70/0
		Station to WBH of New GRS		
	Other	The state of the s	7.32E-07	37.9%
	Total		1.93E-06	100.0%

Table 5H.12 Main Risk Contributor to PLL for Construction Year (2020) at the LPS

Ranking	Event	Description	PLL	Percentage
1	GRS_01_LR_IF_FB	Fire ball scenario due to a line rupture	2.13E-08	32.09%
		of Above ground existing piping from		
		shore to existing GRS Trains		
2	GRS_10_LR_IF_FB	Fire ball scenario due to a line rupture	1.06E-08	15.91%
		of Pig Receiver of the existing GRS		
3	GRS_08_LR_IF_FB	Fire ball scenario due to a line rupture	7.17E-09	10.78%
		of Piping from Heater to Pressure		
		Reduction Station (L9 Stream)		
4	GRS_07_LR_IF_FB	Fire ball scenario due to a line rupture	7.02E-09	10.56%
		of Piping from Metering Skid to Heater		
		(L9 Stream)		
5	GRS_06_LR_IF_FB	Fire ball scenario due to a line rupture	5.57E-09	8.38%
		of Piping from Filter Skid to Metering		
		Skid (L9 Stream)		
6	GRS_02_LR_IF_FB	Fire ball scenario due to a line rupture	3.05E-09	4.58%
		of Piping from Filter Skid to Metering		
		Skid (GT57 Stream)		
7	GRS_03_LR_IF_FB	Fire ball scenario due to a line rupture	2.54E-09	3.83%
		of Piping from Metering Skid to Heater		
		(GT57 Stream)		
8	GRS_04_LR_IF_FB	Fire ball scenario due to a line rupture	2.35E-09	3.53%
		of Piping from Heater to Pressure		
		Reduction Station (GT57 Stream)		
9	GRS_01_LR_IF_FF2	Flash fire scenario due to a line rupture	1.95E-09	2.93%
		of Above ground existing piping from		
		shore to existing GRS Trains		
10	GRS_09_LR_IF_FB	Fire ball scenario due to a line rupture	1.15E-09	1.72%
		of Piping from Pressure Reduction		
	O.I.	Station (L9 Stream) to L9	• <b>=</b> ••	= 4004
	Other		3.78E-09	5.69%
	Total		6.65E-08	100.0%

Table 5H.13 Main Risk Contributor to PLL for Operational Year (2020) at the LPS

Ranking	Event	Description	PLL	Percentage
1	GRS_01_LR_IF_FB	Fire ball scenario due to a line rupture	1.70E-08	17.03%
		scenario of Above ground existing		
		piping from shore to existing GRS		
		Trains		
2	NGRS_01_LR_IF_FB	Fire ball scenario due to a line rupture	9.65E-09	9.65%
		scenario of Above ground 20" piping		
		from shore to Inlet of each New GRS		
		Metering Train A		
3	NGRS_27_LR_IF_FB	Fire ball scenario due to a line rupture	7.91E-09	7.91%
		scenario of Pig Receiver of New GRS		
4	NGRS_02_LR_IF_FB	Fire ball scenario due to a line rupture	7.00E-09	7.00%
		scenario of Piping from Existing Gas		
		Header to Inlet ESDVs of each New		
		GRS Metering Train B		
5	GRS_10_LR_IF_FB	Fire ball scenario due to a line rupture	6.70E-09	6.70%
		scenario of Pig Receiver of the existing		
		GRS		
6	NGRS_28_LR_IF_FB	Fire ball scenario due to a line rupture	6.08E-09	6.08%
		scenario of Piping from Existing Gas		
		Header to Inlet ESDV (L10 Stream A)		
7	GRS_08_LR_IF_FB	Fire ball scenario due to a line rupture	5.47E-09	5.47%
		scenario of Piping from Heater to		
		Pressure Reduction Station (L9 Stream)		
8	NGRS_33_LR_IF_FB	Fire ball scenario due to a line rupture	5.32E-09	5.32%
		scenario of Piping from New Gas		
	CDC 07 ID IE ED	Header to Inlet ESDV (L10 Stream B)	4.0.4E.00	4.040/
9	GRS_07_LR_IF_FB	Fire ball scenario due to a line rupture	4.84E-09	4.84%
		scenario of Piping from Metering Skid		
10	CDC 04 LD IE ED	to Heater (L9 Stream)	4.450 00	4.450/
10	GRS_06_LR_IF_FB	Fire ball scenario due to a line rupture	4.17E-09	4.17%
		scenario of Piping from Filter Skid to		
	Other	Metering Skid (L9 Stream)	2.58E-08	25.83%
	Total		1.00E-07	100.0%
	1 Utal		1.00E-07	100.0 //

Table 5H.14 Main Risk Contributor to PLL for Future Scenario Year (2030) at the LPS

Ranking	Event	Description	PLL	Percentage
1	GRS_01_LR_IF_FB	Fire ball scenario due to a line rupture	2.04E-08	17.03%
		of Above ground existing piping from		
		shore to existing GRS Trains		
2	NGRS_01_LR_IF_FB	Fire ball scenario due to a line rupture	1.16E-08	9.65%
		of Above ground 20" piping from shore		
		to Inlet of each New GRS Metering		
		Train A		
3	NGRS_27_LR_IF_FB	Fire ball scenario due to a line rupture	9.49E-09	7.91%
		of Pig Receiver of New GRS		
4	NGRS_02_LR_IF_FB	Fire ball scenario due to a line rupture	8.40E-09	7.00%
		of Piping from Existing Gas Header to		
		Inlet ESDVs of each New GRS		
		Metering Train B		
5	GRS_10_LR_IF_FB	Fire ball scenario due to a line rupture	8.04E-09	6.70%
		of Pig Receiver of the existing GRS		
6	NGRS_28_LR_IF_FB	Fire ball scenario due to a line rupture	7.30E-09	6.08%
		of Piping from Existing Gas Header to		
		Inlet ESDV (L10 Stream, Train 1)		
7	GRS_08_LR_IF_FB	Fire ball scenario due to a line rupture	6.56E-09	5.47%
		of Piping from Heater to Pressure		
		Reduction Station (L9 Stream)		
8	NGRS_33_LR_IF_FB	Fire ball scenario due to a line rupture	6.38E-09	5.32%
		of Piping from New Gas Header to		
		Inlet ESDV (L10 Stream, Train 2)		
9	GRS_07_LR_IF_FB	Fire ball scenario due to a line rupture	5.81E-09	4.84%
		of Piping from Metering Skid to Heater		
		(L9 Stream)		
10	GRS_06_LR_IF_FB	Fire ball scenario due to a line rupture	5.00E-09	4.16%
		of Piping from Filter Skid to Metering		
	0.1	Skid (L9 Stream)	0 10E 00	<b>25</b> 05°′
	Other		3.10E-08	25.85%
	Total		1.20E-07	100.0%