Slides for Panel Discussion in Green Methanol OGV Workshop

discuss roadmap, get the infrastructure ready and demand aggregation for

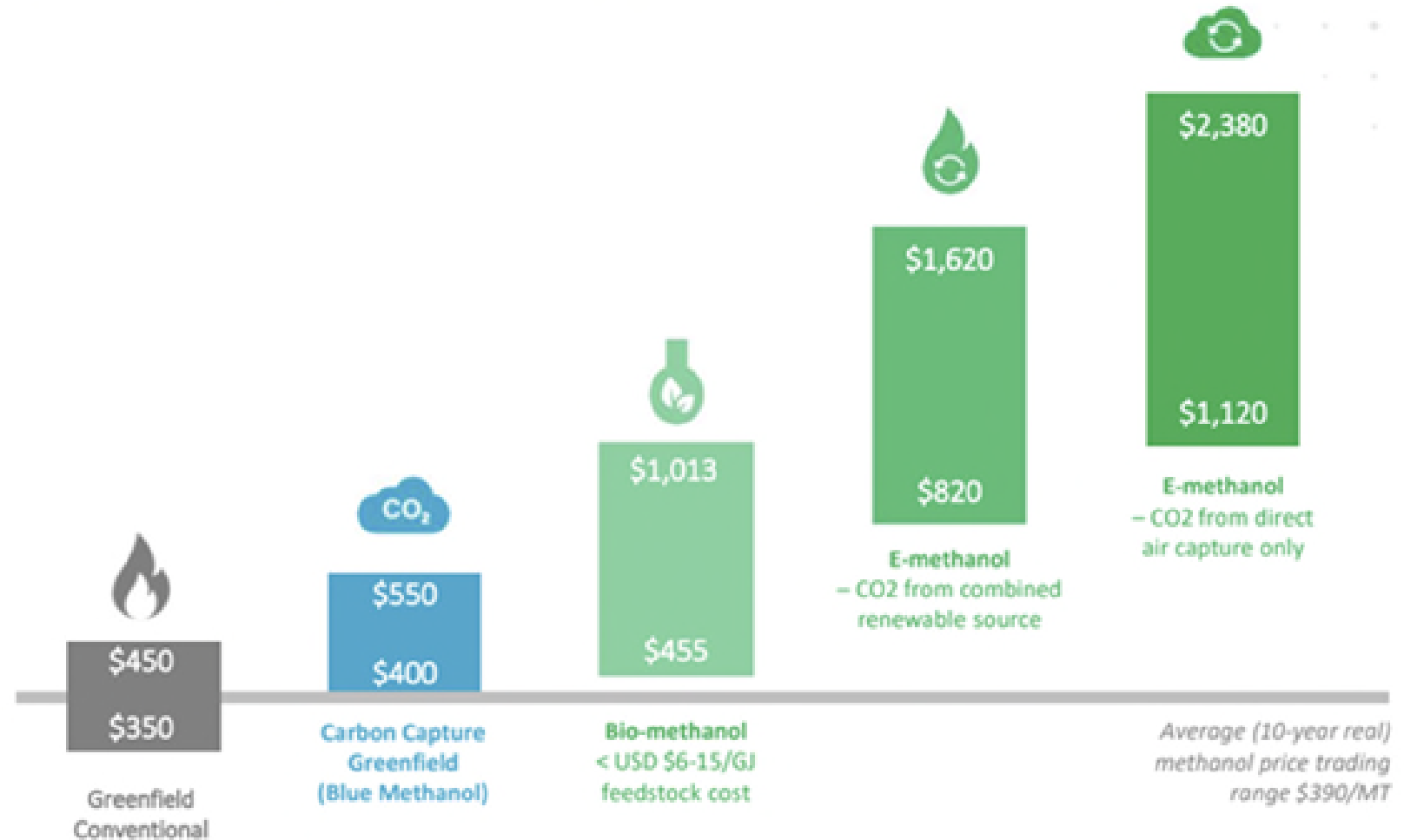## methanol bunkering in Hong Kong

22 October 2024

Screen 1

Incentivizing low-carbon methanol production.

We expect government policies and regulations to lead to increased investment and demand for low and zero carbon methanol. Greater production of lower or zero carbon methanol can be incentivized through various means including customers' willingness to pay a higher price and new technology that reduce production costs.

The cost for lower emission methanol is expected to decrease as technologies mature and become scalable.

Methanol from Methanex | The evolution of Marine Fuel

Range of current capital and production costs for different forms of methanol
USD $/tonne of methanol*

	Greenfield Conventional	Carbon Capture Greenfield (Blue Methanol)	Bio-methanol < USD $6-15/GJ feedstock cost	E-methanol – CO2 from combined renewable source	E-methanol – CO2 from direct air capture only
High	$450	$550	$1,013	$1,620	$2,380
Low	$350	$400	$455	$820	$1,120

Average (10-year real) methanol price trading range $390/MT

Source: 2021 Irena Report and internal estimates.   * Exchange rate used USD 1 = EUR 0.9

methanex
the power of agility

2023 "全球十大船加油港口" 排名结果
2023 Global Bunker Rankings By Port
2023全球十大船加油港口（百万吨）2023 Top-10 Bunker Ports (mn t)

Rank	Country 国家	Port 港口	2023 Volume 总量
1	Singapore 新加坡	Singapore 新加坡	51.82
2	The Netherlands 荷兰	Rotterdam 鹿特丹	9.81
3	UAE 阿联酋	Fujairah 富查伊拉	7.48
4	China 中国	Zhoushan 舟山	7.04
5	Belgium 比利时	Antwerp-Burges 安特卫普-布鲁日	6.15
6	South Korea 韩国	Busan 釜山	5.78
7	China 中国	Hong Kong 香港	5.10
8	Panama 巴拿马	Panama 巴拿马	4.91
9	United Kingdom 英国	Gibraltar 直布罗陀	4.54
10	China 中国	Shanghai 上海	3.41

Figure 5 in "The Silk Alliance: A progress report" for 359 vessels that will bunker in Singapore with fuel consumption at 2.9 MMT fuel oil equivalent per year gives 3.0 MMT in 2030 => Estimated HK 0.3 MMT (based on 10:1 ratio of Singapore: HK bunker demand, see screen 2)
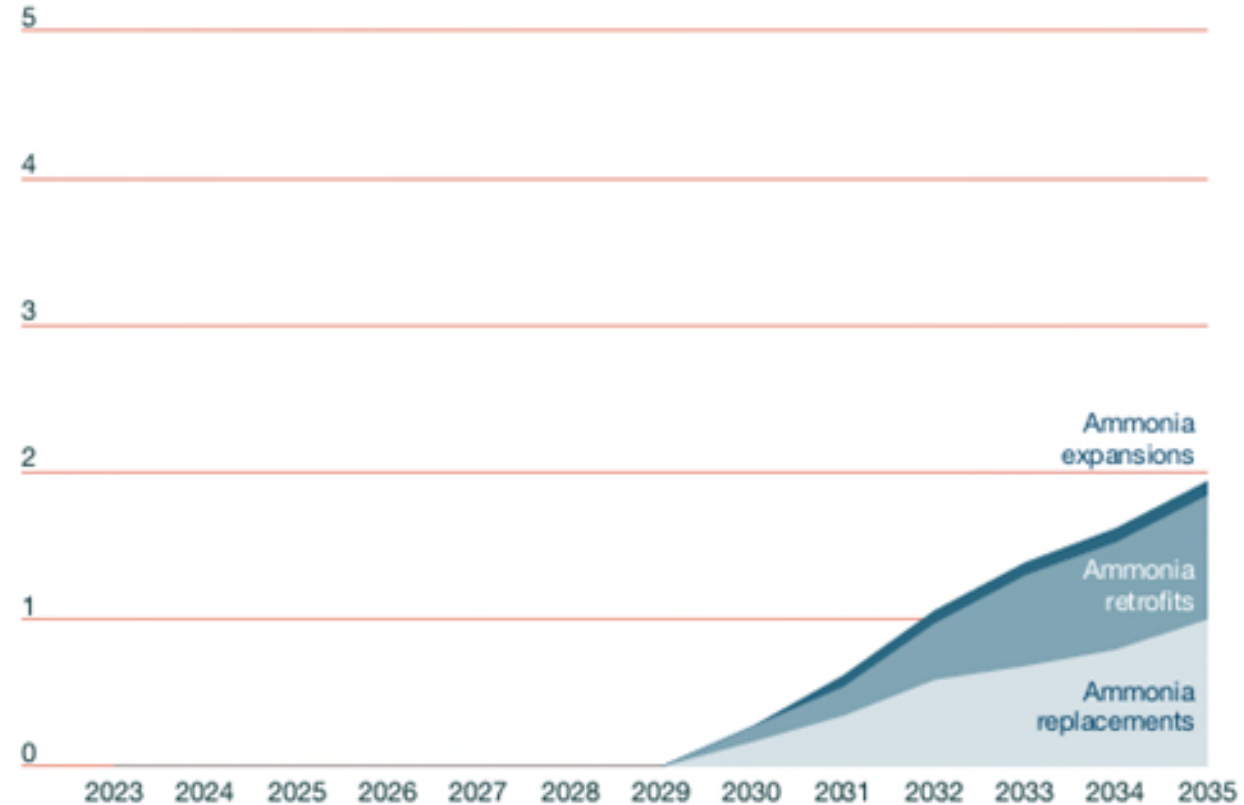
Figure 5
Projected growth of alternative fuel demand for the Silk Alliance baseline fleet to 2035

Source: https://www.lr.org/en/knowledge/research-reports/2023/silk-alliance-progress-report/
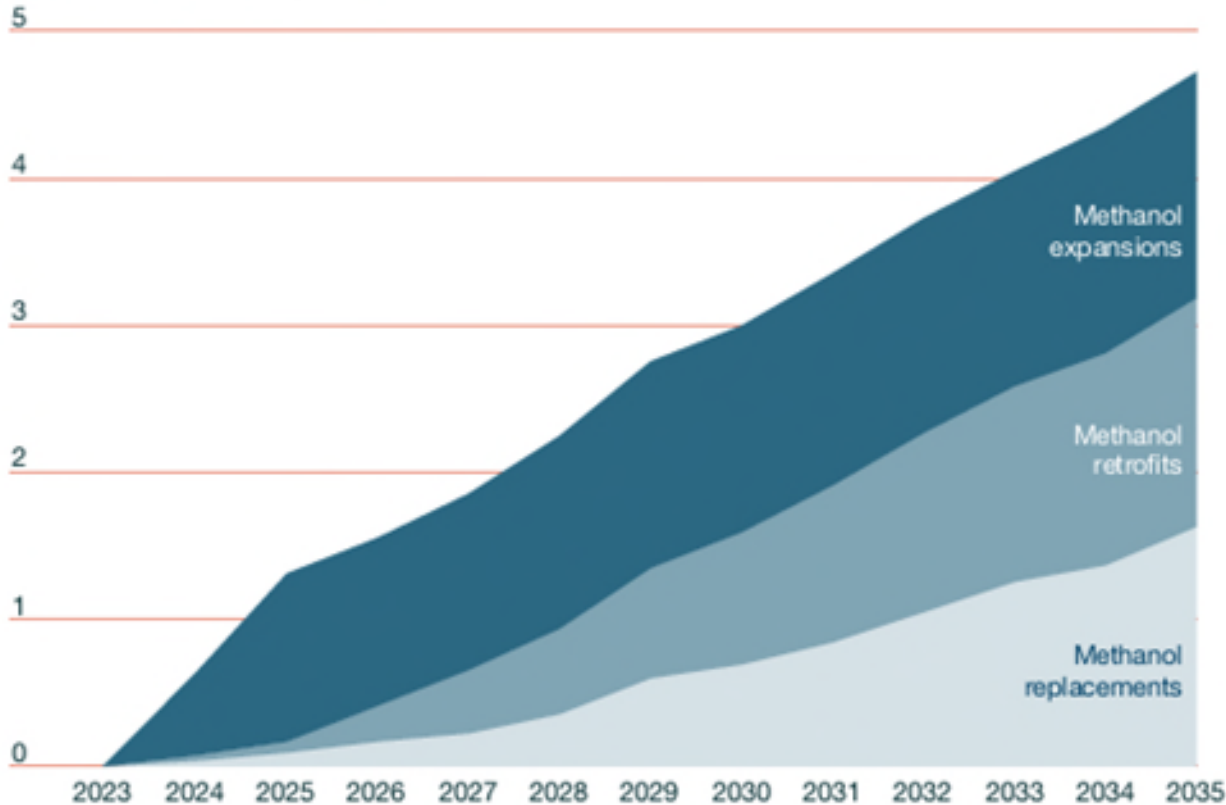
Green Methanol Shore Tank Capacities for methanol bunkering from Year 2026/27 to 2050

Start year	Tank capacity (m3)	Remarks
2026/27	15,000	= (4000 + 2000)m3/week x 2.5 weeks^
Containership demand is the largest; GM bunker volume = 4K m3 (one big containership) + 2K m3 (one small containership)/ week.*		
2030	18,000 - 45,000#	= 7.5% x 5M x 2/ 52 x 2.5/ 0.8
IMO target 5-10 %; HK Fuel Oil bunker demand = 5 MMT/year (see screen 2); Conversion factor = 2 (HFO => GM); Density = 0.8 t/T/m3		
2050	182,000	= 4 x Year 2030 demand
30% demand (mean of MAN and ABS fuel mix estimate by 2050)		
2040	113,000	= mean of 2030 and 2050

^ Agreed with an oil company representative. * Estimated by Prakash Chandra of Fleet Management Ltd.
# Lower bound refers to Silk Alliance estimate (see screen 3). Upper bound refers to remarks.

Singapore was the major supplier for import of fuel oil. If some Singapore tankers were to change carrying clean petroleum products (CPP), these tankers upon unloading the CPP in HK could backhaul green methanol via HK imported from China; making HK an export hub of green fuels. **Screen 5**

Type of oil products		Kilolitres				Tonnes	
		Aviation gasoline and kerosene	Motor gasoline (unleaded petrol)	Gas oil, diesel oil and naphtha	Fuel oil	Liquefied petroleum gas	Natural gas
2023	Q1	1 174 536	132 594	934 061	1 464 728	68 968	697 040
	Q2	1 448 505	157 554	1 008 505	1 357 743	77 352	1 017 011
	Q3	1 461 538	121 292	854 065	1 237 776	80 634	1 128 839
	Q4	1 591 538	127 042	1 064 692	1 435 137	60 440	939 593
2024	Q1	1 749 127	116 903	963 482	1 522 500	75 498	888 291

Quantity of Net Import

See https://www.censtatd.gov.hk/en/wbr.html?ecode=B11000012024QQ01&download_xml=1