

China Heavy Duty Truck

Natural gas HDT +14.8x YoY in Oct on low base; Expect momentum to continue; Weichai our top pick

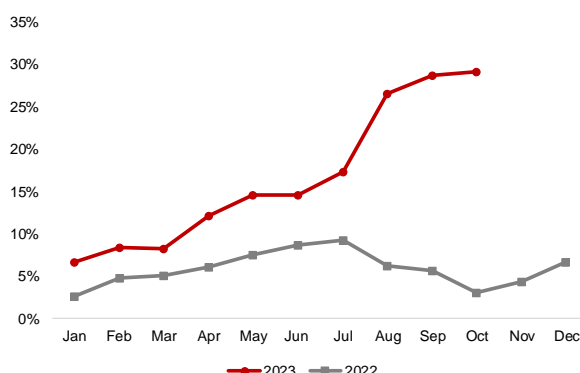
The large price spread between LNG and diesel continued to boost the sales volume of natural gas heavy-duty trucks (HDT). According to the preliminary data from Cvworl, the industry sales volume of gas HDT surged 14.8x YoY to 23k units in Oct, representing 29% of the total HDT sold. In 10M23, sales volume of gas HDT surged 3.1x YoY to ~130k units, accounting for ~17% of total HDT sold.

- **Payback period for gas HDT is 3.1 years; versus 3.7 years for diesel HDT.** Despite an increase of gas/diesel price ratio to 0.74x (mid-Nov) from 0.63x a month ago, our payback period analysis suggests that gas HDT remains a better choice for truck buyers (LNG: 3.1 years, diesel: 3.7 years). Our key assumptions include: (1) purchase price (VAT-included) of RMB468k for LNG HDT and RMB374k for diesel HDT; and (2) average daily transportation distance of 500km. For truck buyers, based on the current price of LNG (RMB5.5/kg) and diesel (RMB7.4/litre), the annual net profit of RMB151k generated from LNG truck is better than that of diesel truck (RMB100k).

Key beneficiaries:

- **Our top pick is Weichai Power (2338 HK, 000338 CH, BUY)** given its >60% market share in HDT gas engine. The rising HDT gas engine mix will help lift the total market share of HDT engine.
- **Natural gas HDT: FAW Jiefang (000800 CH, NR)** remains the largest gas HDT manufacturer with 32% market share in Oct.
- **LNG on-vehicle cylinder manufacturers: CIMC Enric (3899 HK, NR), Furui Special Equipment (300228 CH, NR) and Zhiyuan New Energy Equipment (300985 CH, NR)** are beneficiaries of strong orders for cylinder.

Natural gas HDTs as % of total HDTs sold



Source: Wind, Cvworl, CMBIGM

OUTPERFORM
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Related reports:

1. China Construction Machinery & HDT – 3Q23 earnings review: Weichai & Zoomlion beat; SANY Heavy & Jiangsu Hengli miss – 31 Oct 2023 ([link](#))
2. China Heavy Duty Truck – Is the growth of natural gas truck sales sustainable? – 24 Oct 2023 ([link](#))
3. Weichai Power (2338 HK / 000338 CH, BUY) – 3Q23 earnings surged 120-200% YoY; Strong gas trucks sales continue to be the key driver – 16 Oct 2023 ([link](#) for H-share) ([link](#) for A-share)

Figure 1: Comparison of investment return between Diesel and LNG truck

Diesel		LNG	
Operating assumptions			
Transport service income (RMB / tonne km)	0.27	Transport service income (RMB / tonne km)	0.27
Capacity (tonne)	30	Capacity (tonne)	30
Operating days / month	20	Operating days / month	20
Daily transportation distance (km)	500	Daily transportation distance (km)	500
Diesel consumption (litre / 100 km)	30	Gas consumption (kg / 100 km)	30
Diesel price (RMB /litre)	7.4	Gas price (RMB/kg)	5.5
Urea expense (RMB / 100 km)	11.25	Urea expense (RMB / 100 km)	0
Maintenance expense (RMB / 100 km)	60	Maintenance expense (RMB / 100 km)	60
Toll fee per vehicle (RMB/km)	2.2	Toll fee per vehicle (RMB/km)	2.2
Monthly wage of a driver (RMB)	9,000	Monthly wage of a driver (RMB)	9,000
Tax rate (%)	25%	Tax rate (%)	25%
Capex			
Truck purchase price (RMB)	320,000	Truck purchase price (RMB)	400,000
Years of depreciation	5	Years of depreciation	5
VAT rate	17%	VAT rate	17%
VAT (RMB)	54,400	VAT (RMB)	68,000
Total purchase price (RMB)	374,400	Total purchase price (RMB)	468,000
Profitability			
	(RMB)		(RMB)
Revenue (annual)	931,500	Revenue (annual)	931,500
Expense:		Expense:	
Diesel	-267,084	Natural gas	-197,100
Urea	-13,500	Urea	0
Depreciation	-64,000	Depreciation	-80,000
Maintenance	-72,000	Maintenance	-72,000
Toll fee	-253,000	Toll fee	-253,000
Driver wage	-108,000	Driver wage	-108,000
Insurance and others	-20,000	Insurance and others	-20,000
Pre-tax profit	133,916	Pre-tax profit	201,400
Tax	-33,479	Tax	-50,350
Net profit	100,437	Net profit	151,050
Payback period (year)	3.7		3.1

Source: CMBIGM estimates

Figure 2: Sensitivity of payback period to diesel price

		Transport service income (RMB / tonne km)				
		0.243	0.2565	0.27	0.2835	0.297
Diesel price (RMB/litre)	5.9	5.3	3.5	2.7	2.1	1.8
	6.7	7.4	4.4	3.1	2.4	2.0
	7.4	12.2	5.7	3.7	2.8	2.2
	8.2	35.5	8.2	4.7	3.2	2.5
	8.9	-39.5	14.7	6.2	3.9	2.9

Source: CMBIGM estimates

Note: For diesel truck

Figure 3: Sensitivity of payback period to LNG price

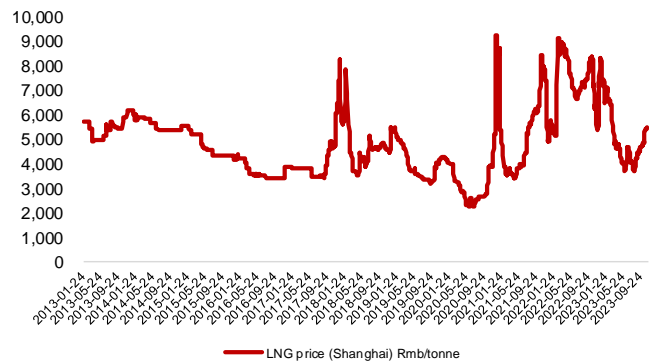
		Transport service income (RMB / tonne km)				
		0.243	0.2565	0.27	0.2835	0.297
LNG price (RMB/kg)	4.4	4.2	3.2	2.6	2.2	1.9
	4.9	4.9	3.6	2.8	2.3	2.0
	5.5	5.8	4.0	3.1	2.5	2.1
	6.0	7.0	4.6	3.4	2.7	2.3
	6.6	9.1	5.4	3.9	3.0	2.4

Source: CMBIGM estimates

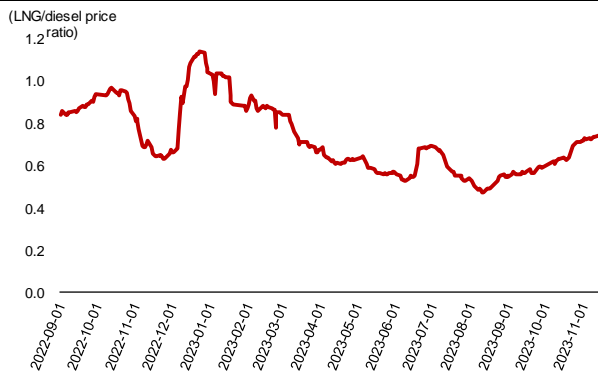
Note: For LNG truck

Figure 4: Diesel price in Shandong

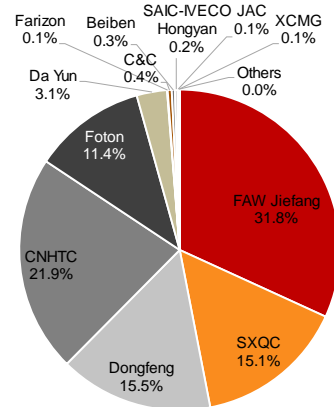
Source: Wind, CMBIGM

Figure 5: LNG price in Shanghai

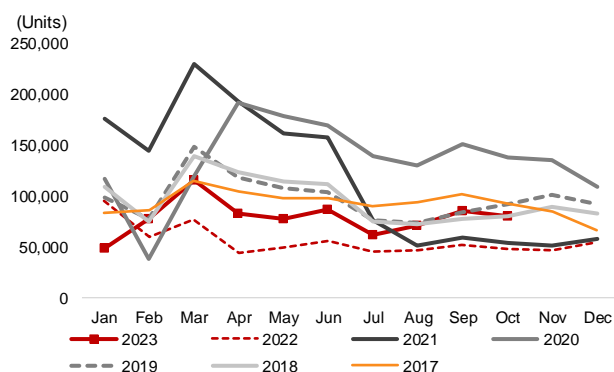
Source: Wind, CMBIGM

Figure 6: LNG/Diesel price ratio

Source: Bloomberg, CMBIGM estimates

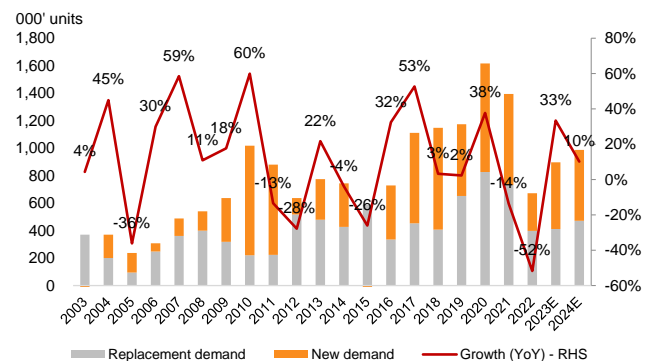
Figure 7: Market share of natural gas HDT in China (Oct)

Source: Wind, Cvworl, CMBIGM

Figure 8: China HDT monthly sales

Source: Cvworl, CMBIGM

Note: China's domestic sales + export

Figure 9: CMBIGM HDT sales projection

Source: Cvworl, Wind, CMBIGM estimates

Note: China's domestic sales + export

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