5.0 Bus and truck building industry

The most common form of new bus manufacture in Thailand involves assembly of imported completely knocked down (CKD) kits (all including chassis with engine). Very few completely built up (CBU) buses or trucks are imported as this incurs a higher tax component. In addition, CBU vehicles require approval for each model type to be imported). In 2003, Customs Data shows no buses with more than 30 seats were imported.

There is some importing of chassis with engines and building of bodies locally. The most common form for new truck supply is a semi knockdown kit (SKD) where a chassis with engine is imported and kit for the cabin is also imported.

Refer Table 5.1 which shows the impact of taxes and duties on the final price of trucks and buses for different methods of assembly in 2004 and in 1994. However, since 1994 the taxes on fully imported trucks and buses (ie CBU) has been reduced significantly.

Thai Hino, Mistubishi and Isuzu dominate the new medium and heavy truck market. Nissan Diesel is also a significant heavy truck maker. Most of the vehicles produced are locally assembled.

Similarly, in the new bus market, the main marques are Thai Hino, Isuzu, Mercedes Benz (Thonburi Automotive Assembly Plant Co Ltd), and Nissan.
Table 5.2 sets out information on details of major new bus and truck assemblers in Thailand.

Table 5.1 – Duties and Taxes Impact on Final Price of New Buses and Trucks, Thailand 1994 and 2004

Public Transport Vehicles			CIF	Import Duty	Sub-total	VAT (at 7%)	Sub-total	Body Value	Sub-total	Excise tax	Interior Tax	Total	Total Tax 2004	Total tax 1994
1	All with more than 10 seats (inc bus)	CKD	100	20	120	8.4	128.4	0	128.4	0	0	128.4	28.4	28.4
1	Pickups & vans inlc Rot Too - engine size less 2400 cc	CKD	100	30	130	9.1	139.1	0	139.1	79.2	7.9	227.1	127.1	99
3	Pickups & vans inlc Rot Too - engine size 2401cc – 3000cc	CKD	100	30	130	9.1	139.1	0	139.1	103.9	10.4	254.5	154.5	121.7
4	Pickups & vans inlc Rot Too - engine size > 3000cc	CKD	100	30	130	9.1	139.1	0	139.1	141.5	14.1	296.2	196.2	121.7
5	Buses	CBU	100	40	140	9.8	149.8	0	149.8	0	0	149.8	49.8	158.4
6	All	Imported Chassis + Local body build	100	10	110	7.7	117.7	100	217.7	0	0	217.7	17.7	NA
Motor Vehicles for Transport of Goods														
7	All with more than 10 seats	CKD	100	20	120	8.4	128.4	0	128.4	0	0	128.4	28.4	28.4
8	Pickups & vans inlc Rot Too - engine size less 2400 cc	Imported Chassis + Local body build	100	30	130	9.1	139.1	100	239.1	136.1	13.6	389.7	189.7	NA
9	Pickups & vans inlc Rot Too - engine size 2401cc – 3000cc	Imported Chassis + Local body build	100	30	130	9.1	139.1	100	239.1	178.6	17.9	436.7	236.7	NA
10	Pickups & vans inlc Rot Too - engine size > 3000cc	Imported Chassis + Local body build	100	30	130	9.1	139.1	100	239.1	243.2	24.3	508.1	308.1	NA
11	Trucks	CBU	100	40	140	9.8	149.8	0	149.8	0	0	149.8	49.8	195.3
12	All	Imported Chassis + Local body build	100	10	110	7.7	117.7	100	217.7	0	0	217.7	17.7	17.7

Note: Assumed body values are illustrative for calculation purposes but only matter where Excise and Interior Tax are levied at time of assembly
Actual excise tax rate = ETR/(1-(1.1 x ETR)); Where excise tax is levied - Interior tax applies at rate of 10% of excise tax
All CBU vehicles require permission to import by model type

Table 5.2 – Availability of New Bus and Truck Chassis, Thailand

Company	Description
Chassis Assemblers	
Cherdchai Industrial Factory Co Ltd – current JV with Volvo	Cherdchai, located in Korat, is a major bus chassis & bus body maker. Has a current JV with Volvo for new chassis made from imported kits. Cherdchai also produce re-manufactured used chassis to an unknown quality.
Tripetch (Isuzu)	Isuzu bus and truck chassis
Thonburi Automotive Assembly Plant Co Ltd	Makes Mercedes Benz bus chassis from imported kits. Also builds bus bodies. Currently also maintains Daewoo buses operated by BMTA, Bangkok, due to original agent Berli Jucker giving up the Daewoo franchise. Also makes truck chassis.
Hino Motors Manufacturing (Thailand) Ltd	Hino bus and truck chassis.
Chassis makes imported as CBU for intercity and rural buses	
Volvo	
Scania	
DAF	
Nissan	
Mercedes	CBU chassis from Brazil

Source: Hino and Thonburi Automotive Assembly Plant Co Ld

Table 5.3 shows that very few new buses are sold each year in Thailand. Over the 10 year period to 1993 to 2002 a total of 6,198 new buses were sold in Thailand of which 5,461 or 88% were heavy buses (with GVW greater than 10 tons). However, this average annual yearly sales of buses (620) represents less than 0.65% of the estimated 95,750 in-use buses in Thailand (see Table 4.1). This is an extremely low percentage – a more realistic percentage based on an average bus life of 20 years would be 5%. More on this subject below.

Table 5.3 – New Bus Sales 1993 to 2002, Thailand

Year	Bus < 10 ton	Bus > 10 Ton	Total Bus	Nissan	Hino	Isuzu	Benz	Daewoo	Other
1993	418	428	846	400	57	140	38	0	211
1994	255	891	1146	19	57	336	0	0	734
1995	56	1670	1726	22	59	613	1628	0	-596
1996	0	609	609	29	59	158	0	0	363
1997	0	554	554	0	59	87	46	0	362
1998	0	577	577	0	59	255	397	0	-134
1999	0	81	81	0	59	41	0	0	-19
2000	0		0	0	59	1	0	0	-60
2001	8	263	271	0	59	20	0	0	192
2002	0	388	388	0	59	106	0	306	-83

Year	Bus < 10 ton	Bus > 10 Ton	Total Bus	Nissan	Hino	Isuzu	Benz	Daewoo	Other
Total	**737**	**5461**	**6198**	**470**	**586**	**1757**	**2109**	**306**	**970**
%	***11.9%***	***88.1%***	***100.0%***	***7.6%***	***9.5%***	***28.3%***	***34.0%***	***4.9%***	***15.7%***

Source: The Thai Automotive Industry Association for total bus production by size and manufacturers for other sales data. In 2003, Customs Data shows no buses with more than 30 seats were imported. Hino data provided as total sales for 10 year period. *Data to be updated.*

Table 5.4 shows total Thailand sales data of pickups, and medium and heavy trucks (and buses, which are a small number). This table shows that 346,098 trucks were sold over the 14 year period 1990 to end 2003 which indicates an average sale of new trucks of around 24,700 trucks pa of which 38.9% were medium trucks.

Table 5.4 - Vehicle Sales (including truck and pickup) data 1990 – 2003, Thailand

Year	Total Vehicles	Pax van & microbus	1 ton pickup	2 - 4 ton tare truck - medium	Truck > 4 ton tare & bus	Total truck & bus > 2 ton	< 1 ton	4 wheel drive / SUV
1990	304,062	6,980	167,613	15,920	32,126	48,046	11,960	3,599
1991	268,560	7,670	155,366	10,312	15,895	26,207	10,200	2,338
1992	362,987	9,924	182,958	12,465	17,549	30,014	14,490	4,160
1993	456,468	11,727	224,388	12,717	15,573	28,290	14,207	3,687
1994	485,678	12,672	258,091	14,139	22,312	36,451	19,564	3,230
1995	571,580	12,425	323,813	16,383	31,766	48,149	16,402	7,420
1996	589,126	12,633	327,663	16,683	31,814	48,497	15,018	12,585
1997	363,156	8,353	188,324	9,021	11,275	20,296	5,642	8,481
1998	144,065	2,792	81,263	2,838	3,756	6,594	2,841	4,275
1999	218,330	4,167	129,904	3,750	3,434	7,184	3,018	7,199
2000	262,189	6,492	151,703	4,655	4,804	9,459	3,780	7,649
2001	296,985	6,582	168,639	3,807	4,398	8,205	2,686	6,371
2002	409,362	8,335	241,266	4,564	5,560	10,124	1,664	21,620
2003	533,176	8,489	309,144	7,366	11,216	18,582	1,478	16,492
			2,910,135					
			Total trucks > 2 ton	**134,620**	**211,478**	**346,098**		
			% of trucks by size	**38.90%**	**61.10%**	**100.00%**		

Source: The Thai Automotive Industry Association

Tripetch (Isuzu) which has an estimated share of the new truck market of over 30% shows that medium sized trucks represent over half of their annual sales. (Isuzu define and medium truck a having a kerb weight of 2 to 3 tonnes say a loaded GVM of 4 to 7 tonnes).

Table 5.5 – Isuzu's Truck Sales 1992 – 2004, Thailand

Year	Large	Medium	Total
1992	5840	7664	13504
1993	5668	7227	12895
1994	6433	8205	14638
1995	8522	8710	17232
1996	9917	8494	18411
1997	3512	5388	8900
1998	1510	1220	2730
1999	853	1798	2651
2000	1469	2313	3782
2001	1543	2228	3771

Year	Large	Medium	Total
2002	2035	2371	4406
2003	3551	4014	7565
2004 (Jan –April)	1461	1243	2704
Total	**52314**	**60875**	**113189**
%	**46.2%**	**53.8%**	**100%**

Source: Tripetch (Isuzu)

The volume of new trucks sales pa of 24,700 is about 5% of the estimated in-use truck fleet which appears consistent with an average truck life of 20 years. The low sales of new buses is due to a large portion of the bus fleet (over 80%) being used in fixed-route urban and inter-city operations, and the low "regulated" fare regime applied by government. As a result Thailand has an extensive and widespread industry for rebuilding buses using old rebuilt chassis, new or imported second hand diesel engines, and building new bus bodies to various qualities.

Supply of new or second hand replacement engines

Customs data for imports in 2003 shows that:

- 34,544 new diesel engines for any type of car, pickup, truck or bus were imported in 2003 of which 22,864 from Japan, 11,431 from UK and the rest from 9 other countries (ie Code: 8408.200-204; New diesel engines for any type of vehicle (chapter 87) – see Table 1.1); and
- 90,462 used diesel engines of which 89,856 were imported from Japan with the rest imported from 18 other countries (ie Code: 8408.200-103; Used diesel engines for any type of vehicle (chapter 87) – see Table 1.1).

It appears possible that a lot of engines are broken down and imported as scrap metal as they may attract a lower duty (3%) that is lower than the normal duty of around 15%. In addition, the declared value may be also set very low. However, apparently it is easier to register an engine with DLT that has been imported whole with Customs Department's paperwork showing the source of the engine.

Second hand used diesel engines for buses, trucks, pickups and boats are widely available in numerous areas in Bangkok. Most are imported from Japan. The emission standards of these engines are not regulated. Some used diesel engines are used for boats and in agricultural purposes and for other applications where emissions are not regulated. DLT and PCD have looked into setting standards on imported used diesel engines but to date they have not worked how an engine emissions standard would be verified. In addition, until emissions from diesel engines in all application are regulated, it is unlikely that it would be possible to regulate an engine standard by end use, at time of import.

Euro 1 engines are now available. It appears that second hand diesel engines for buses can be purchased for around Baht 80,000 to Baht 100,000 or more depending on engine condition.

Bus rebuilding industry

Thailand's bus rebuilding industry appears to be widespread. Many medium sized bus companies (20 buses and up) throughout the country rebuild their own buses including making chassis modifications and building bodies. They may refurbish engines or simply purchase a replacement engine from many shops in numerous districts in Bangkok (eg Pathumwan, Lak Si, Rangsit, and Bang Na). Refer Figure 5.1.

Figure 5.1 – Used Diesel Engines are Widely Available

There are also specialist companies (at least 47) companies in the BMR and nearby balance of the Central Region that build bus and truck bodies and rebuild from old chassis according to information supplied by Hino Thailand.

In the west of the BMR, a major area where buses are rebuilt is at Baan Pong located in Nakon Pathom. According enquires of Thonburi Automotive Assembly Company Ltd some two to three buses per day are produced by the various firms (around 10) in this area. The largest bus rebuilder is Mee Saeng which has two factories in Baan Pong area. They specialise in tourist coaches. Chassis for these coaches are supplied by another local company.

Cherdchai of Korat also rebuilds buses. Chonburi located near to the BMR on the Eastern Seaboard is said to be a centre for bus rebuilding also.