消 費 者 委 員 會 CONSUMER COUNCIL

Energizing the Energy Market

為能源市場注入動力

A Study of Motor Gasoline, Diesel and LPG Markets in Hong Kong

汽油、柴油及石油氣市場研究報告

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Abbreviations

ACCC	Australian Competition and Consumer Commission
BP	BP Hong Kong Limited
Caltex	Caltex Oil Hong Kong Limited
COMPAG	Competition Policy Advisory Group
Concord	Concord Oil (Hong Kong) Limited
CRC	China Resources PetroChems (Group) Co., Ltd.
CSD	Census and Statistics Department
EBIT	Earnings before Interest and Tax
EHS	Environmental, Health and Safety
EMSD	Electrical and Mechanical Services Department
ESB	Economic Services Bureau
Esso	Esso Hong Kong Limited
Feoso	Feoso Oil Limited
FTC	U.S. Federal Trade Commission
GSAC	Gas Safety Advisory Committee
HA	Housing Authority
HHI	Herfindahl-Hirschman Index
HO	Hydrocarbon Oil
LegCo	Legislative Council
LPG	Liquefied Petroleum Gas
LPGSTC	LPG Safety Technical Committee
Marubeni	Marubeni Hong Kong Limited
Mobil	Mobil Oil Hong Kong Limited
OFT	UK Office of Fair Trading
OPEC	The Organization for Petroleum Exporting Countries
PELB	Planning, Environment and Lands Bureau
PFS	Petrol Filling Station
Shell	Shell Hong Kong Limited
the Council	Consumer Council
the Government	Hong Kong Government
UK	United Kingdom
U.S.	United States of America

Preface

The Consumer Council (the Council) has long been concerned with the marketing of oil products in Hong Kong and its implications for consumers. In November 1998, the industry had also come under questioning from Members of the Hong Kong Legislative Council (LegCo) at the time. Concerns were that retail prices for motor gasoline, diesel and liquefied petroleum gas (LPG) might not be "reasonable", and that the sales of the products might not be taking place in a competitive market. The Council had prepared a submission for the LegCo Panel on Economic Services and made a number of observations that were ascertainable from information it had collected up until that time.

Accordingly, in late 1998, the Council decided to embark on this study, as and when manpower resources became available, in order to bring some clarity to the debate on the industry and to ascertain what, if any, recommendations it might have on how the industry could be made more competitive and efficient.

The Council's work was intended as a starting point for industry action and for relevant government policy bureaux and industry departments, to carry on with their allotted roles with regard to competition, in line with the sector specific approach as enunciated in the Hong Kong Government's May 1998 "*Statement on Competition Policy"*. That policy stated the Hong Kong Government (the Government) would promote economic efficiency and free trade through competition by:

a. identifying on a sectoral basis, obstacles and constraints imposed by the Government and other public sector entities which limit market accessibility and contestability and compromise economic efficiency and free trade to the detriment of the overall interest of Hong Kong, and removing them through voluntary, administrative measures as appropriate; and
b. initiating pro-competition measures, on a sectoral basis, in the government and private sector through administrative, legislative measures as appropriate.

Accordingly, this study examines:

a. industry trends and structure;
b. government regulations;
c. the different functional levels involved from supply to retail;
d. the state of competition in the various markets; and
e. makes recommendations for the Government and industry to consider.

At the LegCo panel hearing in November 1998, the Economic Services Bureau (ESB) also indicated it would obtain costing and pricing information from the industry and conduct an analysis to ascertain whether prices were in fact "reasonable". ESB presented its findings to LegCo on 26 April 1999 and made a number of observations, based on confidential information that it had received from some industry participants. The Council was not provided with that confidential information and has had to rely on the public information contained in ESB's published report, insofar as this study considers issues of costs and prices.

This study has examined a number of areas, focussing on the markets for motor vehicle fuels (i.e. mainly unleaded petrol and diesel, but also including LPG),

and the markets for cylinder LPG and piped LPG for use as a domestic hot water and cooking fuel. It is the culmination of all the information obtained, as of the present date, from a variety of sources. In particular, the Council acknowledges the assistance and information provided by the following organizations:

BP Hong Kong Limited
Caltex Oil Hong Kong Limited
Census and Statistics Department
Concord Oil (Hong Kong) Limited
CRC Petrol Filling Station Co., Ltd.
Customs & Excise Department
Economic Services Bureau
Electrical and Mechanical Services Department
Esso Hong Kong Limited
Feoso Oil Limited
Housing Authority
Industry Department
Lands Department
Marubeni Hong Kong Limited
Mobil Oil Hong Kong Limited
Planning Department
Planning, Environment and Lands Bureau
Shell Hong Kong Limited
Shenzhen Consumer Council
Transport Department

The petrol filling station site model in Chapter Four of this study was constructed with the assistance of Mr. Michael Tse, an ex petroleum industry executive. The Council wishes to express its appreciation to Mr. Tse for his assistance in preparing some of the material in that Chapter. The Council also expresses its appreciation to a number of business commentators and economists who provided valuable comments to the Council in the process of conducting this study.

Consumer Council
December 1999

Findings and Recommendations

1. In undertaking this study on the marketing of motor gasoline, diesel and liquefied petroleum gas (LPG) the Council's intention was to construct a starting point for relevant government policy bureaux and departments, to carry on with their allotted roles with regard to promoting competitive markets within their areas of responsibility, and to point out deficiencies in the market for industry action. This is in line with the sector specific approach as enunciated in the Hong Kong Government's May 1998 "*Statement on Competition Policy*". The Chapters in this study provide a range of information on the industry that should assist relevant government agencies in their work. This summary highlights the major observations of the study and lists various recommendations made by the Council, for ease of reference.

Industry Overview

2. The supply of energy and fuel to Hong Kong markets has come a long way from reliance on firewood, kerosene, manufactured gas for the privileged few, to universal coverage of electricity, cylinder LPG, piped gas, and motor vehicle fuels. The Government's attention has been on the safety aspects of oil products (characterized by various safety regulations) and ensuring stability of long term supply. Both of which are very important. Nevertheless, of equal importance is the need for competitive markets which through their effects on prices can be expected to lower the costs of doing business in Hong Kong and alleviate pressure on household expenses.

Oligopoly Markets

3. The Council's study indicates that the oil products industry is highly concentrated **(paras 9.18 to 9.24)** and largely vertically integrated **(paras 9.29 & 9.30)**, with three oil companies holding over 70% of the piped and wholesale cylinder LPG market, 90% of the motor gasoline market, and 80% of the diesel market **(Table 9.1)**. It is characterized by relatively small total demand, limited growth opportunities **(para 1.26)**, and barriers to entry such as the need to achieve economies of scale in storage and retail and the high cost of land **(paras 9.31 & 9.32)**. As such the three product markets can be characterized as oligopolies. Theoretically, the consequences of this form of market structure can lead to cooperative behaviour, which may be explicit or implicit in form. Explicit collusion leads to a cartel, which is usually a target of scrutiny by jurisdictions with competition oversight. However, cooperation may also be implicit, in the sense that the few firms in the market recognize their mutual interdependence and realize that it is not in their interests to constantly drive prices down to marginal cost levels. In any case, a symptom of both explicit and implicit cooperation is that prices are uniform and above their competitive levels **(paras 9.3 to 9.8)**.

4. In a situation of tacit cooperation, i.e. shying away from direct across-territory price competition, oligopolistic firms may still engage in limited price competition that applies only to specific geographic markets and/or is tied to promotion schemes, product differentiation, as well as other forms of non-price competition. Evidence on these latter phenomena may be taken as proof that there is no explicit cartel, although it does not necessarily mean that the market is effectively competitive **(paras 9.25 to 9.28)**.

5. In the present study, given the limitations in data and information collection, no

direct evidence of explicit collusion has been located. There are various indications that geographic price competition and non-price competition have existed, particularly in the past two to three years, perhaps because of the economic recession **(paras 7.8 & 7.15)**. Given the very high market concentration ratios, however, it is not clear whether these forms of competition will persist in the future. The Council is not in a position (without the privilege of relevant but commercially sensitive data) to estimate the level of abnormal profit, if any, which is being earned by key market players **(paras 6.18 to 6.26)**. For the same reason it is not in a position to ascertain the related welfare benefits and losses to various parties. However, the Council is sufficiently worried about the lack of genuine price competition, various entry barriers to the markets, and the inadequacy in regulatory oversight that ensures competition **(paras 9.40 to 9.48)**.

6. Under the circumstances, the best that the Council can do is to make objective observations about the industry and to propose recommendations that would in its view improve competitiveness in the markets under study. The observations and recommendations contained in this report can certainly be modified and improved in further studies. In any case, the recommendations here proposed should be acceptable in most regulatory regimes.

7. While price comparisons may or may not be good indicators of excess profits, a concern is that the prices of the products under study, exclusive of taxes and duties, are observed to be higher than those in other countries, particularly in the region **(paras 6.36 to 6.44)**. Oil companies advanced the reason that other than the high operating costs, including land premium, the higher octane level used in Hong Kong could be part of the reason for gasoline. This raises a question as to what weight does a high octane rating carry in the overall pricing of the product and whether Hong Kong consumers prefer such high quality at a higher price. Irrespective of the actual market structure, the Council considers that competitiveness can and should be enhanced through a number of measures.

8. Duties on goods such as oil products have important policy considerations in that they raise revenue for general administration and for development projects, while at the same time helping to keep general tax levels low. Nevertheless, it has to be recognized that duty represents a high proportion of the total retail price of motor vehicle fuels. A high rate of duty, and the way in which it is applied (either on a per unit basis or an *ad valorem* (percentage) basis) could affect the way in which fuel is marketed **(paras 2.9 & 2.10)**. Any reduction that can be made by retailers might only represent a small portion of the overall price for the product and it could be the case that this would suppress interest on the part of retailers to use price as a major means of attracting customers.

Future Development

9. Long term future growth for the three products varies. Potential demand for unleaded petrol can be seen as relatively limited, while diesel will face decline due to government intervention to replace its use with LPG, at least with regard to legal sales. Use of LPG as a motor vehicle fuel will grow, but there will be diminishing demand in the hot water and cooking fuel market for cylinder LPG. Piped LPG faces strong competition from Towngas and an uncertain future due to various restrictions that govern the construction of LPG piping infrastructure, and the land costs associated with on site storage.

10. **Figures 3.1 and 3.2 in Chapter 3** illustrate the number of firms operating in the

motor vehicle fuels and LPG markets, the extent to which the industry is concentrated, and how the majority of operators are vertically integrated from import to retail, in the case of motor vehicle fuels, or import to wholesale in the case of LPG.

Motor Vehicle Fuel Retailing

11. While there is no requirement for motor vehicle fuels marketers to limit themselves to government tendered petrol filling station (PFS) sites, the sites do represent the easiest means of entering the retail segment. Moreover, established filling sites occupy strategic positions in geographic markets and there is no competition oversight at the time a lease expires to ascertain whether allowing the previous incumbent to simply renew the lease has detrimental consequences in that market. In addition, there is no competition oversight in the ownership of filling sites within geographic markets at the tender stage for new filling sites, to guard against undue concentration within relevant markets. The extent to which undue concentration in markets is defined might not be an easy task. However, the analysis starts with the assumption that more than one participant in a market is a necessary condition for competition to arise, and that the fewer the participants the greater the risk that competition will not evolve to its fullest extent **(para 2.29)**.

12. The study has identified a number of areas where on the face of it there appear to be competing sites, but due to the supply arrangements the degree of competition is uncertain. For example, Esso Hong Kong Limited (Esso) owns a site in Kwun Tong that is located next door to a Feoso Oil Company (Feoso) owned PFS which has a supply agreement with Esso. Likewise, there are two sites closely located to each other in Tseung Kwan O. One has "Mobil/Concord" signage and the other has "Feoso/Mobil" signage. Both are operated as joint ventures with the Mobil Oil Hong Kong Limited (Mobil). One is a joint venture with Concord Oil (Hong Kong) Limited (Concord), the other is a joint venture with Feoso. This raises queries as to how much actual competition exists between the two PFSs within the geographic area **(para 2.27)**.

13. It is apparent therefore that geographic markets, and the genuine substitution possibilities that exist for consumers between different oil companies within those markets, play an important part in the way in which competition develops in Hong Kong. This is an important factor for the Government to consider when locating PFS sites for public tender, and in determining who should be the successful bidder for a site **(para 7.14)**. The Government is attempting to expand the availability of LPG filling sites for motor vehicle fuels. There is an opportunity here for some pro-competitive safeguards to be introduced by the Government.

14. Motor vehicle fuel filling sites are operated under uniform retailing arrangements where:

a. the pump price for fuels appears the same;
b. the major source of revenue comes from fuel sales;
c. there is little or no opportunity to diversify; and
d. there is little discernable difference in the retailing of motor vehicle fuels between retailers. **(See Chapter 5)**

15. The area in which there appears to be strongest competition is in product differentiation. For example, premium fuels with special additives, or promotional giveaways **(paras 7.15 and 7.16)**. While price competition exists, through the application

of discounts based on loyalty schemes, the focus of competition in the future would seem to be promotion based **(para 7.28)**. Of note is that discounts off the pump price are significantly greater than they appear and a significant portion of unit cost would seem to be either used up in promotional cost, or in the absence of the discounts, could be regarded as profit **(paras 7.31 and 7.32, see also Figure 7.1)**. It is also significant to note that price information boards are not used by retailers in Hong Kong to inform consumers of the pump price. This denies consumers information on which to base their purchasing decisions and indicates that price competition is not considered a major marketing strategy by oil companies **(paras 7.18 to 7.24)**.

16. With regard to the Government policy to accelerate the supply of auto-LPG filling sites, the Council welcomes the Government's initiatives in this area to meet very worthwhile social concerns. It also appreciates the difficulties in setting an appropriate policy of ensuring supply of product to meet demand generated by government regulatory initiative. The Council notes that the nil premium policy would be necessary to provide incentives and ensure benefits from nil premium are passed on to consumers. However, in a market that it is inherently contestable, there should be no need to have an indexing component to derive final prices for consumers. Indexing, or other price control mechanisms, would usually only be considered justified where there are elements of natural monopoly or insufficient competition in the market. Overall, the Government must be cautious not to expand wider application of this mechanism on a long term basis. This is due to the opportunities that could exist for cross subsidization and manipulation, and the effect this could have on impeding new entry or damaging the competitive position of existing market players that do not have retail operations based on nil premium **(paras 5.34 to 5.46)**.

17. In order for motor vehicle fuels marketers (who are independent of the importing oil companies) to compete, they either need their own storage facilities or access to a competitive wholesale market. At present, there are substantial investment costs, given the small land area and high rental value in Hong Kong, to set up adequate storage facilities. The most likely opportunity for access to wholesale supply would therefore be to lease capacity from an existing oil company. The important point to note with regard to storage capacity in Hong Kong is that all the importing oil companies have their own storage facilities. The fact that there are separate storage facilities, each with its own berthing and pumping facilities would be a positive factor in that there would be expected to be pressure to utilize the capacity. This indicates there is opportunity for oil companies to rent their terminal and storage facilities to new entrants so as to spread overheads and reduce unit costs.

LPG

18. The wholesale market for cylinder LPG (i.e. supply from oil companies to cylinder LPG dealers) is characterized by uniform pricing, with selective rebates provided to dealers. This uniformity is also symptomatic of oligopolistic market conditions **(para 5.27)**. Competition could be improved in this sector through standardizing cylinder connecting equipment thereby improving the mobility of dealers between sources of supply.

19. Given the high set-up and operating costs, required throughput for viability, and the shrinking market, new entry in cylinder LPG retailing is unlikely **(paras 4.17 - 4.26)**. From a Council survey of cylinder LPG prices, there appears to be price competition at the retail level between dealers, although service can be viewed as a major determinant in choosing a dealer. In view of the absence of any overt promotional

activities between dealers, consumers are advised to "shop around" if they are seeking cheaper prices for cylinder LPG.

20. Piped LPG has faced regulatory constraints in the past that have hampered its development. With any obligatory improvements to address safety concerns it could be regarded as a viable means of furthering the introduction of common carrier arrangements for gas reticulation generally in Hong Kong. For example by experimenting within limited geographic markets, before a territory wide common carrier scheme (most probably for natural gas) is put into place in the future. Its promotion may also serve a function of increasing available infrastructure for vehicle LPG distribution **(paras 2.34 to 2.39 and paras 5.20 & 5.21)**.

Government Regulations and Oversight

21. In the Government's May 1998 "*Statement on Competition Policy"* it was noted that the Government would promote economic efficiency and free trade through competition by:

a. identifying on a sectoral basis, obstacles and constraints imposed by the Government and other public sector entities which limit market accessibility and contestability and compromise economic efficiency and free trade to the detriment of the overall interest of Hong Kong, and removing them through voluntary, administrative measures as appropriate; and
b. initiating pro-competition measures, on a sectoral basis, in the Government and private sector through administrative, legislative measures as appropriate.

22. The three oil products under study are only a part of a wider energy sector in the Hong Kong economy, that also includes electricity, towngas, diesel sales to the public transport sector and bunkering by the aviation and shipping sector. Government regulations and policy initiatives affect the manner in which all of these products are supplied and consumed in Hong Kong. The regulations and initiatives cover a range of functions concerned with safety, land planning, certainty of supply and environmental considerations. A number of these are outlined in Chapter Two. At present, the functions are carried out through a division of labor by different arms of the Government that requires a high degree of coordination. The process of coordination and development of an energy policy could be greatly assisted by having one government body, adequately resourced, having that task. For example, an agency similar to others in Hong Kong (such as the Tourism Commission). Such a body would provide an institutional framework for strategic planning of the energy sector, and be required to develop a clear agenda for how the various energy needs of Hong Kong are to be met into the future.

Recommendations

23. Having regard to the Government's *Statement on Competition Policy*, and in order to promote competition and enhance consumer welfare, the Council has put forward the following recommendations, in three aspects.

a. **encouraging entry by new retail operators**, through addressing issues relating to site retailing and storage which affects wholesale supply;
b. **inducing price competition**, through the provision of more information to consumers and by changing the retail environment; and
c. **improving government oversight**, through a more focussed approach in devising a long term strategy, and better coordination with regard to regulatory and policy activities.

Encouraging Entry by New Retail Operators

Recommendation 1: Removal of import license and supply contract restriction

24. There are currently restrictions on those persons who can bid for a petrol filling site on offer by the Government. Regulations require either the holding of a license or being able to adduce evidence of a guaranteed supply of hydrocarbon oils from a licensed supplier. This restriction would tend to favor the oil companies against independent entrepreneurs who do not have the wholesale storage infrastructure of oil companies. Independent entrepreneurs would be required to obtain the essential qualification for making a bid from the parties they would eventually be bidding against for a site.

25. A possible reason behind this restriction might be to ensure that a bidder has the intention to operate a filling station from the site. However, if this is the reason, there would be other ways to ensure planning objectives are met. For example, by inserting a covenant on the lease. In any event, the Government should remove the restrictions on holding a special importer's license or adducing evidence of a supply contract before making a bid **(para 2.21)**.

Recommendation 2: Scrutinizing site ownership

26. It is apparent that geographic markets, and the genuine substitution possibilities that exist for consumers between different oil companies within those markets, play an important part in the way in which competition develops in Hong Kong. It follows that the fewer the participants the greater the risk that competition will not evolve to its fullest extent. The Council considers that acquisition of approved motor vehicle fuels filling site leases, and renewal of site leases should therefore be scrutinized by the Government for undue market concentration by the same company within the relevant geographic market. The Government should consider disqualifying certain bidders where competition may be compromised, and limit direct or beneficial interest in the site to classes of persons who would similarly not compromise the objective of promoting or preserving competition. Similar conditions could also run the term of the lease to safeguard against changes in ownership that result in competitive detriments **(paras 2.26 to 2.30, 5.37 to 5.38, 5.41 and 7.14)**.

Recommendation 3: Flexibility in filling sites

27. Viable independent new entry can bring about major changes in the highly vertically integrated motor vehicle fuels sector (import, wholesale and retail by same company). The Council recommends, in order to facilitate new entry, that the following steps should be taken to give wider publicity to the fact that:

a. notwithstanding the Government planning guidelines, and restrictions associated with government tendered filling sites, there is flexibility in the Government's procedures which allow for development of filling sites that incorporate the retailing of other products in addition to motor vehicle fuels; and
b. filling sites are not confined to sites identified by the Planning Department and Lands Department, but that interested parties may apply for conversion of land lease on suitable sites.

Recommendation 4: Safeguarding adequate storage facilities

28. Although there is no limit on entry to the Hong Kong market (i.e. unlike Fixed Telephone Network Service telecommunications licenses where the Government determines the number of licenses) participation in the oil business involves large sunk costs in storage and other infrastructure facilities, hence posing a significant financial barrier to entry. The Council observes, however, that the current oil company importers, each with their own separate facilities, could be regarded as having spare storage capacity. As such, the owners of the infrastructure may have an incentive to lease capacity to potential new entrants to defray the huge sunk costs. Therefore, separate and independent storage facilities should ideally be maintained in order to satisfy potential demand from new entrants at the retail level **(para 3.29)**. If there is any industry attempt at rationalization of storage capacity the Council recommends that the Government should consider whether it needs to facilitate the creation of new infrastructure, or take appropriate administrative or legislative action to maintain a sufficient level of competitive storage capacity available to new entrants, or those resellers currently in the market who lease capacity.

Inducing Price Competition

Recommendation 5: Ensuring competitive behaviour

29. In the absence of competition laws that provide a safeguard against collusive conduct between competitors in a market, conditions could be inserted in filling site leases (either those preplanned by the Government or leases converted for filling site use) that prohibit collusive anti-competitive conduct. This form of safeguard would not be necessary if a competition authority administering competition laws was in existence. While the Council's preferred option is for a general competition authority to undertake this analysis of conduct, in the absence of such an authority, the Government should ensure that relevant government agencies have adequate training and resources to undertake the work.

Recommendation 6: Price information boards

30. Price information boards at filling sites ensure not only the existence of market price information that is easily viewed by consumers, but also serve the purpose of on-going price monitoring. The use of price information boards should be encouraged. An option for the Government to consider is imposing a condition on the grant of a petrol filling site lease that price information boards should be displayed **(para 7.24)**.

Recommendation 7: LPG common carrier

31. Development of LPG common carrier arrangements in large housing estates using piped LPG should be encouraged as a means of promoting price competition, by allowing consumers a choice of suppliers, and furthering common carrier arrangements for gas reticulation generally. With regard to existing housing estates, in particular public housing estates, it would be desirable to encourage LPG common carrier arrangements by converting the current arrangements to a common carrier system whereby the fixed costs of the LPG network and storage area are separated from the variable costs of LPG supply. The variable cost component would be the functional level subject to competitive rivalry in the supply to customers. With new developments utilizing piped LPG, common carrier supply arrangements could be considered as an alternative to supply by a single oil company, where the LPG infrastructure (configured to accept LPG/air) can possibly be later used for natural gas under a Hong Kong wide common carrier arrangement. This could also serve the purpose of acting as a test base for a Hong Kong wide common carrier arrangement **(paras 5.20 & 5.21)**.

Recommendation 8: Standardization of cylinder LPG connecting equipment

32. Connection equipment for LPG cylinders should be standardized between the different oil companies that supply cylinders into the wholesale market. This will enable cylinder LPG dealers to more easily switch between suppliers and as a consequence allow greater mobility between suppliers for consumers **(para 5.24)**.

Improving Government Oversight

Recommendation 9: Competition Authority and Energy Commission

33. The Council has identified a need for competitive oversight of motor vehicle fuels filling station ownership **(Chapter Two)** and the benefits that competition laws can bring to light in regard to anti-competitive conduct **(Chapter Nine**). The Council's first preference is for a general competition authority to administer this important task. A general Competition Authority would be the preferred option as it would be the most cost effective means of addressing competition issues in not only the oil products industry, but all other economic sectors. Moreover, a Competition Authority administering general competition laws that prohibit anti-competitive practices, such as found in other jurisdictions, that has the confidence of the public and the business community, could relieve market participants from constant innuendo that the industry is not competitive **(para 9.40)**.

34. The Council considers there is a compelling need for improving the Government focus in the energy sector, which includes oversight of the various oil products under study. Accordingly, it recommends that an Energy Commission be created to coordinate the activities of relevant government departments, monitor industry trends,

develop a long term strategy for the energy sector and advise on energy policy. Its responsibility should cover strategic policy issues concerning energy supply and demand, equipment supply, and safety[1]**.** Such a body would be in a position to set an agenda for this important economic sector, and coordinate the various regulatory and policy activities that affect the way in which energy is supplied, distributed and consumed in Hong Kong.

35. In the absence of a general competition authority having competitive oversight for the industry, the Council would accept the Energy Commission having the role of undertaking the various competitive safeguard tasks outlined throughout this study. Moreover, it could also take on the role, as part of its strategic planning function, to promote competition in the various markets that make up the sector, similar to the role of the Office of the Telecommunications Authority.

Recommendation 10: Monitoring the industry's profitability trend

36. In view of widespread public concern over competition in this industry, which can be viewed in the same light as a major utility, an assessment of profitability in the industry would be instructive as to the state of competition in the industry. High profits can indicate there is little real competition. The Government should monitor the industry by collecting data from oil companies to enable the Government to:

a. make trend observations on profitability levels in the industry, along the lines of return on capital or return on assets **(paras 6.18 to. 6.26)**; and
b. make trend observations on the difference between import prices and retail prices.

37. An appropriate body to conduct such an exercise would be the Energy Commission, proposed above. It should be noted, however, that profitability studies are instructive only for particular periods of time, and that as markets evolve profitability will also change. Oversight of competitive conditions in markets therefore need to be equally adaptive. The mechanisms used in other advanced economies is that of a general competition law and a certain form of a competition authority.

38. The industry also has an obligation to explain why retail prices for oil products are so high in Hong Kong in comparison with our trading partners. While a number of reasons have been advanced by the industry **(see paras 6.36 to 6.44)** it would be instructive for the community if some quantification of the reasons behind the high costs were provided. For example, the degree to which land premiums impact on retail prices, and how consumption patterns have emerged that indicate consumers' professed preference for higher octane fuel.

39. While information on import prices is publicly made available by the Census and Statistics Department (CSD) there are time gaps in the provision of this information due to the time taken for it to be made public[2]. The Government should seek the

[1] The Council recommended such a Commission in its 1995 Report "Assessing Competition in the Domestic Water Heating and Cooking Fuel Market". It was envisaged at the time that the Energy Commission would also have a role in safeguarding competition in the market. However, the report preceded the Council's subsequent 1996 Report "Competition Policy – The Key to Hong Kong's Future Economic Success" in which the Council recommended the establishment of a Competition Authority.

[2] Currently the Census and Statistics Department releases aggregated data along with other trade statistics two months after the information is collected, and is bound to the Special Data Dissemination Standard which is established by the International Monetary Fund. Adherence to this standard limits the

supply of relevant information from oil companies on a voluntary basis to enable it to gauge the market trend in a more timely manner **(para 6.45)**.

Recommendation 11: Competition implications of regulatory intervention

40. The Council supports the annual reporting by the Competition Policy Advisory Group (COMPAG) on the various initiatives taken by government bureaux and departments in reviewing their operations with regard to competition. The Council trusts that this study will assist in identifying areas for further government action. The Council considers that a formal and disciplined approach to assessing the extent to which existing regulations and administrative action, or proposed regulatory market intervention, impinge on competition, would assist in the reporting process by government agencies. For example, by way of a Competitive Impact Statement **(para 2.58)**.

41. The Council also recommends that appropriate training should be given to government agencies to assist them in their competition assessment tasks **(para 2.59)**.

Implementation

Government Action

42. The Council does not consider that the above recommendations will involve great cost increases to the Government. Many of the recommendations only require a change in government approach, utilizing existing resources that have already been allocated to the policy oversight of the industry. Some decisions can be made fairly quickly, for example by removing the requirement for import license and supply contract restrictions on persons who can bid for filling site leases offered by the Government. Other recommendations will require some time before they can be brought into practice, for example, scrutinizing undue market concentration.

43. There are two organizational recommendations that have been made, that on the face of it may seem to increase government expenditure, and involvement in the market. The first is the recommendation to create a Competition Authority administering general competition laws. The second is the creation of an Energy Commission.

44. The Council has made recommendations on the issue of a Competition Authority previously, in relation to other sectors. The Government's response has been to decline such an approach. Having regard to the Government's response, the Council has suggested alternative approaches, that would work within the Government's preferred policy of sector specific competition oversight.

45. However, it must be pointed out that the sector specific approach to competition oversight has its own associated costs and inefficiencies. In the long run it could be more costly than creating a competition authority. This is because of the need to duplicate resources devoted to competition oversight within different government agencies that could be concentrated in the one agency, and used on a sector needs basis. A competition authority would also bring about consistency in the application of competition policy rules, to the benefit of industry, as it could be expected that if

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period of time in which the data can be released to government agencies prior to general public release.

different government agencies develop their own competition policy rules, some differences in approach will become inevitable. This could lead to confusion and added costs to businesses that operate across different economic sectors. It could also result in damaging time lags between when a problem emerges and the time taken to identify and coordinate the activities of responsible departments.

46. The Council has recommended the creation of an Energy Commission. The Council's objective in making this recommendation is to bring together those areas involved in government policy in planning and developing policy on Hong Kong's future energy needs. The reason being that this important sector is largely shaped by government policy that must be focussed on long term planning, and coordination of various government agencies. Recognizing that it is unlikely, at least in the short term, that a Competition Authority will be created, the Council would see the Energy Commission as being the appropriate agency to take over competition oversight for the sector. However, this is very much a second best option, given the efficiencies and cost benefits that arise from having competition expertise concentrated in the one Competition Authority.

Industry Action

47. The industry must explain why the product prices, exclusive of taxes and duties, are higher in Hong Kong, the contribution of higher octane rating to the overall pricing of motor gasoline and whether Hong Kong consumers prefer such high quality at a higher price. Further, the companies should explain their case that they indeed are operating in a competitive manner and should make efforts for the consumers to see that it is really the case. The Council hopes that the suggestion on price information boards is voluntarily taken up. The Council considers such action to be relatively simple and would project a consumer friendly image of retail operations. The Council would also hope that oil companies will continue their cooperation in the provision of information to Government to assist with studies on profitability levels, and to enable rapid comparisons to be made between import costs and retail prices.

Consumer Action

48. While the above recommendations indicate areas for industry and government action, there are also things that consumers can do. Primarily, this revolves around taking an active role in comparing prices by shopping around (for not only motor vehicle fuels, but cylinder LPG) and patronizing those retailers who offer the best deals, in addition to making their views known on issues such as the preference for price competition compared to promotional giveaways. Price information boards at motor vehicle fuels filling sites are essential to empower consumers in this sense.

Agenda for the Future

49. The above observations and recommendations set the framework for an agenda for further investigations into competition in the Hong Kong oil products sector. As mentioned at the outset, this study is only a starting point for relevant government policy bureaux and departments, to carry on with their allotted roles with regard to promoting competitive markets within their areas of responsibility. Given the limitations in data and information available to the Council (it is the Government that either currently has access to sensitive commercial data, or the ability to obtain those data), the Council considers that more analyses are needed for determining:

a. the precise level and form of competitiveness, or the lack of it, in the markets; and
b. the extent to which consumers can be benefited by the introduction of more competition in various forms.

Further Monitoring of Market Structure

50. An important step is for the Government to examine the implications of the merger of Esso and Mobil for local markets. It is worthwhile noting that the merger of the local parent companies Exxon and Mobil attracted the attention of competition authorities around the world, and resulted in safeguards being implemented. In the United States of America (U.S.) for example, the relevant competition authority, the Federal Trade Commission, required the divestiture of substantial numbers of filling sites to preserve local competition at the retail level. Increasing concentration of market participants in this industry is not a matter that governments can ignore.

51. Another important step is for the Government to apply some oversight when deciding whether any restrictions should be applied to incumbent operators at the time of renewing leases or awarding bids, given their substantial presence and power in the market. The process also begins with removing any government regulations that might impede new entry. For example, the restrictions that currently exist for bidders of government tendered motor vehicle fuels filling sites. It also requires ensuring that government regulations do not inhibit innovation in the evolution of filling sites. The introduction of price information boards for filling sites would also raise the profile of price competition in the market and provide more information for the community to consider when making competitive choices. The role that duty plays in price competition is also a matter that may need further consideration. For example, whether duty might be better applied on an *ad valorem* (percentage) basis, rather than on a per unit basis.

Alternative Land Leasing Procedures

52. Given the Government's pre-eminent role in the location and availability of motor vehicle fuel filling sites, the manner in which leases are granted needs to be considered in detail. For example, what the implications will be, not only for retail prices but on investment in the industry, if bidders are asked to bid for sites:

a. on a premium only basis;
b. on a nil premium basis, with winning bids determined simply on offers of a price ceiling formula (as is currently the case with auto LPG); or
c. on a combination of premium and offer of price ceiling formula.

Assessment will also have to be made on the impact of the revised bidding formula for new sites on the operations of incumbents who are legally bound to different rules.

Remote Storage

53. Ensuring access to competitive supply of product is also a priority, for the present and the future. Current storage infrastructure arrangements would seem to be appropriate for maintaining competitive alternatives. In order to lower operating costs, remote storage should also be considered as a viable option in the future for potential new entrants. The extent to which remote storage is feasible depends on the level of government regulatory/policy impediments that exist from time to time. These would

relate not only to procurement, storage and transportation considerations, but policy issues as to whether the Hong Kong SAR needs to keep major facilities within its geographic boundary.

54. The Council has not been able to conduct in depth research into a number of matters noted above, particularly those related to future issues. The rationale behind this study has been to construct a starting point for business, government, and other interested parties, including the Council, in order to provide some impetus to bring about a momentum for change.

Conclusion

55. The invention of the motor vehicle has enabled people to move around more freely and speedily. It is fossil fuels, such as petrol and diesel, which provide the necessary energy to enable the motor vehicle to achieve this important function. LPG will soon take on an additional function, apart from being a cooking and water heating fuel, in supplying energy to fleets of taxis in Hong Kong.

56. For many years, consumers in Hong Kong have been asking the question of whether they are being treated fairly in obtaining the supplies of petroleum products. They have found that the market in this sector has not changed much over a long period of time. We know we are not able to answer all their queries in this report as it is intended just as a starting point in the study of a complex issue. However, we strongly believe that our findings could enable the relevant government agencies and concerned parties within the industry to carry on the investigation and resolve more issues. We also believe that our recommendations in the report are practical and can, if implemented, energize the petroleum products market.

Chapter One

Industry Overview

1.1 Like many inputs for other local businesses, the supply of oil products in Hong Kong is derived entirely from external sources[1].

1.2 This chapter outlines some of the key developments in the oil products industry and the relevant markets. For the purposes of this report, the focus is on the import, consumption and demand patterns of motor gasoline, diesel and liquefied petroleum gas (LPG).

Imports and Consumption

1.3 Oil products play an important role in the energy sector, accounting for 60% of total primary energy requirements and 52% of total final energy requirements in 1997 respectively. Total value of retained imports of oil products was HK$10,570 million, approximately 2.9% of total retained import value of Hong Kong in 1997[2].

1.4 Oil products are generally classified under the following six categories. They are (1) aviation gasoline and kerosene, (2) motor gasoline (leaded petrol and unleaded petrol), (3) gas / diesel oil and naphtha, (4) fuel oil, (5) LPG and (6) natural gas. All are widely used throughout the territory for domestic, commercial and industrial purposes. An important factor to note is that the major oil companies that market the three oil products under study also market substantial quantities of other fuels. The oil products under study would therefore only constitute a part of total revenues and would account for only part of the cost of doing business.

1.5 During 1987 to 1997, the import of oil products increased significantly (Table 1.1). This was partly due to the introduction of natural gas as a substitute for some of the coal products for electricity generation since late 1995.

1.6 At the same time, Hong Kong has become a major centre for re-export of oil products to Mainland China and Macau. Except for LPG, re-exports of aviation gasoline and kerosene, motor gasoline, gas / diesel oil and naphtha, and fuel oil increased significantly over the past ten years (Table 1.2).

[1] Hong Kong derives its energy supplies entirely from external sources. Energy is either imported directly (as in the case of coal products and oil products), or produced through some intermediate transformation processes using imported fuel inputs (as in the case of electricity and gas).

[2] Hong Kong's external trade statistics: total import value in 1997 was HK$1,615,090 million, re-export HK$1,244,539 million. Total retained import value, therefore, was HK$370,551 million.

Table 1.1: Total Import and Energy Requirements, 1987, 1992 and 1997
(Source: Hong Kong Energy Statistics, Census and Statistics Department)

Year	Coal Products			Oil Products			Electricity			Gas			Total		
	Import	Energy Requirements		Import	Energy Requirements		Import	Energy Requirements		Import	Energy Requirements		Import	Energy Requirements	
		Primary	Final		Primary	Final		Primary	Final		Primary	Final		Primary	Final
1987	211,906	211,093	698	245,998	126,691	104,891	0	-4,904	70,626	0	0	10,584	457,904	332,880	186,799
1992	269,956	305,879	549	458,991	183,635	148,115	0	-17,866	94,151	0	0	18,207	728,947	471,648	261,022
1997	151,069	161,229	350	919,088	284,870	153,956	28,353	26,339	116,074	0	0	23,906	1,098,510	472,439	294,298

Basis: Terajoule

Table 1.2: Re-exports of Oil Products, 1987, 1992 and 1997
(Source: Hong Kong Energy Statistics, Census and Statistics Department)

Year	Aviation Gasoline and Kerosene	Motor Gasoline	Gas / Diesel Oil and Naphtha	Fuel Oil	LPG (Kilotonne)
1987	5	26	311	311	13
1992	54	93	1,855	1,562	51
1997	227	186	8,634	2,596	9

Basis: Megalitre, unless otherwise specified

1.7 There has been, however, an import ban, since September 1998, on oil products re-exported to Mainland China, in order to protect its internal oil production. According to one oil company, its re-export business has as a result, reduced significantly in 1999.

1.8 The quantity of retained imports (total imports minus total re-exports), roughly the equivalent of consumption, does not show similar growth across the different oil products (Table 1.3).

Table 1.3: Retained Imports of Oil Products, 1987, 1992 and 1997
(Source: Hong Kong Energy Statistics, Census and Statistics Department)

Year	Aviation Gasoline and Kerosene	Motor Gasoline	Gas / Diesel Oil and Naphtha	Fuel Oil	LPG (Kilotonne)
1987	1,587	266	2,083	1,934	164
1992	2,680	499	3,744	1,882	195
1997	3,082	319	2,541	954	163

Basis: Megalitre, unless otherwise specified

1.9 For the three products under this study, the quantity of total imports, re-exports, retained imports and consumption from 1987 to 1997 are shown in Table 1.4.

1.10 Table 1.4 shows that, during 1987 to 1994 and 1995, retained imports and consumption of motor gasoline, and gas / diesel oil and naphtha increased steadily in quantity terms, however, plateaus in the markets for each appear to have been reached thereafter. For LPG, although retained imports and consumption increased during 1987 to 1992, remarkable declines in statistics for both have been recorded since 1993. There is, however, a recent recovery in the quantity of retained imports of LPG.

1.11 The Council was unable to obtain a break down of data that would identify the import and consumption trends of fuel for vehicle use and LPG for domestic consumption only. Nevertheless, the information does provide useful data on the general trends in the markets for the three products under study.

Table 1.4: Imports, Re-exports, Retained Imports and Consumption of Motor Gasoline, Gas / Diesel Oil and Naphtha, and LPG from 1987 to 1997
(Source: Hong Kong Energy Statistics, Census and Statistics Department)

Year	Motor Gasoline				Gas / Diesel Oil and Naphtha				LPG			
	Total Imports	Re-exports	Retained Imports	Con-sumption	Total Imports	Re-exports	Retained Imports	Con-sumption	Total Imports	Re-exports	Retained Imports	Con-sumption
	(Megalitre)				(Megalitre)				(Kilotonne)			
1987	292	26	266	266	2,395	311	2,084	1,446	177	13	164	172
1988	307	42	265	307	2,692	482	2,210	1,755	176	17	160	181
1989	429	117	312	332	3,758	1,444	2,314	1,664	205	28	177	187
1990	488	99	389	321	3,708	1,017	2,691	1,909	212	43	169	198
1991	397	46	351	367	4,365	1,475	2,890	2,375	201	38	163	201
1992	592	93	499	400	5,599	1,855	3,744	2,766	246	51	195	212
1993	613	246	367	437	6,481	2,843	3,638	3,139	182	51	131	194
1994	853	359	494	461	8,350	3,527	4,823	3,466	143	37	106	187
1995	712	200	512	453	11,052	6,360	4,691	3,280	146	22	124	185
1996	676	160	516	454	11,616	7,209	4,407	3,049	190	30	160	160
1997	505	186	319	467	11,175	8,634	2,541	3,100	172	9	163	146

Remarks:

1. Total Imports = Re-exports + Retained Imports
2. Re-exports are mainly to Mainland China (Pearl River Delta) and Macau. In 1997, 37% of motor gasoline, 77% of gas / diesel oil and naphtha, and 5% of LPG were re-exported.
3. Consumption: Local consumption by domestic, commercial and industrial users. There is other local consumption by electricity and gas companies and by government and armed forces. Apart from local consumption, the imported oil products are also sold for re-exports, ship stores and aircraft stores.
4. Consumption during the year is from retained imports of the previous year and imports of the current year.
5. The Council observed that there is non-reconciliation of some yearly import, retained import and consumption statistics. According to the Industry Department, it collects consumption and stock information from the oil companies to ensure that the oil companies are meeting a minimum stock requirement sufficient for 30 days supply. Whereas for the import, retained import and re-export statistics, they are consolidated by the Customs and Excise Department to the Census and Statistics Department for compiling the Hong Kong Energy Statistics, though the original source was again from data submitted by the oil companies. The Council believes that it may be the possible cause for non-reconciliation of the information. The Council has been informed that the Industry Department has raised this issue with the Economic Services Bureau to seek coordinated information from the oil companies in the future.

Demand

1.12 The main use of motor gasoline and diesel is fuel for motor vehicles, while LPG is primarily used for cooking and domestic water heating[3]. There is also anticipated to be growing use of LPG for motor vehicles (para 1.18 refers).

Vehicular demand

1.13 The number of vehicles on the road in Hong Kong grew from 524,021 in 1994 to 558,903 in 1997 (Table 1.5). There is a long term trend towards increased vehicle ownership in Hong Kong but, as Table 1.4 shows, motor gasoline, gas / diesel oil and naphtha, and LPG consumption have not increased during this period. The reasons behind this are not clear, as published consumption information cannot be broken down into different sectors. However, the popularity of smaller engine capacity cars, improved engine performance and higher fuel efficiency can be assumed as part of the reason. There has also been an increase in the quantity of hydrocarbon oil seizures from 1991 to 1997, suggesting that the figures on demand are being distorted by the presence of illegal sales of product (see Chapter Two para 2.6).

[3] Diesel and LPG are also used for industry.

Table 1.5: New Registration and Licensing of Vehicles
(Source: Transport Department)

Year	Total Registered Vehicles	
	All Vehicles	Private Cars
1994	524,021	311,929
1995	526,296	318,233
1996	532,946	325,131
1997	558,903	348,450

1.14 Motor gasoline, diesel, electricity, LPG and natural gas are fuels used throughout the world for motor vehicles. In Hong Kong two thirds of the vehicle population, which are private cars, are fuelled by motor gasoline (leaded petrol and unleaded petrol).

1.15 Unleaded petrol was first introduced to the Hong Kong retail market in 1991 and sales of this fuel rose sharply at the expense of leaded petrol. This was in line with the requirement that all petrol vehicles supplied in Hong Kong after 1992 had to be fitted with 3-way catalytic converters to clean exhaust emissions[4]. By the end of 1998, unleaded petrol sales accounted for about 94% of the total motor gasoline sold[5]. To completely control emissions from petrol vehicles, the Government banned the supply, sale and dispensing of leaded petrol as well as any fuel additives containing lead with effect from 1 April 1999.

1.16 Almost all commercial vehicles in Hong Kong including taxis, light buses, goods vehicles and buses are fuelled by diesel. Although diesel vehicles account for only one third of the vehicle population, they take up about two thirds of the vehicle mileage and high emission of particulates[6]. To address the public concerns over air quality in Hong Kong, the Government considered that a clean practicable alternative to diesel vehicles had to be found. In September 1995, the Government proposed that all light duty diesel vehicles should be phased out and replaced by clean petrol vehicles. However, the proposal did not receive sufficient public support[7].

1.17 In September 1996, an interdepartmental working group was set up to study the feasibility of replacing diesel vehicles with clean gaseous fuelled vehicles. The working group had explored natural gas and electric vehicles but found that such vehicles had many technical and operational issues to resolve such as the lack of a stable supply of natural gas, the need for a new infrastructure for distribution and storage of natural gas and non-availability of mature electric vehicle technology. The working group concluded that LPG vehicles were a practicable clean alternative to diesel vehicles and that they were safe and technically feasible in Hong Kong.

1.18 In view of the positive results from the trial of 30 LPG taxis launched in November 1997, the Government, subsequent to its public consultation in 1998, determined to require from the end of 2000, that all vehicles newly registered as taxis would have to use LPG; and all existing diesel taxis would have to be replaced with LPG taxis, before the end of 2005. The Government also indicated that it would

[4] Leaded petrol cannot be used in vehicles with catalytic converters.

[5] Environmental Protection Department's press release on 5 February 1999.

[6] Planning, Environment and Lands Bureau's "A Proposal to Introduce LPG Taxis, A Consultation Paper" in October 1998.

[7] According to the End of Year Press Briefing by the Director of Environmental Protection on 23 February 1999, both the trade and the Legislative Council members refused to support such scheme.

continue to examine the feasibility of encouraging other light duty diesel vehicles to use LPG.

1.19 By the same token, bus companies in Hong Kong are also investigating other alternatives to pursue a less polluted environment such as the use of ultra-low sulphur diesel and other clean practical modes, including electricity. The Hong Kong, Kowloon and New Territories Public and Maxicab Lightbus Merchants United Association recently tested the use of vegetable oil as fuel to promote a smoke-free environment. The Chairman of the Association, in a discussion with the Council stated that biodiesel is not only environmentally friendly but would be much cheaper than diesel. The Government has yet to allow the sale of biodiesel in Hong Kong, but nevertheless, it can be expected that with these and possibly other new initiatives, notable changes in demand for various vehicular fuels in Hong Kong may occur in the near future.

Domestic water heating and cooking demand

1.20 Domestic consumers of water heating and cooking fuel in Hong Kong are currently served by a number of alternatives. These include manufactured gas based on naptha (commonly known as Towngas), electricity, cylinder and piped LPG and, to a lesser extent, kerosene. The Council's study in 1995 "*Assessing Competition in the Domestic Water Heating and Cooking Fuel Market"* provided a full account on the market competitiveness and trade practices of companies in this industry.

1.21 The study found that LPG companies have limited access to the residential market due to government regulations and policies. Since 1982, piped LPG emerged in Hong Kong and this, in addition to its main competitor Hong Kong and China Gas Co. Ltd (also commonly referred to as Towngas) has gradually replaced the use of cylinder LPG in some districts. However, development of the piped LPG market has been constrained to some extent by government regulations. For example, the enactment in 1990 of Section 17(4) of the Gas Safety (Gas Supply) Regulations, provided until recently that: -

> "No person shall install a gas main for the conveyance of liquefied petroleum gas along or across a road."

This, in effect, banned the underground transmission of LPG under public roadways in Hong Kong.

1.22 At the time of preparing its 1995 report, the Council noted that the existing policy of the Housing Authority (HA) was that it would consider piped LPG supply only where Towngas was not presently available and would not become available by the date of completion of the estate/court. As a result, there has been a continuous decline in the number of LPG customers since 1990 (Table 1.6) and the demand for fuel used for cooking and water heating shifted from LPG to other types of fuel gas such as Towngas (Table 1.7).

Table 1.6: LPG Development
(Source: Hong Kong 1989 – 1997 Series, Hong Kong – A New Era, Information Services Department)

	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
LPG Customers	800,000	912,000	955,000	950,000	950,000	880,000	877,000	850,000	847,000	790,000
Sales (%)										
Cylinder	70	65	79	64	63	59	58	62	61	59
Piped	30	35	21	36	37	41	42	38	39	41

Domestic Dwellings(%)										
Cylinder	43	38	40	38	35	30	26	32	31	29
Piped	57	62	60	62	65	70	74	68	69	71

Table 1.7: Percentage of Fuel Gas Sold in Energy Terms
(Source: Hong Kong 1989 - 1997 Series, Hong Kong – A New Era, Information Services Department)

	1988	**1989**	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**
LPG	44	39	34	35	37	35	31	30	30	26
Towngas	56	61	66	65	63	65	69	70	70	74

1.23 Reflecting this shift in demand, consumption of LPG reduced substantially from 212 kilotonnes in 1992 (the peak) to 146 kilotonnes in 1997 (Table 1.4). However, with the recent introduction of LPG taxis and other LPG vehicles in the future, an increase in demand for LPG as vehicular fuel can be forecasted.

1.24 Since HA represents the largest developer in Hong Kong, the implication of its policy of LPG use, for competition, is significant. This relates not only to the markets for the supply of energy for domestic water heating and cooking fuel, but the maintenance of a viable LPG industry in view of its intended use as a motor vehicle fuel. Accordingly, the Council sought the current views of HA with regard to piped LPG supply. HA responded by noting that it had carried out another study in August 1997 on the feasibility of using bulk LPG in public housing developments supplied from a LPG compound either within or outside the developments. The study was to respond to the public consultation paper on the feasibility of introducing a common carrier system for gas supply issued by the Electrical and Mechanical Services Department (EMSD) in June 1997. This was recommended, among other things, to promote and enhance competition between LPG and Towngas before the introduction of the common carrier system to Hong Kong. The membership of the working group comprised representatives from HA, EMSD, and the LPG Safety Technical Committee (LPGSTC) representing LPG supply companies in Hong Kong.

1.25 HA stated that the working group had agreed that, in view of the increasing demand on housing production and planning constraints, it was not the appropriate time to pursue the supplying of LPG from a compound located within public housing developments. Regarding the feasibility of supplying LPG from a compound outside the developments, LPGSTC carried out detailed studies to address the issues of land acquisition and finally advised that they could not be resolved for the time being. LPGSTC agreed the working group and the feasibility study be suspended until they could come up with a proposal. HA informed the Council that it is prepared to consider all possible choices of fuel supply to public housing developments, but it was up to the LPG industry to resolve the above issues first to make LPG supply a viable option.

Future Trends

1.26 The import of oil products has increased significantly over the past ten years. Public data indicates that Hong Kong is now being used for re-exporting fuels to Mainland China and to Macau. For the three oil products under examination, their long term domestic future growth patterns vary. Domestic demand for motor gasoline (mainly unleaded petrol after April 1999) can be seen as limited. Diesel for vehicle use will no doubt face decline due to government intervention to replace its use with LPG. LPG will subsequently face growth as motor vehicle fuel, but there will be diminishing demand in the water heating and cooking fuel market for cylinder LPG. Piped LPG faces an uncertain future due to various restraints and the costs associated with on site storage. Another important factor is the Government's policy to promote railways as the key means of public transport. According to the third comprehensive transport review[8] released in October 1999, the rail share of total public transport boardings is forecasted to increase from 33% in 1997 to about 50% in 2016. Insofar as trains are electrified, and environmental concerns driving natural gas to be used for generating electricity this would also have significant downside implications for the three products in this study. Overall the growth potential in the demand for the three products could be characterised as limited, at least as far as legal sales are concerned.

[8] Hong Kong Third Comprehensive Transport Study – Final Report, October 1999, para 2.29.

Chapter Two

Government Regulations

2.1 In many countries the oil products industry is subject to considerable government attention and regulation. The most widely shared concerns, apart from using the products as a base for collecting taxes, are those related to the safety of the products and to their environmental impacts. This chapter has the objective of identifying the extent of government intervention in the industry that has an effect on the market structure, conduct and performance of the industry.

Government's Policy on Price of Oil Products

2.2 The supply of oil products, as discussed in Chapter One, is entirely from external sources. In response to a serious threat to oil supply in the 1970s, the Government enacted the Oil (Conservation and Control) Ordinance (Cap. 264) in 1979 to enable control, *inter alia*, of the supply and use of oil and also to regulate the price at which oil may be sold. The major objective of the legislation was to ensure the long term stability of supply of oil products. These powers have never been used; the Government being of the view that they should only be used in the event of a crisis. It is noted however, that the Government has required all the oil companies to maintain a minimum stock in Hong Kong sufficient for 30 days supply[1].

Duty

2.3 Though there is no price regulation on oil products, there is duty on what the Government terms "hydrocarbon oil"[2] (HO). Current duty on unleaded petrol is HK$6.06 per litre which represents around 60% of the average retail price. For diesel, it is HK$2.00 per litre which represents about 33% of the retail price. Duties on oil products in Hong Kong are high in relation to other economies. An international comparison of unleaded petrol and diesel prices and taxes is found in Chapter Six.

2.4 According to the Government, duties on goods raise revenue for general administration and for development projects, while at the same time helping to keep general tax levels low. For duty on hydrocarbon oil, there are secondary objectives and effects that must be included. The most significant secondary issues are road traffic and the environment. At the Provisional Legislative Council Meeting on 10 March 1998, the Deputy Secretary for the Treasury emphasized the duty policy on hydrocarbon oil was:

a. to control the use of private vehicles and encourage the use of public transport through the increase in petrol duty; and

[1] On local consumption basis, monitored by the Industry Department.

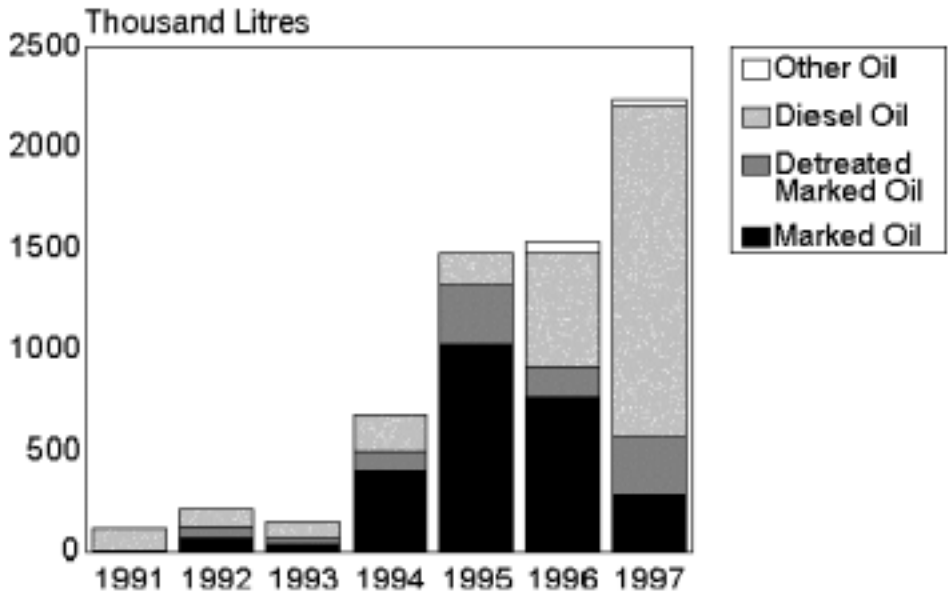
[2] Hong Kong is a free port. There is no tariff on general imports. However, there is duty on liquors, tobacco, methyl alcohol and hydrocarbon oil. As defined in the Dutiable Commodities Ordinance (Cap. 109), dutiable hydrocarbon oil include motor spirit (leaded petrol and unleaded petrol), light diesel oil, kerosene and aircraft spirit. There is no excise on LPG.

b. to maintain the incentive for users to switch to cleaner fuels by preserving the differential between duties on light diesel oil and other cleaner fuel.

2.5 Nevertheless, members present at the meeting were not convinced that raising petrol duty to control the use of private cars would work because there was no statistical evidence to support a correlation. They considered that the Government should reduce the duty on unleaded petrol and improve the current public transport system.

2.6 Members were also not convinced of the use of duty increase to encourage the switch to cleaner fuel. The failure of a government proposal in September 1995 that all light duty diesel vehicles should be phased out and replaced by clean petrol vehicles indicated there was a high level of resistance by commercial vehicles to use petrol. There had also been considerable public concern about the flow on effects of high rates of duty for taxi services, public light bus services and users of commercial transport. There were also suggestions that the high light diesel oil duty would encourage demand for illegal diesel oil or marked oil which would in turn hamper the Hong Kong economy and environment. In this regard it should be noted that the quantity of hydrocarbon oil seizures has actually increased from 1991 to 1997 (Figure 2.1). The presence of extensive sales of illicit fuel would adversely affect the business of oil companies and could raise average costs of operation. The sales would be distorting the picture on demand in the industry, but by the same token, the sales indicate the extent to which the products being sold are price sensitive.

Figure 2.1: Hydrocarbon Oil Seizure, 1991-1997
(Source: Customs and Excise Department)



2.7 To keep duties as a stable source of revenue and to maintain the real value of duties, there have been year-on-year increases in duty for hydrocarbon oil and other dutiable commodities (Table 2.1).

Table 2.1: Duty on Hydrocarbon Oil, 1989 – 1999
(Source: Financial Budgets, 1989 – 1999)

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Motor spirit	2.75	3.58	3.76								
- Leaded				4.17	4.59	5.03	5.46	5.90	6.43	6.82	6.82
- Unleaded				3.72	4.09	4.48	4.86	5.25	5.72	6.06	6.06
Light diesel	1.37	1.78	1.87	1.87	2.06	2.26	2.45	2.65	2.89	2.89	2.00
Aircraft spirit	2.75	3.58	3.76	3.76	4.14	4.53	4.92	5.31	5.79	6.14	6.51

Basis: HK$ per litre

2.8 In June 1998, nine months after the "East Asian Financial Crisis", the Government announced a policy of "Special Measures to Relieve Hardship and Economy". One of the measures was to reduce duty on diesel by 30% from June 23, 1998 to March 31, 1999 (from HK$2.89 per litre to HK$2.00 per litre). This was further extended by one more year until 31 March 2000. Recent indications are that the Government is prepared to exempt LPG for vehicle use from the payment of duty in order to fulfil its policy commitment of improving air quality by requiring all new taxis to operate on LPG fuel from the end of the year 2000.

2.9 Whilst accepting that government's tax policy has to take on board wider policy considerations, there is a general observation that can be made with regard to the relationship between price competition and duty that can have some bearing on the way in which competition might develop in a market. This is that any reduction that can be made by retailers in the price of a product that carries a large percentage of duty, will be confined to a small portion of the overall price for the product. One possible effect of this could be to suppress any interest on the part of retailers to use price as a means of attracting customers. The reason being that the component of the price to which competition applies is minor in comparison to the overall price of the product, and consumers would not see any major benefit in having a minor discount off the price.

2.10 The way in which duty is imposed (currently on a per unit basis) could also have an affect on the way in which product is marketed. For example, collecting fuel tax on a per unit basis might induce resellers to market high octane gasoline because with a constant amount of tax imposed on a per litre of gasoline, the price of high octane (and high price) gasoline relative to the price of low octane (and low price) will fall. This could induce resellers to market gasoline with a high octane rating that can reduce the relative proportion of the tax. A constant per unit duty imposed on motor vehicle fuel will also reduce the cost saving effort of retailers. Retailers will tend to upgrade services and increase prices so as to reduce the tax burden. To promote price competition, and avoid increasing costs through non price competition such as added services or "giveaways", collecting tax through on an *ad valorem* (percentage) basis may be preferable. This could induce retailers to reduce costs and prices, in order to pay a smaller amount of tax per litre to the Government.

Safety Considerations

2.11 Apart from being a dutiable commodity, motor gasoline and diesel are also classified as Category 5 Dangerous Goods (Substances giving off inflammable vapor) and LPG Category 2 Dangerous Goods (Compressed gases) under the Dangerous Goods Ordinance (Cap. 295). There is therefore, extensive regulation governing oil product manufacturing, possession, shipment, storage, transportation and retailing[3]. There is also extensive regulatory pressure exerted on planning and land use. The relevant regulations and guidelines can affect market entry and structure, due to the substantial investments and ongoing costs incurred to ensure the products are stored and distributed in strict compliance with safety standards and planning guidelines.

Siting and Leasing Conditions for Petrol Filling Stations

2.12 As far as petrol filling station (PFS) sites are concerned, site use is determined by the Planning Department, based on established planning controls and standards. When the Planning Department prepares an Outline Development Plan or Layout Plan of a new Planning Area, it will normally identify suitable sites for PFS use in consultation with relevant government departments with reference to the standards and guidelines listed in Table 2.2.

2.13 The zoning of land, which defines the range of its permitted use, can have a large impact on its value and on the community. The plan will therefore have to be circulated to various government departments for comments and later, if agreed, go through public consultation procedures. The Council was informed that prior to gazetting the land use proposals under the Town Planning Ordinance it was standard procedure to consult the public on the land use proposals including proposed PFS; if there were any.

2.14 The Planning Department informed the Council that locations and size of PFS are planned according to a number of factors, such as land use compatability, safety, traffic engineering, traffic conditions, etc. Some of these factors are standards set by the Planning Department but most are requirements of the Transport Department, the Fire Services Department, the EMSD and other government departments. These requirements are not intended to limit the number of PFS but to ensure that the essential operational requirements are met. One of the major concerns was the mixing of PFS with other land uses. According to the Fire Services Department a PFS has a higher fire risk and consequently it would object to the mixing of uses which would attract "outsiders" who may not be familiar with the surroundings and would thus be subject to higher safety risks in case of fire.

2.15 Traffic control in particular was one area of concern that was identified as having a direct influence on the absence of PFS on major roads, such as expressways. While there has been a development of PFS combined with fast food shops and other retail outlets located on major roadways overseas, this has not been a characteristic in Hong Kong, largely due to traffic control considerations. The main concern, according to the Transport Department, has been with the relatively short span of expressways in Hong Kong and the inability to site PFS on expressways without affecting traffic flow and safety. The Transport Department stated that in

[3] Dangerous Goods Ordinance (Cap. 295) and its subsidiary regulations.

general, provision of PFS on expressways and trunk roads should be discouraged, and that if it has to be provided, it is important to ensure that among other traffic requirements, properly designed acceleration and deceleration lanes should be provided to serve vehicles to and from the PFS.

Table 2.2: Planning Standards and Guidelines for Petrol Filling Stations (Source: Planning Department)

	Planning Standards and Guidelines
1.	When patronized by container vehicles ● minimum frontage : 40m ● minimum depth of site : 15m (including a 3m footway) ● minimum width of access : 8.5m
2.	When patronized by other vehicles ● minimum frontage : 25m ● minimum depth of site : 15m (including footway)
3.	On Expressways ● at least 2 km from any intersection ● preferably form part of a service area
4.	On Trunk Roads, Primary Distributor Roads and Rural Roads A ● minimum sight distance of 100m ● minimum interval of 5 km
5.	On other roads lower in the hierarchy ● minimum sight distance of 50m ● minimum interval of 100m if located on different sides of the road ● minimum interval of 300m if located on the same side of the road
6.	Vehicle space should be provided adjacent to each metered filling point
7.	Minimum 4 waiting spaces between the entrance and the filling points
8.	Additional 4 spaces should be provided for each service bay if general lubrication and servicing facilities are available
9.	Adequate petrol-intercepting facilities should be provided
10.	Station with large canopies should separate the drainage for covered and open areas and discharge each of these areas via a separate interception to the foul sewer and storm drains respectively

2.16 Hong Kong's planning standards and guidelines for PFS have changed over the years and have been incrementally upgraded to meet higher safety, environmental and operational standards. For those PFS sites that met standards in the past, but not current standards, the Government cannot take any remedial action unless the site is leased and its lease term has expired.

2.17 The Planning Department stressed that the standards and guidelines are nevertheless administrative and flexibly applied. The Planning Department also advised that apart from land reserved for PFS in town planning, the current planning system allowed the change of use to PFS through the planning permission system and/or rezoning requests. For example, within the existing planning framework

private property developers could apply for conversion of land use and it would be up to the private developers to justify that their applications satisfy the planning requirements. Most of the available development plans do allow for land use conversion. Previous applications for conversion would be available in the Town Planning Board's Planning Permission Register.

2.18 Nevertheless, given the small land area but large population in Hong Kong, opportunities for new petrol filling stations are limited, particularly in urban areas, given the need to balance the allocation of land for PFS and other land uses, including housing. From the land sales records of petrol filling station sites in the past three years, the majority of new sites are located in the New Territories or in areas with lower population density (Table 2.3).

Table 2.3: Land Sales Records of Petrol Filling Stations in 1995, 1996 and 1997 (Source: Lands Department)

Month/Year	Location
Feb 1995	Tseung Kwan O
Mar 1995	Shek Mun, Shatin
Aug 1995	Tuen Mun
Oct 1996	Kwai Chung Container Terminal Road
Mar 1997	Pokfulam Road

Tender and Operational Conditions for Petrol Filling Stations

Qualifications of bidders

2.19 It would appear that notwithstanding the ability for conversion of land to a petrol filling station, the easiest way to enter the retail market would be through an existing PFS site, or a planned PFS site that needs to be developed as a "green field" investment. There are a number of tender and operational conditions that are applied in relation to the bidding for sites that have approval for development as a PFS.

2.20 When a planned PFS site is ready for disposal by the Government, the relevant District Lands Office will prepare the Conditions of Sale and if necessary apply to the Town Planning Board for permission under section 16 of the Town Planning Ordinance (Cap. 131). In general, the disposal of a site is by way of open tender. Nevertheless, there are restrictions on those persons who can bid for a site. Each bidder must either be:

a. the holder of a special importer's license to import hydrocarbon oils under the Dutiable Commodities Ordinance; or
b. able to adduce evidence of a guaranteed supply of hydrocarbon oils from a licensed supplier (in which event the bidder will have to forward with the tender a copy of the supply agreement with the supplier).

2.21 This restriction would tend to favor the oil companies against independent entrepreneurs who do not have the wholesale storage infrastructure of oil companies. Independent entrepreneurs would be required to obtain the essential qualification for making a bid from the parties they would eventually be bidding against for a site. While an independent entrepreneur would obviously need to have indicative prices for supply before making a bid, the necessity for evidence of a supply agreement means that a bidder would have to finalize supply arrangements with a potential competing bidder and thereby disclose the detail of its business plan. A possible reason behind this restriction might be to ensure that a bidder has the intention to

operate a filling station from the site. However, if this is the reason, there would be other ways to ensure the planning objectives are met. For example, by inserting a covenant on the lease. In any event, the Council recommends that the Government should remove the restriction with regard to the bidding process. In discussions with the Planning, Environment and Lands Bureau (PELB) on this point, PELB stated that it would begin the process of removing this qualification for bidders.

Bidding for a site

2.22 Each bidder is also required to state on the Form of Tender an offer of premium[4] to purchase the site for the term and upon the terms and conditions contained in the Tender Notice and Conditions of Sale. As this is an open tender exercise, the tender is normally awarded to the bidder who has submitted the highest bid. According to a press reports in November 1998 claims were made that in order to maintain market share, the oil companies would submit very high bids for new PFS sites and the overall operating costs would then be equally shared across all petrol filling stations in the group.

2.23 Notwithstanding the ability to engage in cost transfers (if in fact this does occur) a strategy such as this depends of course on the ability to maintain final prices at a competitive level so that throughput is maintained. However, oil companies having substantial retailing operations would have the opportunity to engage in this conduct, and if uniformly practiced across the industry such a strategy would be an indirect barrier to entry for new entrants who did not have the ability to resort to similar forms of cost transfer.

2.24 One means of breaking down this particular barrier could be for the Government to consider offering lower land cost incentives to non integrated retailers to support entry and break down the cycle of cost transfers. There were some comments made that low cost land had been made available to support new entry in the past. According to the Lands Department certain sites were made available on "Crown Land Licence" in the past to a number of operators. These were later converted to standard leases at market rentals and some ended up getting 21 year leases by private treaty grant at full market value. These low cost arrangements have not been repeated and according to the Lands Department were not being currently considered.

2.25 In principle, the Council is not convinced that low cost land incentives by themselves would be appropriate for encouraging new entry. First, there is no guarantee that new entrants would pass on any cost advantages in lower prices to consumers. In fact, any profit maximizing company in this position of advantage could be expected to price at or marginally below the market price and retain the substantial marginal difference between cost and price. Second, the Government cannot be regarded as being the best informed as to the appropriate price, and commercial potential for land. The preferred policy would be to encourage a flexible approach to land use conversion whereby entrepreneurs are able to identify suitable land for their particular purposes.

Site ownership

[4] In most cases, there is no base price provided in the tender. Bidders quote a price that is based on their experience and expected rate of return to back calculate the amount to be invested in the site. Details to be discussed in Chapter Four: Retail Site Business Plans.

2.26 Nevertheless, the Council considers there is a need for some intervention in the ownership of PFS sites to safeguard the competitive process. An issue of concern to the Council is the apparent lack of oversight in terms of whether current market participants should, in the interests of competition, be permitted to bid for an approved PFS site, or to continue with a PFS site at the completion of a lease. At present, with the expiry of a PFS lease (21 year terms in general) an existing oil company lessee need only repay the land premium to the Government to continue its operation. This has the effect of perpetuating the incumbency of existing PFS by the same oil company. In view of the probability that the sites are in key areas, and that the likelihood of obtaining approval to build a "green field" site in the area is limited, any opportunity for new entrants to establish a presence in key geographic markets is substantially lessened.

2.27 In addition, government policy is that newly approved PFS sites would go to the highest bidder, regardless of who they were. However, competition could be compromised if a successful bidder for a PFS site already owns a substantial number of sites in the same geographic market, or is connected in a commercial sense to sites within the same market. There are some preplanned sites that have been planned so as to adjoin each other, but the degree to which they could be considered in competition with each other is uncertain. As an example, Esso Hong Kong Limited (Esso) owns a site in Kwun Tong that is located next door to a Feoso Oil Company (Feoso) owned PFS which has a supply agreement with Esso. Likewise, there are two sites closely located to each other in Tseung Kwan O. One has "Mobil/Concord" signage and the other has "Feoso/Mobil" signage. Both are operated as joint ventures with the Mobil Oil Hong Kong Limited (Mobil). One is a joint venture with Concord Oil (Hong Kong) Limited (Concord), the other is a joint venture with Feoso. This raises queries as to how much actual competition exists between the two PFS within the geographic area, a topic which is discussed in more detail in Chapter Seven.

2.28 There are no general competition laws in Hong Kong prohibiting the acquisition of assets which could have the effect of substantially lessening competition in a market. The Council considers therefore that some regulatory process should be put in place by the Government to ensure that PFS sites within the same geographic market (and are therefore important for spatial competition) are not purchased by the same persons, or persons with beneficial interest in other competing sites within the same market. This form of intervention could in effect bring about lower costs of entry into the market by removing some or all of the existing market participants from the bidding process and thereby restricting the bidding to a smaller group of entrepreneurs. However, the intervention would not be at a level that sets an arbitrary entry price. Entry would still be subject to competitive bidding by market participants, but it would be by firms that could be assumed to have a positive role to play in promoting competition in the market. In discussions with the PELB on this point, PELB indicated that it would consider the issue of competitive oversight in the awarding of tenders and the renewal of leases[5].

2.29 The extent to which undue concentration in markets is defined is not an easy task. However, the analysis starts with the assumption that more than one participant in a market is a necessary condition for competition to arise, and that the

[5] In this regard it may be worthy to consider the removal of any non alienation clauses that exist in PFS leases which prohibit assignment of sites to a third party. If the clauses were removed, lessees who are considered to have undue concentration of sites within a geographic market would have more flexibility to address any competition concerns. For example, to assign a lease of one of its other PFS within the market that is not up for renewal to another non aligned reseller rather than have to give up the site that is up for renewal.

fewer the participants the greater the risk that competition will not evolve to its fullest extent. There are precedents for this analysis that can be found in the work of competition authorities in similar advanced economies. Whether a problem might actually exist with regard to a potential bidder for a site depends on the facts that exist at the time of the proposed acquisition of the asset. As far as competition analysis is concerned, these are matters that experienced and well resourced competition authorities would find somewhat elementary. In the absence of general competition laws in Hong Kong, and a competition authority, the skills required for appropriate market place analysis would need to be developed "in house" for those agencies that have a role in promoting competition within their sphere of influence. Appropriate training would therefore need to be provided by the Government.

2.30 In the absence of general competition laws that set the appropriate legal framework for determining an appropriate test of suitable ownership, provisions could be inserted in the leases for the filling sites. These could disqualify certain bidders, where competition may be compromised, and limit direct or beneficial interest in the site to classes of persons who would similarly not compromise the objective of promoting or preserving competition. Conditions could also be inserted that prohibit collusive anti-competitive practices, similar to the prohibitions that exist in tender documents that prohibit bidders from exchanging price information with each other. However it should be emphasized that inserting provisions such as these in leases is not a preferred option. In fact it introduces a level of administrative complexity for an issue that might not always require such close scrutiny and use of administrative resources. A more informal response, as would be found with general oversight by a competition authority, applying general competition laws would be simpler, and is preferred.

Site use restrictions

2.31 A successful purchaser of a PFS lease is able to authorize a licensee to operate the petrol filling station, or with the prior written consent of the Director of Lands, and in conformity with any conditions imposed by him, underlet the petrol filling station to:

a. a wholly-owned subsidiary company of the purchaser; or
b. a company the whole of whose issued share capital is owned by the same persons as the persons who own the whole of the issued share capital of the purchaser.

The site, however, can only be used for the purposes as stated in the Conditions of Sale[6]:

a. a petrol and diesel filling station including vehicle lubricating or servicing facilities; and
b. the retail sale of confectionery, drinks and motorists accessories only.

2.32 The Conditions of Sale further state that no commercial franchise independent of the petrol filling station is permitted to operate on the site. These operational restrictions, when viewed in conjunction with site planning constraints and particularly the densely built nature of Hong Kong, limit the dynamics of petrol filling station development in Hong Kong. Accordingly, the development of innovative

[6] Copy of Tender Notice and Conditions of Sales are provided by the Lands Department to the Council for information and reference.

marketing models such as mixed retailing now commonly seen in other countries such as Australia and the United Kingdom (UK) is limited. These alternatives are discussed further in Chapter Eight - Alternative Retailing Models.

2.33 The Planning Department informed the Council that the primary objective of a PFS site is for PFS use, and that retail sales of drinks, confectionery, etc permitted under the lease are regarded as complimentary services. Allowing uncontrolled retailing of other goods or services would therefore substantially change the nature of the use of the site that has already undergone careful consideration in terms of its suitability as a PFS. This would therefore undermine the nature of the safety and traffic concerns noted above.

LPG Supply, Storage and Parking

Piped LPG

2.34 LPG has a density heavier than air. With a density higher than air, LPG leakage is likely to result in accumulation until discovery. The main hazard of such accumulation, in addition to complications in the clean up process, is the possibility of eventual ignition and explosion. With a view that LPG is a "dangerous" gas in the case of leakage, section 17(4) of the Gas Safety (Gas Supply) Regulations[7] had provided in the past that:

> "No person shall install a gas main for the conveyance of liquefied petroleum gas along or across a road."

2.35 This, in effect, banned the underground transmission of LPG under public roadways in Hong Kong for some years until the restriction was recently lifted. However, according to the oil companies restraints remain that apparently discriminate against LPG mains in that they are not applied for competing gas mains for Towngas. The EMSD notes however, that it is able to grant exemptions where it is of the opinion that the safety of the members of the public will not be prejudiced by such exemptions. In a response to the Council on this point it noted that a number of exemptions have been granted to installation of gas mains along or across public roads. These include gas mains associated with LPG installations in Butterfly Estate, Tai Yen Estate and South Horizon. The EMSD noted that to assist any proponent in applying for exemption from the requirements of Regulation 17(4), a draft guidance note for laying of LPG mains along or across public roads was drawn up and released in mid 1996.

2.36 EMSD stipulates additional safety requirements concerning the building of LPG storage depots in housing complexes. It specifies that no residential structure should be built on top of, or within a defined distance from a storage depot. Hence, land must be earmarked for the storage depot within the development. To compensate developers for the loss of building space, LPG suppliers competing with Towngas for installation of their product in building estates must therefore pay a

[7] As a further means of safeguarding the general public and gas consumers, the Gas Safety Ordinance (Cap. 51) was introduced on 1 April 1991. This ordinance and its subsidiary regulations cover all aspects of fuel gas importation, manufacturer, storage, transport, supply and use of gas. The legislation was amended in 1996 to encompass periodic examination of gasholders, deter damaging of underground gas pipes, improve safety requirements for the maintenance of gas installations and prohibit the importation and sale of certain types of disposable LPG containers. Since 1 April 1992, all gas supply companies, gas installers and contractors must be registered with the Gas Authority (the Director of Electrical and Mechanical Services) in order to carry out their operations.

premium to developers for the right to supply LPG to residences in the developments to overcome the regulatory restrictions.

Piped LPG and motor vehicle fuel

2.37 As noted in the preceding chapter, the introduction of LPG taxis and other LPG vehicles in the future will lead to an increase in demand for LPG as vehicular fuel. However, there could be difficulties with supply matching the expected demand. Given the constraints that have been in place that discouraged investment in reticulated LPG infrastructure, this would be expected to have reduced the level of infrastructure invested in residential (and commercial) areas over the last few years that could be considered for other purposes, in addition to the domestic or commercial purposes. For example, that piped LPG storage facilities could serve dual purposes in reticulating fuel to domestic users, and filling vehicles on or near the piped LPG site.

2.38 This suggestion was raised in discussions with the industry and the Government, and reservations were expressed as to whether existing sites could be converted to dual use. It was conceded by some that this might be feasible for new developments, however, existing estates had a number of factors which worked against the suggestion. Piped LPG storage has not been planned in the past for this and there would be limited ability to accommodate the resultant traffic flow. Moreover, existing piped LPG storage facilities would not have the necessary capacity to satisfy dual demand, and residents of estates could be expected to object to the increased motor vehicle traffic in the area and possible safety concerns. EMSD also noted that it is unlikely that the existing piped LPG storage facilities for domestic use could be adequately adapted to serve for filling vehicles as well.

2.39 The Council accepts that these are valid concerns. However, given the benefits that LPG as a motor vehicle fuel will presumably bring to air quality in Hong Kong, and the immediate need for adequate numbers of sites, the weight of argument should tilt in favor of exploring to the maximum extent possible the use of these sites for motor vehicle use.

Cylinder LPG wagon parking

2.40 Cylinder LPG is transported in special cylinder LPG wagon trucks that are modified and manned in a way to ensure safe handling of the product. Following an incident in 1992, which involved a serious fire and explosion of a cylinder LPG wagon parked in a public car park in Tuen Mun, the Government planned to provide designated overnight parking sites for cylinder LPG wagons. At present, there are three such sites, at Tuen Mun, Kwai Tsing and Pok Fu Lam.

2.41 According to the oil companies, they have invested around HK$14 million to construct the three parking sites, and annual operation costs for each site amounted to around HK$1 million. The construction and operation costs were high due to extra safety and protection measures that are not found in usual commercial parking sites, and the need to man the sites for 24 hours operation. In addition, the terms of the leases are for only three years, which means that the rentals paid and the fixed costs have a short time span in which to be recovered. The costs are calculated by the LPGSTC, and are shared by the oil companies, with the amount determined by LPG market shares.

2.42 It is clear that the designated parking sites serve an important safety concern for the public. However, as noted above, there are only three dedicated sites currently available and they are not located in areas that would be convenient to all

dealers. The Council was informed by the oil companies that cylinder LPG wagon drivers are reluctant to park their wagons at these designated sites as they are quite remote from their normal business areas, and the absence of public transportation nearby makes it difficult and inconvenient for drivers to move to and from the sites. Accordingly, there was a resistance by some drivers to use them. As a result, utilization rates for dedicated sites was claimed to be low. In Kwai Tsing, utilization was around 60% to 70%. The lowest was in Pok Fu Lam which has a capacity for 30 wagons but usually has only six wagons parked there at any one time. According to the oil companies the reason for the low rate of usage was due to a more convenient commercial parking site in the Western District, much closer to the urban business area in the western part of Hong Kong Island. Accordingly, there was a need for the fees at designated parking sites to be set at a level at least equal to that of commercial sites to limit the extent of substitution. It was claimed that the fees obtained for the designated parking sites were not sufficient to recover the costs incurred in building the sites.

2.43 However, with regard to choice of parking, EMSD informed the Council that where a designated parking site has been established in a district to serve a nominated areas or areas, drivers could only utilize the designated site. EMSD stated that there is no choice available to drivers and failure to observe the requirement to park in the designated site (being a condition of the wagon permit) would be an offence under the Gas Safety Ordinance. In fact, it pointed to successful policing action it had undertaken against drivers who had infringed their permit requirements.

2.44 EMSD also noted that the Gas Safety Advisory Committee (GSAC) agreed some years ago that the Gas Authority (the Director of Electrical and Mechanical Services) could only reasonably amend conditions of permit to enforce overnight parking arrangements where a designated parking site was available. Availability of parking sites depended upon the release of suitable land which was difficult in some areas; particularly on Hong Kong Island. Accordingly, where there are no designated parking sites in existence, drivers are able to park in other locations, subject to safe separation distances from property etc. being observed. EMSD noted that this was a significant factor in the current low usage of the Pok Fu Lam site.

2.45 There are two observations that can be made from this. While the Gas Safety Ordinance requirements mean that drivers have no choice between designated and non-designated sites, it is apparent, in view of the oil companies comments about drivers choosing to use commercial sites rather designated sites, that some drivers who should by law use a designated site, prefer to take the risk of using a non designated site and being fined. It is also apparent that there are areas where drivers are not subject to the designated site requirement, and are therefore free to use commercial parking sites.

2.46 There are costs associated with developing the designated parking sites, above those incurred for a usual commercial site. The Government presumably considered that the costs to be incurred would be justified because of the wider community benefit through increased safety. It could be expected that the presumed extra costs that dedicated sites incur, above those that commercial sites incur, would eventually be passed on to consumers of cylinder LPG through the retail price of the oil companies' products.

2.47 However, the Council considers that the public safety concerns for developing dedicated sites appears to have been compromised by the fact that some cylinder LPG wagon drivers (whose permits do not require them to park at designated sites)

are free to use non-designated sites that do not have appropriate safety equipment equal to that of the designated sites. As a result, the extra costs incurred to construct dedicated sites, which will be eventually passed on to cylinder LPG consumers, seem to have little justification in terms of the cost benefit rationale that underpinned the policy decision to construct the dedicated sites in the first place. This is because there are some cylinder LPG wagons that are not adequately parked to meet the current safety requirements. Accordingly, if the Government is to fulfill its commitment to improve public safety, at the expense of increasing industry costs, it should release more land for use as designated cylinder LPG wagon parking sites so that the community does not face the prospect of accidents occurring from those wagons that are not required to park in designated sites.

Cylinder LPG dealers

2.48 Present government policy is that it is neither practical nor desirable for the Gas Authority (the Director of Electrical and Mechanical Services) to attempt to control all aspects of the daily operations of gas supply companies, i.e. either the oil companies or their appointed cylinder LPG dealers. Accordingly, regulation of the industry utilizes general legislative prohibitions, and self-regulation. The Gas Safety Ordinance exists which provides that companies engaged in gas supply must be registered by the Gas Authority. The Ordinance imposes a general duty upon registered gas supply companies to conduct their operations safely.

2.49 Recently, when considering the need to introduce new measures to minimize the chance of LPG accidents with LPG and gas appliances generally, this task was approached by relying on a combination of new codes of practice and safety legislation. For example, a code of practice regarding the procurement and supply of cylinder LPG regulators and dim sum trolley valves has been drawn up.

2.50 Further efforts at tightening up self regulation to bring about improvements in safety of this product are being considered by EMSD, subject to agreement by the GSAC through the development of an industry guideline to cover other safety issues in the market for cylinder LPG.

2.51 Press reports in August 1999 on the efforts to use self regulatory means to address safety issues in proposed cylinder LPG dealer guidelines noted two suggestions that had been put forward by the oil companies. They were:

a. that dealers should furnish strictly for monitoring purposes oil company wholesalers with a list of their customers (which dealers saw as an attempt by oil companies to enter the retail market); and
b. that dealers should be tied to the one oil company wholesaler.

Both these issues are important from a competition perspective, as vertical integration and long term ties between wholesalers and retailers can distort the extent to which the retail market is contestable and the extent to which there is diversity in the price, product and performance dimensions of competition. At the time, the Council indicated it would be concerned if these restraints were imposed in the industry before a thorough analysis was undertaken on the effect they would have on the wholesale and retail markets for cylinder LPG.

2.52 When contacted by the Council on these issues EMSD stated that it would prefer to consider competition issues as a separate issue, after safety considerations

had been worked out between the Government and industry representatives, including agreement by GSAC. It was indicated that the Council would be invited to attend any future meetings. Subsequent discussions with EMSD indicated that the issue of customer lists had been resolved to the satisfaction of the oil companies and the dealers. The only unresolved issue was that of whether dealers should be tied to the one oil company. While a resolution to this issue might arise in the near future, there are doubts that EMSD would be in a position to effect any immediate resolution to a competition concern if one arose notwithstanding the ongoing negotiations on the code of practice.

2.53 The Council can appreciate the difficulty that EMSD faces in undertaking its role as an industry regulator while at the same time being required to consider the competition aspects of its work with regard to safety. Apart from the fact that it may not have the resources available at the time to undertake the necessary economic assessment of the competition issues being raised, it would in any event seem to be powerless to intervene in the market in the short term if, for example, the oil companies decided to unilaterally or collectively take action to impose terms of wholesale supply on dealers that tied them to oil companies, regardless of whether an EMSD and GSAC sanctioned code of practice required dealers to do so.

2.54 While a regulatory response may eventually be forthcoming, the time lag in bringing about a change could lead to structural conditions emerging in the market that would be difficult to overcome, after the event. The answer to this difficulty would be the existence of a regulatory body, such as a general competition authority or in the absence of such an authority an energy industry authority[8]. Such a body would have competition oversight of the market conditions and the power to immediately intervene to prevent conduct from taking place; and the power determine whether any anti-competitive vertical or horizontal restraints should be authorized on public benefit grounds. In these circumstances, EMSD would be in a position where they could represent the safety aspects of any restraints, as their sole focus, in a separate forum that is appropriate for analysis of competition issues.

Government Competition Initiatives

2.55 Notwithstanding the Council's recommendation in 1996 that Hong Kong should have general competition law, administered by a general competition authority, the Government, in its May 1998 "*Statement on Competition Policy"* set out a framework in which competition would be promoted in Hong Kong, based on sector specific government initiatives, and industry self regulation. A dedicated forum known as the Competition Policy Advisory Group (COMPAG) was created to review policy issues related to competition.

2.56 The Government noted that it would invite all government entities to adhere to the Statement, propose initiatives for furthering the policy objective, examine the impact of all new proposals on competition and, where appropriate, bring this to the attention of the Executive Council and the Legislature. The Government policy statement made it clear that rather than having a general competition authority to administer general competition laws, it would be incumbent on relevant government entities to take on the role of competition advocate for their particular economic sector.

[8] See Consumer Council's Report "Competition Policy: The Key to Hong Kong's Future Economic Success" in November 1996 and "Assessing Competition in the Domestic Water Heating and Cooking Fuel Market" in 1995.

2.57 In early 1999 COMPAG published its 1998 Report which listed a number of initiatives by government entities in the reporting year, in pursuance of the above Statement. The Council supports the annual reporting by COMPAG on the various initiatives taken by government bureaux and departments in reviewing their operations with regard to competition, and trusts this study will assist in identifying areas for further government action. The Council has identified a number of existing regulations hindering market contestability and makes some recommendations in this regard. The Council considers there may be need for a formal and disciplined approach to the process of assessing the extent to which existing regulations and administrative action might impinge on competition, as well as for new proposals.

2.58 Accordingly, when annually reviewing agency activities that affect competition, the Council recommends that government agencies could report by way of a "Competition Impact Statement"[9] to reflect on the agency's initiatives that:

a. have addressed competition issues arising during the year;
b. ensure regulations administered by the agency do not unnecessarily restrict competition. If the regulations are considered to restrict competition then it must be demonstrated that the benefits to the community of the restrictions outweigh the anti-competitive costs; and
c. ensure that regulatory induced costs are justified and there is an absence of alternative approaches.

With regard to new regulatory proposals, a similar Competition Impact Statement could accompany briefings to the Legislative Council (LegCo), or public discussion papers:

a. making an assessment of competition in the market or markets in which intervention is proposed;
b. indicating whether the regulatory proposal will affect competition in the market or markets; and
c. suggesting ways in which any potential problem areas can be addressed to ensure the market or markets are contestable.

2.59 The Council is aware that the application of competition principles to the work of government agencies, and the construction of a Competition Impact Statement would be a demanding exercise for some agencies. It would be desirable therefore if some understanding of the principles, and assistance could be provided for responsible government officials, and policy bureaux through appropriate training in this area of work.

[9] It is envisaged that the proposed Competition Impact Statement would be similar to the current "Controlling Officer's Environmental Report", which gives effect to the Government's policy objective of introducing environmental reporting throughout the Government, beginning from Year 1999-2000. See Planning, Environment and Lands Bureau General Circular No. 2/99.

Chapter Three

Supply and Distribution

3.1 This chapter examines the structural arrangements that exist at various functional levels concerned with the supply and distribution for the three products under examination. The functional levels are:

a. Buying arrangements at the refinery stage;
b. Importation into Hong Kong;
c. Terminal and storage costs; and
d. Distribution.

The retailing aspects of the products are analyzed in the next chapter.

Supply Chain of Oil Products

3.2 The supply of oil products begins with the activities of various oil producing nations world wide that have as their prime objective the maintenance of price stability and adequate returns on capital. This is in fact the prime objective of a cartel of oil producing nations, known as "The Organization for Petroleum Exporting Countries" (OPEC) a group major producers and exporters of crude oil. The organization, set up in 1960, acts as a forum for discussion of and agreement on the level at which the member countries should fix the price of their crude oil exports by production quotas[1]. The member countries accounted for about 60 % to total crude-oil production and about 90% of total world exports in the early 1970s. However, for a number of reasons, including the expansion of supplies from non-OPEC producers, OPEC's share of world exports have fallen over recent years. OPEC's current estimate is that it supplies more than 40% of the world's oil and that its members possess about 78% of the world's total proven crude oil reserves.

3.3 Notwithstanding its loss of share, OPEC's influence in the market remains a factor in prices for crude oil prices. In early 1999 key OPEC countries, including Saudi Arabia, Iran and Venezuela, as well as non-OPEC member Mexico sought to raise oil prices further and pledged to cut production by 2 million barrels a day by 1 April 1999. While some remained skeptical of the members' commitment, if implemented, it was considered that the cuts in production would have some effect on prices worldwide[2].

3.4 Subsequently, OPEC's September 1999 Conference announced that adherence to the agreed level of production was satisfactory, but still urged greater compliance[3]. Analysts attributed the doubling of the January 1999 price of crude oil in November 1999 was as a result of cooperation not only within OPEC but between OPEC and non-OPEC producers. The non-OPEC producers were Mexico, Norway,

[1] The member countries are: Algeria, Ecuador, Gabon, Indonesia, Iran, Iraq, Kuwait, Libya, Nigeria, Qatar, Saudi Arabia, the United Arab Emirates and Venezuela.

[2] "OPEC Speaks and the World Shrugs", Newsweek magazine, 22 March 1999.

[3] OPEC Press Release No. 7/1999, Final Statement From the One-Hundred-and Eighth Meeting of the OPEC Conference Vienna, Austria, 22 September 1999.

the Sultanate of Oman and Russia. Whether the agreement on production cuts will be extended for a further year, and the effect on crude oil prices remains to be seen[4].

Sources of Supply

3.5 One of the important features of the Hong Kong oil industry (apart from not having any production capacity) is the absence of a refining facility and the total dependence on imports. The chain of product supply as far as Hong Kong is concerned begins with imports from overseas as shown in Figure 3.1 and Figure 3.2. Oil products are imported into Hong Kong from various external sources. In 1997, Hong Kong obtained 60% of its oil imports from Singapore, 7% from South Korea and 3% from Japan. Mainland China has previously been an important supplier for the three products under examination, but dropped out significantly since 1996.

3.6 Information on the sources of supply of the three products under study shows that during the last ten years, the supply of motor gasoline, gas/diesel oil and naphtha, and LPG have little changes in terms of the sources of supply (Appendix 1). Singapore has traditionally been the largest supplier of most oil products imported into Hong Kong although in recent years supplies from the South Korea and Japan (for gas/diesel oil) and the Philippines (for LPG) have been growing. In 1997, Singapore accounted for 95% of imports of motor gasoline, 61% of gas/diesel oil and naphtha, and 40% of LPG.

3.7 While it can be expected that Hong Kong should have imported its oil products from the cheapest sources of supply, the comparison of average import price and import quantity of different suppliers does not support this assumption (Appendix 2). In response to this observation, the oil companies have stated that, apart from cost concerns, they have to consider other factors such as the quality, stability and continuity of oil product supplies to Hong Kong.

3.8 It is worth noting that in a submission to an Australian Government inquiry into the oil industry, an oil company submitted that it was unlikely that other locations could compete for substantial market share against the large scale refineries that currently exist in Singapore, or those that will be established in other Asian areas to meet demand growth in demand for the Pacific Rim/Asian region[5].

[4] Hong Kong Economic Journal, 9 and 16 of November 1999.

[5] Petroleum Products, Industry Commission, Australian Government, 1994.

Figure 3.1: Supply Chain of Motor Gasoline / Diesel

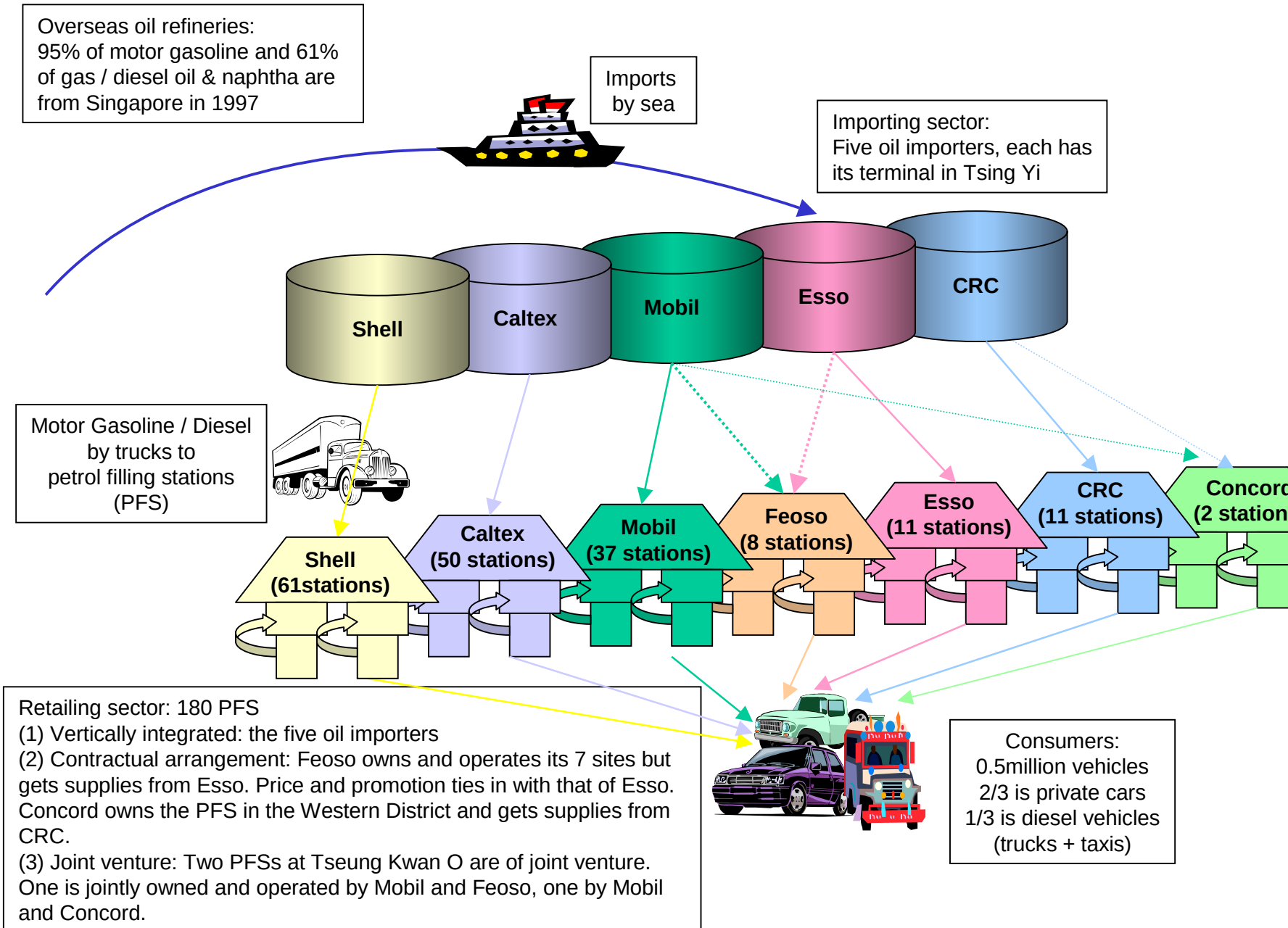
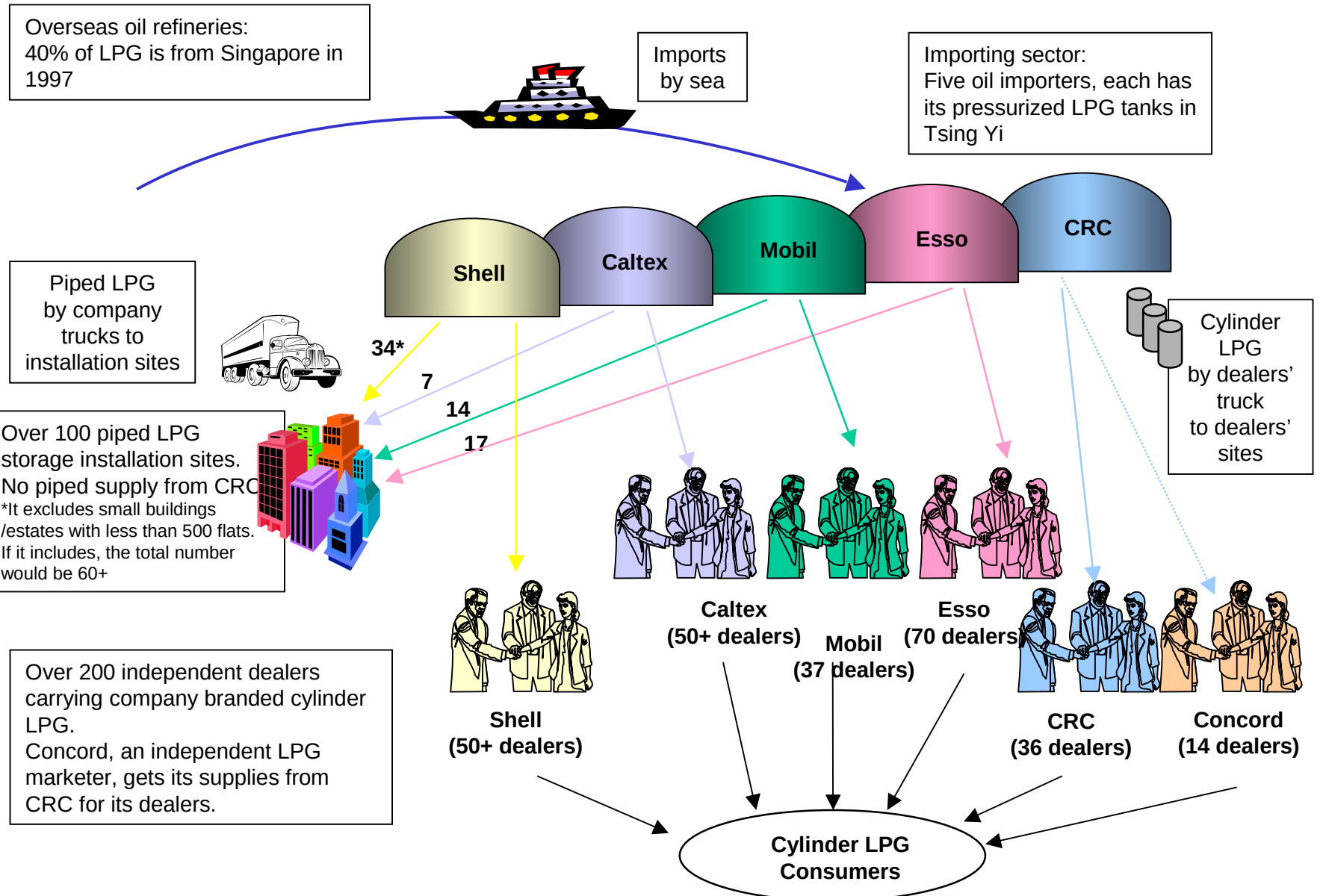


Figure 3.2: Supply Chain of LPG



Oil Importers

3.9 The Customs and Excise Department wrote to the Council and confirmed that "no person shall import motor spirit or light diesel oil, except the holders of Special Import License or their associates"[6].

3.10 At present, Shell Hong Kong Limited (Shell), Caltex Oil Hong Kong Limited (Caltex), Mobil Oil Hong Kong Limited (Mobil), Esso Hong Kong Limited (Esso) and China Resources PetroChems (Group) Co., Ltd. (CRC) are the only special import license holders in Hong Kong[7]. In order to apply for a special import license, being a keeper of a Licensed Warehouse capable of storing not less than 500 kilolitres of hydrocarbon oil (HO) is the basic requirement. Shell, Caltex, Mobil, Esso and CRC (holding 2 licenses), again, are the only holders of licensed warehouse license.

3.11 In accordance with Reg. 24 of Dutiable Commodities Regulations (Cap. 109), a licensee of special import license for HO whom the Commissioner has authorized may, under the conditions the Commissioner may impose, issue:

a. a pass for the removal of dutiable HO from a licensed warehouse to a ship for use as fuel or store of the ship or to another licensed warehouse; or / and
b. a voucher for the removal of HO on which duty is deemed to have been paid from a licensed warehouse.

3.12 There is also an Import and Export License for HO. Based on information from the Customs and Excise Department, apart from the five licensees of special import license, BP Hong Kong Limited (BP), Concord Oil (Hong Kong) Limited (Concord), Feoso Oil Limited (Feoso), Shell Developments (HK) Ltd., Kuwait Petroleum Aviation HK Ltd. and Jebsen & Co. Ltd. are also holders of import and export license. However, a licensee of an import and export license is not authorized to issue the above-mentioned pass and voucher. They have to apply for the permit concerned for every removal of dutiable HO in Hong Kong.

Procurement

3.13 The Shell, Caltex, Mobil and Esso groups are both refiners and producers of oil products in a number of countries. In submissions to the Council, the related local oil companies noted that imports were mainly sourced from their own companies or affiliated companies, although there were purchases from third parties (Table 3.1).

3.14 In meetings with the oil companies on product procurement, the Council was informed that purchase prices for motor gasoline and diesel generally followed those as noted by Platt's[8]. Whereas for LPG, the purchase price was subject to an agreed contract price with the refineries. All sales and purchases are Saudi Contract Price related and the contract price is a function of the tender prices offered by the LPG buyers on monthly basis.

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[6] Letter to the Council on 13 September 1999.

[7] AFSC Operation Ltd. is the sixth holder of Special Import License and Licensed Warehouse License but it deals only with aviation fuels. It is a consortium with representatives from different oil companies and the Airport Authority.

[8] Platt's Oilgram Price Report published by McGraw-Hill Inc.: an international daily oil/gas price and marketing letter.

3.15 With the above procurement systems it can be assumed to a certain extent that the unit values of imports of oil products into Hong Kong might fluctuate with shipments over different periods of time. In addition, different oil companies should have different unit values of imports for different quantities ordered. This point is important to note in view of the lack of volatility in retail prices between different oil companies.

Table 3.1: Oil Product Procurement
(Source: Oil Companies)

	Unleaded Petrol and Diesel	LPG
Shell	From both related companies and unrelated companies, depending on the competitiveness of the offers. The purchase is based on the most competitive offer on a landed HK basis at the time of purchase. There are volume contracts involved.	From Shell Gas Eastern, Inc. and any available source in the market / world which can meet the product specification. LPG is sourced mainly from refrigerated cargoes and traded in the Eastern Hemisphere on CP (Contract Price) plus premium basis. The CP is announced by Saudi Armco on a monthly basis and the assessment of which is based on the result of open tenders. If CP is over or under estimated, the premium will correct itself by adjusting upwards or downwards.
Caltex	From Singapore Joint Venture Refinery. Sometimes other sources. All are purchased via Caltex Singapore based on a term contract covering a whole year requirement	From both affiliate and third parties. Not engaged in any contract arrangement.
Mobil	From Mobil's Singapore Jurong refinery but product procurement system may change from time to time. Prices are related to Platt's market price for fuels.	From Mobil's Singapore Jurong refinery but product procurement system may change from time to time. Prices are related to contract price for LPG.
Esso	Motor gasoline and diesel from Esso Singapore affiliate or market. Purchases are made on a spot basis for a given specification and quantity to be delivered. Spot prices refer to assessment of oil product price prices fob Singapore published by Platt's.	From Esso Singapore affiliate or market.

3.16 The Council also notes that using Platt's as an indicative price is not altogether useful. There could be more competitive prices obtainable from spot market sales and optimum prices could be obtained from picking the right moment when there is periodic over capacity. This is apparently how independent wholesalers operate in supplying independent retailers in other jurisdictions such as Australia, rather than on long term volume supply agreements based on Platt's.

3.17 An important factor in relation to procurement is the fact that most unleaded petrol imported into Hong Kong has an octane rating of 98[9]. Apparently, this is the highest among South-East countries where the norm is an octane of 95 for unleaded petrol. The Council was informed by one oil company that Europe and North America commonly used octane ratings of 92, 95 and 97. For every increase in octane value, the cost of production is higher than for lower ratings, and it is therefore one of the reasons why unleaded petrol in Hong Kong is more expensive than in other countries, disregarding government duty. Therefore, the cost of imported product is not only a Platt's based price but a premium to cover a higher octane rating.

[9] The Council was informed by one oil company that the oil industry traditionally uses Research Octane Number (RON) in Hong Kong; while the oil industry overseas traditionally uses a combination of RON and MON Motor Octane Number (MON) in U.S. The two numbers are slightly different.

3.18 An issue raised concerning procurement, is that of transfer pricing. In this regard, the major oil companies also informed the Council that their purchase volumes, as compared to the total refinery production was relatively small, and even with vertical integration their bargaining power in purchase price within the company was relatively weak. In this regard, some pointed to the fact that purchases were not limited to those within the company and that some leeway was given in this regard to obtain product from other than company related sources. The issue of transfer pricing is a matter that might be resolved through access to companies' books and accounts, and making comparisons with import cost information of other jurisdictions. However, this is not within the Council's ambit. A relevant observation that can be made in relation to this issue is that vertically integrated operations will always arouse these suspicions. The answer therefore is that if the suspicion warrants a concern, some effort should be made to promote non-integrated operations in Hong Kong.

Shipping

3.19 Oil products are imported into Hong Kong by sea. It is however, worthwhile to note that during the Oil Crisis in the 1970s when China exported oil products to Hong Kong, rail transport had been used.

3.20 In submissions to the Council, two oil companies indicated that they have their own in-house chartering and shipping services. One oil company stated it has its shipping services arranged by its overseas affiliates and provided by third parties at market freight rates. Shipping of motor gasoline, diesel and LPG of another oil company is arranged and paid by its suppliers. If products are bought on CIF basis, marine insurance is also arranged and covered by the suppliers. If products are bought on CNF (cost and freight) basis, the insurance costs will be paid by the importer. Leaving aside the ability to purchase product, and regulatory requirements for importation, there would not appear to be any impediment to a non oil company importing product into Hong Kong by using current shipping services which can be sourced from international charter / freight market.

Terminal and Storage

3.21 The five holders of special importer licence have their own terminals and warehouses in the Tsing Yi Island. The latest facility is that of CRC which was finished in1997. CRC claimed its depot and tanks are now the largest among all oil importers in Hong Kong.

3.22 After an oil tanker has berthed at the jetty at terminals in the Tsing Yi Island, the products are pumped from the tanker to the storage tanks on shore. The terminals handle all receiving, storage and issuing of the product. Costs involved in the ship-to-shore delivery process include payments for anchorage, pilots, tugboats, berthing, port charges, shipping agency fees, surveyor fees, demurrages costs, as well as terminal operating costs for manpower, facilities, sampling, inspection.

3.23 For motor gasoline and diesel, the product is stored in storage tanks at Tsing Yi terminals before delivery by tank trucks to service stations or commercial users. Storage costs are high due to individual company's environmental, health and safety (EHS) standards and the Government's safety and environmental protection requirements.

3.24 As for LPG, the product is stored in specially built pressurized LPG tanks in Tsing Yi. To fill empty cylinders, LPG is drawn from the tanks to the filling plant at the terminal. LPG may also be drawn from the storage to the tank truck loading bay at the terminal where the LPG tank trucks are loaded for delivery to housing sites. Again, all LPG equipment and facilities are required to comply with individual company's and the Government's EHS standards, such as the standard safety separation distance away from the LPG storage, handling facilities, fire fighting foam cannon and sprinkler system etc.

3.25 At present, the oil companies only use common shared facilities for cylinder LPG wagon parking sites and fuel storage at Hong Kong airport by AFSC Operation Ltd. In most other situations, they use their own storage facilities for their own particular set of company standards and business requirements.

Access to storage facilities

3.26 At present, there are substantial investment costs, given the small land area and high rental value in Hong Kong, to set up adequate storage facilities. EMSD informed the Council that a site for new entrants to build importation/storage facilities for LPG, for example, is available at Tseung Kwan O. However, whether this might be taken up by a new entrant is not assured. Feoso, a non-importing retailer informed the Council that it considered the setting up of oil storage tank facilities unjustified given its relatively small scale of business in comparison with other importing retailers. The most likely opportunity for access to storage facilities would therefore be to lease capacity from an existing oil company. A question arises therefore as to whether there would be adequate capacity for a potential independent marketer, either wholesale or retail, to utilize the capacity of either oil company in Tsing Yi. According to one method of calculating capacity utilization, by the Industry Department, there is under utilization of existing capacity (Table 3.2).

3.27 Accordingly, the Council raised this issue with the oil companies that owned the facilities, for their comments. One company replied that, compared with other oil companies, it had smaller tanks. As a result it expected its tank utilization would be much higher than the industry average. Nevertheless it reckoned that overall facilities utilization rate was around 50%. Another answered that tank utilization will fluctuate with the supply cycle in consideration to minimal stock requirements, freight costs, etc.

Table 3.2: Industry Percentage Tank Utilization Against Maximum Storage as in 1987, 1992 and 1997
(Source: Hong Kong Energy Statistics, Census and Statistics Department)

Year	Motor Gasoline						Gas/Diesel Oil and Naphtha			LPG		
	Leaded Petrol			Unleaded Petrol								
	Max. Storage	Tank Stock	%	Max. Storage	Tank Stock	%	Max. Storage	Tank Stock	%	Max. Storage	Tank Stock	%
1987	Motor Gasoline											
Q1	61651	23469	38.1				371615	245082	66.0	12458	7711	61.9
Q2	65907	34483	52.3				372990	173002	46.4	12458	6399	51.4
Q3	64476	26211	40.7				386245	157785	40.9	12156	6736	55.4
Q4	61574	27940	45.4				389859	209631	53.8	12156	6202	51.0
Avg			44.10						51.74			54.92
1992												
Q1	39280	17007	43.3	48987	23766	48.5	515595	296849	57.6	13884	10135	73.0
Q2	39280	18041	45.9	48987	18170	37.1	476144	195309	41.0	13884	6708	48.3
Q3	40133	18366	45.8	48977	21775	44.5	498264	264109	53.0	13884	7324	52.8
Q4	45173	25306	56.0	48977	24490	50.0	498264	206854	41.5	13884	4767	34.3
Avg			47.75			45.02			48.28			52.10
1997												
Q1	47845	21615	45.2	46710	24607	52.7	544901	232728	42.7	14926	8942	59.9
Q2	47845	25968	54.3	46710	23089	49.4	544901	263203	48.3	14926	11202	75.1
Q3	58895	38603	65.5	46710	21927	46.9	544901	235301	43.2	14926	8516	57.1
Q4	47945	24436	51.0	46710	22953	49.1	544901	324260	59.5	14926	10447	70.0
Avg			53.99			49.55			48.43			65.50

3.28 Another company responded that storage capacity was not an issue as there is substantial re-exporting business from Hong Kong. As discussed in Chapter One, Hong Kong has become a major re-export centre of oil products to Mainland China and Macau. According to one company, most of its tank capacity is for re-exports to Mainland China. Other companies reported different figures for re-exports, with one noting that 36% of its total throughput in one year was for re-exports although it subsequently declined to 2% due to the import ban in China since September 1998.

3.29 The Council understands that capacity varies in accordance with a number of factors, e.g. pumping rate, berthing facilities, frequency of shipments, re-exports, etc. The published figures on storage capacity are therefore only part of the overall picture. The important point to note with regard to storage capacity in Hong Kong is that all the oil companies have their own storage facilities. The fact that there are separate storage facilities, each with its own berthing and pumping facilities would be a positive factor in that there would be expected to be pressure to utilize the capacity. This indicates there is opportunity for the oil companies to rent their terminal and storage facilities to new entrants so as to spread overheads and reduce unit costs.

Common carrier arrangements

3.30 Another means of increasing the number of competitors at the import level would be to have common storage facilities, operated on a similar basis to that of the common carrier arrangements currently in existence for aviation fuels by AFSC Operation Ltd. The economic benefits of operations sharing these facilities can be substantial due to the fact that they enable recovery of high levels of fixed costs over increased throughput volumes.

3.31 On balance, the Council considers that leasing arrangements entered into between existing owners of infrastructure on the one hand, and importers without their own storage facilities on the other hand, either supplying their own retail outlets, or wholesaling to other retailers, would be preferable. As noted above, maintaining separate and independent storage facilities would ensure that competitive rivalry between the different owners of infrastructure would keep prices at competitive levels. In addition, having separate facilities would ensure that the ability to differentiate product would be at a higher level than if there was common storage. Moreover, common carrier arrangements, because they would in effect reduce the infrastructure to a natural monopoly, would require some scheme of control or oversight of shareholder arrangements. This is to ensure that prices are kept reasonable and that entry into the common carrier arrangements by new entrants is not foreclosed by the incumbents.

Remote storage facilities

3.32 Another possibility with regard to storage facilities, is that of remote storage in Mainland China, in light of the close proximity of the border, and lower land and operating costs that exist. One possible cost effective means of setting up LPG storage facilities, for example, would be across the border in Shenzhen. The Council was informed by the Shenzhen Gas Corporation Ltd. that at present there was no sole proprietor from Hong Kong or overseas investing in LPG storage facilities in the Shenzhen region. However, the Council was informed by Marubeni Hong Kong Limited (Marubeni) that it has involvement in wholesaling LPG in the Shenzhen region, through a minor shareholding in a Shenzhen company. The operation does not have any relationship with any of the Hong Kong based oil companies, although Marubeni said that it did supply product occasionally to the Hong Kong oil companies in the course of their efforts to find cheap sources of supply. Marubeni stated that they were considering the possibility of entering the Hong Kong LPG market to meet demand for the product as a motor vehicle fuel, by using remote storage in Shenzhen and transporting product into Hong Kong. There were two ways in which they could use remote storage supply. One way would be to enter into agreements to supply LPG filling sites to operators independent of the major oil companies. The other way would be to enter into long term supply agreements with one or more of the major oil companies.

3.33 To invest in Shenzhen of Mainland China, one has to follow Law of People's Republic of China on Chinese-foreign Contractual Joint ventures<<中華人民共和國中外合資經營企業法>> and laws and regulations relating to the operation and control of liquefied petroleum gas such as <<深圳經濟特區燃料氣管理條例>>. With regard to procurement procedures, the exporting quota allocated to a joint venture has to be first scrutinized by the Municipal Trade Development Administration (市貿發局) and the export is also subject to the Customs and Excise Authority. While transport by rail, ship or trucks in delivering LPG to Hong Kong is possible, the best means of transportation is considered by Shenzhen Gas Corporation Ltd. to be by ship, taking into consideration the volume and cost.

3.34 Notwithstanding the interest expressed in remote storage and supply into the Hong Kong market, the extent to which remote storage is feasible depends on what regulatory impediment exists from time to time in relation to the export of oil products from Mainland China. There would also be policy implications for the Government to consider in view of the present strategy to ensure adequate supply of oil products within Hong Kong as a reserve in times of product shortages (see Chapter Two).

Nevertheless, from discussions with industry representatives it does remain an option for the future and accordingly could be considered by a potential new entrant into the Hong Kong market.

Wholesaling

3.35 As noted above, while vertical integration can bring some efficiencies, the existence of independent operators at different functional levels in the supply chain can introduce another dimension to the competitive process. The existence of a wholesale market for fuels would be important for any firm attempting to enter the retail market, that did not have capacity for importing product itself.

3.36 There are two examples in the Hong Kong industry that are instructive in this regard. They concern the experience of Concord, a wholesale supplier of cylinder LPG to independent dealers contracted to it for supply and a non-importing retailer of motor gasoline and diesel for two petrol filling stations; and that of Feoso, a non-importing retailer of motor gasoline and diesel which only operates a small number of petrol refilling sites in Hong Kong.

3.37 Over the years with regard to wholesale supply of LPG, Concord had changed its LPG supplier a number of times. First it obtained supplies from Mobil, then Shell and from August 1998 it had moved to CRC. For petrol filling stations in the Western District, Concord previously obtained its oil product supply from Mobil and currently from CRC. The PFS in Tseung Kwan O is a joint-venture of Concord and Mobil.

3.38 Feoso informed the Council that it had entered the motor gasoline and diesel retail market in the 1970s during the Oil Crisis, in response to a request from the Government to the Chinese Government to allow the export of oil products into Hong Kong, via China's trading company CRC. Ownership and operation of the petrol filling sites were by Feoso with oil products supplied by CRC. Currently, Feoso gets its oil supplies from Esso. According to Feoso, it did not encounter any difficulties in securing supply contracts. Recently, Feoso set up a joint-venture with Mobil to operate a PFS in Tseung Kwan O with supply from that company. The other seven PFS are still wholly-owned by Feoso and supplied by Esso.

3.39 Apart from the joint-ventured PFS in Tseung Kwan O, the supply contracts for the seven Feoso PFS vary and depend on the terms of the lease for the retail sites. The supply contracts were negotiated with regard to not only the term of the relevant leases, but also to the investment cost and the profitability of the particular PFS.

3.40 Taking the experience of the above two operators, access to supply agreements would not appear to be a problem. However, with regard to motor vehicle fuels, it is noted that the marketing of Feoso product is closely aligned with its supplier. Its independence is therefore a matter of degree. For Concord, the Council was unable to collect any further information on the extent to which its operations were aligned with that of its suppliers.

Transportation to Retail Sites

3.41 As discussed in Chapter Two, there are stringent requirements set by the Government on oil product transportation for safety reasons. Moreover, the transportation costs of gasoline / diesel as compared to LPG are different. The following table (Table 3.3) summarizes the differences between motor gasoline, diesel and LPG transport requirements.

Table 3.3: Differences in Transportation between Motor Gasoline / Diesel and LPG
Source: Caltex

Transportation Cost	Motor Gasoline / Diesel	LPG
Safety requirement	Stringent	More stringent
Manpower requirement	1 driver per truck	2 workers per truck
Delivery volume	Larger volume per trip	Smaller volume per trip
Storage and distribution cost	HK$0.15/litre	HK$1.91/kg
Operating hours	All day	Only in daytime

3.42 Trucks used for transporting piped LPG have to be dedicated to carrying LPG and with a flame retardant coating. Due to the stringent safety standards for LPG distribution piped LPG transportation is carried out solely by oil companies' trucks. For cylinder LPG, independent dealers collect the cylinders from the oil companies' terminals and deliver the cylinders to the sales outlets by their own special cylinder LPG wagons.

3.43 For motor gasoline and diesel, oil companies use both their own trucks or contractors' trucks. The presence of independent transport operators in this sector would on the face of it seem to offer independent marketers with an opportunity for negotiating their own transport arrangements. However, from what the Council can ascertain, the use of contractors' trucks is fully under the control of oil suppliers. Whether or not an independent retailer could therefore select a truck contractor to effect deliveries is not clear. One way of ascertaining the degree of commercial freedom on the part of contractors would be to examine whether the cost of delivery is borne by the supplier or charged to the PFS operator /independent per delivery. The Council was unable to obtain information on such arrangements, and it is therefore unable to conclude on this point. Nevertheless, it does appear that contractual arrangements between oil companies, and the need for independent trucking contractors to have guaranteed throughput, could act as impediments to independent retailers securing transport services. With regard to LPG, it is clear that there are no independent sources of transport that could be used to effect bulk deliveries for independent retailers of LPG, for use in either piped gas or motor vehicle fuel.

Ferry Transport

3.44 Oil / LPG trucks are prohibited from using tunnels. Accordingly, there are added costs for ferrying tankers across the harbour in the form of ferrying expenses (HK$1,800 per round trip per truck, or HK$9,000 per trip for each ship chartered).

3.45 The Council was informed that the YMT Ferry Company currently has a monopoly in the service of ferrying fuel tankers across Hong Kong harbor, and that the oil companies have to bear substantial costs related ferry cost. The oil companies have apparently discussed whether it would be feasible to have joint ferrying services through a joint venture, in the interests of lowering operational costs. However, it appears that while the idea has appeal to some, nothing has come of the suggestions that have been made.

3.46 With ferrying services provided by an independent service provider, it would not appear that there would be any impediment in non-oil companies obtaining ferry services for their tankers, if required. Should a joint venture between oil companies arise in the future, and there are no substitutable services to those of the joint venture, a concern might arise in regard to the terms and conditions an independent operator would be faced with to avail itself of the services. Joint venture arrangements to supply services of this kind would most likely involve shareholder investment, and that the benefits of the joint venture operation would be skewed towards the shareholders.

Chapter Four

Retail Site Business Plans

4.1 To understand the economics of investing in oil products retailing in Hong Kong, the Council has, with the assistance of industry experts, constructed two business models - one for a petrol filling station and another for a cylinder LPG dealership, based on industry circumstances in early 1999. The models set out the investment required to cover costs for a profitable green field development of a site similar to those currently operated by the oil companies, for a petrol filling station, and their dealers, for a LPG dealership.

4.2 The models were constructed so as to obtain an insight into the economics of retailing for the products under examination. The investments raise issues of sunk costs and recovery based on projections of throughput, both of which are important for understanding competition in the relevant markets.

Petrol Filling Station

Methodology

4.3 The following model of a petrol filling station site captures several key features of motor fuel retailing investment. The Council was informed that oil companies are generally looking for a return on investment equating to a 12% internal rate of return after tax[1], based on a 20 year[2] cash flow. Construction and equipment costs for a typical site are roughly fixed. Since unit margins and other variable costs are usually uniform across the territory, relative land cost is a function of throughput and is back calculated from a cash flow analysis.

Factors of profitable operation

4.4 In evaluating the economics of investing in a petrol filling station in Hong Kong, it is suggested that there are three important factors to consider: land cost, throughput and unit margins.

Land cost

4.5 Given the exceptionally high land value in Hong Kong and the tendering arrangement adopted by the Government, land cost is the most important contributor for a petrol filling station site investment. In general, 80% or more of the petrol filling station set up costs are accounted for by the land premium.

[1] While an investor in a petrol filling site might use the internal rate of return model with a 12% rate, as noted above, another option is a model based on return on assets, with a correspondingly different rate. It is a matter of choice for the investor, and it is difficult to make comparisons between the two. It could be conceded that investment in a petrol filling station site would carry higher risks than with other investments that also have high sunk costs.

[2] As the term of the petrol filling station lease is normally 21 years, a 20 years cash flow analysis is used to evaluate a new petrol filling station opportunity.

4.6 According to the oil companies' information, for a typical land site of 10,000 square feet, the approximate cost for setting up a petrol filling station ranges from HK$110 million to HK$150 million, with simple breakdowns as follows:

a. Land premium: HK$100 million to HK$120 million (~80%)
b. Construction and facilities: HK$10 million to HK$15 million (~20%)

4.7 Land cost does not necessarily depend on the plot size of the site. It is a function of throughput and is normally back calculated from a cash flow analysis. The following table (Table 4.1) notes land premiums against site sizes, in recent years.

Table 4.1: Land Premium Information in Recent Years
(Source: Lands Department and the Hong Kong Economic Journal, 13 Jan 1999)

Month / Year	Location	Area (square feet)	Land Premium (HK$'millions)	Operator
Feb 1995	Tseung Kwan O	28,417	110.2	Mobil, Feoso
Mar 1995	Shek Mun, Shatin	16,469	110	Esso
Aug 1995	Tuen Mun	8,719	132.3	Shell
Oct 1996	Kwai Chung Container Terminal Road	16,953	165	Caltex
Mar 1997	Pokfulam Road	8730	125	Caltex

4.8 Moreover, while most retail sites are attuned to achieving economies of scale and scope to recover the site premium, there are exceptions, such as some small sites located in metropolitan areas in order to maintain the oil companies' market presence. For example, according to Caltex in its press interview with the Hong Kong Economic Journal on 18 April 1998 and in the Legislative Council Panel on Economic Services Meeting on 23 November 1998, it was stated that the rent payable to the Government for its refilling station in Middle Road, Tsim Sha Tsui, was HK$1.3 million per month though the site has an area less than 400 square metres.

Throughput

4.9 Drivers are very much inclined to use the retail site that is most convenient or closest geographically. Because of this purchasing pattern, with other things being equal, throughput is a function of traffic in its catchment area as well as the density of stations in the same area. One can therefore expect a station located in a more densely populated area will generate a higher throughput than a less densely populated area. The Council was informed that the average throughput for the petrol filling stations in Hong Kong is about 500,000[3] litres per month with a petrol:diesel[4] ratio of 40:60. In some busy stations the throughput may be over one million litres per month.

Unit Margins

4.10 Unit gross margin is pump price less duty, less product costs. Based on the mid-Feb Platt's Singapore FOB costs, the unit gross margin for unleaded petrol and

[3] Given the pump price of unleaded petrol at HK$9.84/litre and diesel at HK$5.59/litre before September 1999, the sales quantity of 500,000 litres and mix 40:60 gives a total turnover of HK$3.6 million. This is found to be consistent with that provided by Caltex and published in the Apple Daily on 25 May 1999. In that article, it was said that the monthly turnover of an average petrol filling station is about HK$3.3 million.

[4] According to the recent submission by the Planning, Environment and Lands Bureau to the Legislative Council, the first 3,000 – 5,000 LPG Taxis will be introduced before the end of 2000 and there will be about 24 new or existing filling stations for LPG refilling. As the majority of filling stations are still for petrol and diesel refilling only, the model in this study has not taken LPG refilling into account.

diesel are estimated to be about HK$2.99 and HK$2.85 per litre respectively[5]. However, deducting the discount at some stations in the same period (12% for petrol and 15% for diesel), the margins were HK$1.81 and HK$2.01 per litre respectively[6].

Assumptions

4.11 The model is used to estimate the investment required to cover costs for a green field development of a site similar to those currently operated by the oil companies. The model is, therefore, incorporated by a range of assumptions which are consistent with normal quantity, price and profit levels (Table 4.2).

The model

4.12 Based on the assumptions and the economics of investment described above, a model used to evaluate a new petrol filling station opportunity has been constructed (Table 4.3). The maximum land cost for the station under study is calculated to be HK$70.5 million.

Implications from the model

4.13 The model relies on a number of assumptions which require empirical evidence to support, and the trade to verify. The model also skips the details on how to estimate or derive the throughput of a site and the costs of the products. The uses of the model to test assumptions about current profitability and competition in the industry and how efficiency might be improved are therefore limited. Nevertheless, the model usefully provides the following information on motor fuel retailing:

a. Land cost which is the most important contributor of petrol filling station investment, is a function of throughput and is back calculated from a cash flow analysis. To accurately estimate the output sales which determines the amount to invest, substantial knowledge and experiences in the field are essential and critical. New investors or independents who are not or have not been working in the industry may have difficulties in making reliable estimation and forecast.
b. As land cost is back calculated from a cash flow analysis based on a number of quantity and cost assumptions, differences between estimated and actual sales and margins will affect the period to recover the capital investment. This can be assumed to be part of the reason why oil companies are slow to respond in reducing prices when there is a decrease in the import price but quick when there is an increase (to maintain the margin).
c. The capital investment for construction and facilities are fixed, and are high. The investment is related to sales quantity and site size, in that it is a function of the projected throughput. The projected throughput

[5] Calculations of Feb 1999 Gross Margins:

HK$/lire	Unleaded Petrol	Diesel
Pump Price	9.84	5.59
Duty	(6.06)	(2.00)
Landed Costs	(0.79)	(0.74)
Gross Margin	2.99	2.85

[6] The average margins in Feb 1999 therefore approximate to HK$2.4/litre for both unleaded petrol and diesel.

determines the number of pumps, storage tanks, and waiting spaces that need to be provided.

d. Given the high land cost and capital in setting up a green field site based on current business models, motor fuel retailing is a long term investment in Hong Kong; extending up to 20 years.

Based on the above, it is apparent that combined with the low growth in demand for motor vehicle fuels, significant new entry into retailing cannot be expected unless substantial cost savings can be affected for retail site development.

4.14 One way of achieving those savings could be to provide incentives for new entry by subsidizing investment through lowering site premiums. However, even if a new entrant is provided with a site lease substantially lower than other existing retailers in the new entrant's catchment area, there is no guarantee that a new entrant would pass on a savings to consumers through lower retail prices.

4.15 It can be assumed the new entrant will be operating on the basis of profit maximization. A new entrant would therefore be expected to price at or only slightly below the market price, which would be based on much higher cost projections and higher throughput by incumbent operators. There would not, on the face of it, seem to be an incentive for the subsidized new entrant to price well below the market price and pass on savings to consumers. However, significant price reductions could be achieved if on the one hand, a new entrant operated on an altruistic basis, for example, as a non-profit cooperative. Or alternatively, if the new entrant's business plan required substantial price reductions off the market price to take market share off the incumbents as a means of guaranteeing the necessary throughput.

4.16 It also needs to be noted that a new entrant (regardless of whether it was profit maximizing or a non-profit cooperative), would very likely have to obtain product utilizing existing oil companies' storage capacity, and possibly transport infrastructure. In these circumstances it can be expected that any oil company that finally agreed on a supply arrangement, would want to factor in the cost of loss of revenue to the new entrant, in the negotiated price for storage and other services. The alternative to these arrangements would be remote storage that bypasses the infrastructure of the incumbents. The threat of bypass could in turn place pressure on incumbents to offer more attractive supply arrangements as a disincentive for new entrants to seek remote storage possibilities.

Cylinder LPG Dealer

4.17 Notwithstanding that new entry into the cylinder LPG market is unlikely, the Council obtained estimations from cylinder LPG dealers as to the cost of entering this line of business, for an average dealership. The information is of value in order to provide a reference point as to what a cylinder LPG dealer has to assess regarding capital costs, daily or monthly expenditure, an appropriate market price and required throughput (Table 4.4).

4.18 A survey on the retail price per cylinder of 13.5 kg of LPG in August 1999 was HK$146-$148. In these circumstances, a dealer, on average, would have to charge around HK$10.9 per kg. Taking into account the depreciation of the assets employed, an average size of business with monthly sales of about 30,000 kg of LPG has to cover an operating cost of HK$186,050 per month.

Operating costs

4.19 A breakdown of the operating costs is as follows:

Rental

4.20 Depending on the size of business and the location of the retail outlet, rental was considered rather significant to the total cost of operation. For an outlet with an average of 30,000 kg sales volume a month, the rental is about HK$ 20,000, i.e. about HK$0.67 per kg is contributed to the total operational cost. For an outlet with a smaller business scale generating only 10,000 kg of sales volume, the rental is HK$10,000, i.e. about HK$1.0 per kg will be the cost of rent.

Labour cost

4.21 Given the size of operation of a large dealer as described in 4.20, 5 persons(2 drivers and 3 deliverymen) would need to be employed for 2 cylinder LPG wagons (Gas Safety (Gas Supply) Regulations), 1 fitter, 2 persons for order taking, 1 person for day-to-day administration, and 1 person for books and accounting. The drivers and the deliverymen responsible for the delivery earn salaries of HK$12,000 per month (including commission). The fitter earns about HK$13,000 a month. The salary for the clerical staff is now at HK$9,000 per month. In addition to staff salary, other outlays are long service awards or the proposed mandatory provident fund in compliance with the Labour Ordinance. The remuneration of staff accounts for a large portion of the total cost of operation.

4.22 In the present economic conditions, some dealers cut their costs of operation by means of reducing the number of staff. Shops with small size of turnover are usually a family business. They survive by engaging each member in one or more jobs and thereby employ minimal manpower.

Costs for cylinder LPG wagons

4.23 To comply with Regulations, cylinder LPG wagons are under annual routine inspection at a renewal charge of HK$600. Other costs related to wagons are the insurance, mechanical servicing, fuel, parking fee, license fee, wireless-calling station, asset depreciation and tickets for illegal parking. With regard to this cost, oil companies noted that there is always the risk some cylinder LPG dealers might chose to parking wagons illegally and regard any tickets they received as an operating cost.

Management costs

4.24 To run the business, the basic costs incurred include electricity charges, telephone, water, business license fee, employees' insurance, stationery expenses, travelling expenses, mailing cost and tax consultant fee.

Miscellaneous costs

4.25 The dealers have to maintain a record of the expiry dates of the customers' gas regulators and hoses. For ease of management, some dealers, with the support of suppliers (provision of software) installed computers in the early 1990's. This helps to identify those customers whose hoses or regulators are due for replacement. However, this involved the purchase of computers and manpower training. As accounts in previous times required no deposits paid for cylinders, the cost for lost cylinders has to be borne by the dealers. Owing to the shrinking market, the dealer

who provided information to the Council stated that he kept the operation viable by acquiring the business of some dealers who were doing poorly. It was claimed that the premium for such acquisitions was not necessarily a small sum.

Future market development

4.26 The trade claimed the average price for both commercial and domestic consumers was around HK$10.0 per kg. Deducting the wholesale price of HK$5.5 per kg, a dealer would be earning a gross profit margin of HK$ 4.5 per kg. With a throughput of 30,000 kg and in full compliance of the government regulation on safety, the operating overheads of HK$6.2 per kg would seem to discourage new entry in the cylinder LPG retailing business. Considering present market conditions and the increasing standards of safety, it was not expected that there would be new market entry. However, it was noted that one person, who had been employed in this trade started his business by taking over the business of retiring dealers. Most dealers expected there would be drastic structural transformation in the trade in order to reduce operating costs and improve economies of scale.

Table 4.2: Green Field Model for Petrol Filling Station – Basic Assumptions

	Assumptions		Remarks
Throughput	Year 1	Year 2-20	Litres per month. As the supply, sale and dispensing of leaded petrol are banned with effect from 1 April 1999, the model takes into account of unleaded petrol only.
● Unleaded petrol	168,000	240,000	
● Diesel	252,000	360,000	
Gross Margins			
● Unleaded petrol	HK$2.4/litre		Pump price less duty less product costs (the average margin in Feb 1999)
● Diesel	HK$2.4/litre		
Other Income	HK$30,000/month		Dealer's rent, a mechanism by oil companies to adjust dealer's profitability[7].
Variable Costs			
Dealer Commission			
● Unleaded Petrol	HK$0.39/litre		Covers dealer's operating costs for the station and includes part of promotion costs, e.g. giveaways[8].
● Diesel	HK$0.30/litre		
Operating Costs			
● Terminalling	HK$0.02/litre		
● Delivery	HK$0.05/litre		
Marketing Costs			
● Promotion	HK$0.10/litre		Giveaways such as water, tissue.
Rates and Rent	HK$0.05/litre		Ratable value is calculated on throughput basis. Rent refers to the 3% ratable value applying to leases in the NT.
Other Costs			
Maintenance	HK$0.12 million/year		
Insurance	-		Basic third party insurance covered by dealer. Major catastrophe insurance covered by in-house insurance company.
Tax	16.00%		Standard corporate tax rate.
Tax Depreciation Allowance			
● Equipment	65% in year 1, balance over 5 years		
● Building	3% per year		
Capital Expenditure			
● Building	HK$6 million		Construction and equipment costs for a typical site.
● Equipment	HK$4 million		
● Grand Opening Promotion	HK$1 million		Expense item in year 1.

[7] In the case provided by Caltex published on Apple Daily 25 May 1999, the dealer's rent is HK$20,000/month.

[8] In the case provided by Caltex published on Apple Daily 25 May 1999, the dealer's commission is 6% of monthly turnover. In a recent submission to the Council, Caltex informed the Council the dealer's commission is around 50 cents / litre sales.

Table 4.3: Petrol Filling Station Model Cash Flow Analysis

HK$ 'million

		Yr 0	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Yr 6	Yr 7	Yr 8	Yr 9	Yr 10	Yr 11	Yr 12	Yr 13	Yr 14	Yr 15	Yr 16	Yr 17	Yr 18	Yr 19	Yr 20	Yr 21
Sales volume																							
Unleaded Petrol	million litres		2.02	2.88	2.88	2.88	2.88	2.88	2.88	2.88	2.88	2.88	2.88	2.88	2.88	2.88	2.88	2.88	2.88	2.88	2.88	2.88	
Diesel			3.02	4.32	4.32	4.32	4.32	4.32	4.32	4.32	4.32	4.32	4.32	4.32	4.32	4.32	4.32	4.32	4.32	4.32	4.32	4.32	
Margins																							
Unleaded Petrol	$2.40/litre		4.84	6.91	6.91	6.91	6.91	6.91	6.91	6.91	6.91	6.91	6.91	6.91	6.91	6.91	6.91	6.91	6.91	6.91	6.91	6.91	
Diesel	$2.41/litre		7.26	10.37	10.37	10.37	10.37	10.37	10.37	10.37	10.37	10.37	10.37	10.37	10.37	10.37	10.37	10.37	10.37	10.37	10.37	10.37	
Total gross margins			12.1	17.28	17.28	17.28	17.28	17.28	17.28	17.28	17.28	17.28	17.28	17.28	17.28	17.28	17.28	17.28	17.28	17.28	17.28	17.28	
Dealer's commisson																							
Unleaded Petrol	$0.39/litre		-0.79	-1.12	-1.12	-1.12	-1.12	-1.12	-1.12	-1.12	-1.12	-1.12	-1.12	-1.12	-1.12	-1.12	-1.12	-1.12	-1.12	-1.12	-1.12	-1.12	
Diesel	$0.30/litre		-0.91	-1.3	-1.3	-1.3	-1.3	-1.3	-1.3	-1.3	-1.3	-1.3	-1.3	-1.3	-1.3	-1.3	-1.3	-1.3	-1.3	-1.3	-1.3	-1.3	
Total			-1.69	-2.42	-2.42	-2.42	-2.42	-2.42	-2.42	-2.42	-2.42	-2.42	-2.42	-2.42	-2.42	-2.42	-2.42	-2.42	-2.42	-2.42	-2.42	-2.42	
Other income - dealer's rent			0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	
Expense																							
Delivery	$0.05/litre		-0.25	-0.36	-0.36	-0.36	-0.36	-0.36	-0.36	-0.36	-0.36	-0.36	-0.36	-0.36	-0.36	-0.36	-0.36	-0.36	-0.36	-0.36	-0.36	-0.36	
Terminal	$0.02/litre		-0.06	-0.09	-0.09	-0.09	-0.09	-0.09	-0.09	-0.09	-0.09	-0.09	-0.09	-0.09	-0.09	-0.09	-0.09	-0.09	-0.09	-0.09	-0.09	-0.09	
Rates	$0.05/litre		-0.25	-0.36	-0.36	-0.36	-0.36	-0.36	-0.36	-0.36	-0.36	-0.36	-0.36	-0.36	-0.36	-0.36	-0.36	-0.36	-0.36	-0.36	-0.36	-0.36	
M&R			-0.12	-0.12	-0.12	-0.12	-0.12	-0.12	-0.12	-0.12	-0.12	-0.12	-0.12	-0.12	-0.12	-0.12	-0.12	-0.12	-0.12	-0.12	-0.12	-0.12	
Promotion	$0.10/litre		-0.5	-0.72	-0.72	-0.72	-0.72	-0.72	-0.72	-0.72	-0.72	-0.72	-0.72	-0.72	-0.72	-0.72	-0.72	-0.72	-0.72	-0.72	-0.72	-0.72	
Total			-1.19	-1.65	-1.65	-1.65	-1.65	-1.65	-1.65	-1.65	-1.65	-1.65	-1.65	-1.65	-1.65	-1.65	-1.65	-1.65	-1.65	-1.65	-1.65	-1.65	
Depreciation																							
Building			-0.18	-0.18	-0.18	-0.18	-0.18	-0.18	-0.18	-0.18	-0.18	-0.18	-0.18	-0.18	-0.18	-0.18	-0.18	-0.18	-0.18	-0.18	-0.18	-0.18	
Equipment			-2.6	-0.28	-0.28	-0.28	-0.28	-0.28															
Grand opening promotion			-1																				
Income b/tax			5.79	13.11	13.11	13.11	13.11	13.11	13.39	13.39	13.39	13.39	13.39	13.39	13.39	13.39	13.39	13.39	13.39	13.39	13.39	13.39	
Income a/tax			4.87	11.02	11.02	11.02	11.02	11.02	11.25	11.25	11.25	11.25	11.25	11.25	11.25	11.25	11.25	11.25	11.25	11.25	11.25	11.25	
Capital investment																							
Building		-6																					
Equipment		-4																					
Capital recovery			2.78	0.46	0.46	0.46	0.46	0.46	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	
Working capital			-1.5	-0.65																			2.15
Net cash flow		-10	6.15	10.83	11.48	11.48	11.48	11.48	11.43	11.43	11.43	11.43	11.43	11.43	11.43	11.43	11.43	11.43	11.43	11.43	11.43	11.43	2.15
Net present value@12%			70.49																				

Land cost = HK$70.5 million

Table 4.4: Cost for an Average Cylinder LPG Dealer
(Source : An oil company and a dealer of similar size of business)

Average Monthly Sales:	30,000 kg
Business Set-up Cost:	
Shop Renovation	HK$ 150,000 (incl. 2 PCs)
2 Trucks (3.3-ton)	HK$ 440,000 (incl. safety devices)
2 Bicycles	HK$ 12,000
4 Carts	HK$ 1,500
	HK$ 603,500
Monthly Outgoing Expenses:	
Shop	HK$ 32,500 (incl. rent and other management costs)
Two 3.3-ton Trucks	HK$ 22,200 (incl. fuel, parking, maintenance, license)
Staff Remuneration plus MPF	HK$ 123,900 (assume 5 delivery staff, 1 fitter, 1 account clerk, and 2 clerical staff)
Depreciation:	
Shop Renovation(10 Yrs)	HK$ 1,250
Trucks(6 Yrs)	HK$ 6,000
Bicycles & Carts (6 Yrs)	HK$ 200
Operating Costs to Cover	HK$ 186,050 (equivalent to HK$6.2/Kg)

Chapter Five

Retailing

5.1 This chapter examines existing retailing arrangements for motor vehicle fuels, sold through petrol filling stations, and arrangements for piped LPG supply and retailing of cylinder LPG.

Petrol Filling Stations

Number and location of stations

5.2 In 1998, there were about 180 petrol filling stations in Hong Kong. With the exception of Feoso and Concord, all are owned by and vertically integrated within the oil company importers. Table 5.1 shows the total number and the distribution of petrol filling stations in Hong Kong.

Table 5.1: Distribution of Petrol Filling Stations in Hong Kong, October 1998

Area	Shell	Caltex	Mobil	Esso	CRC	Feoso	Concord	Total
HKI	15	10	8	1	0	2	1	36
Kln	18	15	18	2	0	4	0	57
NT	25	24	12	8	11	2	1	82
Islands	3	1	1	0	0	0	0	5
Total	61	50	37	11	11	8[1]	2[2]	180

Petrol filling site operations

5.3 As noted in Chapter Two, the Conditions of Sale for Petrol Filling Stations provide that the owner of a site may authorize a licensee to operate the station under license. In general, the operations of petrol filling stations in Hong Kong owned by the oil company importers are by contracted commission agents, known as "dealers" of the oil companies. Dealers of petrol filling stations are retail site operators who receive a commission from the oil companies for selling the company's products through the site owned or leased by the company. As can be seen from Table 5.2, different oil companies have somewhat different dealer terms of engagement.

5.4 The Council was unable to obtain a pro forma contract between a dealer and an oil company. However, the Council has been told by Caltex that the terms in Table 5.3 will normally be included in a dealer contract.

5.5 According to Caltex's retail training manager in a press interview[3], there is a global trend of oil companies to contract petrol filling stations to dealers in order to develop their retail network more effectively and efficiently. The recruitment of dealers is from the general public through advertisement, or by internal promotion through the existing dealer pool. The main criteria, as submitted to the Council by Shell, are experience, good track records for customer service, and a commitment to the business. Financial soundness is also a necessary condition. In the case of

[1] The Feoso station at Tseung Kwan O is jointly owned with Mobil.

[2] The Concord station at Tseung Kwan O is jointly owned with Mobil.

[3] Apple Daily, 25 May 1999.

Caltex, the capital investment by every new site dealer must be at least HK$1.5 million (HK$0.5 million as current capital for day-to-day operation and HK$1.0 million as bank guarantee).

Table 5.2: Dealer Terms of Engagement of Different Oil Companies
(Source: Oil companies)

Oil Company	Company A	Company B	Company C
Contract Period	3 – 5 years	1 years	1 – 2 years
Remuneration	Uniform commission rate at around 50 cents per litre oil sales. Incentives will be paid if monthly target is hit.	Standard commission rate for dealers. Commission is made up of two parts: a fixed commission and a variable commission based on performance.	
Payment to the Oil Company	A monthly license fee and about 50% of promotion costs.	A monthly license fee.	

Table 5.3: Terms of Dealer Engagement
(Source: Caltex)

	Standard Terms
1.	Terms of operations
2.	License fees
3.	Conditions of appointment
4.	Use of service station
5.	Exclusivity of product sales
6.	Pricing
7.	Payments
8.	Risk and ownership
9.	Guarantee against product sales
10.	Operation standards of service
11.	Service hours
12.	Quality of service
13.	Obligations and rights
14.	Indemnity and insurance
15.	Termination

5.6 Dealers are responsible for the daily operation of the station, including responsibility for accounting and employing personnel to assist in the operation of the station. Every morning, dealers report their inventory to staff at distribution terminals in Tsing Yi, after which terminal staff will arrange to dispatch quantities ordered by the station. The dealers have no control over the oil company's product, promotion and pricing, and as a general rule, they must follow oil companies' standardized procedures on petrol filling station planning, resource management, operations and price adjustment. They can, however, provide their own "value-added services" to customers. For example, car window cleaning, so as to build customer loyalty.

5.7 The Council queried the oil companies as to whether they might allow dealers to have flexibility on price, however they all considered it inappropriate. It seemed clear that pricing of product is an important function of the required rate of return of oil companies' total investments in the industry, and it was important to maintain control on prices for the purposes of corporate strategy. In any event the Council considers it doubtful whether pricing flexibility by dealers in this situation would have any effect on price competition. The dealers would be tied to an oil company for supply and the company would be expected to adjust the wholesale price offered to dealers to achieve the same end as if the dealers had no say on price. The Council considers that the more important issue in this context is that dealers would need to be independent of oil companies, and have access to a competitive wholesale market, to have true flexibility on price.

5.8 According to Caltex, the monthly turnover and net income for a dealer in running an average petrol filling station is as follows (Table 5.4).

Table 5.4: Monthly Turnover and Net Income of an Average Petrol Filling Station (Source: Caltex)

Average Monthly Turnover		**HK$3.3 million**
Average Monthly Commission (around 6% of monthly turnover)		**HK$0.2 million**
Average Monthly Expenditure		
Rental to the Oil Company	HK$0.02 million	
Salary (12 persons)	HK$0.11 million	
Promotion	HK$0.02 million	
Water and Electricity	HK$0.012 million	
Miscellaneous	HK$0.01 million	**HK$0.172 million**
Average Monthly Profit		**HK$0.028 million**

In addition to the commission paid to dealers, oil companies bear the delivery costs and station operation costs such as: station re-build program, regular maintenance and repair, equipment upgrade, electronic payment system, dealer training and development programs.

5.9 The commission agent mode of retailing, while it is the dominant form of operation, is not the only one used. Feoso for example has its petrol filling stations operated by their own employees. Feoso has at present eight stations in Hong Kong. Seven of these stations are wholly owned by Feoso but supplied by Esso. For the station in Tseung Kwan O, it is a joint venture of both Feoso and Mobil.

5.10 Though the seven Esso supplied stations are owned and operated by Feoso, price and promotion of products at these stations are generally tied to those offered by Esso. The Council was informed by Feoso that it will meet regularly with its product suppliers to discuss the market situation and the type of promotion to be offered. Esso therefore has direct influence on Feoso on its product, price and promotion dimensions of station operations. Moreover, the supply contract with Esso varies from one Feoso station to another because the term leases of these seven sites are different.

Product mix

5.11 As noted in Chapter Two, the mandated Conditions of Sale for Petrol Filling Stations stipulate that a petrol filling station site can be used for the following purposes:

a. a petrol and diesel filling station including vehicle lubricating or servicing facilities; and
b. the retail sale of confectionery, drinks and motorists accessories only.

Condition (b) is incorporated as a general term in the site tender lease only recently. In the past all petrol filling stations were allowed for motor gasoline and diesel refilling only. Since 1997, the Government allowed the retail sale of confectionery, drinks and motorists accessories at some petrol filling station sites. An extra land premium depending on the saleable area and store area at the site, however, is charged to the oil companies for this additional use condition.

5.12 According to the oil companies, the operations of non-fuel sales at petrol filling stations are the responsibility of dealers. In return for the right to market non-fuel product, dealers have to pay the oil companies a nominal license fee. In the case of Caltex for example, a dealer has to pay HK$2,000 to HK$4,000 per month for operating a retail mart at its petrol filling station. Nevertheless, most oil companies claimed that the operations of these "retail marts" are generally unsuccessful and not profitable. They are simply considered as a complimentary service to customers.

Uniform retailing arrangements

5.13 It is clear from the above that:

a. the major source of revenue obtained from petrol filling station sites is through fuel sales;
b. there little or no opportunity for significantly diversifying the source of revenue to include products other than motor vehicle fuels;
c. there is little discernable difference in the retailing of motor vehicle fuels between the various retailers. Feoso could be classed as "independent" in that it is not related to an oil company importer and it does not operate on a commission agent basis. Nevertheless, the Council found that its station operations particularly on the pricing and promotion aspects, are so tightly bonded to that of its product suppliers that its degree of independence in a marketing sense is questionable. For Concord, one of its stations is operated as a joint venture, with Mobil signage. With regard to the other, the Council was unable to collect any information on the extent to which its operations were aligned with its supplier.

Piped LPG

5.14 There are over 100 bulk LPG storage installation sites in Hong Kong. The key suppliers serving the number of housing estates are shown in Table 5.5 below:

Table 5.5: Supply of Piped LPG to Housing Estates

	Shell	Caltex	Mobil	Esso
No. of Housing Estates	34[4]	7	14	17

5.15 In general, the terms of supply contracts vary from 5 to 30 years. In most cases, LPG supply contracts are granted to the highest bidder for open tenders but management companies / property developers / owners' incorporation normally have the final say in deciding with which supplier they will contract. It was noted by some oil companies that the renewal of contracts for supply did not always go to the initial supplier, that developed the piped gas installation. Competitive bidding had resulted in changes to the company supplying product to estates. Chapter One details the past and current policy of the Housing Authority on piped gas.

5.16 Under Gas Safety Regulations, a LPG supplier to a housing development is required to design, procure and construct the entire LPG supply system and is, in bidding for the contract, required to pay a land premium in order to acquire the exclusive LPG supply right for that contract period. For private residential properties, the company is also required to provide free LPG appliances, such as cooking ranges and water heaters, to the developers as an incentive to take on piped LPG.

[4] It excludes small buildings / estates with less than 500 flats. If it includes, the total number would be 60+.

5.17 The prices that users pay are as per supply contracts according to a "list price" of the oil companies' LPG. However, at least one oil company informed the Council that in some recent contract negotiations, there are guaranteed terms that the list price will be lower than the Towngas price. In general, the list price is adjusted according to the rate of inflation and import costs. Change of import costs is usually given as an average over a period of time.

5.18 At the customer level, an authorized dealer handles the management of the LPG supply in the housing estate(s) involving billing customers, collection of monthly charges, inspection and reporting of meters and other installations, checking and reporting of stock level, etc. Besides obtaining proceeds in selling of stoves and water heaters, dealers earn a commission on the sales of LPG from the supplier. This commission is negotiated between the supplier and the dealer. Since the supplier sets the price of LPG and charges directly to the customers, the dealer, therefore, only acts as an agent for the supplier to manage the LPG supply system within the development.

5.19 In discussions with the oil companies, most commented that the Government's policy on piped gas imposed discriminatory treatment to LPG (Chapter Two on Government Regulations has noted the history of regulations that has impeded the growth of this product)[5]. The industry commissioned an external consultant to work on a report to study the safety issues of LPG. The report was submitted to the Economic Services Bureau for consideration in May 1999.

Piped LPG common carrier

5.20 In the Council's 1995 Study on *"Assessing Competition in the Domestic Water Heating and Cooking Fuel Market"*, the Government was urged to take positive steps to devise a feasible scheme to open up the gas distribution network by introducing a "common carrier" system for natural gas. This was recommended in light of market dominance by the Hong Kong & China Gas Co Ltd (Towngas) and the need to promote competition in the wider gas market. The Council repeats its call for such a system to be introduced in that wider market but suggests that the Government could take steps now in the piped LPG market segment to promote this common carrier concept. First, with regard to existing public housing estates, LPG common carrier arrangements could be encouraged by converting the current arrangements to a common carrier system, when existing leases expire, whereby the fixed costs of the LPG network and storage area are separated from the variable costs of LPG supply. The variable cost component would be the functional level subject to competitive rivalry in the supply to customers. Second, with new developments that are utilizing piped LPG, common carrier arrangements could be considered as an alternative to supply by a single oil company, where the LPG infrastructure, configured to accept LPG/air, can possibly be later used for natural gas under a Hong Kong wide common carrier arrangement. This could serve the purpose of acting as a test base for a Hong Kong wide common carrier arrangement to develop[6].

[5] EMSD noted in this respect that "LPG and towngas are very different products and must be dealt with in different ways if the public is to be assured that their safety is our primary concern".

[6] The LPG Safety and Technical Committee has submitted a May 1999 Discussion Paper to Economic Services Bureau on this issue for their study. In the study, the technical compatibility of pipework, regulators, equipment and appliances for natural gas and LPG/air was noted. The Committee stated that "Because LPG/air possess combustion characteristics similar to natural gas such that the pipework, regulators, equipment and appliances for both natural gas and LPG/air are similar, adjustments of these are generally unnecessary when shifting the supply from LPG/air to natural gas and vice versa."

5.21 In addition, the development of LPG common carrier arrangements in any new developments might also assist in the evolution of LPG vehicle refueling sites, as there may be possibilities for remote housing fuel infrastructure, at the storage level, serving a dual purpose for both domestic demand and vehicle refueling. However, as noted in Chapter Two, there are constraints as to whether this remains a viable option.

Cylinder LPG

5.22 Cylinder LPG is channeled through independent dealers (or distributors) directly to consumers. Whilst dealers are not owned by oil companies, they are tied closely, in terms of supply agreements, with the oil companies. The number of cylinder LPG dealers employed by oil companies is as follows (Table 5.6).

Table 5.6: Distribution of Cylinder LPG by Oil Companies

	Shell	Caltex	Mobil	Esso	CRC	Concord
No. of Cylinder LPG Dealers	50+	50+	37	70	36	14

Evolution of cylinder LPG retailing

5.23 LPG was first introduced into Hong Kong in the early 1960's. Participation in cylinder LPG market requires an appointment as a dealer by an oil company registered by the Electrical and Mechanical Services Department (EMSD) and is subject to significant safety regulations. EMSD stated that because many dealers now supply more than one brand of gas, oil companies have reported considerable difficulty in ensuring these dealers comply with oil company operating instructions. While LPG dealers appointed by the oil companies do not have to be registered as such by EMSD, the fact that an oil company has appointed a dealer has to be filed with the Department. Wholesale supply of cylinders to dealers is therefore the sole province of oil companies and is, in theory at least, controlled by the oil companies. This matter has been discussed in recent Gas Safety Advisory Committee (GSAC) meetings and proposed measures to improve control of gas distributors, while maintaining the self-regulatory framework, are at an advanced stage.

5.24 In the 1970's[7], the cost of replacement of hose and regulators, which were distinct to each oil company, was shifted by the oil companies to the dealers who in turn passed it on to the customers. The fact that gas connection equipment was not standard added to the cost of dealers in supplying product to consumers, because different equipment had to be stocked for competing product. The Council therefore recommends that connection equipment should be standardized within the industry. In response to this suggestion some oil companies suggested that the difference in connection equipment added another dimension to competition (in terms of enhanced efficiency and safety levels between different equipment). It was also pointed out that standardizing equipment would add initial short term costs to the industry. One oil company acknowledged that standardizing equipment would encourage the existence of multi-brand distributors. However, it pointed out that under the current regulatory arrangements, where oil companies are responsible for monitoring the safety standards of distributors, this mobility would reduce the ability to control dealers. Nevertheless, the Council is convinced that, on balance, price competition in the wholesale market for supply of cylinder LPG would be better

[7] One oil company retained ownership of regulators until the mid-1990s.

served through having standardized equipment. This price competition would outweigh any perceived competition between having choices in connection equipment. As for safety concerns, it would be preferable if these could be addressed through means other than compromising price competition. For example, bar coding of LPG cylinders (see para 5.31).

Dealership contract

5.25 In principle, oil companies welcome anyone who is interested in the retail business of LPG to enter into a contract for supply of cylinder LPG as a dealer. However, in recent years, there has been no new market entry. The trade believes cylinder LPG is a sunset business as the market is shrinking and the increasing imposition of safety requirements on the use of LPG adds to costs which are getting harder to recover. In addition, it was alleged by some dealers that the dealership contracts restricted their ability to carry other brands (the Council was unable to obtain a copy of a contract for our examination). In the normal course of events, therefore, customers selecting a brand would be selecting a particular dealer or vice versa. However, the Council was informed by oil companies that dealers are free to switch and do obtain competing companies product. They knew some dealers carried more than one brand and took no action. The Council's understanding is that if there is a brand restriction imposed by oil companies (either explicit or implicit) it has no effect as there are dealers who are able to make arrangements to obtain competing product, as shown in the Council's survey in Chapter Seven. There may be levels of difficulty in achieving this depending on the oil company and the dealer concerned.

Wholesale price

5.26 Before January 1999, industry announcements of price adjustments on LPG were referred to as the "retail price". As the dealers adjusted the market price of cylinder LPG themselves, the announced retail price could act as some kind of reference only. When the industry came under scrutiny following the LegCo discussions in November 1998, oil companies thereafter announced price increases with regard to the "wholesale price".

5.27 The Council carried out a number of interviews with cylinder LPG dealers to ascertain their mode of operation. According to the dealers, the wholesale price given by oil companies was uniform amongst all dealers[8]. Oil companies response to this was that whatever uniformity there was in the wholesale price, it was in fact driven by the freedom dealers had to switch between suppliers. This fact resulted in oil companies having to keep the wholesale price as competitive as possible and that a common market price naturally evolved. A question arises however, as to whether the wholesale price would reach a level at or close to marginal cost given oligopolistic market conditions and the subsequent strategic behaviour of the oil companies (see Chapter Nine).

5.28 It was stated by some dealers that in rare circumstances, if an oil company found its sales were sluggish it would cut its wholesale price to alleviate over-stocking. In addition, they also pointed to a rebate that could be given on the wholesale price. Some dealers claimed they had no idea on what criteria rebates were granted, whereas some realized it was assessed mainly on the compliance to the safety requirements of oil companies and partly by their volume of sale. Regardless of the rebate, they considered it was insignificant to their total revenue. One dealer further

[8] While not all oil companies publicly announce the wholesale price for cylinder LPG, the uniformity was confirmed through a sample survey of cylinder LPG dealers for all brands, including Concord.

commented that unlike commercial clients, they had no say over the wholesale price. In principle, they felt no one had a competitive advantage in product cost.

5.29 Oil companies on the other hand stressed the importance of rebates as a key incentive to keep the dealer within the company and have them comply with government regulations. They claimed there are standard rebates at wholesale price levels based on sales volume and business growth. Rebates on hitting different targets set by the oil companies over a period of time were also available.

Direct distribution

5.30 Most oil companies who were canvassed on the feasibility of oil companies directly dealing with consumers thought it would not be a viable means of distribution, if the intention was to find a way of reducing prices to consumers. First, oil companies would have to re-establish networks for distribution. Second, in order to attract sales of cylinder LPG, the companies would have to devise different marketing programs which would increase the indirect cost of goods sold. Some oil companies also considered that matching the existing long credit terms offered by dealers to their customers would impose another layer of unacceptable cost.

Distribution by "sub-contractors"

5.31 A number of dealers who were contacted noted that they were not only facing a shrinking market, but the pressure from continuous imposition of safety requirements meant that some competitors were allegedly circumventing the oil company rules, by supplying to "sub-contractors". These sub-contractors were alleged to be mainly Chinese grocery shops, but also included persons who operated from residential premises. It was said they usually ordered very small quantities and kept their stock in the vicinity of their retail outlet or from their premises[9]. They were therefore able to under-cut the retail price offered by dealers who sold cylinder LPG in conformity with the rules stipulated by EMSD. As some consumers demanded prompt delivery services, these sub-contractors could satisfy the need and thus diverted some of the business from the appointed dealers in the vicinity. The Council was unable to obtain any direct information leading to the identification of these sub-contractors. In discussions with EMSD on this point the Council undertook to assist by providing whatever information came its way on these market participants, through its research and survey work, to EMSD.

5.32 This phenomenon of sub-contractors distorts the picture on retail prices of cylinder LPG in the market place, because of the unfair competition that appointed dealers, who did not supply the contractors, faced. The following table (Table 5.7) illustrates cost structures of a typical appointed dealer with monthly sales volume of about 30,000 kg and a sub-contractor. (In the study, a number of dealers were interviewed with varying sizes of business from about sales volume of 10,000 kg per month to sales volume of over 30,000 kg a month).

[9] Cylinder LPG dealers alleged that some of these sub-contractors kept their stocks away from their actual premises, in alley ways for example, so as to be in a position where they could deny ownership when queried by an official concerned at the safety implications for the storage. EMSD stated that it had successfully prosecuted safety regulations infringements, but it was extremely difficult to obtain evidence in order to initiate prosecution action in this area. It was for this reason that a new code and amended legislation was being actively pursued through the GSAC. One means to introduce traceability of LPG cylinders, such as bar-coding, would be of particular benefit in identifying potential offenders, however, this would involve additional investment by oil companies. Shell informed the Council that they had attempted to introduce such a scheme some time ago but it was not taken up by the majority of the industry. Apart from Shell, Mobil also informed the Council it has implemented a similar scheme.

Table 5.7: Estimated Cost Structure of Appointed Dealer and Sub-contractor

Items	Appointed Dealer	Sub-contractor
Product Cost (per kg)	HK$5.5	HK$6.25
1. Rental Cost (per kg)	HK$0.67	N.A.
2. Costs for Wagons (per kg)	HK$0.74	N.A.
3. Labour Cost (per kg)	HK$4.13	N.A.
4. Management Costs (per kg)	HK$0.42	N.A.
5. Dealer's Margin	N.A.	HK$0.75
Total Estimated Cost (per kg.)	HK$5.54	HK$0.57+
Gross Profit Margin (per kg.)	HK$4.5	HK$3.75

5.33 Apart from the revenue of monthly sales of 30,000 kg, a dealer may generate other income from the sale of kitchen stoves of approximately HK$30,000. To earn a profit, the proprietor, as a manager in daytime, also assumed the posts of either fitter or bookkeeper after business hours. It was alleged in the trade that for a size of 13.5kg cylinder LPG, an appointed dealer sold to a sub-contractor at a profit margin of about HK$10.0, i.e. HK$0.75 per kg. It was also noted that while a sub-contractor would be paying minimal rental, labour, transportation and management, not all sub-contractors were selling at a price much lower than the dealers' price.

Vehicle LPG Retailing

5.34 As noted in Chapter One and Chapter Two, the Government has embarked on measures to reduce emissions from diesel vehicles to improve air quality in Hong Kong. In view of the positive results from a trial, the Government determined to require, from the end of 2000, that all vehicles newly registered as taxis must use LPG, and all existing 18,000 diesel taxis are to be replaced with LPG taxis before the end of 2005.

5.35 As at October 1999 there were 183 LPG taxis in operation and four pilot LPG filling stations in Hong Kong. The four LPG filling stations are at Tsing Yi, Shatin Heights, Kowloon Bay and Chai Wan. In order to increase the number of sites, the Planning, Environment and Lands Bureau (PELB), in a Discussion Paper on this subject[10] stated that it had identified 67 potential sites for LPG refilling including 41 existing petrol filling stations and 26 new sites. Out of these 67 sites, 33 existing petrol filling stations and 11 new sites already have the support of the respective Provisional District Boards; 8 existing petrol filling stations and 5 new sites have their in-principle support but further details needs to be provided to them when available. The geographical distribution of the 57 (approved) sites is as follows:

District	Number
Hong Kong Island	8
Kowloon and Kwai Tsing	16
New Territories	33
Total	57

5.36 In its Discussion Paper on this subject PELB has indicated that in order to facilitate the setting up of more LPG refilling sites a number of incentives will be offered, and obligations imposed:

[10] Planning, Environment and Lands Bureau Discussion Paper presented to LegCo Panel on Environmental Affairs and Transport LPG Taxi Scheme, 6 July 1999.

a. Dedicated sites will be put out to tender on a design, build and operate basis at nil premium and the sites will be awarded to whichever tenderer offers the best scheme for providing LPG facilities by January 2001, a fixed LPG price at a reasonable level during the first year of operation and a formula that sets the lowest price of LPG after the first full year of operation.
b. For existing PFS suitable for conversion, extension of the lease will be agreed at no additional premium where a company undertakes to provide a specified number of LPG dispensers by an agreed time and to sell LPG at a fixed price during the first year of the mandatory LPG scheme and thereafter at a price set by a formula related to the import price of LPG.
c. Where in the Government's view additional land is required to enable LPG facilities to be installed at existing sites, no premium will be asked for this additional land, subject to the same conditions in respect of LPG price ceiling as noted above.

5.37 The need for adequate numbers of LPG filling sites, to cater for demand is crucial to the Government's policy, and the Council welcomes the Government's initiative in this area. The Council also appreciates the difficulties in setting an appropriate policy of ensuring supply of product to meet demand generated by government regulatory initiative. The Council notes that the nil premium policy could be necessary to provide incentives and ensure benefits from nil premium are passed on to consumers.

5.38 However, there are a number of points the Council would make in relation to the Government's proposals. First, there was no indication in the public discussion paper that the awarding of a tender to build and operate new sites would be subject to competitive oversight to ensure there would not be undue concentration of any one oil company (or joint ventures between oil companies and others) in any geographic markets. While there would be two separate contracts awarded for the five dedicated sites, with at least one Hong Kong Island and one Kowloon site per contract, it was possible for both contracts to be awarded to the same bidder. If this was the case it would, at least in the short term, result in a concentration level that could leave little competitive choices for consumers between retail outlets.

5.39 The grant of leases or extension of existing PFS leases at nil premium also raises competition questions. For example, whether this would enable the successful bidders or existing PFS owners to engage in cross subsidization to support other company operations, leading to an uneven playing field between existing market participants. If a nil premium policy is to be pursued, there may be a need for safeguards to be applied to ensure that anti-competitive cross subsidization would not occur. There is also a query as to whether the policy might impede new entrants who would not have the ability to develop complicated business plans to gauge an appropriate retail price in order to win a bid.

5.40 As for the proposed indexing mechanism, the Council queries whether there would be incentives for the mechanism to be manipulated, and whether the price level should be left to an open market. As noted in Chapter Six, Shell's indexing mechanism that was introduced for pricing LPG (which uses both product and operational costs as a reference base) was found to be still subordinate to the pressures of the market.

5.41 In discussions prior to release of this study, PELB informed the Council that it had considered the competitive implications of the supply of auto-LPG when devising

the scheme. As far as concentration of ownership was concerned, PELB confirmed that both contracts for the initial dedicated sites could be awarded to the same bidder. However, it was open for other potential entrants to either convert existing filling sites for auto LPG, or develop new sites. It also noted concerns about cross subsidy and possible manipulation of the proposed indexing mechanism, but considered these unlikely to occur.

5.42 PELB stated that the dedicated LPG sites currently being offered for tender would be awarded to whichever bidder offered the best scheme for providing LPG filling facilities by the end year 2000 in order to support the large scale introduction of LPG taxis. The scheme would be based on the lowest price ceiling for auto-LPG derived from a pricing formula. The pricing formula would have to include two price components. The first component is a LPG cost element, set on the basis of an agreed international benchmark of LPG market prices. The second component is an operating cost element. It was this component that would be subject to competitive bidding. The successful bidder would therefore be the one that offers the lowest operating cost component for LPG retail prices over the period of a lease of twenty one years.

5.43 PELB noted that the retail price derived from the formula would be a ceiling price for auto-LPG at the dedicated stations and the successful bidders would be free to charge any price below the ceiling, in accordance with the market situation as it unfolds into the future. Auto-LPG at those sites could not be sold higher than the winning bid for the duration of the lease. PELB further noted that the successful bidders would not be allowed to change the operating cost element in the pricing formula once it is in force except by the adjustment of the composite CPI on a yearly basis. The LPG cost element would be adjusted half yearly in accordance with the movement of the international LPG benchmark price.

5.44 PELB considered that an open bidding approach on the pricing scheme, and the competition between bidders for winning the sites on the lowest price basis, would therefore ensure market conditions determined the price consumers would pay and ensure that it would be kept at a reasonable level. It noted that the offer to extend existing PFS leases at nil premium to the existing operators was intended to encourage installation of LPG refilling facilities in time to support the large scale introduction of LPG taxis in 2001. The intention was to base the terms of the offer only on what would provide sufficient incentives for installation of the LPG refilling facilities and there was no question of allowing these incentives to become a cross-subsidy for non-LPG business or vice versa. The offers for existing leases would also be conditional upon the acceptance of the same pricing mechanism and oversight, similar to those for the dedicated sites.

5.45 The Council appreciates the difficulties in setting an appropriate policy of ensuring supply of product to meet demand derived from regulatory initiative. However, with regard to the assurances on cross subsidy, the Council considers that incumbent oil companies are in an advantageous position in the market over other potential new entrants. In calculating their bids for sites, the ability to cover costs from operations in other areas would be a factor. This could distort the true costs of establishing the auto-LPG sites and possibly frustrate entry by non integrated participants. There would also be concerns that notwithstanding any government oversight of how the pricing formula is applied, there would be incentives to manipulate the operating cost component of the formula.

5.46 As a matter of principle the Council would also be wary of endorsing any schemes that had an indexing component to derive final prices for consumers in a

market that is inherently contestable. Indexing, or other price control mechanisms, would only be considered justified where there are elements of natural monopoly in the market.

Chapter Six

Industry Performance

6.1 This chapter looks at how the industry has performed in terms of market shares, investment, history of market entry and exit, costs, profits and prices.

Market Concentration

6.2 Information on market concentration can be useful for assessing competitiveness in a market. A firm or firms will not normally be able to exercise market power in the absence of significant market share.

6.3 Market shares can also be a good indicator of consumer preferences and brand loyalty for the firms' products. Moreover, where market structure has been highly concentrated and market shares have been stable for a long period of time, this will tend to suggest that there are substantial barriers to entry which might otherwise undermine and constrain the exercise of market power.

6.4 The following table, indicating market shares based on volume of product sold, and the number of retail sites, has been constructed by the Council from information obtained from a number of sources during 1998 and 1999[1]. These include information obtained from the oil companies themselves and press reports (Table 6.1).

Table 6.1: Market Share of Oil Companies

	Shell	Caltex	Mobil	Esso	Feoso	CRC	Concord
Product Volume							
Motor gasoline	40%	27%	22%		11%		-
Auto diesel	30%	28%	24%		18%		-
LPG (piped and cylinder)	36%	15%	21%	19%	-	6%	3%
PFS Sites	34%	28%	21%	6%	4%[2]	6%	1%[3]

6.5 In terms of LPG, though separate market shares for piped and cylinder LPG are not available, respective distribution of piped LPG and cylinder LPG by housing estates and dealers of different oil companies are shown below (Table 6.2) which could be a useful indicator of market concentration[4].

[1] Information on market shares was obtained during the period of study from a number of sources including newspaper reports and direct interviews with the oil companies. Information provided by individual oil companies did not always tally between each other, and the above figures should therefore be regarded as a general estimation.

[2] The Feoso station at Tseung Kwan O is jointly owned with Mobil.

[3] The Concord station at Tseung Kwan O is jointly owned with Mobil.

[4] In discussions with oil companies on the LPG cylinder and piped gas markets, it was stressed that LPG competes with Towngas and in terms of market share for the wider gas market, both forms of LPG only represented about 25% of that wider market.

Table 6.2: Distribution of Piped LPG and Cylinder LPG by Oil Companies

	Shell	Caltex	Mobil	Esso	CRC	Concord
Piped LPG - No. of Housing Estates	34[5]	7	14	17	-	-
Cylinder LPG – No. of Dealers	50+	50+	37	70	36	14

Industry Investment

Storage

6.6 In response to growing imports and re-exports for oil products in the 1980s and 1990s (Table 1.1 and 1.2 of Chapter One) and increasing concern for the environment, new oil installations have been built and existing ones modified. Being totally dependent on imports, it is also important that Hong Kong has adequate storage facilities to allow stockpiling in times of worldwide shortage or disruptions to supply. For example, to meet the demands envisaged in the Oil (Conservation and Control) Ordinance (Cap. 264). Currently, there are five oil installations and terminals on the Tsing Yi for receiving and storing oil imports into Hong Kong.

6.7 As the market leader in a number of oil products (Table 6.1), Shell had invested HK$2.5 billion to build one of its Group's largest single depots on the Tsing Yi Island. The new oil installation was completed in 1991, encompassing advanced storage, distribution and anti-pollution facilities to accommodate all Shell's existing operations in Kwun Tong and Ap Lei Chau as well as future expansion needs. Other oil companies such as Mobil and Caltex had also completed their Tsing Yi Fuel Terminal Projects in early 1990s. CRC redeveloped and completed its depot and storage facilities in 1997 and claimed that their storage capacity was the largest among all local oil importers. In its submission to the LegCo in 1986, the Chairman of Esso stated that the company would, by 1990, have invested some HK$15 billion in Hong Kong, in the course of 10 years or so.

Retailing

6.8 Substantial investment by oil companies has also been directed at retailing, including upgrading existing service stations to meet environmental requirements and changing marketing needs.

6.9 In 1998, there were about 180 petrol filling stations in Hong Kong. In recent years, many existing refilling stations have been renovated and new stations incorporated with vehicle lubricating or servicing facilities and small convenience stores for retailing confectionery and drinks. In addition, electronic systems that allow for the processing of all major bank cards right at the pumps, thus enhancing security control and increasing customer convenience was installed. CRC, the PFS retailer without a computerized system at PFS sites is also planning to install sophisticated systems at their stations so as to be able to issue its own company cards, bonus cards, etc. The Council has been unable to obtain further details on the level of investments at this functional level. However, the costs detailed in Chapter Four give an indication of what has been spent and will be required in the future.

New Entry and Exit

[5] It excludes small buildings / estates with less than 500 flats. If it includes, the total number would be 60+.

6.10 Profitable or growing industries will attract new entry. Firms which cannot perform as well as others will eventually choose to leave or merge with more successful competitors. Due most likely to the extensive investment in land, plant and equipment required for participation in the markets for the three products, there has been little recent turnover in the industry. The following paragraphs illustrate the extent of entry and exit into the markets for motor vehicle fuels, piped LPG and cylinder LPG over the last thirty years.

6.11 In the 1970s, there were six companies in Hong Kong engaged in the importing and marketing of oil products. They were Shell, Caltex, Mobil, Esso, Hong Kong Oil and Peninsula. With the Oil Crisis in 1972, Hong Kong was in the shortage of oil supplies from overseas countries. At that time, oil fields at Daqing in China were just discovered. The Government therefore discussed with the Chinese Government to see if oil products could be imported into Hong Kong from Mainland China. The negotiations and the import arrangements were conducted via CRC, one of the China's major trade and import representative companies in Hong Kong. Oil imports by CRC from Mainland China into Hong Kong were then supplied to local oil companies which included the major oil companies. Feoso, which was Hong Kong in origin, was set up as the major retail channel for CRC products.

6.12 In early 1980s, Peninsula sold its entire assets to Caltex. Peninsula had a presence in Hong Kong from the 1960s and operated an oil terminal (the present Caltex Terminal), one service station, and (according to industry sources) a significant share of the LPG market and modest market shares in the industrial diesel and fuel oil markets.

6.13 In 1987 – 1988, as a stepping stone to enter the China market, British Petroleum (BP) started its import and retail business in Hong Kong with two sites in Yuen Long. Though they had no depot or tank facilities themselves, they had contractual arrangements with Mobil to share their infrastructure by paying back Mobil handling and storage fees. At around the same time, CRC began to bid and operate its own petrol filling stations. Feoso, thereafter, shifted to oil supplies from other providers.

6.14 In 1991 – 1992, Hong Kong Oil was acquired by Pacific Concord, a stock holding company and renamed as Concord Oil (Hong Kong) Limited. Its oil terminals were then closed.

6.15 In 1992 BP also decided to withdraw its oil business from Hong Kong. From discussions with the current BP operation [6] and comments by other industry commentators, it seems the reasons may have been due to the following.

a. High land costs. Land cost in the early 1980s was significantly less than what was the case towards the end of the decade and into the 1990s, around the time BP entered the market. For example, BP obtained additional land for PFS in Kam Tin (New Territories) with a tender awarded at HK$14 million.
b. Natural advantage of other oil companies. For the existing oil companies, they had a long history in Hong Kong. They had already built up their brand image and occupied strategic sites in urban areas.
c. Economies of scale. BP had only a few sites and most likely was not able to enjoy the same economies of scale as other established oil companies.

[6] Current BP operations in Hong Kong are involved with marketing petro chemical products other than those the subject of this study.

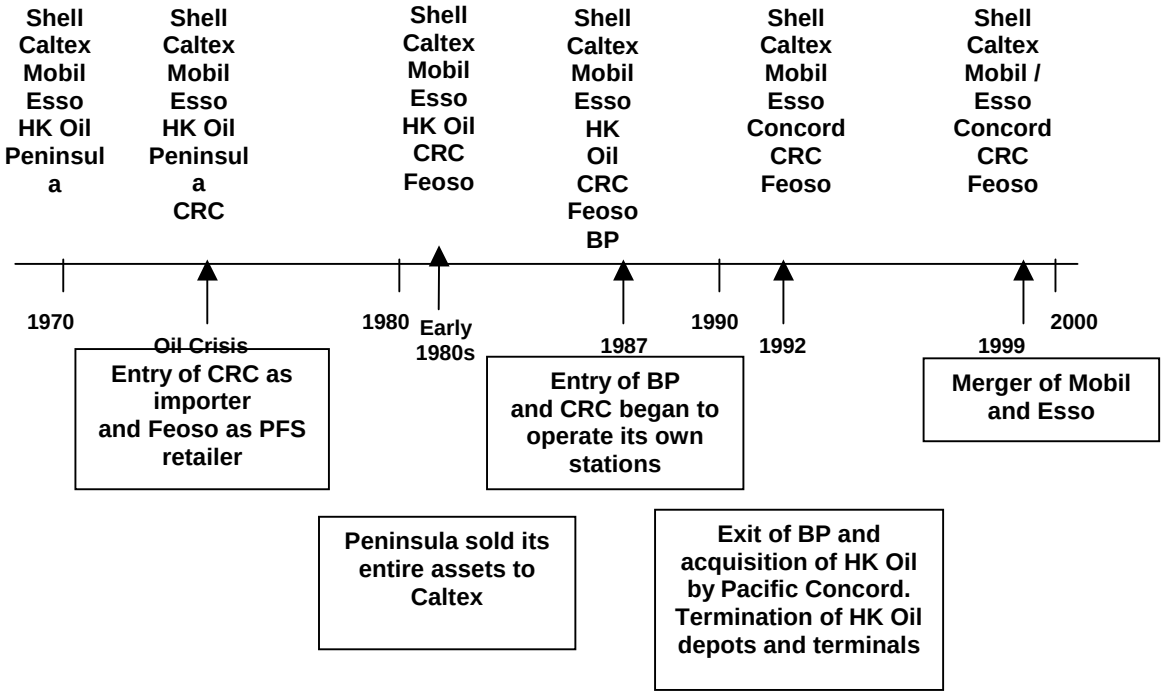
d. Opposition to building PFS. BP purchased land and applied for land conversion for petrol filling stations. However, strong opposition from residents and district boards in the areas, for environmental and safety reasons, prevented the conversions from occurring.

BP subsequently sold its three petrol filling stations and facilities in 1992 to Shell.

6.16 In December 1999, Mobil and Esso began to merge their operations in most locations world wide, including Hong Kong.

6.17 The following time line figure (Figure 6.1) illustrates the extent of incumbency, exit and entry in the Hong Kong markets for the three products under study, over the last thirty years.

Figure 6.1: Time Line of Incumbency, Exit and Entry in the Hong Kong Markets



Profitability

6.18 At the LegCo Panel on Economic Services Meeting of 23 November 1998, the Government, through the Economic Services Bureau (ESB) undertook to collect more information from the oil companies on their costs in order to adjudge whether prices offered in the subject markets were reasonable. The five major oil companies supplying oil products into Hong Kong were then requested to provide a breakdown of their cost components for unleaded petrol, automotive diesel and cylinder LPG for the years 1997, 1998 and 1999 respectively. The data for 1999 was estimated by the oil companies based on information available to them up to the middle of January 1999.

6.19 The oil companies provided the data to ESB on a confidential and proprietary basis and agreed that the data presented to the public could only be on an aggregated and non-attributable level. Both the LegCo Panel Members and the Council were provided with the data on this same basis. Only three oil companies were able to provide data up to the level of detail requested by ESB. Nevertheless the situation of these three oil companies was felt to be fairly representative of the oil products supply sector in Hong Kong as the three represented over 70% of the retail market of both unleaded petrol and automotive diesel and over 65% of the wholesale market of cylinder LPG.

Assessing profitability

6.20 The extent of competition in markets can theoretically be determined with reference to profitability in the industry. It is usually the case that competitive firms earn normal profits, while firms with market power have the capability of earning monopoly profits. The rationale behind ESB's exercise was therefore to gauge whether the markets for the three products under study were competitive, as ultra high profits would suggest that there was little real competition.

6.21 The oil companies have responded to queries on profitability in the past by claiming that profitability in the industry is low, but declined to provide detailed figures supporting the contention. Taking into account the information on costs and prices for the subject products, as noted above, ESB's estimates of profit in 1998 (on a unit basis) were that on average they were:

a. around 9% (17% in 1997) of the net cost for unleaded petrol; and
b. around 7% (11% in 1997) of the net cost of automotive diesel.

In terms of the average retail price, the profit represented around 4% in 1998 (6% in 1997) for both products.

6.22 For cylinder LPG, profit in 1998 represented around 28% of average net cost (22% in 1997). In terms of the average wholesale price, the profit represented around 22% (18% in 1997).

Methods of calculating profit

6.23 Profitability figures on a unit basis are not particularly informative, given that the critical variable is throughput. (For example, a profit margin of 20 cents per litre would result in a higher overall profit for 500,000 litres sold, as against 250,000 litres). It can also be complicated by the fact that oil companies could market a range of products, in addition to those under study, which share fixed costs of operation. ESB has indicated that it will be obtaining information from the oil companies to allow them

to follow up on the preliminary observations made on profitability in their study, and it is expected that the information will be provided along these lines in the future. Nevertheless, even in the absence of detailed information, some observations can be made on the issue of profitability, particularly the way in which they can be calculated and misinterpreted, and other ways in which profitability can be observed, that can assist in understanding competitiveness in the industry.

6.24 One method of assessing corporate profitability is by gauging the ratio of earnings against assets. Commonly, the calculations are based on earnings before interest and tax to assets (referred to as EBIT/Assets). This is an indicator of how efficiently a firm is using its assets and because it includes calculations based on investment, it also indicates important clues on the competitiveness of the industry. In discussions with the oil companies, the Council was informed that as multinational business enterprises, some considered that the rate of return ought to be assessed on the capital employed on the whole of business. From the shareholders' point of view, the rate of return on capital could reflect the true picture on investment and may be easier to compare with the bank interest rate or the yields of other investment tools.

6.25 The most common problem that occurs in misinterpreting profitability is in the valuation of assets. In particular whether they are calculated on a historical cost basis or current values. For example, in times of rising prices, EBIT/Assets can overstate a firm's profitability, and vice versa. Profitability would also be understated if the value of assets is overstated because of asset revaluation or major investment during the reporting year[7]. Given the lumpiness of investment in the oil industry it would be expected that variations in returns would be encountered from year to year. It should be noted, however, that profitability studies are instructive only for particular periods of time, and as markets evolve profitability will also change. Oversight of competitive conditions in markets therefore need to be equally adaptive. The mechanisms used in other advanced economies is that of a general competition law.

6.26 Generally speaking, high profitability levels in an industry would also attract new entry, and possibly investment in infrastructure by existing participants. Observing trends on these aspects could therefore be indicative of profitability. As noted earlier in this chapter, investment in storage and retail was extensive in the early nineties, particularly in storage facilities, to meet growing demand, which has subsequently flattened in recent years. Investment in new facilities has also been necessary as a result of government regulations addressing safety concerns. However, the industry has also seen a number of participants exit the markets for the three products under study. For example, one participant apparently exiting because of the inability to recover high land costs and regulatory difficulties that had made it economically not viable for the company to establish more retail outlets (see para 6.15).

Transfer Pricing

6.27 One important factor that needs to be recognised in this industry, given the integrated nature of operations from procurement and retail (and possibly extending to exploration and refining) is the theoretical possibility for transfer pricing to arise. For example, if transactions between one company and an affiliate company are not priced on a commercial basis. The oil companies that responded to questions on this

[7] In this regard, for example, it could also be important to factor in gains that may have been made through the sale of real estate on which old terminals were built and that were used to fund the cost of constructing new terminals.

indicated that it was not the case, and pointed to fact that prices paid for imported product were generally based on spot market prices (see Chapter Three). Nevertheless, transfer pricing can also be undertaken at levels other than at procurement, for example, between different product operations within a company's combined operations. However, cross subsidisation at this level may in some circumstances be legitimate, and sustainable in the short term, in order to secure major contracts or preserve market share in the face of vigorous competition.

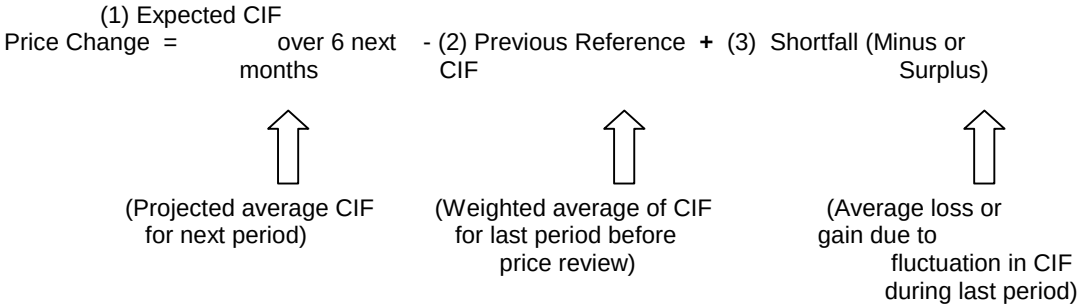
Introduction of an Indexing Mechanism for Pricing Cylinder LPG

6.28 On 27 January 1999 Shell reduced the wholesale price of cylinder LPG by HK$0.40/kg and the reduction was immediately followed by other oil companies. At the same time, Shell announced the adoption of an indexing mechanism for adjusting their LPG prices at half-yearly intervals in future, in an effort to provide transparency in their operations and pricing decisions. Shell initiated the reduction and the indexing mechanism in response to public criticism that the import cost for LPG had fallen for an extended period of time but the retail price had remained unchanged. What was referred to as the "retail price" at the time was actually the wholesale price that cylinder LPG dealers received for supply. Oil companies at the time also indicated that the price of LPG was set with reference to the price of Towngas, which was considered the main competitor of LPG for the domestic hot water and cooking fuel market. Towngas only announces adjustments to its price once a year based on movements in the import cost of naptha.

6.29 Under Shell's indexing mechanism, the company noted it would review their imported price of LPG every six months and their operational costs every twelve months. In each six-monthly review, Shell would review the changes in the imported price of LPG since the last review, forecast the likely price level for the coming six months and adjust the wholesale price accordingly. In other words, Shell would not make any gain / loss from any change in imported price of LPG and would pass on any such changes to consumers through making an adjustment every six months to their wholesale price. In each twelve-monthly review, Shell would take into account their operational costs when making the wholesale price adjustments. This should mean that future changes in import price would be fully taken into account in future changes in the wholesale price of cylinder LPG.

6.30 Diagrammatically, this mechanism can be illustrated as in Figure 6.2.

Figure 6.2: Indexing Mechanism for Pricing Cylinder LPG



Council's views on indexing

6.31 In its submission to the LegCo in November 1998, the Council did acknowledge that one way of ensuring "reasonable" prices in some circumstances was to index them against a measure of cost. For example, reference was made to the way in which Towngas was indexed to the import cost of naptha.

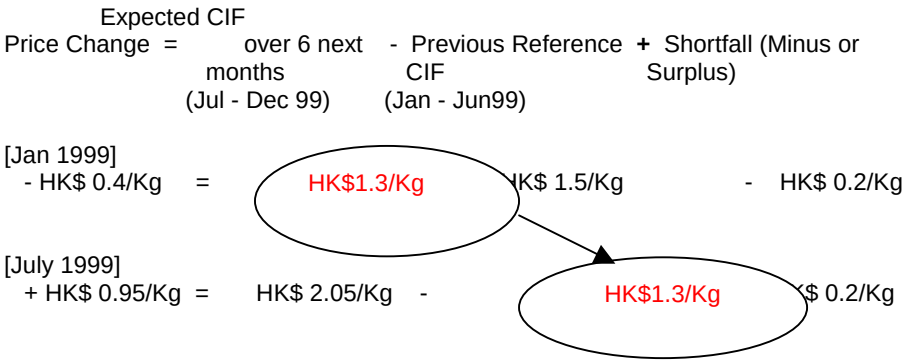
6.32 However, indexing prices to an input cost is not the Council's first option for ensuring "reasonable" prices. As a competition advocate, it has consistently argued the most efficient mechanism for determining reasonable prices is through ensuring fair and open competition. This necessitates individual action on the part of each competitor as they constantly attempt to achieve comparative advantage over each other. The worst case scenario would be for all companies to have uniform pricing strategies (for example, based on Shell's indexing mechanism) given the apparent similarities of market participants' costs.

6.33 As far as Shell's price index mechanism was concerned, the Council's view is that:

a. There is no doubt that the proposed pricing mechanism would bring transparency to the means by which prices were calculated. However, the half-yearly price review still seems unable to reflect closely the movement of import cost. Shell had submitted that this periodic review was fairer given the volatility of import prices and were of the opinion that consumers would prefer not to have price volatility.
b. The component (noted as (1) in the above diagram) in the formula is merely a projection. If the projection was made in favor of the company, consumers may have to pay an inflated price in advance.
c. The indexing mechanism only applies to the wholesale price. The Council's observations were that published price movements, as are generally the case, are taken by the dealers of cylinder LPG as a signal to justify movements in their retail prices.

6.34 Notwithstanding the introduction of Shell's indexing mechanism, when the results of past and projected costs were taken into account during the first period under which the mechanism was to be applied, in July 1999, the indexing mechanism was not applied to its fullest extent. In applying its pricing mechanism in 1999, Shell made use of the import price forecast for LPG for the next 6 months (July - Dec 1999) and the previous forecast for the past 6 months (Jan - Jun 1999) to determine the price adjustment in July 1999. The resulting price change was worked out as follows (Figure 6.3):

Figure 6.3: Resulting Price Change



6.35 In July 1999, price adjustments were made on industrial, commercial and government accounts. Nonetheless, it was noted that the purchase price would be subject to negotiation between Shell and bulk purchase accounts. In Shell's press announcement, it decided to freeze domestic LPG prices by offering discounts of the same amount of the cost escalation of HK$0.95/Kg. In effect, the new wholesale price of cylinder LPG, the list price of piped LPG and the auto LPG price remained unchanged at HK$ 5.50/Kg, HK$ 20.39/cu. m. and HK$ 3.88/L respectively. This indicated to the Council that notwithstanding the indexing mechanism, there was still room for the company to absorb the higher product costs, by either reducing costs in other areas, or absorbing the costs in the existing margins. In effect, market conditions were still the overriding variable in its pricing decisions, not the level of an input cost.

International Pricing

6.36 In the course of this study queries were raised as to how Hong Kong oil prices rated as compared to other countries. The Council undertook its own research and examined a number of sources of information[8] in order to make international comparisons with recent oil prices in Hong Kong. In order to obtain the most current information on prices, some countries, particularly those in South East Asia for unleaded gasoline, were not available. Comparative information of this kind can be informative, but needs to be considered in the light of certain qualifications, such as:

a. the fact that sampling methodologies may not have been appropriate by the collection agency/agencies that were researched;
b. there could be hidden subsidies in the prices;
c. the fuel quality could vary between countries, and not be directly comparable; and
d. the fixed and recurrent costs of delivering oil products may vary across different countries and territories.

6.37 Nevertheless, the information may be useful in a general sense to gauge the extent of price difference, if any, between comparable economies. The following figures compare prices, inclusive and exclusive of tax, for the three products under study, against those available in Europe, North America and South East Asia for the last quarter of 1998.

[8] In compiling the international comparison, the Council obtained information from its own sources, and also had reference to information published by the International Energy Agency publication "Energy Prices & Taxes – Quarterly Statistics, Fourth Quarter 1998".

Unleaded petrol (See Figure 6.4)

6.38 With regard to unleaded petrol, it can be observed Hong Kong rates highly against all the other countries on both a duty inclusive and exclusive basis. The Council was informed by the industry that apart from the high cost of operations in Hong Kong, another reason could be attributed to Hong Kong consumer preference for an octane rating of 98 for unleaded petrol. Hong Kong motorists, it was claimed, demanded higher octane ratings because of the higher efficiency and performance of the fuel which suited the types of vehicles used in Hong Kong and the demands placed on vehicles because of the hilly terrain.

6.39 The Council was informed that historically the octane rating demands had increased over the years to the point where the Hong Kong standard was now uniformly higher than in other countries. In comparison, it was said that other South-East Asian countries mostly used octane 95 or less for unleaded petrol, whereas European countries and North America used octane ratings within the range of 92, 95 and 97[9]. (Octane ratings have been noted in the Council's figures, and some of these are at the Ron 98 level).

6.40 For every increase in octane value, the cost of production is higher than ratings below that level. Moreover, there is a substantial price difference between the very bottom of the scale to the top. As an example, the difference in price, as observed from the Council's research, indicated that the price difference for unleaded petrol from a very low octane rating of 90 to a rating of 98 in ShenZhen of Mainland China was from around HK$2.04(RMB 2.35) up to HK$3.30(RMB 3.80). From a consumer's perspective there seems little choice available to purchase low priced low octane rated fuel. In fact a number of oil companies offer higher premium fuels, with fuel additives and other performance enhancing properties, that cost more than the standard unleaded gasoline on offer. According to the oil companies, these fuels were being provided in answer to Hong Kong drivers' demand for high performance product, and the opportunity was being taken to utilize the spare capacity brought about through tanks previously used for storing leaded petrol. Nevertheless, the Council believes that consumers should be given wider choices in gasoline octane ratings, particularly if this would significantly reduce the price of fuel.

6.41 It also has to be noted that the Hong Kong prices in the table were observable pump prices, and that discounts of varying levels were available in the course of company promotions. Accordingly, prices could be discounted in some circumstances off the indicative price.

Diesel (See Figure 6.5)

6.42 With regard to diesel, the Hong Kong price compares favorably against some European countries inclusive of tax. However, the price exclusive of tax is higher than most other countries. Compared with other countries in the South East Asia region, Hong Kong rates highest on duty inclusive and exclusive basis. When queried on this point, the industry response again was that, leaving aside the high cost of operation, another factor was the quality of fuel in Hong Kong which was of a higher rating, with a low sulphur content.

[9] The Council was informed by one oil company that the oil industry traditionally uses Research Octane Number (RON) in Hong Kong; while the oil industry overseas traditionally uses a combination of RON and MON Motor Octane Number (MON) in U.S. The two numbers are slightly different.

LPG (See Figure 6.6)

6.43 Hong Kong is rated high with regard to LPG. While the price for Hong Kong is an indicative average retail price and actual retail prices would differ among dealers, they still only ranged between HK$8.00 and HK$12.00. The list price (i.e. the wholesale price to dealers) was around HK$5.50, which was still higher than some other countries.

Summary of information on international price comparisons

6.44 While there are a number of qualifications that can be made in relation to the price comparisons, as noted in para 6.36, the general observation can be made that Hong Kong prices are high in comparison with other countries. The comment is often made that Hong Kong is unique in comparison with other countries, and that the reasons for high prices can be attributed, amongst other things, to very high land and infrastructure costs due to its peculiar circumstances. It is difficult to quantify many of the reasons put forward, and for every query on prices there seems to be a plausible explanation. In the final analysis, the only response is to ensure that those structural, regulatory and market conduct factors that are put forward as a reason for high prices are addressed, where possible. This study makes a number of observations and recommendations in this regard.

Oil Price Movements

6.45 The Council began monitoring oil prices in November 1977. Over the years, the Council has relied on import data supplied by the Census and Statistics Department to study the actual cost of import[10]. The import costs were taken to include cargo, insurance and freight, referred to as CIF. In general, the Council found that oil companies closely followed the trend of import cost in the adjustment of retail prices. However, there have been times over the years when the Council has openly criticized the oil companies when it has noted that the movements of retail prices and import costs were not in line.

6.46 For example, in mid-1985, there were substantial reductions in the price of crude oil, however there were no corresponding reductions in the retail prices of oil products in Hong Kong. The Council submitted its analysis of the price movements of the oil products to the LegCo Ad Hoc Group on Oil Prices and criticized the oil companies for being slow in keeping pace with the price trends and that there were no attempts to reduce prices.

6.47 In June 1991, the Council observed the average import cost of automotive diesel oil had dropped to the pre-Gulf War level in August 1990, however the reduction in retail price did not correspond with that of import cost. The Council openly called for the oil companies to keep the retail price reduction in line with the drop in import cost.

[10] While information on import prices is publicly made available by the Census and Statistics Department there are time gaps in the provision of this information due to the time taken for the Department to collate statistics and for it to be made public. Currently the Census and Statistics Department releases aggregated data along with other trade statistics two months after the information is collected, and is bound to the Special Data Dissemination Standard which is established by the International Monetary Fund. Adherence to this standard limits the period of time in which the data can be released to government agencies prior to general public release. An option for the Government to consider would be to seek the supply of relevant information from oil companies on a voluntary basis to enable it to gauge the market trend in a more timely manner.

6.48 The latest criticism on oil price was in November 1998. In a submission to the LegCo, the Council pointed out there was an absence of price reduction for LPG while a reduction import prices took place from the period between October 1997 to July 1998. It was noted however, that prices for motor gasoline and diesel were generally in line with cost reductions.

6.49 Attached are graphs (Figures 6.7, 6.8 and 6.9) which plot the movement of import costs against retail or wholesale prices for the three products from June 1998 to September 1999. These illustrate the observations made in the above paragraph. The retail prices quoted for petrol and diesel are "pump price"[11] and do not reflect possible discounts may have applied at the time. The prices for LPG are for cylinder, at the wholesale price to dealers[12]. The actual retail price for cylinder LPG would vary depending on the dealer and locality. See Chapter Seven, paras 7.35 to 7.41 for details of a Council survey on cylinder retail prices in August 1999.

6.50 Prior to the discussion on oil product prices in the LegCo in November 1998, some public comments were made that because crude oil prices had decreased, there should have been a corresponding reduction in prices due to this fact. The Council raised this with oil companies, and the response was that the relationship of crude oil prices and oil product prices is complex and is not of a simple ratio or percentage type. A number of reasons were given, for example operational difficulties at refineries affecting supply, demands on the conversion process from different products, and seasonal factors affecting demand. The Council has produced graphs (Figures 6.10, 6.11 & 6.12) that illustrate the movement of crude oil prices, import costs and retail or wholesale prices from January 1999 onwards. These tend to confirm that there is little point in attempting direct comparisons between retail prices and crude oil price fluctuations.

[11] Information on "pump price" are retail prices that the Council has identified from monitoring oil company press releases when retail prices are adjusted, and confirming pump prices by directly questioning the oil companies that might not issue press releases.

[12] Oil companies had, prior to January 1999, referred to the wholesale price for LPG in public announcements of price increases as the "retail price".

Figure 6.4: Retail Price and Duty of Unleaded Petrol (4th Quarter of 1998)

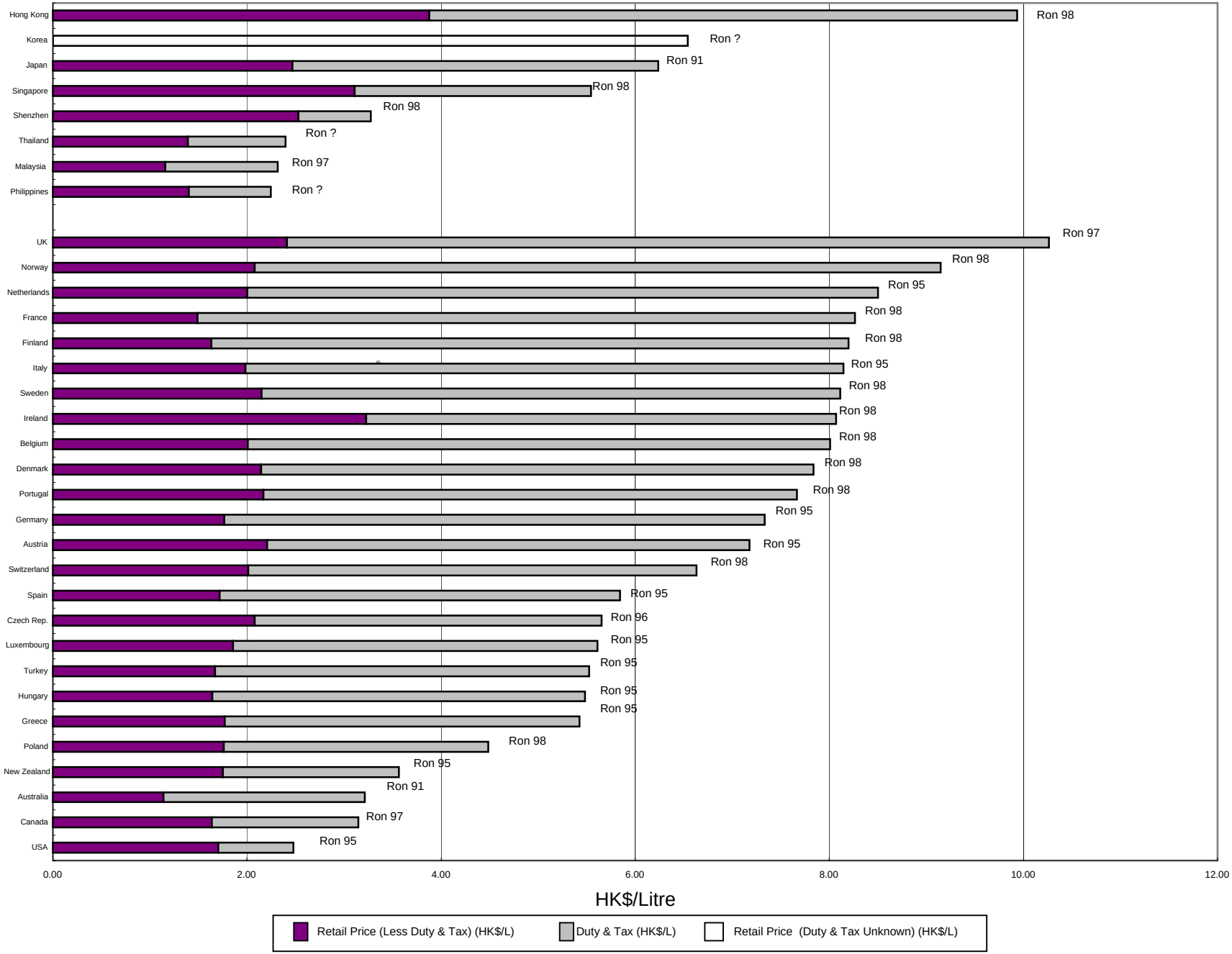


Figure 6.5: Retail Price and Duty of Diesel (4th Quarter of 1998)

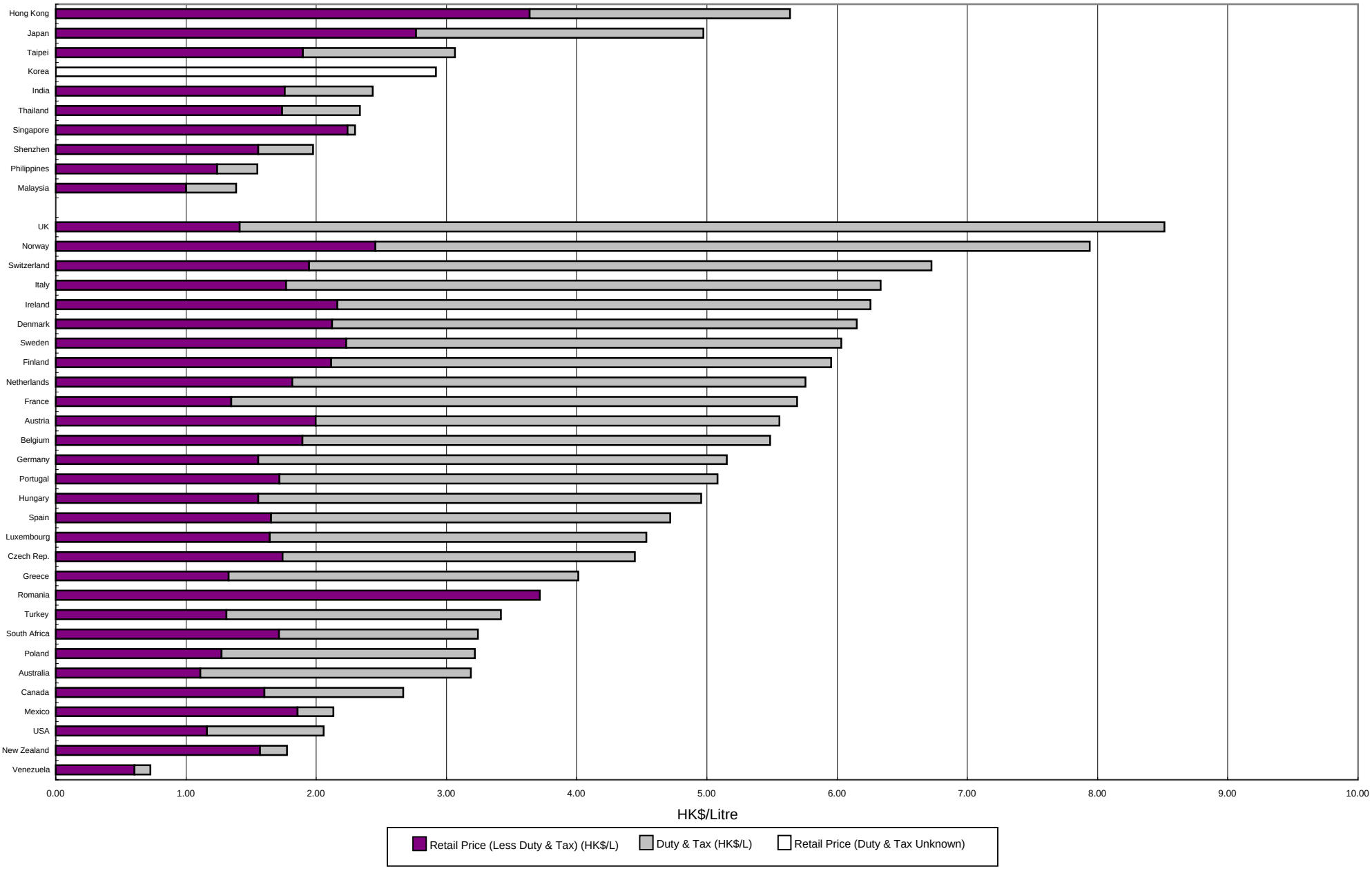


Figure 6.6: Retail Price and Duty of Cylinder LPG (4th Quarter of 1998)

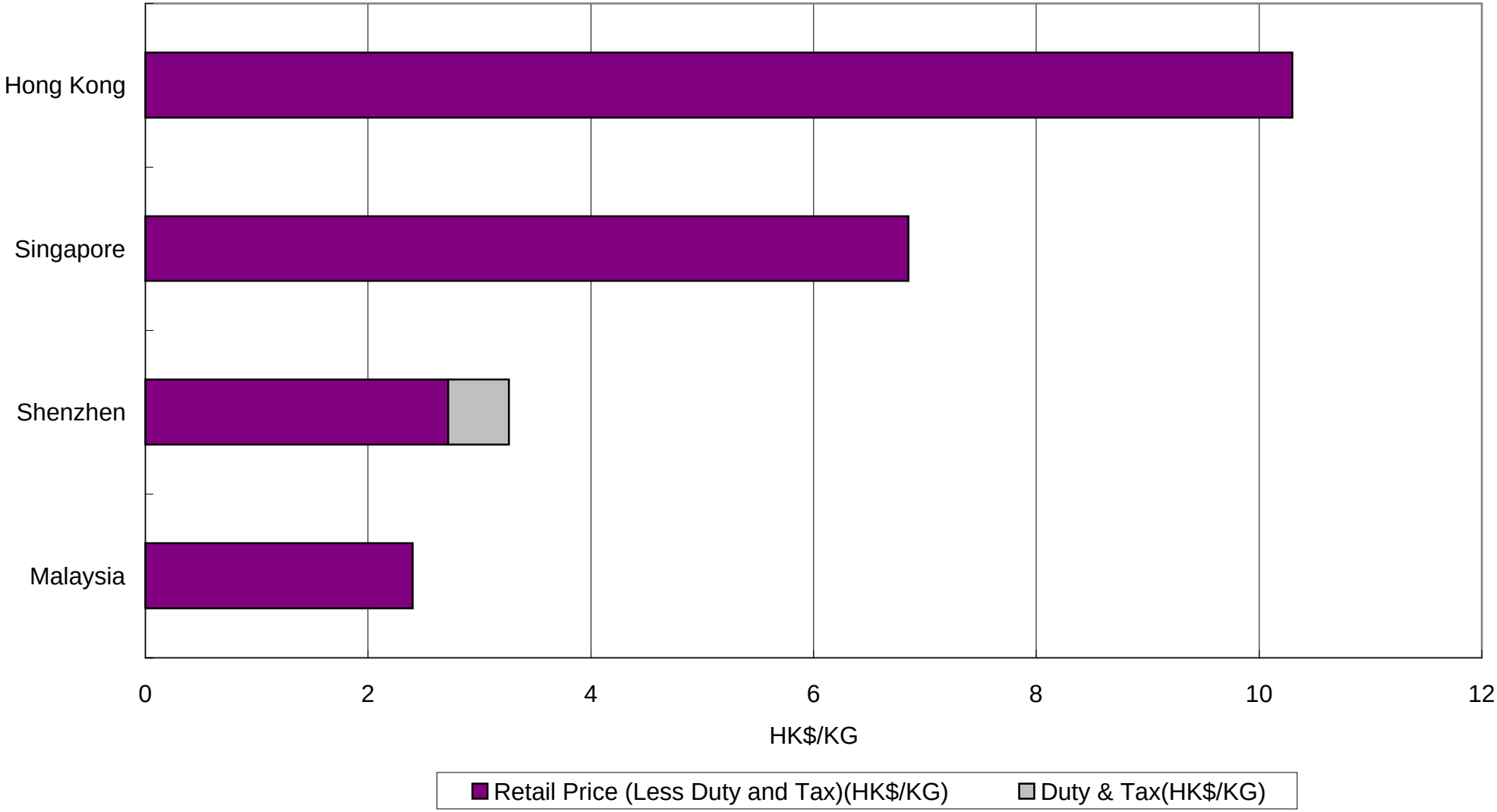


Figure 6.7: Retail Price vs Import Cost of Unleaded Petrol

Figure 6.8: Retail Price vs Import Cost of Diesel

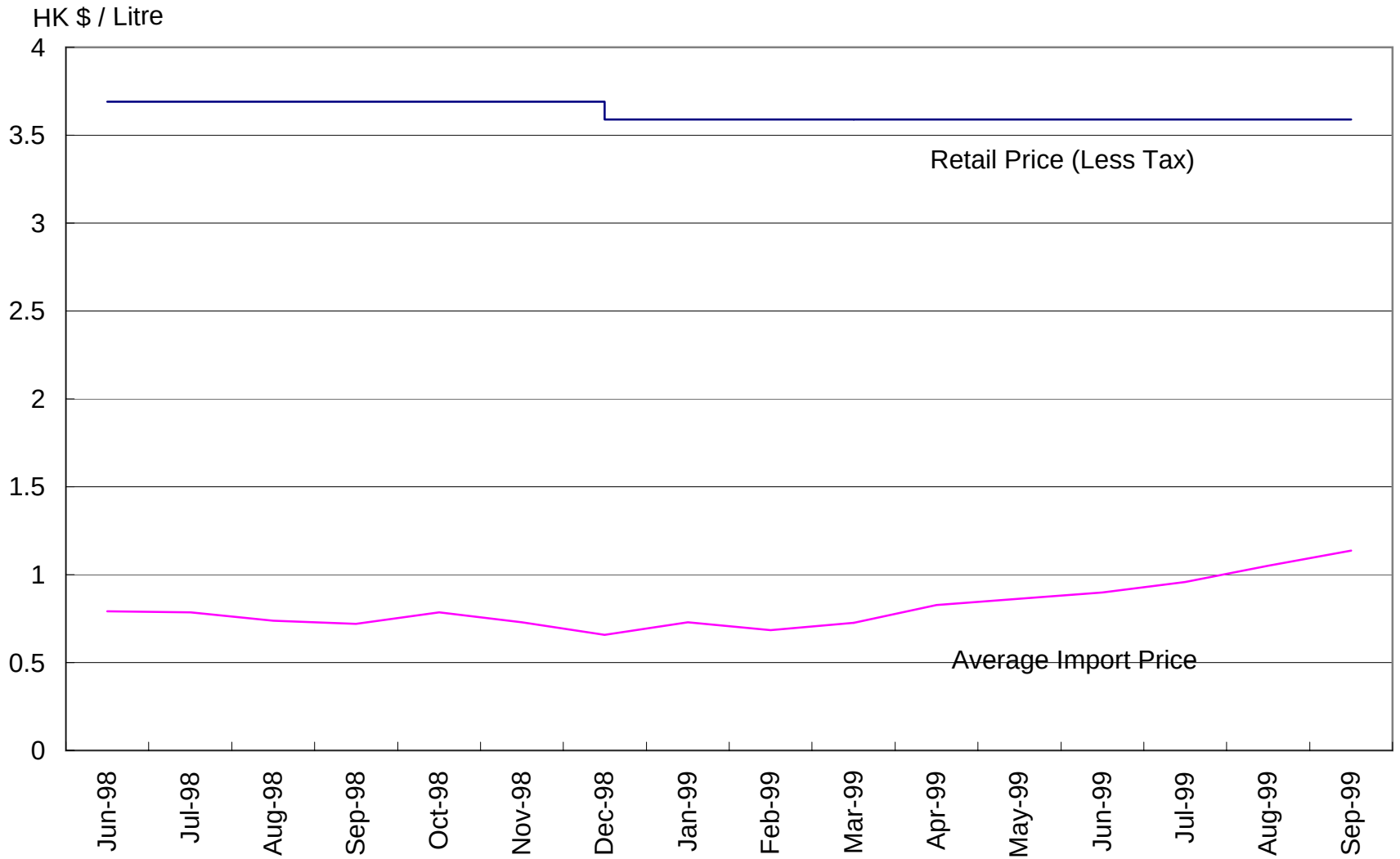


Figure 6.9: Wholesale Price vs Import Cost of Cylinder LPG

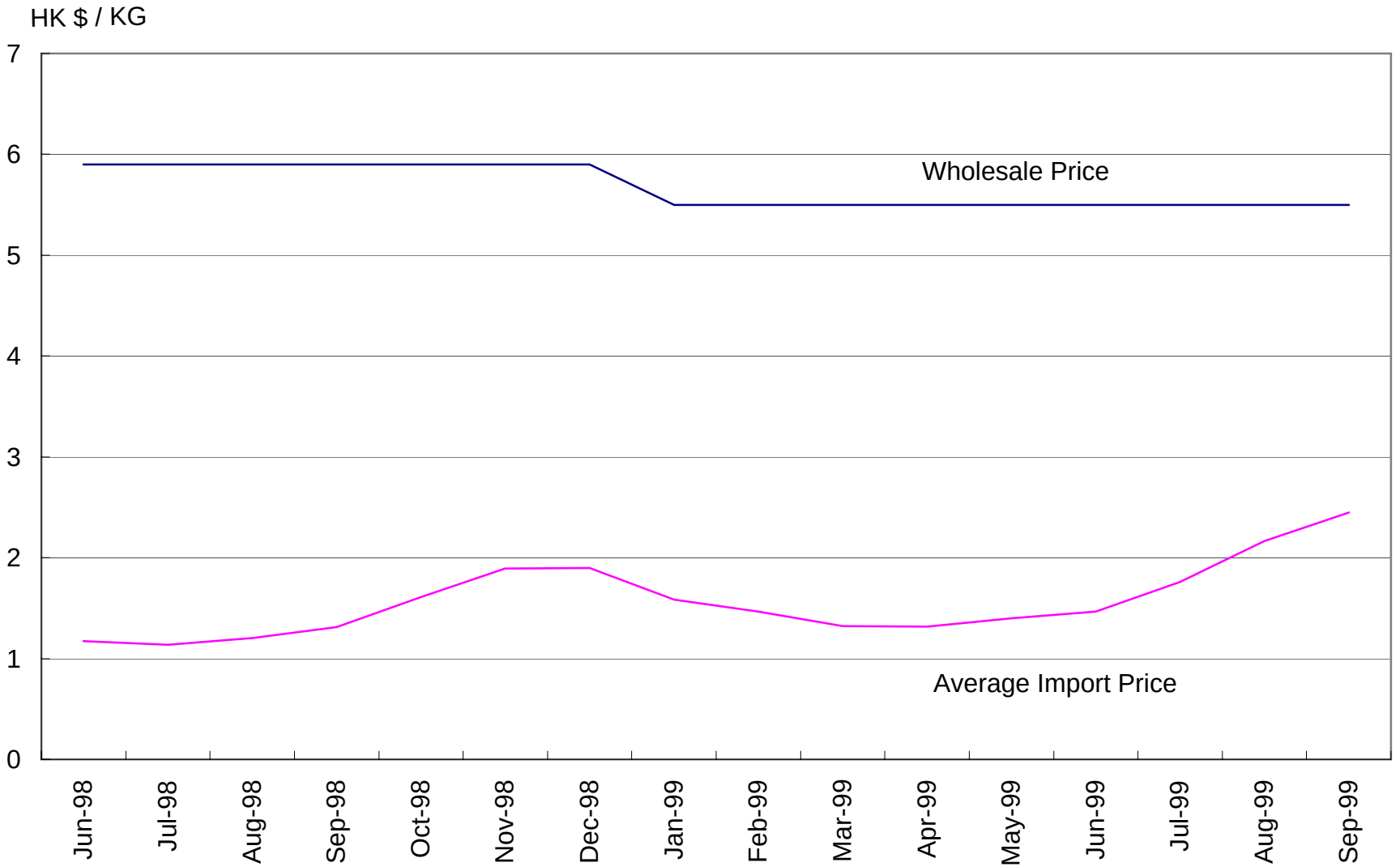


Figure 6.10: Movement of Crude Oil, Import and Retail Prices of Unleaded Petrol

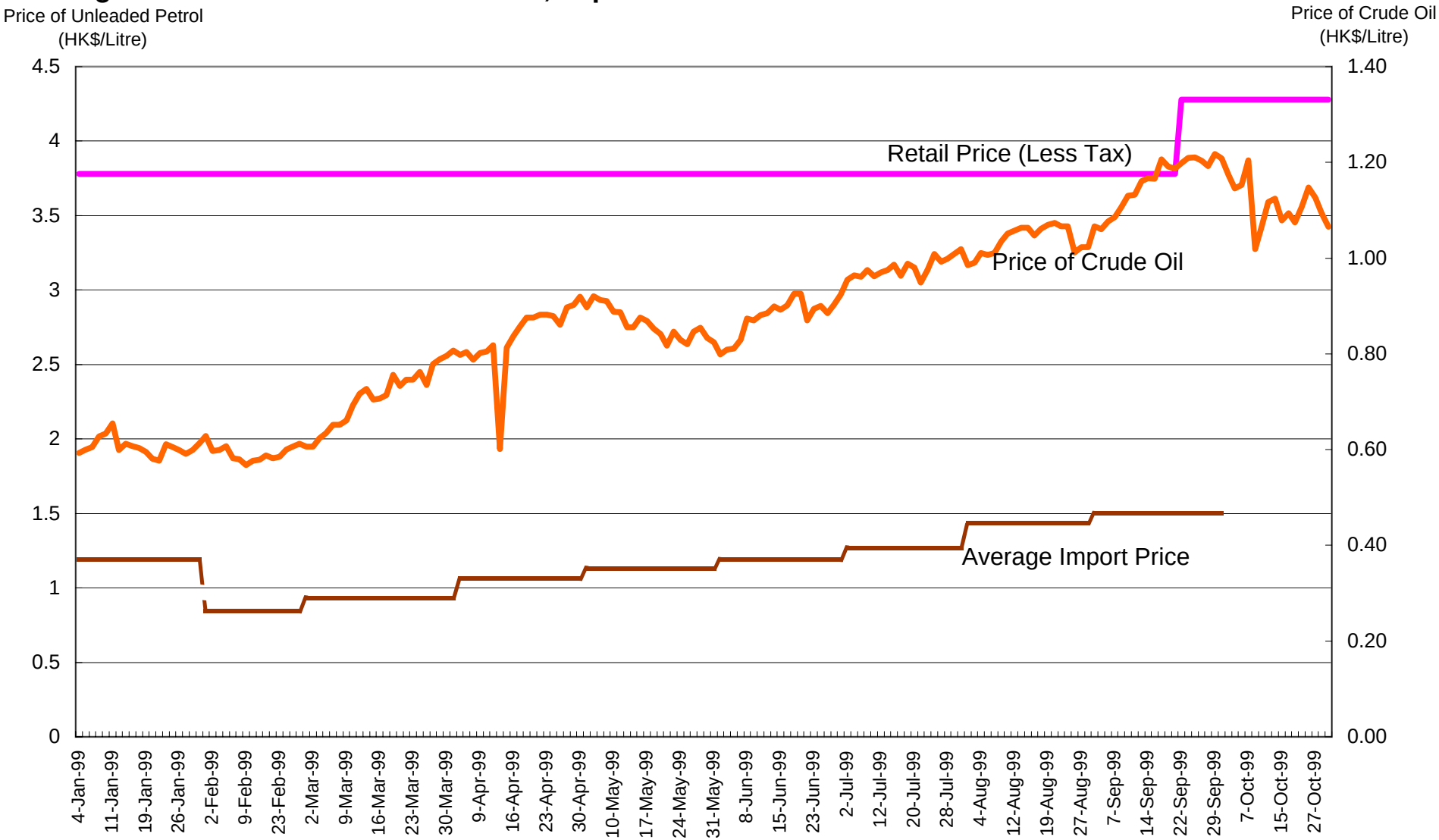


Figure 6.11: Movement of Crude Oil, Import and Retail Prices of Diesel

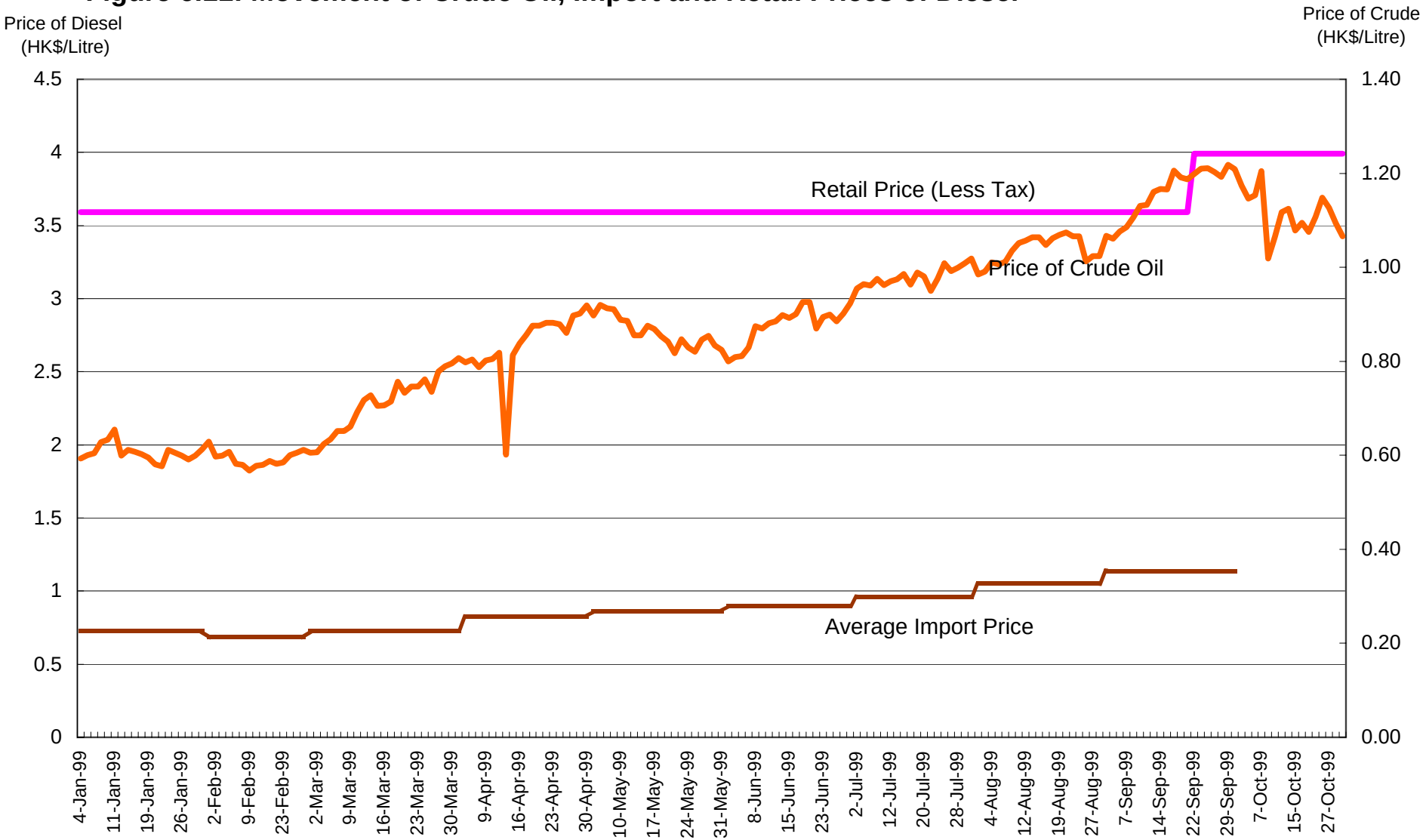
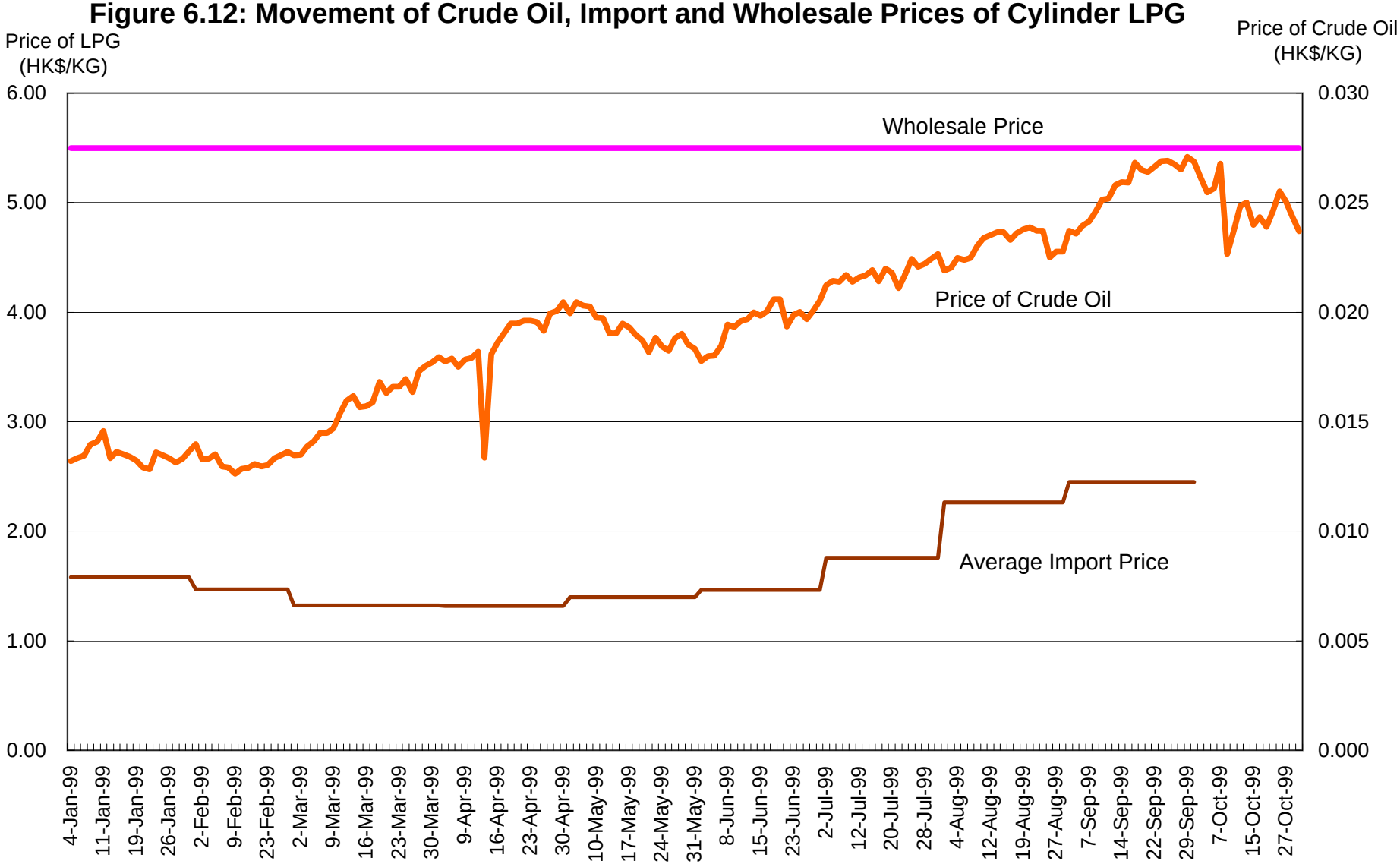


Figure 6.12: Movement of Crude Oil, Import and Wholesale Prices of Cylinder LPG



Chapter Seven

Competition in the Markets

7.1 The products under examination are largely homogenous, demand is not too price sensitive, and their growth potentials are relatively limited. The Council has identified three factors which it considers would be most influential in the purchasing decisions of consumers. They are location, service / product differentiation and price. This chapter therefore examines the state of competition for the relevant products in terms of:

a. an assessment of the spatial characteristics of demand (relevant geographic markets);
b. the extent of product differentiation (level of service and promotional activities); and
c. the prices on offer.

Motor Vehicle Fuels

Geographic markets

7.2 The location of petrol filling station (PFS) sites in relation to the location of customers, and the ease of patronizing the PFS, is considered a significant factor when determining the extent of competition in the market. And by implication, the degree of market power that a firm can be assumed to have. Market power can arise due to the preference of consumers to make purchases at the nearest site to where they are located when in need of refueling, and the absence of ready substitutes. This is referred to as a spatial, or location model of competition, i.e. where consumers prefer a product that is sold by a firm located close to them. The further away competitors are to a site that is placed closer to areas of high population density, or on a major thoroughfare, the more market power that firm can be assumed to have. By the same token, the closer sites are to each other in geographic space, the better substitutes they are and the greater the need for them to engage in direct competition.

7.3 In order to understand the extent of spatial competition that may exist the Council has examined two factors. The first is the distribution of PFS throughout Hong Kong, according to the different oil companies. The second is examples of market conduct that indicate geographic location is a factor in competition in the market. Defining areas subject to spatial competition requires the measuring of changing patterns of demand in relation to price movements in different geographic areas. Given that there has been little price volatility between different geographic areas, or within Hong Kong generally, the Council has had limited material available to work with.

Location of PFS

7.4 The following table (Table 7.1) indicates the location of PFS, by oil companies, as of October 1998, in relation to the various districts in Hong Kong; with reference to population density.

Table 7.1: Geographic Distribution of PFS by Oil Companies and District Council Districts (Ordered by Total Number of PFS Sites)

District	Shell	Caltex	Mobil	Esso	CRC	Feoso	Concord	Total no. of PFS	Pop. Density (people/sq km)
Yuen Long	7	7	2	3	5	1	-	25	2,465
Kowloon City	7	7	3	1	-	1	-	19	38,553
Sham Shui Po	2	3	6	-	-	2	-	13	38,237
Kwai Tsing	4	4	2	2	1	-	-	13	21,793
Wanchai (HKI)	4	4	4	-	-	-	-	12	17,235
Shatin	3	4	1	2	1	-	-	11	8,468
Yau Tsim Mong	6	2	3	-	-	-	-	11	38,320
Southern (HKI)	6	2	1	1	-	-	-	10	7,505
Tuen Mun	2	2	4	-	2	-	-	10	5,663
Eastern (HKI)	2	4	-	-	-	2	-	8	31,735
North (NT)	2	3	1	-	2	-	-	8	1,689
Sai Kung	2	1	2	-	-	1[1]	1[2]	7	1,542
Kwun Tong	2	1	2	1	-	1	-	7	53,081
Tai Po	3	2	1	1	-	-	-	7	2,103
Central & Western (HKI)	3	-	2	-	-	-	1	6	20,755
Wong Tai Sin	1	2	1	-	-	-	-	4	42,331
Tsuen Wan	2	1	1	-	-	-	-	4	4,502
Islands	3	1	1	-	-	-	-	5	364
Total	61	50	37	11	11	8	2	180	5,796

7.5 It can be observed from the above that:

a. each district has, in most cases, a presence of at least three oil companies;
b. Shell, Mobil and Caltex have a presence across the major geographic areas in Hong Kong;
c. no one district has only one oil company serving the area, and
d. oil companies are generally spread throughout the districts in varied geographic locations, with the exception of CRC which is only located in the New Territories.

It needs to be noted however, that the figures in Table 7.1 will change in light of the proposed merger of Esso and Mobil (see Chapter Six).

[1] This Feoso PFS in Tseung Kwan O is a joint venture with Mobil that has Mobil and Feoso signage. It has been noted as a Feoso PFS to distinguish it from other Mobil sites.

[2] This PFS in Tseung Kwan O is a joint venture between Concord and Mobil, with Mobil and Concord signage. It has been noted as a Concord PFS to distinguish it from other Mobil sites.

7.6 The information also indicates that the distribution of the 180 petrol filling sites in Hong Kong is uneven in terms of the population densities of the areas in which they are located. However, the usefulness of an examination of geographic location of PFS in relation to population density is limited, and a more useful analysis would need to have regard to such matters as the density of motor vehicle owners for each district and the location of sites in terms of motor vehicle traffic density. The latter is important due to the fact that optimum PFS sites would be on major traffic thoroughfares, as motor vehicle fuel can be expected to be purchased, more likely than not, while consumers are on a journey. However, that information is not presently available to the Council.

7.7 As noted above, drivers will normally use the retail site that is most convenient or closest geographically. Therefore, it could be expected that the greater the number of retail sites that an oil company has and the greater the geographic area it is able to cover, the better it would be placed to attract customers. Whether this translates into market power, however, depends on the extent to which its ability to price is constrained by the presence of ready substitutes. Assessing the level of substitutability in geographic terms, with reference to districts is, as noted in paragraph 7.5 above, not entirely satisfactory. A more appropriate means of assessing spatial competition would be to examine the purchasing patterns of consumers, or the actions of retailers in response to price discounts by competitors with reference to geographic factors.

Price discounting by geographic area - case study

7.8 To assess the extent of competition that might be influenced by spatial characteristics, it is instructive to note what has actually happened in terms of price competition, by geographic area. The Council has obtained the following information from various press reports made in late 1998 and early 1999.

7.9 In November 1998, Esso initiated a privilege card/loyalty program whereby card holders could earn bonus points based on actual purchases, that translated to a 12% and 15% discount for petrol and diesel respectively. The discount was initially offered at only nine Esso and Esso / Feoso stations. CRC announced a 15% discount at all of its PFS on 4 January 1999 (all located in the New Territories). Caltex responded on 10 January 1999 and offered 12% petrol and 15% diesel discounts to drivers at 11 of its stations which, by reference to the following table and the appended PFS location maps, were closely located to the discounted outlets operated by Esso and Feoso. Esso extended its coupon scheme to all its PFS at around this time. Shell and Mobil subsequently followed Caltex and announced, virtually at the same time, that 11 of their PFS were going to offer similar discounts to drivers.

7.10 Table 7.2 and the PFS location maps in Appendix 3 show the distribution of the PFS with the price discount. The Mobil, Shell and Caltex PFS noted on the maps at Appendix 3, that were discounted, are underlined.

Table 7.2: Price Discounting by Geographic Areas in January 1999

	Shell	Mobil	Caltex	Esso	CRC
Price Discount: Unleaded petrol Auto diesel	 12% less 15% less	 12% less 15% less	 12% less 15% less	 12% less 15% less	 15% less 15% less
No. of PFS	61	Mobil: 37 Mobil Feoso (JV): 1 Mobil Concord (JV): 1 Concord (supplied by Mobil in Jan 99, now by CRC): 1	50	Esso: 11 Feoso (supplied by Esso): 7	11
Effective date	12 January 1999	12 January 1999	10 January 1999	24 November 1998	4 January 1999
Discounted Locations (Initial)	11	11	11	Esso: 8 Feoso (Esso): 1	All
HKI Kln NT	Wong Chuk Hang King's Road Tung Choi Street Boundary Street Tai Hung Tung Road Lei Yue Mun Road Tsuen Wan Shatin City One Kwai Chung Yuen Long Au Tau Yuen Long	Aberdeen Nullah Road Castle Peak Road Tai Po Road Lai Chi Kok Road Kwun Tong Tai Wai Kwai Chung Fairview Garden Tuen Mun Tai Po	Aberdeen King's Road Chaiwan Tai Hung Tung Road Kwun Tong Tsuen Wan Shatin Yuen Chau Kok Kwai Chung Sheung Kwai Chung Fairview Garden Yuen Long Tai Tong	 Boundary Street Kwai Hing Shatin Kwai Chung Shek Mun Yuen Long Yuen Long Tai Tong Yuen Long Kam Tin Tai Po	 All 11 PFS in NT
Discounted Locations (End of January 1999)	11	11	11	All	All
HKI Kowloon NT	Wong Chuk Hang King's Road Lei Yue Mun Road Kai Tak Boundary Street Tsuen Wan Shatin City One Kwai Chung Yuen Long Au Tau Tuen Mun	Aberdeen Kwun Tong Kai Tak Princess Margaret Road Tsuen Wan Tai Wai Kwai Chung Fairview Garden Lam Tei Tai Po Tsing Yi	Aberdeen King's Road Kwun Tong Kai Tak Tai Hang Tung Road Sheung Kwai Chung Shatin Yuen Chau Kok Kwai Chung Yuen Long Long Ha Yuen Long Tai Tong Tai Po Market	 All 18 PFS	 All 11 PFS in NT
Applicable for	Cash or credit card payment		Not applicable for payment by bonus card		

7.11 The question that arises is why only some PFS were discounted, while others were not.

7.12 It is apparent from the table and the appended PFS location maps that the discounted sites are located not only in the same districts but in many instances next to each other, and therefore in the same geographic retail markets. For example discounts could be found (among other places) at Kai Tak - the three PFS (Mobil, Shell and Caltex) located next to each other; and on or near Boundary Street, the junction of Old Kowloon and New Kowloon - Caltex, Shell and Esso. The heaviest area of discounted sites was in the New Territories.

7.13 By contrast, there was no discounting in Yau Tsim, Hung Hom, North District, Central and Western Districts, Wanchai, Stanley, Shek O and Lantau Island.

7.14 The notable feature from the above information is that it appears that where there were either Esso or Feoso sites in close proximity to the three majors, there was discounting. This indicates the existence of certain geographic markets for the products within Hong Kong. It is apparent therefore that geographic markets, and the

genuine substitution possibilities that exist for consumers between different oil companies within those markets, play an important part in the way in which competition develops in Hong Kong. This is an important factor for the Government to consider when locating PFS sites for public tender, and in determining who should be the successful bidder for a site.

Non-price competition

7.15 It is a characteristic of the Hong Kong motor fuel retailing market that competition is essentially through forms of product differentiation by attaching giveaways such as tissue boxes or water to motor vehicle fuel purchases, and the use of purchase schemes that engender customer loyalty or return visits in return for discounts of the current price. In an effort to illustrate the extent of this form of competition the Council has produced the following table of offerings since May 1999 by the oil companies, in terms of promotions, and loyalty based discount schemes (Table 7.3).

7.16 As can be seen from the table, there is keen and closely aligned product and promotion programs by the oil companies. This is particularly the case by the three major oil companies, Shell, Mobil and Caltex. Taking this information at face value, it would have to be conceded that there is strong competition between the oil companies, at least in terms of product differentiation.

Price competition

7.17 In discussions with the oil companies, it was acknowledged that notwithstanding the heavy reliance on promotions as a means of attracting customers, price is nevertheless an important determinant. This was particularly the case, as one would expect, with commerical customers (i.e. taxi and van drivers). Moreover, the April 1999 study undertaken by ESB on prices and costs suggested, without providing details, that fleet discounts were an important contributor to the costs of oil companies in marketing their products. No details were provided on the extent of the price differential between the pump price available to the public, and the prices given in response to competitive bidding for contracted long term supply to commercial customers. However, comments made by oil companies suggested that these "hidden" discounts would be substantial, given the guaranteed throughput, and greater than that available to consumers generally[3]. The discounts to consumers off the pump price based on volume, which sometimes accompany these promotions, are also important in terms of securing future throughput.

[3] The Council has not made inquiries in the commercial market as to the level of competition, largely due to the resources involved, and that the main focus of this study is to examine the prices consumers other than businesses are paying for fuel. It is a pertinent area of study insofar as assessing competition is concerned. Accordingly, it should be a focus of any subsequent work undertaken by the Government to monitor competition and profitability in the industry.

Table 7.3: Price Competition / Product Differentiation by Oil Companies from May 1999 to Early September 1999

	Mobil	Shell	Caltex	Esso	CRC
May	● Launch of Mobil Synergy NOVA unleaded: Gain 1 stamp per $100 refill of Mobil Synergy NOVA: with 3 stamps, get a pair of spectacles (without glasses); with 8 stamps, a heavy metallic key holder.	● V-Power Unleaded Battery promotion: For every $300 refill of V-Power, in addition to the normal premiums, gain extra two Energizer batteries.	● Launch of Superon Unleaded: 17/5 – 15/6 Redemption of Jaguar Model Car per $200 refill of Superon Unleaded by paying $88 only. ● 25/5 Full chain cash card promotion.		
June	● 4/6 Mobil offered 6% discount on unleaded and 10% discount on diesel to Bank Credit card customers. ● 10/6 To counteract the full chain cash card promotion by Caltex on 25/5, Mobil offered 10 % cash card discount for diesel customers at full chain. ● 16/6 – 18/7 Joint promotion with VISA International (Phase 1): For every $200 refill with VISA payment, can redeem a table utensil set at $10 only (original price at $100).	● 12/6 Shell, Caltex, Esso reactivated 10% cash card discounts to diesel customers at full chain. CRC offered 10% cash discounts on all fuels. ● Joint promotion with Options Card. The first 365 applicants can get $500 cash coupons for Shell. Shell card holders can exchange its credit points with Option credit points, every one Shell card point will become 6 Option points	● 12/6 Shell, Caltex, Esso reactivated 10% cash card discounts to diesel customers at full chain. CRC offered 10% cash discounts on all fuels. ● Redemption of Mercedes-Benz Model Car per $200 refill of Superon Unleaded by paying $88 only.	● 12/6 Shell, Caltex, Esso reactivated 10% cash card discounts to diesel customers at full chain. CRC offered 10% cash discounts on all fuels.	● 1/6 CRC reduced their off-pump-price discount from 10% to 5%. ● 12/6 Shell, Caltex, Esso reactivated 10% cash card discounts to diesel customers – full chain. CRC offered 10% cash discounts on all fuels.
July	● 9/7 Mega umbrella redemption to promote NOVA and Mobil 1: (1) Gain 1 stamp per $100 refill of Mobil Synergy NOVA or Rocket unleaded. Redeem with 10 stamps + $10 (2) Free for $300 refill of Mobil Synergy NOVA + 4 litres of Mobil 1 (3) Free for 6 litres of Mobil	● 17/7 – 31/8 6% Discount & Lucky Draw promotion. Summer promotion with Mitsubishi Motors for all Shell Card/Bonus Card customers. Programs include a lucky draw to win a Mitsubishi GDI Dingo or one ton of Shell V-Power. Media support: newspaper, radio.	● 8/7 Caltex sent $10 coupon directly to diesel customers. ● 15/7 One Million Jackpot Promotion. with VISA and Mastercard: Customer paying through credit card can enjoy a 6% discount and is eligible to enter into a Bingo game. Free credits accumulated up to		

	Mobil	Shell	Caltex	Esso	CRC
	1 ● 19/7 – 15/8 Joint promotion with VISA International (Phase 2): For every $200 refill with VISA payment, can redeem a Japanese bowl set at $10 only. ● 24/7 Mobil offered 8% discount on unleaded sales at 11 selected sites to credit card customers ● 30/7 Mobil started to offer 8% discount to credit card customers – full chain except TKO1 and TKO2.	● 29/7 Shell follow suit to match Caltex to offer 8% discount on unleaded all day and 20% off in "Owl Hours" to diesel customer at full chain.	HK$1 million would be awarded tot he credit card owner if the approval code of the credit card receipt showed t4 digits of number '2". Media support: newspaper, radio, TVC. Promotion period 15/7 – 23/9. ● 25/7 Caltex started to offer 8% discount on unleaded for credit card users and launch "Owl Hours" by giving away 20% discount on diesel sales at full chain.	● 22/7 Esso offered 8 % discount on unleaded & 10% for diesel to their card holder. Moreover, they started to offer 20% discount on diesel sales during "Owl Hours" (from 0100 to 0700) everyday at full chain. ● 29/7 Esso started to offer 10% discount on unleaded sales.	
August	● Joint promotion with Chase Infinity Card. Spend with Chase Infinity Card for every $200, can gain Smart$1 for use at Mobil stations. If use Chase Infinity at Mobil stations, for every $200 expenses can gain Smart$8.	● Windbreaker promotion: free for $200 refill of V-Power + 4 litres of Shell lubricants.			
September			● Joint promotion with Toyota. Get Caltex cash coupon if attend car trial at Toyota Showroom from 4/9 – 5/9.		

7.18 In other jurisdictions such as UK, U.S. and Australia, price information boards are common as a means to inform the public of the pump prices at petrol filling stations, to attract customers. In these circumstances, an easy comparison can be made of the prices on offer at PFS, and they serve an intrinsic part of a retailer's price competition strategy. In a market characterized by retail price volatility, and close proximity of competing PFS, such information would be a necessity to ensure the existence of perfect knowledge which is expected in order that competitive market conditions are satisfied. In addition, the boards can serve the purpose of ongoing price monitors for consumers generally, and for that matter, interested consumer bodies such as the Council. However, price boards of the kind that exist in other jurisdictions, are not found in Hong Kong.

7.19 According to some oil companies, this fact was due to the small area of PFS sites and that there is limited space at most sites for locating price information boards. Constructing the boards would therefore not only be costly in terms of the boards themselves, but would limit the utility of the overall site because of the space they would use up. Some oil companies pointed to the public display of competition in the form of banners. However, these are used to advertise special promotions that are of extended duration, combine the sale of other products in association with fuel, in addition to the possible discount levels, subject to some condition. They do not note the standard retail price on which a discount is to be given.

7.20 Some oil companies noted that notwithstanding the absence of boards or other overt display, and the notion of geographic markets, information will spread very rapidly and a change in price at one oil company's petrol filling station will be immediately followed by other oil companies to ensure that throughput is not lost. This inevitably leads to a uniform price as the figure settles to a level that is considered to be sustainable at current cost levels. Accordingly, it was not considered necessary for price boards to be displayed, as once the price has settled, it becomes universally known, and if the price changes the new price quickly becomes a market norm.

7.21 There was a general consensus among the oil companies that overt price competition across the whole territory is not a sustainable form of competition in the Hong Kong environment. In these circumstances oil companies will focus on non-price competition such as service and promotions, and ensure it has a comprehensive network of stations to maintain throughput. Where there is competition on price, it is usually through credit card ties or other promotional activities, that engender return visits. The oil companies felt therefore, that the presence of price boards, in terms of attracting consumers, was not as useful as it might assumed to be.

7.22 While this might be the case as far as oil companies are concerned, the existence of market information on price, for the benefit of consumers, cannot be ignored. First, price information that is visible from the street will inform consumers before they actually commit themselves to stopping at a particular PFS to refuel. It will not always be practicable for consumers to drive into PFS, examine the price on the pump, and then decide not to purchase at that price. Second, price boards noting the standard retail price would be a reference point for consumers to note when assessing the benefits of a promotion that is offering a discount on the normal retail price. Third, the presence of boards would act as a public form of prices monitoring and add to the general body of information that the public has on retail prices and the extent of price volatility. Last, the absence of price boards could be, though not at all certain, one of the reasons why price volatility is not as high as it might otherwise be.

7.23 In its 1996 Study into the Australian oil products industry, the Australian Competition and Consumer Commission noted that the absence of price boards was a characteristic of those geographic markets in Australia where there was little competition[4]. The Commission acknowledged that price boards can be either pro-competitive because they assist consumers to shop around, but that they could also assist either tacit or explicit collusion. Nevertheless, it supported the display of retail price boards for reasons of greater transparency, and recommended that State and Territory Governments give consideration to the mandatory display of price boards at service station sites.

7.24 The Council would encourage Hong Kong retailers to provide this form of price information, to likewise assist consumers to shop around. Notwithstanding the fact that retail prices might remain uniform at a "market standard" for some duration, and there is little volatility, the primary benefit that the Council sees in price boards is that they serve as an easily visible reference point for consumers in assessing the benefits of various promotions and percentage discounts that are offered. An option for the Government to consider would be imposing a condition on the granting of a PFS lease that price boards should be displayed.

Uniformity in price increases

7.25 The recognition of mutual interest, and the uniform nature of motor fuel marketing in Hong Kong is aptly demonstrated by the conduct of market participants in the face of rising import costs in a nine month period during the course of this study. The price of crude oil had gradually increased over the period, from US$10 per barrel in December 1998 to US$23 in September 1999. Publicly available figures up to July 1999 on import costs had shown that they had risen significantly, and in view of the increasing crude oil prices, it seemed inevitable that import costs would similarly rise.

7.26 Caltex was the first to react to the rising costs and announced an increase in the pump prices of unleaded petrol and diesel by 50cents per litre and 40 cents per litre with effect from 22 September 1999. In the following two days, Shell, Mobil, Esso and CRC all announced similar price increases. The details are represented in the table below (Table 7.4).

[4] Australian Competition and Consumer Commission, "Inquiry into the Petroleum Products Declaration", Volume 1 August 1996, pp 96.

Table 7.4: Price Increase in September 1999

Oil company	Effective date	Product	Previous price (HK$/Litre)	New price (HK$/Litre)	% Increase
Caltex	22 September, 1999	Techron unleaded gasoline	9.84	10.34	5.1%
		Superon unleaded gasoline	10.50	11.00	4.8%
		Environmental diesel	5.59	5.99	7.2%
Shell	23 September, 1999	Super unleaded	9.84	10.34	5.1%
		V Power unleaded	10.4	11.05	6.3%
		Formula diesel	5.59	5.99	7.2%
Mobil	23 September, 1999	Rocket unleaded	9.84	10.34	5.1%
		Synergy NOVA unleaded	10.5	10.99	4.7%
		Diesel	5.59	5.99	7.2%
Esso	24 September, 1999	Unleaded	9.84	10.34	5.1%
		Diesel	5.59	5.99	7.2%
CRC	24 September, 1999	Unleaded	9.84	10.34	5.1%
		Diesel	5.59	5.99	7.2%

7.27 Notwithstanding the price increases, non-price competition continued in the form of giveaways, and other merchandising promotion. It could be expected that with a substantial increase in the cost of imported product, some oil companies would seek ways to reduce other variable or fixed costs to maintain a low retail price. In fact, some of the oil companies informed the Council, in discussions prior to the increase, that they were facing significant reorganization in a search for means to lower operating costs, and that this was the reason why retail prices had not been rising despite the gradual increase in import costs.

7.28 However, it is significant to observe that in the face of the need to lower costs, it appears companies recognized the benefit of not reducing the costs associated with promotions and giveaways, and focusing on maintaining a lower retail price for a longer period than competitors. It is apparent that some recognition of mutual interest arose that while price competition was important (through the continuance of discount payments) a primary focus of competition in the industry would continue to be promotion based, rather than simply price based. The issue of recognition of mutual interest, and competition within oligopolistic markets is discussed in Chapter Nine – para 9.7.

Case study – discounts offered by the oil companies

7.29 As noted above, a feature of the competition that exists is the presence of coupon and other discounts off the pump price. For example, in July 1999 Esso began to offer 8% discount on unleaded petrol to their card holders. Mobil, Caltex and Shell responded and followed suit to match Esso by offering the same discount to its customers. Given that the pump price including tax at that time was HK$9.84 and tax was HK$6.06, the cost of discount (Table 7.5) to oil companies was actually 20.9% off the net retail price (pump price less duty).

Table 7.5: Cost of Discount

	HK$/Litre	% of net retail price
Pump price including tax	9.84	
Less tax	6.06	
Net retail price	3.78	100%
8% discount on pump price including tax	0.79	20.9%

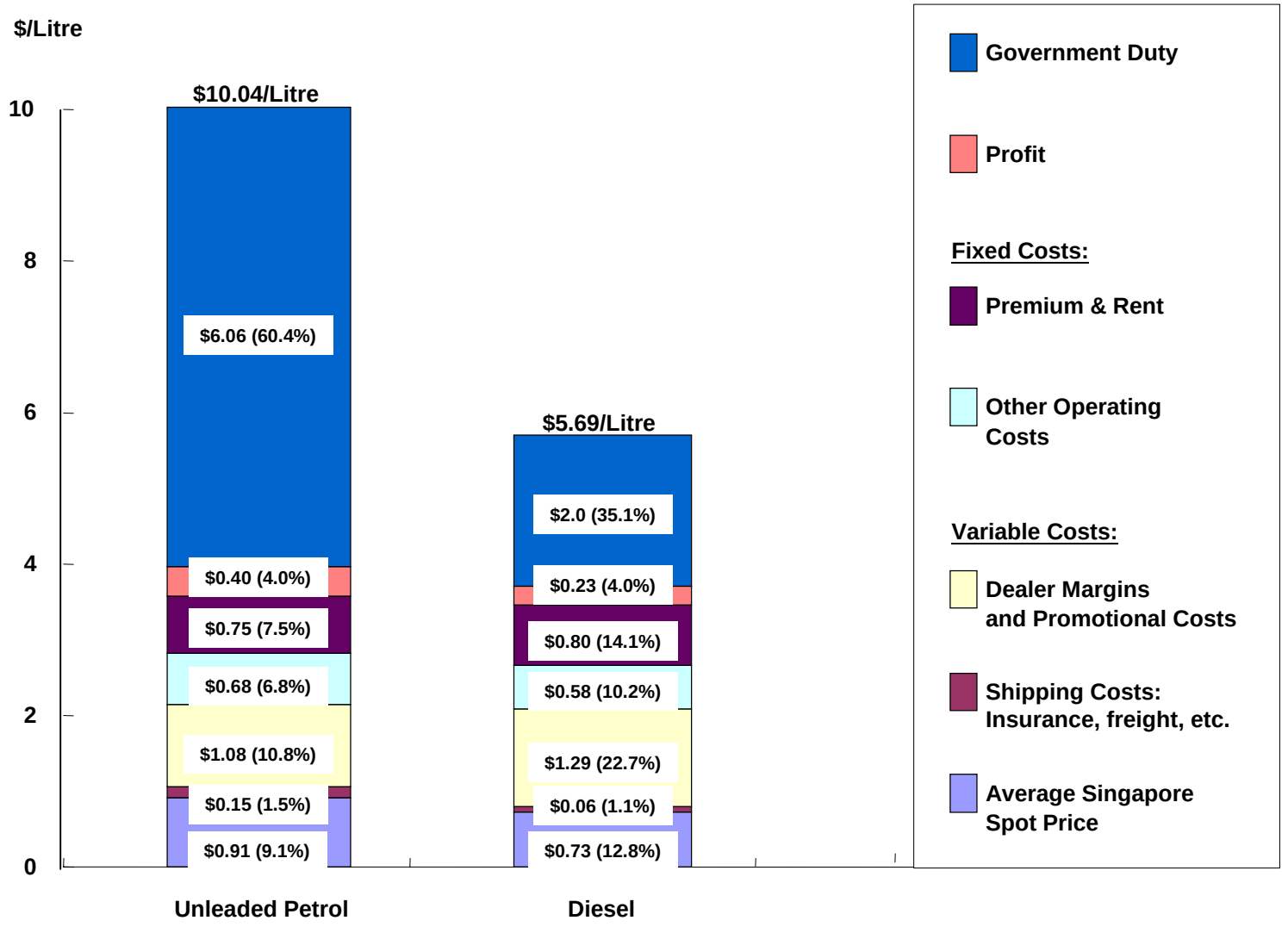
7.30 Figure 7.1 is compiled by the Council, based on information obtained from Economic Services Bureau's April 1999 prices and costs study. The table notes the percentages of fixed and variable costs, and duty that went to make up retail prices

for unleaded petrol and diesel in mid-1998 relating to costs and prices examined by ESB. During discussions with the oil companies it was agreed that the diagram was on average a general representation of costs at that particular time. It could be expected that the percentages of fixed and variable costs as noted in the table would vary to some extent between companies, and would have changed as at the time this study was finalized. Moreover, while the depiction of variable costs can be directly attributable to each litre of product, such as imported product, dealers' margin, discounts and promotional give-aways, fixed costs are not so directly attributable. These costs are generally required irrespective of the quantity of sales.

7.31 Having regard to this information in respect of unleaded petrol, 14.8% of the total retail price including duty was attributed to dealer margins and promotional costs and profit. Subtracting the duty portion off the HK$10.04 price, the net retail price of unleaded petrol in mid-1998 was HK$3.98/litre. The total amount of dealer margin and promotional costs and profit, to the net retail price at the time was therefore around 37.3%. According to one oil company, its dealer margins were set at 50 cents/litre, which is 12.6% of the net retail price for unleaded petrol, theoretically leaving 24.7% available for use in discounts, promotional offerings and profit.

7.32 The general observation from the above information, taking into account the fact that discounts off the pump price are significantly greater than they appear, is that a significant portion of unit cost would seem to be either used up in promotional costs, or in the absence of the discounts, could be regarded as profit.

Figure 7.1: Components of Retail Prices of Unleaded Petrol and Diesel



Figures are of 1998 and compiled by Consumer Council based on ESB's submission to Legco Panel on Economic Services

LPG

7.33 In the course of its November 1998 submission to LegCo, the Council made a number of observations on the retail price for LPG, suggesting that prices were not tracking fluctuations in the import cost, and that the ability for consumers to move between competing suppliers was limited.

Piped LPG

7.34 As far as piped LPG is concerned, users in estates that have this infrastructure have little competitive choices apart from converting appliances to use cylinder LPG, or to use electricity[5]. In discussions with oil companies, the point was repeatedly made that LPG competes with Towngas in a wider market for fuel. However, as far as consumers of either piped LPG or cylinder LPG are concerned, Towngas would not be a viable competitive option unless the consumer was in a residence that had Towngas infrastructure.

7.35 The prices that users of piped LPG pay are as per supply contracts according to a "list price" of the oil companies' LPG. In general, the list price is adjusted according to the rate of inflation and import costs. Change of import costs is usually given as an average over a period of time. However, it is instructive to note that at least one oil company informed the Council that in some recent contract negotiations when tendering for supply of piped gas to estates, there are guaranteed terms that the list price will be lower than the Towngas price. The Council has suggested (in Chapter Five) that one means of increasing competition, and therefore possibly bringing about direct price competition in this particular market segment, would be to introduce small scale common carrier arrangements within the confines of housing estates that utilize piped LPG.

Cylinder LPG

7.36 In order to obtain more information on price competition in the market for cylinder LPG the Council examined the spread of cylinder dealers by geographic location and also undertook a price survey to ascertain the extent of price variation between dealers within the same districts.

7.37 The geographic dimension to markets for the demand and supply of cylinder LPG would be governed largely by the ability for dealers to service an area in which consumers reside. Inquiries with cylinder LPG dealers indicated that consumers preferred delivered cylinders, and that the extent of a catchment area for consumers would be determined by the economics of how far afield a dealer would be prepared to travel to deliver a cylinder. It could be expected that there would be a higher concentration of dealers in areas where there is little or no piped gas (either Towngas or LPG). However, given the density of housing in Hong Kong those areas would be in close proximity to each other, reflecting the fact that housing areas with piped gas can be found adjoining housing areas using cylinders. Accordingly, the Council has simply obtained figures on the number of dealers by District Council, as a close approximation of relevant geographic markets. Table 7.6 indicates the distribution of cylinder LPG dealers by District Council Districts as at January 1999. What is

[5] Whether or not electricity is a viable substitute for gas, particularly for cooking, is doubtful given the preference that Hong Kong consumers have for flame cooking. This was a matter discussed in the Council's 1995 report "Assessing Competition in the Domestic Water Heating and Cooking Fuel Market' where the wider market for competition in supplying what might be regarded as competing forms of energy was undertaken.

apparent from the figures is they do not indicate, at that time, that any one oil company has a greater proportion of dealerships in any one district. Each district also had representation from at least four out of the five importing oil companies. As far as dealers are concerned, Council inquiries did not indicate the presence of commonly owned dealers which might indicate excessive concentration of ownership.

Survey on the retail price of cylinder LPG

7.38 The Council also conducted a sample telephone survey of dealers appointed by oil companies in four districts in early August 1999 to understand the extent of retail price competition of cylinder LPG over different districts. The key observations are as follows:

a. 29% of all interviewed shop dealers (19 out of 65) carry more than one oil company's cylinder LPG.
b. Eastern District has the highest average price per kg than other districts in the survey whereas Yuen Long has the lowest. A positive relationship with the district's median monthly household income is observed[6].
c. Retail prices are not uniform. Differences were observed in the retail price of cylinder LPG between dealers of the same branded product or between suppliers of different product in the same district or between different districts.

7.39 Summary results of the survey can be found in Table 7.7 and detailed findings in Appendix 4.

7.40 Another observation that can be made in relation to the extent of competition in the market is that the services of cylinder LPG dealers do not seem to be advertised or promoted widely within districts or generally in Hong Kong. Cylinder LPG dealers in interviews indicated that their business was promoted largely on the basis of service, and building up a loyal clientele. One of the main factors that prompted consumers to stay with a dealer, or to move, was service. Predominantly the ability for the dealer to provide timely service. One dealer stated that when he entered the business some years ago, he began to distribute "flyers" in the district to promote his business and increase market share. He alleged that the oil company that was supplying him at the time told him to desist from the practice, because it was not the "done thing". The clear impression being that efforts should be concentrated on providing a high service to existing customers, rather than taking customers away from other dealers. Dealers also noted generally that the Cylinder LPG business was a "traditional" business and therefore overt competition was not something that came naturally to most operators. While service is an important part of the competitive dimension to a market, and many consumers might prefer the "traditional" approach to doing business, the Council would consider any pressure by oil companies dissuading dealers from engaging in overt competition to be unacceptable.

7.41 Another factor that may dissuade consumers from switching dealers can be attributed to the need to pay a deposit for a cylinder, (and in some cases for connecting equipment that differed between suppliers). As the loss of any cylinders is borne by dealers, most require customers to pay a deposit of around HK$50 for each cylinder (this amount varies among dealers). If a consumer discontinues a

[6] Subsequent interviews with cylinder LPG dealers raised allegations of the existence of sub-contractors undercutting the prices by oil company appointed dealers, by bypassing safety requirements. The presence of competition from these sub-contractors in the older districts (Sham Shui Po, Yuen Long, etc.) may account for the relatively lower prices in these districts.

service from a dealer and wishes to retrieve the deposit, the consumer will have to return the cylinder to the dealer rather than expect the dealer to collect it. It is interesting to note however, that the actual cost of a cylinder is higher than the deposit charged and consumers might not realize that the dealers could not fully recover the price of the cylinder charged by the supplier from the deposit collected. Therefore an incentive would exist for the dealer to collect cylinders. However, even if a dealer agreed to collect the cylinder, it would inevitably be some time later. Therefore, a switching consumer would have to pay another sum of deposit. Comments to the Council by consumers on this point indicated that the inconvenience of switching and the additional deposit were the reasons they were reluctant to switch. This seemed especially the case for the elderly or low-income households. It appeared that unless consumers were dissatisfied with the existing service or, were extremely price-sensitive, they rarely switched.

7.42 In view of the differences in prices for cylinder LPG within districts in Hong Kong, and the absence of overt promotional activities by dealers, the Council would suggest that consumers should "shop around" and actively seek out what price competition exists in their districts between dealers.

Table 7.6: Distribution of Cylinder LPG Dealer Shops by District Council Districts, January 1999

District	Shell	Caltex	Mobil	Esso	CRC	Concord	Total	No. of Households	Potential Servicing Ratio
Shatin	2	4	3	3	2	-	14	168298	12946.0
Wong Tai Sin	3	1	1	5	-	-	10	111686	11168.6
Tuen Mun	3	2	5	2	1	2	15	133565	10274.2
Eastern	6	4	4	8	1	-	23	177743	8079.2
Kwun Tong	4	6	7	4	2	1	24	176170	7659.6
Kwai Tsing	3	1	7	3	3	1	21	129342	7608.4
Wanchai	3	-	5	1	-	1	10	58697	7337.1
Southern	3	4	2	2	1	1	13	79739	6644.9
Tai Po	2	4	4	2	-	1	13	78624	6552.0
Sai Kung	2	2	2	1	1	-	8	56608	5660.8
Yau Tsim	2	3	5	2	-	-	12	60880	5073.3
Kowloon City	4	7	6	5	3	3	28	115093	4795.5
Central & Western	6	3	1	10	-	-	20	87016	4579.8
Tsuen Wan	2	2	5	2	6	1	18	80868	4256.2
Yuen Long	6	10	4	4	2	1	27	101913	4076.5
North	3	10	4	5	1	3	26	67507	3214.6
Sham Shui Po	8	10	8	5	7	-	38	117237	3085.2
Mongkok	1	4	5	4	5	-	19	31996	1684.0
Islands	4	7	6	2	1	1	21	20266	1013.3
Total Dealer Shops	67	87	84	70	36	16	360	1853248	5147.9
% Distribution	18.6%	24.2%	23.3%	19.4%	10%	4.4%	100%		

Table 7.7: Survey on the Retail Price of Cylinder LPG – Summary Results

Districts (1)	Total number of cylinder LPG dealer shops(2)	Number of successful interviewed shop dealers (3)	Number of dealer shops carry more than one company's brand	Retail price in the District ($/Kg) (4)			Median monthly household income ($) (5)
				Highest	Lowest	Average	
Eastern District of Hong Kong Island	22	17	5	11.5 (Caltex)	10.7 (Esso)	11.0	22,300
Sham Shui Po of Kowloon	38	21	4	11.0 (Esso)	9.6 (Caltex)	10.3	15,000
Yuen Long of the New Territories	26	13	8	11.0 (Shell)	9.6 (Concord)	10.0	14,000
Outlying Islands	21	14	2	12.4 (Caltex)	9.2 (Concord)	10.6	18,400
Total	107	65	19				

Remarks:

(1) One district from one region. Generally, they are the districts with the largest number of cylinder LPG dealers in the regions.
(2) Dealer lists from Shell, Caltex, Mobil, Esso, CRC and Concord.
(3) Unsuccessful interviews due to: refusal, no telephone numbers, no one answered.
(4) Different oil companies have different pack sizes, for example:

Shell	8Kg, 13.5Kg
Caltex	10.5Kg, 16Kg
Mobil	10.5Kg
Esso	8Kg, 12Kg
CRC	10.5Kg

To reduce the refusal rate of interviews, retail price of the above underlined pack size per oil company is asked only. To facilitate the purpose of comparison, price per Kg is used as the comparison basis.

(5) 1996 Population By-census

Key Observations

1. 29% of interviewed shop dealers (19 out of 65) carry more than one oil company's cylinder LPG.
2. Eastern District has the highest average price per kg than other districts in the survey whereas Yuen Long has the lowest. Positive relationship with the district's median monthly household income is observed. The alleged presence of and competition from illegal outlets in the older districts (Sham Shui Po, Yuen Long, etc.) may also account for the relatively lower prices in these districts
3. Retail prices are not uniformed. Substantial differences in the retail price of cylinder LPG between dealers of the same oil suppliers or different suppliers in the same district or different districts are observed. Please refer to the Appendix 4 for details.

Chapter Eight

Alternative Retailing Models

8.1 This chapter examines the nature of motor fuel retailing, and the changes taking place overseas, and assesses the possibility of similar retailing changes taking place in Hong Kong.

8.2 Motor fuel retailing in Australia and the United Kingdom (UK) for example, has undergone significant change with the growth of retailers and wholesalers independent of the major oil companies, and the diversification of major supermarket chains into motor fuel retailing. The typical strategy employed by these chains appears to be matching the cheapest fuel price posted at nearby sites and offering, in addition, fuel discounts for customers who spend a certain amount or more in the chain's supermarket[1].

The Changing Face of Motor Fuel Retailing

8.3 Oil product retailing worldwide has been a process of evolution. Initially, motor vehicle fuel was sold as an adjunct to other general business. Subsequently, it was common for numerous brands to be sold from the one site. Then followed a period when sites were made exclusive to a particular brand of fuel. During the latter two phases, fuel sales were the main activity but often repair workshops were attached to service stations. This exclusive brand strategy encouraged the proliferation of sites and, according to some authorities, an unsustainable investment in land and buildings.

8.4 The next phase saw a rationalization of sites, a move away from coupling fuel sales with auto repairs and a lessening of the importance of fuel sales to retail site viability, as the range of products sold increased. Retail sites in other jurisdictions are now more attuned to achieving economies of scale and scope, combining the demand for a wide range of goods and service, and especially in metropolitan areas are more likely to rely heavily on ancillary products for viability, allowing lower margins on oil products.

8.5 However, the latest marketing innovations overseas have yet to reach Hong Kong. A question arises as to whether they can, given the current environment, and whether there is any proactive action by the Government that can be taken to assist in the process. It is instructive to first examine in some detail what changes are taking place overseas.

Australia

8.6 Motor fuel retailing in Australia has been undergoing a period of significant change due to falling profit margins on fuel sales and increasing competition from independent retailers. The entry of new competitors has further impacted upon the nature of the motor fuel retailing in Australia. The following information on this form

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[1] Petroleum Gazette 33(1) 1998, Australia, "Independent petrol retailers and cheap imports have the oil refiner/marketers running on empty", pp 30 – 33.

of retailing was obtained in contacts with the Australian Competition and Consumer Commission (ACCC).

8.7 Woolworths, Australia's largest grocery retailer, entered motor fuel retailing in October 1996 via outlets in country areas where fuel prices were significantly higher than in the cities. The major oil companies had argued that although transport costs play a role in the price difference, the biggest factor is the myriad of small country service stations that take high margins. Woolworths recognized an opportunity to compete on price in rural areas. It guaranteed to match the lowest price of any of its competitors within three kilometres of any of its outlets in addition to offering a 2 cents per litre (AUST$) discount to consumers who had purchased groceries to the value of AUST$30 or more in a Woolworths' supermarket.

8.8 Since October 1996 Woolworths has been steadily adding petrol filling station (PFS) sites to its supermarkets and as at November 1998, eighty-five "Woolworths' Plus" petrol refilling outlets had been opened around Australia in both rural and urban areas. Media reports suggested that Woolworths was aiming to operate two hundred petrol refilling outlets by the year 2000. When Woolworths entered into motor fuel retailing, its chief executive predicted that fuel sales would boost supermarket sales by 3-4% (with direct sales accounting for 2-3% and the remainder a result of increased supermarket sales).

8.9 Following Woolworths' initial success in motor fuel retailing, other major Australian grocery retailers appear to be looking to adopt the same concept. Woolworths entry into motor fuel retailing was seen as part of the company's "bolt-on" strategy through which it hoped to increase consumer traffic to its stores by offering a broader range of services. In Australia, independent petrol filling station retailers including Woolworths have lifted their market share in oil product retailing from 5% in 1994 to 15-20% in 1998 through the opening of new outlets and aggressive pricing[2]. The major oil companies have alleged that Woolworths is using petrol as a loss leader to draw people into its supermarkets, a claim denied by Woolworths' executives.

8.10 Oil companies have been adding convenience stores to their petrol filling stations as a way of boosting customer traffic, sales and profits for many years. However, the accelerated move into non-fuel retailing in Australia was linked to a significant reduction in profit margins from fuel sales, coupled with increasing competition from independent retailers. Anecdotal evidence from the ACCC was that some petrol filling station outlets now make more gross profit from a can of softdrink than from a litre of petrol.

8.11 In light of this reduction in the profitability of motor fuel retailing, the major oil companies in Australia are now expanding the range of products sold from their petrol filling stations. At the moment, convenience stores and fast-food outlets are the motor fuel industry's main ways of attracting non-fuel sales. It is expected these businesses will be joined by other services, such as dry-cleaning, film-processing, key-cutting, bill paying and banking.

8.12 Further, at least one of the major oil companies is expanding upon the traditional convenience store concept. In early February 1999, Caltex Australia Ltd. announced its opening of a supermarket in Sydney under the banner of an

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[2] While the major oil companies operate (including their franchises) only 50% of service stations, they still account for about 97% of the oil supply (the balance is imports) and 80% of retail sales.

established grocery chain. Caltex Australia Ltd. proposes to open more supermarkets, a likely response to Woolworths' foray into motor fuel retailing.

United Kingdom

8.13 The recent Australian experience with the retailing of petrol followed changes that had been taking place in the UK since 1990. In the UK Office of Fair Trading (OFT) report *"Competition in the supply of petrol in the UK"*[3], the Director General of Fair Trading noted supermarket expansion into motor fuel retailing since 1990 had led to supermarkets' market share of motor fuel retailing growing from 5% to around 23%. The oil companies, as was the case in Australia, had responded by diversifying into other product lines and concentrating on higher volume sites.

8.14 The OFT noted that up to 1995, the supermarkets were left largely unchallenged to operate at prices significantly lower than those being offered in the rest of the market and no systematic attempt appeared to have been made by the traditional motor fuel retailers to match supermarket prices. Throughout the early 1990s average supermarket prices were 2.5 pence to 4.5 pence per litre cheaper than the national average. This sustained and sizeable supermarket price advantage gave them a key advantage over the traditional retail network and it was this which underpinned their dramatic growth in the market. As supermarket volumes grew, so traditional forecourt sales fell. Oil company attempts to respond to the supermarket threat with selective price support to those sites most badly affected were unsystematic, typically at a local level, and without major publicity.

8.15 By the mid-1990s the continued loss of volume to the rapidly expanding supermarket network prompted the major oil companies into a more severe price reaction than had been seen hitherto. For example, in the case of British Petroleum (UK), it announced in late 1994 that it would be pricing nationally in response to the supermarkets, and followed up this announcement with a campaign of advertising designed to raise awareness of its new strategy. Evidence of British Petroleum (UK)'s actions could be found in the gradual decline in the supermarkets' price advantage over the roadside sector, from the end of 1994 and in the decline in the national average margin and the supermarkets' average margins as they sought to defend their differential.

8.16 It is interesting to note that, according to the OFT, the information provided by the supermarkets, both publicly and to OFT, has been insufficient to undertake a detailed analysis of profitability. In their reports and accounts, none of the supermarkets show separately their results from fuel sales despite the substantial proportion of total sales that petrol in some instances contributes.

8.17 Nevertheless, on the limited data available, the OFT noted that it is possible to identify broad trends in sales and profitability. It stated:

> "….. Sales volumes have increased rapidly over the period. The fact that wholesale margins for the majors were high in the early 1990s compared with the previous decade must have been an encouragement for the supermarkets to expand their petrol operations. Up until 1994, the margin on sales also increased for all of the supermarkets. Since then all the companies show the margin on

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[3] Office of Fair Trading, May 1998, "Competition in the Supply of Petrol in the UK".

> sales declining and, in the case of two supermarkets, turning negative."

8.18 The OFT went on further to note that although two of the supermarkets reported losses in the year to Spring 1997, three others continued to show profits from fuel sales. One possible explanation for differences, according to the OFT was the charge that the supermarkets made to their motor fuel operations for the sites and that this depended on the value they placed on the fuel assets and the way they allocated site running costs.

8.19 The valuation of fuel assets was also noted by the OFT as important when assessing the profitability of the supermarkets' motor fuel operations. Whereas an oil company would construct a dedicated petrol filling station outlet, a supermarket would include a petrol refilling outlet as part of a far larger retail site. The incremental cost of the petrol refilling outlet incurred by the supermarket would probably be much less than the cost of a dedicated outlet incurred by an oil company. Supermarkets might also report lower running costs because their petrol refilling outlets are integrated with the stores. If this was correct, it meant that supermarkets could sell petrol at lower prices than the oil companies and still report profits on the activity.

8.20 In terms of what the future might bring, as the supermarkets' entry matured, the OFT made a number of observations:

> "As petrol sales reach their limit, the incentive to sell at low margins in order to win market share will be reduced. When they have gained the maximum share they can, supermarkets might reconsider their strategy for petrol pricing. It is difficult to see what this strategy might be. Petrol may be treated as a 'loss-leader' to attract customers to a store (supermarkets may not actually make losses, just unduly low margins), thus rendering the problem part of the wider one of whether supermarkets cross-subsidize to the detriment of consumers. If they do loss-lead, we would expect to see especially low prices where a competing supermarket is nearby (with or without a petrol outlet). This would imply a continued appreciable discount to petrol prices at the pumps of the oil companies and the retailers they supply.
>
> Alternatively, the supermarkets are increasingly moving out of their core market of UK food retailing. Both Sainsbury and Tesco now have overseas operations and these two companies and Safeway provide banking services. The motivation for this may lie with the need to fuel year-on-year growth in sales and profits. Low inflation in food prices and planning restrictions on new stores mean that it is more difficult to generate this growth from their core market. If petrol forms part of this strategy to expand outside core markets then it will be expected to deliver good results on its own. The supermarkets would be happy to see their prices closer to those of the more competitive oil companies." [4]

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[4] Op Cit, OFT, pp 64 – 65.

8.21 In the process of preparing its report, the OFT posed a series questions in a survey of the industry as to how the role of supermarkets would develop over the next five years. The following is a summary of points made by respondents[5]:

a. An acknowledgement that supermarkets had transformed the motor gasoline market in the UK, and that they had done so by offering petrol at convenient locations and at low prices. It was generally agreed that one reason they have been able to charge low prices is the far higher throughput of their sites compared to that of roadside sites.
b. Supermarkets derived considerable benefit from being seen to be competitive with their supermarket rivals on such a high profile and price transparent product.
c. The supermarkets themselves did not endorse the view that a competitive petrol price alone was capable of generating significant additional custom for their grocery business at a site. However, they did acknowledge that it was important that their sites were seen to be competitive and that their petrol prices were consistent with their general price proposition.
d. Several non-supermarket respondents said that the main driver of supermarket pricing competition was with other supermarkets and not with traditional roadside sites.
e. The major oil companies saw the supermarkets as their chief source of competition in the market. All major oil companies expected supermarkets' growth to continue, but at a slower rate than in recent years. Most believed that supermarkets will continue to drive the market to seek further cost efficiencies and to generate income from non-fuel related activities.
f. One respondent considered that the supermarkets had grown to such a size that they were now able to take control of the supply chain, buying at ex-refinery prices and, if necessary, importing petrol directly.
g. Among the supermarkets themselves, one company was pessimistic about its own prospects and those of the supermarket sector generally. It pointed out that the opportunity cost of a petrol forecourt was 90 car parking spaces and that at sites where parking space was a constraint on the expansion of grocery business, it might well be more profitable to return the forecourts to parking spaces.

Opportunity for Changing the Retail Environment

8.22 Whether Hong Kong could experience similar changes to those overseas, in terms of independent retailing or mixed retailing, where motor vehicle fuels are sold at prices close to, or less than cost, and as an addition to the product mix of a retailer, depends on a number of factors. For example, whether there are other retailers or entrepreneurs in the market that have the incentive to do so, and whether there is opportunity in terms of access to land suitable for petrol filling station sites. While it might be assumed that selling below cost equates with anti-competitive conduct commonly referred to in antitrust law as "predatory pricing", this would depend on the market power of the new entrant that is accused of predation, and whether selling below cost would undermine competition in the market. For example, to the extent that any existing competitors would be forced to exit, new entry would be prevented, and those left in the market would be deterred from engaging in competitive conduct.

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[5] Op Cit, OFT, pp 83 – 85.

Independent retailers

8.23 As noted earlier, the existence of retailers independent of vertically integrated oil companies have played a part in the evolution of a competitive oil product retailing environment in other jurisdictions. However, their ability to provide competition has depended on a number of factors. The main one being access to a competitive wholesale market.

8.24 The study has identified that there would appear to be standard commercial pressures on the oil companies in Hong Kong to make available use of existing storage infrastructure. It could be expected therefore that an independent retailer would have little difficulty in negotiating supply arrangements with an oil company, or leasing storage space at an existing storage site and importing product. In fact, Feoso, the closest approximation to an independent retailer in Hong Kong, has negotiated supply agreements with two separate oil companies.

8.25 However, the extent to which such independents could actually develop a marketing strategy significantly competitive with oil companies, for example purely on price, and without resorting to the same product promotion strategies employed by the oil companies, is open to question. From the Council's observations, Feoso and Concord for example, do not employ a pricing strategy significantly different to that of their suppliers. In effect there is little difference in terms of their mode of operation to a vertically integrated oil company. For an independent retailer to have a marked change on the marketing environment in Hong Kong, it can be assumed that it would need to be able to generate demand for enough throughput necessary to achieve the economies of scale that match the throughput of its major competitors.

8.26 This could only be achieved if it has access to a suitable number of sites in optimum locations. Given the static nature of the market, and the fact that oil companies would need to preserve the profitability of their existing sites, it can be expected that vertically integrated oil companies will factor in the cost of loss of revenue to their retail outlets in determining a wholesale price for new entrants. Ideally, new entry that changes the competitive dimension of retailing in Hong Kong would have independent source of wholesale supply not related to current vertically integrated oil companies, and an ability to secure adequate throughput by way a number of sites in good locations. One way that throughput assurances could be achieved is through entry by a cooperative group of buyers such as taxis and mini bus operators.

Availability of sites

8.27 When considering the issue of "mixed retailing", there are two ways in which this can be achieved. One form is where both motor vehicle fuels and other products are retailed from the one site, e.g. a supermarket or convenience store physically attached to a petrol filling station site, or where a supermarket or other retailer uses its supermarket brand name for a petrol filling station. In the case of the latter, it would typically connect sales of groceries with motor vehicle fuels, e.g. by offering fuel discounts at its petrol filling station site based on purchases made at the supermarket. As far as selling both motor vehicle fuels and other products from the one site is concerned, the Planning, Environment and Lands Bureau (PELB) stated it has had initial discussions with the Fire Services Department to examine the idea of petrol filling stations in hyper-market, car park or other composite type developments. As the setting up of petrol filling stations in composite developments will have to meet stringent fire safety requirements, at this stage, no such composite development has

been identified. PELB noted that it was very unlikely for a petrol/LPG filling station to be suitable for composite type developments given the safety risk factors. Nevertheless, PELB stated it will continue to attempt identifying suitable sites for petrol / LPG filling stations. As noted in Chapter Two, regardless of what the Government planning might be undertaken in regard to dedicated PFS sites, the option remains for any entrepreneur to purchase suitable land and make separate application for a PFS site, or seek conversion of an existing lease.

8.28 In the case of non-vertically integrated independents who choose to enter the market without a mixed retailing profile, but using a marketing strategy that seeks to significantly discount price, site availability can be seen as a significant barrier. To make an appreciable difference to marketing fuel in Hong Kong, an independent would need to have a geographic presence that attracts an optimum number of customers to generate sufficient throughput that would earn it a substantially discounted wholesale price due to the volume of purchases. While this does not mean it would have to mirror the extensive coverage that the three major oil companies (Shell, Caltex and Mobil) currently have, it can be assumed that it would need to have a presence in some of the key areas currently occupied by the oil companies. Ideally, to introduce an element of change to the marketing environment in Hong Kong, some of the existing more established sites would need to be converted to independent ownership.

8.29 As can be seen from the information in Chapter Seven on location of existing PFS sites, according to geographic locality, the three major oil companies, Shell, Caltex and Mobil, have substantial incumbency in the existing PFS distribution network, with a presence in all major geographic areas in Hong Kong. Notwithstanding the fact that the Council does not have information on the throughput of the various sites, it can be assumed that some of those sites, particularly in the more established areas, would have substantial throughput and are therefore in "key" areas.

8.30 At present, with the expiry of a PFS lease (21 year terms in general) an existing oil company lessee need only repay the land premium to the Government to continue its operation. This has the effect of perpetuating the incumbency of existing PFS by the same oil company. In view of the probability that the sites are in key areas, and that the likelihood of obtaining approval to build a "green field" site in the area is minimal, any opportunity for new entrants to establish a presence in key geographic markets is substantially lessened.

Incentives for mixed retailing

8.31 The CRC group is involved in both the oil industry and the grocery sector. In discussions with CRC, the Council was informed that it had in the past experimented with offering coupons linked to petrol purchases, but considered there were other equally worthwhile means of attracting customer. The Council has not approached any of the current leading market participants in the grocery sector to ascertain whether they would be interested in emulating either the Australian or the UK experience, by entering the motor fuel retailing industry. From general observations, it can be observed that the grocery market in Hong Kong is not in a similar position to that of Australia and the UK where such initiatives have been taken. Incentives for finding markets outside groceries in Hong Kong might not be as great, and the more pertinent challenges for the sector would most likely be in meeting competition from emerging electronic commerce sales centres, and traditional fresh food markets. As far as mixed retailing is concerned, where products other than fuels and lubricants

are sold at a PFS, the more likely involvement would seem to be through convenience stores.

8.32 A pertinent issue in this context is that the major supermarkets in Hong Kong are part of large conglomerate groups that encompass numerous economic sectors. A question could arise as to whether the involvement of large Hong Kong conglomerates in the sector could result in an unacceptable level of market power in the industry with the possibility of cross subsidizing unprofitable activities (such as motor fuel retailing) within the group with profitable ones. The presence of participants with such market power could have the effect of not only deterring new entry, but once a sustainable presence has been achieved, an ability to deter those remaining in the market from engaging in competitive activity. On the other hand, the presence of large retailers with substantial purchasing and marketing power could be seen as enhancing competition, particularly in view of the need to match the substantial market presence that the vertically integrated major oil companies possess. The Council offers no comments on this point apart from noting that the question of whether market power is being misused is a matter that should be tested within the bounds of a competition law, and with reference to the facts as they apply at the time.

Alternative cylinder LPG retailing

8.33 During the course of this study there were suggestions made that cylinder LPG may be better served through different modes of distribution. For example, vertically integrated by oil companies and increased economies of scope and scale by having exclusive areas of supply. There has been some suggestion that oil companies may be attempting to change the nature of retailing in the sector – see Chapter Two and the reference to a proposed Code of Practice for LGP Distributors.

8.34 However, this study has found (see Chapter Five and Chapter Seven) that price competition in cylinder LPG distribution has come about through bypassing the regulatory induced costs for handling LPG. If the suggestions as to exclusivity and/or vertical integration are taken up, there is no guarantee that prices will come down from the prices that "legitimate" dealers charge. It is certain that the prices will be in excess of those that are currently available in the market. In view of the shrinking market for cylinder LPG, it can be expected that a certain amount of rationalization will take place among existing dealers in the near future.

8.35 The economies of scale for cylinder LPG distribution might be improved through the creation of exclusive monopolies for specific geographic areas. However, such a change would bring about a great deal of dislocation and disruption to the livelihood of a number of dealers, and in the absence of some form of prices oversight, consumers could face the prospect of an unregulated monopoly supplier of cylinder LPG in certain geographic areas. The Council does not consider that such changes should be engineered. In the absence of any urgency to bring about change, and the fact that there is shrinking demand for the product, the market should be left free to find its own appropriate level.

8.36 The only warning is that in the absence of general competition laws that examine the effect on consumer welfare of vertical or horizontal restraints between competitors and other market participants, an unregulated monopoly or other welfare reducing market structure could, in any event, arise.

Chapter Nine

Competitive Behaviour

9.1 The Council began this study at a time when the industry came under scrutiny following reductions in the price of crude oil during the year and the belief on the part of some Members of the LegCo that there should have been corresponding reductions in the retail price of motor gasoline, diesel and LPG. Members were concerned as to whether retail prices for the products were "reasonable", and that the market might not be fully competitive. The latter point suggesting that there may be some anti-competitive agreements between market participants.

9.2 This chapter briefly examines the theory of competitive behaviour as found in the analytical tools used by competition authorities that administer general competition law. The analysis is conducted with reference to the information on the Hong Kong industry outlined in preceding chapters.

Cooperative Behaviour

9.3 Allegations of cooperative behaviour usually come about as a result of the existence of uniform prices in a market, and a suspicion that the prices could only reach that level in cooperation between competitors. In antitrust terms, this is generally attributed to :

a. the existence of a specific agreement between competitors, i.e. a cartel; or
b. the existence of "tacit collusion" brought about through oligopoly conditions in the market.

Similar market conditions (uniform prices and absence of competition) can also arise through the presence of an oligopolistic price leader.

Cartel

9.4 Explicit agreements between competitors on prices to be charged, through cartel arrangements, are regarded in some jurisdictions as *per se* violations of antitrust law, and authorities need only prove the existence of the agreement, as distinct from anti-competitive detriment, to secure a contravention. Even so, in some jurisdictions price cartels can be exempted from antitrust laws if it can be shown that they serve a wider public or national interest[1].

9.5 There is no law in Hong Kong prohibiting price fixing between oil companies. Accordingly, if there was an explicit agreement between competitors on price for example, there is no incentive for a party to an agreement to come forward and provide details in exchange for a form of immunity or lenient treatment, or to publicly argue the case for overriding public benefits. Moreover, when discussing this matter with some oil companies, the Council was informed that regardless of the absence of such laws in Hong Kong, the existence of strict laws prohibiting price fixing between competitors in their principals' home jurisdictions, meant that they were under the

1. [1] See Part VII of the Australian Trade Practice Act, 1974.

same pressure not to behave in such a manner. This might not only be due to the strict prohibition enforced by a head office, but could also relate to the possible threat of legal action from the home jurisdiction's authorities in circumstances where there was extra-territorial reach of anti-trust laws.

9.6 The fact that local subsidiaries could incur the wrath of their principals, in the event of local action unsanctioned by the overseas principals, would diminish the possibility that subsidiaries in Hong Kong would admit to such behaviour, if it was to occur.

Oligopoly

9.7 An oligopoly is constituted by a small number of firms in a market, with substantial barriers to new participants entering the market. The theory of oligopoly is a complex and contentious subject that postulates between two points of reference.

a. A "cooperative oligopoly" in which a small number of firms coordinate their actions to maximize joint profits. This could be through an explicit agreement (essentially a cartel) or even without an explicit agreement, because each firm finds acting as though it were a member of a cartel to be in its self interest. In other words there is a tacit agreement.
b. A "non-cooperative oligopoly" where firms act independently (and consider themselves as rivals) but are aware of each other's existence and have a good assessment of each other's costs[2].

9.8 The distinction between these forms of oligopoly is not always a clear one. This is because an absence of competition can arise because of either an explicit or tacit agreement, or simply because competitors are aware of each other and are able to accurately predict the behaviour of one another. In the latter case, there may be little opportunity for strategic behaviour that would give one firm a significant long term advantage in the market, and a pattern of marketplace conduct evolves that serves the same mutual self interest as an explicit agreement. This leads to a perception of cooperative behaviour. Where competition authorities have challenged such behaviour, the courts have had to determine whether it could infer that a cartel has come about, drawing from the course of conduct of the alleged conspirators. Notwithstanding prevailing theories of oligopoly, the question of whether oligopolistic markets tend to behave more like monopolistic markets, than like markets with genuine contest or effective competition, albeit among a few firms, is a matter that can only be ascertained from the facts.

9.9 In the 1946 *American Tobacco* case the U.S. Supreme Court ruled that similarity of conduct among the three major U.S. tobacco companies at the time provided a basis to infer that an unlawful conspiracy had taken place[3]. However, in recent times courts have ruled that parallel behaviour alone is not sufficient to prove an antitrust violation. For example, in cases brought by the U.S. Federal Trade Commission (FTC) where it was alleged that markets are not competitive because of certain business practices adopted independently by each firm[4].

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[2] Carlton and Perloff, Modern Industrial Organization, Second Edition, HarperCollins College Publishers, 1994, pp 175 & 229.

[3] *American Tobacco Company v. United States*, 328 U.S. 781 (1946).

[4] Op Cit, Carlton and Perloff, pp 817 – 818.

9.10 In the *du Pont* case[5], for example, the FTC alleged that the non-collusive adoption of certain business practices, including notification to buyers of price increases, the use of uniform delivered pricing, and public announcements in the press all constituted business practices that facilitated non-competitive pricing. The U.S. Court of Appeals for the Second Circuit rejected this line of argument:

> "The mere existence of an oligopolistic market structure in which a small group of manufacturers engage in consciously parallel pricing of an identical product does not violate the antitrust laws."

Oligopolistic price leader

9.11 Another theoretical proposition that has been advanced to explain seemingly cooperative behaviour is that of the oligopolistic price leader, or dominant firm price leader. Prices in this scenario are similar due to the fact that competitive fringe firms follow the price leadership of the dominant firm in the market, due to the unilateral market power the dominant firm can exert and the discipline this has on unilateral pricing action.

9.12 Whether a dominant firm can exercise unilateral market power in the long run depends on a number of factors[6]:

a. the number of firms that can enter the industry;
b. how their production costs compare to those of the dominant firm; and
c. how quickly new entry can take place.

9.13 Price leadership of the sort envisaged above has been proposed as a likely basis on which to explain the existence of cooperative behaviour, where similar modes of pricing and other market behaviour have been observed.

> "The weight of the evidence from industry case studies and statistical analyses, both cross sectionally and time series, suggests that oligopolistic firms do not react to each other's moves in stable, mechanistic, easily modeled ways. Rather, there appears to be much emphasis on establishing clearly understood signals and patterns of leadership exercised by one of a very few of the market's largest firms."[7]

Regulatory Responses to Cooperative Behaviour

9.14 Notwithstanding the difficulties in challenging the above form of behaviour in the courts, uniform conduct between competitors continues to attract the attention of competition authorities. While oligopolistic market conditions prevail, there is a lingering suspicion on the part of the community that prices are not being set at competitive levels. Acknowledging the difficulties in targeting the conduct of firms within oligopolies, the focus of regulators has necessarily been transferred to

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[5] *E.I. du Pont de Nemours & Co. v. FTC*, 729 F2d 128 (2d Cir.1984).

[6] Op Cit, Carlton and Perloff,t pp 158 – 159.

[7] Frederic.M. Scherer, "Market structure" in Eatwell, Milgate and Newman (eds), The New Palgrave (Macmillan, London. 1987), pp 344.

exploring mechanisms by which oligopolistic structures can be broken down, or the market power inherent in oligopolies, or one dominant firm, can be diminished.

9.15 This can best be achieved through:

a. identifying those factors that indicate an absence of market power;
b. taking measures, if possible, to ensure those factors are present in the industry under examination; and
c. ensuring that the underlying conditions that give rise to the creation of market power are minimized.

9.16 Leaving aside the question of an oligopolistic price leader, it is generally recognized that mutual interest between competitors, or cooperative behaviour, is more likely to occur when:

a. the number of firms supplying the market is small, and/or market concentration is high;
b. the firms involved have similar costs and are driven by similar economic incentives;
c. the product is homogeneous and relatively price inelastic;
d. prices are transparent;
e. there is a high level of vertical integration; and
f. entry is difficult and market conditions are stable.[8]

9.17 In the context of the various oil product markets in Hong Kong, each of the above factors should be assessed to determine whether they do in fact exist. If they do, a decision can then be made as to what if any action can or needs to be taken in relation to those factors, to mitigate the likelihood of anti-competitive circumstances arising. Those factors are assessed as follows.

Market concentration

9.18 The question as to what level of market concentration raises a concern has been and remains a matter of conjecture in jurisdictions with general competition law. Useful sources of reference can be found in the merger guidelines published by competition authorities that have established competition laws.

9.19 In jurisdictions with laws that prohibit anti-competitive mergers or acquisitions, a test based on arbitrary market concentration ratios is generally applied to determine whether an acquisition or merger might be at risk of breaching the law. If a proposed acquisition or merger satisfies the test, i.e. that it would result in a concentration level at or above the arbitrary level, the merger or acquisition would therefore be scrutinized to see whether in fact the authority is of the opinion that the concern is well founded.

9.20 For example, in Australia if a merger will result in a post-merger combined market share of the four (or fewer) largest firms (CR4) of 75% or more and the merged firm will supply at least 15% of the relevant market, the ACCC will want to give further consideration to a merger proposal before being satisfied that it will not result in a substantial lessening of competition. In any event, if the merged firm will supply 40% or more of the market, the ACCC will want to give the merger further

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[8] Office of Fair Trading, "Competition in the supply of petrol in the UK", May 1998, pp 100.

consideration[9]. The twofold thresholds in the ACCC's guideline reflect concerns with the potential exercise of both coordinated market power[10] and unilateral market power.

9.21 These thresholds have been set at a more generous level than those in other jurisdictions with a similar merger law. For example, the Canadian Director of Investigation and Research, Competition Act, *Merger Enforcement Guidelines* (1991) employ a CR4 threshold of 65%, with the merged firm's market share at 10%, and a single firm market share of 35%. The U.S. Department of Justice and Federal Trade Commission's *Horizontal Merger Guidelines* (1992) employ the Herfindahl-Hirschman Index (HHI) instead of the CR4, but would examine mergers where the post-merger CR4 was below 75%; and the single firm market share threshold is 35%.

9.22 The Council has not undertaken a detailed analysis of market definition, and is relying on the loose identification of four product markets (unleaded petrol, diesel, piped and cylinder LPG) for the purpose of assessing market concentration. At the time of preparing this report Esso and Mobil were in discussions on the merger of the two firms into a single entity to be known as Exxon Mobil. Having reference to the market share figures noted in Table 6.1 (Chapter Six) the following is an indication of Esso's and Mobil's market shares, in relation to the next two biggest competitors (Table 9.1). The figures in Table 6.1 for Esso were combined with those of CRC and Feoso for motor gasoline and diesel, and it has been assumed for the purpose of this exercise that Esso would have about one third of the share of those three firms.

Table 9.1: Market Share of Major Oil Companies

	Shell	Caltex	Mobil	Esso	Total
Motor gasoline	40%	27%	22%	4%	93%
Auto diesel	30%	28%	24%	6%	88%
LPG (piped and cylinder)	36%	15%	21%	19%	89%

9.23 With reference to the standards of the lowest threshold regulator, i.e. the ACCC, the Council believes that based on the above figures, market concentration levels in Hong Kong are high in terms of the possibility of coordinated market power.

9.24 The possibility of effective competition or genuine contest in markets where there are only a few participants is analyzed by the theory of contestable markets[11]. This theory suggests that while a market may contain only a few firms, these firms' behaviour may not deviate significantly from that described by the model of a competitive market, in the absence of collusion. A key factor is the ease of entry,

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[9] Australian Competition and Consumer Commission, "Merger Guidelines – A guide to the Commission's administration of the merger provisions (ss50, 50A) of the Trade Practices Act", 16 July 1996.

[10] The term "coordinated market power" is essentially the same as the term "co-operative behaviour" used in the discussion in this Chapter on oligopolies. The ACCC's Mergers Guideline at para 5.167, op cit, makes the following observation in respect of coordinated market power:
"One factor which is of general relevance is the extent to which the market is characterized by conditions conducive to coordinated conduct. While the exercise of unilateral market power does not require accommodating action by remaining firms in a market, the exercise of coordinated market power does. This does not necessarily involve collusion of the kind covered by s. 45 [prohibition of collusive contracts, arrangements or understandings] but may simply involve signaling or conscious parallelism. Features of the market which impinge on the likely rewards from co-ordination, the likelihood of reaching an agreement, and the ability of the parties to detect and punish deviations from the agreement, are all relevant to the likelihood of such conduct occurring and being successful in the future."

[11] Baumol, William J., John C. Panzar, and Robert D. Willig, Contestable Markets and the Theory of Industrial Structure, New York: Harcourt Brace, Jovanovich, 1982.

which is related to the sunk cost of investment that is required in making the entry into the existing oligopolistic market. Experiences overseas for example[12] suggests that the incumbents in an oligolistic market may be susceptible to contest by powerful players from other sectors, who can bear the sunk cost and the associated risks in making an entry.

Product differentiation and non-price competition

9.25 Conventional oligopoly theory predicts stable market shares, rivalry through product differentiation, and rigid prices[13]. The notion of coordinated behaviour is less likely to be accepted if there is extensive product differentiation in a market. In the case of motor gasoline and diesel, which is largely undifferentiated and price inelastic, some schools of antitrust theory emphasize that it is unlikely that an organized cartel would engage in cost inducing product differentiation.

> "Cartels very often engage in product standardisation precisely to secure stability. It seems perverse of oligopolists to engage in product differentiation for the same reason. Conventional oligopoly theory ought to predict a lessening of product competition, just as it predicts a lessening of price competition. Where product competition is observed, the correct inference is that the companies involved are not behaving as restrained oligopolists: they are competing …… product rivalry introduces so many variables that the stability of the oligopolistic peace becomes impossible."[14]

9.26 In Hong Kong, oil companies do currently engage in a form of product differentiation. For example, specially formulated performance fuels, to cater for Hong Kong motorists' apparent demand for higher than usual octane ratings, or other performance enhancing additives. There is also another form of non-price competition, e.g. the substantial use of "giveaways" such as bottled water and tissues, and other merchandise promotions. However, apart from the possibility that consumers may not want this form of competition (i.e. it is not demand driven differentiation) the product differentiation, particularly with giveaways has taken on uniform characteristics, where oil companies offer little or no variation in the form that the giveaways take.

9.27 Another aspect to oligopolistic peace that is implied in the notion of cooperative behaviour, or a formalized cartel, is that the presence of large commercial and industrial buyers facilitates cheating on the part of oligopolist or cartel partners. Secret price cuts on a small number of large transactions can be both lucrative and difficult to detect[15].

9.28 It has not been possible to verify the presence of substantial discounting in large commercial and industrial contracts. However, the part that fleet discounts played in the significant costs of oil companies, was observed by ESB in its April

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[12] Rose J, "The ACCC and the Market Power of the Oil Majors – Part 1", Trade Practices Law Journal 7 (1), March 1999, pp 25 noted that inquiries by the Australian Competition and Consumer Commission into a number of industries found that competition was strong in markets with two or three major sellers.

[13] Bork, The Antitrust Paradox, the Free Press, New York, 1993, pp 185.

[14] Op Cit, Bork, pp 187.

[15] Op Cit, Rose, pp 30.

1999 study into prices and costs in the industry. The information provided to ESB by the oil companies, that could confirm the level of competition in this area, was not made available to the Council. It also has to be noted that while more information confirming the existence of competitive bidding for supply contracts would be useful, agreements between cartel members on complicated schemes to provide a competition "smokescreen" when bidding for tenders, or otherwise competing for contracts, are not unknown overseas where competition laws are in operation.

Vertical integration

9.29 The existence of independent operators at the retail and wholesale level in the chain of supply, and the benefits this provides for competition, is important. The presence of these factors is a commonly used argument to counter the suggestion that cooperative behaviour is prevalent in markets.

> "….. independents and excess refinery capacity both linger to interact in their usual destabilising roles in oligopolies."[16]

However, a distinction needs to be made between independent operation at the wholesale and the retail level, and what is meant by independent retail.

9.30 In a recent industry report prepared by the UK Office of Fair Trading (OFT) it was noted:

> "….. in the prevailing climate of strong competition between the major players in the market, the OFT does not believe that independent retailers provide any significant benefits for competition, over and above those which would be provided by an otherwise identical company-owned and managed site or supermarket".[17]

In a recent Australian study, the ACCC noted:

> "….. vertical integration and vertical arrangements have the potential to reduce costs and create efficiencies. The Commission would not wish to stifle the industry's opportunity to take advantage of such arrangements. Of more importance would be any lack of competition between these vertically integrated firms rather than vertical integration *per se*."[18]

There are two different ways of assessing independent operation. Some independent operators who might not make much difference to competition are those that are linked closely to the vertically integrated major oil companies through supply agreements. They also lack economies of scale and buying power. Other independents are retail chains, with a large number of sites that have the ability to secure large turnover, and have wholesale sources of supply independent of the vertically integrated oil companies. Such companies would be independent of the oil companies and can provide a competitive edge to the market, driving vertically integrated oil companies to seek greater efficiencies. There are no such independent

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[16] Op Cit, Rose, pp 26.

[17] Op Cit, OFT, pp 100.

[18] Australian Competition and Consumer Commission, "Inquiry into the Petroleum Products Declaration" Volume 1 Main Report 1996, pp 35.

operators in Hong Kong at the moment. However, there may be opportunity for this to develop in the retailing of vehicle LPG, because of possible new entry driven by the increased demand for the product, and the Government's initiatives in releasing more LPG filling sites (see Chapter Two and Chapter Five).

Barriers to entry

9.31 Barriers to entry can vary, depending on the particular product and the level at which entry is being planned. It is impossible for new entry to be sustainable at the wholesale level without adequate sources for retail throughput; and vice versa. Retailing motor vehicle fuels also has substantial site leasing and investment costs. For retailing cylinder LPG, major costs, in addition to leasing costs, would seem to be labor and the technical skills necessary to satisfy government regulations. As noted in the preceding chapters, the strongest retail competition appears to come from alleged sub-contractors who were said to bypass government regulations.

9.32 Investment in storage capacity, and transportation costs would be high in the wholesale level of motor vehicle fuels and LPG. In view of the need for constant supply, to maintain required throughput rates and assure customers of the ability to meet demand, adequate storage capacity is critical to the success of any market participant. Moreover, it is the existence of adequate capacity at the storage or refinery level that acts as a safeguard against predatory or cartel behaviour:

> "….. a problem with the oligopolistic predation scenario is that investment in additional …… capacity by incumbent firms has the same price effect as new entry, particularly when no firm is dominant. The new capacity of entrants and the spare capacity of incumbents encourage firms to sell more because the marginal cost of utilizing idle facilities is relatively low. This is why cartels rationalize rather than expand spare capacity and they also restrict new investment. The removal of spare capacity reduces the incentive and the ability of cartel members to cheat."[19]

Any diminution of storage capacity could therefore be viewed as constructing a significant barrier to entry, and removing one of the mitigating factors that weakens the prospect cooperative behaviour.

Mergers and acquisitions

9.33 As noted above, during the course of this study negotiations between Mobil and Esso were taking place to effect a merger of the two operations. As distinct to many of Hong Kong's major trading partners, there is no law in Hong Kong that could be used to challenge the merger if there were anti-competitive implications from the combination. As can be seen from the above discussion on market concentration, it is clear that the merger would attract the attention of a competition authority in a number of other jurisdictions, given the same facts as Hong Kong. Moreover, given the nature of the local industry, if there were mergers and acquisition laws, it is also possible that some action might need to be taken in the form of divestitures, or undertakings. The action could be to ensure that what competition does exist, continues, or that the competitive environment be improved. While the Council has not undertaken any analysis of the proposed merger, some observations can be made.

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[19] Op Cit, Rose, pp 22.

9.34 One way of looking at the merger could be to argue that it would improve competition at both the retail and wholesale level, because the merged entity would have improved economies of scale that could reduce costs and improve efficiencies. In addition, because the merger would result in three major players of roughly equal size there would be less concern about a dominant player being able to exert undue influence and manipulate prices through, for example, "margin squeeze". This is where one player enjoys lower costs, higher profits and turnover than its rivals and can therefore squeeze margins to discipline any outbreaks of price competition.

9.35 However, concern would have to be raised in relation to the effect the merger would have in relation to reducing the number of competitors in the market, thereby strengthening an environment conducive to cooperative behaviour. In addition, there could be ramifications for spatial competition in geographic markets, where Mobil and Esso have retail outlets in the same markets and substitution is low. While it might be assumed that consumer mobility is very high (given Hong Kong's small geographic area) and that consumers would most likely be willing to drive some distances to obtain price discounts, the discussion on competition in Chapter Seven gives an indication of the level of spatial competition in Hong Kong and the existence of geographic markets. The Council has made recommendations in relation to oversight of PFS lease renewals, and conditions that may need to be applied to the bidding process for new PFS. These may provide some safeguards in maintaining competition within geographic markets by keeping a check on concentration levels.

9.36 The other area of concern could be in relation to rationalization of storage capacity. As noted above, concentration in this aspect of the industry could raise impediments to new entry. The Council recommends that any rationalization at this functional level should also be vetted, in the interests of maintaining competitive pressure in the industry. This is also important given Hong Kong's total reliance on imports for oil products, and the importance of having adequate domestic storage facilities in periods of disruption to supply. Scrutiny of the type noted above, in terms of the effects of the Esso/Mobil merger on wholesale supply, and retail marketing were in fact taking place in the U.S. and elsewhere during the course of this study[20].

Price control/monitoring

9.37 An examination of the structural features of the Hong Kong oil products industry has been central to the purpose of the Council's study. If the underlying conditions for effective competition are present in the industry, it would not be necessary to introduce some form of prices oversight. Indeed, any attempts to introduce such a form of government regulation would be an anathema to the Government's prevailing non-interventionist policy. Price control nevertheless is a common reaction to perceived concerns on the state of competition in a market.

9.38 However, price control should only ever be seen as a last resort. Such intervention can deter new investment, constrain productivity growth and prevent

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[20] See for example, "Statement of the Federal Trade Commission before the Committee on Commerce, Subcommittee on Energy and Power, U.S. House of Representatives", 10 March 1999. Document located at http://www.ftc.gov/os/1999/9903/exxonmobiltestimony.htm. This provides an overview of the concerns of a competition authority in relation to the effects of mergers on a number of matters. In particular the effect on spatial competition and the likelihood of a situation arising where as a result of increased concentration branded marketers in a local gasoline market may have the ability to raise price oligopolistically, without the fear that price increases will be eroded by a small fringe of independent marketers or new entry.

prices from playing an important role of guiding investment and resources into their most efficient use.

9.39 Nevertheless, some form of prices monitoring can be beneficial in improving transparency of the market, and as a means of checking one of the fundamental indicators that a market is competitive, i.e. checking costs against prices. The Economic Services Bureau has produced one report on this subject, and it is open to the Government to repeat the exercise at some time in the future. ESB has indicated it will report further on profitability in the industry, and this will also assist in understanding the state of competition in the industry. Given the absence of a competition or energy authority that has wide investigative power, it may be necessary, to allay public concerns about a lack of competition in the market, to produce periodic reviews on such matters. For example, a report that not only examines prices and costs, and profitability, but also identifies whether the underlying conditions that point to an absence of market power are present.

Competition Oversight

9.40 One means of addressing concerns on competition and to assuage public opinion, is to have a form of generic competition oversight, by way of a general competition law administered by a general competition authority, similar to that found in comparable economies. In fact, if Hong Kong had a competition authority with the necessary investigative powers that enjoyed public and industry confidence, its presence could relieve the industry from the burden of constant innuendo that it is not competitive. This form of oversight would be the most cost effective use of obligatory legal and economic resources required to undertake analysis, as it could be applied across all sectors of the economy, rather than be targeted at one particular sector, that only needs some oversight on an "ad hoc" basis.

9.41 For example, one of the ad hoc concerns that may arise could be access to storage facilities. In this hypothetical scenario, a new entrant might be faced with a "constructive refusal" to provide access to storage facilities. A constructive refusal is where access is provided, but at a price that is not commercially viable and unjustifiably so, given the costs of providing that access.

9.42 In these circumstances, the intervention of a government authority would be obligatory, to ascertain whether the refusal to deal was justified. For example, that there is not adequate capacity to meet both the needs of the incumbent or incumbents and the new entrant, or that the price that is offered is reasonable and not the exercise of unilateral or collusive market power. A precedent already exists in Hong Kong for this form of intervention, through the powers that are available to the Telecommunications Authority to take action against abuse of dominance, and other forms of anti-competitive conduct.

Self Enforcing Nature of Competition Laws

9.43 It would be hoped that if strong laws prohibiting collusive conduct were introduced, then market participants would observe the laws. However, experience from other jurisdictions that have such laws demonstrates that this is not necessarily the case. Moreover, obtaining direct evidence on collusion where it does exist, even where competition authorities have extensive investigative power, is not an easy task.

9.44 In fact, the existence of cartels is often disclosed not through the investigative endeavors of a competition authority, but by some cartel members themselves. Australian cases in the ready mixed concrete industry are a case in point[21]. This self disclosure demonstrates, in a way, the self enforcing nature of laws that prohibit cartels. The self enforcement comes about due to a combination of the risk of very high pecuniary penalty, and the fact that cartel members can obtain first mover advantage and seek immunity from legal action (or reduced penalty) by informing the competition authority of the cartel arrangements.

9.45 Self disclosure can arise in two circumstances. First, where the competition authority lets it be known it has obtained some indirect evidence which it believes will prove the existence of a cartel, and that legal action is imminent. Second, where it becomes apparent that someone with detailed information on a cartel (such as an aggrieved employee) is about to "blow the whistle" to the competition authority.

Imminent legal action

9.46 In these circumstances cartel members have to gamble on the probability that either the competition authority will not take action (it is only bluffing) or that if it does take action, the indirect evidence will not be of a standard to satisfy a court, even under a civil standard of proof. In these circumstances the cartel member with the least to lose may choose, in view of the immunity arrangements offered by the competition authority, to reveal details of the cartel. Immunity is usually given to a cartel member that is the smallest player, and may have been subject to indirect or direct pressure to join; or was not a prime instigator of the cartel.

"Whistle blowers"

9.47 The existence of laws prohibiting cartel behaviour can be self enforcing, in view of the potential for "whistle blowing" to occur, because cartel members realize they cannot be sure of containing information about the activities of the cartel. This would be due to the involvement of some staff, whose loyalty or standards of behaviour cannot be relied upon. Or at least, it can only be relied on at a cost, which loses its benefit when the cost exceeds the commercial benefits of the cartel arrangements. For example, the cost of sacking an employee, or not agreeing to a demand for a wage rise could be the pecuniary penalty imposed by a court following disclosure of the cartel in which the employee played an important part.

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[21] See for example *Australian Competition and Consumer Commission v Pioneer Concrete* (1996) ATPR, pp 41- 457, where the respondent admitted agreeing with other suppliers to fix prices for ready mixed concrete. In the Australian cases, the cartel members met frequently to review their allocated market shares. First they identified certain customers that liked doing business with certain suppliers. These were called "pet customers". When the participants knew tenders and contracts were about to be released, they would meet to allocate the contracts first according to whose pet customer the tender/contracts came from. Then they would allocate remaining tenders/contracts until everyone had got their agreed market share. Once the tenders were allocated, they would arrange cover prices - prices they knew they would not win. If anybody won a contract they were not supposed to win, their allocation would be reduced by the amount of "cheating" at the next meeting.

Summary

9.48 In the absence of direct evidence of cartel arrangements, there are essentially two ways in which the question as to whether effective competition is actually taking place in the market can be answered. They are examining profitability and tracking historical prices against variable costs. The information obtained up to the present time on these factors is inconclusive, and more work can be done. While these efforts may prove useful in an instructive sense, the more fruitful responses would be to construct a framework that addresses the potential problems that give rise to anti-competitive structures in the relevant markets, and to put legislative and administrative mechanisms in place to censure anti-competitive conduct. The various recommendations arising from this study attempt to provide that framework.

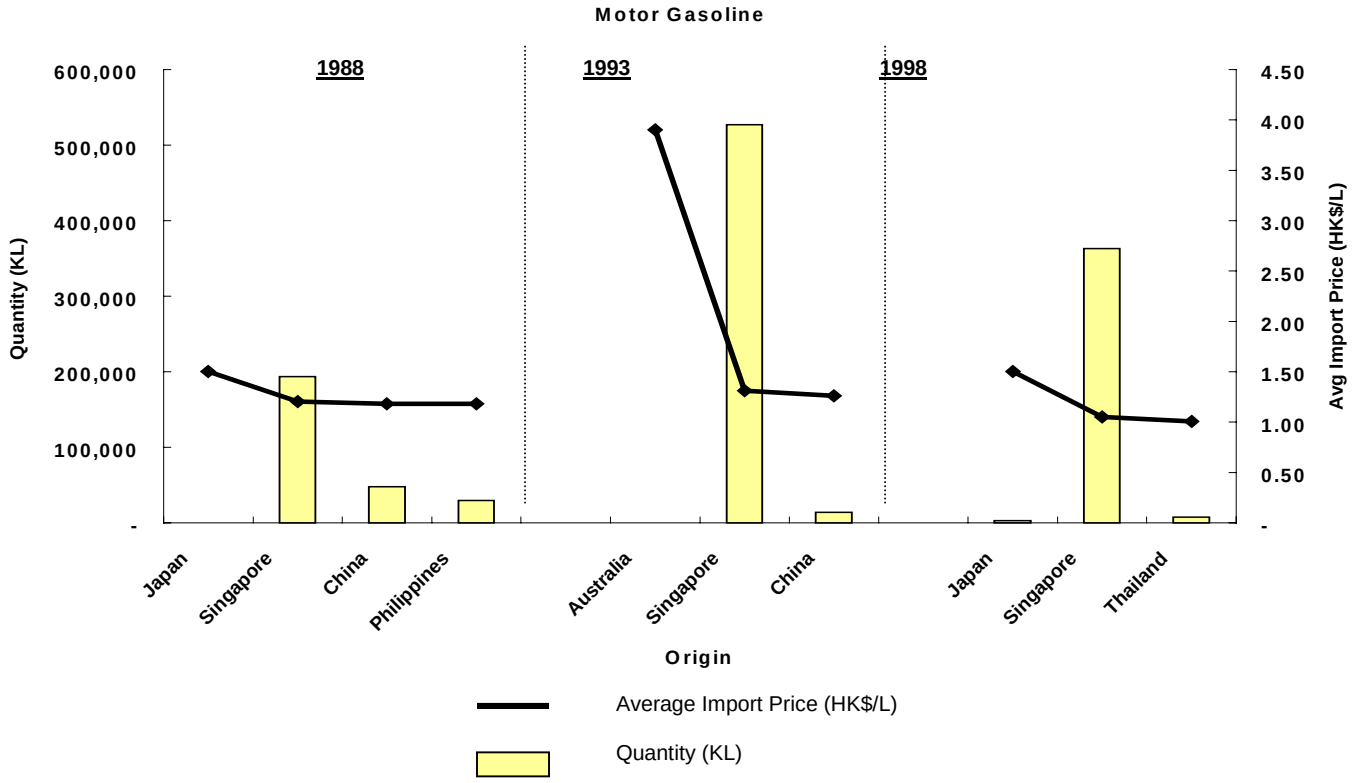
Appendix 1: Sources of Supply
(Source: Hong Kong Trade Statistics - Import (Hong Kong), Nov 1988, Nov 1993 & Nov 1998, Census and Statistics Department)

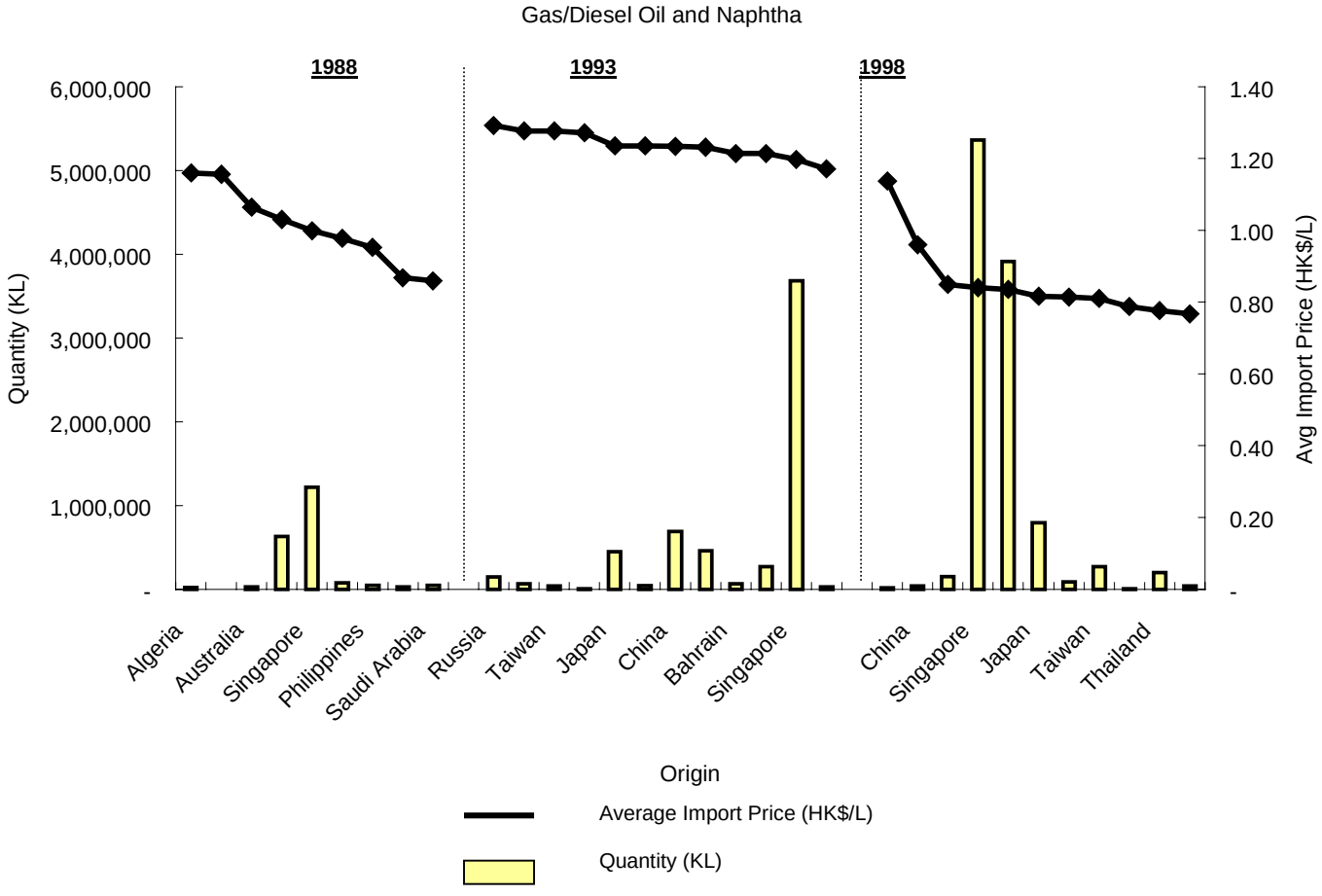
The following figures illustrate the proportions by quantities of the three examining products imported into Hong Kong from different sources. For comparison purpose, the periods in the years under study cover from January to November only.

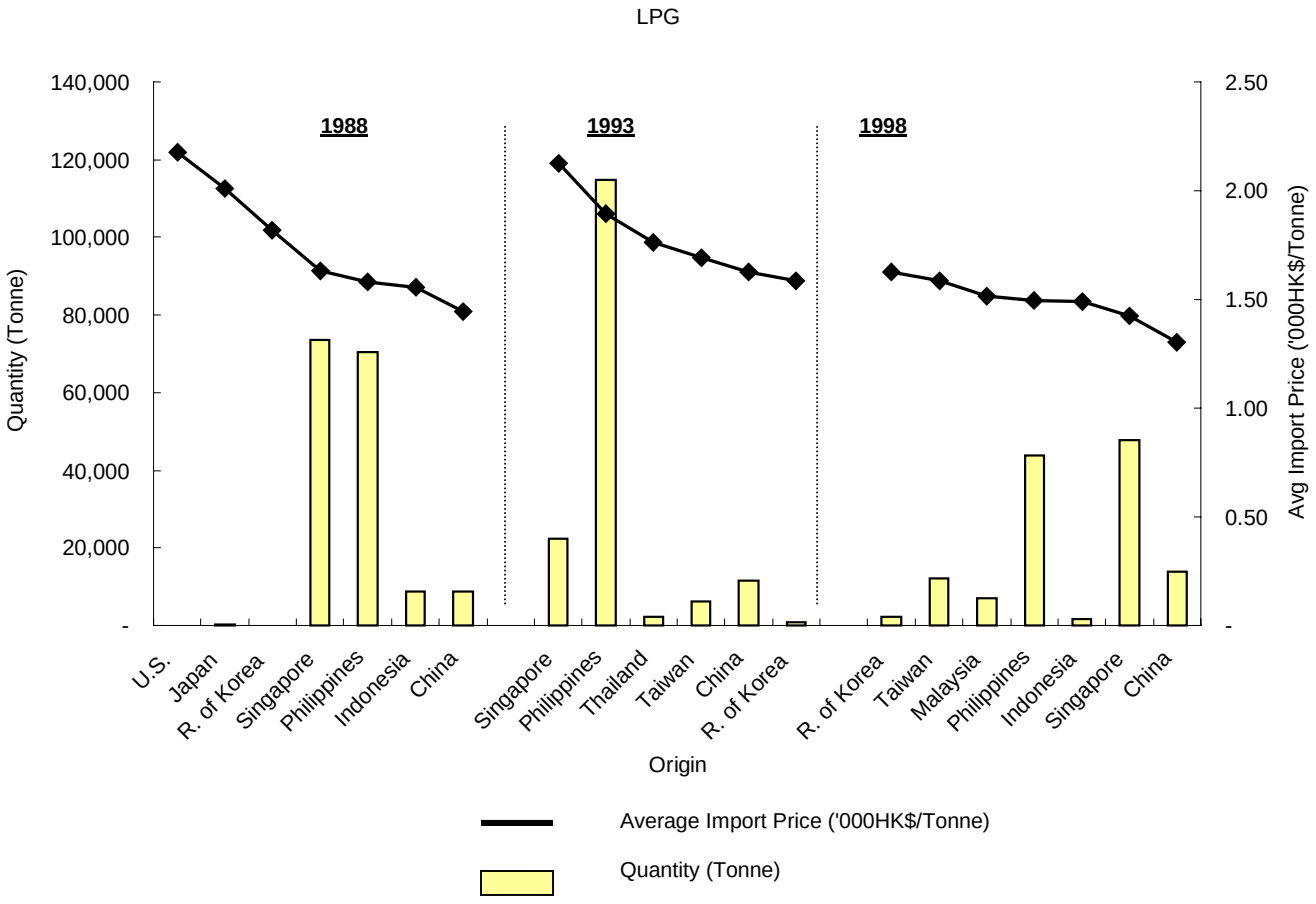
Oil Products	Year	Country of Origin	Quantity (KL)	Value (HK$)
Motor Gasoline (Leaded and unleaded)	1988	Philippines	29,986	35,493,957
		Japan	25	37,622
		Mainland China	47,985	56,903,478
		Singapore	193,677	233,461,247
	1993	Mainland China	14,121	17,829,000
		Singapore	527,372	692,969,000
		Australia	174	679,000
	1998	Thailand	7,411	7,484,000
		Japan	3,168	4,768,000
		Singapore	363,416	382,788,000
Gas/Diesel Oil and Naphtha	1988	Saudi Arabia	42,865	43,371,143
		U.S.	62,541	72,008,889
		Macau	91	123,877
		Philippines	41,323	46,333,215
		R. of Korea	23,597	24,102,659
		Mainland China	535,015	648,636,976
		Singapore	1,032,889	1,214,824,315
		Algeria	16,046	21,907,718
		Australia	24,952	31,257,836
	1993	U.S.	267,416	324,519,000
		Canada	62,072	79,288,000
		Italy	28,925	33,887,000
		Russia	146,586	189,412,000
		Bahrain	64,888	78,790,000
		Saudi Arabia	40,457	49,978,000
		Taiwan	37,710	48,162,000
		R. of Korea	457,051	563,093,000
		Japan	446,426	551,517,000
		Mainland China	688,628	849,510,000
		D.P.R. of Korea	5,710	7,263,000
		Singapore	3,681,536	4,407,254,000
	1998	Russia	87,556	71,288,000
		Saudi Arabia	14,287	16,246,000
		Taiwan	272,008	220,484,000
		Philippines	36,199	27,769,000
		R. of Korea	3,914,131	3,276,076,000
		Thailand	201,689	156,561,000
		Japan	794,520	648,808,000
		Mainland China	37,591	36,074,000
		Malaysia	7,655	6,032,000
		Singapore	5,365,988	4,508,095,000
		Australia	151,626	128,690,000

Oil Products	Year	Country of Origin	Quantity (Tonne)	Value (HK$)
Liquefied Petroleum Gas (LPG)	1988	U.S.	6	13,086
		Indonesia	8,823	13,733,903
		R. of Korea	60	109,137
		Japan	194	390,211
		Philippines	70,731	111,448,678
		Mainland China	8,827	12,729,737
		Singapore	73,448	119,927,504
	1993	Taiwan	6,147	10,412,000
		R. of Korea	762	1,210,000
		Thailand	2,213	3,898,000
		Mainland China	11,528	18,730,000
		Singapore	22,275	47,318,000
		Philippines	114,842	217,463,000
	1998	Taiwan	12,060	19,140,000
		Indonesia	1,674	2,498,000
		R. of Korea	2,291	3,731,000
		Mainland China	13,902	18,103,000
		Malaysia	7,193	10,908,000
		Singapore	47,766	67,929,000
		Philippines	43,833	65,584,000

Appendix 2: Comparison of Average Import Price and Import Quantity



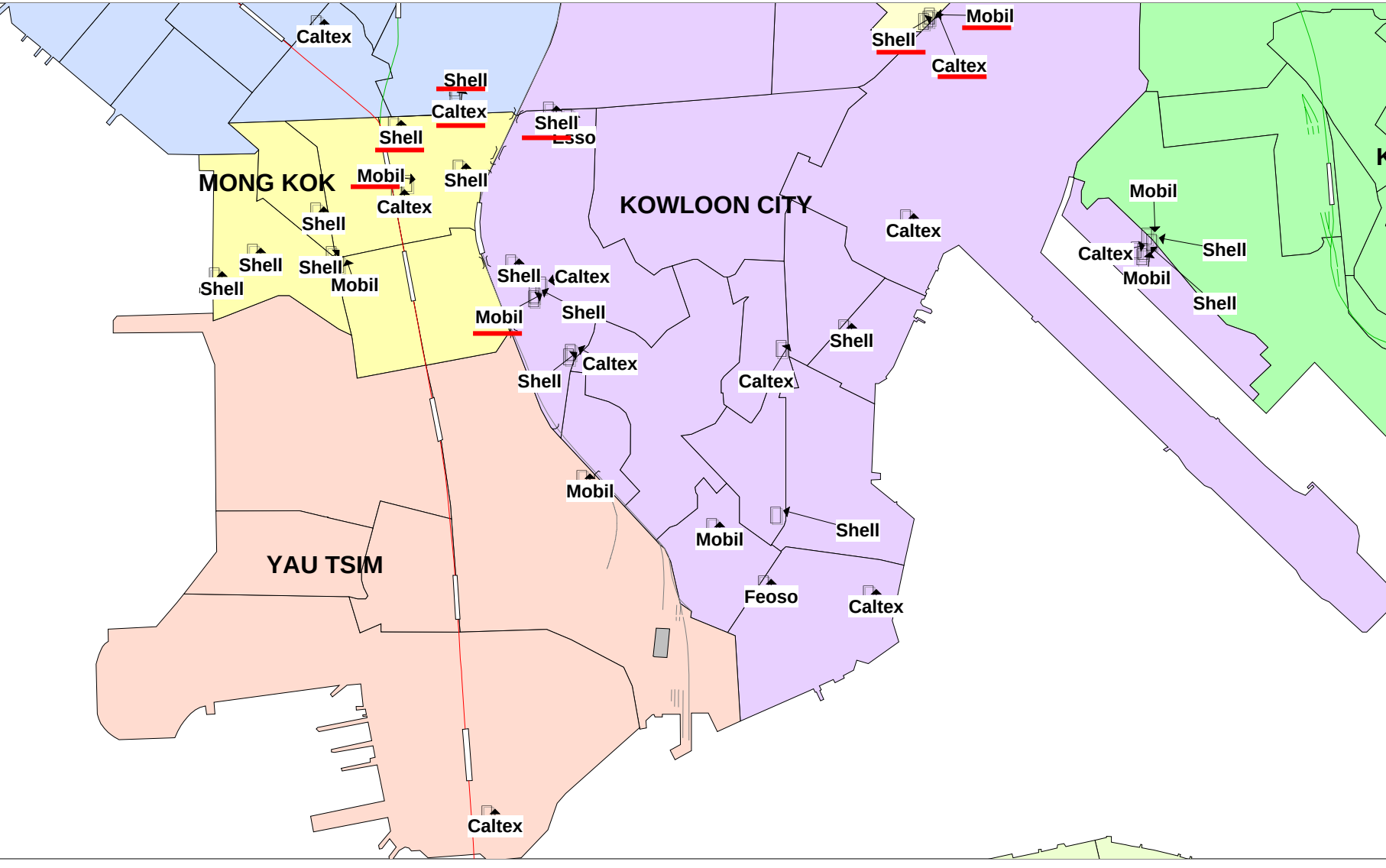



LPG
140,000
120,000
100,000
80,000
60,000
40,000
20,000
-
2.50
2.00
1.50
1.00
0.50
-
Quantity (Tonne)
Avg Import Price ('000HK$/Tonne)
1988
1993
1998
U.S.
Japan
R. of Korea
Singapore
Philippines
Indonesia
China
Singapore
Philippines
Thailand
Taiwan
China
R. of Korea
R. of Korea
Taiwan
Malaysia
Philippines
Indonesia
Singapore
China
Origin
Average Import Price ('000HK$/Tonne)
Quantity (Tonne)

Appendix 3: Petrol Filling Station Location Maps

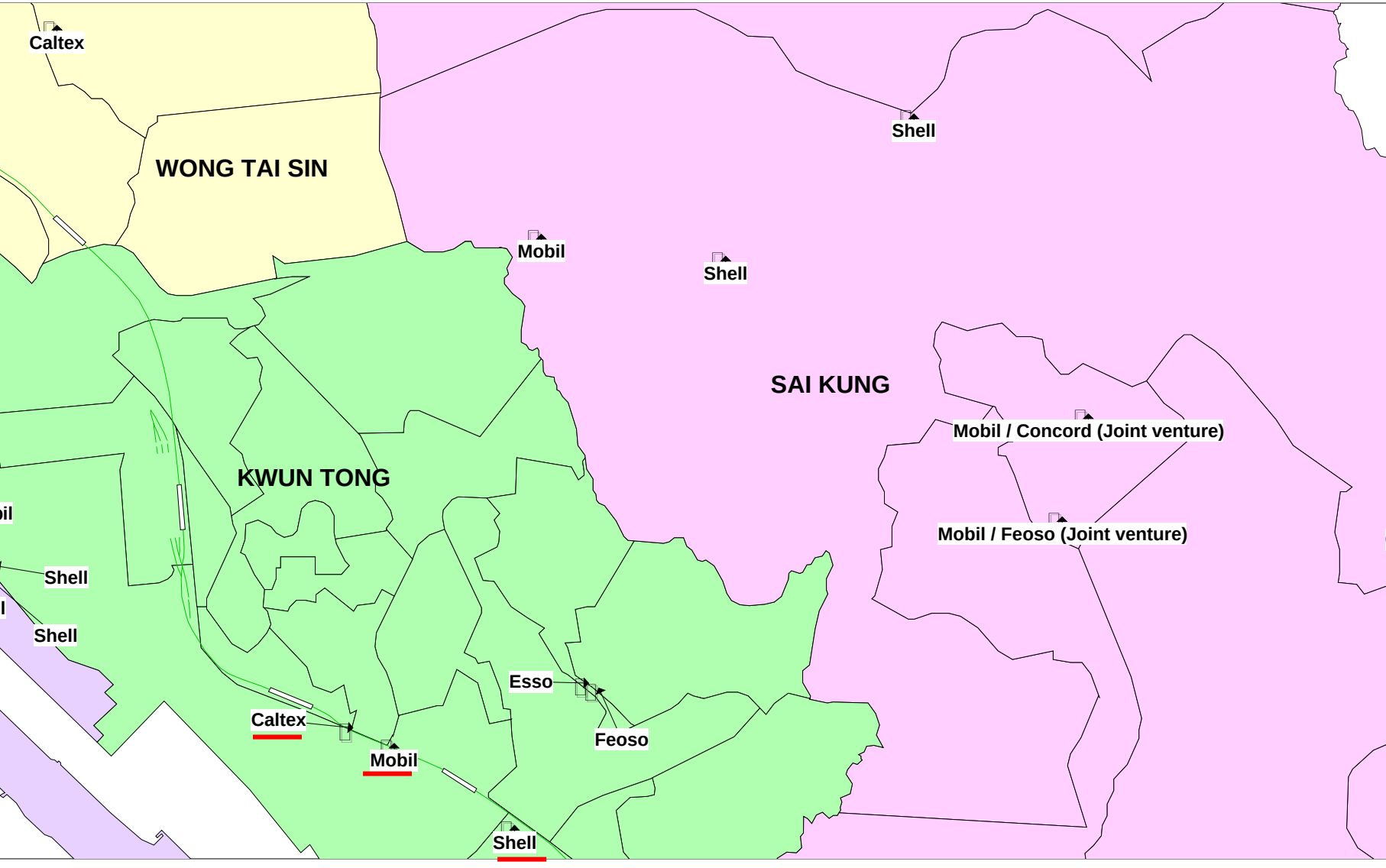
Distribution of petrol filling stations in Hong Kong Island

Distribution of petrol filling stations in Southern Kowloon



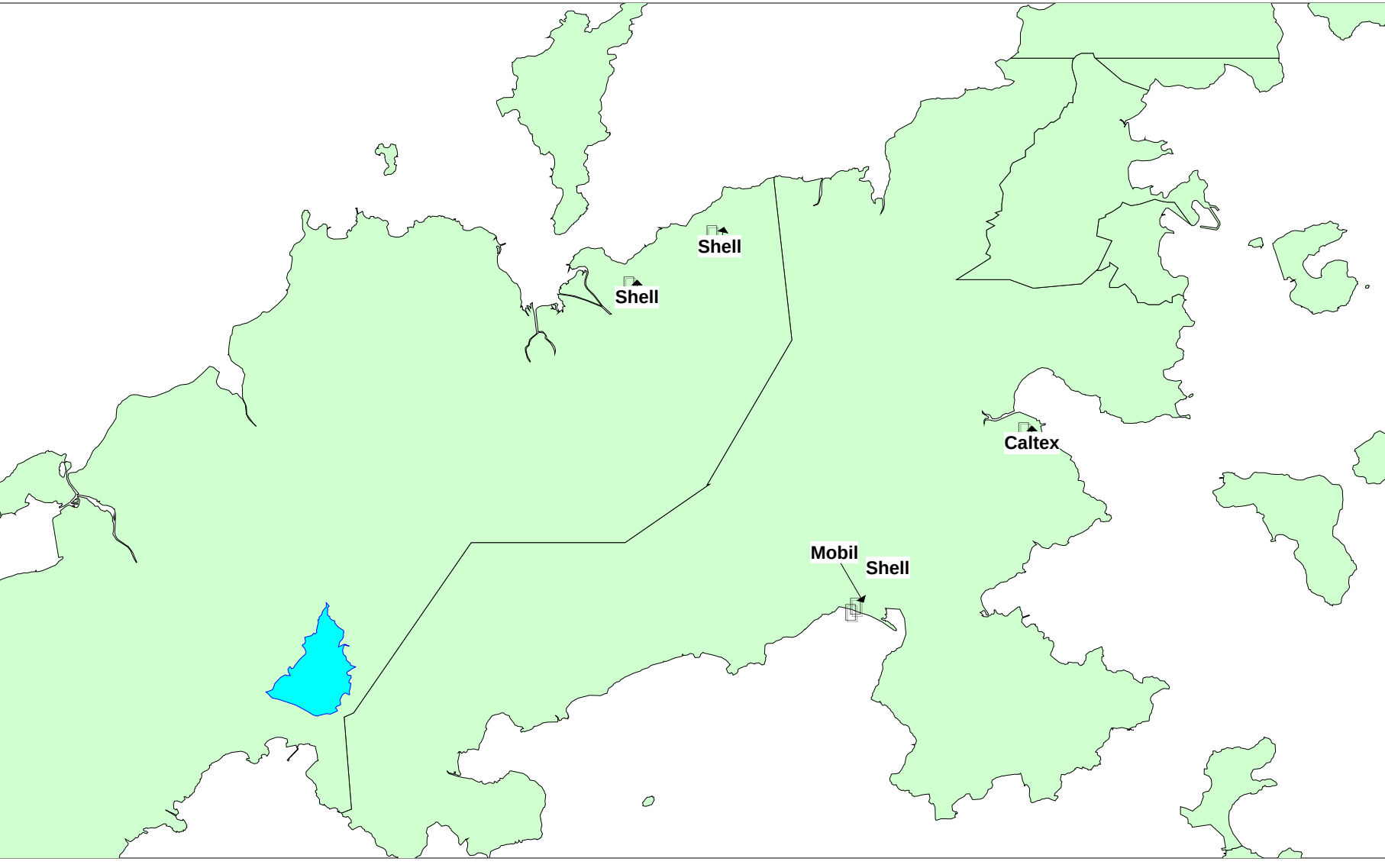
Appendix 3: Petrol Filling Station Location Maps

Distribution of petrol filling stations in Eastern Kowloon and Sai Kung



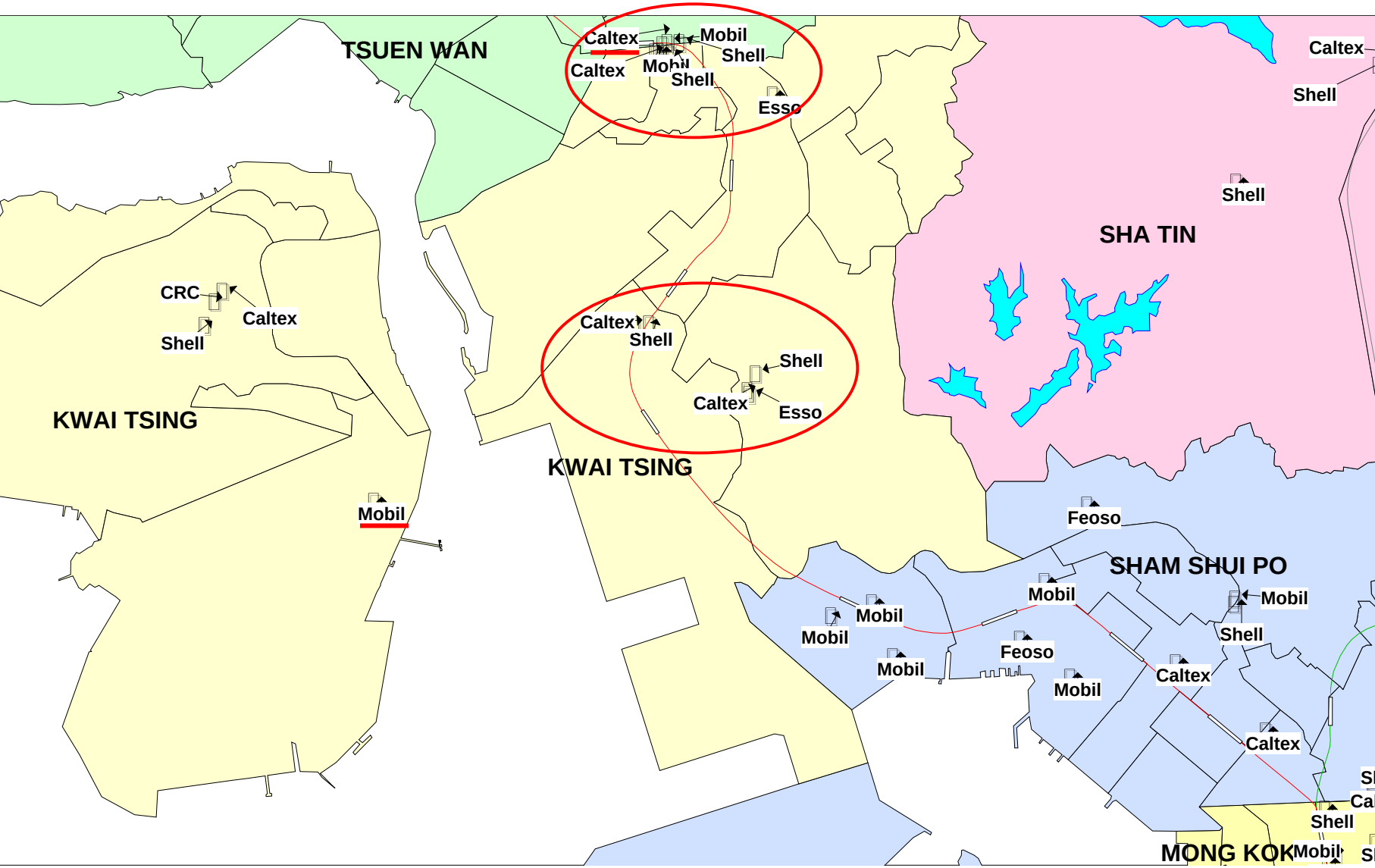
Appendix 3: Petrol Filling Station Location Maps

Distribution of petrol filling stations in Lantau Island



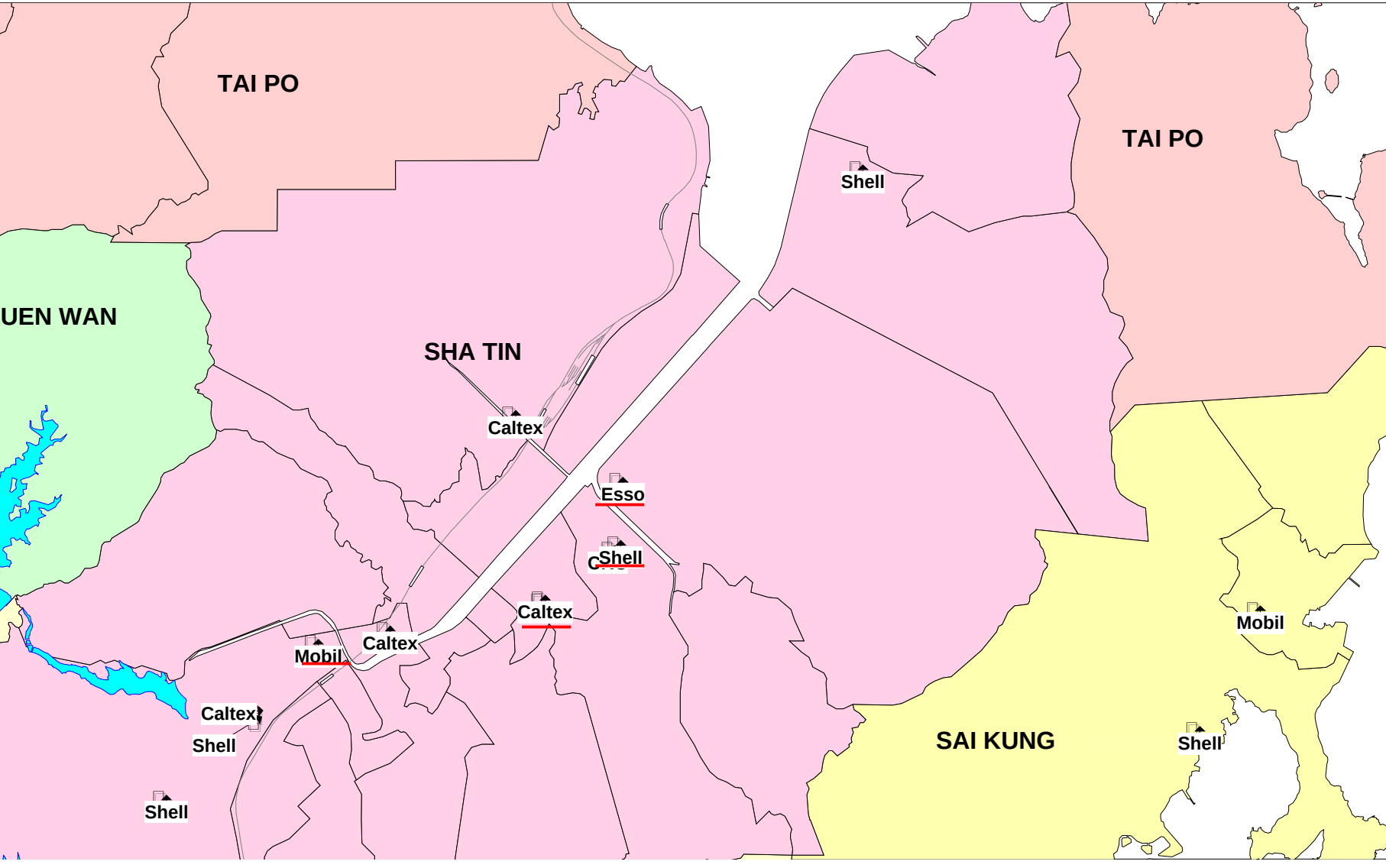
Appendix 3: Petrol Filling Station Location Maps

Distribution of petrol filling stations in Western Kowloon and Shatin



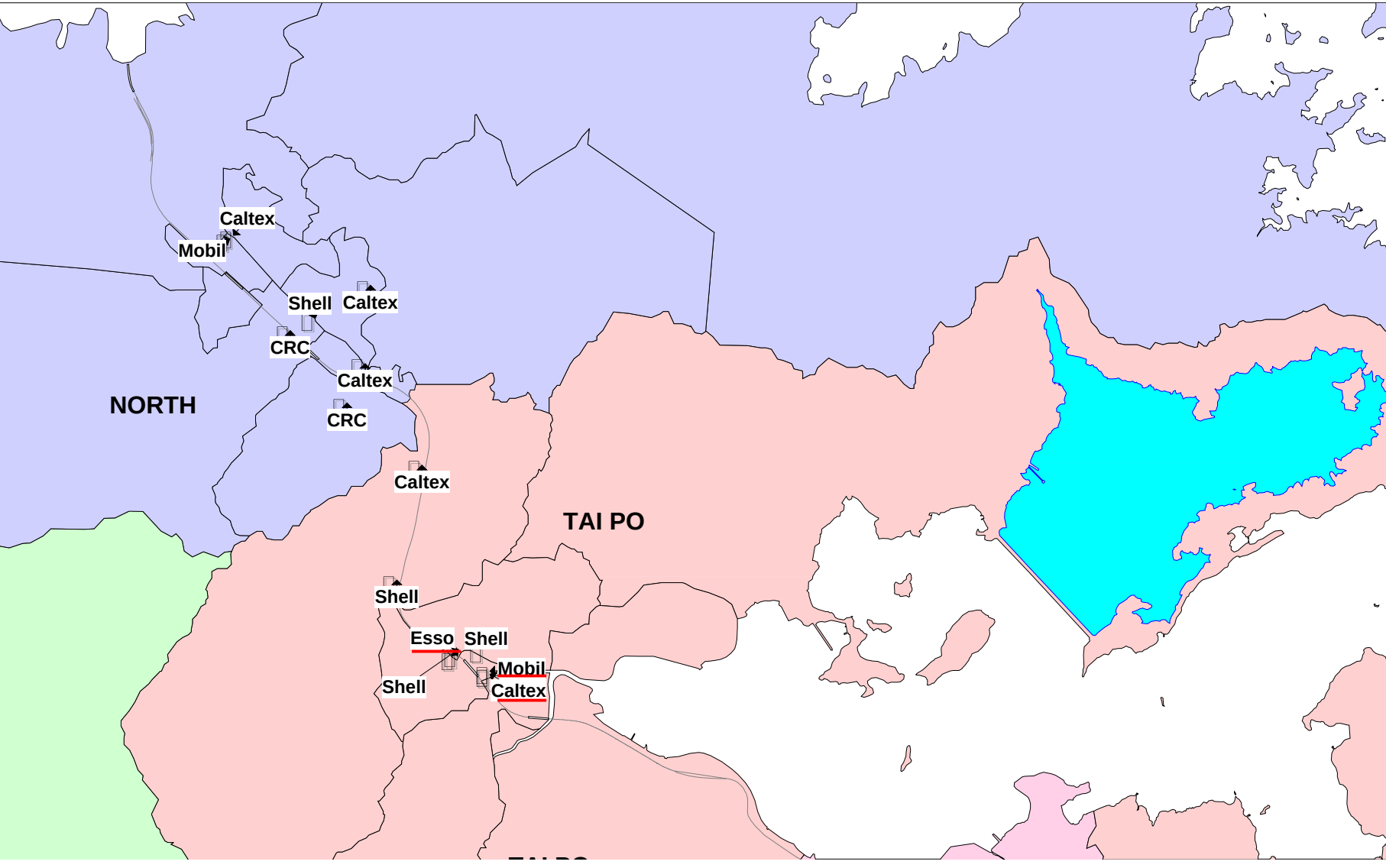
Appendix 3: Petrol Filling Station Location Maps

Distribution of petrol filling stations in Shatin and Northern Sai Kung



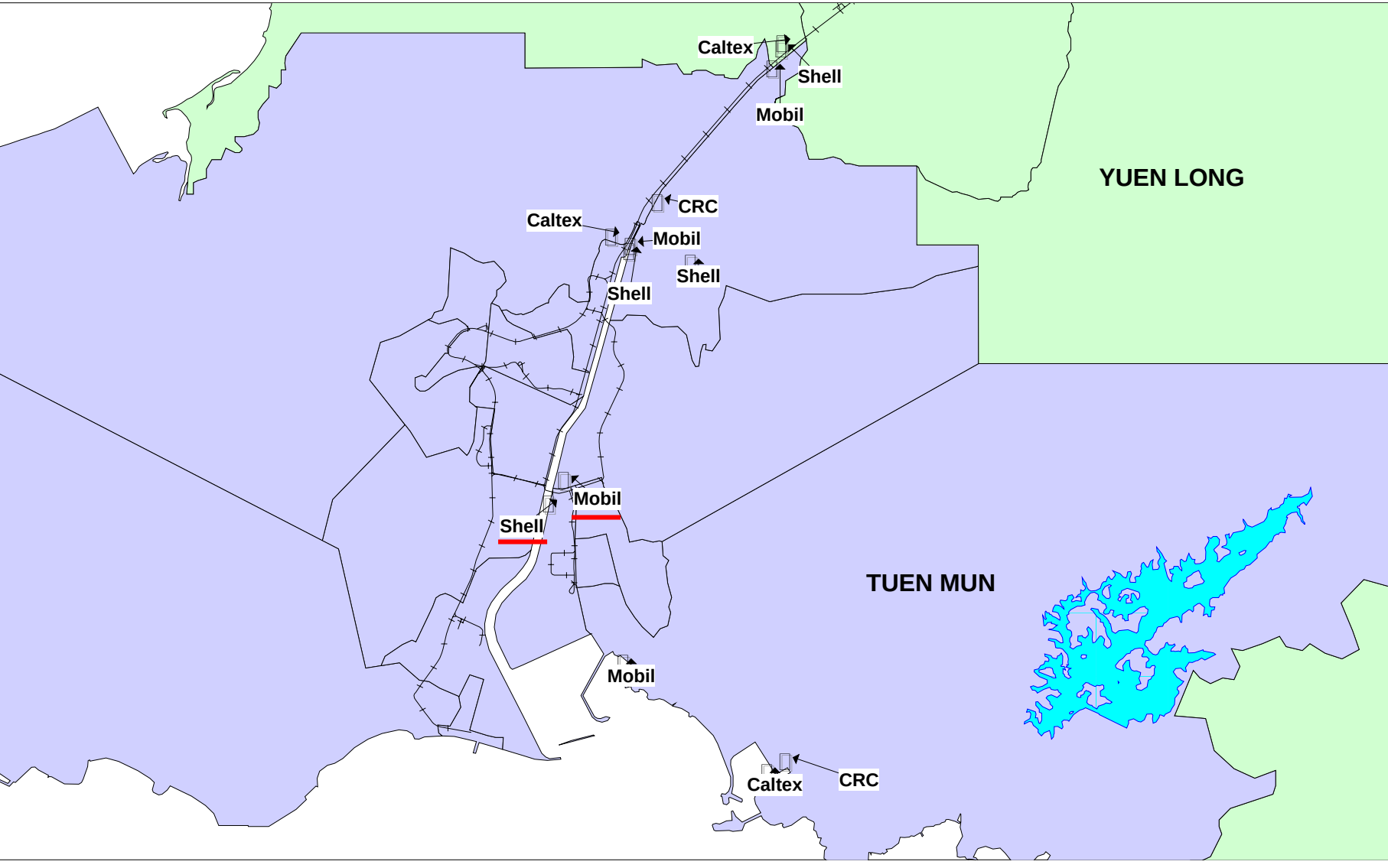
Appendix 3: Petrol Filling Station Location Maps

Distribution of petrol filling stations in Tai Po and Northern District



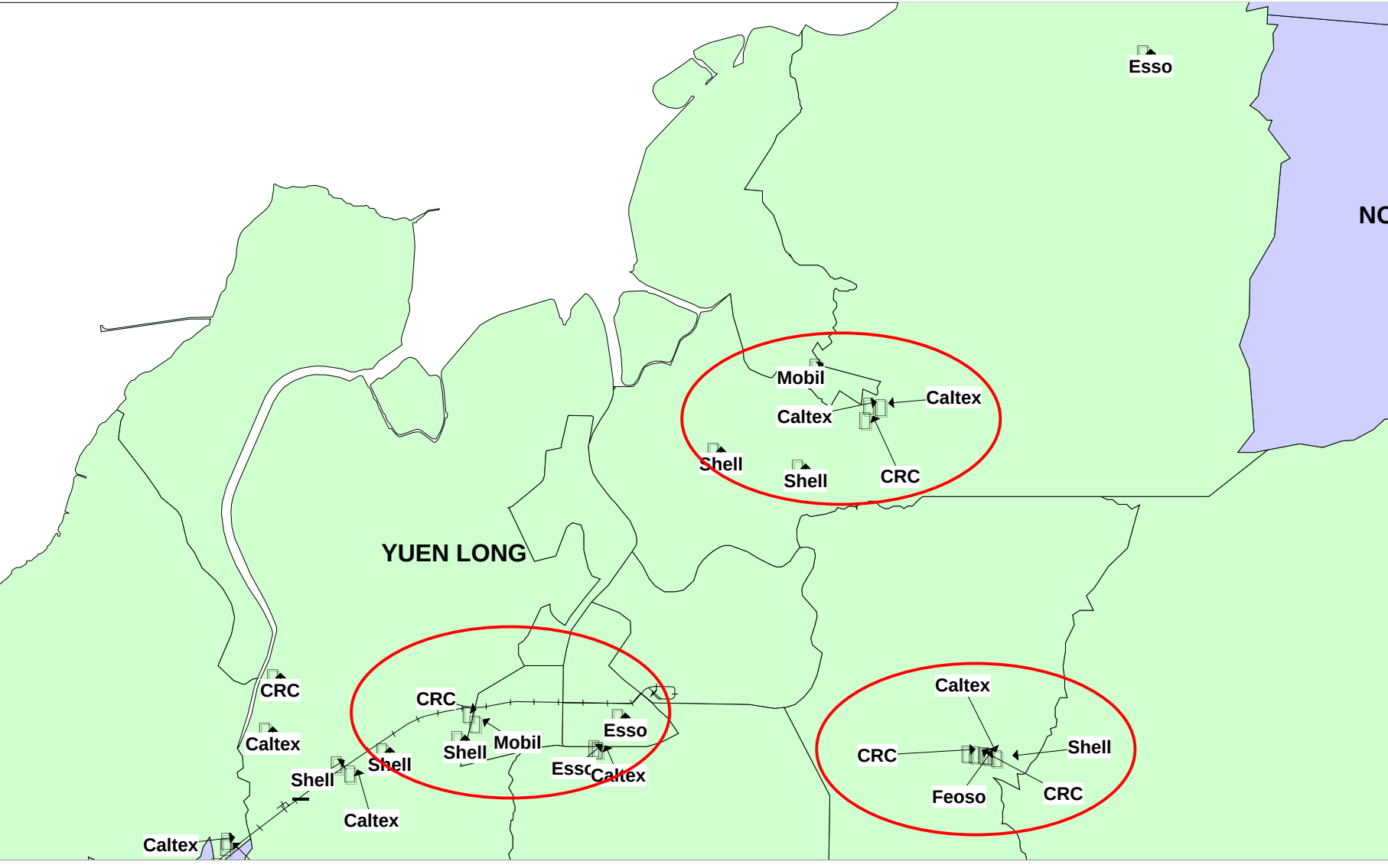
Appendix 3: Petrol Filling Station Location Maps

Distribution of petrol filling stations in Tuen Mun



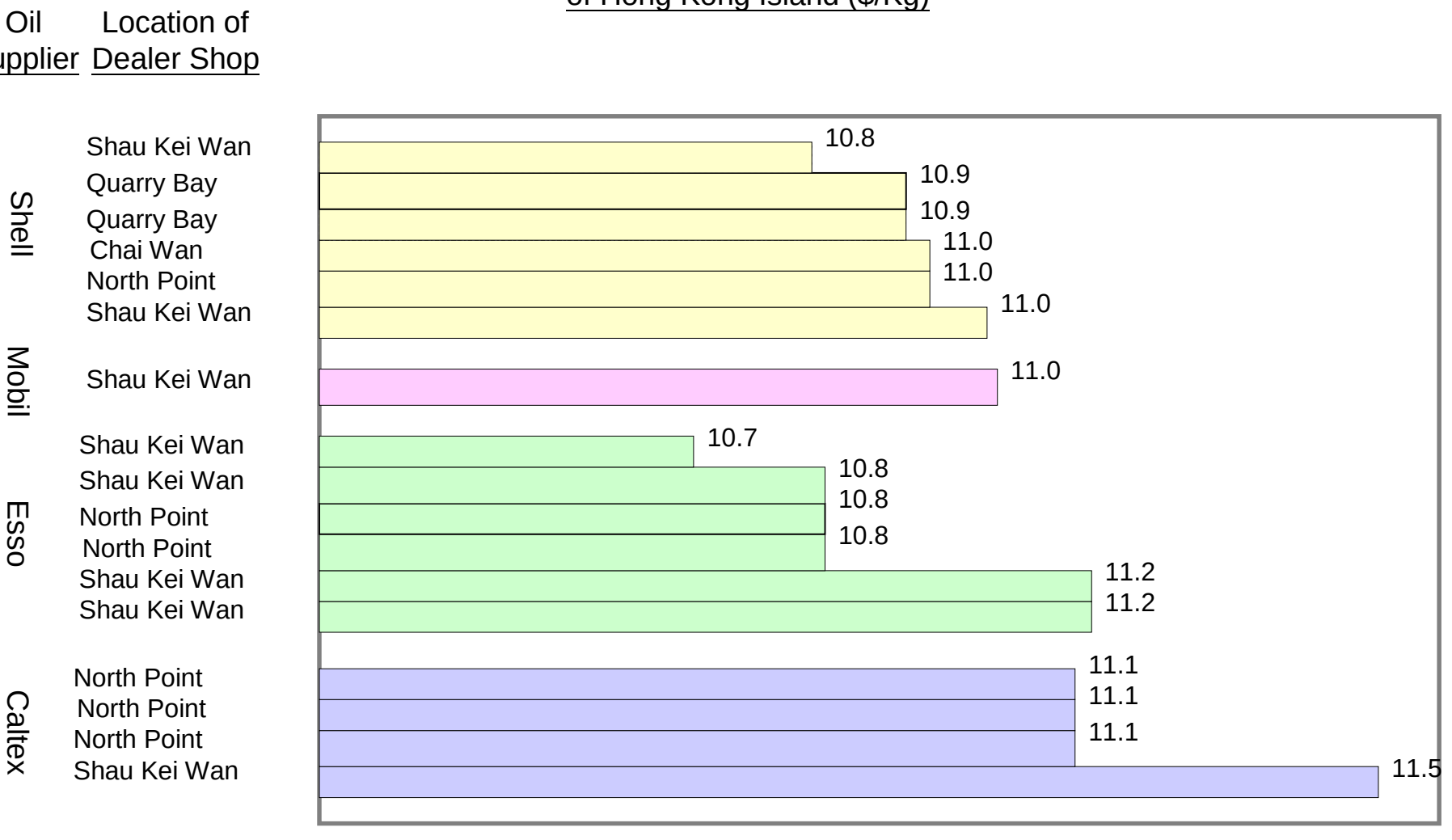
Appendix 3: Petrol Filling Station Location Maps

Distribution of petrol filling stations in Yuen Long

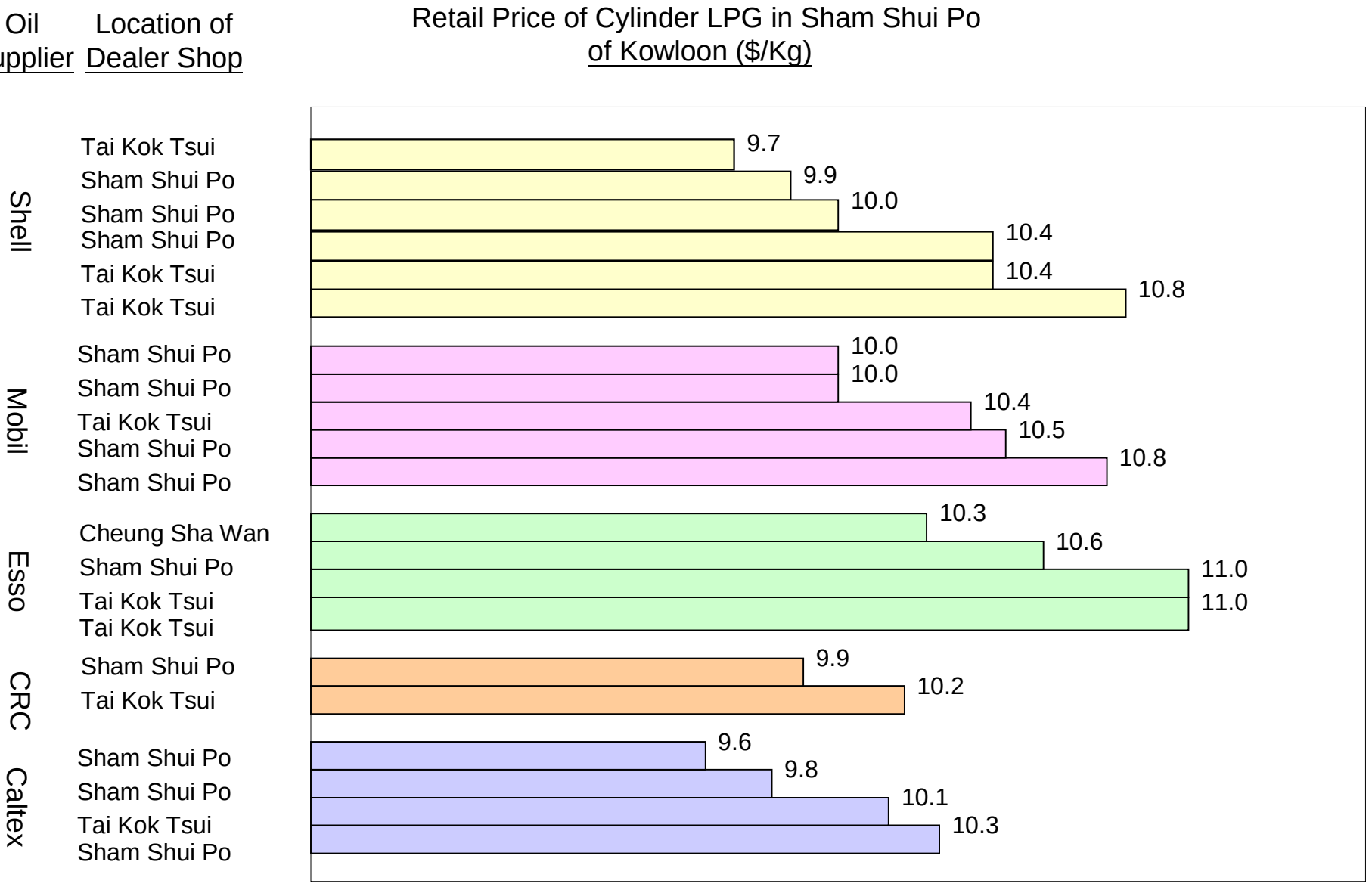


Appendix 4: Survey on the Retail Price of Cylinder LPG

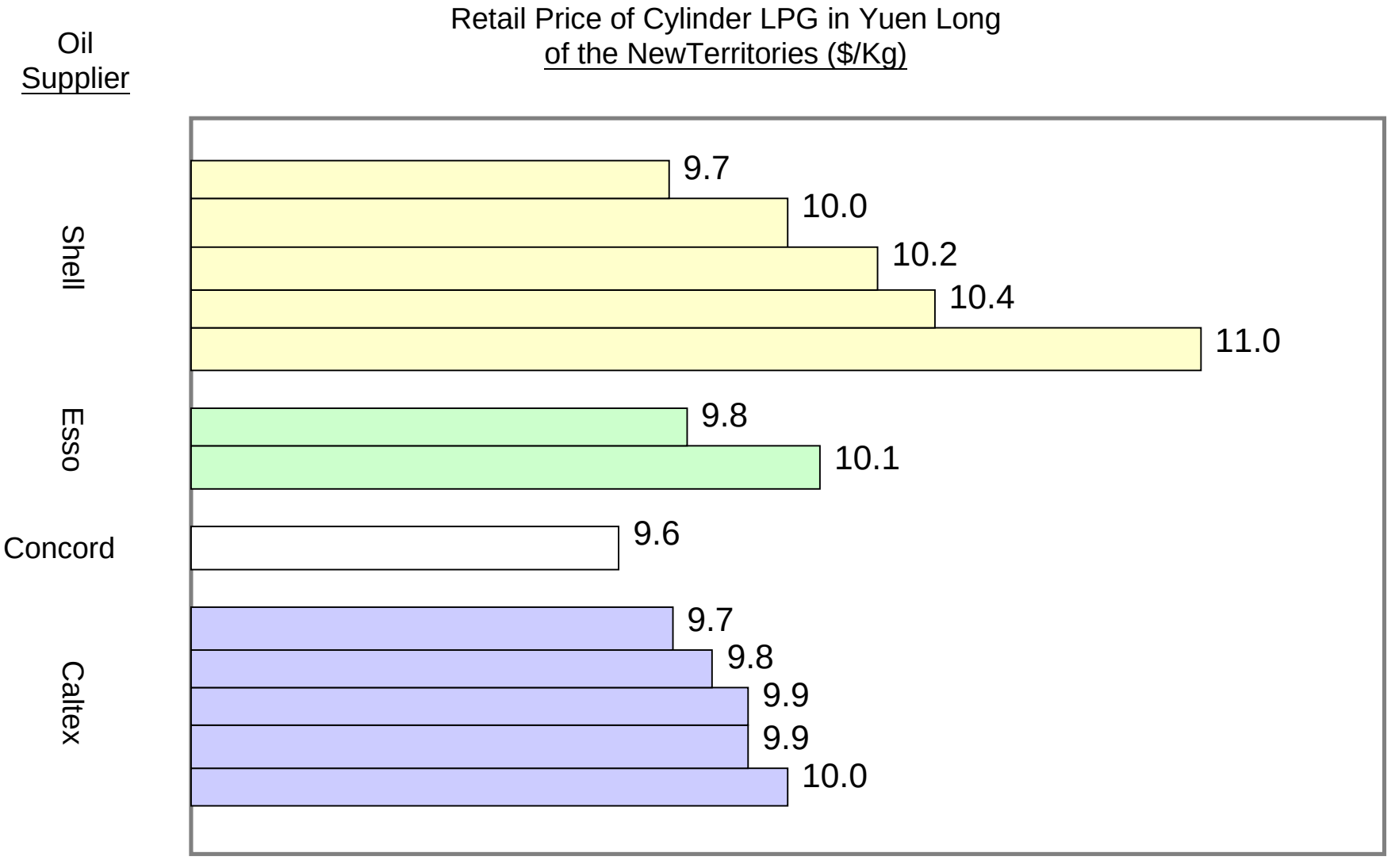
Retail Price of Cylinder LPG in the Eastern District of Hong Kong Island ($/Kg)



Appendix 4: Survey on the Retail Price of Cylinder LPG

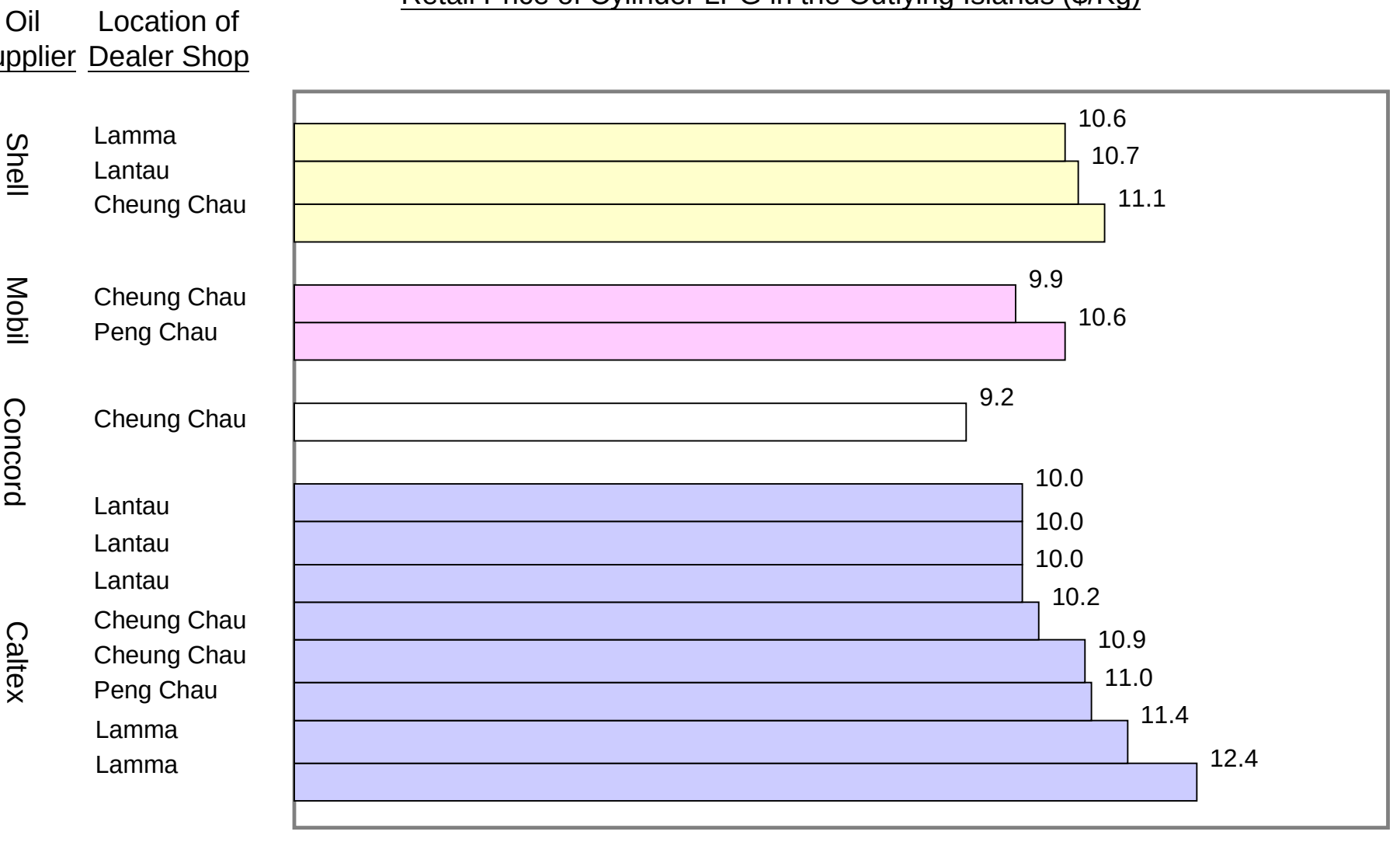


Appendix 4: Survey on the Retail Price of Cylinder LPG



Appendix 4: Survey on the Retail Price of Cylinder LPG

Retail Price of Cylinder LPG in the Outlying Islands ($/Kg)



為能源市場注入動力

汽油、柴油及石油氣市場研究報告
結論及建議

為能源市場注入動力

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前言

消費者委員會一向關注香港石油產品的營銷及其對消費者的影響。一九九八年十一月，立法會議員質詢汽油、柴油及石油氣的零售價格是否合理和市場是否存在競爭。就此，消委會向立法會經濟事務小組提交報告，闡述當時的分析。

九八年末，消委會決定在適當時間及人力資源許可的情況下，進行詳盡的研究，對石油產品市場的營運情況提供清晰的資料以供討論，並提出建議，提高市場的競爭和效率。

消委會的研究是一個起點，讓政府有關決策局及部門各自就其職能繼續研究如何促進市場競爭。正好配合政府九八年五月發表的「競爭政策綱領」，按個別行業的需要而採取措施。政策綱領說明政府會透過競爭來促進經濟效益和自由貿易。所用的方法是：

(甲) 找出政府和其他公營機構對每行業所設定的障礙和限制，並確定它們會否限制進入市場的機會和市場內競逐的機會、有損經濟效益和不利自由貿易，使香港的整體利益受損。若然，便要自發性地或透過行政、立法等措施予以消除；

(乙) 透過適當的行政、立法等措施，在政府和公營部門內，就每個行業推行促進競爭的措施。

研究的範圍如下：

(甲) 石油產品市場的趨勢及結構

(乙) 政府的規例

(丙) 石油產品供應以至零售的不同層面

(丁) 各石油產品的市場競爭情況

(戊) 政府及行業應考慮的建議

在九八年十一月的立法會小組上，經濟局承諾分析石油產品的成本及價格，以評定其零售價是否合理。經濟局根據石油公司提供的保密資料，於九九年四月廿六日向立法會提交了報告。消委會並沒有獲得這些保密資料，因此，本研究有關的成本及價格部份還需依賴經濟局報告內的資料。

分析三類產品：汽車用的無鉛汽油、柴油及家用石油氣(包括樽裝及管道石油氣)，資料來自不同來源。本研究得各方面的協助提供資料。以下機構提供的協助，尤為重要，謹此致謝：

工業署

丸紅香港有限公司

地政總署

東方石油有限公司

協和石油（香港）有限公司

政府統計處

英國石油有限公司

香港加德士有限公司

香港美孚石油有限公司

香港房屋委員會

香港海關

香港蜆殼有限公司

埃索石油香港有限公司

規劃署

規劃環境地政局

深圳市消委者委員會

華潤油站有限公司

運輸署

經濟局

機電工程署

(以上依筆劃序排列)

本報告第四章內有關汽油站的經營模式是由謝天錫先生撰寫，謝先生為石油公司前行政人員。消委會謹對謝先生協助提供這些資料致謝。此外，消委會亦對多位商界人士及經濟專家就研究提供寶貴的意見表示謝意。

消費者委員會
1999 年 12 月

結論及建議

1. 消委會研究車用汽油、柴油、及石油氣的市場運作，作為起點，讓政府有關決策局及部門就各自的職能，繼續研究如何促進市場競爭，並指出市場不完善之處讓行業跟進。這是配合九八年五月政府發表的「競爭政策綱領」，按個別行業的需要而採取因應措施。研究報告提供了業內資料，希望對有關政府部門的工作有所幫助。

以下為報告摘要。

燃料市場整體狀況

2. 過往市民燒柴、用火水、少數富裕人士用煤氣。時至今日，能源及燃料市場發展到電力供應覆蓋全港、有樽裝石油氣、管道氣體和汽油等。石油產品方面政府一向集中注意安全問題(因而訂定安全規例規管)和確保其供應穩定。這兩方面當然重要，但同樣重要的是要使石油產品的市場具有競爭力。透過競爭，不但可以降低營商的成本，同時也可減少消費者的負擔。

寡頭市場

3. 研究顯示，石油產品供應市場高度集中（9.18 - 9.24 段），且大部分是縱向結合（9.29 - 9.30 段）。其中三大石油公司佔去管道及批發樽裝石油氣市場的七成、汽油市場的九成和柴油市場的八成。市場的特質是總需求相對細小、增長有限（1.26 段）和入市有一定的障礙 (由於土地成本高昂（9.31 - 9.32 段），需要在儲存和零售方面達致規模經濟)。在這形勢下，該三類石油產品的市場均具寡頭市場的特質。理論上，這類市場結構結果可能導致串謀或默契合作。串謀會構成卡特爾，這情況在有法例監管的地方定將受到審查。然而，合作的行為亦可以基於默契，即是說市場上只有數家公司，它們知道有需要彼此互相依靠來維持共存，所以為大家利益著想，不宜持續割價至邊際成本。無論如何，串謀或默契合作其中一個特徵是價格劃一，而且維持在競爭水平之上（9.3 - 9.8 段）。

4. 在默契合作 －即避開全面價格競爭－ 的情況下，這些公司仍會進行有限度的價格競爭，這祇限於特定的地區進行、或以一些推銷計劃配合，此外亦把產品以不同形式銷售、以及進行其他非價錢的競爭等。這現象或可視為市場上卡特爾不存在，**但即使不存在卡特爾，亦不表示**市場存在有效競爭（9.25 - 9.28 段）。

5. 鑑於可蒐集的數據和資料的限制，消委會未發現有明顯串謀的直接証據。同時，特別在過去兩、三年間，可能由於經濟衰退（7.8 及 7.15 段），某些地區存在價格競爭和非價格競爭。不過，在高度的市場集中的情況，這類競爭方式會否在未來持續仍然是未知之數。職能所限（消委會沒有權獲取商業上敏感的資料）消委會未能評估市場主要經營者是否可以賺取不正常利潤及其水平（6.18 - 6.26 段），也未能評估各有關方面因此獲得的利益或受到的損失。無論如何，消委會對於市場缺乏了真正價格競爭、進入市場出現障礙和缺乏市場競爭監管的問題，十分關注（9.40 - 9.48 段）。

6. 由於無權獲取商業上敏感的資料，消委會祇可對行業作客觀的觀察，及從改善市場的競爭的角度提出建議。當然，經進一步的研究後，報告中的觀察及建議是可以加以修改及再加完善。無論如何，這裡的建議,相信是大多數的監管公平競爭的機構，都會認同的。

7. 雖然價格比較未必是審視利潤是否超乎合理的最佳指標，但本地石油產品的零售價在扣除稅項後仍比很多國家的為高，尤其是與區內的國家相比，這值得關注(6.36 至 6.44 段) 。石油公司給予的理由是，除了高昂的營運成本(包括地價)外，香港汽油的辛烷值較高，因此價格亦較高。要是如此，就有人會問汽油的辛烷值對價格有甚麼程度的影響、香港消費者又是否願意付出較高價格來購買這種高質素的產品。無論實際的市場結構是怎樣，消委會認為應引進一些措施，增強其競爭力。

8. 對商品例如石油產品徵收的稅項，有很多政策上的考慮，稅項一則可以為政府提供收入，以支持行政和發展計劃的開支，二則有助把一般稅項維持於低的水平。不過無可否認，汽車用燃油的稅項佔零售價的比重相當大。高的稅率和徵收形式（以每公升或百分率計算）均對其營銷有影響 (2.9 和 2.10 段)。比方說，燃油稅高，減價與整體零售價格相比佔相當小的部份，可能抑制了零售商以減價來吸引顧客的意念。

未來的發展

9. 三類石油產品的長遠需求增長各有差異。無鉛汽油的潛在需求預期有限，柴油也因政府的干預，漸以石油氣取代，至少在合法銷售層面會面臨減縮。使用石油氣作為汽車燃料將會增加，不過樽裝石油氣作為熱水和煮食燃料的需求將會減少。管道石油氣要面對煤氣公司的強力競爭、以及由於管道的基建工程受到各種限制、儲存庫的土地價格高昂而引致不明朗的前景。

10. 第三章圖 3.1 和 3.2 顯示了汽車燃料及石油氣市場經營者的數目及行業集中的程度。此外又顯示汽車燃料或石油氣從進口到批發或零售方面，經營者縱向結合的情況。

汽車燃料零售

11. 政府沒有指定油站必須落在政府標投用地，但標投政府圈定的油站是打入零售市場的最方便途徑。現存的油站在地理環境上佔有優勢，況且租約到期續約的時候，政府又沒有檢討與原租用者續訂租約，會否妨礙市場競爭。此外，新油站招標，亦缺乏監察競爭的考慮，以審視同一地區的油站擁有權是否出現過度集中的情況。要界定什麼是不合理的市場集中可能並非易事。但是，分析的起點是假設競爭存在的必須條件是超過一個經營者，越少經營者則越難達到全面的競爭（2.29 段）。

12. 本研究發現在某些地區內，有些油站看似存在競爭，但實在的競爭程度則難以斷定，原因在於油站的供應安排。舉例來說，埃索石油香港有限公司（簡稱埃索）擁有一油站在觀塘，而其貼鄰就是東方石油有限公司（簡稱東方石油）的油站，可是埃索是東方石油的供應商；同樣地，位於將軍澳的相連油站，其一有美孚與協和商標，另一有東方石油和美孚商標，兩油站都是與美孚合資經營，前者與協和合資，而後者與東方石油合資，疑問是這些處於同一地區的相連油站之間究竟有沒有競爭 (2.27 段)。

13. 因此，明顯地，地區市場，以及消費者可以在這些市場內選擇不同的石油公司的產品和服務，是推進香港石油產品市場競爭的重要因素。政府在考慮選取油站地點讓公眾投標以致誰者可勝出的過程中，宜顧及這一要點 (7.14 段)。政府現正安排增加石油氣添加站，以方便使用石油氣的汽車。政府應趁此機會，考慮引入一些促進競爭的措施。

14. 不同油站的營銷安排出現雷同的現象，具體情況是：

(甲) 各油站燃料售價顯然相同；
(乙) 主要收入來自燃料的銷售；
(丙) 絕少甚或沒有機會提供多樣化產品；
(丁) 零售商提供的汽車燃料品種分別不大(第五章)。

15. 競爭最大的，似乎是產品成份及贈品的變化，例如，附特殊添加劑的特級燃油或加送贈品(7.15 及 7.16 段)。雖然油站是透過為長期顧客提供優惠折扣，進行價格競爭，看來日後的競爭似乎是以優惠推廣為主(7.28 段)。值得注意的是，這類入油的標價折扣其實比表面看來還要多。同時，單位成本中有相當部分是用於產品推廣，若沒有給顧客這類折扣優惠，石油公司可保留作利潤(7.31 及 7.32 段，及圖 7.1)。同時值得注意的是，香港的油站並沒設有價格顯示板，使消費者一目了然，實質上剝奪了消費者憑資料作選擇的權利，也顯示石油公司並非以價格競爭為主要的市場策略(7.18-7.24 段)。

16. 消委會歡迎政府加快設置石油氣添加站的政策，以配合社會大眾期望。消委會理解政府制定合適的政策，殊非簡單，原因是因應政府的新政策、新的規定，市場(對石油氣)的需求有所改變，政府要確保有足夠的石油氣供應。消委會明白政府對新的石油氣添加站，不收取地價予以鼓勵是需要的，亦可確保「零」地價的利益可回饋消費者。但是以指數機制釐定車用石油汽最終市場零售價的建議，消委會有保留意見，原因是市場的本質可容許競爭，就毋須加入指數機制來決定予消費者的最終售價。採用指數或其他價格管制機制的前題，是市場存有自然壟斷或不全面競爭。整體上，政府使用這個機制需要小心，因為擴大使用長遠來說可能造就跨單位補貼及操控的機會，最終會導致欲加入市場的經營者望而卻步，或打擊現有經營者的競爭力，因為他們未能享有「零」地價優惠 (5.34-5.46 段)。

17. 若要獨立於燃油入口商的經營者進行有效競爭，他們就要擁有自己的儲存庫或可以透過競爭性強的批發市場採購燃油。現時香港地小和價高的情況下，要設置足夠的儲存設施的投資不菲。最好的辦法是向現有的石油公司租用倉庫。現有的石油公司均擁他們自己的倉庫，和各自停泊輸送的設施，高昂的投資正會產生壓力，令其盡量利用設施，換句話說，石油公司可出租倉庫等設施給新經營者以減低其支出和成本。

石油氣

18. 樽裝石油氣批發市場(即由石油公司供應予分銷商)的特點是劃一定價，以及石油公司予個別分銷商的回扣，這也反映了寡頭市場的特徵(5.27 段)。透過樽裝接駁器的標準化、改善分銷商供應來源的流動性，可望改善競爭情況。

19. 基於設備和經營成本高、維持經營能力需有足夠的銷售量以支持營運成本、加上市場需求逐漸減縮，在樽裝石油氣零售市場出現新加入的競爭者的可能性看來很低

(4.17-4.26 段)。消委會調查樽裝石油氣的價格，發現在各分銷商之間的零售層面似乎存在着價格競爭，當然，消費者在選擇時，服務質素也是主要的決定因素。鑑於各分銷商並無任何明顯的推廣活動，消費者宜事先格價。

20. 管道石油氣過往受到規例限制，妨礙了市場發展。若石油氣進一步加強其安全，引用共同輸送網的安排，推而廣之，可作為日後進一步引進全港氣體燃料共同輸送系統的參考指標。在全港的共同輸送系統(最有可能是輸送天然氣)未成事實之前，可以在一些地區試辦。石油氣共同輸送網有龐大潛力增加車用石油氣供應站的數目 (2.34-2.39 段，5.20 段和 5.21 段)。

政府規例及監察

21. 政府一九九八年五月發表的「競爭政策綱領」指出，政府為透過競爭而促進經濟效益和自由貿易的方法是：

(甲) 找出政府和其他公營機構對每個行業所設的障礙和限制，並確定它們會否限制進入市場的機會和市場內競逐的機會、有損經濟效益和不利自由貿易，使香港的整體利益受損。若然，便要自發性地或透過行政、立法等措施予以消除；

(乙) 透過適當的行政、立法等措施，在政府和公營部門內，就每個行業推行促進競爭的措施。

22. 本報告研究的三類石油產品不過是能源供應的一部分，全港能源市場也包括電力、煤氣、公共汽車用柴油、及航運和飛機用油等。政府訂立的規例在很大程度上影響到這些產品的供應和使用，但這些規例往往出於安全、土地使用、環境保護及求穩定供應等考慮。以上種種分別由不同政府部門負責，有一定的協調需要。若由一個政府機構全面統籌有關能源供應和發展的事宜，運作更為順暢 (一如旅遊事務專員的職能)。這機構應可為能源供應行業釐定長遠策略，以應付香港未來在能源方面的需求。這機構應有足夠的資源開展工作。

建議

23. 根據政府的「競爭政策綱領」、為提倡競爭和加強消費者的權益保障，消委會提出下列三方面的建議：

(甲) 鼓勵新經營者入市：改善零售油站與批發儲存設備層面的運作，使新經營者有機會入市。

(乙) 促進價格競爭：改變零售的競爭環境、向消費者提供更多資料。

(丙) 改善政府監察：制訂長遠策略、促進各監管及政策行動之間的協調。

鼓勵新經營者入市

建議 1：免除入口牌照及供應合約限制

24. 現時政府對油站投標者的資格存在限制，規定投標者需要持有供應碳氫油的牌照或從持牌供應商取得供油保証。這項限制似乎有利於現有的石油公司，因為新經營者往往缺乏批發儲存設施。需要新經營者事先獲得石油公司供油保証才可以投標，但他們最終又要和石油公司對壘競投油站。

25. 政府這種條款的目的，可能是要確保投標者有誠意經營標投的油站。若是如此，應有其他途徑達到這目的。例如可以在租約加上指定條款。無論如何，政府在招標時，宜免除入口牌照及供應合約的限制(2.21 段)。

建議 2：審察油站擁有權

26. 明顯地，地區市場，以及消費者可以在這些市場內選擇不同的石油公司的產品和服務，是推進香港石油產品市場競爭的重要因素。市場上有超過一個經營者方能有競爭，反之，經營者數目越少，市場上越難有完全競爭，消委會認為政府在批核由同一間石油公司經營油站的經營權和續訂租約的時候，須防備既定範圍內市場變得過分集中(同地區內，由同一石油公司和其聯營公司獨佔油站市場)。 因此政府可在油站的標書及租約上加上條款。例如，不容許或限制某類人士標投或實益持有油站的經營權，保障市場競爭、租約應有條款禁止轉讓以確保市場上有足夠競爭 (2.26-2.30 段，5.37-5.38 段，5.41 及 7.14 段)。

建議 3：靈活利用油站用地

27. 新的經營者進入市場可以平衡石油產品市場高度縱向結合的情況(即是入口、批發及零售均由同一公司統辦)。為鼓勵新入市者，消委會建議可以廣為宣傳以下兩點：

(甲) 政府的油站用地，雖然要符合政府的指引和限制，但仍可靈活處理，以同時發展混合零售和加油服務。

(乙) 宜讓有意經營油站的人士知道，油站不一定限於規劃署和地政總署的指定用地，任何人遇有適當地點亦可申請改變土地用途，建設油站。

建議 4：保証充足的儲存設備

28. 任何新經營者要進入香港的市場，是沒有限制的（情況與政府批出指定數目的固定網絡牌照不同），但石油產品市場牽涉的儲存庫及基本設施成本不菲，這龐大的投資可構成入市限制。研究發現石油公司各自擁有自己的儲油庫，亦有剩餘的倉位，因而可能願意為新經營者提供儲油倉位，以彌補早已投入的建設成本。因此，石油公司各自分設倉庫設施，有利於鼓勵新經營者提供零售服務，因為他們可以租用現有石油公司的設施 (3.29 段)。若有朝一日業內安排共用倉庫，政府須考慮應否另設新的架構，或採取行政或立法措施，使新經營者或現租用倉庫的零售商有足夠的倉庫儲油，進行有效競爭。

促進價格競爭

建議 5：確保市場競爭

29. 香港尚未設立公平競爭委員會，防止合謀操縱市場的行為。政府可在油站租約內加上條款，不容此類行為出現。消委會最希望香港設立公平競爭委員會，處理這些問題，在目前的情況下，只能期望負責的政策局有足夠訓練和能力承擔這任務。

建議 6：在油站上設價格顯示板

30. 消委會建議所有油站設置價格顯示板，使消費者一目了然，更易於監察價格的動態。政府可在批核油站租約時，附加這項規定(7.24 段)，亦鼓勵現有油站自動設置顯示板。

建議 7：石油氣共同輸送系統

31. 在大型屋邨發展石油氣共同輸送管道的安排應予鼓勵，此舉可促進競爭，同時作為日後發展全面的氣體燃料共同輸送網的指標。現有大型屋邨方面，特別是公共屋邨，宜考慮採用共同輸送系統的安排，首先把石油氣網絡及儲存的固定成本與供應石油氣的可變成本分開，用以為顧客供應石油氣的經營開支，受市場的競爭影響。新發展屋邨方面，石油氣共同輸送的安排是用煤氣以外的一種選擇，採用石油氣，亦毋須局限於某一間公司，以加強市場的競爭。再者使用混入空氣的石油氣 (以加強安全程度)，日後亦可應用於全面性的天然氣共同輸送安排。因此，石油氣共同輸送的安排，可視為推行全面氣體共同輸送網絡的試辦經驗（5.20 及 5.21 段）。

建議 8：劃一樽裝石油氣接駁器的標準

32. 劃一樽裝石油氣接駁器應的標準，可以增加市場競爭和選擇，因為分銷商可以轉換供應商，同時，消費者在選擇方面有更大的自由度(5.24 段)。

改善政府監察

建議 9：公平競爭委員會及能源管理局

33. 為促進競爭，消委會認為需要監察油站的擁有權(見第二章)，及訂定公平競爭法，以針對違反競爭的行為(見第九章)。消委會相信是最理想是由公平競爭委員會負責這職能。這委員會的職權非只限於監察石油產品市場，還包括其他所有企業在內，合乎成本效益。根據其他國家的經驗，公平競爭委員會執行法例，對任何違反競爭的行為進行調查及採取行動，既取得公眾和商界的信任，減少了市場上就某些行為是否違反競爭的揣測，對經營者反而有利 (9.40 段)。

34. 消委會又認為，政府宜對能源供應行業有全面的策略，包括各種石油產品及其他能源，因此建議有迫切性設立能源管理局去協調有關政府部門的活動、監察行業發展趨勢和為能源供應行業訂定長遠的策略，就制訂能源政策提出意見。其職能涵蓋與能源政策有關的重要課題，包括能源需求及供應、設施及安全等問題[1]。能源管理局在監管和政策層面上為這重要的經濟活動訂定發展路向，並在決定能源供應、分銷及使用方面，負起協調的責任。

35. 在未有公平競爭委員會監察行業競爭之前，消委會建議能源管理局兼負上述保障競爭的任務。再者，能源管理局亦須促進各石油產品市場的競爭，其角色與電訊管理局相類似。

建議 10：監察石油公司的盈利

36. 石油產品的供應可視為一種重要的公用事業，而公眾又非常關注這行業是否有足夠的競爭。一般來說，異常高的盈利，可能顯示市場沒有足夠的競爭。因此，政府宜從石油公司蒐集資料來分析：

(甲) 公司的資本回報或資產回報，以反映行業的盈利走勢(6.18-6.26 段)。
(乙) 石油產品的入口價及零售價差距，以觀察價格的變動和走勢。

37. 建議成立的能源管理局是進行上述分析最適合的機構。然而，我們必須明白，盈利的分析只能相應某特定時刻，因為隨著時間的進展，行業的盈利必有所改變，因此一個有效監察行業競爭的機制是同樣重要的，它須注意形勢的改變。一些先進的國家有公平競爭法例和公平競爭委員會進行監察。

38. 業內亦是責無旁貸，須解釋為何本港的石油產品零售價較其他地方為高，雖則行業已提供一連串的理由（見 6.36-6.44 段），但石油公司須向公眾闡釋高成本的理由。舉例來說，要解釋地價對零售價的影響程度，石油公司何以得知消費者選擇較高辛烷值的汽油等。

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1 消委會在 1995 年發表的「家用熱水及煮食燃料市場競爭研究報告」內，曾建議設立能源管理局。當時預期能源管理局亦同時會負起監察這個市場競爭的任務。其後消委會於 1996 年發表「公平競爭政策－香港經濟繁榮之關鍵」研究報告，建議成立公平競爭委員會。

39. 統計署定期公開入口價的資料，但蒐集數據至公開資料有時間差距[2]，政府宜請石油公司自願直接提供資料，俾政府能儘早掌握市場走勢（6.45 段）。

建議 11：分析政府規例對競爭的影響

40. 消委會支持「競爭政策諮詢委員會」就各政府政策局及部門為促進競爭而採取的行動，每年提出報告，本研究的一些結論及建議，可作為各政府部門未來工作的基礎。消委會建議政府部門在評估現行法例、行政措施和對市場的有關規限怎樣影競爭的時候，它們可以循一定的「競爭影響評估」步驟進行，此類較有系統和規範的方法，有利於這個報告過程（2.58 段）。

41. 消委會又建議，政府機構人員宜接受適當訓練，俾能協助他們評估競爭方面的工作 (2.59 段)。

實施

政府方面

42. 消委會相信，實施上述各項建議不會令政府的成本負擔大增。當中多項建議只需要利用現存的資源，改變目前的運作模式而已。有些建議例如毋須油站競投者持有入口牌照及供應合約，可以較早執行，另外一些建議例如要避免出現不正常的市場集中，則需要時間才能付諸實行。

43. 有兩項建議和架構組織有關。表面上，似乎可能增加政府開支及介入市場，但實施後卻會促進效率。第一項是設立公平競爭委員會以施行全面性的競爭法例，第二項是設立能源管理局。

44. 消委會早前建議設立公平競爭委員會，政府沒有全面接納，但採取按個別行業監管的政策。為此，消委會提出其他做法作為配合。

45. 須知，個別行業的監管競爭政策仍會涉及費用及缺乏效率。長遠計，亦有可能較設立公平競爭委員會更為昂貴。原因是原可以由一個機構統理的監察競爭職能，分散由各政府機構去處理，會重複花費資源。再者，公平競爭委員會在施行競爭政策規例上，能保持一貫性，對行業來說實屬有利。若由政府機構各自展開一套競爭規例的話，處理問題的方式無可避免會存在差異，產生混亂，也加重了跨行業經營者的成本負擔。當問題發生時，才開始尋找應負責及須協調的不同部門，亦會花費不少時間。

46. 消委會建議設立能源管理局，目的為統籌策劃和發展香港未來能源需求的各種政策。政府的政策和各政府機構間的協調對這重要行業的影響至大，且行業的發展，亦須有長遠的計劃。消委會相信，至少在短期內香港不可能有公平競爭委員會，在這情況下，

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2 現時政府統計處在蒐集有關數據後，連同其他貿易統計數字，每隔兩個月發表一次，並遵循國際貨幣基金會制訂的特別數據發布標準。根據這套準則，限制了把蒐集的數據向政府機構發表和再公開發表的時間。

適宜由能源管理局監察這行業的競爭情況。這只是退而求其次的辦法，由集中專才的公平競爭委員會統理，才是較有效率和合乎成本效益的安排。

石油公司須採取的行動

47. 石油公司應該解釋香港石油產品的價格在扣除稅項後為何仍是如此高昂、較高的辛烷值對汽車用燃油價格有什麼程度的影響、以及香港的消費者是否偏好這些高質素的燃油，因而願意付出更多金錢。更且，石油公司應該顯示它們是在競爭中運作，並應讓消費者觀察到競爭真正存在。消委會希望行業能自發地設立價格顯示板。實施這建議相當簡單，亦展示出對消費者友善的形象。消委會又期望業界與政府能合作，繼續提供資料，讓政府衡量盈利水平及迅速得知零售價與入口價的變動。

消費者的行動

48. 上述提出行業與政府應採取的行動，而消費者也應該主動的比較價錢（不單是車用汽油，罐裝石油氣也如是），及光顧給予最優惠的零售商。油站的價格顯示板在這方面有助消費者的選擇。同時，消費者亦應明確表示他們在價格競爭與贈品推廣之間的喜好。

未來的課題

49. 研究的結論和建議顯示須進一步分析香港石油產品市場的各個範疇。正如報告一開始就指出，本研究只是一個開始，讓政府有關決策局及部門因應各自的職能繼續致力促進市場競爭。由於可供消委會的資料及數據有限（現時祇有政府有權或有能力取得敏感的商業資料），消委會認為需要更進一步的分析：

（甲） 市場上是否缺乏競爭，或真正的競爭程度與形式為何
（乙） 採用不同的競爭方式，消費者得益的程度為何

繼續監察市場結構

50. 政府須研究埃索與美孚合併對本港市場的影響。值得留意的是兩家母公司的合併受到世界各地的競爭監管機構的注視，而各類保障措施亦因應執行，例如在美國，作為競爭監管機構的聯邦貿易委員會（Federal Trade Commission）要求公司分拆大量的油站，以便在零售市場維持地區內的競爭。市場集中程度的上升是每個政府都不能忽視的。

51. 政府另一項重要工作是考慮現有經營者的續約或投標，如果他們具備龐大的市場力量，政府便應發揮監察作用，決定是否須加諸某些限制。這過程中首先撤除構成入市限制的規例，例如現時油站的投標限制。另外政府規例不宜阻礙油站的靈活發展（如混合零售）。設立價格顯示板可以提高價格競爭及提供予大眾更多資料以供選擇。稅項對於價格競爭亦可作研究，例如燃油稅是否應按價值的百分比而非每公升來計算及徵收。

投標程序的改革

52. 由於政府主宰油站的地點和供應，如何設定合約應作詳盡的考慮。例如要考慮下列三種投標方式會對投標者在零售價與業務投資方面有何影響：

(甲) 祇是以地價作基礎
(乙) 以「零」地價為基礎，單從最高售價限制公式選取勝出的投標者（如目前車用石油氣站的做法）
(丙) 地價及最高售價限制公式的混合

同時，亦應就修改了的新油站投標方式會對現存的、受到現行合約規限的經營者造成什麼影響，作出評估。

外地儲存庫

53. 不論現在與未來，保障經營者可取得有競爭的供應是十分重要的。現時的儲存基建安排似乎已具競爭的特質，要減低運作成本，外地儲存庫不失為可行的方法來引入新的經營者。其可行性則視乎政府的規例/政策。這不單牽涉採購、儲存及運輸方面，更視乎香港政府是否希望保持這些主要設施於境內。

54. 上述的一些問題，尤以有關未來的課題，消委會未能深入探討。本研究不過是一個開始，讓商界、政府及其他有關團體(包括消委會在內)，提供作出改變的動力。

總結

55. 汽車的發明令人們可以更自由及快速地移動，但仍須依賴燃油(汽油及柴油)為車輛提供動力。石油氣除了作為煮食及熱水爐燃料，亦快將有另一功能，向的士隊伍供應能源。

56. 多年以來，香港的消費者都在質疑：他們在石油產品供應市場裏是否受到公平對待。他們發覺這個行業的市場年復一年無大變化。消委會知道這個報告無法解答他們所有疑問，因為它只是對一個複雜課題的研究起點。無論如何，我們深信報告內的結論，有助於各有關政府部門及業內的相關團體繼續進行探討，並解決更多的問題。我們亦相信報告所提出的建議是具體可行的。如果施行的話，將會為石油產品市場提供一股新動力。

消費者委員會 CONSUMER COUNCIL

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