

Case Study Series

**UNDERSTANDING MARKETS
IN AFGHANISTAN**

**A Study of the Market
for Petroleum Fuels**

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About the Afghanistan Research and Evaluation Unit

The Afghanistan Research and Evaluation Unit (AREU) is an independent research organisation that conducts and facilitates action-oriented research and learning that informs and influences policy and practice. AREU also actively promotes a culture of research and learning by strengthening analytical capacity in Afghanistan and by creating opportunities for analysis and debate. Fundamental to AREU's vision is that its work should improve Afghan lives.

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Contents

1.	Introduction	1
2.	Petroleum products and their use in Afghanistan	3
2.1	History of fuel imports and domestic production	4
3.	Main players in the fuel market	7
3.1	Street traders	7
3.2	Petrol pump stations	9
3.3	Wholesalers	11
3.4	Importers	12
3.5	Smugglers	14
3.6	Relationships between traders	15
4.	Import routes and transport	17
4.1	Imports from Iran	19
4.2	Imports from Pakistan	20
4.3	Imports from Central Asia	21
4.4	Transport of fuel	23
5.	Prices	25
5.1	Fuel prices in developing countries that are net importers	25
5.2	A snapshot of Afghan fuel prices	26
5.3	Petrol and diesel prices in Kabul	26
6.	Government regulation	29
6.1	Government role in the fuel market	29
6.2	Customs procedures and other charges	29
6.3	Quality and testing	31
6.4	The National Environmental Protection Agency (NEPA) and the Afghanistan National Standardisation Authority (ANSA)	32
7.	Conclusions and recommendations	33
7.1	Securing supply and quality	33
7.2	Private sector development	34
	Bibliography	36
	Recent publications from AREU	38

Acronyms

AISA	Afghan Investment Support Agency
ANSA	Afghanistan National Standardisation Authority
AREU	Afghanistan Research and Evaluation Unit
DGPP	Department of General Petrol Products
ISAF	International Security Assistance Force
LPG	liquid petroleum gas
MoC	Ministry of Commerce
MoF	Ministry of Finance
NEPA	National Environmental Protection Agency
PAH	poly aromatic hydrocarbons
USAID	United States Agency for International Development

Executive summary

This study is the fourth in a series of six case studies that aim to enhance understanding of the role of markets in affecting prospects for growth, and the distribution of the benefits of growth, in Afghanistan. The studies explore the structures and functioning of markets in Afghanistan, with a view to assisting in the formulation of policies to enhance broad-based growth and poverty reduction in a market environment. The purpose of this study was to gain an insight into the experiences of Afghan businessmen in the fuel market; how numerous the players were, where the greatest margins were made, what connections there were between market players and what barriers, if any, were faced by new entrants.

Specifically, the study found that:

- **As a net importer of petroleum fuels, and where long distances and poor transport infrastructure add to the cost of imports, Afghanistan is particularly vulnerable to fuel price shocks on the international market.** Increases in the price of fuel have a serious impact on households, small businesses and macroeconomic growth – in this way security of petroleum fuel supply and stability of prices ultimately have a significant impact upon livelihoods and economic growth. [Section 5.1: Fuel prices in developing countries that are net importers, pp. 25–26]
- **At the top of the chain, the fuel market is dominated by a very small number of large players, who may be politically well connected. At the opposite end of the chain, there are very large numbers of small players making very small margins.** [Section 3: Main players in the fuel market, pp. 7–16]
- **Better monitoring of the market to ensure openness and to ward against anti-competitive and monopolistic practices, combined with renovation of strategic storage facilities, could help protect Afghanistan against fuel price shocks and allow competition to deliver a better product to the consumer.** [Section 3.4: Importers, pp. 12–14 and Section 5: Prices, pp. 25–28]
- **In Kabul, 35 percent of city electricity at base and at peak times is produced by diesel generators, and all of Kandahar’s emergency electricity is supplied this way, making it amongst the most expensive electricity per kilowatt in the world.** The diesel for this electricity production is donated entirely by USAID. There is a programme in place to reduce dependence on diesel for electricity generation, but this reliance is expected to remain in the medium term. [Section 2: Petroleum products and their use in Afghanistan, pp. 3–6]
- **Low-quality fuel specifications and adulteration of fuel pose serious public health risks to the Afghan population in terms of urban pollution as well as accidents. The efficiency and life span of engines is also reduced by these practices. Basic fuel quality specifications should be set and enforced for fuel imports to Afghanistan.** [Section 6.3: Quality and testing, pp. 31–32]
- **There is widespread smuggling of fuel over the porous border with Iran, where petrol and diesel are heavily subsidised and therefore have a much lower retail price than in Afghanistan.** This smuggling is mostly conducted by a large number of small players, from whom the fuel is then bought and mixed by wholesalers. **It is likely that fuel is also being illegally siphoned or otherwise appropriated from official contracts.** [Section 3.5: Smugglers, pp. 14–15 and Section 4.1: Imports from Iran, pp. 19–20]

- **Imports of petroleum fuel have been, and continue to be, linked to Afghanistan’s geopolitical relations with its neighbours.** Some routes have been closed in the past due to conflict and geopolitics, but today, Afghan fuel comes in approximately equal quantities from Central Asia, Iran and Pakistan. Smuggled Iranian imports could be hit by any increase in Iranian initiatives to clamp down on this illicit trade. Pakistani routes are sometimes closed due to disputes between trucking organisations, or limited by Pakistani export quotas. [Section 2: History of fuel imports and domestic production, pp. 4–6 and Section 4: Import routes and transport, pp. 17–24]
- **The Fuel and Liquid Gas Enterprise, which comes under the Department of General Petroleum Products in the Ministry of Commerce, is listed as a state enterprise that is scheduled to be privatised by asset sale.** This may involve the privatisation of government storage facilities for petrol, diesel and gas. Should this process go ahead, it must be transparent and proper valuation of assets must be assured. [Section 6: Government regulation, pp. 29–32]

1. Introduction

This study is the fifth in a series of six case studies conducted within the Afghanistan Research and Evaluation Unit's Political Economy and Markets research stream. The first three case studies were produced in mid 2004, and dealt with three important sectors in the Afghan economy: raisins, carpets and construction materials. The current set of studies deal with three key import markets: petroleum fuel, second-hand cars and pharmaceuticals. The aim of the studies is to enhance understanding of the role of markets in affecting prospects for growth, and the distribution of the benefits of growth, in Afghanistan. They explore the structures and functioning of markets in Afghanistan and thereby aim to assist in the formulation of policies to enhance broad-based growth and poverty reduction in a market environment. Each study is designed to stand alone, but the series can be read together to gain a fuller picture of markets across a range of sectors. A briefing paper was produced after the first three studies, which provides discussion and preliminary analysis of overall findings.¹ A longer synthesis paper drawing together and analysing the findings of the six studies will be produced on their completion.

The purpose of this study, like that of the previous studies, was to investigate the real structures of markets in Afghanistan. Researchers attempted to gain an insight into the experiences of Afghan businessmen in the fuel market: how numerous the players were, where the greatest margins were made, what connections there were between market players and what, if any, barriers were faced by new entrants. Semi-structured interviews were conducted with importers, wholesalers, large and small retailers, some groups of customers, international agencies and relevant government bodies. Research was conducted in: Kabul; Mazar-i-Sharif and Heiratan; Herat, Islam Qala and Turgundi; Zaranj; Kandahar; Jalalabad; and Quetta and Peshawar from April to May 2005. Numbers interviewed in each category depended on the size of the location and the number of players in the market. Wholesalers and street vendors were often interviewed in groups where they were based in the same part of town. Larger official importers were interviewed at their offices in Kabul, Mazar, Heiratan and Herat. Several groups of smugglers were interviewed in Nimroz at two locations along the border with Iran, one near Zaranj and one north of Zaranj. Workers from at least four petrol pump stations were interviewed at each location except Zaranj, where there were only two pump stations.

The petroleum fuels import market is an important market across all regions of Afghanistan, particularly in urban areas. Afghanistan has a low level of demand for petroleum fuels relative to other countries, but demand has grown since 2002. The fuel trade continued to operate throughout the conflict period, and it is therefore an interesting market in which to observe the impact of conflict and the post-conflict environment on business, as well as the effect on Afghan trade of changing relationships with its neighbours. The fuel market is also a particularly important one for growth and private sector development, as businesses rely on the supply of fuel in order to operate and expand, and are adversely affected by shortages of fuel supply and excessive fluctuations in the price of fuel. Finally, the quality of fuel has key environmental and public health ramifications in Afghanistan. Leaded petrol is used, as are fuels containing high levels of sulphur oxides and other pollutants.

This study looks first at the use of petroleum products in Afghanistan and the history of the fuel import market, then at the different market players involved in the

¹ S. Lister and A. Pain, 2004, *Trading in Power: The Politics of "Free" Markets in Afghanistan*, Kabul: Afghanistan Research and Evaluation Unit

supply chain for petroleum fuels. The different import routes for these products are then considered, after which the report turns its attention to pricing and government regulation. Finally, possible means of ensuring the openness, quality and competitiveness of the market are discussed.

2. Petroleum products and their use in Afghanistan

Much of Afghanistan's energy needs are met by traditional fuels such as wood, animal dung and agricultural waste. For larger-scale energy needs, hydropower and gas are also used, but petroleum products dominate. Petrol, kerosene, diesel and aviation fuel make up most of Afghanistan's petroleum product use. It is estimated that diesel accounts for 60 percent of petroleum product consumption, followed by petrol and aviation fuel at 20 percent and 15 percent, respectively, and kerosene, used for cooking and heating, at 5 percent.² There is a growing market for liquid petroleum gas (LPG) in Afghanistan as it is increasingly used as an alternative to traditional fuels such as wood for domestic use. Total demand for petroleum products is probably between 1 and 1.5 million metric tonnes per year, but this is boosted by the demand of the assistance community and the Coalition Forces.³ This is a low level of demand relative to population by world standards.

This report focuses on the market for petrol, diesel and aviation fuel in Afghanistan. All of these are produced from crude petroleum oil and are used in internal combustion engines. There has been a dramatic increase in demand for aviation fuel for passenger airlines and military jet fuel for Coalition Forces, ISAF and the Afghan National Army since 2002. Diesel engines are generally preferred over petrol engines for commercial and heavy-duty vehicles, and are also more readily available for a wide range of uses, such as diesel generator sets for homes, electricity utilities and businesses.⁴ Diesel use in Afghanistan is much higher than petrol use. Most Afghan vehicles, including passenger cars, have diesel engines. Afghanistan has very low vehicle ownership per capita and private vehicles probably account for around 20 percent of total petroleum fuel consumption. Use of diesel-powered private generators for urban domestic electricity and for factories and businesses is widespread.

Box 1. The refining process

Refineries use the different boiling points of different hydrocarbons in oil to separate them in a distillation tower. Lighter fractions, such as petrol, rise to the top according to boiling point and weight. Some heavier fractions are converted into lighter products by cracking.

Petrol is blended from products with a relatively low boiling point. Other compounds (sometimes lead compounds) are added to petrol to increase its octane number, which makes it more resistant to self-ignition in the engine or "knocking".

Diesel is blended from petroleum components that have a higher boiling point and does not have an octane number. Low temperatures can affect the operation of diesel causing it to thicken in the engine, and some diesel blends are produced specifically for colder climates. On world markets, petrol is more expensive than diesel.

Aviation fuel is produced from kerosene, which has a lower boiling point than diesel and is lighter, but it sits with diesel in the middle of the distillation tower.

All of these fuels are blended with other hydrocarbons, dyes and performance-enhancing additives before being marketed.

² S.Z. Hoda, March 2003, *Afghanistan Capacity Building for Reconstruction and Development, Petroleum Storage Rehabilitation Draft Final Report* (TA 3874-AFG), ADB

³ Jamal Khan, 2005, *Pakistan-Afghanistan petroleum report* (unpublished report for Afghanistan Research and Evaluation Unit)

⁴ Intermediate Technology Development Group (ITDG), *Technical information on diesel*, http://www.itdg.org/docs/technical_information_service/diesel.pdf

In addition to the consumption of diesel by private generators, a substantial proportion of electricity supplied by the national grid to Kabul, and all of the emergency electricity currently supplied to Kandahar, Qalat and Lashkar Gah, is produced by diesel powered turbines and generators, for which all the diesel is currently procured and donated by USAID. Two of four gas turbines dating from the 1970s are operational at Kabul Northwest Plant, and are running on diesel fuel during normal and peak times. These turbines supply around 35 percent of the city's electricity and consume roughly 200,000 litres of diesel per day each. In the southern grid of Kandahar, Qalat and Lashkar Gah, the daily consumption runs close to 75,000 litres. This diesel was initially purchased by USAID at less than US\$0.40 per litre, but the price of the latest consignment had jumped to US\$0.55 per litre. The turbine-generated power in Kabul ranks amongst the most expensive electricity per kilowatt in the world and since November 2003, USAID has spent over US\$50m on purchasing diesel for generating electricity. The price of electricity to the consumer remains fairly low, at between 0.5 Afghanis per kilowatt for households using up to 600 kilowatts/hour (kw/h) to 1.6 Afghanis for those using up to 1,200 kw/h. Over 1,200 kw/h, the price goes up to 2.5 Afghanis per kilowatt. The commercial price for government and private industry is 5.0 Afghanis kw/h.

There is a timetable to reduce reliance on diesel-generated electricity over time and to put the provision of electricity on a commercial basis – by repairing and bringing to full capacity the hydroelectric power stations that serve Kabul and Kandahar, and by linking Kabul with the northern electrical grid to allow the transmission to the capital of imported Central Asian electricity. Electricity generated from natural gas in a proposed thermal power station at Shibirghan could also be supplied to Kabul through this route. However, reliance on diesel will remain in the medium term, for at least the next three years.⁵

There are serious public health dimensions to diesel and petrol use in the developing world. Modern technologies have succeeded in mitigating the dangers of diesel engine emissions. However, around 90 percent of particles emitted from diesel engines are very fine, cannot be effectively removed from exhausts and are considered by many to be carcinogens. Diesel exhausts contain volatile organic compounds and oxides of nitrogen, and engines using low-quality, high-sulphur fuel also produce high levels of sulphur oxides. In the developed world, many countries have standard on-road diesel fuel containing 350–500 ppm (parts per million) sulphur (0.035–0.05 percent). In the developing world, diesel fuel often contains 1–5 percent of sulphur. An Asian Development Bank report on petroleum storage found that in Afghanistan:

*...in some cases gasoline of 83-research octane number with a lead content of 0.7 grams per litre is marketed. Automotive diesel containing more than 1.0 percent of sulphur is being marketed at prices higher than the international price for diesel containing 0.2-0.5 percent sulphur.*⁶

2.1 History of fuel imports and domestic production

Soviet estimates from the late 1970s placed Afghanistan's proven and probable oil and condensate reserves at 95 million barrels. From the 1960s to the mid 1980s, the Soviets identified more than 15 oil and gas fields in northern Afghanistan. Three gas fields, Khwaja Gogerdak, Djarquduk, and Yatimtaq, were developed in the area around Shibirghan, west of Mazar-i-Sharif. Afghan natural gas production reached

⁵ International Relief and Development, Kabul, pers. comm.

⁶ Hoda, 2003

275 million cubic feet per day (mcf/d) in the mid 1970s. One oil field, Angot in Saripul, was developed in the late 1960s, but aside from production tests, oil production was intermittent, with daily outputs averaging 500 barrels per day (bbl/d) or less. This field continues to produce small quantities of crude oil, and primitive means are used to refine produced oil at the field and near Shibirghan.⁷ There are no current plans to develop Afghan oil fields with foreign assistance and it is not clear whether the proven reserves and the logistics of extracting them make this a feasible possibility for the future. However, one American company, Tryco, has proposed building a refinery in northern Afghanistan to refine imported crude from Central Asia.

During the 1960s and 70s, the Soviet Union accounted for some 80 percent of Afghanistan's petroleum products imports, with the remainder coming from Iran and Pakistan.⁸ At this time the government had a formal monopoly on the import of fuel into Afghanistan. By the beginning of the Najibullah regime in 1987, Afghanistan was dependent on fuel imports and aid from the Soviet Union, and in 1990 Moscow supplied Najibullah with thousands of tonnes of fuel along with military aid. In March 1991, as part of the reforms of the Najibullah period, the privatisation of the fuel trade was announced. This did not prevent acute fuel shortages in 1992, as the regime's fuel deliveries from the disintegrating Soviet Union fell short of the contracted amount by 90 percent. By early 1992, the Afghan air force was grounded and according to one scholar:

*The army in the entire western part of the country depended on commercial purchases of fuel from Iran – as did the mujahedin, who had more dollars, thanks to the heroin trade. In the rest of the country the army had at best a few months' supply of diesel and gasoline.*⁹

But the market had now been officially opened to private sector fuel traders and truckers, who filled the gap left by the state's collapse during the mujaheddin period. The Taliban relied on fuel imports from Pakistan, some of which may have been in the form of aid, and also on contracted fuel imports from Turkmenistan. The fuel import market continued to be dominated by private actors.¹⁰

The former government import system possessed a storage, transportation and distribution infrastructure, designed to protect the country from fuel shortages and price fluctuations. Of the original strategic storage capacity owned by the Department of General Petrol Products (DGPP) less than a quarter is still available. The available storage capacity is particularly low (only 7 percent of original capacity) in the central region, including Kabul, where demand is highest. The north has the largest remaining stores, with 50 percent of original capacity still in use – often by private sector players for temporary storage of petrol products delivered by rail to Torkham or Heiratan.¹¹ The government also had a fleet of tankers to transport fuel from the point of sale to the storage depots, but most of this fleet was damaged or stolen during the conflict years post 1992, (although the DGPP reported that some tankers were still in use). The DGPP is responsible for supplying fuel to ministries and other government departments, and in order to do this it uses a mixture of its own imports, the 3 percent in-kind charge which it levies on importers of fuel, and

⁷ US Energy Country Analysis Brief (<http://www.eia.doe.gov/emeu/cabs/afghan.html>)

⁸ H.J. Arens, 1974, *Die Stellung der Energiewirtschaftprozess Afghanistans*, Verlag Anton Hain, p. 144

⁹ B. Rubin, 2002, *The Fragmentation of Afghanistan*, New Haven, CT: Yale Press, p. 171

¹⁰ Rubin, 2002, p. 149 and pp. 169–70

¹¹ Hoda, 2003

fuel which it buys on the open market. The DGPP also owns some petrol pump stations, discussed below.

3. Main players in the fuel market

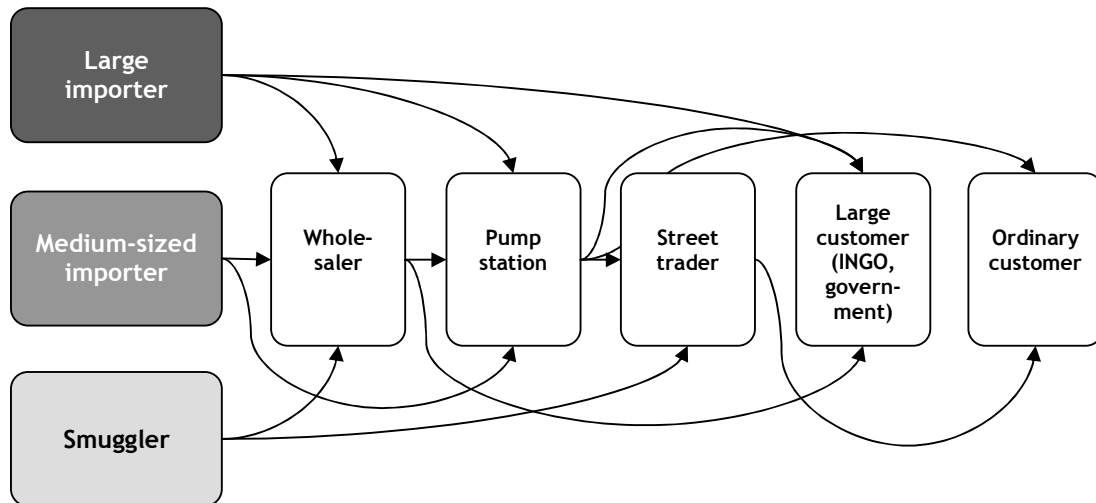


Figure 1. Fuel supply chain within Afghanistan

Figure 1 is a guide to the main players involved in the petrol and diesel supply chain inside Afghanistan. Many commodities in Afghanistan have been used as “coping strategies”, with small players buying and selling or reselling goods on a small scale, sometimes making negligible margins and often remaining unable to invest capital in growing or specialising their business. This phenomenon was observed in the fuel market and there was even one instance of begging for fuel witnessed by the researchers. Some small-scale actors do graduate to become larger and more profitable market players. Nonetheless, the number of market actors reduces considerably and the barriers to entry increase further “upstream” in the supply chain and the import of fuel is dominated largely by a small number of businessmen.

Across the board, wholesalers, pump stations and street traders sold larger volumes of diesel than petrol, the average ratio being 70–30 percent. Many of these players also trade in LPG, but this study concentrates on petrol, diesel and aviation fuel.

3.1 Street traders



Street traders typically sell 10- or 20-litre plastic jerry cans and metal drums of diesel. Some have small shops or kiosks on the roadside, while some simply sell from a cart. Those with their own shops or kiosks often also sell gas canisters. Street sellers buy their diesel from pump stations or sometimes from wholesalers and even directly from smugglers. The latter scenario probably happens only in border regions where smugglers operate; the street sellers who reported buying diesel directly from smugglers were in just such an area in Nimroz. Although street sellers do not benefit from economies of scale, they have lower overheads and this research found that their prices ranged from being slightly more expensive to being slightly cheaper per litre than pump stations. Street traders offer their customers the convenience of buying from a local trader, rather than

visiting a pump station which may involve a longer journey. Moreover, according to street traders, many customers prefer to buy fuel they can inspect, rather than go to a pump station where they might not get the volume or the quality of fuel they are paying for. Street traders who owned their own kiosks in Herat reported that their business had been affected by the construction of pump stations, many of which had opened only over the past one to two years. However, street sellers remain a conspicuous part of this market in all cities where research was undertaken. Street sellers are commonly based inside cities, along main roads on the outskirts of cities, in the vicinity of fuel wholesale markets and in areas close to border crossings.



The amount of initial capital needed to enter the business of selling fuel on a small scale varies. Some street sellers merely add a few jerry cans of diesel to an existing business selling groceries or other commodities. Street sellers in Kabul who rented their own small shops required a much larger starting capital, reporting that they had needed the equivalent of US\$1,500–2,000 to start

the business. Since they were buying larger quantities of fuel than smaller street sellers, and were also attempting to keep small reserves of fuel in barrels, they often bought fuel on short-term credit known as *ugraye*. It is clear that there are many market actors who are involved in opportunistic fuel trading on a very small scale, especially in border areas where fuel is imported. In Islam Qala, the main crossing on the Iranian border near Herat, small crowds of people can be observed buying fuel from the tanks of Iranian truck drivers in jerry cans and other kinds of small plastic containers – even soft drink bottles. Also in Islam Qala, ten women were observed begging for petrol or diesel from Iranian drivers, hoping to sell it to tankers or other buyers.

Not surprisingly, entry into and exit from the petrol and diesel market seems to be easier the smaller the scale of the business. This is suggested by the varying amounts of time that street sellers reported being involved in the business. Four street sellers

Box 2. Experiences of street sellers

I have been selling diesel and petrol for 11 years. I started in this business because I was unemployed after losing my job as a government employee. There are 20 or more petrol and diesel sellers in this area. I have my own small shop, set back a little from the road, and I pay rent to the owner of this land. I sell mostly diesel in small quantities to car and truck drivers. I buy by the barrel (around 220 litres) from the main traders in Herat. I might buy two or three barrels at one time. Our business has been damaged by the recent increase in petrol pump stations.

Street seller, Herat

I have a small movable wooden kiosk selling groceries, mainly food and also some stationery. In front of this kiosk I also sell around eight jerry cans of diesel, containing 30 litres each. I also sell kerosene. The land on which I park my kiosk is part of the road. There used to be many more street sellers but the authorities have tried to reduce the number of street sellers outside the area of the wholesale market. I sometimes have to stop business because I am disturbed by the police. I buy the fuel from the wholesale market and bring it here on my bicycle.

Street seller, central Kabul

I have been in business for two years. I began in this business because I had no income. I spent some time in Iran during the conflict and when I came back I wanted to be involved in “free” business of some kind. I make around 2,500 toomans (\$2) per day. I would like to run a pump station some day.

Street seller, wholesale market

running their own roadside stalls in the same area of Kabul had been in business for four months, six months, one year and 16 years, respectively. Although these entrepreneurs do need good relations with fuel wholesalers or petrol pump stations, and may be subject to disturbance by police and municipal or local authorities, this end of the market did not appear to be dominated by long-established players. There may be a blurred line between the larger roadside fuel traders and smaller wholesalers, especially as they are often located in the same area. Expanding a business to the level of a fuel wholesaler, or a petrol pump station, would require considerably more financial capital and personal contacts than is necessary to operate on a smaller scale. Nonetheless, a number of petrol pump station owners interviewed reported that they had started out as roadside traders of barrels and jerry cans of fuel.

3.2 Petrol pump stations



Pump stations in Afghanistan are either entirely private or “government” pump stations leased to their managers. Pump stations buy fuel either directly from importers or from wholesalers. As with wholesalers, petrol pump station owners are sometimes also importers of petrol and diesel. Pump stations reported selling between 600 and 4,500 litres of diesel per day. There is currently a dramatic growth in petrol

pump construction and the number of applications for new pump stations is thought to be over 900, compared to the 166 existing registered petrol pump stations in the country.

All petrol pump stations in Afghanistan were previously government owned and leased to individuals. Many of these older government pump stations have simply been taken over by the private sector, but “government” pump stations do remain, some of which sell diesel and petrol at slightly lower rates than the market price. In Herat, the government petrol station sells fuel collected by the fuel department of the Ministry of Finance as in-kind taxation from importers. Elsewhere, managers of government pump stations reported that they leased the station building and facilities from the authorities but bought all their fuel from private importers. One “government” petrol station in Kabul was run by two partners, one of whom has his own trucks to bring Turkmen fuel from Heiratan, on the border with Uzbekistan, which is cheaper than buying the fuel on the wholesale market in Kabul. This helps the station sell fuel at a slightly cheaper price than its competitors.

Box 3. A pump station manager’s experience

This pump station is 36 years old, and the oldest in town, and I have been working here since the beginning. When the government collapsed, I began importing my own fuel from Iran. When the Taliban came, they stripped me of all my property, beat me and put me in a cell more than once, claiming that I was a government stooge. They also hated me because I am Shi’a. I escaped to Iran and returned when the Taliban had gone. Although all my documents had been destroyed, now this is a government petrol station again and I am back working here. I pay a basic rent to the authorities and buy the fuel on the open market. This pump station has two underground storage tanks of 30,000 litres each. Prices are much higher and quality is much lower since the days when the government imported fuel. Everything is mixed together. But I can tell the difference between good and bad quality diesel by its smell and colour.

**Government pump station manager
near Iranian border**

However, competition between pump stations is not fierce, the owner reported, since demand was sufficiently high to sustain them all.



Private pump stations began to appear in Kabul in 1991 (after the beginning of the mujaheddin period) when the government lost the capability to import and supply fuel to its pump stations and to the market in general. Many of the private pump stations visited in this research were between six months and four years old. Pump stations have underground storage facilities ranging from 30,000–600,000 litres, but many stations in Afghanistan are very small, with only one fuel pump. To build a pump station requires a reliable source of fuel, owned or securely rented land and capital for construction. One small pump station owner in Zaranj reported that he had needed as little as 500,000 Afghanis (US\$10,000) to build his station. This included the cost of buying land and constructing the building. Another petrol pump station owner in Turgundi reported that he had a five-year lease on the land on which he had built his station. Investing in buildings and underground storage facilities on rented land is a significant risk in Afghanistan due to high rents and insecurity of tenure. Not even larger-scale Kabul wholesalers were prepared to take this risk on rented land.

Underground storage tanks used in petrol pump stations pose a potential public health risk if they are old or poorly installed. Tanks made of unprotected steel become rusted and can leak after around 10 years. Leakage can cause vapours in buildings and can contaminate drinking water, soil and groundwater. While the current growth in petrol pump construction means that an ever-growing proportion of pump stations are new, there is insufficient means of testing the safety of underground storage in old stations, or ensuring that storage tanks are properly installed in new stations.

Several pump station owners reported that they had started as much smaller traders of petrol and diesel. One pump station owner in Kabul, who reported that his family business ran several other stations in the city, said he had begun by selling fuel in jerry cans. It is clearly possible to graduate from small-scale trade in fuel to a larger enterprise. However, there are significantly fewer petrol pump station owners in the fuel market than street traders, and for many smaller players the amount of capital needed and the sheer logistical difficulty of constructing a pump station are probably prohibitive. Some pump stations are owned by several business partners in order to distribute the financial burden. Good relationships with suppliers as well as personal trust also play a part, especially for smaller and newly established stations. The owner of one such station in Herat described how he did not pay his supplier for the entire amount of fuel purchased until he himself had sold the fuel. Pump stations are also conspicuous targets for harassment from official and unofficial groups. One pump station on a main road close to a city reported that commanders sometimes came to demand fuel without paying.

Some private pump station owners reported that they also “imported” a proportion of the fuel they sold, bringing it from the border in trucks rather than actually bringing it across borders. There is evidence of some degree of vertical integration, with importers of diesel and petrol establishing chains of their own petrol pump stations. One large importer of diesel and petrol reportedly runs three pump stations

in Kabul and has plans to build more stations across several provinces. Another large importer is currently constructing large pump stations along the northern road running out of Kabul to Shomali. The same importer reportedly has two pump stations in Mazar-i-Sharif. A pump station in Mazar-i-Sharif belongs to a company that is involved in fuel importation from Turkmenistan as well as in construction. In Herat, one fuel importer claimed to run six petrol pump stations locally. Many petrol stations have the same or similar names but it is unclear if these are owned by the same company.¹² It does not appear that any one import or retail company currently has the capacity to expand a chain of pump stations across the whole of Afghanistan.

Along some stretches of road, there appears to be a disproportionately large concentration of pump stations. For example, there are 25–30 petrol pumps on the Chaman–Kandahar road, many of which have been built since the reconstruction of the highway after 2001. The distance between Kandahar and Chaman is around 160 kilometres and the journey takes only two hours. Some have suggested that, at least during Taliban times, the construction of petrol pump stations was a means of laundering money.¹³

3.3 Wholesalers

Petrol and diesel wholesalers trade in larger quantities – upwards of 8,000 litres per week – according to this research. They keep large reserves of fuel, and in many cases also import some of their own fuel. In cities where research was conducted, wholesalers are often concentrated in a wholesale market on a single site where larger amounts of fuel are traded. In Kabul the wholesale market is located in Diwan Bigi on the outskirts of town, on the Kandahar road. The market is an open courtyard full of free-standing large tanks and barrels surrounded by small shops. Tankers were observed being emptied, their contents transferred to the free-standing tanks by means of a generator-driven water pump.

Box 4. Experience of a fuel wholesaler

I have been a fuel wholesaler for 15 years. I was previously a government employee and was involved with government distribution of fuel to vulnerable groups during the fuel shortages that occurred in the Najibullah regime as the Russians were leaving. This is how I made friends and contacts in the petrol and diesel business. When I lost my civil service job, one of these friends who ran a pump station encouraged me to invest a considerable sum to begin in this business, promising that if I could not sell all the fuel I bought in my initial investment, he would buy it from me. I have a few of my own trucks with which I import my own fuel, but most of the fuel I buy comes from one big importer. My customers include petrol pump stations and large organisations. There are few new players in this business. It is very expensive to start as a diesel and petrol wholesaler. Experience is also important because dealing with large quantities of fuel is dangerous. Access to land is a problem for us: if we had a more permanent location we could build underground storage tanks. But otherwise we are happy. There is a free market in Afghanistan and everyone is free to do his own business.

Wholesaler, Kabul

¹² Khan, 2005

¹³ Centre for Public Integrity (<http://www.publicintegrity.org/report.aspx?aid=621&sid=100>)

According to wholesalers, the market had been established some 15 years previously in another location, after the government lost its de facto monopoly on fuel importation and the private sector moved in. The market had moved locations three times since then, as landowners in the city increasingly wanted to use their land for construction. Tankers belonging to large- and medium-sized importers of diesel and petrol come to this market every day to sell fuel, but the larger importers dominate trade. The fuel comes from Iran and Turkmenistan. Wholesalers reported that 50–60 tankers carrying 28,000–30,000 litres of fuel come to the market daily. Petrol pump station owners reportedly send representatives to the market daily, both to buy fuel and to ascertain the price of fuel, on which they base their own prices. Thus the price of fuel in Kabul on any given day is essentially set here.



The wholesale market in Zaranj has aboveground and underground storage facilities. Wholesalers here collect fuel deliveries in barrels and jerry cans, and one wholesaler claimed he could unload approximately 800 barrels (of 200 litres each) per day. The wholesalers' main customers are pump station owners and fuel traders from other parts of Afghanistan. Some call and order a specific quantity of fuel in advance, but often tankers simply arrive to collect fuel from whoever has sufficient stocks.

In Herat the fuel wholesale area, where large quantities of fuel are traded between importers and between importers and wholesalers, is effectively located at the office of the fuel department of the Ministry of Commerce (MoC). This is not a formal wholesale area, but fuel importers are obliged to register their imports and pay the 3 percent commission to the MoC here. As it is widely known that importers gather here, deals are also made here for buying and selling fuel. There are also wholesale markets near the Pakistani import routes for fuel, such as in Landi Kotal, where fuel imported from Torkham is traded.¹⁴

3.4 Importers

If setting up a wholesale fuel trading business or building a pump station is a significant financial and logistical undertaking in the Afghan context, then importing large quantities of fuel into Afghanistan is much more difficult and involves far fewer market actors. Diesel and petrol imports from Pakistan and Central Asia and official imports from Iran are therefore dominated by a few large- and medium-sized players. However, there is large-scale smuggling of petrol and diesel along the long porous border with Iran, which involves hundreds of people, if not more.

There are international agencies and companies involved in the import of fuel into Afghanistan. These include the World Food Programme, which supplies its own fuel,

Box 5. A fuel importer's story

Our company imports petrol, diesel and gas from Turkmenistan. In the years following the collapse of the Soviet Union this business was easier. Turkmen state companies were so eager to trade they would accept only partial payment at the beginning of a contract. Now the entire amount has to be paid when the contracts are signed. It is hard for Afghan traders to pay amounts as large as US\$1m up-front. There are many logistical difficulties now in Turkmenistan, we even find it hard to get visas and we have to pay bribes. In order to set up an office or agency in Ashqabad, you need a strong Dubai-based company to support you as the Turkmen authorities do not accept Afghan guarantees.

Fuel importer, Herat

¹⁴ Khan, 2005

and also companies that have won contracts to serve the tax-free community in Afghanistan, such as Coalition Forces, ISAF and the government (including USAID where it is purchasing fuel to generate electricity in Kabul and Kandahar). It is difficult to ascertain exactly how many commercial importers of fuel there are. The DGPP in the MoC reported that more than 30 import companies of various sizes were registered to import fuel. The Afghan Investment Support Agency (AISA) has 21 registered importers of fuel, 12 of which are Afghan companies, three are Iranian, two are Afghan-American, and one Afghan-Pakistani. The starting capital of these companies ranged between US\$10,000 and US\$3m and numbers of employees ranged from 3–160.¹⁵



The American company Tryco has been operating in Afghanistan for three years and is now a leading importer of petrol, diesel and aviation fuel to government departments, Coalition Forces, international organisations, some airlines and other large customers. The company is the exclusive agent in Afghanistan of the Pakistan State Oil company (PSO) and has a monthly turnover of four million litres of jet fuel and eight million litres of diesel, with sales

of US\$50m last year. Tryco is currently considering issuing shares to attract Afghan investors and to expand into other activities, including possibly building a private refinery to produce petrol products from imported and eventually even Afghan crude oil.

The Pakistani oil company Attock Petroleum Ltd began exporting to Afghanistan in 2003 and is registered as an oil marketing company with AISA. The company exports petrol, kerosene, aviation fuels, diesel and bitumen, and reportedly supplied most of the bitumen for the Kabul–Kandahar highway. It is constructing two petrol pump stations in Jalalabad and has plans for two storage facilities, one in Jalalabad and one in Kabul. Shell Pakistan has also been exporting lubricants to Afghanistan since January 2003.¹⁶

There are a small number of large Afghan importers who dominate official imports from each main route. There are also an indeterminate number of medium-sized actors; these may be large companies, but ones which do not specialise in petrol and diesel imports. Many of the medium-sized actors encountered in this research are also engaged in trading other commodities, for example one importer of diesel and petrol in Mazar-i-Sharif is also involved in the import of construction materials such as wood and iron bars as well as jewellery and watches from Dubai, where the headquarters of the company are based. As well as supplying traders who come to collect fuel from the border, this company also delivers directly to NGOs and one government department. It is difficult to ascertain how many medium-sized Afghan players are actually importing from abroad and how many are merely buying fuel from larger traders, for example those based in Heiratan. It is likely that many medium-sized fuel dealers import their own fuel only in irregular instalments, and then supplement this with fuel bought from a larger importer. Some petrol and diesel importers also trade in gas for lighting, heating and cooking. Most importers of all sizes make use of

¹⁵ Afghanistan Investment Support Agency (AISA), personal comm.

¹⁶ Khan, 2005

government storage facilities, while some have smaller storage facilities of their own.

One large importer in the north was originally involved in the import of other commodities but now concentrates on diesel and petrol, importing 2,000–3,000 metric tonnes per day (roughly 2.4–3.6m litres of diesel) according to the estimate of a company representative. Like many smaller players, this company has its main office in Dubai, where orders are made, and it plans to construct more of its own storage to reduce dependence on Afghan government storage facilities. It is at this end of the petrol and diesel market that players are fewer in number and more powerful. Cross-border trading in larger quantities of diesel or petrol involves access to large contracts in the country where the fuel is sourced, as well as the capacity to store, transport and distribute fuel in very difficult terrain once it reaches Afghanistan. Anecdotes suggest that the large fuel importers that dominate the market are politically well connected at a high level both in Afghanistan and in the countries where they procure fuel. Significantly, large-scale players do not have to be long-established businessmen in this sector and indeed some long-standing fuel traders are now facing competition from relatively recent entrants into the market who benefit from influential sponsorship. Afghanistan is not the only country where political connections can be instrumental in the success of a businessman. Experience in other countries shows that excessive reliance upon such contacts can introduce an element of unpredictability into economic development – tying major businesses to the shifting fortunes of political actors and affecting the openness and competitiveness of the market. Dominance of fuel imports by a small number of players using the same routes also has a potential impact on security of supply and protection against price shocks in the Afghan fuel market, since the loss of a contract by one of these dominant players would have a disproportionate effect on the supply of fuel on the market.

3.5 Smugglers



One common complaint raised by importers is that they face unfair competition from smugglers of petrol and diesel. Official contracts for importing Iranian fuel are only a part of the import of Iranian fuel into Afghanistan. Smugglers are active along the Iranian border and were observed in Nimroz, where the border with Iran runs close to, and in one part through, the Helmand River. At two points near the border groups of smugglers carrying empty jerry cans were observed in teams beside the river waiting to cross the river in boats at night. Fuel was their main smuggling commodity and they claimed to be known as *gazoli* or “petrol people”. There were around 20 people per team, carrying several 10-litre plastic containers, and they reported that they could import 2,000 litres per team, per trip. Further north, where the border runs to the west of the river, smugglers crossed the river in ferries carrying donkeys laden with empty containers ready to cross into Iran on the other side. One or two small trucks were also shipped over the river, but it was unclear whether these were intended to transport fuel.

It appears that the smugglers import only small quantities of fuel each, but are very numerous and could collectively account for a large share of fuel imports from Iran, especially if the numbers observed by researchers are similar along other portions of

the border. The smugglers do not appear to make any margin themselves from the difference between the subsidised price of fuel in Iran and the higher fuel price in Afghanistan. Rather, they report that they are paid a flat rate by wholesalers and larger traders of diesel and petrol, who then collect the fuel from them. They are also granted some protection by these “employers”, who pay to ensure they are not harassed on their riverside plots as well as giving them money to bribe border guards. Nonetheless this is a precarious occupation and the smugglers relate how their colleagues have sometimes been shot at by Iranian border police.

The possibility cannot be discounted that fuel is also being smuggled in large tankers from Iran, or indeed via northern, south and southeastern routes, but this research uncovered no direct evidence of such large-scale illicit shipments. Those wanting to appropriate larger quantities of fuel without paying full taxes or other contractual obligations probably use more sophisticated means of avoiding these payments than outright smuggling over a border. Large legal orders of fuel can be subject to siphoning and appropriation by various means by those involved in the process. The amount of fuel intended for sale in a technically legal contract can be exaggerated, and then the difference between the contacted amount and the amount actually bought can be sold or re-exported to its country of origin at a profit. In this way, the opportunities for profit-making are greater in large contracts involving tax concessions, for example, where fuel is intended for the tax-free community in Afghanistan or where fuel is bought in a high-tax country at a “for export to Afghanistan” tax rate, and some fuel is not exported but is sold in the home market.

3.6 Relationships between traders

The importance of personal contacts and trust emerged as a critical factor for small and large players in the fuel market. Whether for a street vendor, who was able to buy fuel from a wholesaler on informal credit, or for a wholesaler starting in the business who was assured by friends that they would buy his fuel if he was unable to sell it, personal relationships with other market agents were raised as an important factor in setting up or expanding a business. These connections may be compensation for the absence of formal credit or insurance systems. Market players cooperated with each other in more profound ways than simply granting credit: wholesalers reported that they would sometimes club together to meet a large order of fuel from a buyer, and there was also evidence of collusion among traders in setting prices (see below). On one level this type of social capital is a vital and positive force allowing poorer people to become entrepreneurs:

Dense and overlapping social networks increase the likelihood of economic cooperation by building trust and fostering shared norms. The social capital generated within and between firms is especially important for lowering risk and uncertainty at the local level.

and

Social capital facilitates valuable information exchange about products and markets and reduces the costs of contracts and extensive regulations and enforcement. Repeated transactions and business reputation provide the necessary incentives for parties to act in mutually beneficial ways.¹⁷

¹⁷ Excerpts from *Social Capital in Poverty Reduction and Economic Development*, World Bank Poverty Net, <http://www1.worldbank.org/prem/poverty/scapital/topic/pov1.htm>

However, these types of personal trust networks can also have a negative effect on the competitiveness of markets. If networks of personal contacts and trust become vital to new entrants in markets, then new entrants without such “social network capital” can be barred, especially where larger market players are concerned. These networks can also lead to anticompetitive practices where pricing is concerned, and groups of market actors can collude together to artificially inflate their own margins.¹⁸

¹⁸ M. Fafchamps, and B. Minten, 2002, *Returns to social network capital among traders*, Oxford Economic Papers 54, 175–76.

4. Import routes and transport

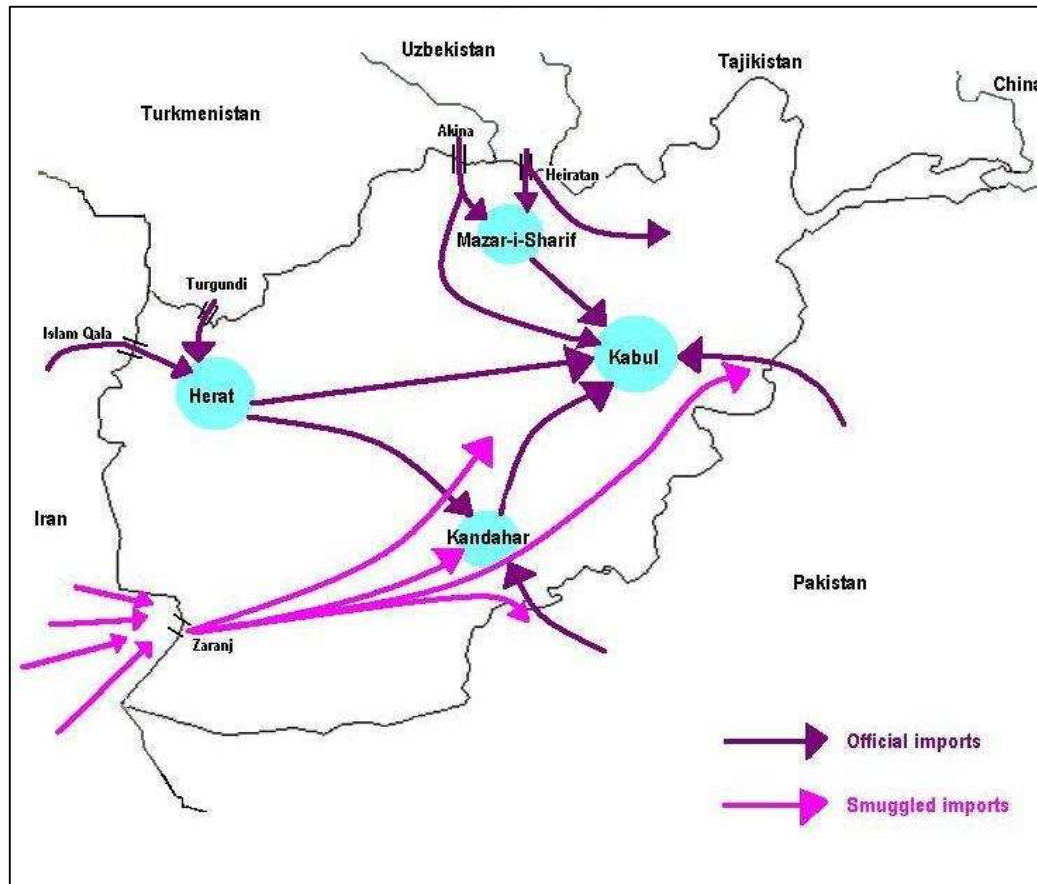


Figure 2. Routes of official and smuggled imports of fuel

Routes for importing fuel into Afghanistan have been, and continue to be, tied up with Afghanistan's geopolitics. The Najibullah regime, as mentioned above, was so reliant upon fuel imports and fuel aid from the Soviet Union that the latter's collapse and the drying-up of much of Afghanistan's contracted fuel deliveries caused serious fuel shortages in 1992.

During the mujahedin period, various factions were given fuel by the different regional powers that supported them. Trade and economic activity also became more localised as the central authority collapsed. In the fuel market, as with other commodities, resources flowed to and from regions of neighbouring countries rather than to Kabul, with the southern economy linked to Pakistan, that of Mazar-i-Sharif and the north to Uzbekistan, and Herat and the west to Iran.¹⁹ The Taliban relied extensively on imports of fuel from Pakistan. Permits were issued by the government of Pakistan to individuals or export companies for the export of Pakistani petroleum products to government and private entities in Afghanistan.²⁰ Some fuel did come from Central Asia, both to Taliban and Northern Alliance areas. In September 1998 the Taliban authorities signed an agreement with the government of Turkmenistan on the import of petrol, diesel and jet fuel via Turgundi. But with the deterioration

¹⁹ A. Pain and J. Goodhand, March 2002, *Afghanistan: Current Employment and Socioeconomic Situation and Prospects*, ILO Working Paper 8.

²⁰ Khan, 2005

of Taliban relations with Iran, Uzbekistan and Tajikistan, border crossings with the latter two countries were closed, and they were temporarily closed with Iran. Trade ground to a halt through Heiratan and was reduced through Islam Qala. Iranian smuggling routes continued to operate.²¹

Today fuel is imported into Afghanistan from Central Asia in the north, Iran in the west and Pakistan in the south and east. The *Afghan Trade Statistical Yearbook for 1382* (February 2003–February 2004) records the following imports of petrol and diesel into Afghanistan:

Import product	Source	Value (US\$)	Quantity (kg)
Petrol	Turkmenistan	37,905	91,485
	Russia	53,906	137,465
	Total	91,811	228,950
Diesel	Turkmenistan	11,858,848	27,834,527
	Russia	104,188	260,465
	Total	11,963,034	28,094,992

Table 1. Petrol and diesel by source (Central Statistics Office)

by port for 1383 (March 2004–March 2005) show that Herat deals with the largest volume of imports of any port in Afghanistan, and petroleum products must account for a proportion of these imports.²² Pakistani imports of petrol and diesel are also not recorded here, although Pakistan is recorded as importing US\$84,318 of “motor oil and grease” in 1382. It is difficult to tell whether all the fuel labelled here as “Russian” or “Turkmen” actually originated from these countries due to the extensive oil and fuel “swapping” that occurs between Turkmenistan, Kazakhstan and Russia.

This study estimates that Pakistan, Iran and the Central Asian states account for roughly a third each of total petrol products imported into Afghanistan, including the smuggled fuel that comes over the Iranian border. Were it not for the large contracts represented by Coalition Forces and the international community in Afghanistan, particularly for aviation fuel, the Pakistani share might be much lower. This research found that imports of Pakistani fuel not destined for Coalition Forces appeared to have decreased and certainly the opening of other routes closed during Taliban times has reduced the Pakistani share of petroleum product imports to Afghanistan. The Iranian share of petroleum imports to Afghanistan would also be significantly smaller were it not for the extensive smuggling of Iranian fuel into the country.

Afghanistan’s size and geography pose real logistical problems for the supply of fuel. This is compounded by poor infrastructure, the absence of a rail network and dependence on road transport across difficult and often badly maintained roads. Moreover, the location of depots and refineries in the countries from which Afghanistan buys its fuel are often a long way from Afghan supply routes.²³

²¹ Office of the UN Coordinator for Afghanistan, April 1999, *Afghanistan Outlook*, Kabul

²² Ministry of Finance, *Statistical Office Import Table*, <http://www.mof.gov.af/english/customs/Stat-Office/Stat-Office-ImportTable.pdf>

²³ Hoda, *Afghanistan Capacity Building for Reconstruction*.

4.1 Imports from Iran

According to the *Oil and Gas Journal* (1/1/05), Iran holds 125.8 billion barrels of proven oil reserves, some 10 percent of the world's total. During 2004, Iran produced about 3.9 million barrels per day (bbl/d) of crude oil. The country exports around 2.5 million bbl/d, with major customers including Japan, China, South Korea, Taiwan and Europe. As of January 2005, Iran had nine operational refineries (most built before the 1979 Iranian revolution) with a combined capacity of 1.47 million bbl/d. As well as its exports of refined products, Iran has also been importing for domestic use since 1982. In 2004, Iran imported an estimated 160,000 bbl/d of petrol and diesel at an estimated annual value of around US\$2–3b. According to sources, Iran's heavy subsidies of domestic petroleum products cause significant wastage and inefficiency in its domestic market.²⁴

Official consignments of Iranian fuel come into Afghanistan through Islam Qala. This includes tankers of fuel ordered by importers that have contracts with Iranian state companies, but researchers also encountered tanker drivers waiting on the Afghan side of the border to procure petrol or diesel from whoever would sell it at a reasonable price. One such tanker driver reported that no fuel had arrived in two days. Although tankers on large contracts came straight through the crossing on a more regular basis, this driver related that he often had to wait for the arrival of tankers that were prepared to sell on the border. Trade in other commodities, especially cars, food and other consumer goods appeared to be very active in Islam Qala. However, on the day the port was observed by the researchers, no large tankers of petrol or diesel were seen passing through. The customs office in Islam Qala reported that an average of four or five large tankers of fuel, mostly diesel, were imported through this crossing every day.

As well as the official imports of Iranian fuel, there is large-scale smuggling of petrol and diesel along the 900 kilometre-long Iranian border, as discussed above. In January 2005 an Iranian government spokesman claimed that more than US\$1b of petrol and other petrol products were smuggled out of the country every year to Pakistan, Afghanistan, Iraq and Turkey. This, the spokesman said, was due to the difference in price between petrol products in Iran, where they are subsidised, and in its neighbouring countries.²⁵ Domestic consumers in Iran pay a fraction of the cost price of petrol, and the country is forced to import petrol as its domestic demand outstrips the production capacity of its refineries. Iran now spends around 8 percent of its national budget buying petrol at full market price from abroad, a price it can only afford because of the windfalls it has made from high international oil prices over recent years.²⁶ The result of these subsidised prices in Iran is a clear financial incentive to smuggle petrol and diesel out of the country. Iranian customers pay 40 cents per US gallon, which equates to just 4.5 Afghanis a litre. This compares to an average price of 23 Afghanis per litre in Kabul. This research found that many small-scale smugglers are involved in bringing petrol and diesel across the Iranian border, as elaborated above in Section 3. It is also possible that diesel and petrol is imported in larger quantities, but to bring larger, more conspicuous consignments would require greater resources for negotiating passage through the border on both sides. Nimroz, where smuggling was observed during this research, was mentioned by many interviewees as a key area for the unofficial import of Iranian fuel.

²⁴ US Energy Country Analysis Brief, <http://www.eia.doe.gov/emeu/cabs/iran.html>

²⁵ *Dawn* (internet edition), "\$1bn oil smuggled out annually: Iran", <http://www.dawn.com/2005/01/25/ebr8.htm>

²⁶ K. Vick, 4 July 2005, "Iran guzzles gas at its own cost", *The Washington Post*

It is difficult to estimate how much of Afghanistan's petroleum fuels demand is met by smuggled Iranian fuel, as this would require a closer study of the scale of smuggling along the entire length of the border. It is harder to identify quantities of Iranian fuel further down the supply chain as the mixing of fuel from various origins is so widespread, although smuggled Iranian fuel is unlikely to account for more than 10 percent of total Afghan demand for petroleum fuels. Some news reports have suggested that the amount of fuel smuggled from Iran has decreased under Iran's new president, Mahmood Ahmadinejad.

4.2 Imports from Pakistan

Pakistan produced 60,000 bbl/d of crude oil in 2003 and consumed 360,000 bbl/d of petroleum products. Net oil imports in 2003 were 308,000 bbl/d. The country has four refineries and several marketing companies for refined products. In 2002–03, Afghanistan was the second-largest importer of Pakistani petroleum products after the UAE. As the largest refinery in Pakistan is a joint venture between the government and an investment group from the UAE, some Arabian crude oil is refined in Pakistan and then sent to the UAE. If we exclude this arrangement, Afghanistan receives an even larger share of Pakistani petrol products exports. Total exports to Afghanistan may amount to 250,000 metric tonnes of petroleum exports, worth up to US\$56m per year.

The border areas with Pakistan are sometimes closed to trucking traffic due to disputes of one kind or another, and import of petroleum fuels through these routes is sometimes affected by official decisions by the Pakistani government. For example, at the time of publication of this report the Pakistani government had announced a temporary reduction of quotas for exports of aviation fuel in order to deal with the increase in domestic air traffic during the forthcoming Hajj.

This research examined Pakistani fuel imports into Afghanistan along the Quetta–Chaman–Kandahar and the Peshawar–Torkham–Jalalabad routes. Along the latter route, it appeared that commercial imports of Pakistani fuel for non-military use had reduced over the past year. At the Chaman border, not a single tanker was observed transporting fuel into Afghanistan. Researchers were told that fuel was transported across the border in pick-up trucks, not in tankers. Much of this trade may be smuggling fuel not into Afghanistan, but into Pakistan from Afghanistan. There is some incentive for re-export of Pakistani fuel back into Pakistan since fuel for import into Afghanistan is exempt from Pakistani domestic taxes, and therefore cheaper than Pakistani fuel. During 2003, Pakistani oil companies, which are also some of the largest taxpayers in Pakistan, complained about this practice and it is now thought to be less common.²⁷

Pakistani petrol and diesel prices for wholesale and retail are set by the Pakistani government and are reviewed over a 15-day period. Significantly, the margin of the retailers does not change along with price changes. Rather, the retailers receive a commission per litre. The current commission is 80–85 paisas (US\$0.01) per litre of diesel and 1.10–1.15 paisas (US\$0.02) per litre of petrol. This means that there is a limit to revenues, and therefore profits, for pump stations dealing in legal fuel only. In practice, pump stations often supplement their profit margin by altering the pump gauge or by mixing smuggled Iranian products with Pakistani petrol and diesel.

²⁷ Khan, 2005 and US Energy Information Administration (<http://www.eia.doe.gov/emeu/cabs/pakistan.html>).

Interviews with drivers and petrol pump owners in Baluchistan Province and the Federally Administered Tribal Areas (FATA) in Pakistan revealed that they were paying less than the official rate for their petrol and diesel, suggesting that some or all of their fuel was smuggled. Smuggled fuel is almost always from Iran because of the high profit margins involved (see above section on Iranian import routes), although some respondents in Khyber Agency claimed that their smuggled fuel came from Central Asia. Fuel is smuggled directly from Iran to Pakistan over the border shared by the two countries in Baluchistan. However, smuggled Iranian fuel also reaches Pakistan via Afghanistan. Thus, on key routes such as the Quetta–Chaman–Kandahar road and Peshawar–Torkham–Jalalabad road, fuel is imported into Afghanistan from Pakistan, but Iranian fuel is also smuggled from Afghanistan into Pakistan.

Box 6. Effects of a petrol strike in Pakistan

About a year ago all the petrol depots and petrol pump owners in Baluchistan went on strike. They remained closed for 17 days, so for 17 days there was no legal fuel being distributed or sold in the whole province. In theory all the vehicles in the province should have ground to a halt because there was no fuel available. But to the surprise of all not a single vehicle stopped running, not even the vehicles of government departments. This suggested that everyone was in fact using Iranian smuggled fuel.

Pump station owner, Quetta

4.3 Imports from Central Asia

The origin of petrol products imported into Afghanistan from the northern routes, over the border with Turkmenistan and Uzbekistan, is sometimes difficult to judge due to the “oil swapping” that occurs between Iran, Turkmenistan, Kazakhstan and Russia. Most fuel imported into Afghanistan from the former Soviet republics comes across the border from Turkmenistan and Uzbekistan. Although these countries have more significant reserves of natural gas, they have small and undeveloped recoverable oil reserves compared to their neighbours in the Caspian region and Russia.



Turkmenistan has proven oil reserves of 1.5 billion barrels, and produces 162,500 bbl/d. There are two refineries in Turkmenistan, both belonging to the state. One is located in Turkmenbashi on the Caspian Sea coast. The other one, known as the Seidi refinery, is located in Chardjou, near the border with Uzbekistan. The refineries have a capacity of about 120,000 bbl/d each. Turkmenistan was the most commonly reported source of fuel

imports from the former Soviet Union. Turkmen infrastructure is also equipped to supply Afghan markets, and the country has a petroleum product storage and distribution facility at Tagtabazar, on the Turkmen side near the Afghan border, which supplies northwestern Afghanistan. The fact that there were contracts to import Turkmen fuel and other commodities into Afghanistan under the Taliban, when borders with other western and northern neighbours were closed, may have consolidated some business relationships between Afghan and Turkmen players. One large importer, who now uses several ports, reported that in Taliban times he had imported only from Turgundi on the Turkmen border and had enjoyed a virtual monopoly of imports from this route.

Uzbekistan currently possesses about 600 million barrels of proven oil reserves and produces 116,000 barrels per day. There are two operating refineries in the country, one of which was constructed in Soviet times and another, the Bukhara refinery, which started operation in 1997. The Bukhara refinery is designed to process condensates from a nearby oil field and to produce motor gasoline for export as well as gasoline, diesel fuel and kerosene for domestic consumption. Both of Uzbekistan's presently operating refineries suffer from the underdevelopment of the domestic market for petroleum products, its regulated prices and poor distribution networks. Turkmen fuel is better value than its Uzbek equivalents and there is widespread smuggling of cheaper Turkmen petrol and diesel into Uzbekistan.²⁸ Large imports of fuel enter Afghanistan across the Uzbek border through Heiratan, but it is unclear how much of this is Uzbek in origin and most is likely to originate from other countries such as Turkmenistan or Kazakhstan.

The largest recoverable crude oil reserves in the Caspian region belong to Kazakhstan, which also accounts for two thirds of the current 1.5 million bbl/d of crude oil production in the region (which includes Azerbaijan, Kazakhstan and Turkmenistan). Kazakhstan has three major oil refineries, with a total refining capacity of 427,000 bbl/d. One of these refineries is served entirely with Russian crude oil from Siberia. The country exports oil via swaps to Iran and by rail to Russia. The swap agreement between Iran and Kazakhstan entails approximately 30,000 bbl/d. A representative of one large importer in Heiratan reported to researchers that some of the company's fuel imports came from Kazakhstan.

By far the largest oil producer in the former Soviet Union is Russia, which produced 8.8 million bbl/d in 2004. In 2003, Russian crude oil production was second only to Saudi Arabia and from May 2003 to March 2004, Russian crude oil production actually exceeded Saudi output. Russia has 41 oil refineries with a total processing capacity of 5.44 million bbl/d. Many of these refineries are inefficient, aging, and in need of modernisation, and Russian refined products have a lower average export price than Russian crude oil. Since Russian refining capacity also far outstrips domestic demand (around 2.6 million bbl/d in 2004), the government reduced export taxes during the mid 1990s to allow greater volumes of refined products to be exported.²⁹ Some rail shipments of fuel in Turgundi appeared to be Russian. The Central Statistics Office trade statistics in Table 1 also show that some Russian petrol and diesel is imported into Afghanistan. However, this research did not encounter any businessmen claiming to import Russian fuel.



Central Asian fuel is imported into Afghanistan through the border crossings with Turkmenistan at Turgundi and Akina, and through the crossing with Uzbekistan at Heiratan. It is possible that fuel is also smuggled across the border with Turkmenistan, especially where the border is dry and easy to cross. The range of commodities that can be observed passing through the border crossing with Turkmenistan at Turgundi, and through the crossing with Uzbekistan at Heiratan, is smaller and more dominated by petrol products than through the Iranian–Afghan crossing at Islam Qala. At Turgundi, the main imports appeared to be scrap metal, petrol, diesel and gas. At Heiratan,

²⁸ Alexander's Gas and Oil Connections (website), <http://www.gasandoil.com/goc/company/cnr02353.htm>

²⁹ US Energy Information Administration, *Country Analysis Brief, Russia and Caspian Region*, <http://www.eia.doe.gov>

petrol, diesel and gas dominated, and according to the customs office at Mazar-i-Sharif, 17,000 metric tonnes of fuel imports per month pass through this port. At both Turgundi and Heiratan, imports were transported over the border by rail along the Soviet era railway which stops just inside the border. The products are then discharged onto trucks and tankers. There were government and privately used fuel storage facilities at both border ports. Representatives from the Provincial Reconstruction Team based in Shibirghan, who patrol the Turkmen border, reported that petrol and diesel were imported in tankers through the small border port at Akina and that on one day 10–15 tankers could pass through this crossing. This fuel was then taken to the wholesale market at Shibirghan.

4.4 Transport of fuel



As described above, petrol and diesel are transported across borders by rail, tanker, truck, donkey and even by boat. Tankers are the main means of large scale transport, and aviation fuel can only be transported by tanker. Some companies have their own fleets of trucks and tankers, but most rely on private transport organisations which often comprise a number of individual truck and tanker owners who combine to win contracts for transportation of goods. One group of tanker drivers contracted to transport aviation fuel for a large international customer was observed near a main road in Kabul. They had brought aviation fuel from Pakistan and were waiting for the customer to come

and collect the fuel. This was taking some time and as a result some five or six tankers of aviation fuel had been sitting on the roadside overnight. The drivers reported that their journey from the Pakistani supplier to the Afghan border had taken two days and they had travelled a further two days from the border to Kabul. They did not travel at night. These drivers, who were all Pakistani, reported that there were security risks along the way both from criminals and insurgents, but that the situation had recently improved, especially on the Afghan side of the border. Nonetheless, they described some recent incidents of attacks on tankers that had caused large explosions.

Although there are security risks involved in the transportation of fuel, some reported attacks on fuel tankers may not be associated with insurgents. One large importer suggested that many of the attacks on tankers reported as insurgent attacks had in fact been criminal in nature and probably involved the drivers themselves. Pictures of “attacked” tankers sometimes showed much less damage than would be expected from the explosion of a tanker full of fuel. There had also been reports of accidents in the Jalalabad area in which ovens and heaters exploded as they had been filled with military jet fuel, indicating that fuel stolen from tankers had been sold for domestic uses. A very small proportion of aviation fuel is naturally lost during transportation due to evaporation. It is possible that the proportion of this natural loss is sometimes exaggerated and the fuel appropriated in this way.

Afghan and Pakistani trucking organisations both claim that their drivers have difficulty entering and driving in the other country. Disputes between trucking organisations have caused the temporary closure of Afghan–Pakistani border routes at some points. During July and August 2005, Pakistani border points on the Peshawar–

Jalalabad road and later along the Quetta–Kandahar road were closed for a month due to such a dispute.

5. Prices

5.1 Fuel prices in developing countries that are net importers

Prices for products refined from petroleum oil are linked to the price for oil on international markets. As there is no government subsidy or intervention in petrol prices in Afghanistan, changes in world oil prices are passed on via importers and retailers to the customer of refined petroleum products. As a general trend oil prices on international markets have been rising since 1999, and have recently reached record high levels – around US\$57 per barrel in July 2005.³⁰ Demand for petroleum products is also fairly inelastic, as consumers will continue to buy these products in spite of increases in price.

The retail price of petrol products is an important economic issue for developing countries, especially those that are oil importers and that have low per capita incomes. In these countries, petroleum prices can have a serious impact on livelihoods, consumer income and private sector development. Oil price shocks in such countries can affect economic growth.³¹ An International Monetary Fund report surveying selected developing countries which were net importers of petroleum products found that a significant majority regulated petroleum prices either at the retail or ex-refinery level. Even those governments that had deregulated prices were found to exert pressure on oil companies to moderate their price increases, and played a role in the price-setting process. The report suggested that deregulation of prices might not be a viable strategy where “domestic market conditions are not sufficiently competitive”.³² Afghanistan does require more effective regulation of petroleum product imports, however the introduction of price regulation by government might not be feasible in the current Afghan context and it could open further opportunities for rent-seeking and corruption. Better monitoring of the market to ensure openness and to ward against anticompetitive and monopolistic practices, combined with renovation of strategic storage facilities, could help to ensure that fuel products are more cost effective for the end customer.

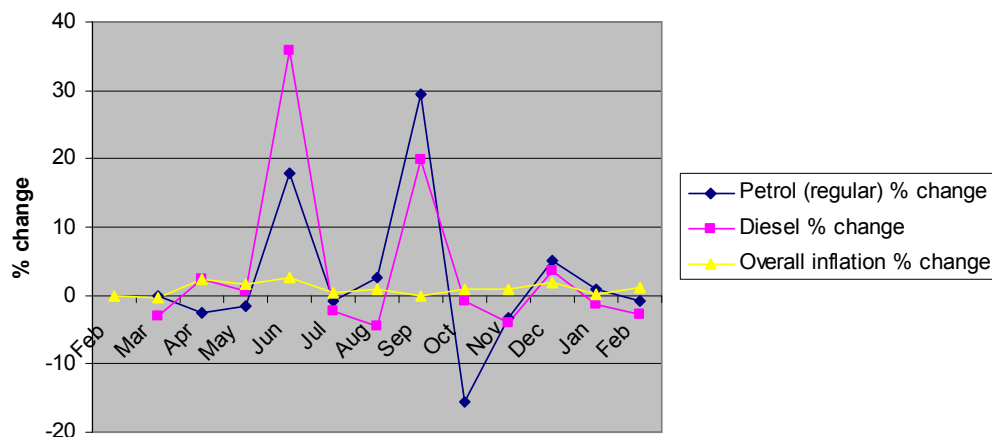


Figure 3. Petrol and diesel prices and overall consumer price index, monthly % change

³⁰ US Energy Information Administration, <http://www.eia.doe.gov>

³¹ IMF Research Department, December 2000, *The Impact of Higher Oil Prices on the Global Economy*, Washington: IMF

³² G. Federico, J.A. Daniel and B. Bingham, May 2001, *Domestic Petroleum Price Smoothing in Developing and Transition Countries*, IMF Working Paper, Washington: IMF

Fuel prices do have a relationship to prices for other consumer goods – as demonstrated by an anecdote related by a representative of the Afghan state-owned Melli bus service. When fuel prices rose during the winter, the price of a Melli bus ticket in central Kabul had to be increased. Shopkeepers near the bus station had then also increased their prices for groceries, citing the high fuel price and the higher cost of Melli bus tickets by way of explanation. However, Figure 3 plots monthly change in petrol and diesel prices against overall change in consumer prices in Kabul, and suggests that spikes in petrol prices do not have an immediate impact on overall consumer prices.

5.2 A snapshot of Afghan fuel prices

Location	Average price of petrol per litre (Afs)			Average price of diesel per litre (Afs)		
	Government pump station	Private pump station	Street traders	Government pump station	Private pump station	Street traders
Kabul	23.0	23.0	23.0	24.8	24.2	26.0
Mazar	21.0	25.5	24.0	24.0	24.0	25.5
Herat	20.0	22.5	23.5	21.0	23.0	23.0
Zaranj	18.5	21.0	18.9	21.0	21.0	18.5
Kandahar	no data	23.5	no data	no data	no data	no data
Jalalabad	no data	23.5	no data	no data	no data	no data

Table 2. Petrol and diesel prices, May and June 2005³³

It is surprising that petrol prices are not uniformly higher than diesel prices. Generally petrol was not sold by brand or by origin, but sometimes “super petrol” or other reportedly high-quality Iranian petrols were sold at a higher price per litre. It is also interesting that street traders of petrol as well as government pump stations, both of whom often claimed to sell fuel at cheaper prices than private pump stations, were not always cheaper according to these figures. The average price of a litre of diesel in Kabul was the equivalent of US\$0.48 according to the above figures. This compares to a retail cost of US\$0.60 in the US during the same period. By October 2005, at the time of publication of this study, there were reports that the rise in international fuel prices had driven the Afghan retail price to even higher levels, up to 29 Afghanis (US\$0.58) per litre for diesel and 27 Afghanis (US\$0.54) per litre for petrol in Kabul.³⁴

5.3 Petrol and diesel prices in Kabul

Figure 4 shows the changes in petrol and diesel prices in Kabul recorded by the Kabul Consumer Price Index (CPI) for the year 1383 (March 2004–March 2005).³⁵

³³ Prices were collected in May and June 2005 by noting prices from different pump stations and street vendors at different locations in each city. They are intended to give an impression of prices at a specific point in time in different areas of the country.

³⁴ *PakTribune*, 3 October 2005, “Rising fuel prices worry Kabul traders”, <http://paktribune.com/news/print.php?id=118281&PHPSESSID>

³⁵ Central Statistics Office, *Kabul Consumer Price Index n(CPI) Dalwa 1383 (February 2005)*. The data is recorded from February 2004 to February 2005.

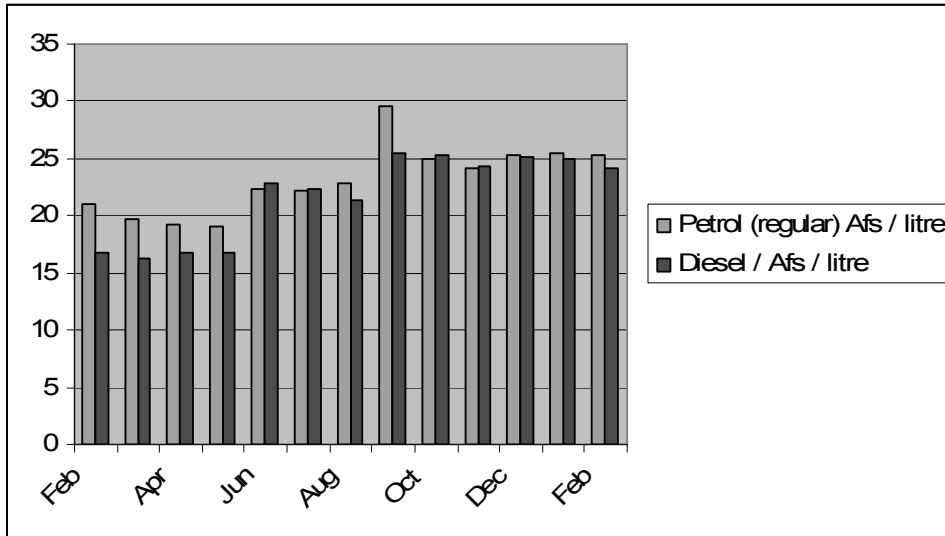


Figure 4. Petrol and diesel prices, 2004–05, Afs/litre

This figure shows price increases during the winter months caused by insecurity of fuel supply to Afghanistan during the winter, however there is also a jump in price between May and June and between August and September. The overall increase in prices has the potential to seriously affect households and businesses. For example, an international organisation, which reported consuming 4,000 litres of diesel per month for vehicles, generators and *bukharis* (heaters) would spend the equivalent of US\$592 more on diesel in February 2005 than one year earlier, according to these figures.

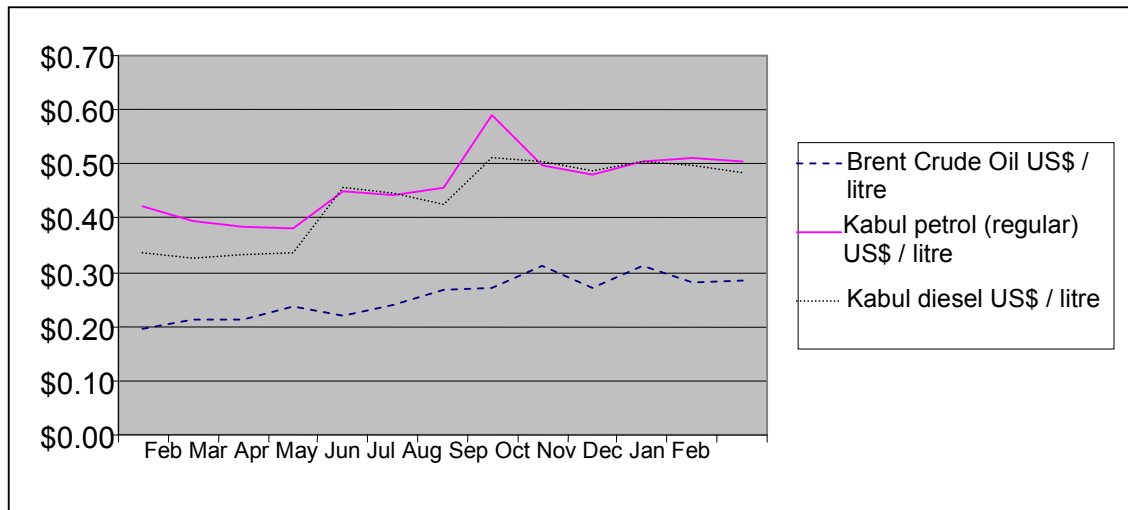


Figure 5. Kabul petrol and diesel prices (US\$/litre) and Brent crude oil (US\$/litre), February 2004–February 2005 (note: Brent crude oil price from US Energy Information Administration³⁶; 1 barrel = 159 litres crude oil)

In Afghanistan, the logistical difficulty of importing and distributing fuel, especially in winter, adds to the retail cost of petrol products and also compounds the existing volatility of fuel prices. Several interviewees reported instances of fuel shortages during winter months. As well as the seasonal price fluctuations, instability of fuel

³⁶ US Energy Information Administration prices, http://www.eia.doe.gov/pub/oil_gas/petroleum/data_publications/weekly_petroleum_status_report/current/pdf/table14.pdf

supply and price can be caused by disputes over contracts for petrol imports. This was illustrated by news stories in August 2004 about a temporary suspension of Turkmen fuel exports that had driven up prices of petrol and diesel as far away from the Turkmen border as Jalalabad.³⁷ (It may be that this story was behind the price spike shown in Kabul prices between August and September in the figures above.) An important means of protection against price fluctuation and petrol shortages is the existence of strategic petroleum products storage, especially in net importing countries such as Afghanistan. Storage facilities can act as a strategic buffer, especially to serve remote areas less easily accessible by road. The Asian Development Bank has produced a needs assessment for reconstruction of Afghanistan's fuel storage facilities and the government is considering a project to construct a central strategic storage facility. The MoC is also considering privatisation of existing storage facilities as a possible way forward. The Asian Development Bank has pledged US\$18m for the reconstruction and development of petroleum storage facilities.

Box 7. Price fluctuations

Prices fluctuate a lot. Today diesel is 20 Afs per litre. Tomorrow it could be 21 or 22 Afs. There were shortages of fuel at the end of last March, when roads were closed, and recently during a public holiday in Iran which halted fuel imports, and both these events had caused a spike in prices. There is also a general increase in prices. When I opened this pump station last year, a litre of diesel was 13 Afs. I add 1–2 Afs of profit per litre to the fuel I sell.

Pump station owner, Herat

This study found some evidence of price setting by wholesalers and retailers of fuel. One group of wholesalers described how the price of fuel was negotiated between them in a daily meeting, explaining “there is a small OPEC here every day”, although they later claimed that if one player wanted to trade at a lower price, he was at liberty to do so. The Kabul wholesale

market reported that petrol pump station owners from Kabul would send representatives to the Kabul market every morning to check the price of fuel and decide on their own prices. Traders here reported that pump station owners from provinces outside Kabul would frequently telephone to check the price at the Kabul market on a given day. One Kabul wholesaler explained that buyers would often buy fuel from several traders if they needed a large consignment, a system which increases the incentive for traders to agree with each other on pricing. In one Mazar pump station, researchers were told that there was limited scope for reducing the price of petrol and diesel, explaining: “If we reduced the price too much, other pump stations would come and complain.”

Smuggling of fuel from Iran also has an effect on prices and many importers complained that the influx of low quality fuel at below market prices was affecting their business. An importer of Central Asian fuel in Herat claimed that Iranian fuel sometimes floods the market, leading to price fluctuations. Fuel smuggling from Iran may also reduce the incentive to import better quality, more expensive fuel. Nonetheless petrol and diesel in Afghanistan appears to be both low in quality and relatively high in price.

³⁷ Sabawoon Daily News, 12 August 2004, “Suspension of Turkmen fuel imports said driving up prices in Afghanistan”, <http://www.sabawoon.com/read.asp?cat=1&ViewNews=1&newsdate=8/12/2004>

6. Government regulation

Responsibility for the import and storage of petroleum lies with the Department of General Petroleum Products (DGPP) in the Ministry of Commerce. All importers of petroleum products register with this department, which issues licences to import fuel. The Fuel and Liquid Gas Enterprise, which comes under the DGPP, is listed as a state enterprise that is scheduled to be privatised by asset sale. This would presumably involve the privatisation of the remaining government storage facilities for petrol, diesel and gas.

6.1 Government role in the fuel market

As mentioned above, the DGPP reported to the researchers that some government tankers were still in action and were used to import fuel. The DGPP is responsible for supplying fuel to ministries and other government departments, for which it uses a mixture of its own imports, the 3 percent in-kind charge which it levies on importers of fuel for use of government Fuel and Liquid Gas Enterprise storage facilities, and fuel which it buys on the open market. However, ministries, especially those such as the Ministry of Transportation that are large consumers of fuel, report that there is often a shortfall in their supplies, so they, in turn, are obliged to buy on the open market to fill the gap.

6.2 Customs procedures and other charges

Domestic taxation of petroleum products is a potentially large source of government revenue. An International Monetary Fund report surveying selected developing countries which were net importers of petroleum products found that taxation of these products accounted for 7–30 percent of overall revenue.³⁸ There have been suggestions that imports of petroleum products into Afghanistan should be taxed at a higher rate than the current 8 percent, but such an increase could adversely affect prices.

Importers of petrol, diesel and aviation fuel pay a customs tax at a rate of 8 percent, which is variously levied at the border itself or at the nearest main inland customs office. The 8 percent tax is collected at the border crossing itself in Turgundi and Islam Qala. In Islam Qala, the customs office reported that the 8 percent tax for fuel began to be levied at Islam Qala itself only five months ago, while other taxes were still paid in Herat. However, the 8 percent customs tax for imports from Heiratan was paid in the provincial customs office in Mazar-i-Sharif, and the fuel was merely weighed and valued in Heiratan. The Customs Department in Kabul confirmed that a small number of border ports that possessed facilities to process large tankers had recently been granted the authority to collect tax for fuel. In Zaranj the customs authorities claimed that the 8 percent tax on fuel imports was paid by tankers when they had collected the fuel, since they needed customs documents to transport the fuel to other provinces, so taxes were paid by the transporter of the fuel, not the importers. Traders also confirmed this practice, reporting that the buyers of the fuel paid the tax through their drivers, but it was not clear how easily this could be enforced in practice.

A further 2 percent transaction tax is applicable to importers. This is calculated as 2 percent of the value of imported goods plus the duty and would normally be paid to the Ministry of Finance (MoF) at the end of the tax year. However, the Customs

³⁸ Federico, Daniel and Bingham, *Domestic Petroleum Price Smoothing in Developing and Transition Countries*.

Department at the MoF reported that in the case of fuel imports, this was levied at the border due to the difficulty of collection at the end of the year. Thus, in this case customs is operating as a collection agent for the revenue department. Very few importers mentioned this 2 percent tax. One importer complained about “a new 2 percent tax”, which their company had so far “refused to pay”. There is also a tax of 3 percent which is levied at customs from importers who do not have a business licence, in an attempt to obtain revenue from transient traders. However, it is likely that the majority, if not all, fuel importers do possess a business licence.

In addition to the 8 percent customs tax and the 2 percent transaction tax levied by the MoF, the MoC imposes a 3 percent charge on petrol product imports, which is paid in-kind. As with customs duties, this charge is variously paid at the border or in the nearest provincial capital. Importers bringing fuel through Turgundi and Heiratan pay this 3 percent charge at the office of the DGPP in Herat, known locally as the “fuel monopoly” – a title that is probably rooted in history, as the trucks belonging to the government’s former fuel import monopoly had “monopoly” written on them. However, importers in Heiratan pay at the border itself. This 3 percent fee is a charge for use of the storage, loading and measurement facilities at border crossings that appear to belong to the state-owned Fuel and Liquid Gas Enterprise. The 3 percent charge was not levied in Zaranj, where there were no government storage facilities. The charge is technically levied before collection of customs duties, so importers pay the 8 percent customs tax on the 97 percent of their original volume of imported fuel remaining after the MoC has taken its charge. The exact relationship and division of responsibilities between the Fuel and Liquid Gas Enterprise and the DGPP was unclear to researchers.

All of these taxes are levied according to the price per litre or per tonne, which is valued using an official database. There are insufficient facilities for loading, unloading and measuring fuel at border entry ports, and many importers complained that measurements were not taken correctly. Researchers also heard reports of nepotism and patronage in customs appointments at border ports, many of which could provide rent-seeking opportunities for those inclined to take them. Enforcement of proper customs procedures is generally problematic and some have suggested that differential tax rates and tax exemptions are being granted, in some cases by those who lack the official authority to do so. The lack of enforcement capacity means that local customs officials may be granting unfair tax concessions to favoured traders.

It appeared that unofficial taxes were being paid by fuel traders in Nimroz and it is not entirely surprising that the trade in smuggled Iranian fuel should attract rent-seeking behaviour from groups wanting a share of the profits that can be made from this business. In Zaranj, the researchers were shown a document noting taxes paid to the “Nimroz Province Council of Rehabilitation”, even though by law all taxes raised (with the exception of municipal taxes) must be remitted to Kabul. Researchers received some reports of additional taxes for transporting fuel into different provinces, especially Kandahar.

The above procedure recalls the lines quoted in a previous commodity chain case study:

Many transactions...are subject to procedures that are...vaguely defined and not applied uniformly. This generates unpredictability and increases the

*scope for discretion and corruption. Simple transactions may involve interactions with multiple agencies.*³⁹

6.3 Quality and testing

Petrol and diesel imported into the developed world must meet set specifications in terms of physical properties, chemical composition and performance tests. There is no specified standard of fuel that must be met upon import to Afghanistan, although when import companies register with the DGPP, they “commit” to importing high-quality fuel. There is a testing and standards department at customs to test the quality of fuel entering Afghanistan, however one government official quoted an Afghan proverb to describe the standard of fuel imports to Afghanistan and the government’s capacity to control these standards: “the wheat is wet and the scythe is blunt”. There are laboratories for testing fuel at border ports, but the condition of their testing equipment is not known and anecdotes suggest these are practically non-operational. Currently, therefore, the only documentary assurance of standard is the certificate supplied by the importer from the source of the fuel. However, there are inadequate facilities for verifying these quality assurances. It is unclear what current mechanisms there are for checking the quality of fuel sold by wholesalers and petrol pump stations.

Meanwhile, poor quality fuel continues to be a serious concern in Afghanistan. Many customers interviewed reported that fuel was sometimes mixed with water and that this caused it to freeze in engines in the winter. Diesel does naturally thicken in cold conditions, but it is possible that fuel is being adulterated with water and also with other substances. Kerosene sold for domestic heating and lighting is also sometimes mixed with aviation fuel, which is more flammable, leading to explosions and, in some cases, severe burns to consumers.⁴⁰ Fuel for use in Afghanistan needs to take into account the differences in altitude in the country and the marked differences in climate between summer and winter. Higher altitudes require less volatile petrols and diesels, and different grades of diesels are required for summer and winter use. The use of poor-quality fuel involves both public health loss and also commercial loss for Afghanistan as engines are damaged and energy efficiency is impaired.

That air pollution from petroleum fuels is a potential problem in urban areas of Afghanistan can be seen by anyone stuck in traffic in Kabul – in the emission from exhausts of diesel soot, which is suspected to be a carcinogen and is caused by polluted or low-specification fuel and/or poorly tuned engines. There has been little research of air pollution levels in Afghanistan. A United Nations Environment Programme mission to Afghanistan in 2002 carried out some air sampling at urban sites in Kabul, Mazar, Herat and Kandahar. Increasing vehicle density in urban areas, and use of low-grade diesel was identified as a serious cause of air pollution. High levels of poly aromatic hydrocarbons (PAH) “most likely originating from vehicle exhaust emissions” were discovered in some areas:

The highest concentrations were detected in Mazar-i-Sharif, where analyses show 13.6 Ng/m³. The WHO average values for urban areas range from 1 to

³⁹ S. Lister and Z. Karaev, 2004, *Understanding Markets in Afghanistan: A Case Study of the Market in Construction Materials*, Kabul: Afghanistan Research and Evaluation Unit.

⁴⁰ R. Rustami, 27 July 2005, “Bad fuel blamed for rise in burn victims in Kabul city”, *Kabul Weekly*

10 Ng/m³. Concentrations for Kabul and Kandahar were between these values, while those for Herat were below WHO average values.⁴¹

One of the PAHs discovered in the air during this sampling was identified as Benzene-a-pyrene, a substance suspected of increasing the risk of lung cancer in humans. The potential risk to human health of PAHs is increased by the presence of dust in the air, which binds hydrocarbon particles and prevents them from escaping into the atmosphere.⁴² There is a need for more research on pollution levels from car emissions in urban areas of Afghanistan and of the role of low-grade petroleum fuels in urban air pollution.

Use of poor quality or polluted aviation fuel can significantly reduce the life span of engines. There have been cases where aircraft have been grounded due to the use of contaminated aviation fuel.⁴³

6.4 The National Environmental Protection Agency (NEPA) and the Afghanistan National Standardisation Authority (ANSA)

The National Environmental Protection Agency of Afghanistan was established in April 2005. NEPA currently has no enforcement or implementation role as there is no environmental management law in place. However, the first Afghan environmental law is presently under review by the Ministry of Justice and is expected to be passed into law in the near future. Policy papers on pollution control and on industrial and urban pollution are also under review. An Asian Development Bank funded project is underway in collaboration with NEPA to establish baseline information on air pollution in Kabul.

The Afghanistan National Standardisation Authority (ANSA), within the Ministry of Commerce, is the result of the work done by the National Commission for Metrology and Standards. This body has been established with the support of the World Bank Emergency Customs Modernisation and Trade Facilitation Project and is also part of the UNIDO Post Conflict Assistance for Industrial Rehabilitation and Development in Afghanistan. The ANSA will have a remit both for testing and regulation of consumer products in Afghanistan and is set to be the single national standards authority for all domains, as specified in Presidential Decree 952. The ANSA plans to conduct a technical study of current fuel specifications at border points in Afghanistan with a view to establishing the baseline quality levels of fuels entering the country. It will initially recommend the use of fuel specifications based on international standards, but as technical committees are established, these will take into account the Afghan context when evaluating what appropriate standards would be. In the short term, ANSA is procuring a mobile laboratory to allow testing of petroleum products at their ports of entry. In the medium term a fully equipped laboratory is planned in Kabul for testing of fuel samples taken from wholesale storage facilities and from petrol service stations. In the long term, ANSA plans to establish satellite laboratories in border posts across Afghanistan for the testing of petroleum fuels. ANSA laboratories will have both a regulatory and a commercial role, and will be available for use by businessmen to verify that goods meet the standards agreed in contracts with suppliers.

⁴¹ United Nations Environmental Program, 2003, *Afghanistan Post Conflict Environmental Assessment*, <http://www.reliefweb.int/library/documents/2003/unep-afg-01feb.pdf>

⁴² United Nations Environmental Program, 2003

⁴³ Australian Transport Bureau Special Investigation Reports, *Systemic investigation into fuel contamination*, <http://www.atsb.gov.au/aviation/sdi/fcon.cfm>

7. Conclusions and recommendations

7.1 Securing supply and quality

The price and quality of petroleum products has widespread implications for Afghan growth and reconstruction. Economic growth is literally fuelled by petroleum products, especially in a country where road transport and trade is such an important part of the economy and where most businesses rely on diesel generators.

All interviewees in this study, most of whom were traders, not consumers, were asked what recommendations they would make in order to make the petroleum fuel market more effective for their needs. It was remarkable how many said they would recommend better regulation of the market, even those for whom improved regulation would arguably be bad for business. Even in a free market, business is subject to some regulation to ensure standards and competitiveness. Some government intervention to protect Afghanistan from shortages of supply and price shocks is justified in this market. Security of supply could be promoted in the following ways:

- Continued development of existing and planned hydroelectric and other sources of energy to provide electricity without relying on diesel-driven generators. This includes linking Kabul to the northern electrical grid, as planned.
- There may be room for examining the feasibility of producing bio-fuels in Afghanistan. Bio-diesel is produced from oil seeds such as soy beans, cottonseed, rapeseed, peanuts and sunflower seeds. It is blended with mineral diesel at a ratio of up to 20 percent bio diesel to 80 percent crude oil diesel. Production of bio-diesel in Afghanistan would require large scale agricultural production of seeds and a partner company to process the oils. Bio-diesel is widely used in the European Union, blended with mineral diesel, is clean burning, with low emissions and does not require engine modification.
- Renovation of Afghanistan's strategic storage facilities is vital. Any privatisation plans for state storage facilities need to demonstrate conclusively that they will benefit Afghanistan's strategic security of fuel supply.
- If the Fuel and Liquid Gas Enterprise's assets are in fact privatised, this should be an open and transparent process. The enterprise's assets should be properly valued before any privatisation and details of the process should be openly available in the public domain.

Ensuring quality and standards for Afghan consumers is important for the Afghan reconstruction effort. As a World Bank official recently commented:

...however impressive the flow of funds is to implement the reconstruction, it is easily possible that an equal amount is lost because the consumers are suffering the costs of substandard infrastructure in the areas of health, pollution and other aspects of daily life relating to the quality of goods and services. The losses suffered by consumers also represent losses to the economy.⁴⁴

Improved quality of petroleum products for consumers could be promoted in the following ways:

⁴⁴ Amer Durrani (Task Manager for World Bank activities in Afghanistan), comments from a meeting with United Nations Industrial Development Organisation staff in Vienna, October 2004, quoted in UNIDOScope Weekly Internet Newsletter 24–30 October 2004.

- Petroleum fuel enterprises should be encouraged to work closely with relevant government bodies such as ANSA to ensure the establishment and smooth operation of an adequate regulatory regime.
- Consultation with the private sector and an appropriate phasing-in of new standards will help to ensure that regulation does not stifle economic activity.
- The regulatory regime for petroleum products requires the setting of basic standards, the establishment of testing facilities to verify these standards, and an enforcement capacity to remove non-compliant products from the supply chain.
- Baseline specifications for fuel imports into Afghanistan should be agreed by the government. The government also has a legitimate role in asking neighbouring countries not to export fuel below these basic specifications.
- Mobile testing facilities should be prioritised for use at border ports.
- Tighter control of the movement of fuel and standards of storage at the point of wholesale and retail is also necessary, since fuel can become polluted at this point even if it was previously of reasonable quality. The ANSA's plan to establish a laboratory for testing samples gathered by inspectors should be supported.
- The health and safety of those working in the fuel market requires protection. Fire fighting facilities and protective clothing should be mandatory.
- In the longer term, Afghanistan should begin to think about the environmental impact of petroleum fuels. Use of leaded petrol could be phased out over time and Afghanistan could phase in lower rates of taxation for more environmentally friendly fuels. NEPA will increasingly work in this area.

7.2 Private sector development

The fuel market in Afghanistan certainly provides employment for a large number of mostly small scale players. The experience of other countries confirms that this type of activity can act as a form of employment substitution, as in Thailand in the late 1990s, where urban workers who had lost their jobs in the economic crisis of that time often sought out informal street vending opportunities.⁴⁵ However, these players also often make very small returns. Moreover, there is limited room for movement and innovation for many smaller market players, as the cooperative connections with other businessmen are so binding and because lack of access to credit can keep them trapped in sub-scale enterprises.

One of the reasons why quality is such a problem in Afghanistan is that quality and competitiveness in an open market require several suppliers competing on a level playing field. Afghan importers of fuel are not playing in a level and open market, and this is especially the case higher up the supply chain. Openness and competition in this market and in the private sector more generally could be promoted in the following ways:

- Access to credit through banks and other financial organisations would open the market to players who were not able to gain unofficial credit. Access to micro-credit would allow small players to expand their businesses.

⁴⁵ Commission on the Private Sector and Development, UNDP, March 2004, *Unleashing Entrepreneurship: making business work for the poor*, Report to the UN Secretary General, p. 12

- Improved procedures for buying land and secure tenure for businesses renting accommodation are vital in order to encourage the growth and expansion of small and medium-sized players.
- Processes for granting licences to importers should be clear, transparent and accountable and should be subject to rigorous inspection.
- Transparency and corporate governance should be emphasised in private sector development and in the allocation of large contracts.
- Appropriate space should be maintained between senior politicians and other officials and large business players in order to reduce the improper patronage of certain businessmen by political figures.
- The establishment of membership-based, democratically run chambers of commerce beyond Kabul should be supported as effective lobby groups for the private sector.
- Anti-competitive practices in trade should be addressed in order to ensure the maximum realisation of the benefits of free market competition in terms of increased productivity and innovation for businesses and better value for consumers.

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