

SAARC Dissemination Workshop for the Study on “Promotion of the trans-border business of crude oil and POL products in SAARC member states”

Presentation 1: Crude Oil & POL products Market Outlook : Introduction

Presenter: CRISIL Research

Scope of the study

The terms of reference of the study include:

1. Study of relevant markets of each member state and their potential for trans-border business, including business/trade volumes, opportunities and challenges
2. Review of existing policies, regulatory instruments, prevailing business/trade regimes and the legal framework of each member state with relation to crude oil and petroleum products
3. Pointing out of barriers and impediments in cross-border business of petroleum products
4. Assessment of the various technological, financial and commercial aspects for promotion of trans-border business of crude oil and petroleum products
5. Way forward for harmonisation of existing rules, regulations and procedures in SAARC member states
6. Analysis of effectiveness and benefits of promoting trans-border business in SAARC member states
7. Determining of governmental support for promotion of trans-border business, including wide-ranging actions for cross-border infrastructure, institutional linkages, legal and regulatory frameworks, etc.
8. Conclusions and recommendations for future

Approach and Methodology

Five-step framework to assess petroleum, oil and lubricants (POL) demand and cross border trade



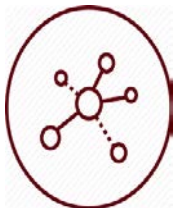
Data collection

Annual government data, energy reports for multilateral funding agencies, press releases



Long-term demographic and economic trends

Economic and demographic forecasts and impact on energy requirement due to impending changes



Sector deep dives: Power, residential, industrial, transport

Demand outlooks and forecasts, underlying factors leading to change



Fuel supply outlook

Domestic production and import of fuels, changing fuel mix owing to supply constraints, price rises, government policies

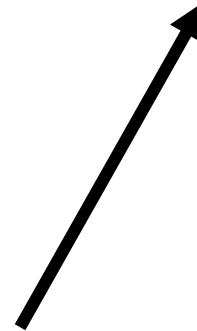


Balancing of trade deficit within and outside SAARC nations

Addressing barriers to improving trade and estimation of country wise benefits



Data-driven bottom-up and top-down approach, to derive demand and supply outlook of SAARC member-states until 2030



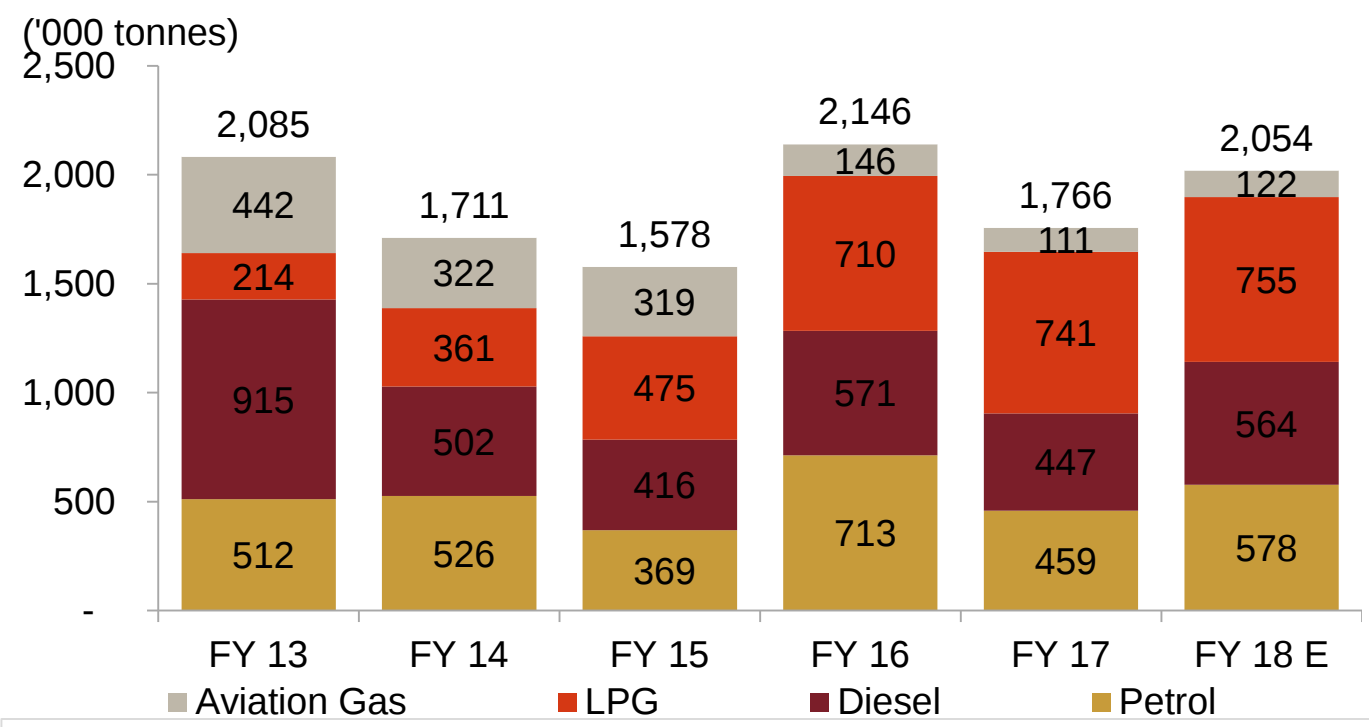
SAARC POL Overview: Demand - Supply Review and Outlook

Countries	POL ('000 tonnes) (FY18/CY17)		POL ('000 tonnes) (FY30/CY30)	
	Gross Demand	Domestic Supply	Gross Demand	Domestic Supply
Afghanistan*	2,019	0	4,673	4,132
Bangladesh*	6,384	1,166	13,435	11,250
Bhutan	158	0	381	0
India	204,922	252,839	316,119	348,475
Maldives	561	0	1,121	0
Nepal	2,307	0	5,982	0
Pakistan	29,037	10,741	50,735	24,617
Sri Lanka	5168	1867	7,844	5,976
Total SMS	2,50,556	2,66,613	4,00,290	3,94,450

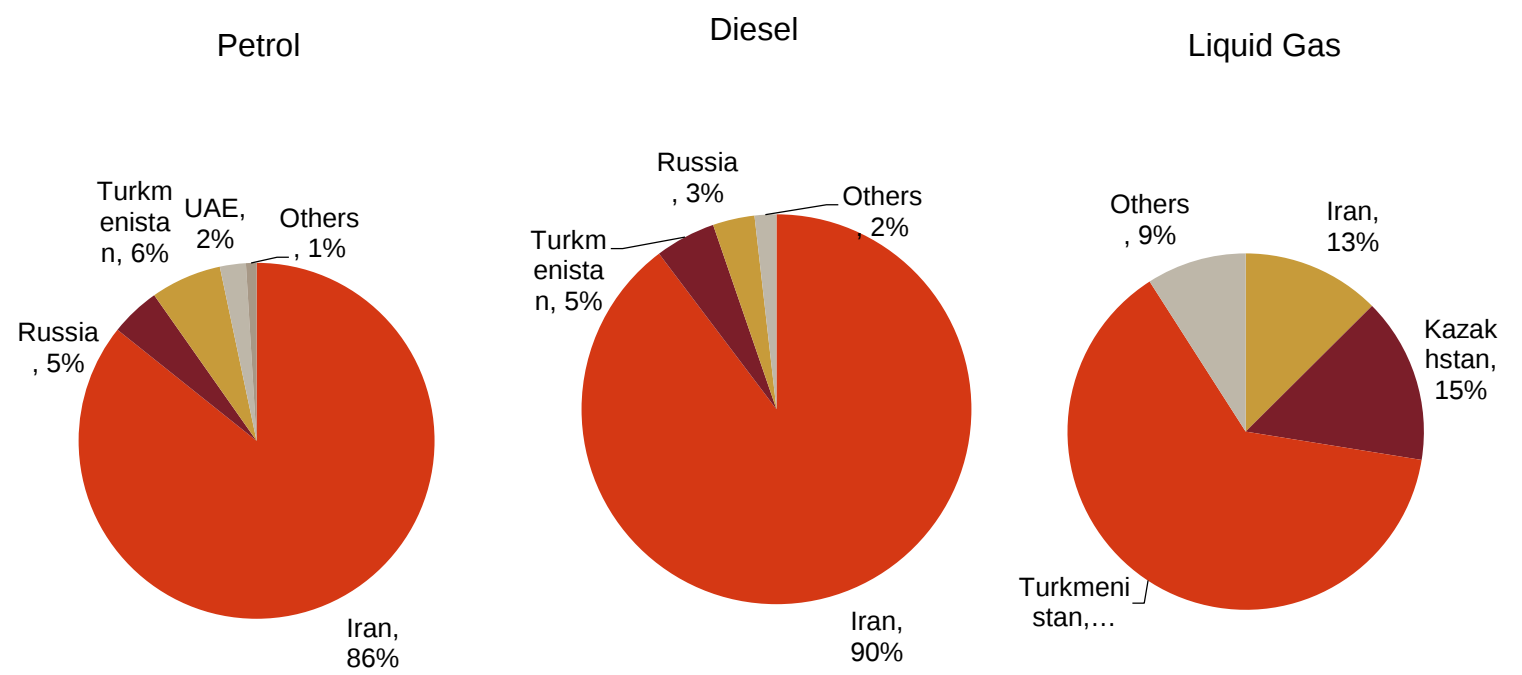
**Excluding LPG*

Afghanistan: POL demand supply review

Consumption of major POL products



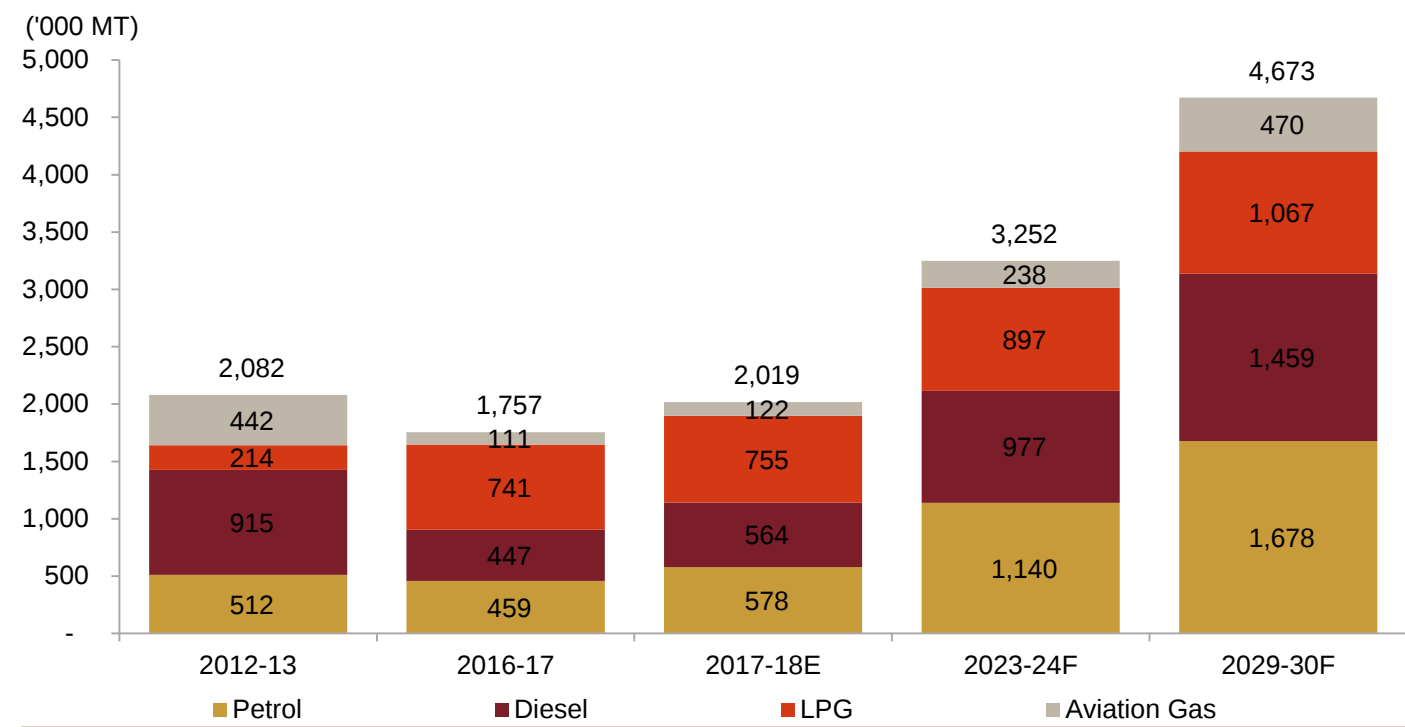
Country-wise POL products Imports



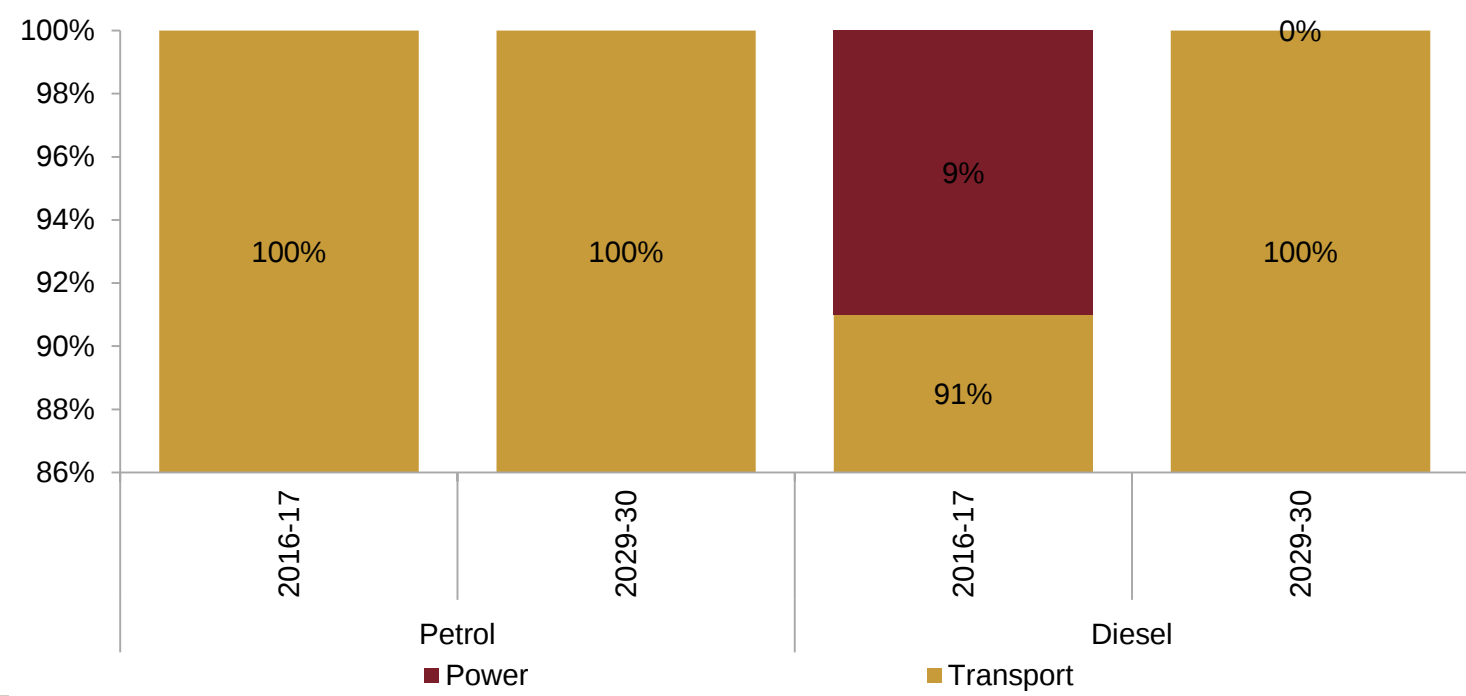
- Afghanistan’s overall demand for POL products is estimated to have remained stable between fiscals 2013 and 2018.
 - While demand for petrol and LPG saw a growth of 2.4% and 28% CAGR, respectively, during the period, this was offset by a decline in diesel demand (de-growth of 9.2% CAGR) and ATF, which saw a sharp decline of 22% CAGR during the period.
- Diesel and petrol in overall terms comprise 51% of the total POL demand in the country. Both diesel and petrol-based vehicles grew at a 3% CAGR from fiscal 2013 to 2018
- Liquefied Petroleum gas (LPG) is the second largest POL component, accounting for almost 40% of the total demand share.
 - Its demand seems to have risen with the replacement of biomass with domestic cooking fuel in both rural and urban households
- Afghanistan imported 100% of its total POL product requirement. Imports are majorly sourced from Iran, Turkmenistan and Uzbekistan

Afghanistan: POL demand outlook

Overall POL demand Outlook 2030



Segment-wise break-up of major petroleum products consumption



- Petroleum product consumption in Afghanistan is expected to grow at a CAGR of 7.2% between fiscals 2018 and 2030, as against no growth seen over the past five years.
 - Cars and two wheelers are expected to grow rapidly during the period, boosting overall demand for petrol, which is expected to grow at a 9.3% CAGR.
 - Diesel demand is expected to grow at an 8.2% CAGR between fiscals 2018 and 2030, driven by higher demand from the transport segment, while demand from power is expected to decline to zero, due to cheaper power imports and rise in renewable energy supply.
 - Due to high per capita consumption of LPG in Afghanistan, LPG consumption is expected to grow at a relatively slower pace, driven by growth in population

Afghanistan: POL supply outlook

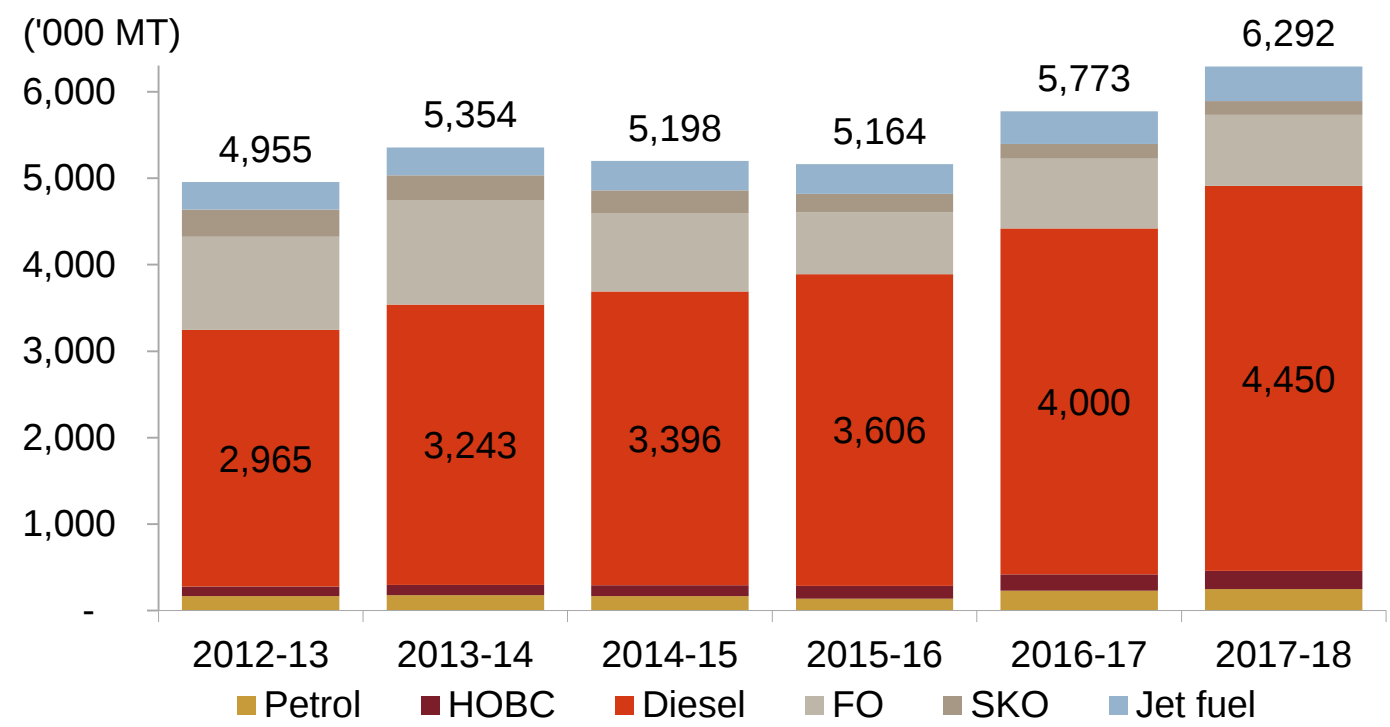
POL Trade balance

('000 MT)	2012-13	2016-17	2017-18E	2023-24F	2029-30F
Refining capacity	1,643	1,643	1,643	1,643	4,132
Crude oil condensates production	1.1	1.1	1.1	498	4,979
Crude oil imports	0	0	0	0	-847
Petroleum products, demand	2,082	1,757	2,019	3,252	4,673
Petroleum products, production	0	0	0	400	4,132
Petroleum products, net imports	2,082	1,757	2,019	2,852	541

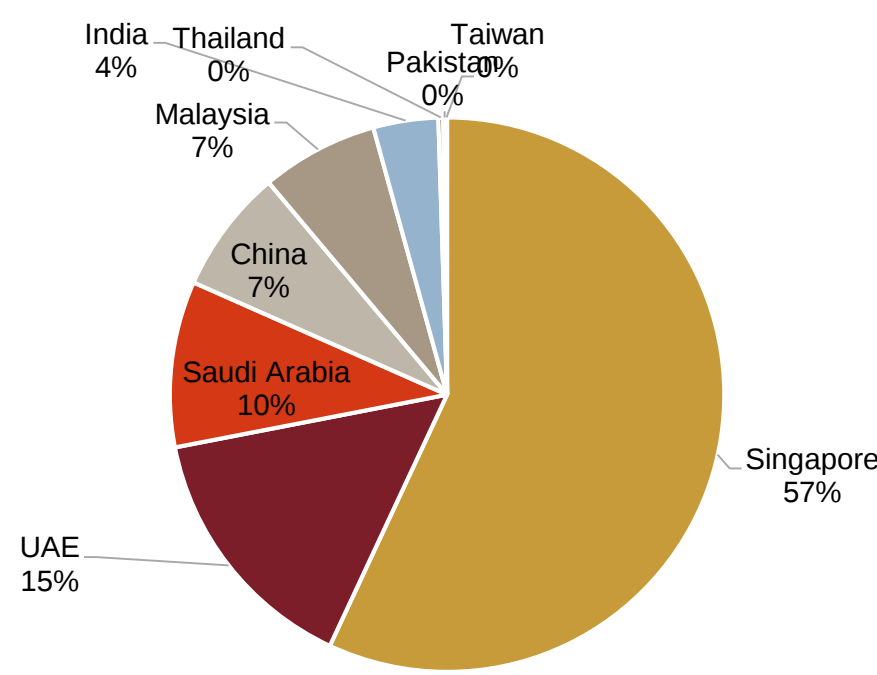
- Afghanistan has a current refining capacity of 32,500 barrels per day (1,643 thousand tonne per annum). However, these refineries are currently non-operational, due to the ban on crude imports. These refineries are expected to start operating by fiscal 2020.
 - Additionally, there is a plan to add 50,000 barrels per day (2,489 thousand tonne per annum) of refining capacity to be fully operational by fiscal 2027.
- Afghanistan is expected to produce petroleum products of 4.1 million tonne against a demand of 4.6 million tonne, leaving an import requirement of only 0.5 million tonne.
- In addition, the country has a strategic goal to increase its crude oil production to 100 thousand barrels per day (4.9 mtpa) over the long term, therefore meeting its entire crude requirement.

Bangladesh: POL demand supply review

Consumption of major POL products



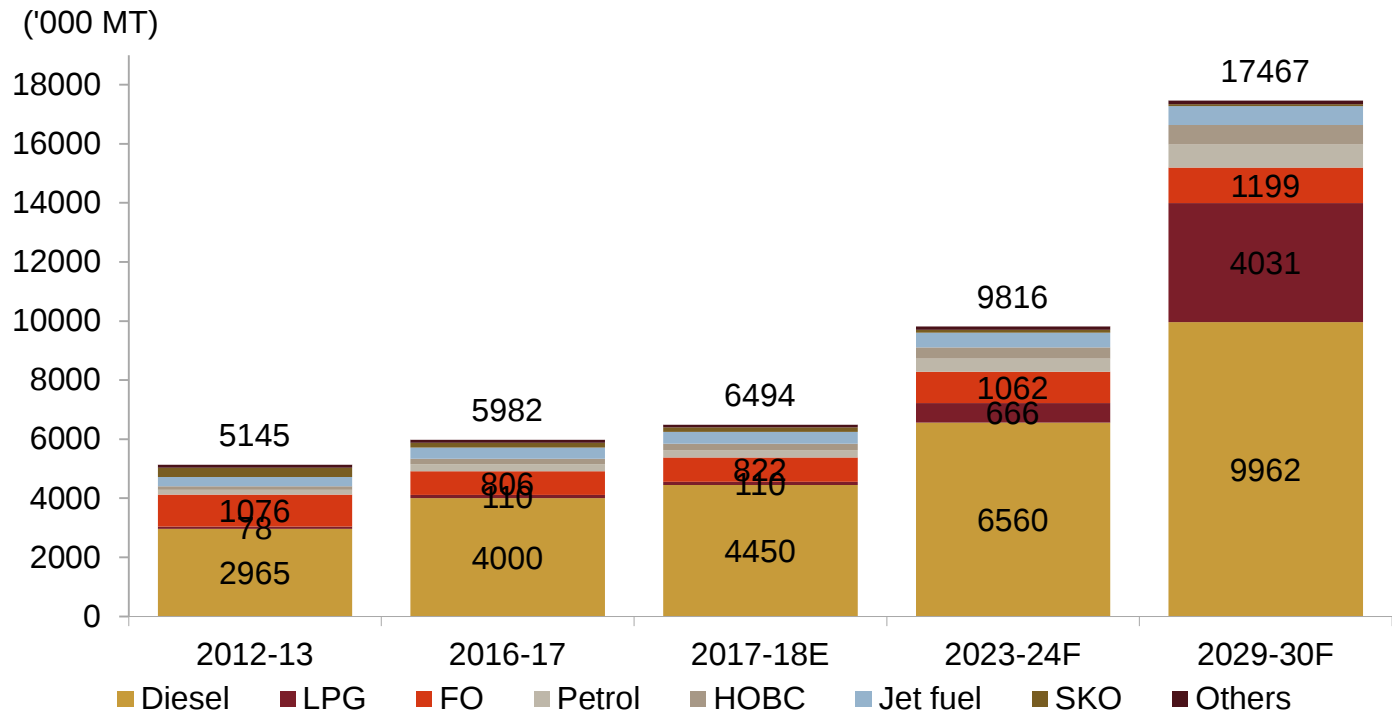
Import payment for oil products in FY17



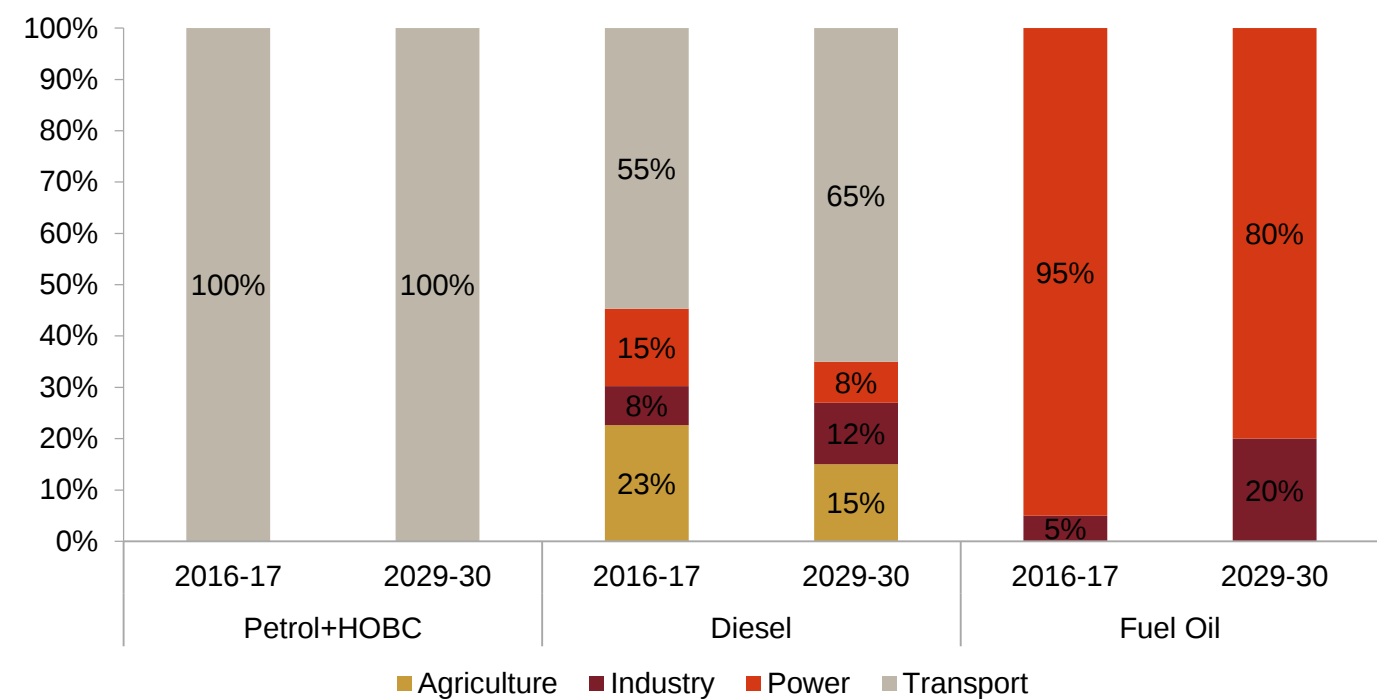
- Bangladesh's overall demand for POL products is estimated to have risen at 4.7% CAGR from fiscal 2013 to 2018 (exclusive of LPG) with specific growth of 8.7% in fiscal 2018.
- In overall terms, petrol and HOBC consumption in Bangladesh rose steeply between fiscals 2013 and 2018 at 8% and 14% CAGR, respectively, mainly driven by the transportation segment.
- Diesel consumption also saw rapid 8.5% CAGR owing to a rise in demand from the industrial and agricultural segments in addition to increased offtake from the transport segment.
- Consumption of furnace oil, with the power sector accounting for a major share, has shown a decreasing trend over the years. It has been falling at 5.3% CAGR between fiscal 2012 and fiscal 2013 with a shift to electricity imports from India.
- Singapore, the global POL trading hub, forms the single largest supplier of POL products, followed by the Middle East.

Bangladesh: POL demand outlook

Overall POL demand Outlook 2030



Segment-wise break-up of major petroleum products consumption



- Petroleum product consumption in Bangladesh is expected to grow at 6.4% CAGR (excluding LPG) between fiscals 2018 and 2030 as against 4.7% growth seen over the past five years.
- Cars and two-wheelers are expected to grow rapidly during the period, boosting overall demand for petrol and HOBC, which is expected to grow at a 10% CAGR.
- Diesel demand is expected to grow at 7% CAGR between fiscals 2018 and 2030, driven by higher demand from the transport segment and industrial growth.
 - Diesel demand from the power sector, which today contributes to 15% of the overall diesel demand, is also expected to see marginal growth for the next two-three years, and stagnate thereafter.
- The Bangladesh government, as per Bangladesh Power Development Board Annual Report, 2016-17, is planning to add 1450 MW of FO-based plants over and above the existing capacities. This is expected to result in demand for FO growing at 3.2% CAGR between fiscals 2018 and 2030.
- Due to significant policy push, LPG demand in Bangladesh is expected to grow sharply at a 35% CAGR with restriction of domestic gas only for existing customers and rising transport demand.

Bangladesh: POL supply outlook

POL Trade balance

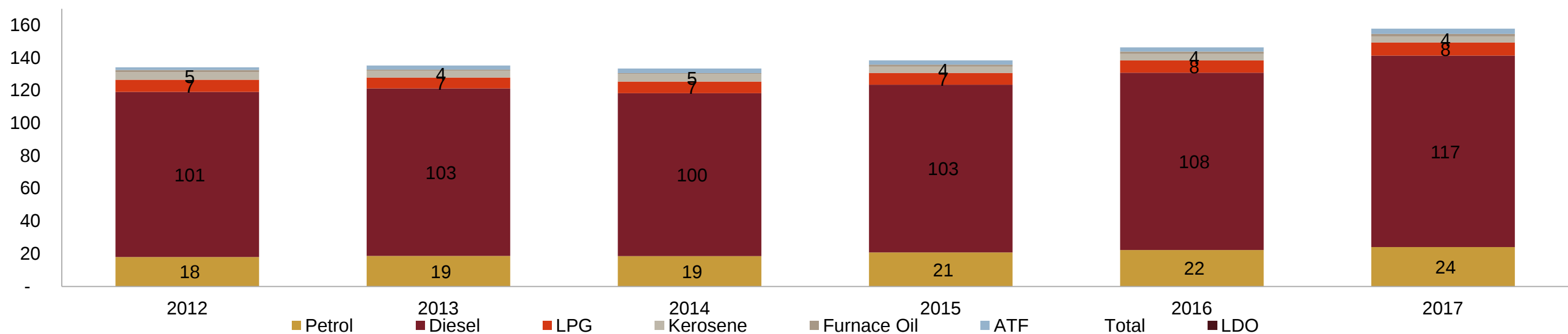
('000 MT)	2012-13	2016-17	2017-18E	2023-24F	2029-30F
Refining capacity	1,500	1,500	1,500	4,500	12,500
Crude oil condensates production	60	26	27	30	40
Crude oil Imports	1,301	1,365	1,139	4,020	11,210
Petroleum products demand (excluding LPG)	5,067	5,872	6,384	9,150	13,436
Petroleum product production (excluding LPG)	1,361	1,392	1,166	4,050	11,250
Petroleum product net import (excluding LPG)	3,706	4,481	5,218	5,100	2,186

- ERL, the only refinery in Bangladesh, plans to expand its existing capacity from 1.5 million tonnes to 4.5 million tonnes by fiscal 2020, which is expected to result in the cutting down of POL product imports.
- In addition to this brownfield expansion, Kuwait Petroleum Corporation (KPC) is also considering setting up a greenfield refinery and petrochemical complex at Moheshkhali Island in Southern Chittagong.
 - It is expected the refinery will have a crude oil distillation capacity of 8.0 million tonnes and will come online by fiscal 2027
- . While the total domestic production of petroleum products is expected to increase to 11.2 million tonnes in 2030, overall demand for POL products will outstrip supply by reaching 17.5 million tonnes, resulting in an import requirement of 6 million tonnes by 2030.
- Additionally, crude imports for Bangladesh are expected to rise to feed the incremental refining capacities.

Bhutan: POL demand supply review

Consumption of major POL products

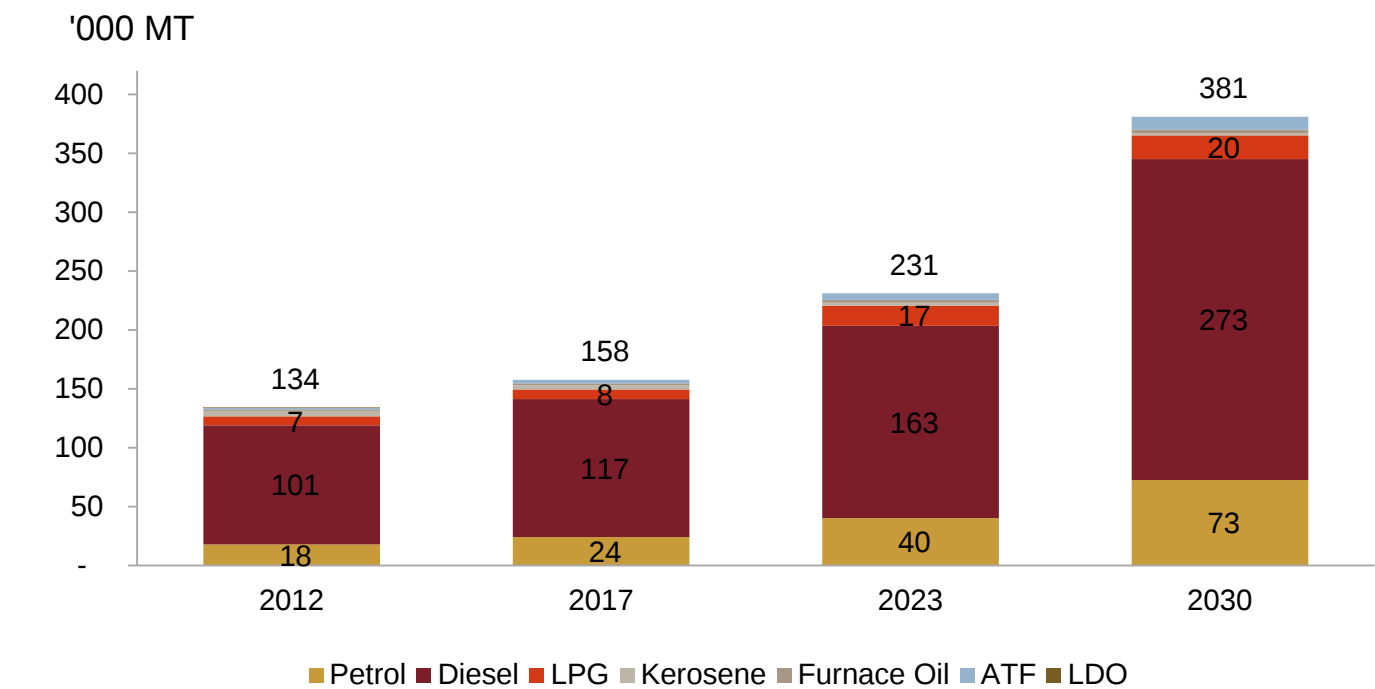
('000 MT)



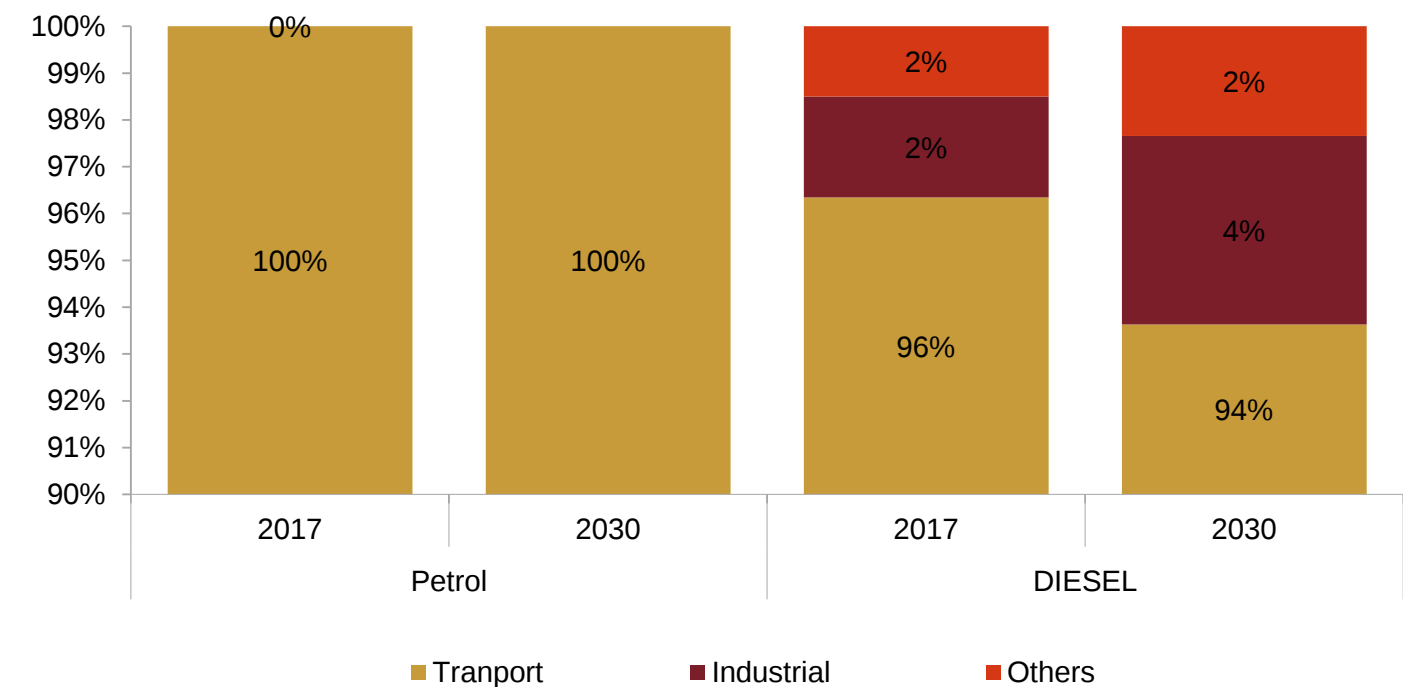
- Bhutan saw stagnation in the growth of demand for POL products from the transportation sector between 2012 and 2014 owing to a ban in import of private and commercial vehicles. However, post lifting of the ban in 2014, vehicle demand grew at a 9% CAGR between 2014 and 2017. This led to demand for POL products growing at a strong 6% CAGR during the period.
- Strong vehicular growth at 6.1% CAGR from 2012 to 2017 even after the ban on imports, particularly passenger cars and utility vehicles, led to a 6% CAGR in petrol consumption during the period.
- Diesel consumption grew at 3% CAGR with a pickup in demand for commercial vehicles subsequent to removal of the ban on vehicle imports. The transport sector accounted for more than 95% of the total diesel demand in the country in 2017
- Other key petroleum products include kerosene, which has seen a decline in demand at 5% CAGR from 2012 to 2017 owing to replacement with subsidised LPG as cooking fuel.
 - LPG demand grew at 5% CAGR from 2014-2017 to reach 8,100 MT in 2017.

Bhutan: POL demand and supply outlook

Overall POL demand Outlook 2030



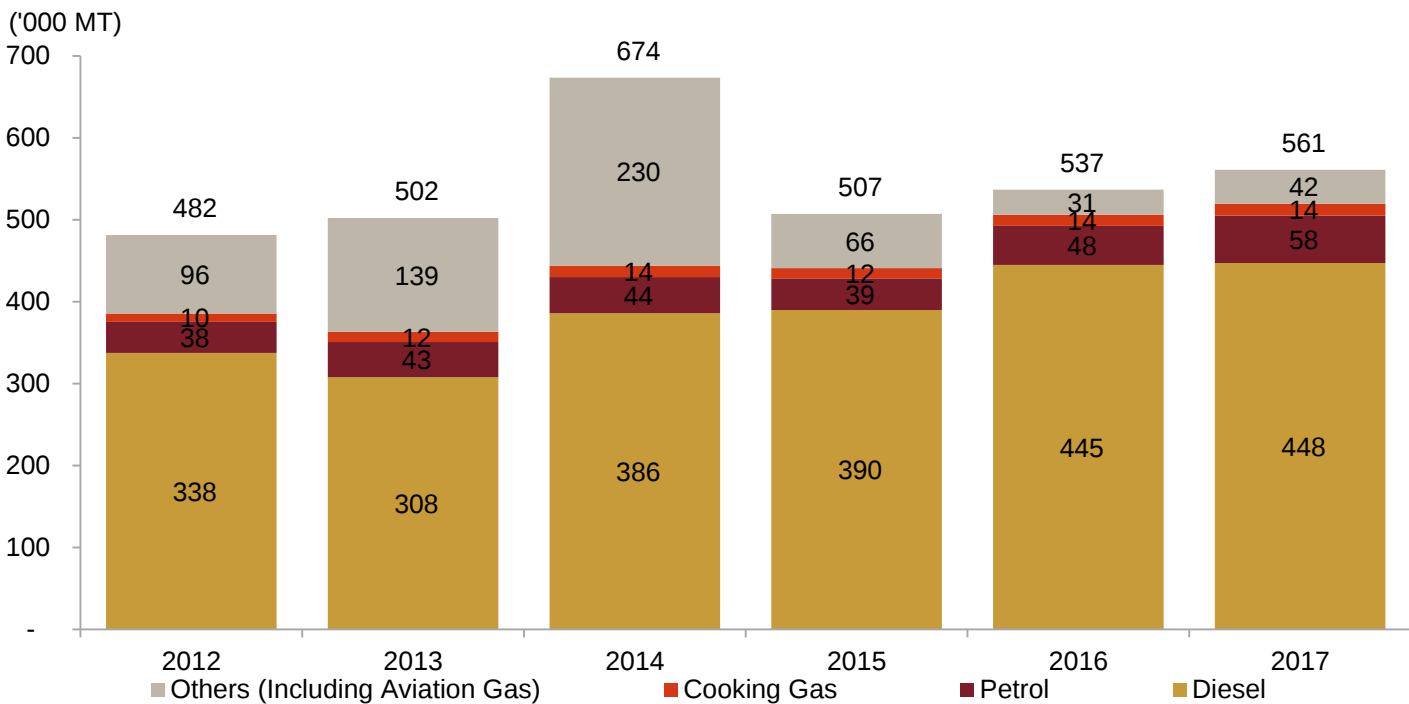
Segment-wise break-up of major petroleum products consumption



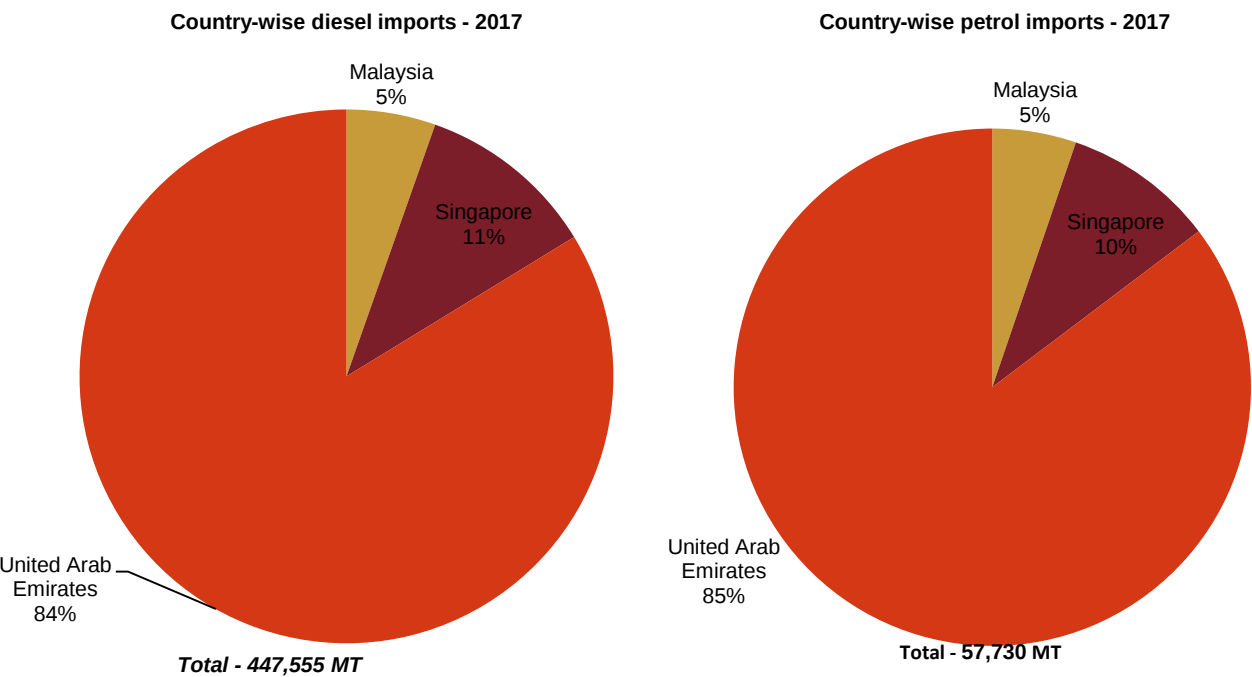
- Consumption of key petroleum products in Bhutan is expected to grow at 7% CAGR from 2017 to 2030 as against 6.8% growth from 2015 to 2017, subsequent to lifting of the vehicular import ban.
- Strong GDP growth (more than 8-9%) and a resultant increase in per capita income is expected to boost overall vehicular sales in the coming years. Lack of availability of any alternative fuels (CNG) and minuscule penetration of electric vehicles would boost demand for petrol, which is expected to grow at 8.9% CAGR from 2017-30.
- The diesel demand is expected to grow at 6.7% CAGR from 2017-30, driven by higher demand from the transport segment and industrial growth. Transport sector constituted ~95% of diesel demand as of 2017.
- LPG consumption is expected to grow at 7.3% CAGR from 2017-30, due to increase in LPG availability subsequent to the launch of the non-subsidised cylinder scheme in February 2018 and focus on shift towards cleaner cooking fuels are expected to be the key factors driving demand
- Owing to its landlocked nature, Bhutan is unlikely to undertake indigenous refining and face issues in transportation of crude oil. Therefore, it is expected to continue meeting its POL demand from imports. Overall deficit of POL products is expected to reach 0.381 million tonnes by 2030.

Maldives: POL demand supply review

Import of POL products (demand) for the Maldives



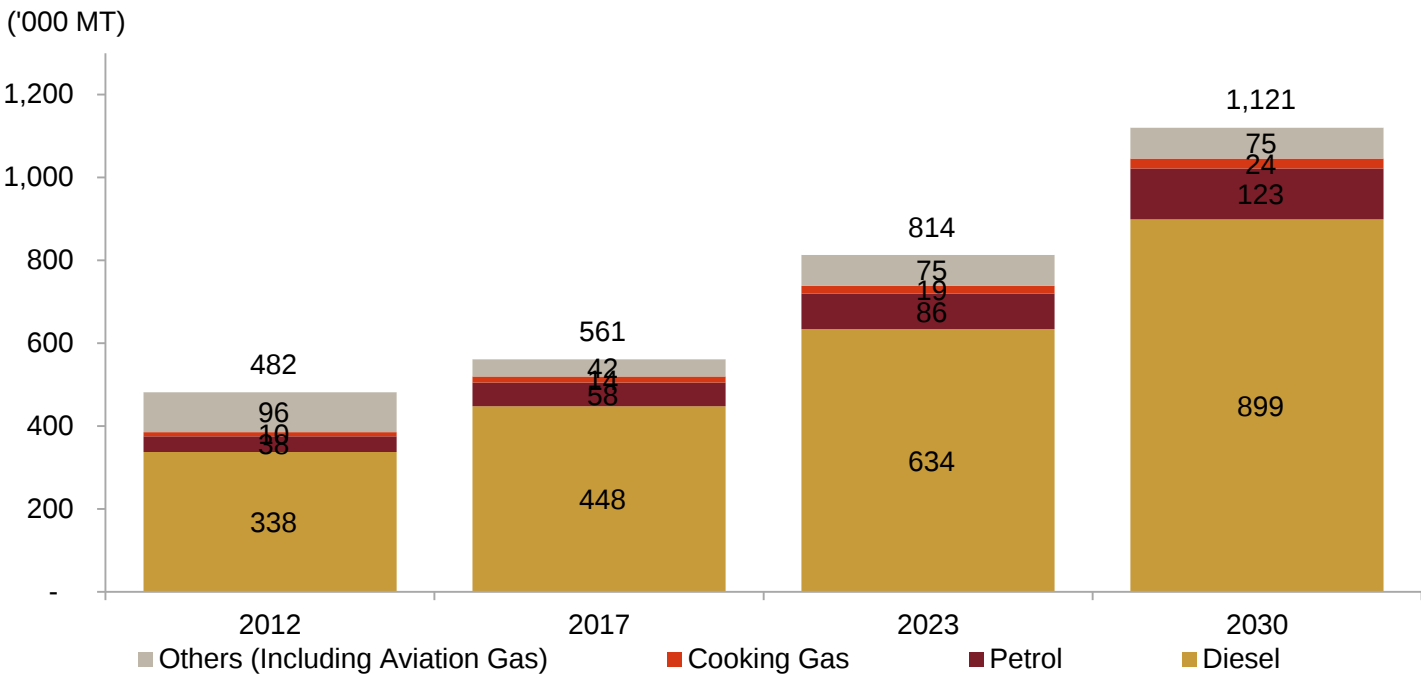
Country-wise diesel and petrol imports by the Maldives



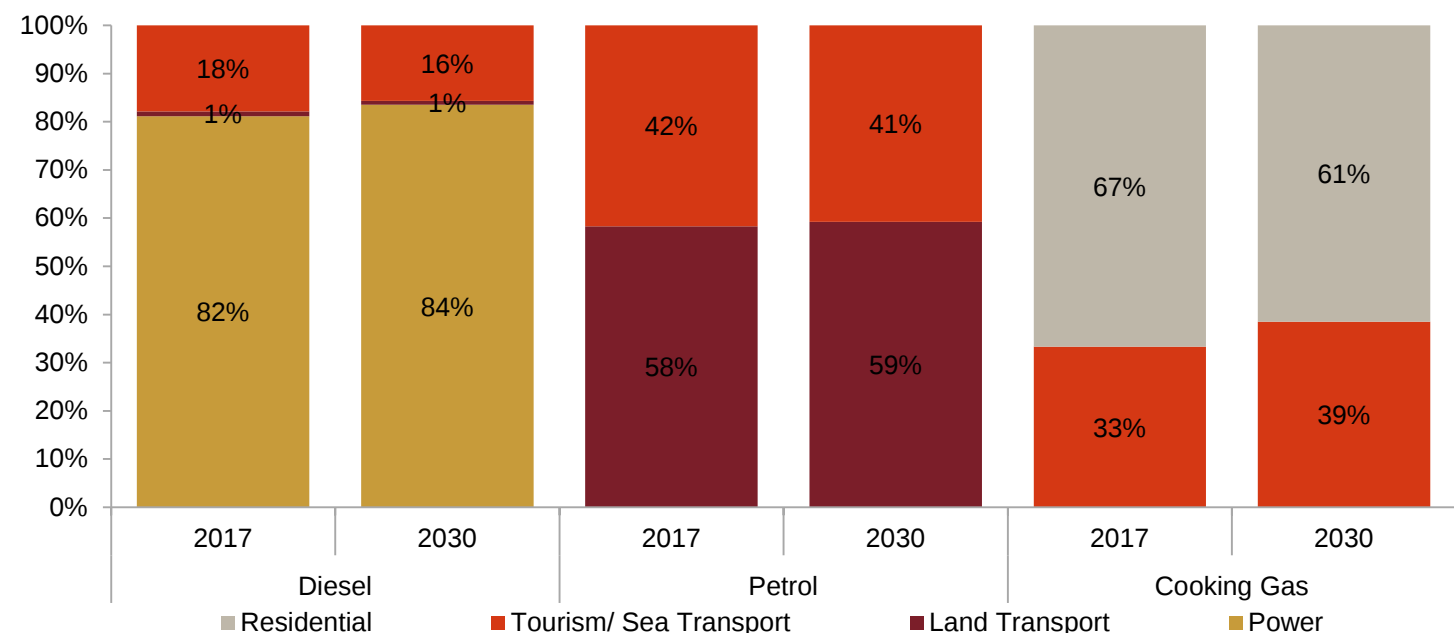
- Demand for POL products in the Maldives clocked a CAGR of 3% to 561,433 MT in 2017 from 481,577 MT in 2012 led by strong growth in demand for petrol and cooking gas which logged a CAGR of 9% and 8%, respectively.
- Diesel serves as the major primary energy source fuel accounting for more than 80% of total POL imports in the country in 2017. The power sector accounted for more than 80% of diesel consumption with power generation, led by demand, posting a CAGR of 6.2% to reach 1,370 MU from 1,000 MU in 2012.
- Demand for petrol has risen significantly over the last five years to account for 10% of total POL imports in the country in 2017, led by rising number of motorcycles and passenger cars whose population has doubled during the same time.
- Import data suggests that the demand for cooking gas in the Maldives has risen from 10,000 MT in 2012 to 14,500 MT in 2017 with residential consumption accounting for more than 60% of the total demand.

Maldives: POL demand, supply outlook

Overall POL demand Outlook 2030



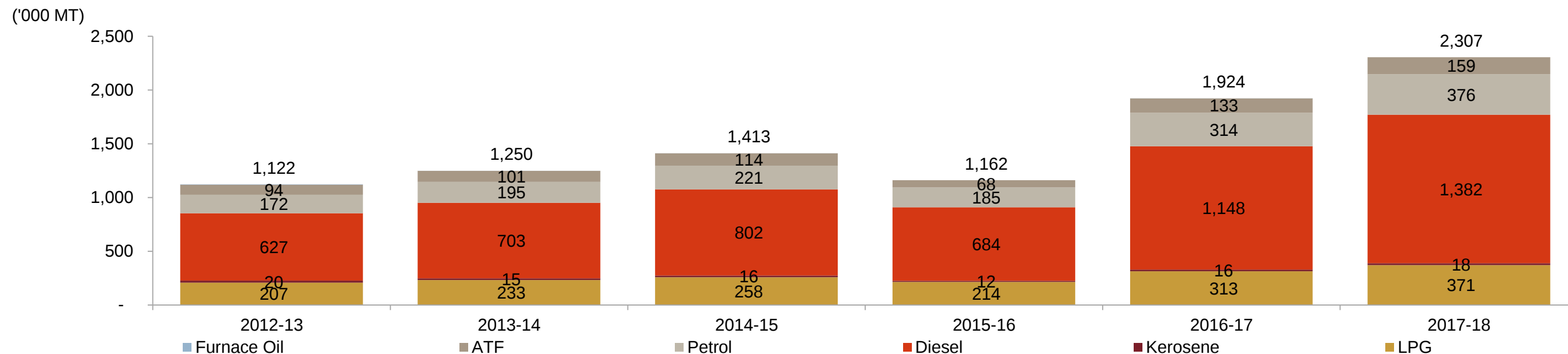
Segment-wise break-up of major petroleum products consumption



- Demand for POL products in the Maldives is expected to rise at a CAGR of 5.4% to 1,114,203 MT in 2030 from 561,433 MT in 2017, led by strong growth in demand for petrol and cooking gas.
- As part of its efforts to reduce dependence on imported fuel, the government of the Maldives is pushing for power generation through renewable energy. However, diesel is still expected to remain the primary fuel to meet power demand with only 10% of total electricity demand estimated to be met from renewable energy sources by 2030. Overall, demand for diesel shall clock a CAGR of 5.5% in line with GDP growth to reach 898,791 MT in 2030.
- Number of cars and motorcycles is expected to grow at a strong pace of 9% and 11%, respectively, till 2022, beyond which it is forecast to slow down to 5% on-year. Additionally, growth in the tourism segment (estimated with increase in tourist arrivals at 7-8% CAGR) is expected to result in higher demand of petrol from speed boats used for tourist transits. Overall, it is expected that the demand for petrol shall rise at 6.0% CAGR to reach 122,955 MT in 2030.
- Maldives will be entirely import dependent to meet its POL requirements going forward.

Nepal: POL demand supply review

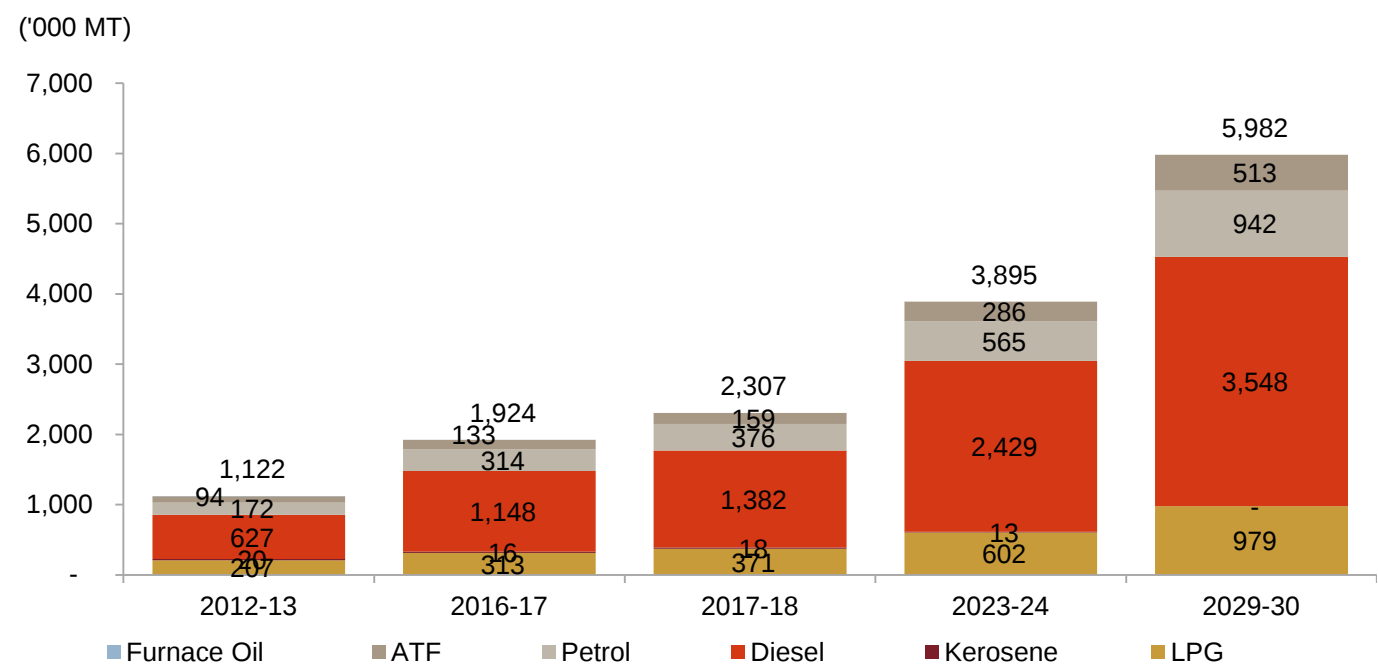
Import of POL products (demand) for the Nepal



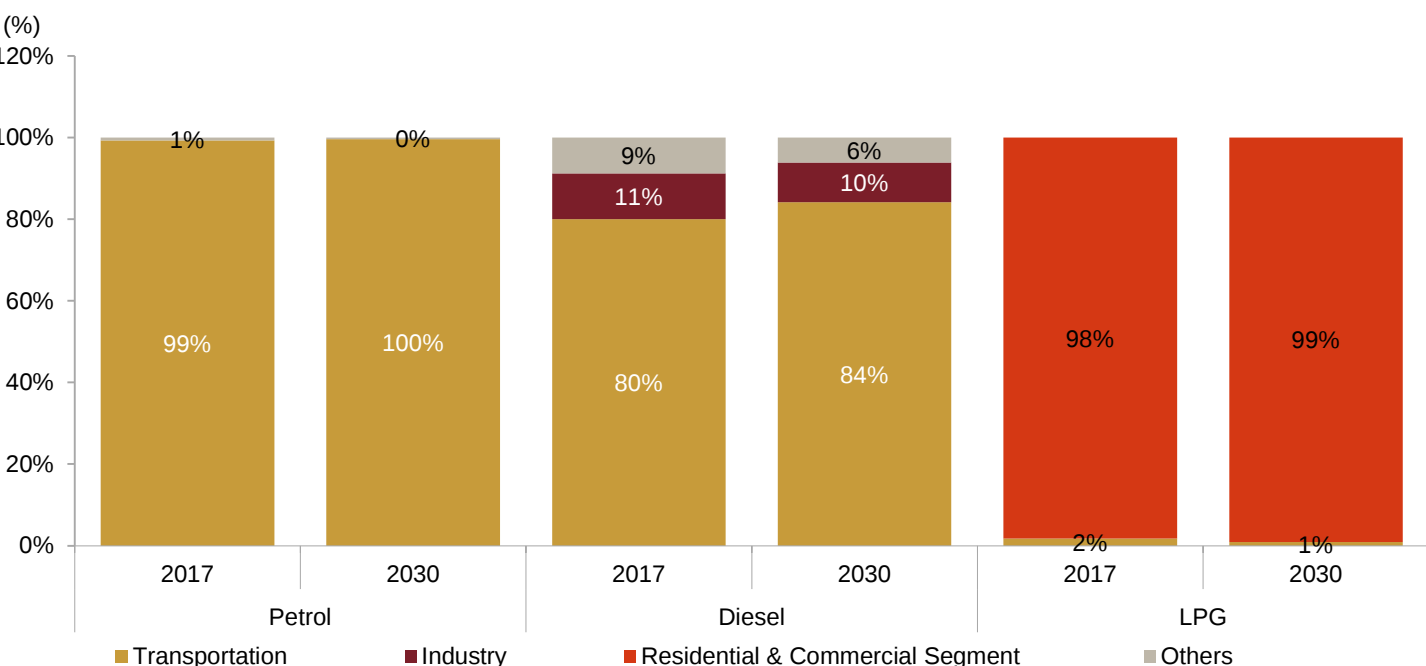
- Demand for the POL products in Nepal grew strongly at 8% CAGR over fiscals 2013-2015 and subsequently declined around 18% on-year in fiscal 2016.
 - The decline can be attributed to the political unrest in the country following the introduction of the new constitution in September 2015 resulting in trade blockade in Terai region.
- Petrol, diesel and LPG cumulatively accounted for 92% of the total POL products imports in fiscal 2017. Petrol and diesel are mainly consumed by the transport sector, which accounted for 82% of the total key POL products consumption.
- Shift towards cleaner fuels for residential cooking pushed up LPG demand by 12% CAGR over fiscals 2013-2018. Kerosene, in turn, saw a fall in demand.
- The demand for aviation fuel grew strong at 11% CAGR over the period backed by robust tourism and transport of foreign aid to support the country after the devastating earthquake

Nepal: POL demand, supply outlook

Overall POL demand Outlook 2030



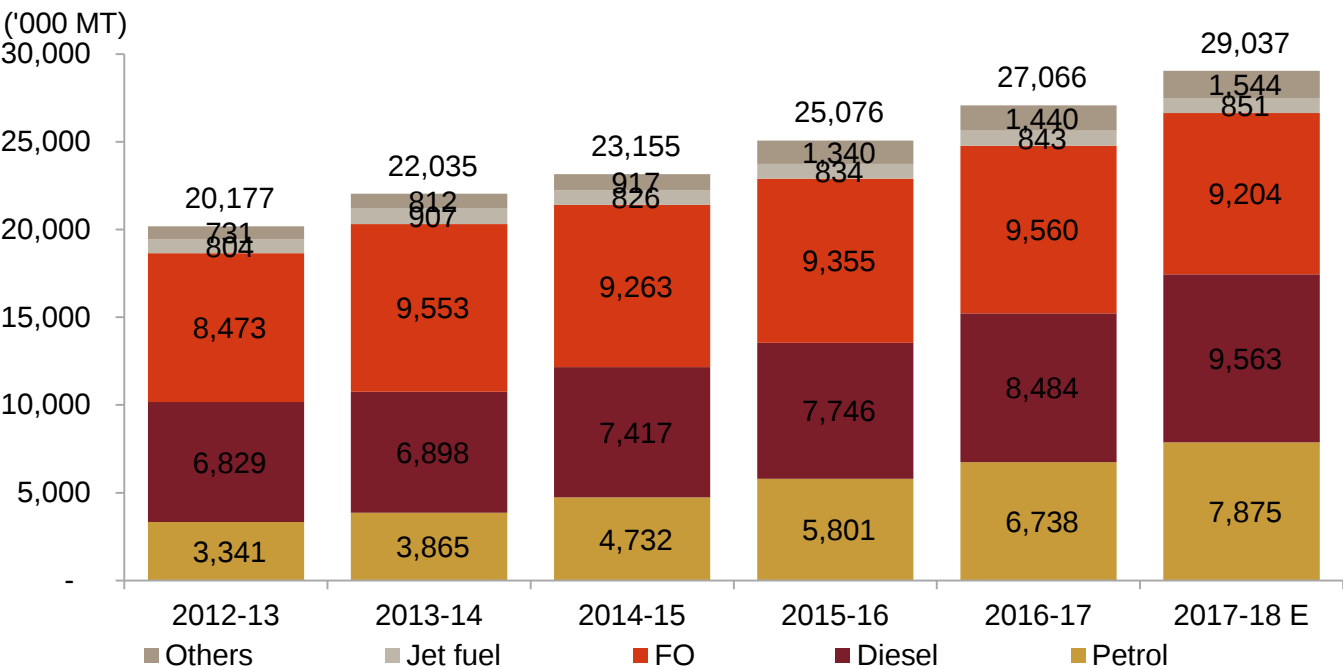
Segment-wise break-up of major petroleum products consumption



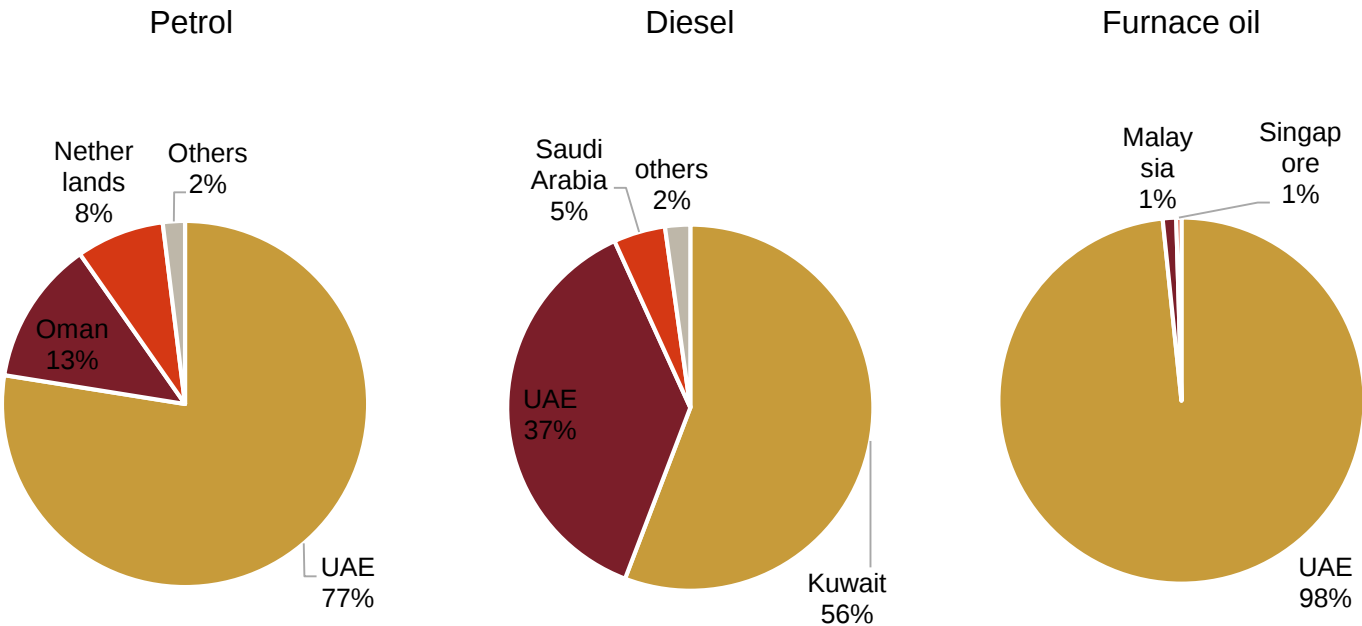
- The consumption of the POL products in Nepal is expected to grow at a CAGR of 8.3% over fiscals 2018-2030 mainly driven by a strong growth in the transport and industrial sectors led by a GDP growth of 4.5%-5%.
- Petrol vehicles are expected to grow at 7.8% CAGR over fiscals 2018-2030 due to rising per capita income, leading to a petrol demand growth of 8% CAGR.
- The consumption of diesel is expected to grow at 8.2% CAGR over the period, driven by demand from the transport and industrial sectors.
- Mostly used by the residential, commercial and institutional segments for cooking, LPG is estimated to grow at around 8.4% CAGR driven by a rising per capita LPG consumption as consumers increasingly replace biomass with cleaner fuels.
- Other petroleum products (FO, ATF, kerosene) are expected to grow at a 9-10% CAGR during the period.
- Nepal, owing to its landlocked nature, is unlikely to undertake indigenous refining with issues in transportation of crude oil. Therefore, it is expected to continue meeting its POL demand through imports.

Pakistan: POL demand supply review

Consumption of major POL products



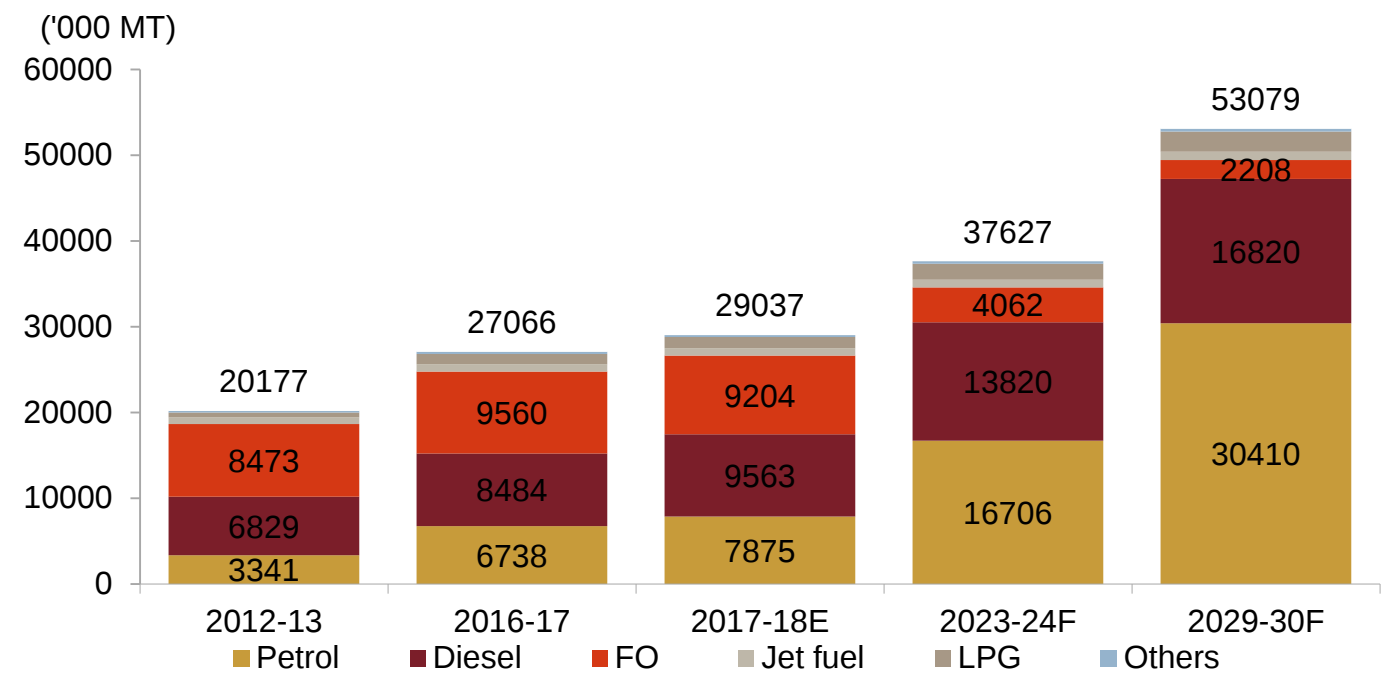
Country-wise POL product imports



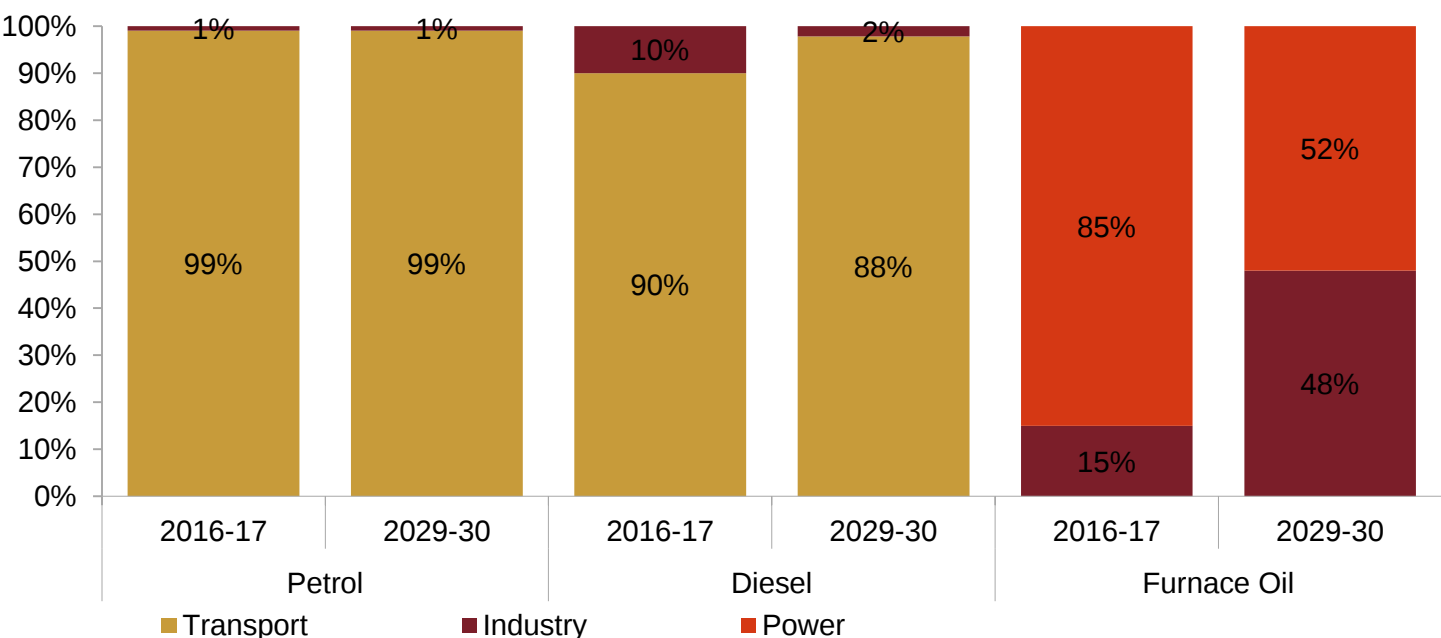
- Demand for petroleum products in fiscal 2017 grew at 7.9% on-year to 25.8 million tonnes. Transport and power were the driving sectors, registering high consumption growth of 12% and 10%, respectively.
- Demand of petrol increased by over 16% on-year in fiscal 2017. The increase may be attributed to rising demand from the transport sector (largest consumers of MS in volume terms), particularly because of growing number of motorcycles and cars, and partially because of lower prices of petrol over the years.
- Diesel demand grew ~9.5% on-year in fiscal 2017, mainly on account of higher utilisation by the transport sector, led by increased economic activity in the country. Consumption growth was muted until fiscal 2014, declining annually from fiscal 2008. However, with a pick-up in economic activity and subdued crude oil prices, along with a ban on CNG usage in public transportation, diesel consumption rose rapidly post fiscal 2015 at 6.9% annually till fiscal 2017.
- Consumption of furnace oil (FO), with the power sector accounting for a major share, has shown mixed trends over the years. Despite low FO prices in recent years, consumption has not risen as OMCs are reluctant to supply fuel on credit to the power sector owing to continued liquidity constraints and delayed cash flows.

Pakistan: POL demand outlook

Overall POL demand Outlook 2030



Segment-wise break-up of major petroleum products consumption



- Petroleum product consumption in Pakistan is expected to grow at an annual rate of 5.2% between fiscals 2018 and 2030.
- Pakistan’s vehicle market is under-penetrated, with only 20 vehicles per 1,000 people. Rising per capita income is expected to boost vehicle sales (particularly cars and two-wheelers) in the coming years. Cars and two-wheelers are expected to grow rapidly at an 11% CAGR during the period, boosting overall demand for petrol, which is expected to grow at ~12% CAGR.
- Diesel demand is expected to grow at 4.5% CAGR between fiscals 2018 and 2030, driven by higher demand from the transport segment and industries.
 - Over the next 13 years, Pakistan’s GDP is expected to grow at ~5% CAGR. As a result, the commercial vehicle market is forecast to grow at 7-8% CAGR, thereby supporting diesel demand.
- As the Government of Pakistan is planning a shift from FO-based capacities to coal and gas in the power sector, we expect FO-based capacities to reduce to 2,500 MW by 2030. FO consumption is, therefore, expected to decline at 11% CAGR to 2.2 million tonnes by fiscal 2030.

Pakistan: POL supply outlook

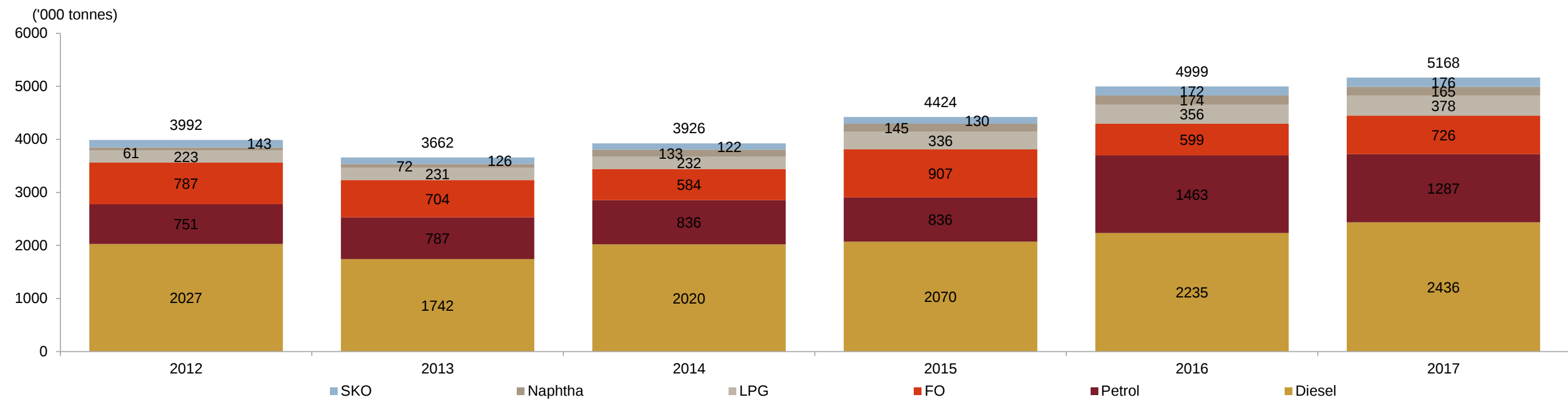
POL Trade balance

('000 MT)	2016-17	2017-18E	2023-24F	2029-30F
Refining capacity	19,600	19,600	32,400	35,200
Crude oil condensates production	4,390	4,460	4,627	4,755
Crude oil Imports	6,084	6,281	18,073	19,862
Petroleum Product Demand	27,066	29,037	37,627	53,079
Petroleum product production	10,475	10,741	22,700	24,618
Petroleum product net import (Excluding LPG)	15,381	16,012	13,074	26,118

- Pakistan's sedimentary basin is majorly unexplored. With increased investment in upstream activities, oil production is expected to rise to ~96 thousand barrels per day going forward from the current 87 thousand barrels per day.
- PARCO is planning to set up a new refinery with a capacity of 250,000 bpd in joint venture with Abu Dhabi through Mubadala Investment Company, entailing an investment of ~\$6 billion. The project is expected to come onstream by 2023.
- ARL also has plans to install a state-of-the-art 50,000 bpd deep conversion greenfield refinery if sustainable enhanced supplies of local crude oil from the North become available and the government comes up with an investment-friendly refining policy.
- Total domestic production of POL products is, therefore, expected to increase to 24.6 million tonnes in fiscal 2030 from 10.4 million tonnes in fiscal 2017 (excluding LPG). However, overall demand for POL products will remain higher, reaching 53 million tonnes by fiscal 2030. As a result, Pakistan will remain a net importer of petroleum products.

Sri Lanka: POL demand supply review

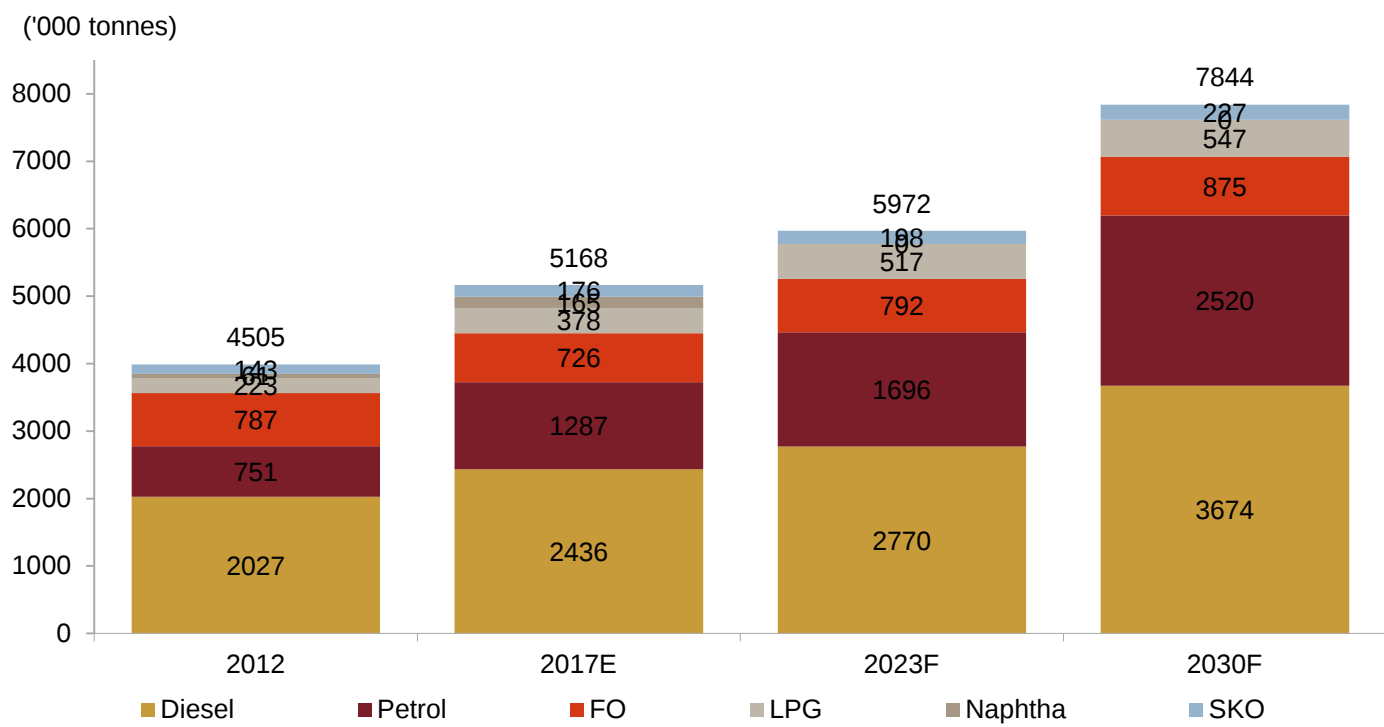
Consumption of major POL products



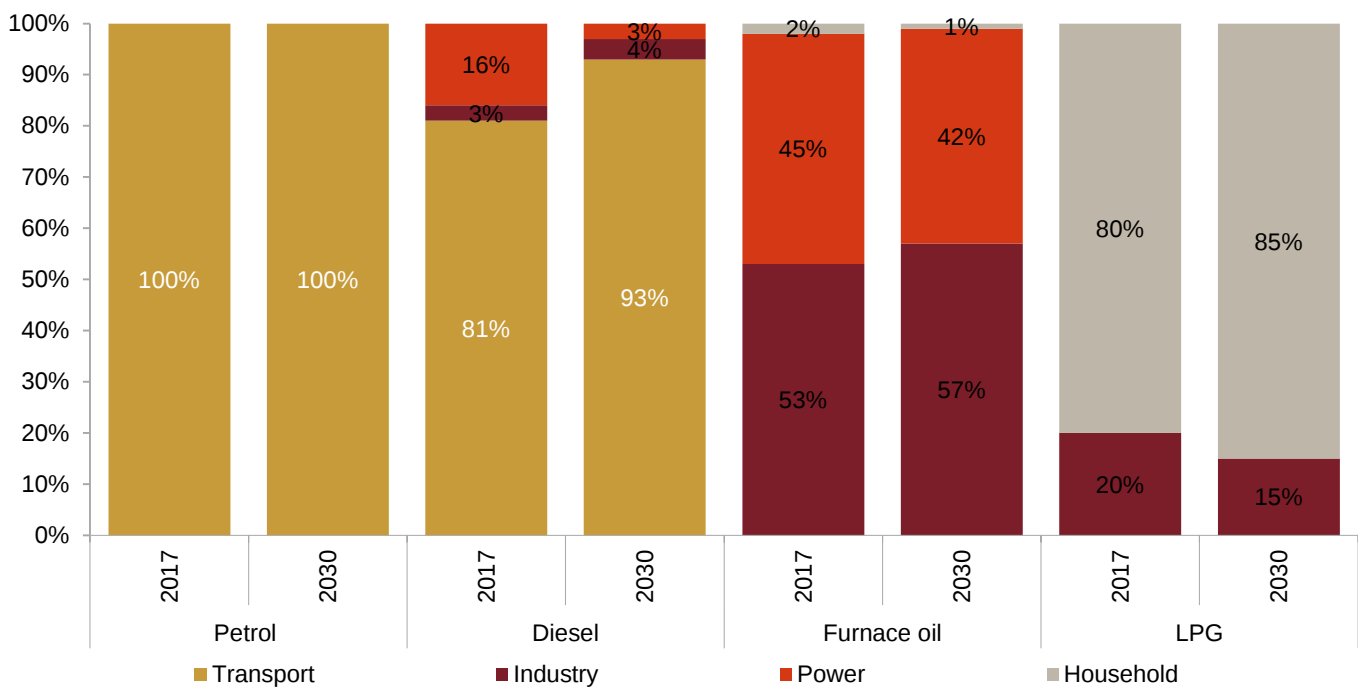
- The demand for POL products in Sri Lanka is estimated to have risen at 3% CAGR over the last five years, till 2017, particularly driven by an 11.5% rise in demand for petrol.
- Petrol demand surged by ~75% on-year in 2016, driven by significantly low prices, revised downwards in 2015, along with increasing vehicle population. However, such demand growth is expected to be an anomaly, which is estimated to have corrected in 2017 with rise in fuel prices.
- Diesel consumption grew 16% on-year in 2016 due to increased transportation activity as a result of GDP growth, coupled with a significant rise in demand from the power sector, as the country experienced severe drought leading to reduced generation from its hydropower units.
- Furnace oil consumption, on the other hand, saw a decline of 22% on-year, despite a rise in power demand, due to lower offtake from industries.
- Sri Lanka meets more than 60% of its POL product demand through imports. Total production of petroleum products through refineries is estimated to have stood at approximately 1.8 million tonnes in 2017 against a total demand of 5.2 million tonnes

Sri Lanka: POL demand outlook

Overall POL demand Outlook 2030



Segment-wise break-up of major petroleum products consumption



- POL product consumption in Sri Lanka is expected to rise 3.3% CAGR between 2017 and 2030 as against 3% growth seen over the past five years.
- Sri Lanka's vehicle market is currently underpenetrated with only 24 cars per 1,000 people. Rising per capita income is expected to boost overall vehicle sales (particularly cars and two-wheelers) in the upcoming years.
 - While petrol demand is expected to remain strong growing at more than 6% till 2025, rising EV penetration along with the development of infrastructure and government support towards purchase of EVs, is expected to moderate demand growth to 5.5% by 2030.
- Diesel demand is expected to witness 3.2% CAGR between 2017 and 2030, driven by demand from the transport segment and industries, as GDP is expected to grow at 4.7% CAGR.
- Demand for furnace oil is expected to see a rise in 2018 subsequent to commissioning of 320 MW of additional furnace oil-based capacity, taking the overall capacity to 430 MW. However, over the long term, we expect retirement of 100 MW of old capacities, resulting in a decline in demand from the power sector.

Sri Lanka: POL supply outlook

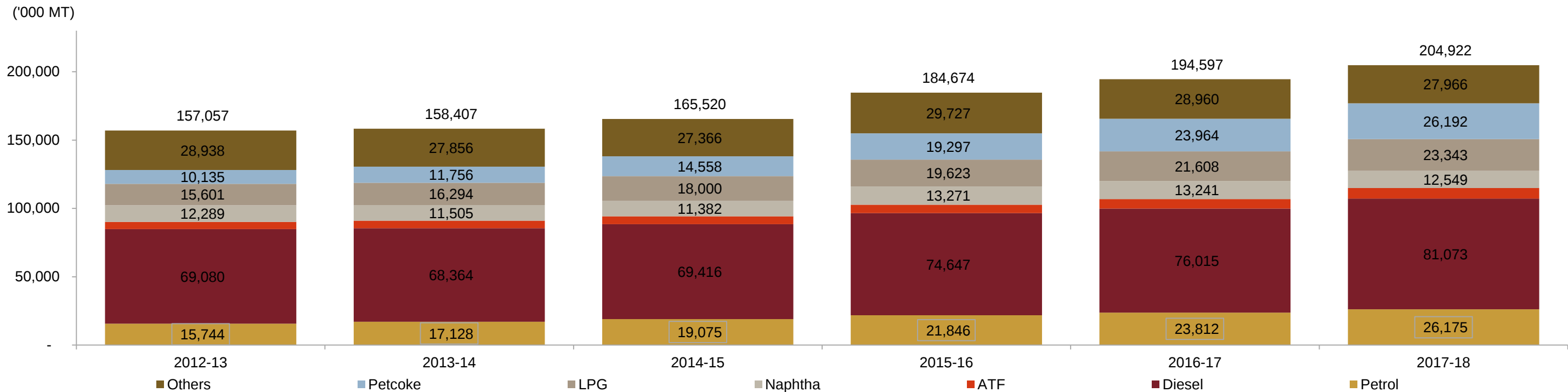
POL Trade balance

('000 MT)	2013	2016	2017E	2023F	2030F
Refining capacity	2490	2490	2490	2490	7470
Crude oil imports	1743	1685	1980	1980	6314
Petroleum product Demand	4505	4900	5168	5972	7844
Petroleum product production	1556	1633	1867	1867	5976
Petroleum product net import	2160	3462	3500	4104	1868

- Sri Lanka is planning to set up a new refinery, in a tie-up with Iran, with a total capacity of 100,000 bpd. However, this project is not expected come onstream before 2024 owing to recent political developments.
 - Sri Lanka is also discussing a 100,000 bpd refinery in partnership with IOC, but it is not expected to materialise before 2030.
 - Considering the aforementioned capacity additions, the total domestic production of petroleum products is expected to increase to 5.9 million tonnes with from current 1.7-1.8 million tonnes.
- However, overall demand for POL products will still remain high, reaching 7.8 million tonnes by 2030. As a result, Sri Lanka will continue to remain a net importer of petroleum products. However, with the addition of this new refinery, imports will reduce from current 3.4 million tonnes to 1.9 million tonnes.
 - This, however, will be substituted with increased imports of crude oil to feed refineries, to the tune 6.3 million tonnes as against current import of 1.9 million tonnes.

India: POL demand supply review

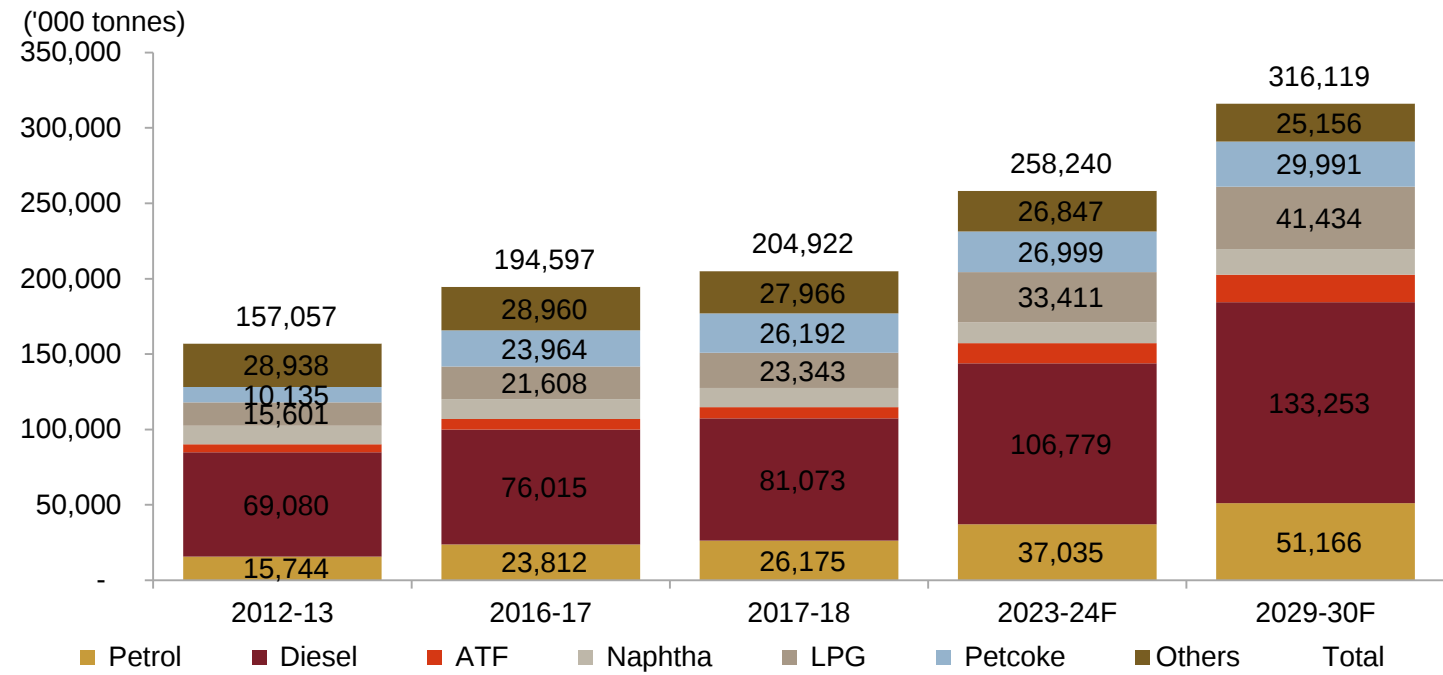
Consumption of major POL products



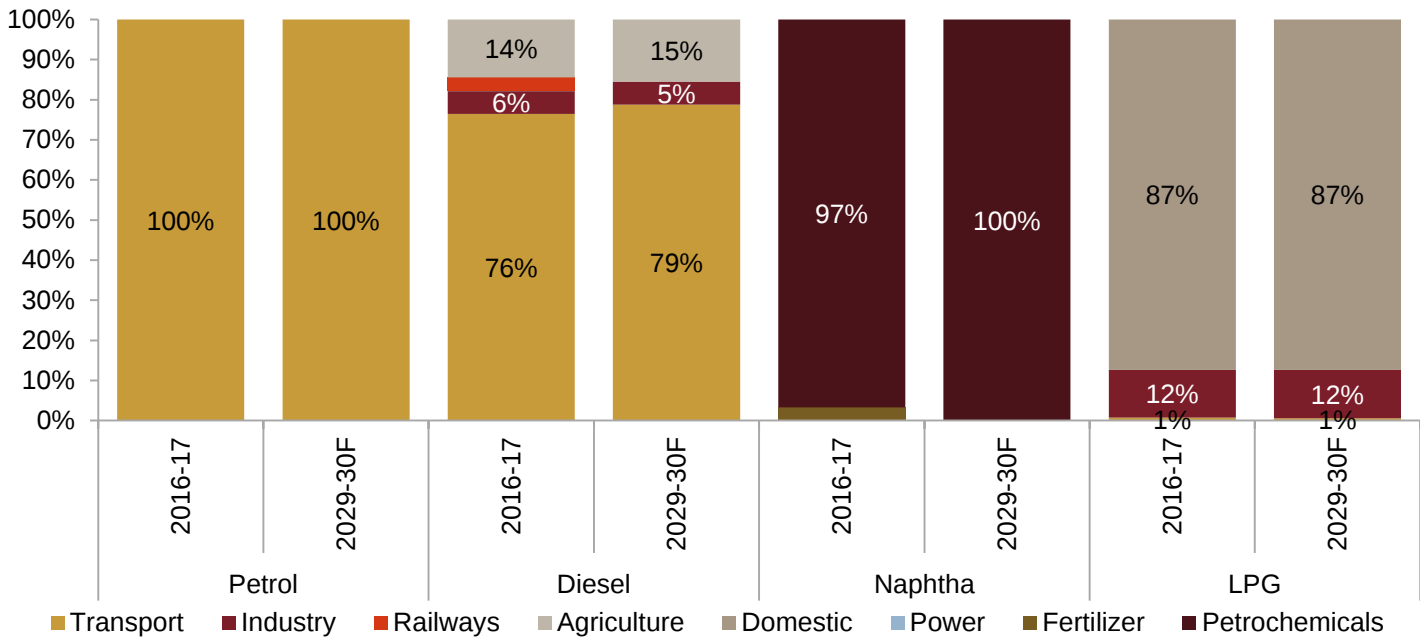
- India’s overall demand for POL products is estimated to have risen at 5.5% CAGR from fiscal 2013 to 2018, led by rising demand for petrol and LPG, on account of increased transportation activity and promotion of clean fuel for cooking in below-poverty line (BPL) households.
- Petrol consumption grew strongly at 11% CAGR from fiscal 2013 to 2018, primarily led by healthy growth in passenger vehicles, which grew by 10% CAGR during the same period.
- Diesel demand grew at 3.3% CAGR from fiscal 2013 to fiscal 2018, led by commercial vehicles sales growth.
- LPG demand rose at a healthy 8.4% CAGR from 15.6 million tonnes in fiscal 2013 to 23.3 million tonnes in fiscal 2018, driven by a concerted push from the government through Pradhan Mantri Ujjwala Yojana (PMUY) scheme to disburse free LPG connections to BPL families
- Petcoke demand shot up by 21% CAGR from fiscal 2013 to fiscal 2018, owing to rise in coal prices which made petcoke more competitive for use in cement plants.

India: POL demand outlook

Overall POL demand Outlook 2030



Segment-wise break-up of major petroleum products consumption



- Petroleum product consumption in India is expected to log a CAGR of 4.1% between fiscals 2018 and 2030 as against 5.5% growth seen over the past five years, with demand crimped by reduction in growth of petrol demand on account of rising substitution by CNG, ethanol blending, and greater focus on electric vehicles (EVs).
- Demand for petrol is expected to clock a CAGR of 5.7% from fiscals 2018 to 2030, driven by increasing passenger vehicle and two-wheeler sales. However, improving efficiencies and substitution with CNG in the medium term and ethanol blending and electric vehicles over the long term is expected to restrict demand growth in petrol.
- Demand is expected to grow at a CAGR of 4.2% from fiscal 2018 to 2030, led up improvement in transportation by commercial vehicles, growing at 4-6% CAGR. Diesel demand from the non-transport sector is expected to increase only marginally during the period, led by growing demand from the agriculture segment, where it is used to run agri-pumpsets and tractors.
- LPG demand is expected to clock a CAGR of 4.6% between fiscals 2018 and 2030, on account of the government’s continued thrust to promote use of LPG and target of rolling out 100 million connections in the next 3-4 years.

India: POL supply outlook

POL Trade balance

('000 MT)	2012-13	2016-17	2017-18	2023-24F	2029-30F
Refining capacity	215,066	233,966	247,516	281,016	342,216
Crude Oil production	37,919	36,008	35,700	36,000	36,000
Crude Oil Imports	184,795	213,932	220,434	245,016	306,216
Petroleum Products Demand	157,057	194,597	204,922	258,240	316,119
Petroleum product production	219,212	245,360	252,839	281,233	348,475
Petroleum product net surplus	62,155	50,763	47,918	22,993	32,356

- The Government of India recently bid out 55 exploration blocks under the Open Acreage Licensing Policy. With these blocks coming into commercial production, oil production is expected to increase only marginally in the long term with a natural decline in India's mature fields to offset this rise.
- By contrast, oil players in the refining segment have significant capacity addition plans going forward, taking India's total crude oil demand to 350 million tonnes by fiscal 2030 from 251 million tonnes at present, clocking a CAGR of 2.7%.
- Considering the rise in domestic production, crude oil imports are expected to increase to 310 million tonnes from current levels of 220 million tonnes.
- As against the above, petroleum product demand is only expected to reach 316 million tonnes by fiscal 2030. the remainder will be exported.

Thank You