YEMEN
An analysis of the major shift in liquefied petroleum gas (LPG) dynamics since April 2023

OVERVIEW

Between April–September 2023, LPG import through Red Sea ports in Yemen, specifically Al Hodeidah and Ras Issa ports, significantly increased to 275,745MT – over seven times more than the 36,405MT imported from October 2022 to March 2023. This surge coincided with the introduction of a ban that the de-facto authority (DFA) in the north of Yemen (also known as the Houthis) imposed in May 2023 on the use of LPG produced in Ma'rib, still in effect as at November. During the conflict and up until May 2023, the majority (60–70%) of the LPG produced by state-run SAFER Exploration and Production Operations Company (SEPOC), more commonly referred to as SAFER, was sold in DFA territory. Between May–August, SAFER LPG average monthly production levels (in MT) decreased by 27% and distribution by 49%.

By reducing the use of Ma'rib LPG, the DFA became more reliant on imported LPG. It is unclear, however, how cost-effective this strategy has been and how it allows the DFA to meet the increased foreign currency demands for higher import volumes. These factors are especially important given that the DFA reduced LPG prices in Sana'a in July 2023. Despite changes to local production and distribution rates, the mode and amount of LPG distributed in areas under the control of the Internationally Recognized Government of Yemen (IRG) have remained largely unchanged, with LPG being distributed to governorates pro rata based on population estimates. In DFA areas, distribution dynamics have slightly changed, with LPG distributors redirected to Red Sea ports to load their supplies and LPG cylinders, which are then sold via Yemen Gas Company (YGC) agents (with the support of heads of neighbourhoods, the Aqel al-Harah) at an official price of YER 5,500 (USD 10.38) or elsewhere (e.g. at fuel stations for vehicles) at a slightly higher rate of YER 6,500 (USD 12.26.

Even though Ma'rib LPG is among the cheapest in the world, the DFA justified the ban as a response to an IRG decision in January 2023 to nearly double LPG prices. As such, the DFA policy was likely driven by political economy calculations aimed at denying the IRG revenue and further reducing their financial capacity to administer the south.

Aim of the report

This report seeks to deconstruct a significant shift in domestic LPG dynamics in Yemen in 2023. It identifies and analyses the impacts of the DFA decision to ban the sale of domestically produced LPG from Ma'rib, a governorate under IRG control, and instead increase imports through Red Sea ports under DFA control. The report studies the cost-effectiveness of the DFA decision and related political economy considerations. It analyses the political and economic impact in IRG-controlled governorates, specifically Ma'rib, and the implications for the peace process.

Methodology

The report is based on a quantitative data analysis of LPG imports from October 2022 to September 2023 (specifically for the Red Sea ports) and LPG production data obtained by ACAPS from key stakeholders. Ten key informant interviews with shipping analysts, regional experts, and officials in Yemen with detailed knowledge of LPG production and distribution dynamics add to a secondary data review carried out to complement and help interpret the data and LPG dynamics in Yemen.

Limitations and information gaps

Gaps remain in relation to the specific cost drivers of LPG imported by the DFA from other countries and the final price difference between the LPG being imported in DFA areas and the gas produced in Ma'rib. Lack of clarity surrounding previous LPG payment settlements between the DFA and Ma'rib prior to the ban also challenges the accurate estimation of IRG revenue loss from the suspension of gas sales to DFA areas. There are also limitations related to accurately determining overall LPG demand in Yemen and broken down by areas of control, particularly after the imposition of the ban. LPG imports per month do not necessarily indicate customer demand, as part of the imported LPG could be going to storage facilities instead of distribution channels.

This project benefited from the support of the IMEDA programme, which is supported by UK aid from the UK government.

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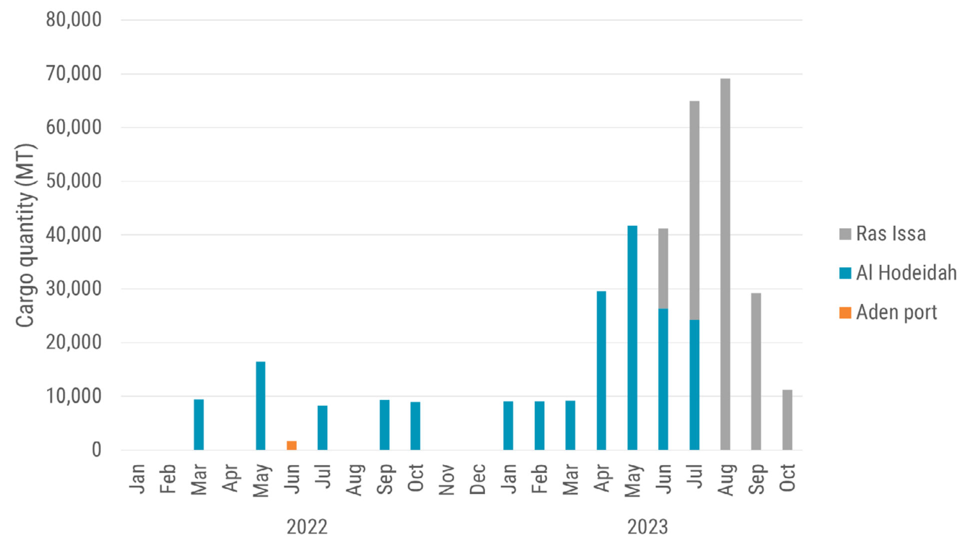
INCREASED LPG IMPORTS VIA RED SEA PORTS AND BAN ON MA'RIB LPG SALES

Ma'rib is the only governorate producing natural gas in Yemen and is home to Yemen's largest oil fields. A natural gas pipeline extends from Ma'rib to the southern port of Balhaf, and an oil pipeline passing through Ma'rib continues to the Ras Issa port near Al Hodeidah in the west, although the latter is currently not in use because of the conflict. Ma'rib also houses the country's largest power plant. The revenues generated by local resources in Ma'rib make up a significant share of Yemen's total GDP.

Prior to the conflict, Ma'rib LPG met 85–90% of the domestic demand throughout Yemen, with the remaining 10–15% being imported. LPG demand among Yemeni households and businesses notably increased during the conflict as a result of continued population growth, occasional disruptions to and price hikes of other oil derivatives (namely, petrol and diesel), and a higher LPG demand among private sector entities and businesses. Until April 2023, LPG was being imported at a much more modest rate than between April–October. In April, the DFA prevented trucks carrying LPG produced in Ma'rib from advancing into DFA territory after the sharp increase in LPG imports during the same month (Arab News 01/06/2023; KII 05/2023; KII 06/2023; KII 07/2023; KII 08/2023; KII 09/2023; SCSS 22/06/2023). These trucks were later authorised to enter and unload the LPG before the DFA instructed the drivers (and, by extension, the LPG distributors) to head to Al Hodeidah to load imported LPG.

Figure 1. LPG imports from January 2022 to October 2023



Source: ACAPS

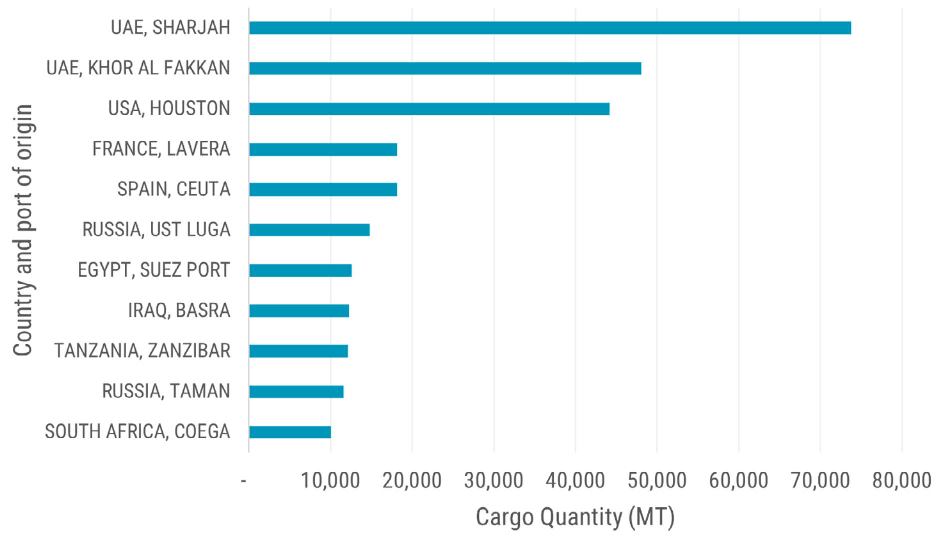
Figure 2. Ras Issa port and storage facilities (15°15’5.20”N; 42°36’50.56”E)

Source: Google Earth (accessed 15/06/2023)

In April, a month prior to the DFA ban, LPG imports via Al Hodeidah port increased to 29,552MT from the January–March monthly average of 9,100MT. Continued high LPG import volumes via Al Hodeidah from May–June 2023 preceded the first LPG shipment discharged at the neighbouring Ras Issa port on 26 June, when a total of 14,800MT was imported. Prior to June, there were no LPG imports through Ras Issa port. From July onwards, the volume of LPG imported via Ras Issa easily surpassed the volume imported via Al Hodeidah, with LPG being discharged directly from carrier vessels via a floating pipeline supported by buoys that connects to LPG trucks waiting on land. With no LPG imports via Al Hodeidah recorded from August–September 2023, it is possible that the DFA is instructing traders to import exclusively through Ras Issa. It is comparatively easier and quicker to unload at Ras Issa, which has a greater depth and can receive larger vessels, such as a vessel that discharged 44,163MT of LPG at Ras Issa in August. A second LPG ship of a similar size berthed at Ras Issa in the first week of November. Shifting LPG imports to Ras Issa also frees up space and time at berth in Al Hodeidah, giving swifter access for vessels carrying other goods at Al Hodeidah.

The high volume of LPG imported via Al Hodeidah and Ras Issa between April–September 2023 was sourced from 11 different ports of origin by a much wider group of fuel traders importing LPG to Yemen than before this period. The DFA sanction led to increased LPG imports from different countries in the region and further afield (see Figure 3). The United Arab Emirates (UAE) was the primary supplier of oil derivatives imported to Yemen during this period. Sharjah recorded the highest number of shipments (six) and total amount of LPG imported (73,756MT) via Al Hodeidah and Ras Issa, followed by another UAE port, Khor Fakkan (four shipments, 48,075MT).

Figure 3. LPG import volumes (in MT) and number of vessels from different ports of loading from April–September 2023



Source: ACAPS

IMPACT OF INCREASED LPG IMPORTS AND MA'RIB LPG BAN ON SUPPLY, DEMAND, AND DISTRIBUTION DYNAMICS

Since May 2023, following the ban on Ma'rib LPG in DFA areas, there have been significant changes in the LPG supply in Yemen. The estimated average LPG supply in Yemen as at May was around 72,000MT/month, with DFA areas accounting for 65% (47,000MT/month) and IRG areas accounting for 35% (25,500 MT/month). Prior to May, average monthly LPG consumption was approximately 64,000MT.

An analysis of both LPG import data and Ma'rib LPG distribution data shows that overall LPG supply/availability in Yemen increased by 12% on a monthly average between May–October 2023, after the ban on Ma'rib LPG gas, compared to the monthly average between August 2017 and April 2023. The estimated average monthly demand increased by 9% in IRG areas and by 13% in DFA areas. The total increase is not necessarily indicative of higher demand; in IRG areas, the increase is likely a result of Ma'rib LPG surplus, whereas in DFA areas, it is likely that some imported LPG is going to storage facilities instead of directly to distribution channels.

Table 1. Estimated LPG market supply and consumption in Yemen

LPG CONSUMPTION AND SUPPLY/AREAS	MONTHLY AVERAGE					
	AUGUST 2017 TO APRIL 2023			MAY–OCTOBER 2023		
	IRG	DFA	TOTAL	IRG	DFA	TOTAL
Average monthly LPG distribution (SAFER Ma'rib distribution data)	17,409MT	32,331MT	49,740MT	25,508MT	0	25,508MT
Average monthly LPG import	5,908MT	8,702MT	14,610MT	0	46,455MT	46,455MT
Estimated average monthly LPG consumption	23,317MT	41,033MT	64, 350MT	25,508MT	46, 455MT	71, 963MT

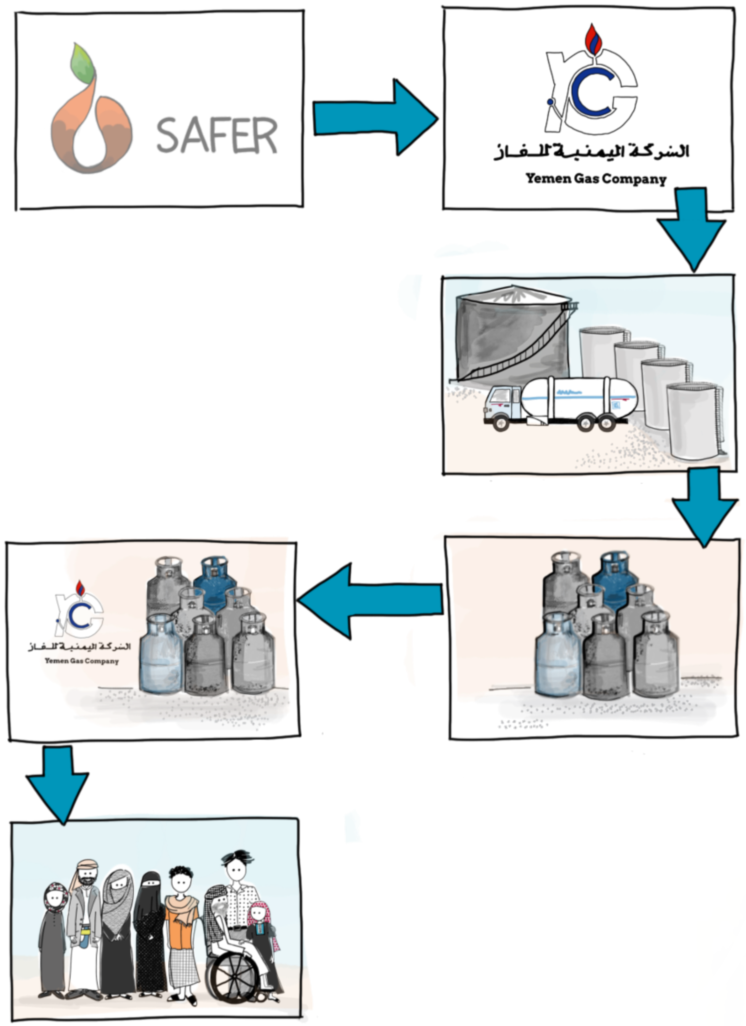
Source: ACAPS

Imported LPG is currently meeting the majority (65%) of the LPG demand in Yemen, which locally produced Ma'rib LPG satisfied before the ban. Since the ban, all LPG supplied in IRG areas has come from locally produced Ma'rib gas. On the other hand, in DFA areas, the most significant change is that LPG distributors have shifted to exclusively sourcing from imported supplies via Red Sea ports under DFA control. In these areas, the DFA implements two alternative distribution and pricing modes.

The first mode concerns LPG/cooking gas distributed to households and local businesses (e.g. restaurants) via the Aqel al-Harah. The Mushrafeen (DFA supervisors) monitors this distribution. Households can request LPG/cooking gas cylinders sold at a lower official price via their respective Aqel al-Harah, although access is not guaranteed, and delivery can take up to and even exceed one month.

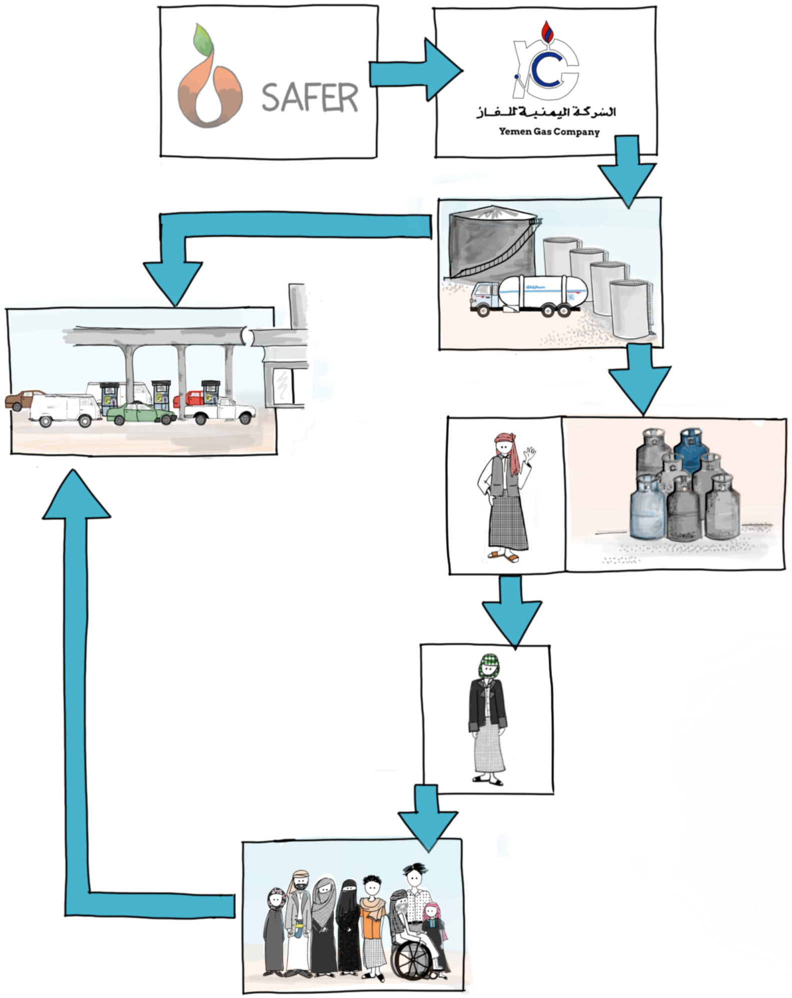
The second mode concerns LPG sold at a higher commercial or parallel market rate via fuel stations and other private agents. The most significant change to distribution in DFA areas since April 2023 centres around LPG distributors being rerouted to the Red Sea ports as opposed to Ma'rib to load LPG onto their respective trucks prior to onward distribution to bottling facilities, fuel stations, and other businesses in DFA areas.

Figure 4. LPG distribution/supply chain in DFA areas before the conflict



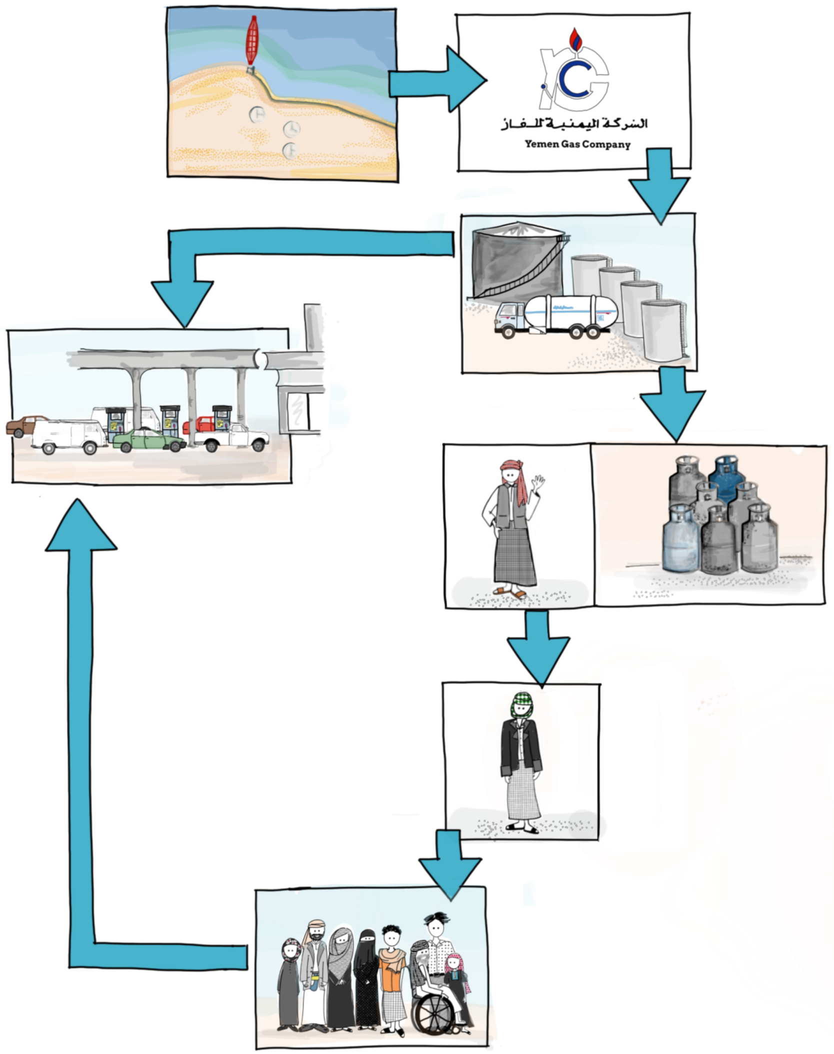
Souce: ACAPS

Figure 5. LPG distribution/supply chain in DFA areas during the conflict (before May 2023)



Source: ACAPS

Figure 6. LPG distribution/supply chain in DFA areas during the conflict (after May 2023)



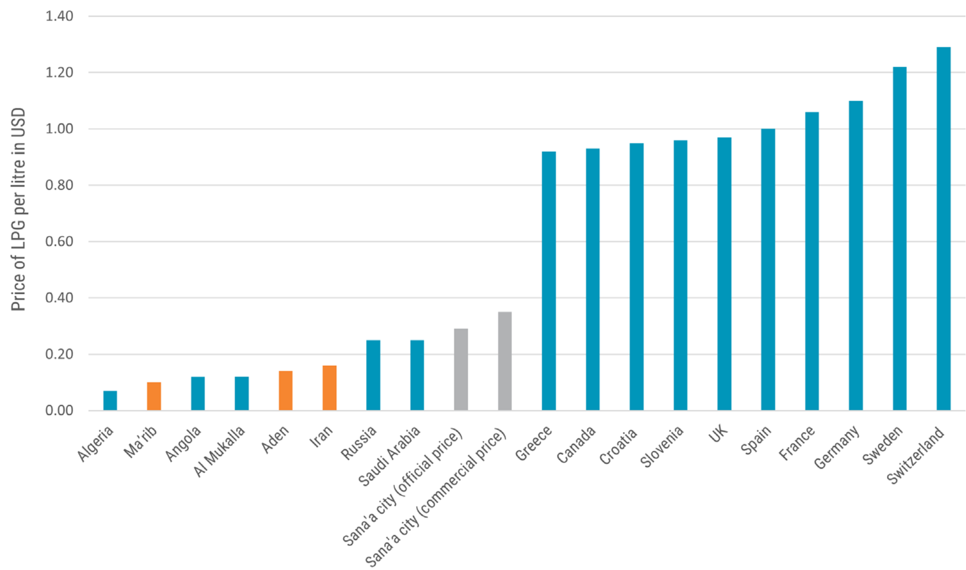
Source: ACAPS

THE POLITICAL ECONOMY OF IMPORTING LPG VERSUS SOURCING LOCALLY PRODUCED LPG

IRG LPG official price increase

The DFA decision to sanction increased LPG imports and ban Ma'rib LPG is said to have been influenced by the January 2023 IRG Supreme Economic Council decision to increase the official LPG price in Ma'rib from YER 2,100 (USD 1.66) to YER 3,000 (USD 2.38) per cylinder (SCSS 25/03/2023). The USD conversion of the cylinder price was calculated based on the market exchange rate in Aden on 11 January (when the price hike was announced) of YER 1,260 per USD 1. Any increase to the official and parallel market price of Ma'rib LPG can affect both the official and higher parallel market LPG price in DFA territories. The parallel market rate is also commonly referred to as the 'commercial rate' or the 'unofficial price'. Despite the increase, Ma'rib LPG remains among the cheapest anywhere in the world (see Figure 7). In May 2023, when the ban was introduced, the official Ma'rib LPG price per cylinder had risen to YER 5,000 (USD 3.96) (SCSS 22/06/2023).

Figure 7. Cheapest and most expensive LPG prices (per litre in USD) worldwide



Sources: ACAPS using data from Global Petrol Prices (accessed 04/09/2023); KII (09/2023)

DFA official price reduction

Until the end of July, the official price of imported LPG in DFA areas was YER 7,200 (USD 13.58) per cylinder, 44% higher than the official price of YER 5,000 (USD 3.47) per cylinder in Ma'rib (SCSS 15/08/2023). On 30 July, the DFA-run YGC announced that LPG cylinders would be sold at a rate of YER 5,500 per cylinder (USD 10.38) via YGC agents (with the support of the Aqel al-Harah). LPG sold elsewhere (e.g. at fuel stations) was to be sold at a slightly higher rate of YER 6,500 (USD 12.26) (Boqash Telegram 30/07/2023). The price difference is tied to two different distribution and sale mechanisms. The lower price is accessible through orders placed via the Aqel al-Harah, but longer delivery times may occur compared to the more easily accessible LPG sold at the higher rate. Consumers who prefer to immediately purchase their LPG go directly to fuel stations and bottling facilities and pay the higher rate.

Table 2. Official LPG prices in Yemen per cylinder and per litre as at September 2023

LOCATION	PRICE PER CYLINDER (IN YER) IN SEPTEMBER 2023	EXCHANGE RATE (YER/USD) ON 4 SEPTEMBER 2023	PRICE PER CYLINDER (IN USD) IN SEPTEMBER 2023	PRICE PER LITRE (IN YER)	PRICE PER LITRE (IN USD)
Sana'a city (official price)	5,500	530	10.38	155.81	0.29
Sana'a city (commercial price)	6,500	530	12.26	184.14	0.35
Ma'rib	5,000	1,465	3.41	141.64	0.10
Al Mukalla	6,400	1,465	4.37	181.30	0.12
Aden	7,000	1,465	4.78	198.30	0.14

Sources: Boqash Telegram (04/09/2023)
Note: there are 35.3L of LPG in an 18kg LPG cylinder (the standard size of a cylinder sold in Yemen).

Cost-effectiveness of imported LPG

The stated DFA-run YGC price of YER 5,500 (USD 10.38) translates to a rate of USD 0.29 per litre. The price reduction has seemingly made LPG prices in DFA among the cheapest in the world but not in Yemen. The official price of LPG per cylinder (and per litre), as determined by either the DFA-run YGC or the IRG-run YGC, is cheaper in USD values in Aden, Al Mukalla, and Ma'rib. It is important to note that the official price is not always available for consumers across Yemen, who may revert to paying a higher parallel market price/commercial rate at fuel stations and other private agents.

The price reduction raises questions about (1) how the DFA is able to reduce prices, and, by extension, how cost-effective imported LPG is compared to locally produced LPG and (2) the ability of the DFA to meet the increased foreign currency demands for higher LPG import volumes, with reports of a foreign currency shortage circulating in DFA territories since 2022.

The decisions to sanction Ma'rib LPG sales in DFA areas and increase LPG imports through Red Sea ports seem more likely to have been underpinned by political economy considerations. The significantly reduced sales of Ma'rib LPG are expected to further weaken IRG financial and macroeconomic position. Consequently, it is also expected to affect the availability of local revenues for Ma'rib governorate specifically, overall affecting the related and relative political stability in both Ma'rib and other IRG-controlled governorates. Another possible reason behind the ban is the fact that Ma'rib and the SAFER LPG production facilities are outside DFA control. Given the liquidity shortage of old YER banknotes in DFA areas, the DFA financial network's capacity to cover LPG purchases from Ma'rib has decreased. Were the DFA able to access LPG from the international market at a competitive or even subsidised rate (depending on the origin of the LPG), then the DFA would be able to supply LPG at a reduced or similar price compared to Ma'rib LPG, while at the same time applying pressure on the IRG by weakening its economic and political position to be able to advance stronger requests in the political and peace process.

Possible LPG imports from Iran

IRG officials accuse the DFA of replacing Ma'rib LPG with Iran LPG (Arab News 01/06/2023). If this were confirmed, it would underscore the DFA's dependency on Iran, with further implications for the peace process and the involvement of other regional entities. Without access to more detailed vessel-tracking software/analysis, it is very difficult to evaluate this accusation. That said, in July 2023, there were reports of Iranian LPG ship-to-ship transfers occurring at Khor Fakkan in the UAE (S&P Global 26/07/2023). Five LPG shipments of 56,811MT of oil was imported from Khor Fakkan to Al Hodeidah and Ras Issa ports between May–September 2023.

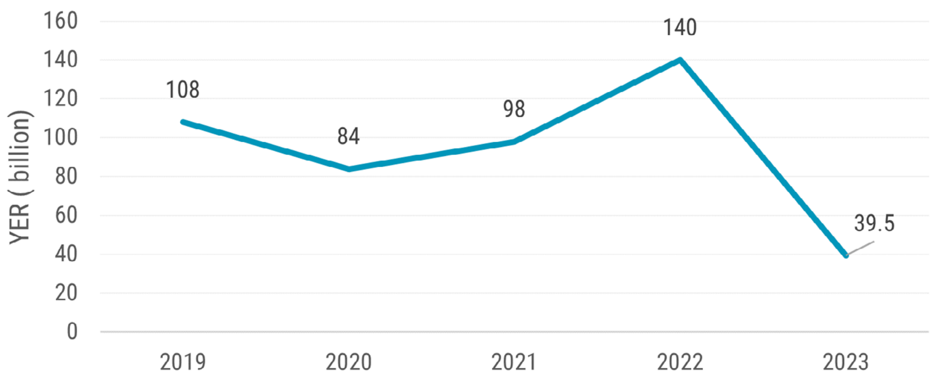
IMPACT OF REDUCED LPG PRODUCTION AND SALES ON THE IRG

LPG revenues before and after the DFA ban on the sale of Ma'rib LPG in DFA areas

The DFA ban on Ma'rib LPG effectively left SAFER and, by extension, the IRG unable to access DFA markets. LPG consumer demand is comparatively much higher in DFA areas – both in the household (cooking gas, LPG for vehicles) and among private sector entities looking to secure higher LPG volumes (e.g. poultry farm owners). The inability to distribute and sell LPG in DFA territories has significantly reduced IRG revenue. With the ban, SAFER LPG monthly production (in MT) decreased by 27% and LPG monthly distribution (in MT) by 49%, with distribution limited to IRG areas (see Annex 2).

Figure 8 provides an overview of IRG LPG revenue from 2019 up until the end of March 2023. The figures listed are based on the net revenues recorded by the IRG Ministry of Finance and calculated after deducting SAFER's share of the revenues to cover operational costs. By law, Ma'rib uses its share of LPG revenues to cover local public service provision costs, and central authority share usually covers military and security force salaries and operational costs within Ma'rib and neighbouring territories. The LPG revenues are deposited at the Central Bank of Yemen (CBY) branch in Ma'rib, while CBY-Aden and the IRG Ministry of Finance keep track of net LPG revenue generation and local expenditure in its accounting system. Generally, revenues are not transferred to CBY-Aden accounts and remain at the CBY-Ma'rib branch.

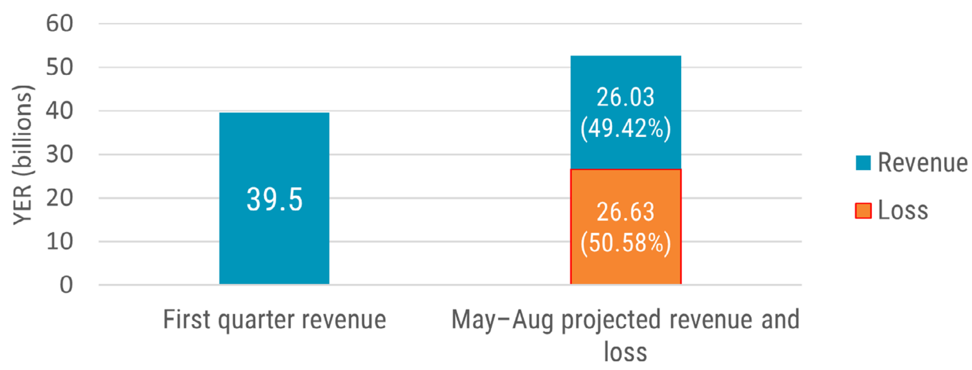
Figure 8. Net IRG LPG revenues from 2019 to the first quarter of 2023



Source: ACAPS discussions with key stakeholders
Notes:LPG revenues are net revenues minus SAFER's share.
The estimated revenue for 2023 is for the first quarter (January–March).

In the first quarter of 2023, IRG LPG revenue was YER 39.5 billion or USD 31.9 million (averaging YER 13.16 billion per month or USD 10.6 million based on an exchange rate monthly average between January–March of YER 1,365 per USD 1). Projecting this to the four-month period of May–August 2023 yields YER 52.6 billion or USD 38.5 million based on an exchange rate monthly average between May–August 2023 of YER 1,236 per USD 1. Considering that Ma'rib LPG monthly distribution rates decreased by 50% after May, the IRG is estimated to have lost YER 26.63 billion or USD 19.5 million between May–August 2023 (averaging YER 6.6 billion or USD 4.8 million per month).

Figure 9. Estimated IRG LPG revenue generated and lost in 2023 (in YER billions)



Source: ACAPS

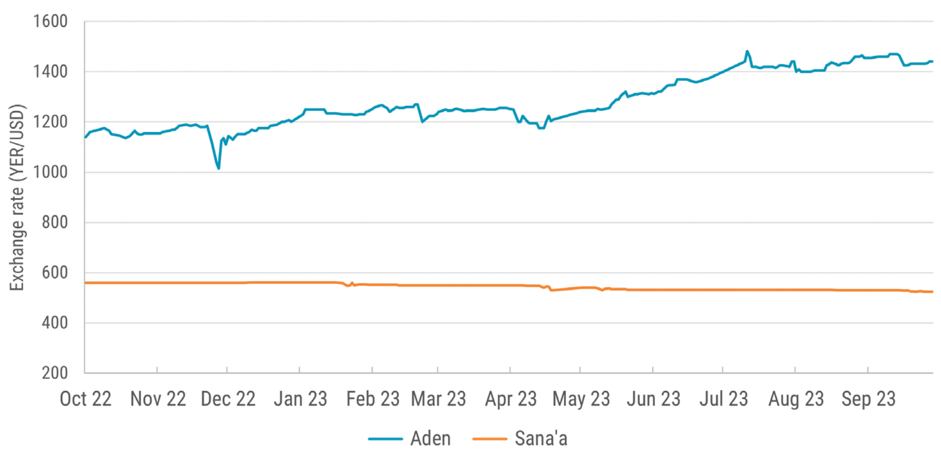
It is difficult, however, to estimate the IRG's exact LPG revenue loss since May 2023, not least because of the lack of clarity surrounding previous LPG payment settlements between the DFA and Ma'rib prior to the DFA ban on Ma'rib LPG.

Continued loss of IRG revenue

The loss of LPG revenue represents an additional economic blow that follows the significant loss of crude oil export revenue since October 2022 and, as a result, the loss of IRG's primary source of revenue. As at September 2023, crude oil export revenue losses had reached an estimated USD 1.1–1.2 billion (see Annex 1 for estimates). The suspension of crude oil exports occurred after DFA threats and subsequent drone and missile attacks respectively targeting the Nushayma and Ash Shihr export terminals in Shabwah and Hadramawt governorates in October and November 2022. The IRG's two failed attempts to load and export LPG in August 2023 indicate the continued threat of retaliation from the DFA (Trade Winds 31/08/2023).

The decline in revenues resulting from the suspension of crude oil exports and the ban on Ma'rib LPG sales in DFA areas has left the IRG more dependent on continued external financial support to maintain relative currency stability and foreign currency supply to sustain CBY-Aden auctions. The DFA's Ma'rib LPG ban and subsequent drop in LPG revenues for the IRG contributed to the depreciation of the Yemeni rial in IRG areas between April–July 2023 (ACAPS accessed 26/09/2023). The economic situation became increasingly unstable during these four months, with the IRG struggling to cover expenditure that critically included salary payments, fuel for electricity power generation, and the holding of weekly foreign exchange auctions.

Figure 10. YER exchange rate in Aden (IRG) and Sana'a (DFA) from October 2022 to September 2023



Source: ACAPS

The precarious economic situation would have gotten worse were it not for the intervention of the international community. In June 2023, CBY-Aden was able to liquidate a second instalment of IMF Special Drawing Rights (SDR) (CBY-Aden 17/06/2023). While the SDR conversion and liquidation helped CBY-Aden maintain weekly foreign currency auctions, it was not enough to arrest the continuing economic decline in IRG areas. Saudi Arabia then decided to assist by announcing USD 1.2 billion worth of financial aid on 1 August, intended to help the IRG and CBY-Aden address the budget deficit, pay salaries, stabilise the rial, and continue to supply and sell foreign currency (Saudi Embassy 01/08/2023).

Impact on external account deficit

Besides resulting in the IRG budget deficit with the loss of gas sale revenues, the DFA decision to significantly increase LPG imports from abroad would also affect Yemen's external account deficit. Normally, the DFA would need to pay foreign exporters for the imported LPG in foreign currency. Providing the necessary foreign exchange funding for LPG importers affected the available funding for other commodity importers. Subsequently, these other importers would seek foreign exchange funding from the foreign exchange market, leading to additional pressure on the exchange rate given increased foreign currency demand. Based on recent available import data, ACAPS estimates that at the current rate, the required foreign currency to import LPG is about USD 425 million per year (as shown in Table 3).

Importers in DFA areas can only access their foreign currency funding demand directly from the DFA foreign exchange market with approval from the DFA foreign exchange payment committee. As a result, importers excluded from the DFA's foreign exchange supply are likely to have two options: either suspend their imports or, more likely, seek foreign exchange funding from the IRG foreign exchange market. This, further strains the IRG's foreign exchange demand, leading to increased currency instability and price inflation in IRG regions.

The rise in LPG imports via Red Sea ports and the consequent increase in foreign currency demand bring into question how acute the alleged foreign currency shortage in DFA areas actually is. Reports in 2022 suggested an increase in foreign currency shortage in DFA territories, which the DFA highlighted to convince Saudi Arabia to inject foreign currency to cover part (if not all) of the salary bill in DFA areas. That said, the move to ban Ma'rib gas sales and increase LPG imports would suggest a higher DFA capacity to provide foreign currency for import financing.

Table 3. Annual foreign currency outflow for LPG imports

DETAILS	
Global price of LPG per MT (average for August 2023): USD 542 + USD 30 per MT for shipping cost	USD 572
Total monthly average imports of LPG (based on average imports between May–August 2023)	61,921MT
Total yearly average of LPG imports	743,052MT
Annual additional deficit to the country's current account funding gap from DFA LPG imports	USD 425,025,744

Source: S&P Global (01/08/2023)

IMPACT ON HUMANITARIAN NEEDS IN IRG AREAS

The reduction of LPG revenue resulting from the DFA Ma'rib LPG ban is further compounded by the disruption that the DFA has caused to crude oil exports since October 2022. The USD 1.2 billion Saudi financial aid package announced on 1 August 2023 provided the IRG with welcome respite and greater financial manoeuvrability. That said, the IRG is still struggling to cover total expenditure and will, as a result, be prioritising where best to use the funds it has available. Key priorities include salary payments, local currency stability, maintaining the supply and sale of foreign exchange via weekly auctions, and the purchase of fuel for electricity power generation.

The threat of salary payment disruptions in areas under IRG control was elevated between June–July 2023, when the IRG was struggling to cover its budgetary demands. The non-payment of salaries occurred in parallel to local currency depreciation and inflation, which contributed to a further reduction of people's purchasing power in IRG areas. Even after a USD 200 million deposit in CBY-Aden announced in early August, the Yemeni rial continued to depreciate, reaching YER 1,453 per USD 1 at the end of August – a 4% increase compared to the previous month and a 23% increase compared to August 2022 (WFP 08/10/2023).

According to WFP, in August, 58% of households surveyed in IRG areas recorded inadequate food consumption, at the same time that funding constraints forced WFP to reduce rations to 41% of the standard food basket per cycle (WFP 08/10/2023). By the end of November, the 2023 Humanitarian Response Plan, which sought USD 4.34 billion to assist 17.3 million people, was only 35.9% funded, forcing aid organisations to reduce aid programmes (OCHA accessed 21/11/2023; OCHA 06/11/2023).

Implications for Ma'rib governorate

The reduction of LPG revenue puts the local governing authorities in Ma'rib specifically under added economic and fiscal pressure and, as a result, places the people in Ma'rib in a more vulnerable position. Ma'rib, as with Shabwah and Hadramawt governorates, reached an agreement with the IRG during the conflict that allowed the local governing authorities to receive 20% of crude oil and gas revenues generated from Ma'rib resources (Berghof Foundation 04/06/2019). These revenues, deposited at CBY-Ma'rib, allowed for the improvement of infrastructure and the expansion of public services in the governorate, further attracting private sector investment, with many Yemenis relocating to Ma'rib from elsewhere in the country (UN-Habitat 16/04/2021; ECFR 12/06/2018). Local resources also permitted the payment of public sector salaries while they were suspended in other IRG areas during the conflict (Yemen LG accessed 21/11/2023). Anti-DFA forces in Ma'rib continued to receive their salary, either from locally collected revenues or direct financial support from Saudi Arabia to the IRG, helping restore relative stability. With the DFA ban curtailing Ma'rib's local budget, estimated at YER 30.5 billion, the local governing authorities in Ma'rib find themselves without their primary sources of revenue, making them more dependent on IRG and external assistance (KII 08/10/2023).

Thanks to the notable progress Ma'rib made economically, infrastructurally, and developmentally during the conflict, the governorate became a safe haven for hundreds of thousands of Yemenis leaving DFA-controlled areas and, to a lesser extent, those internally moving from other IRG governorates. OCHA estimated Ma'rib governorate's 2019 population at around 1.1 million people, although other sources put this figure up to 2.4 million people, including 1.5 million IDPs, compared to a population of around 300,000 people before the IDP influx after the beginning of the conflict (Yemen LG accessed 01/10/2023; ACAPS 26/07/2021; UN-Habitat 16/04/2021; CMEC 31/07/2019; SCSS 29/07/2018). With the loss of revenues from reduced or stalled crude oil exports and gas sales, the ability (and indeed willingness) of the local governing authority to accommodate the significant influx of economic migrants and IDPs may be tested. Should public sector salary payments be disrupted, along with broader economic difficulties, humanitarian needs are likely to increase, especially for IDPs, posing challenges for an already stretched humanitarian response.

IMPLICATIONS FOR THE PEACE PROCESS

The DFA strategy of sanctioning increased LPG imports in parallel with the ban on the use of Ma’rib LPG has direct implications for bilateral discussions between Saudi Arabia and the DFA (with Oman playing a key support role), in addition to the wider peace process.

By imposing the ban on the sale of Ma’rib gas in DFA areas, along with the DFA demand for greater access to Yemen’s oil and gas revenues, the DFA has essentially increased its bargaining position through (a) the disruption to crude oil exports and subsequent denial of IRG’s primary source of revenue and (b) the ban on Ma’rib LPG that further reduces the amount of revenue that the IRG can generate. The longer that the disruption to crude oil exports and, to a lesser extent, the DFA ban on the use of Ma’rib LPG continue, the more pressure that the IRG will come under to consider entering into discussions over a cooperative natural resource management and revenue distribution mechanism. The difficulty, however, is that the IRG is not one homogenous entity. The Southern Transitional Council (STC) is currently opposed to the idea of sharing natural resource revenues with the DFA. With the STC boasting notable representation within the Presidential Leadership Council (the executive decision-making body of the IRG), its opposition is a clear obstacle that would need to be overcome should Saudi Arabia and/or the UN wish to hold discussions over natural resource management and revenue sharing.

ANNEX 1. CRUDE OIL EXPORT REVENUE ESTIMATES

Crude oil export data shows that a total of 25,600,000 barrels of crude oil were exported from Ash Shihr and Nushayma from January 2021 to the end of September 2022 (excluding the crude oil transfers from Nushayma to Aden during this period). ACAPS then divided the total crude oil exports (barrels) between January 2021 and September 2022 by 21 (which equals 1,219,047 barrels) and then multiplied this figure by 12 (to cover the period of disruption from October 2022 to the end of September 2023, which equals 14,628,564 barrels).

To calculate estimated revenue, ACAPS used the estimated crude oil export figure covering October 2022 to September 2023 and multiplied it by the average price of Brent crude per barrel between October 2022 and September 2023. Per Markets Insider data, the average rate for this period was USD 83.48 per barrel, but noting the fact that Russia is selling crude oil at a heavily discounted rate, ACAPS thought it would be prudent to also apply a slightly discounted rate to present a range (Markets Insider accessed 06/10/2023). ACAPS used a figure of USD 80 per barrel. Hence, the estimated loss of crude oil export revenues for the IRG ranges from USD 1,170,285,120.00 to USD 1,221,192,522.72.

ANNEX 2. SAFER LPG PRODUCTION AND DISTRIBUTION RATES BEFORE AND AFTER THE DFA BAN ON MA'RIB

AVERAGE LPG PRODUCTION RATE	TOTAL LPG PRODUCTION AND DISTRIBUTION BEFORE MAY 2023	TOTAL LPG PRODUCTION FROM MAY–AUGUST 2023	TOTAL DISTRIBUTION FROM MAY–AUGUST 2023	REDUCED PRODUCTION RATE (%)	REDUCED DISTRIBUTION RATE (%)	DIFFERENCE IN TOTAL PRODUCTION CAPACITY	DIFFERENCE IN TOTAL DISTRIBUTION CAPACITY
MT/month	50,430	36,845	25,508	-26.94	-49.42	-13,585	-24,922
MT/day	1,658	1,211	838.38	-26.96	-49.43	-447	-820
kg/day	1,657,968	1,211,357	838,622	-26.94	-49.42	-446,611	-819,346
Average number of LPG trucks (trucks/month)	2,002	1,198	829	-40.16	-58.57	-804	-1,173
Average number of LPG trucks (trucks/day)	67	39	27	-41.79	-59.7015	-28	-40

Note: There are 35.3 litres of LPG in a 18kg LPG cylinder (the standard size cylinder sold in Yemen).