



# Sustainability SUPPLEMENT Report 20/21





His Highness  
**Sheikh Nawaf Al-Ahmad Al-Jaber Al-Sabah**  
The Amir of the State of Kuwait



His Highness  
**Sheikh Meshal Al-Ahmad Al-Jaber Al-Sabah**  
Crown Prince of the State of Kuwait

## T a b l e O f C o n t e n t s

5	Manager CCD Statement
7	Company Profile
13	Environmental Performance
17	Innovation
18	Employment
18	CFP Commissioning
19	5 <sup>th</sup> Liquefied Petroleum Gas Train
20	Worker Welfare



# ● Manager CCD Statement

## **To our Valued Stakeholder,**

This Report is the first Supplement that Kuwait National Petroleum Company (KNPC) has produced. With the completion of Kuwait Petroleum Corporation (KPC) Sustainability Report that consolidates the Kuwait Oil & Gas sector into one Report, and in keeping in line with international best practices, we at KNPC have extracted the core KPI's that we would like to communicate to you in this Supplement Report. Due to our commitment to you over the years in reporting our Sustainability performance and initiatives, we have adopted this practice of our Report.

The Report will cover our main achievements in pillars of Environmental Performance, Social Contribution, and Mega Projects. This Report is a paperless one and is available through our website: [www.knpc.com](http://www.knpc.com).

The main KPC Report adheres to the Global Reporting Index (GRI) latest standards and went through an internal audit process of each Company's Corporate Planning Department, and ultimately was checked and verified through KPC's Corporate Planning Department for final sign off.

As indicted in the KPC Report, our business model is built to serve KPC Group's long-term mission of optimizing the value of Kuwait's Hydrocarbon Resources, by operating commercially and globally in an integrated and sustainable manner- while providing opportunities for our people to grow and contribute to Kuwait's economic development. For us, operating sustainably means creating lasting impacts that revolve around empowering individuals, developing responsible products, formation of strategic partnerships and joint ventures, and most importantly driving innovative change and resilient growth.

We shall remain committed to continue to provide transparency to you, our most valued Stakeholders.



**Khuloud S. Al Mutairi**  
Manager Corporate Communication

# Company Profile

*KNPC was established in 1960, where its operations were concerned with Shuaiba oil refinery and the marketing of petroleum products of Al Ahmadi Refinery to local and international markets. In the 1980, KNPC came under the control of KPC as one of its Downstream subsidiaries.*

*To date, KNPC owns 2 state-of-the-art refineries: Mina Al Ahmadi (MAA) Refinery and Mina Abdullah (MAB) Refinery. The Shuaiba Refinery was shut down in 2017 post the kick-off of the Clean Fuels Project (CFP). This is described in further detail in the Product Responsibility section of this report.*

*Each refinery has its own features. MAA is considered to be one of the world's largest refineries and MAB has high conversion capabilities. It also has the only Delayed Coker Unit in the Gulf area.*



## **MINA AL AHMADI (MAA) REFINERY**

Our MAA Refinery operates with a production capacity of 466,00 bpd (barrels per day) of crude oil and a gas processing capacity of 2,475 mmscfpd (millions standard cubic feet per day) and has a water treatment facility and export facilities located in North Pier, New Oil Pier and South Pier (now known by LNG jetty). The flare recovery unit at MAA is one of the 1<sup>st</sup> plants in Kuwait to be registered in the United Clean Development Mechanism (CDM).

In addition to MAA's secondary units, which include a water treatment plant, water cooling units, a sour water unit and storage tanks, MAA's main units which include:

### **1. MAFP Units**

The units produce lead-free Gasoline, MTBE, Alkenes and Propylene.

### **2. Fluid Catalysts Cracking (FCC) Unit**

The Fluid Catalysts Cracking Unit has production capacity of 40,000 bpd, with capacity assumed to increase up to 42,500 bpd with CFP, heavy gas oil cracked into Gasoline in this unit. Other products include LPG.

### **3. Eocene Distillation Unit**

The unit refines 24,000 bpd of heavy Eocene oil, mainly used to produce Bitumen for the local market.

### **4. Sulfur Recovery Units**

The units handle 1,334 MT bpd of Sulfur, the refining by-product. These units recover the Sulfur from the Acid Gas Removal Plants.





## 5. Naphtha Reformers

These units contain a Naphtha 2-train complex to treat and then separate the Naphtha into light and heavy products. The 2 units' total capacity is 36,000 bpd.

## 6. Gas Liquification Units

MAA has 4 gas trains for processing of gas produced either from KOC oil fields or from KNPC Refineries. The units recover Propane, Butane and Gasoline 2,485 mmscfd. Gas is used in power stations, local industries and domestic consumption. Condensates are also produced in these plants.

Gas processing industry is a major activity of KNPC, especially since it has an impact on reducing the emissions of Sox, NOx and CO2, to name a few. The gas is naturally produced in parts of KOC and KGOC's oilfields and then transferred to Gathering Centers before being transported to the KNG Liquification Plant at MAA.

MAA has offshore facilities that are mainly used for the export of crude oil, petroleum products and Sulfur. The facilities were expanded several times to meet the increasing export demands, with 16 loading arms added to the South Pier and upgrades to the 3rd and 4th Piers to enable 4 oil tankers to dock simultaneously, with 9,000 tons per hour loading capacity.

### **MAA main produced petroleum by-products include**

---

- Gasoline • Kerosene
- Gasoil (Diesel) • Bitumen • Naphtha
- LPG • Sulfur

## **MINA ABDULLAH (MAB) REFINERY**

MAB Refinery operates with a production capacity of 270,000 bpd of crude oil, and is designed to refine high Sulfur heavy crude oil. MAB has 27 process units and 85 storage tanks, with dedicated environmentally friendly facilities for tail gas, oil sludge and wastewater treatment to achieve sustained environmental compliance. MAB main 4 units are:

### **1. Crude Distillation Units (CDU)**

The units receive crude oil from KOC then fraction it into Gas, Naphtha, Kerosene, Diesel and HSFO.

### **2. Coker Unit**

With 40,000 bpd, the unit converts the bottom of the barrel residue into higher value products.

### **3. ARDS Unit**

The unit processes 85,000 bpd of high Sulfur atmospheric residue. It reduces Sulfur content to 0.7% demetallizes and removes Nitrogen compounds from the Crude Unit.

The process helps in upgrading the bottom of barrel.



#### 4. Hydrocracker Unit

The unit converts Gas Oil into LPG, Naphtha and Kerosene which meet stringent quality requirements, and has a production capacity of 42,500 bpd.

MAB uses the export facilities of Sea Island, which is located 5 km offshore. It has 2 piers, one for loading giant oil tankers up to 276,000 tons and another for tankers up to 140,000 tons. Each pier has 4 arms for loading light products.

#### **MAB produces all kinds of petroleum by-products that include:**

- Naphtha • Kerosene
- Low-Sulfur-Gas-Oil • Coke • Fuel Oil • Sulfur

From a domestic perspective, KNPC is responsible for the sale and distribution of all petroleum products in the local market. Currently, KNPC has 39 filling stations. A total of 40 filling stations were privatized, transferring the ownership KNPC's assets privatization strategy, and the station's ownership transferred to Al-Soor Fuel Marketing Co.

A 5-year plan was drafted with the aspirations of constructing 100 new filling stations across Kuwait governates, to serve the community's demand for gasoline and other fuels. These stations would be inaugurated in Sabah Al-Ahmad City, Jaber Al-Ahmad City, Northwest Al-Sulaibikhat, Al-Abdali Farms area, and Saad Al-Abdullah City.



## Quantity of products or services provided

Product	Annual Production 2020/2021	
	x000 MT	%
Naphtha/Cars Gasoline/Reformate	7,116.2	23.8
Kerosene / ATK	5,424.3	18.2
Gas Oil /Diesel	9,456.8	31.7
Fuel Oil/Residue	3,889.4	13.0
Other Products	3,628.5	12.1
Total Net Products	29,515.2	98.8
Consumption /Loss	359.7	1.2
<b>Total/Production Capacity</b>	<b>29,874.9</b>	<b>100</b>

Product	Annual Production 2020/2021	
	x000 MT	%
Propane	2,727	44.1
Butane	2,173	35.2
Natural Gasoline	1,283	20.7
Total Liquid Product	6,183	100
Lean Gas (billion standard cubic feet)	467	

# Environmental Performance

The following represents KNPC’s performance pertaining its total energy consumption, categorized per type of energy consumed:

	2021/2020	2019/2018	Difference in performance
Total Fuel Consumption (GJ)	168,602,374.0	94,805,951.0	+73,796,423.00 GJ
Total Electricity Consumption (GJ)	9,865,453.0	7,437,444.0	+2,428,009.00 GJ

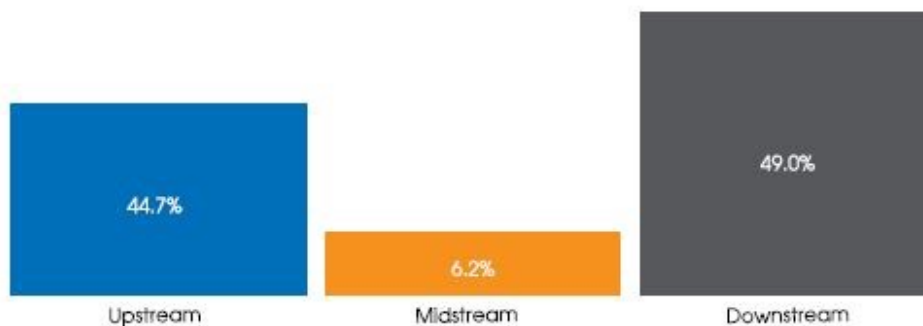
The following shows breakdown of Scope I and II emissions for KNPC performance from 2021-2018:

## Total GHG Emissions (ToneCO<sub>2</sub>e)

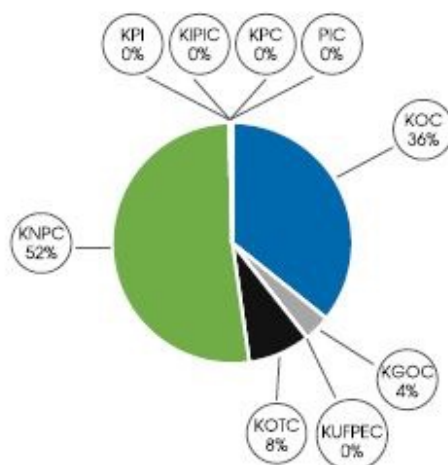
	2021/2020	2019/2018	Difference in performance
Scope I (TonCO <sub>2</sub> e)	8,066,659.0	7,292,816.0	+10.6%
Scope II (TonCO <sub>2</sub> e)	2,189,392.8	1,611,878.0	+35.8%



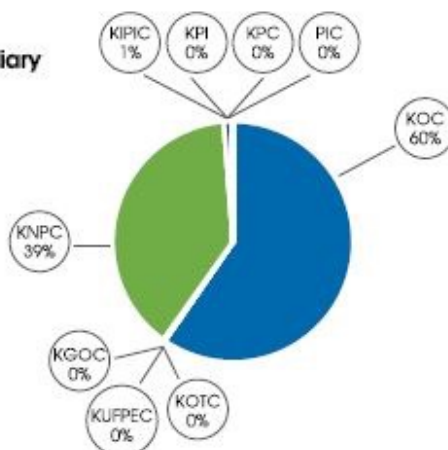
## KNPC's Contribution to GHG Emissions



### Scope I in 2021/2020 per Subsidiary



### Scope II in 2021/2020 per Subsidiary



## SDG Goal 7: Ensure Access to Affordable, Reliable, Sustainable and Modern Energy for All

KNPC has shown its commitment to energy management and GHG mitigation in areas concerning green buildings. KNPC successfully adopted pilot studies of implementing the Global Sustainability Assessment (GSAS) in 2 operational building categories.

KNPC's Head Office is certified as "Gold" level rating and Mina Abdullah Admin Building is certified as a "Silver" level rating from the Gulf Organization for research and Development (GORD). Moreover, work is underway regarding the installation for solar energy system at KNPC's Petrol Filling Stations.

This is currently being implemented in a phased manner till 2023.

### Other Air Pollutants

NOx (Kg)	39,919,333.0
Sox (Kg)	210,009,866.6
Volatile organic Compounds (VOC) (Kg)	18,449,666.6
Hazardous air pollutants (HAP) (Kg)	3,407,768.7
Particulate matter (PM) (Kg)	502,210.0
Other standard categories of air emissions identified in relevant regulations (Kg)	5,157,250.0

### Managing Water Consumption

KNPC is responsible of ensuring the highest quality of standards are applied while treating wastewater in accordance with Kuwait Environment Public Authority (KEPA).

	2021/2020	2019/2018	Difference in performance
Water Withdrawal	1,364,863	2,379,743	-42.6%
Water Discharge	1,335,964	1,421,298	-6%

## Total Waste Generated (Ton)

	2021/2020	2019/2018	Difference in performance
Hazardous Waste	12,729	32,502	-19,773.00 tons
Non-Hazardous Waste	386,571	2,936	+383,635.00 tons



## Non-hazardous Waste Management and Disposal (Ton)

	2021/2020
Recycled	386,165
landfilled	406.00

## Hazardous Waste Management and Disposal

	2021/2020
landfilled	12,728.00



# Innovation

*The following shows selected programs from KNPC that aim at driving responsible innovation practices*

## Patent Registration

Company-wide program launched to enable the registration of KNPC employee's inventions as patents both regionally and internationally.

## Implementation of KNPC Innovation Strategy

KNPC Innovation Team cross-functional team initiatives to support the implementation of the KNPC Innovation strategy and support the growth of the innovation culture within the Company.

## 3D Printing Technology

The program aimed to validate the 3D printing technology implementation and its benefits for KNPC.



# Employment

## Breakdown of KNPC Workforce per Gender Category

	Male Employees (Full-Time Employees) 2021/2020	Female Employees (Full-Time Employees) 2021/2020	Ratio Male to Female Workforce Representation (Non-managerial level)
Total number	5,350	627	89.5% Males vs. 10.5% Females

## Breakdown of KNPC Full-Time Employees per Age Category

	Total Number of Employees (Below 30) 2021/2020	Total Number of Employees (Between 30-50) 2021/2020	Total Number of Employees (Above 50) 2021/2020
Total number	1,535	3,953	489

# CFP Commissioning

The commissioning of the Clean Fuels Project (CFP) marked a monumental achievement for KNPC, being the largest oil and gas project in the history of the Company and regionally in the downstream sector. This mega project consisted of expanding production capacity of KNPC's two operating refineries, Mina Al-Ahmadi (MAA) and Mina Abdullah (MAB) as well as revamping and upgrading existing units in both refineries.

The completion of CFP enabled KNPC to produce refined petrochemical products with very low sulfur content, which meet the USA and Europe market demand with strict specifications of Euro4/Euro5, a direct impact on the environment and Kuwait's economy. The total number of new units installed in MAA and MAB is 76, of which 30 have been upgraded and equipped with the latest technology and operates with higher energy efficiency and increased operation reliability.

# 5<sup>th</sup> Liquefied Petroleum Gas Train

*In line with Kuwait Petroleum Corporation 2040 Strategy, KNPC have successfully and safely commissioned the 5th Liquefied Petroleum Gas Train Project in 2022. The inauguration of the project is the second most important achievements after the commissioning of CFP mega project.*

The 5th Gas Train enables the upstream sector to increase gas production and meets current and future demands of a cleaner and environmentally friendly source of energy, which in turn adds value to economy of the country. KNPC's Mina Al-Ahmadi Refinery (MAA) is regarded as the center of gas operation in Kuwait, now having the capacity to process a total of 3,125 mmscfpd of gas, and 332,000 bpd of condensates, a 30% addition to the Four Gas Trains.

The 5th Gas Train produces five main products for that have domestic and international demands for domestic and industrial utility purposes. The products are Methane, Ethane, Propane, Butane in addition to Kuwait Natural Gasoline (KNG).

During peak stage of the project, 6,900 employees worked at site and the total working hours for the whole project calculated to more than 57 million hours. Nevertheless, the project was completed in 6 years went to operation in March 2022 with no major accidents or injuries, a credit given to all teams for their HSE compliance taking into consideration the emerging global pandemic of COVID-19 and the consequences of health and safety challenges.



# Worker Welfare

*Worker Welfare is a core procedure adopted by KNPC to ensure the quality of our workers conditions at both the work site and including their accommodations.*

*A new procedure on Welfare Guidelines for Contractors has been developed and implemented at KNPC. The procedure covers the welfare of workers including their recruitment, payment, working condition, accommodation, transport etc.*

## **Know Your Rights**

A customized campaign was launched at KNPC among the contractors, and laborers of CFP. KNPC took a proactive step to highlight Kuwait's Labor Law in a way that was clear to understand to all those working on KNPC site.

This campaign highlighted the following points:

- Accommodations
- Passport Retention
- Annual Leave
- Overtime
- Working hours
- Salary

The objective of the campaign is to ensure that all those working at KNPC site are aware of their rights and have a system in place should they feel those rights have not been met.

The United National Development Plan (UNDP) in Kuwait also recognized our initiative and efforts toward human rights and commended KNPC on our efforts.