

# Group of Experts on Fossil Fuel – 2<sup>nd</sup> Meeting

## Gas Flaring Situation In Iraq



UNITED NATIONS

الاسكوا

ESCWA

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العراق للطاقة  
تنشيط الاقتصاد العراقي



**Iraq Energy**  
Energizing Iraq's Economy

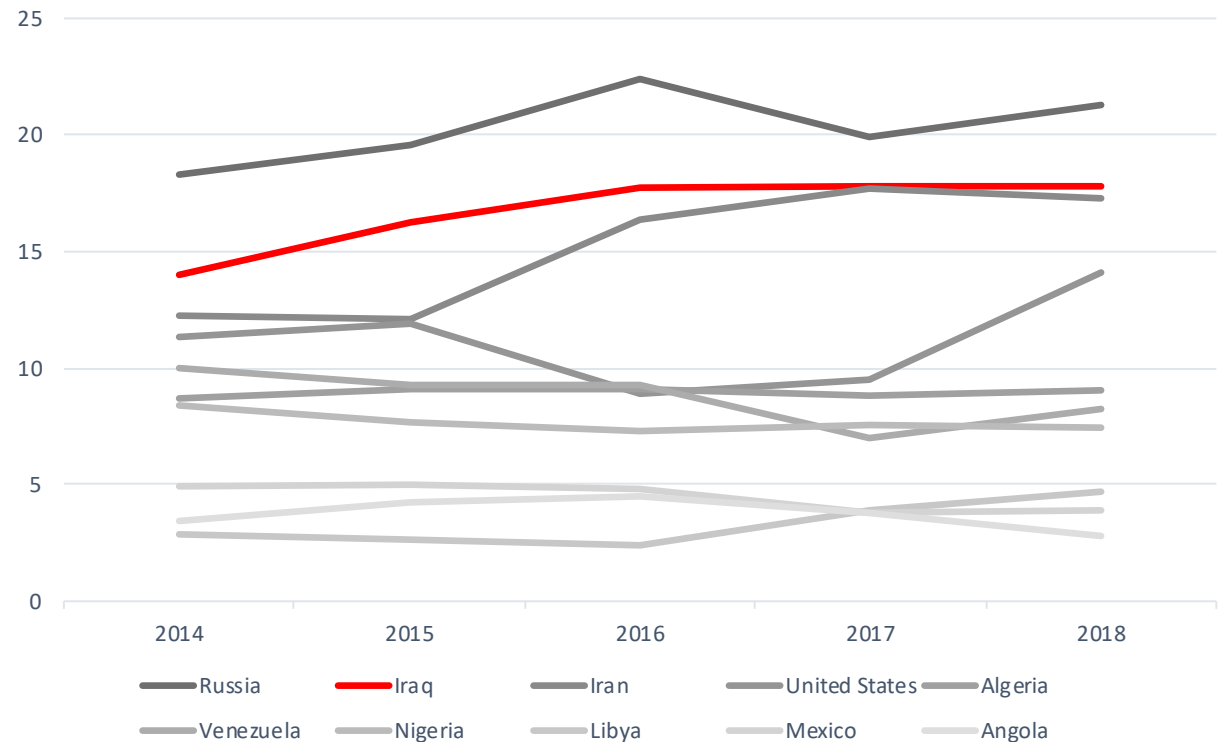
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# Overview

- Since 2012, Iraq's oil production increased by more than **50% from approx. 2.35 to 4.7 mbpd** on average.
- Second to the US, Iraq contributed to **1 in every 5 barrels** of added oil in this decade (IEA).
- Iraq has become the world's **second largest gas flaring country** after Russia (World Bank).
- Capacity to capture and process gas has not kept pace with production. **Almost half of raw gas produced is flared.**
- Non-alignment of Gas and Power policy led to a **gas deficit**, compensated for by imports. Flared gas could power **4.5 GW** of gas fired electricity ( $\pm 3$  million homes).
- Iraq's oil extraction is **50% more emission intensive** than the global average due to gas flaring and methane venting.
- Financial burden, power grid vulnerabilities, causing sustained rolling blackouts during peak demand hours in summer.

Top 10 Natural Gas Flaring Countries (By volume, bcm/year)



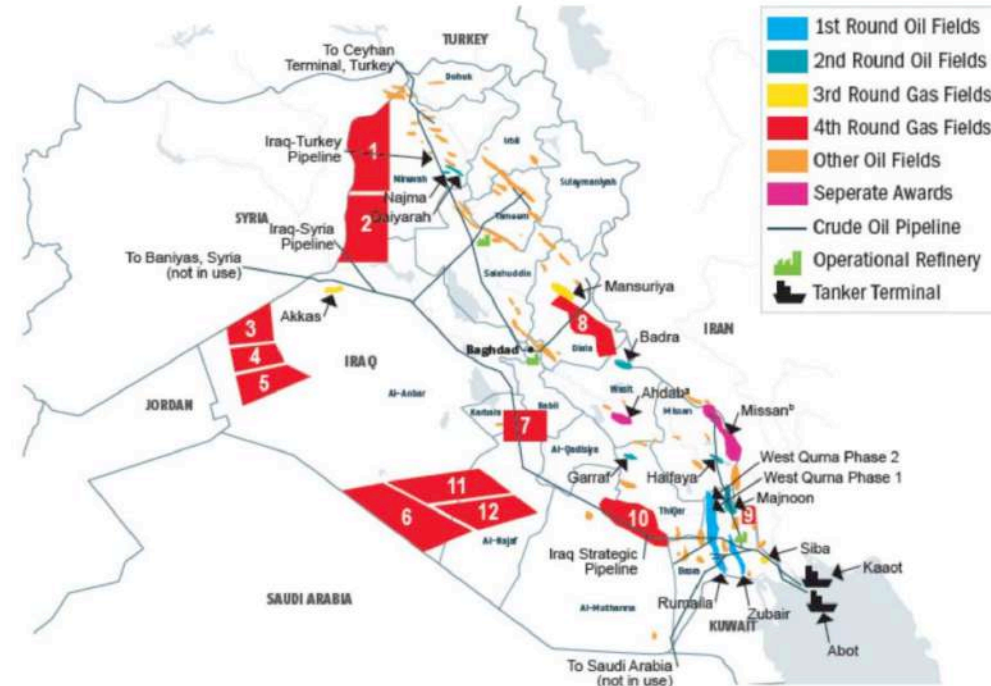
Source: Global Gas Flaring Reduction Partnership (GGFR) and Iraq Energy Institute Analysis

# Iraq's Natural Gas Reserves

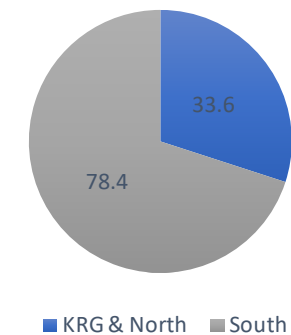
- Iraq has a proven reserve of **112 Tcf** of Natural gas across the country.
- The IEA estimates ultimate recoverable gas resources at **256 Tcf**, 2.28 times the current reserve.
- 30% of Iraq's gas is assumed in the north (KRG & Northern provinces) and 70% in the south.

## Associated Gas Fields:

- Makes up **65 Tcf** of Federal Iraq's reserves.
- Licensing rounds were awarded to attract investment. A total of 14 fields, 11 of them for associated gas, with the last three for non-associated gas (R3 fields).
- Gathered gas from Rumaila, WQ1 and Zubair (R1 fields) are contracted to be processed at the **Basra Gas Company** (BGC) facilities. Also, Majnoon (R2).
- **South Gas Company** captures gas from a number of other southern fields that are operated by national oil companies (Basra Oil Company, Dhi Qar Oil Company & Missan Oil Company)



Iraq Natural Gas Reserves (Tcf)



Source: Iraq Ministry of Oil and Iraq Energy Institute Analysis

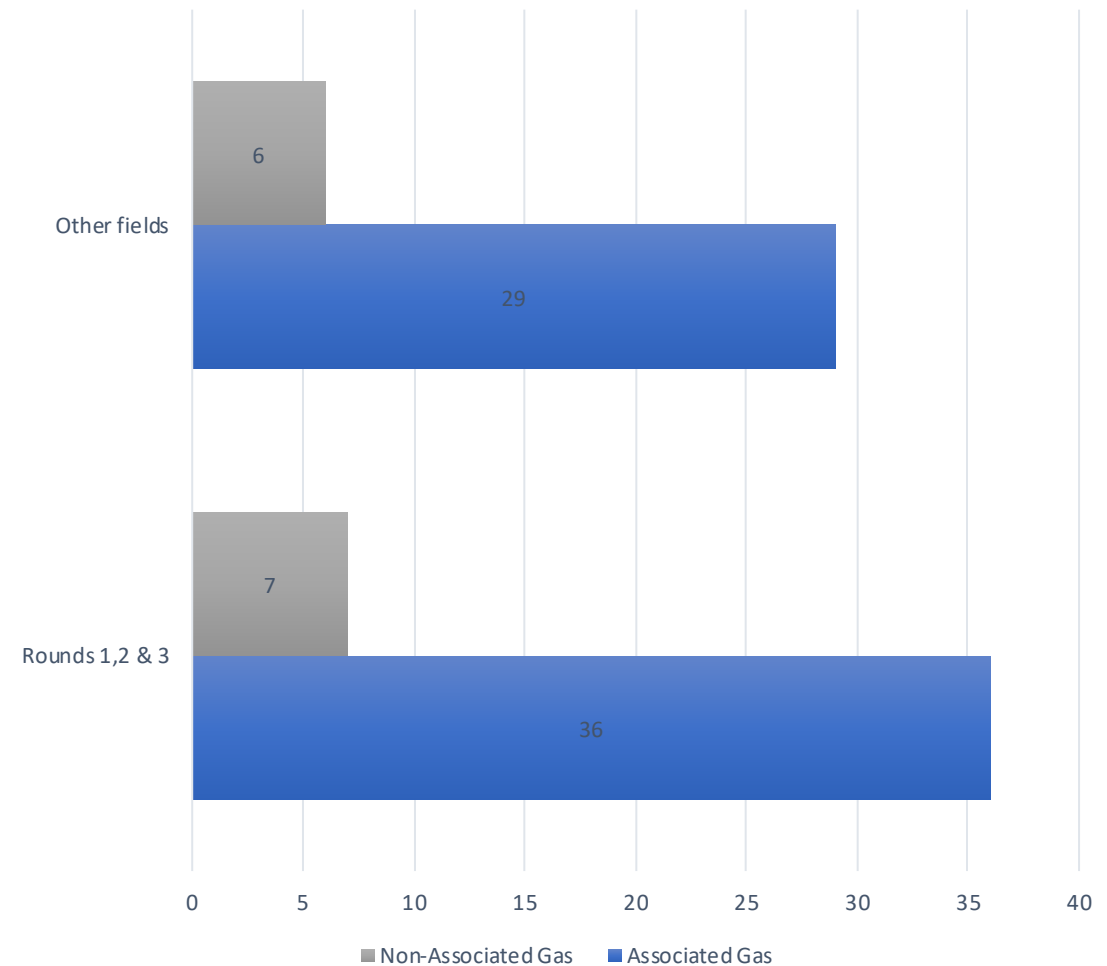


# Iraq's Natural Gas Reserves

## Non-Associated Gas Fields:

- Makes up **13 Tcf** of Federal Iraq's accessible gas reserves.
- Akkas, Siba, and Mansouriya (est. 4.5 Tcf) were part of Licensing Round 3.
  - As ISIS controlled Anbar province, KOGAS ceased operations at **Akkas** (R: 5.6 Tcf,  $P_{est}$ : 320 mmscf/d).
  - **Mansouriya** (R: 3.5 Tcf,  $P_{est}$ : 300 mmscf/d) contract was unilaterally terminated by MoO. Mansouriya power plant runs on imported gas.
  - Dry gas, LPG and condensates from **Siba** (R: 1.1 Tcf,  $P_{act}$ : 25 mmscf/d) are either sold in the domestic market, exported or mixed with crude oil.

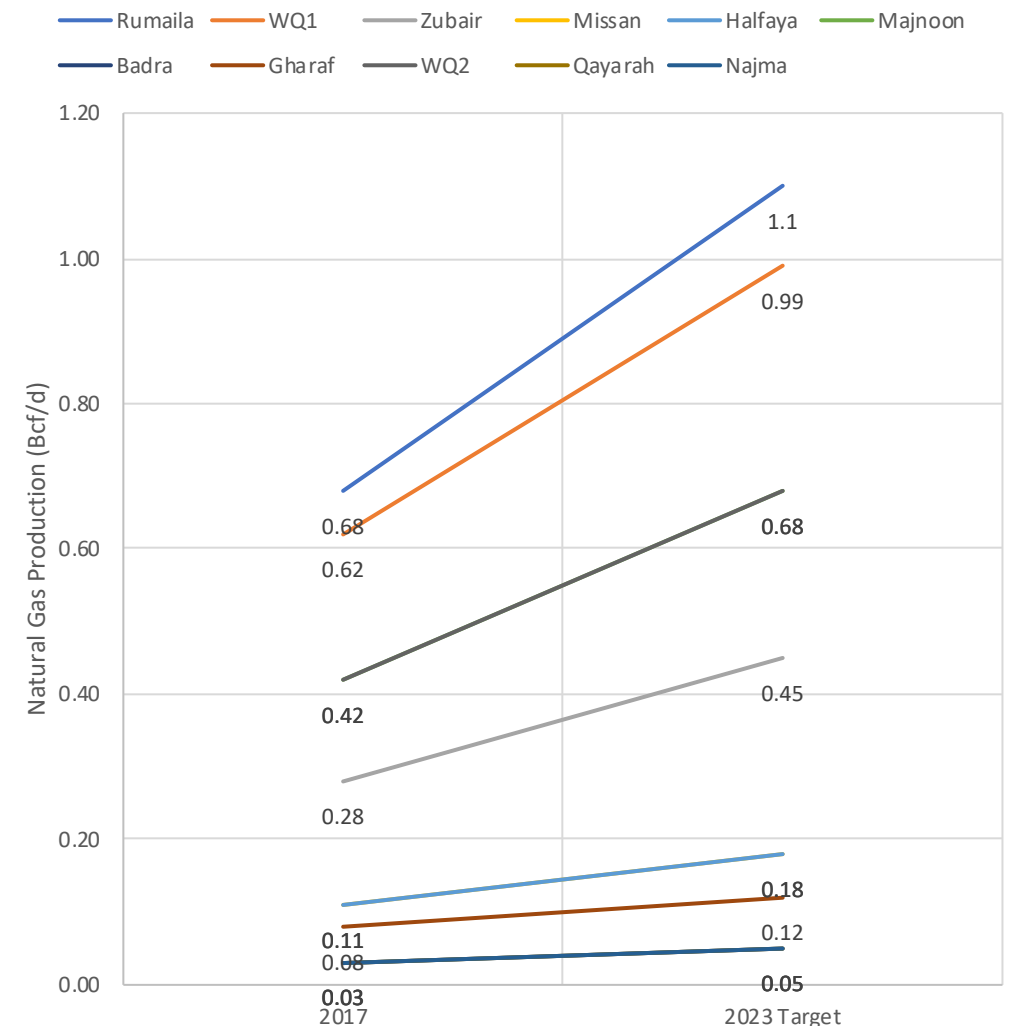
Southern Iraq Natural Gas Reserves (Tcf)



Source: Iraq Ministry of Oil and Iraq Energy Institute Analysis

# Raw Gas Production, Capturing & Flaring

- Iraq's raw gas **production** is estimated at **2.8 Bcf/d**, of which **1.7 Bcf/d** is being flared (50-60%). Only approximately **1.08 Bcf/d** is captured.
- Basra Gas Company (J.V. of SGC, Shell & Mitsubishi) captures **0.94 Bcf/d** while South Gas Company captures another **0.15 Bcf/d**.
- BGC's **2023 target** is to reach **1.43 Bcf/d** while SGC's is **0.5 Bcf/d**. Combined, that will be **2.0 Bcf/d** with additional sites.
- Iraq's **LPG** production covers the local market and Condensates are exported (averaging 4,200 tons per day).
- If flaring is minimized, Iraq's current reserves would be sufficient to supply **200 years** of its current demand.



Source: Iraq Ministry of Oil and Iraq Energy Institute Analysis

# Investment Requirements

- Investment had delayed since 2009-2011 given the non-lucrative nature of contracts signed with IOCs.
- Picked up pace after BGC was allowed to recoup some of its investments immediately by utilizing existing export infrastructure.
- Rationale for greater gas utilization:
  - **Domestic power sector demand** and related **socio-economic implications**
  - **Forward linkages:** petrochemicals & industry
  - Energy **export diversification**



## Gas Gathering

\$1.5-2.5 bn per 1 Bcf gathered



## Gas Processing

\$1.5-2.5 bn per 1 Bcf capacity

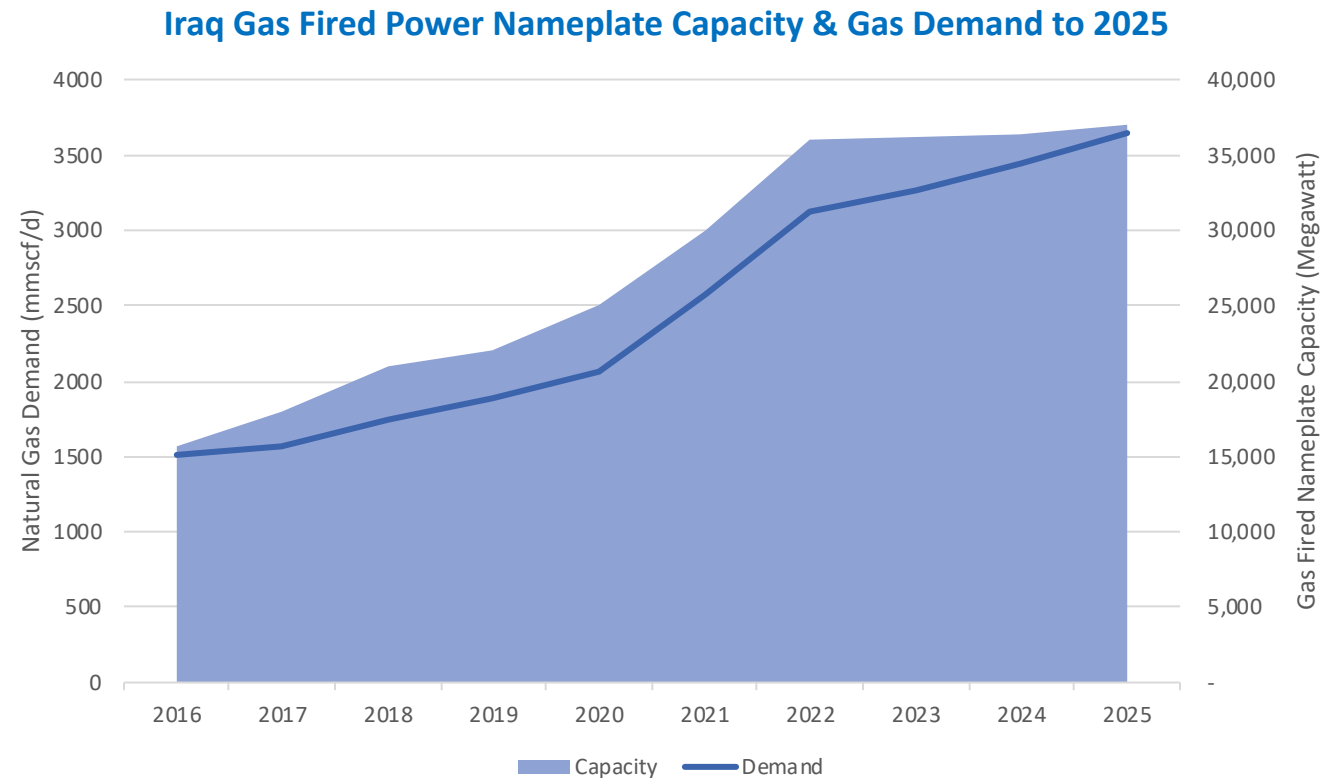


## Gas Transmission

\$100,000 – 150,000 per inch-mile

# Power Sector Gas Demand

- **Peak demand from gas-fired power** is expected to increase by over two thirds over the MoE plan period to 2025, to approximately **37GW**.
- The largest group of power additions will come from gas turbine investments, and this will place considerable stress on the timely provision of gas production, gathering, processing and transport infrastructure.
- During the Plan period, gas demand for power generation will grow to over **3.2 Bcf/d (approximately \$18 bn in investment)**.
- Given the current shortfall in gas supply for power, the plan therefore needs to facilitate more than a doubling in dry gas supply in the next five years, as well as the appropriate transmission needs.
- MoE & MoO will have to coordinate investment and strategies for the liberalization and integration of gas and power markets as a long term solution.



Source: Iraq Ministry of Oil, Ministry of Electricity and Iraq Energy Institute Analysis

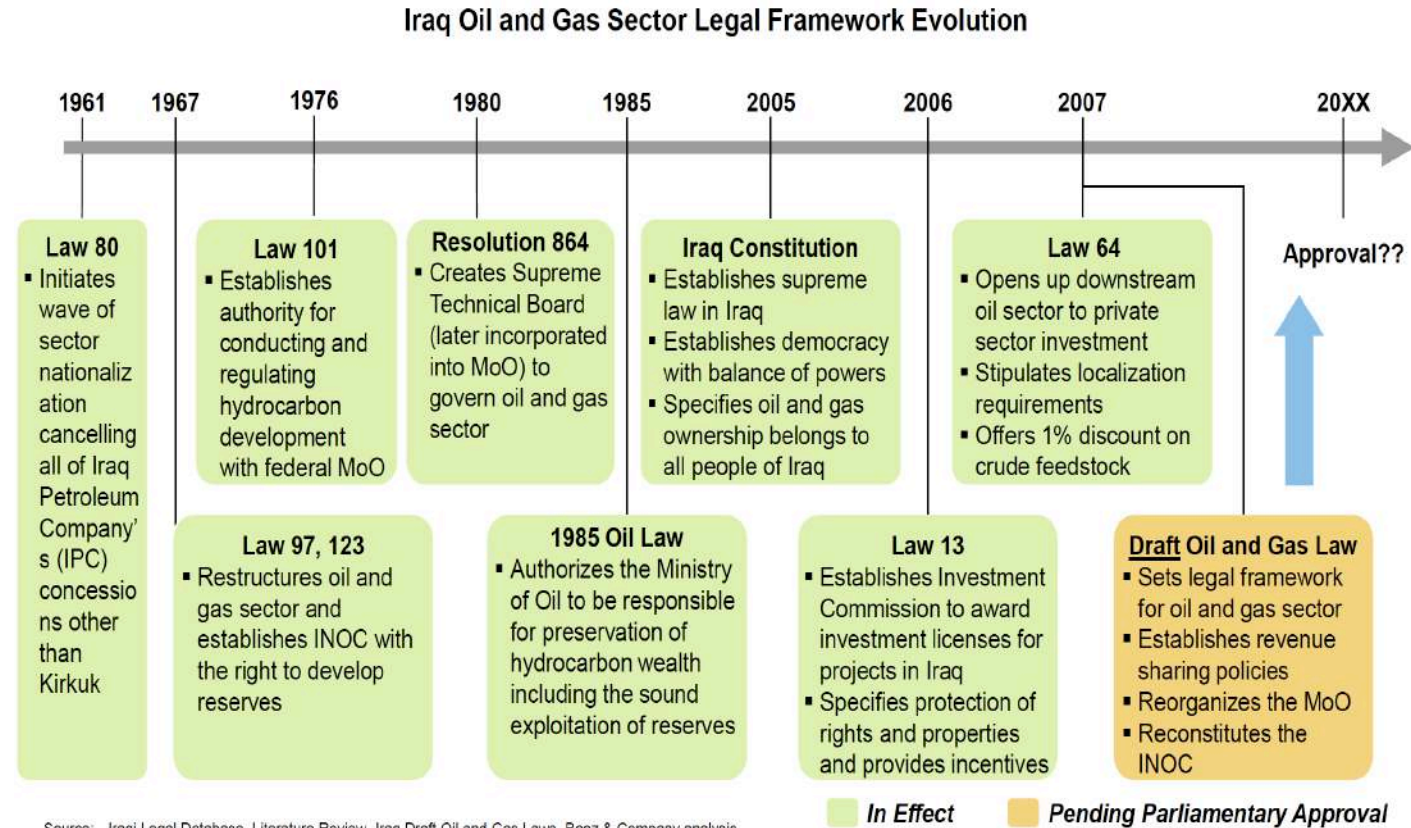


# Technical & Legal Framework Summary

- **2011: Iraq Integrated National Energy Strategy (INES)** – largely failed due to lack of coordination but still maintains sense.

*“By 2015, virtually all of Iraq’s gas production should be captured and processed and available for transport to domestic end users. By that point, gas flaring due to inadequate infrastructure would be minimized, and all of Iraq’s domestic gas requirements will be satisfied”*

- **2018: Council of Ministers’ Resolution No. (51) of 2018**



# Q & A

# Thank You

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