

ADIPEC Edition Newsletter

We are thrilled to be participating again at ADIPEC (Abu Dhabi International Petroleum Exhibition and Conference), taking place in Abu Dhabi, from November 4-7. The event stands as the world's leading oil and gas event and our presence marks a significant milestone in our journey toward innovation and collaboration within the Iraqi oil and gas industry.



The following are selected updates from our various business units, highlighting a few of our recent achievements. Visit us at our stand to learn more about our wide range of services. Our colleagues will be glad to meet with you.



Our Latest Company Updates

AI Majal Oilfield Services (AMOS)

Wireline Services

Al Majal Oilfield Services, led by a team of highly skilled and experienced specialists, successfully completed the first wireline saturation logging job at a major oilfield in southern Iraq by partnering with SLB for technical support.



Coil Tubing Services

AMOS successfully completed the first 2" Coiled Tubing Stimulation intervention at a major oilfield in southern Iraq. The job focused on acid stimulation for a horizontal well and was executed flawlessly by our field crew, exceeding the client's expectations.





Tubular Running Services

AMOS continues investing in the most current technology and equipment in tubular running services with the arrival of new hydraulic casing running tools to include all accessories, ensuring the highest levels of service quality to our valuable clients.

Al Majal Downwhole Tools (AMDH)

AMDH Achieves Milestone at Iraq's Rumaila Oilfield

A well at the Rumaila oilfield was completed using advanced NOV (ReedHycalog) drill bits, achieving high performance and efficiency with only one bit per section. The project was completed in a record time of 16 days, improving drilling time by 50% and reducing total drilling costs by 40%.

Successful Introduction of NOV's Fusetek Technology

A deep conventional well was drilled using NOV (ReedHycalog) premium PDC with Fusetek technology, optimizing drilling efficiency in the abrasive 12 ¹/₄" section where a single bit was used to drill from shoe to well TD. The well was completed in 29 days, reducing drilling time by 30% and lowering overall costs by 25% for the client.

Revolutionizing Drilling in Iraq with Eccentric Reamers

AMDH's Eccentric Reamers revolutionize drilling by eliminating traditional reaming, optimizing operational efficiency and significantly reducing Non-Productive Time (NPT). Clients operating in Iraq have experienced faster well completions and substantial cost savings, thanks to this innovative technology and AMDH's commitment to prompt maintenance through its fully licensed repair facility in Basra.

Enhancing Drilling Performance

AMDH's NOV drilling agitators in Iraq help clients eliminate friction and improve weight transfer to the bit, leading to enhanced drilling performance. This technology allows clients to drill faster and more efficiently, maximizing their productivity and cost effectiveness.





Al Majal Technical Services (AMTS)

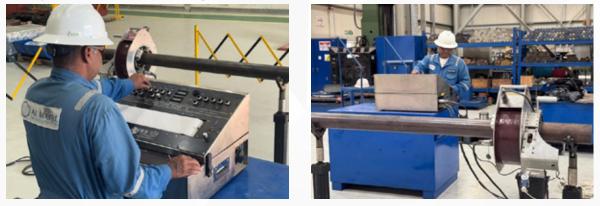
Blowout Preventer Recertification

Al Majal Technical Services have successfully completed its first API16AR 5-year recertification of 5-"8/5 13k Annular Spherical BOP from Al Majal Energy rental fleet with the support of Jiangsu Sanyi OEM. This is not only a significant achievement but a milestone which highlights the technical expertise involved, reinforcing the commitment to safety and reliability in operations.



Leading IOC Inspection

AMTS is preparing for a comprehensive inspection at the operations of a major IOC at Badra field. The thorough procedure includes cleaning, tallying, and various inspection techniques including NDE and EMI will ensure the ultimate integrity and safety of the Vam Top tubing and pup joints.



Tenaris Inspections & Repairs

AMTS has successfully completed the inspection and repairs of 3,800 Tenaris 4 ¹/₂" TSH blue tubing on behalf of Tenaris for CNOOC. The thorough process, from cleaning and visual inspection to CNC thread repairs, varnishing, stenciling and bundling, ensured high quality results.



Al Majal Score

(AMS)

Successful Turnaround for Basra Gas Company

Al Majal Score has successfully completed the execution of the NR NGL Turnaround on behalf of Basra Gas Company in October 2024.

AMS was responsible for managing the preparation and execution of the flange management campaign at site whilst simultaneously servicing the clients valve related equipment on time for reinstallation and plant startup. Another great conversion of our end-to-end capabilities playing its part in the energy security for Iraq.

Key Statistics

- 28 actuated valve assemblies serviced and turned around within 12 days.
- 1,077 joints completed, with130 requiring in-situ flange face machining.
- 23 pipe cuts and beveling completed, ranging in size from 42 6" in Diameter.



Al Majal Score continues to deliver on our commitment of investing in the training and upskilling of the local workforce across Iraq, with the key objective of ensuring our reach of industry knowledge and experience is available for all to access.

Following our recognition as the first accredited provider for ECITB Global in Iraq, we have successfully delivered the Mechanical Joint Integrity (MJI) and Pressure Safety Valve courses.

AMS have welcomed over 500 positive minded participants since the opening of our training academy a little over 12 months, who wish to continue their personal development and play their part in the growth of the economy.



Al Majal Sulzer (AMSRE)

Gas Turbine & Controls Upgrade Project

Al Majal Sulzer executed a turnkey project for a major operator in Iraq, performing a major overhaul of a Ruston TA1750 light industrial gas turbine followed by the site installation and controls upgrade. The project involved dismantling the old servo-based control system and retrofitting a fully digitized control system, completed in record time by a team consisting predominantly of multi-skilled local national workforce, delivering a significant improvement in plant reliability and operational safety.



Pump Casing Reverse Engineering

In response to a disruption of a customer's supply chain, Al Majal Sulzer was tasked with the complete reverse engineering, manufacture and supply of replacement pump casings originating from other OEM equipment. Utilizing in-house capabilities, the pump was fully dismantled, 3D scanned with state-of-the-art technology, and a full engineering review and hydraulic modeling carried out before developing foundry patterns and casting process ready for manufacturing to be carried out.



Motor Rewinding

Rewinding electric motors and generators is a routine activity at Al Majal Sulzer. Performed entirely in-house by highly skilled expert winders and certified to carry out full repairs of EX rated equipment, re-winding of motors is typically a more economical, time-efficient, and sustainable way of returning failed motors back into operation compared to sourcing and importing complete replacements. Following the rewind and overhaul, electric motors can be tested to ensure the integrity and reliability of the refurbished unit.



Wood Al Majal (WAM)

Ghabat Al Majal – BTTC

The Basra Technical Training Centre, recently accredited by the ECITB, has secured its first training contract with ROO. This milestone marks a significant achievement for the center, which aims to enhance local skills in the energy sector. The first apprentice program is set to commence in mid-November 2024, providing valuable training opportunities for the local workforce.



Wood AI Majal Fabrication

The new Wood AI Majal fabrication facility at the AMBP North Rumaila camp is nearing completion and is set to open in Q1 of 2025. The procurement of all key equipment is complete, ensuring the facility is fully equipped to begin operations. This state-of-the-art facility will significantly enhance local fabrication capabilities and support regional energy projects.



Al Majal Business Park (AMBP)

New Fitness Center at Rumaila Business Park

As we continue to promote wellness within our community, Al Majal Business Park is happy to announce the upcoming opening of our new highly anticipated fitness center.

With a fresh approach to a complete workout experience, the new 600sqm facility offers our residents dedicated world class equipment across the cardio, weight and yoga areas. In addition, the gym offers amenities including a refreshments area, changing rooms, high speed WIFI, large screen TVs in an advanced air filtration environment.







AL MAJAL OIL & GAS ROUNDUP IN COLLABORATION WITH QAMAR ENERGY

LATEST IN IRAQI & GLOBAL ENERGY MARKETS



Oil Demand in Iraq & the Middle East

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Iraq's Oil Production and Exports

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Iraq Natural Gas & Power Sector Developments

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Key Projects & Recent Updates in Iraq

| Project | Client / Buyer | Contractor / Seller | Main Observations |
|---|-----------------------|--------------------------------------|--|
| Bid Rounds 5+ and 6 Awards | МоО | Chinese operators, KAR | Winning bids were determined by the lowest profit margins highlighting a shift in competitiveness since 2018, and favoured Chinese firms, with local KAR group winning 3 out of the 13 projects. |
| | | | This shift allows Chinese companies to expand their risk-taking appetite while enabling KAR to leverage its experience in Federal Iraq, signalling increased energy cooperation with Kurdistan. |
| Silopi-Ceyhan Pipeline | Government of Iraq | Government of Turkey | The Development Road Project aims to enhance the Silopi-Ceyhan pipeline, providing a 1.5 Mb/d capacity to transport oil from Iraq to the Mediterranean and potentially generating US\$ 50 B annually. |
| 500 kbbl Qayyarah Sour Crude Sale | Valero Energy | SOMO | Iraq's SOMO has sold 500 kbbl of Qayyarah crude to Valero Energy at a US\$ 28.3/b discount, with 1.5 Mbbl still available, potentially reflecting a well-supplied market amid ongoing regional crisis impacts on pricing. |
| KRI IOCs Plan Expansions | MNR | DNO, Shamaran Petroleum, HKN, GKS | Norway's DNO plans to mobilise a rig for a new well on its Tawke licence, with Q2 production rising %9 to 79.8 kb/d. |
| | | Felloleum, HKN, GKS | Canada's Shamaran Petroleum anticipates increased output from its Atrush and Sarsang stakes, while Gulf Keystone has started 7/24 trucking operations to meet rising domestic demand. |
| BP-MoO Non-Binding Agreement for Kirkuk | MoO / NOC | BP | BP has signed a preliminary agreement with the MoO to lead the rehabilitation of four oil and gas fields in Kirkuk, with NOC preparing wells to increase production before the handover. |
| Iraq to Kick-start Low-Carbon Hydrogen Value Chain | MoO | N/A | Iraq is pursuing a special license to establish a blue ammonia production plant in Basrah, which aims to create a low-carbon hydrogen value chain and potentially diversify energy exports, supported by gas from the MoO and the Dry Canal Corridor linking Iraq to Europe. |
| Khor Mor Gas Expansion Project (KM250) | Dana Gas | Enerflex | Dana Gas has terminated its contract with Canadian EPC contractor Enerflex for the US\$ 600 M KM250 expansion project due to "numerous performance issues" that caused significant delays. |
| | | | Pearl Petroleum will now take direct control of the project to ensure it remains on schedule for completion in H2024 2. |

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| Baiji 2 Power Plant Rebuild | Iraq Minis of Electric | - | Siemens, CSCI | EC Iraq's agreement with Siemens and CSCEC to rehabilitate the Baiji-2 gas-fired power plant, with CSCEC financing and installing equipment, signifies a shift from Western to Chinese firms in the energy sector, potentially enhancing deal terms and future growth. |
|---------------------------------------|--|----------|------------------------------------|--|
| East Baghdad Oilfield Expansion | Iraq State Company fo Oil Projects | | Sinopec Oilfield Services | Sinopec Oilfield Services has secured a US\$ 137 M contract to build new processing facilities at the East Baghdad oilfield, expected to be completed by September 2026, and may leverage carbon credits from captured associated gas as part of a MoO project. |
| Qayyarah Field Seismic Survey | Sonangol | | Iraq Oil Exploration Company | Angola's Sonangol has contracted Iraq Oil Exploration Company for a 3D seismic survey of the Qayyarah oilfield, potentially encouraging international operators to partner with local firms, following similar efforts by China's Geo-Jade Petroleum for the Naft Khana block. |
| GCCIA-Iraq Interconnection | Governmer of Iraq | t | GCCIA | A signing ceremony for a contract to link the GCC's electricity market with Iraq was held on October 9 in Dammam, Saudi Arabia, marking a significant milestone. |
| | | | | Plans for the interconnection to become operational are slated for launch in December 2024, with Iraq being able to import 3.94 TWh of electricity annually by 2025 resulting in savings of US\$ 175 M due to competitive prices that are lower than local production costs. |
| Fao Port Gas Platform | South Ga Compar | | N/A | The South Gas Company is reportedly awarding a contract for the construction of a gas import platform at the Fao Port to import gas and supply it to power facilities through a 100 km pipeline also to be constructed as part of the project. |
| | | | | The project will also comprise storage tanks with a capacity of 150,000 m3 each Project design is slated for completion before end-2024. |
| | | | | |
| Oil Dema | nd in l | raq & | | |
| the Middl | e East | | | |
| Location | August | eptember | Change | Main Observations |
| Iraq | 970 | 950 | -2% | Efficiency improvements have led to slightly lower demand compared to September 2023 levels; overall demand remains robust on back of improving economy and higher demand for road fuels. |
| Major Middle East Economies | 4.0 | 3.93 | -2.1% | Positive economic activity; reduced temperatures lowering power demand for cooling. |

Key Factors Impacting Oil Demand in Iraq

• Current refining capacity at 1.3 Mb/d with 80% utilisation rate

Major Refining Sector Developments that can Impact Oil Demand

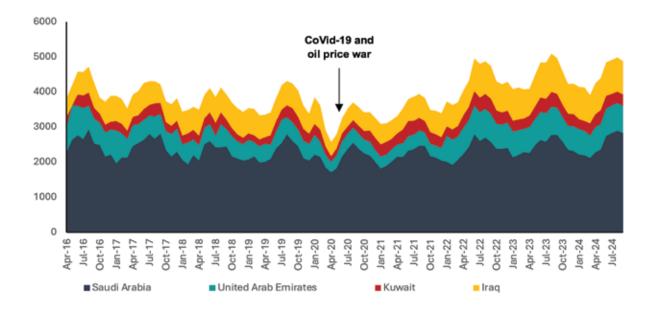


| | Expansions | 70 kb/d expansion at Shuaiba Refinery to receive additional FCC by end-2024 to increase gasoline production. 70 kb/d expansion of the Diwaniya Refinery by 2029 under yet-to-be-decided direct-award contract to Barham Group. New processing unit at Samawah Refinery, but contract pending. 70 kb/d planned expansion of Amarah Refinery, but no deal signed. |
|----------------------|------------|---|
| Refining Capacity | Expansions | 150 kb/d Baiji North Refinery online since February 2024; total Baiji Complex capacity now at 290 kb/d. Upgrade of the Kirkuk Refinery to process about 12 kb/d of naphtha into high-octane gasoline by end-2024. |
| | Expansions | KRI refining capacity at 341 kb/d, but hundreds of illegal topping plants processing small amount of additional crude (138 shutdown by the KRG, while others ordered to implement environmental protection requirements). FI sending 40 kb/d of crude previously exported via ITP to the Bazian Refinery and 50 kb/d to Kalak. If Lanaz has reduced feedstock from Kurdish-controlled administration in Syria, KRI IOC operators can send their crude directly to it. |

Center Burn Major demand source in summer: >250 kb/d at times, but now reducing due to more gas from domestic processing plants and new power lines such as Iraq-Turkey for 300 MW of power to Northern Iraq, and Jordan-Iraq connection for 40 MW to Al-Rutbah.

Key Factors Impacting Oil Demand in Major Middle East Economies

Improved PMIs Positive economic activity, higher manufacturing and construction activity, and strong composite PMIs (mainly in the UAE and Saudi Arabia).



Iraq's Oil Production and Exports

| Metric | Units | August | Sept | Change | Main Observations |
|----------------------|--------|--------|-------|--------|---|
| Production | Mb/d | 4.8 | 4.7 | -2% | State-operated fields in Basrah have reduced production by an additional 100 kb/d in September, as part of OPEC+ compliance and maintenance. |
| Secondary Sources | Mb/d | 4.27 | 4.11 | -4% | Likely under-characterises domestic consumption, which is as high as 1 Mb/d, corresponding to higher production. |
| Exports | Mb/d | 3.41 | 3.31 | -3% | Down 100 kb/d as state-run fields directed to curtail output in line with OPEC+ compensatory cuts. |
| Revenues | US\$ B | 8.49 | 7.11 | -16% | Decreased exports and softer global prices. |
| Sales Price | US\$ B | 80.13 | 71.60 | -11% | FI prices export crude at %5-3 discount to Brent; KRI crude currently trading between US\$ 28/b – US\$ 41/b. |

| OPEC+ Quota | Mb/d | 3.910 | 3.905 | -0.1% | Will reduce by 110-90 kb/d from August to September 2025 to compensate for past overproduction. |
|--------------------|------|-------|-------|-------|--|
| KRI TProduction | Mb/d | 0.31 | 0.31 | 0% | Unchanged from previous month as liquid domestic market provides some respite from ITP closure. |
| ITP Exports | Mb/d | 0.00 | 0.00 | 0% | ITP offline for the eighteenth month straight, a year and half since ICC ruling. |

Major Factors Impacting Iraq Production and Exports



| OPEC Cuts | Rising pressure from OPEC+ to adhere to reduced quota to compensate for past overproduction. Iraq's quota will rise in October as OPEC+ cuts are expected to unwind, but its compensation schedule means its quota will not rise as much as previously anticipated. |
|---------------------|--|
| Fields Expansion | Majnoon, Nahr bin Omar, Luhais, and Tuba in Basrah have reduced output by 200 kb/d since July in response to OPEC+ pressure. Rumaila and Abu Ghirab undergoing maintenance (120 kb/d and 75 kb/d output reduction respectively). |
| Export Capacity | Current sustainable export capacity just below 3.5 Mb/d, raising concerns of bottlenecks that could shrink valuable export flows. Primarily concentrated at Basrah, continuing Iraq's complete dependence on the insecure Red Sea or longer route around Cape of Good Hope to Europe. Plans for a new 2 Mb/d, US\$ 416 M offshore pipeline by 2025 under contract with Dutch company Boskalis are yet to be finalised. A deal for a 300 kb/d export refinery at Fao with CNCEC could reinforce the urgency of revamping export infrastructure but Phase-1 is still 4 years out. |
| KRI Trade | Up to 200 kb/d allegedly exported cross-border illegally on trucks to Iran and bringing in US\$ 200 M, but not independently or officially verified. |
| KRI Expansion | DNO mobilising rig to drill new well at Tawke, with overall production at DNO fields up %9 to 79.8 kb/d in Q2 from Q1. Shamaran and Gulf Keystone also eyeing production expansions as domestic demand increases. |

| Discussion Baghdad could use budget transfers as leverage in getting the KRI to comply with OPEC cuts, but KRI IOCs will want FI to agree to their contractual terms. Lower OPEC+ quota will make resolving issues with the ITP more challenging, but general sentiment positive and suggests progress towards export resumption. Recent attempts to reshuffle oil sector leadership are unlikely to have any impact on production, although progress could slow on departmental-level authorisations and political capital for aspects of projects like TotalEnergies' Gas Growth Integrated Project and the finalisation of contracts awarded in Bid Rounds 5+ and 6, as well as plans for new Bid Rounds 6+ (mainly gas-focussed) and 7 (mixed). | KRI-FI ITP Discussion | • Illegal cross-border trade influencing the urgency of resuming official exports via ITP as well as US\$ 800k per day penalty to Turkey for not shipping committed volumes through the ITP. |
|--|--------------------------|--|
| Politics Recent attempts to reshuffle oil sector leadership are unlikely to have any impact on production, although progress could slow on departmental-level authorisations and political capital for aspects of projects like TotalEnergies' Gas Growth Integrated Project and the finalisation of contracts awarded in Bid Rounds 5+ and 6, as well as plans for new Bid Rounds 6+ (mainly gas-focussed) and 7 (mixed). | | |
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| impacted the refinery's production. | Politics | production, although progress could slow on departmental-level authorisations and political capital for aspects of projects like TotalEnergies' Gas Growth Integrated Project and the finalisation of contracts awarded in Bid Rounds 5+ and 6, as well as plans for new Bid Rounds 6+ (mainly gas-focussed) and 7 (mixed). An explosion of war remnants inside the Baiji Oil Refinery injured four workers but has not |

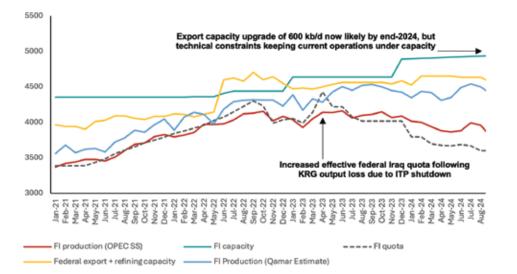
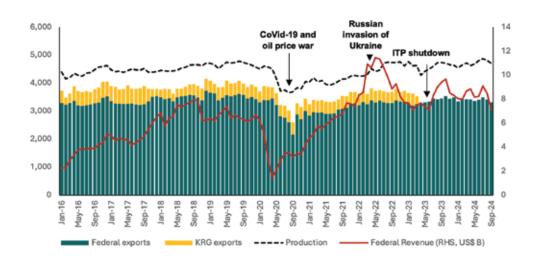


Figure 2 Federal Iraq production vs capacity, kb/d





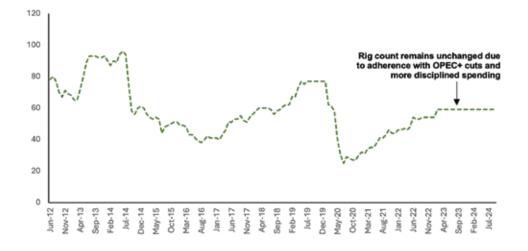


Figure 4 Iraq's monthly oil rig count

Iraq Natural Gas & Power Sector Developments

Iraq Natural Gas Sector Updates



| Gas Output | 3.1 Bcf/d target by end-H2024 1 with associated gas utilisation increasing to %70 from %61 in 2023; current associated gas utilisation at %65. |
|------------------|---|
| | Associated gas utilisation rate should logically reach %100 as Iraq targets end-2028 to ending flaring completely. |
| | Output expected to increase to 5 - 4.5 Bcf/d by 2030 from new 1.825 Bcf/d gas developments: |
| Gas Expansion | 600 MMscf/d Ratawi Gas Hub Project with TotalEnergies (300 MMscf/d Phase-1 in 2028). 200 MMscf/d Capture Project at Nasiriyah and Gharraf fields by end-2026. 2x 150 MMscf/d Phases of Nahr bin Omar Project with local contractors, but loan agreement pending finalisation. 300 MMscf/d Halfaya Gas Project with CNPC (launched in June). 125 MMscf/d Gas Project at Al-Faihaa Oilfield. 300 MMscf/d Non-Associated Gas Project at Mansuriyah. |
| | Additionally, Iraq could receive more associated gas from West Qurna-1 as it expands from 550 kb/d to 800 kb/d. Potential of BGC capacity increasing to 1.4 Bcf/d if more gas is captured from WQ-1, |
| | Rumaila and Zubair, but depends on their expansion programmes. |

| Domestic Demand | Expected to reach 6 Bcf/d by 2030 from current ~5 Bcf/d, narrowing supply gap to 1 Bcf/d from 2 Bcf/d currently (if projects come to fruition). 2030 self-sufficiency target requires development of additional new gas and/or agreements with KRI for surplus gas from developments there. |
|--------------------|--|
| Gas Exploration | Ongoing strategic push to offer 10 gas exploration blocks to US companies left unclaimed from past licensing rounds. Committed US interest can support Baghdad's efforts to reopen the ITP and foster positive outlook for investment opportunities. US investment would even out playing field with more diverse players to keep the gas sector competitive. However gas blocks are in relatively remote areas with limited geological data and will struggle to attract international interest. |
| | |

Iraq Power Sector Updates



| New Power | New power projects will be primary offtakers for all new gas produced, with three new projects announced in Baghdad, Diyala, and Anbar to add 614 MW to national grid: |
|-----------|---|
| Projects | Shanghai Electric will add 364 MW via combined cycle units at the Mansuriyah power plant in Diyala. Dongfang Electric will add 125 MW to the South Baghdad plant. Iraqi Sada al-Najoom will add 125 MW to the Akkas gas-fired power plant in Anbar. Iraq's Mass Group Holding and GE Vernova have made significant progress on modernisation of the 4.5 GW Besmaya Power Plant in Baghdad, completing Phase-1 Advanced Gas Path upgrades on four 9F.04 gas turbines and beginning Phase-2 upgrades on additional four 9F.04 gas turbines. The upgrades will boost efficiency, and increase power output by up to %6. The projects will help reduce reliance on costly Iranian gas and power, the reliability of which has come into question once again due to the risk of an Israeli retaliation against Iranian energy facilities. |

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