Industrial Sector

Building Indigenous Capabilities and Greater Value for Global Competitiveness

Saudi Arabia

Nov 2025

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EXECUTIVE SUMMARY

Saudi Arabia has achieved notable progress towards its Vision 2030 industrial diversification objectives, with non-oil exports, including re-exports, reaching SR33.71 billion ($8.99 billion) in July, 2025 marking a 30.4% increase compared to the same month last year, and revised its unemployment target for nationals to 5 percent by 2030, down from the previous goal of 7 percent.

The industrial sector reached SAR 986 billion GDP in 2024, with non-oil activity now accounting for 55% of the economy, up from 40% pre-2016.

Private sector confidence is evident: investment increased 26.9% to SAR 665 billion (89% of total capital formation), whilst exports grew 13% y/y backed by SAR 69 billion in EXIM Bank support.

A significant consideration is that Saudi Arabia's petrochemical sector is expanding rapidly, yet there is an opportunity to enhance value creation alongside this growth.

The petrochemicals sector is crucial for the industrial sector because it serves as the foundational input for a wide range of industries and products.

Aramco's In-Kingdom Total Value Add (IKTVA) program, established in 2015, has driven local content in the energy supply chain from 35% to 67% by 2024, unlocking cumulative procurement of SAR 1.6 trillion from domestic suppliers. The program mandates minimum local content thresholds for suppliers—failure to meet targets results in disqualification from contracts or reduced bid weights—obliging foreign firms to establish local manufacturing facilities, transfer technology, and develop indigenous capabilities.

The Kingdom is advancing targeted strategic industrial sectors. In automotive, Lucid (which already has an operational factory capable of producing 155,000 vehicles), Ceer (launching Q4 2026), and Hyundai (commencing 2027) target 350,000+ vehicles annually by 2030.

Renewable equipment manufacturing is advancing on 10.2 GW connected capacity, projected to reach 20 GW by end-2026.

Petrochemicals are derived from oil and natural gas and are used to produce many essential materials, including plastics, synthetic fibers, detergents, fertilizers, and pharmaceuticals. This sector provides the raw materials necessary for manufacturing machinery, automotive parts, packaging, electronics, and construction materials, among others.

Industrial Sector

While petrochemicals generate over SAR 310 billion ($ 82.7 billion) in revenue, much of their production is focused on basic commodity chemicals, with specialty chemicals making up about 8-9% of output. These standard products tend to compete mainly on price, which can limit the ability to achieve higher profit margins and capture greater value.

Additionally, around 70% of primary material exports consist of raw petroleum derivatives and unprocessed commodities, indicating potential for further value-added processing and diversification within the sector.
Industry 4.0 technologies demonstrate proven returns: Aramco reduced costs by 30% and downtime by 40%; SABIC achieved 8% Green House Gas emission reductions; Ma'aden's AI deployment saved 2,200 hours monthly while achieving record operational results.

Saudi Arabia's industrial transformation under Vision 2030 positions digital intelligence—particularly artificial intelligence—as a cornerstone of competitiveness, decision-making optimization, and production efficiency. The National Strategy for Data and AI (NSDAI), approved in October 2020, targets Saudi Arabia's ranking among the global top 15 AI nations by 2030 while securing SAR 75 billion (USD 20 billion) in AI investments.

With a SAR 23.8 billion ($6.36 billion) AI market in 2024 and SAR 75 billion ($20 billion) in government commitments, the foundation exists for wider deployment. Yet a substantial gap persists between pilot projects and enterprise-wide implementation, especially among SMEs.

The Public Investment Fund (PIF) has emerged as the primary architect of Saudi industrial consolidation. The Fund operates through multiple mechanisms: acquiring controlling stakes in existing companies, establishing wholly-owned subsidiaries designed as national champions, and orchestrating mergers between portfolio companies to eliminate redundancies and achieve operational efficiencies.

PIF's consolidation strategy explicitly targets elimination of non-productive enterprises through asset reallocation and market rationalization. Criteria for identifying non-productive firms include sustained sub-optimal profitability, low capacity utilization rates (typically below 60-70% in capital-intensive sectors), misalignment with Vision 2030 strategic priorities, and inability to achieve competitive scale independently.

Macro-Industrial Overview

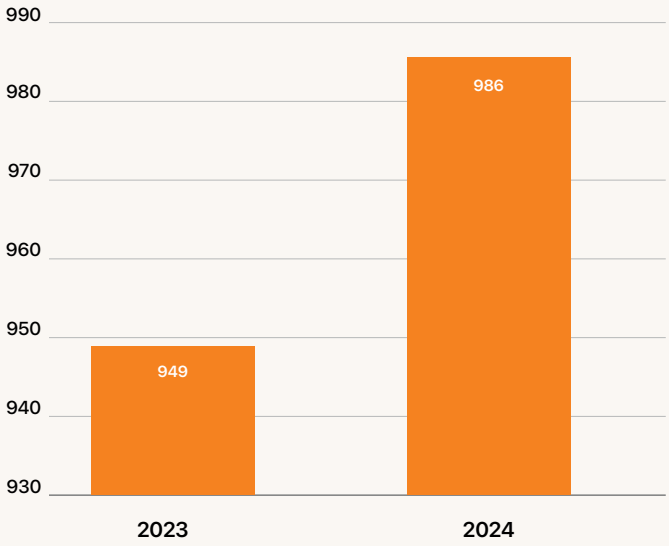
Saudi Arabia's industrial sector serves as a pivotal engine for economic diversification and sustainable growth, underpinned by the National Industrial Development and Logistics Program (NIDLP) and anchored within Vision 2030.

The In-Kingdom Total Value Add (IKTVA) program mandates that all suppliers and partners prioritize and demonstrate a commitment to local content creation, job creation for Saudis, and investment within Saudi Arabia.

In 2024, the industrial sector contributed SAR 986 billion to non-oil GDP, comprising 39% of non-oil economic output and marking an increase from SAR 949 billion in 2023.

Non-oil activities elevated their share to 55% of total GDP, reflecting reduced oil dependency through robust manufacturing and mining activities.

Industrial Sector Contribution to Non-Oil GDP. SAR Billion



Source: National Industrial Development and Logistics Program

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Employment in industrial and logistics activities reached 2.43 million in 2024, with 508,000 new jobs created and Saudi nationals occupying 660,000 NIDLP-linked roles.

Female workforce participation surged, exceeding Vision 2030's original targets, as industrial and logistics sectors created over 39,000 new jobs for Saudi women.

Unemployment among Saudi citizens declined to a record low of 6.3% by 2025Q1(but rose to 6.8% in 2025Q2), with overall labour force participation at 68.2%—a testament to effective localization, training, and empowerment policies.

Large-scale adoption of the Fourth Industrial Revolution, chiefly AI and smart factories is underway in the kingdom, supported by national programs targeting the conversion of 4,000 facilities into advanced "future factories" and a leap in energy efficiency, decarbonization, and circularity.

Saudi Arabia experienced a noteworthy 52% increase in robotics companies, growing from 1,537 to 2,344 between Q2 2022 and Q2 2023. This expansion underscores the country's growing domestic automation capacity, laying a strong foundation for future innovation. While the deployment of robotics across manufacturing facilities continues to develop, with traditional production methods still prevalent, these advancements provide valuable potential for further automation progress.

SWOT Matrix: Industrial Sector, 2025

(PS: A SWOT Matrix for the Industrial Sector is a strategic tool used to analyze the strengths, weaknesses, opportunities, and risks related to the industrial sector)

Strengths	Weaknesses
-Scale: Largest manufacturing capacity in MENA, robust mineral wealth (est. SAR 9.4 trillion)	- Skills mismatch: Demand for technical/ engineering/AI roles outpaces training capacity
- Policy & Incentives: National Industrial Strategy, Saudi Industrial Development Fund (SIDF) loans, Special Economic Zones tax incentives	- Infrastructure: More investments required in logistics, smart grids, and water infrastructure
- Rapid Job Creation: High Saudization, female workforce participation growth	- Productivity: GDP per worker needs to improve
- Global Standing: World›s 33rd in UNIDO Competitive Industrial Performance index (2024), highest woman industrial employment in the GCC	- Key subsectors (mining, petrochemicals) sensitive to global commodity cycles
Opportunities	**Risks**
- Digital Transformation: Fourth Industrial Revolution (4IR), Future Factories, AI integration	- Volatility: Oil prices, commodities, and global demand shocks
- Green Industry: Subsidy rationalization, renewable energy, green hydrogen megaprojects	- Geopolitics: Supply chain disruptions
- FDI inflows (USD 31.7 billion in 2024, exceeding the National Investment Strategy target by 9% and SA ranking 13th in Kearney's 2025 FDI Confidence Index)	- Harmonizing the industry's standards and regulations with those of international markets.

Sources: GASTAT, Vision 2030, NIDLP, UNIDO, IMF, Ministry of Industry and Mineral Resources

Vision 2030 Strategic Integration

Saudi Arabia's National Industrial Strategy (NIS, launched Oct 2022) frames the actionable path for near tripling manufacturing GDP from SAR 331 billion (2020) to SAR 895 billion by 2030, with the longer-term goal of quadrupling the figure by 2035.

Employment targets are equally ambitious, aiming to generate 2.1 million combined direct and indirect industrial jobs by 2030. The NIS prioritizes 12 subsectors for investment—chiefly petrochemicals, renewables, automotive, aerospace, medical devices, mining/metals and advanced manufacturing—offering over 800 investment opportunities worth SAR 1.3 trillion.

Vision 2030's integration extends beyond industry to encompass logistics, export infrastructure, and industrial clustering, alongside strategic expansion of digital intelligence and environmental sustainability initiatives.

Infrastructure investments are expected to reach close to SAR 1 trillion by 2030, supporting manufacturing excellence, digital connectivity, and deployment of advanced smart grid and transport networks.

Metric	Vision 2030 Target	2024 Progress	Achievement Rate
Manufacturing GDP (SAR bn)	895	427	47.70%
Non-oil Exports (SAR billion)	557	514	92.30%
Industrial Jobs (mn)*	2.1 (direct+indirect)	1.09 (direct only)*	N/A*

Sources: National Industrial Strategy (2022), GASTAT, Ministry of Industry and Mineral Resources, NIDLP Annual Report 2024, Saudi Export Development Authority.

Number of Factories by Sector

Source: National Center for Industrial and Mining Information/Argaam

Table Notes:

- **Industrial Jobs:** Vision 2030 target (2.1 million) includes direct and indirect employment. 2024 figure (1.09 million) represents direct employment only; comprehensive direct plus indirect data not publicly available. Achievement rate not calculated due to data incomparability.
- **No. of Factories:** Vision 2030 does not specify a factory count target. Current count (12,589 – end 2024) represents 34.96% progress toward National Industrial Strategy 2035 target of 36,000 factories.

Top Three (in terms of % of Factories per Sector)

- Other Non-Metallic Industrial Products – 19%
- Food products – 14.2%
- Rubber and Plastic Products: 12.9%

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Regional Benchmarking: KSA vs. UAE, Qatar, GCC Peers

Saudi Arabia is positioned as the industrial leader in the GCC by virtue of both scale and acceleration of transformation. While the UAE remains ahead in technology, logistics, and vertical depth, KSA's absolute manufacturing output and resource-driven strategy grant it regional dominance:

- **UNIDO Competitive Industrial Performance Index 2024:** UAE ranked 27th globally (0.115), KSA 33rd (0.088), Qatar 43rd (0.06). KSA exceeds the global average and all Arab states except UAE.
- **Manufacturing Output:** KSA led the region in absolute manufacturing output, with a rapidly expanding base of over 12,580 factories in 2025 and a 2035 target of 36,000.
- **GDP Growth and Non-Oil Diversification**: Saudi Arabia achieved 3.9% overall GDP growth in 2025Q2 (4.6% non-oil), while non-oil sector expansion outpaces most GCC peers.
- **FDI Inflows:** KSA attracted USD 31.7 billion in FDI in 2024, rivaled only by UAE, but with a greenfield focus on large industrial projects and localization, versus UAE's services and real estate tilt.

Industrial KPI	Saudi Arabia (KSA)	UAE	Qatar	GCC Average
UNIDO Index (2024)	0.088 (33rd)	0.115 (27th)	0.06 (43rd)	0.059
GDP manufacturing share	15.57 (2024)	10.85 (2023)%	8.12% (2024)	-
Factories (2025)	12,589 (end-2024)	NA	NA	NA

Sources: UNIDO Competitive Industrial Performance Index 2024 (GCC-Stat), GASTAT, Knight Frank Saudi Industrial & Logistics Review (October 2025), Stratrich UAE Manufacturing Outlook 2024, Emirates NBD Research.

Manufacturing SWOT

Strengths	Weaknesses
SAR 427 billion manufacturing GDP, 4% annual growth	Automation penetration remains low compared to advanced manufacturing economies, though government initiatives under Vision 2030 aim to accelerate adoption in automotive, electronics, and metal fabrication sectors
SAR 514 billion non-oil exports (13% y/y growth)	Technical workforce constraint
12,589 licensed establishments with expansion to 36,000 by 2035	Expensive investments in machinery and infrastructure outweigh the cost savings from cheaper labor. This reduces the overall cost benefits of relocating or outsourcing production.
Strong petrochemical local content (40-50%)	Low R&D intensity (0.56-0.8% . %2.7 OECD average as % of GDP)
Opportunities	**Risks**
Approximately USD 273 billion Advanced Manufacturing Hub opportunities	Competition from established manufacturing economies
4,000 fully automated facilities target by 2035	Technology dependency on imported equipment
Standard Incentives Program (SAR 10 billion, 35% cost coverage)	Modest patent filings (8,029 in 2024, +13% y/y vs. South Korea 200,000+)
NEOM Oxagon Industry 4.0 integration flagship	There are many different suppliers, and they don't offer ready-made, complete solutions, which makes things more complicated.

Source: GASTAT, Ministry of Industry and Mineral Resources, National Industrial Development and Logistics Program (NIDLP) Annual Report 2024, National Industrial Strategy (October 2022), Standard Incentives Program (January 2025), Knight Frank Saudi Industrial & Logistics Review (October 2025), NEOM Project Data, and sectoral analysis from Parts II, III, and VI

SECTORAL DEEP DIVE

Petrochemicals: Global Leadership Through Integrated Value Chains

Saudi Arabia commands dominant global petrochemical positioning, exceeding USD 82.7 billion in sector revenues during 2024 and controlling nearly 80% of GCC petrochemical output. The Kingdom contributes roughly 10% of global chemical trade, leveraging proven petroleum reserves representing 17% of worldwide totals to secure unmatched cost of feedstock advantages. (feedstock means: the raw materials or inputs used in the production process of chemicals and other products.)

The petrochemical sector is related to the industrial sector because it plays a crucial role in producing essential raw materials and chemicals that are fundamental to various manufacturing processes within the industrial sector. Petrochemicals, derived from oil and natural gas, are used to produce plastics, synthetic fibers, resins, solvents, and other chemical products, which are then utilized in industries such as automotive, construction, textiles, packaging, electronics, and more.

Value Chain Architecture

Vertical integration distinguishes Saudi Arabia's competitive advantage, spanning upstream feedstock supply (ethane, propane, naphtha) through midstream basic chemical production (ethylene, propylene, methanol) to downstream polymers and specialty products.

The landmark Crude Oil to Chemicals (COTC) complex—a Saudi Aramco-SABIC joint venture — will process 400,000 barrels of crude oil daily into 9 million tonnes of chemicals annually, creating 30,000 jobs while contributing 1.5% to GDP by 2030.

Despite upstream and midstream strengths, downstream integration gaps persist relative to UAE and Qatar competitors who have captured higher-margin specialty segments through European and Asian technology partnerships. (Higher-margin specialty segments refer to specific areas within the industry, such as specialty chemicals, advanced materials, or niche products, that typically command higher prices and profitability due to their technical complexity and limited competition.)

Petrochemicals SWOT

Strengths	Weaknesses
Abundant feedstock access (approximately 17% global reserves)	Limited downstream specialty chemical integration
Exceeding USD 82.7 billion sector revenues, nearly 80% GCC share	Downstream technology gaps vs. UAE/Qatar
SABIC global brand leadership (USD 4.9 billion brand value)	Dependency on associated gas feedstock
World's largest carbon capture facility (500,000 tonnes CO_2/year)	Modest R&D intensity vs. global petrochemical leaders
Opportunities	**Risks**
Growing Asian specialty petrochemicals demand	Global petrochemical oversupply risk
Green hydrogen integration (NEOM 1.2M tonnes/ year by 2027)	Tightening global sustainability mandates
Circular economy waste-to-value technologies	Competition from shale gas-based US producers
Adoption of Cloud-Oriented Technology and Communications	Oil price volatility affecting feedstock economics

Source: SABIC Integrated Annual Report 2024, IMARC Group Saudi Arabia Petrochemicals Market Report 2024, ACWA Power NEOM Green Hydrogen Project, US-Saudi Business Council Petrochemical Sector Report 2022, GPCA, and sectoral analysis from Parts II and VII.

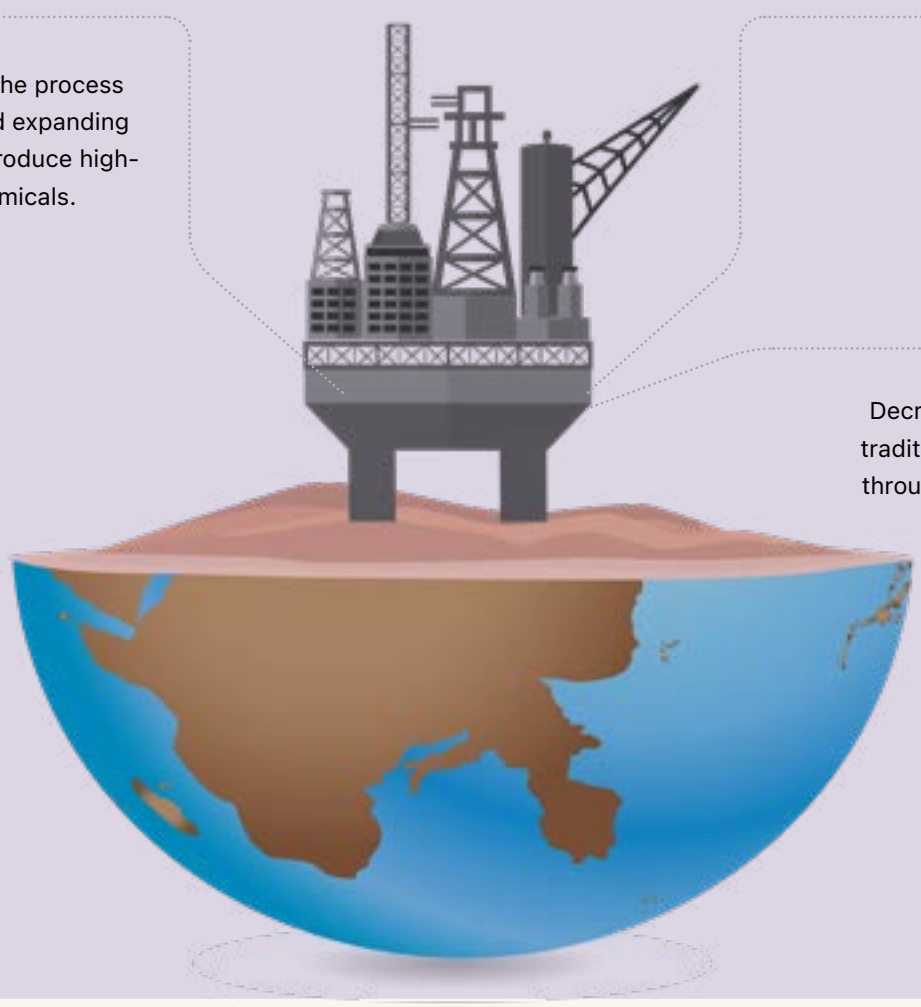
(PS: Dependency on associated gas feedstock refers to the reliance of a company or operation on associated gas, which is natural gas that is produced as a byproduct during crude oil extraction. This dependency implies that the availability, supply, and quality of associated gas directly impact the company's operations, energy sourcing, and potentially its costs and sustainability. If a company depends heavily on associated gas for its energy needs or production processes, any fluctuation or disruption in associated gas supply can significantly affect its operational stability and financial performance.)

(PS: Cloud-Oriented Technology and Communications can enable factories and industrial operations to adopt more flexible, scalable, and efficient systems. For instance, industries can leverage cloud platforms for real-time data analytics, remote monitoring, and automated control systems, which improve streamlined operations, predictive maintenance, and decision-making processes.)

Innovation Leadership

NEOM's green hydrogen facility—80% complete as of 2025Q1—will generate 600 tonnes of clean hydrogen daily and produce 1.2 million tonnes of green ammonia annually using four gigawatts of renewable energy, positioning Saudi Arabia as a pioneer in zero-carbon chemical feedstocks. SABIC deployed SAR 31.7 billion in domestic procurement during 2024, achieving 48.3% local content scores while creating 8,682 positions through its NUSANED™ localization initiative

3 strategic imperatives for petrochemicals sector



Speeding up the process of building and expanding facilities that produce high-value chemicals.

Expand circular economy

Decreasing reliance on traditional hydrocarbons through green hydrogen integration

Achieve Vision 2030's target of 15% specialty product share (from current estimated 8%).

Adding add

$5-7 billion annual revenue to Saudi Arabia's petrochemical sector revenue exceeding $82.7 billion

Mining & Metals: Strategic Resource Maximization

Saudi Arabia's identified mineral resources total SAR 9.4 trillion (USD 2.5 trillion) as of 2025, representing nearly 90% revaluation since 2016.

Vision 2030 targets expanding mining's GDP contribution from USD 17 billion in 2024 to USD 75 billion by 2030—a 4.4-fold increase requiring USD 100 billion investment through 2035 focused on exploration, processing infrastructure, and downstream integration.

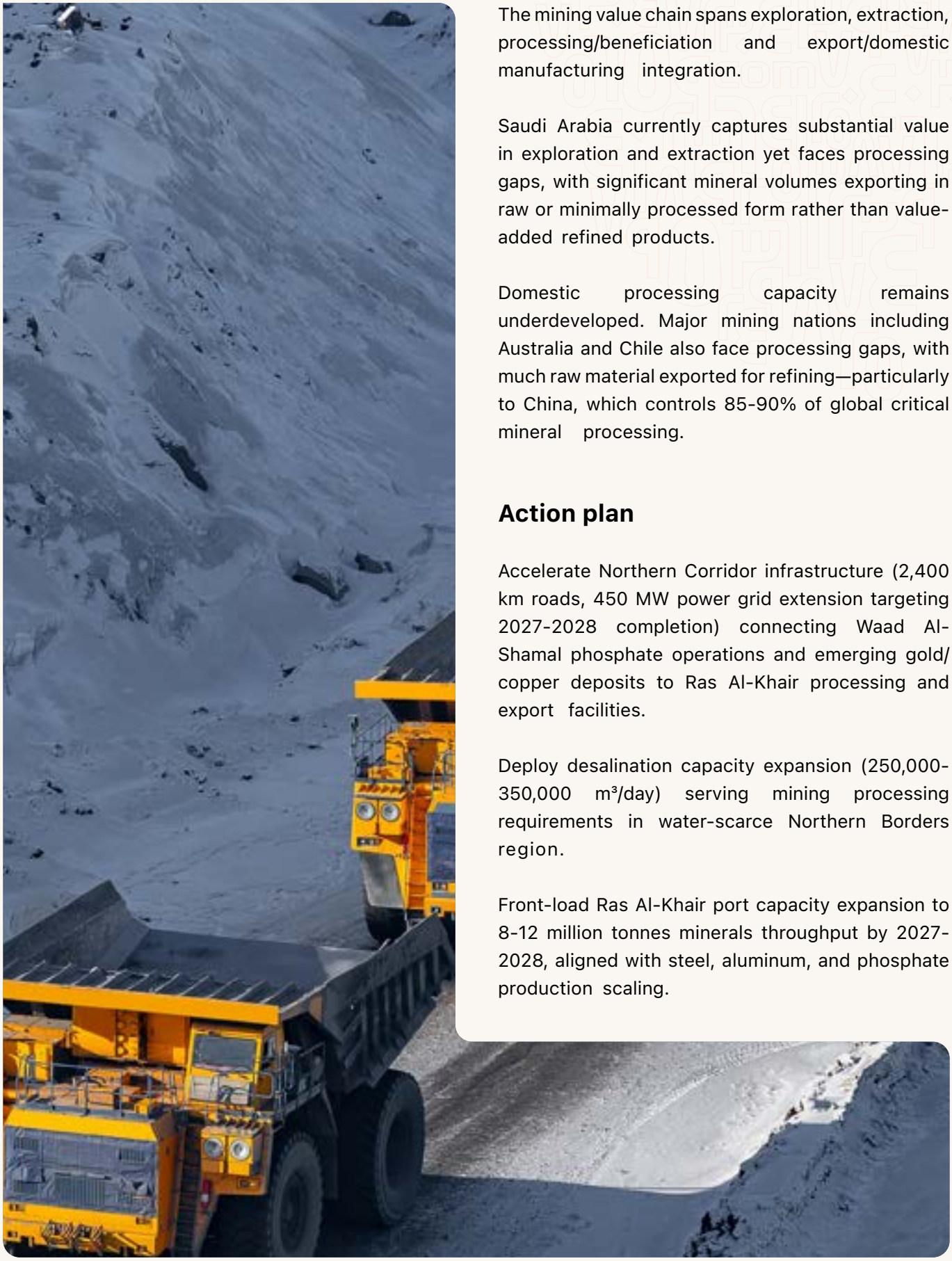
Ma'aden produced 495,000 ounces of gold in 2024, establishing Saudi Arabia as the Middle East's largest gold producer, while phosphate production reached 6 million tonnes positioning Ma'aden as the second-largest global phosphate fertilizer exporter.

Value Chain: Processing Gap

The kingdom's mining exploration spending has increased 500% since 2020, representing one of the most dramatic sectoral investment surges in recent economic history.

The Saudi Public Investment Fund is leading this expansion with over SAR 20 billion (USD 5.3 billion) allocated for mineral sector development.

Private sector participation has grown dramatically, with foreign direct investment in exploration activities surging from approximately USD 200 million in 2020 to over USD 1.2 billion in 2024. This rapid transformation positions Saudi Arabia as an emerging major player in global mineral exploration and development.



The mining value chain spans exploration, extraction, processing/beneficiation and export/domestic manufacturing integration.

Saudi Arabia currently captures substantial value in exploration and extraction yet faces processing gaps, with significant mineral volumes exporting in raw or minimally processed form rather than value-added refined products.

Domestic processing capacity remains underdeveloped. Major mining nations including Australia and Chile also face processing gaps, with much raw material exported for refining—particularly to China, which controls 85-90% of global critical mineral processing.

Action plan

Accelerate Northern Corridor infrastructure (2,400 km roads, 450 MW power grid extension targeting 2027-2028 completion) connecting Waad Al-Shamal phosphate operations and emerging gold/copper deposits to Ras Al-Khair processing and export facilities.

Deploy desalination capacity expansion (250,000-350,000 m^3/day) serving mining processing requirements in water-scarce Northern Borders region.

Front-load Ras Al-Khair port capacity expansion to 8-12 million tonnes minerals throughput by 2027-2028, aligned with steel, aluminum, and phosphate production scaling.

Mining & Metals SWOT

Strengths	Weaknesses
SAR 9.4 trillion identified mineral reserves. 100% foreign ownership is now permitted in mining ventures.	Limited downstream processing infrastructure (approximately 70% of materials exported as raw products)
Vision 2030: USD 100 billion investment plan through 2035.	Water availability critical constraint for mining operations in KSA. Current infrastructure gaps in remote desert locations (water scarcity, extreme temperatures 45°C+, transportation)
Saudi Arabia – exploration licence approval – 4-6 months – much faster than globally. Over 1,400 exploration licenses currently active	Technical workforce shortage (30-50% expatriate dependency)
Tax incentives: 20% corporate rate for foreign investors. Infrastructure Investment Commitments – USD 12 billion	Climate considerations significantly impact operational planning.
Opportunities	**Risks**
USD 9.3 billion recent investment commitments (November 2024)	Commodity price volatility (30-40% copper price swings)
Surging battery metals demand for EV/renewable sectors	Competition from established mining jurisdictions
Saudi Aramco-Ma'aden lithium extraction innovation	Geopolitical risks affecting export market access
Vedanta to invest USD 2 billion in Saudi copper projects - processing facility (400,000 tonnes per year)	Climate impacts: water scarcity, extreme weather

Sources: Ministry of Industry and Mineral Resources), Global Supply Chain Resilience Initiative / World Investment Conference Riyadh (November 2024). Vedanta Official Announcement (November 2024), Aramco and Ma'aden Joint Venture Announcement (January 2025), US-Saudi Business Council Mining Report 2022, and sectoral benchmarking analysis, Discovery Alert.com.au

Policy support and Infrastructure Constraints

The Mining Investment Law reduced corporate tax rates for foreign investors from 45% to 20%, creating competitive fiscal alignment with manufacturing.

In November 2024, there were nine metals and mining investment agreements valued at USD 9.3 billion, featuring global participants including India's Vedanta and China's Zijin Group.

Despite these advances, remote mineral deposit locations—concentrated in Northern Borders Province and north-western regions—face infrastructure deficits including limited road and rail connectivity, inconsistent power supply, and water scarcity, increasing capital costs relative to established mining regions (due to remote location infrastructure requirements, water scarcity necessitating desalination, and extreme climate conditions, though the Kingdom benefits from competitive energy costs and strategic geographic positioning to Asian markets).

Suggested Action Plan

Establishing dedicated mineral processing zones with subsidized infrastructure in Northern Borders Province, leveraging the SEZ model (5% corporate tax for up to 20 years, 100% foreign ownership, customs exemptions).

Creating accelerated mining engineering programs through partnerships with established mining economies to address any workforce deficit.

Implementing the Mining Law's progressive beneficiation requirements (30% domestic processing by 2030) to capture value-added from smelting, refining, and downstream manufacturing.

Automotive Manufacturing

Saudi Arabia's automotive cluster addresses a strategic anomaly: the Kingdom imports 830,000 vehicles annually yet historically lacked local manufacturing capabilities. The sector capitalizes on electric vehicle transition opportunities while building regional manufacturing leadership through three anchor partnerships.

Lucid Motors inaugurated its AMP-2 facility in King Abdullah Economic City in September 2023, targeting 155,000 annual production capacity with initial complete-build-unit manufacturing commencing early 2027.

Ceer, Saudi Arabia's first domestic electric vehicle brand jointly established by the Public Investment Fund and Foxconn, plans to launch its first models in 2026Q4 with 45% local content achieved through SAR 5.5 billion in supplier agreements. Hyundai Motor Manufacturing Middle East broke ground on its factory within the King Salman Automotive Cluster in May 2025, scheduled to begin production in 2027. Collectively, these initiatives target exceeding 350,000 vehicles annually by 2030—both electric and internal combustion—supported by an estimated SAR 90 billion in related industry investments.

Renewable Energy Equipment Manufacturing

The Kingdom plans to produce 50% of its electricity from clean energy sources by 2030. This goal will boost the need for local manufacturing to support the growth of renewable energy projects.

Saudi Arabia's renewable energy capacity growth---with 10.2 GW already connected to the national grid (as of mid-2025), projected to reach 12.7 GW by end-2025 With 18 GW operational renewable capacity achieved by mid-2025 (12 GW solar, 6 GW wind), equipment localization offers both import substitution and regional export opportunities.

Strategic initiatives include Desert Technologies' SAR 750 million investment to establish Saudi Arabia's largest solar panel and cell manufacturing plant with 5 GW annual production capacity in Jeddah, scheduled to produce 2 GW of solar panels and 3 GW of solar cells.

China-based SoleFiori is establishing a 6 GW heterojunction module manufacturing facility leveraging technology suited for high-temperature environments characteristic of the Kingdom and broader MENA region.

The King Abdulaziz City for Science and Technology's Solar PV Cell and Module Manufacturing Plant has already produced 35,000 solar panels domestically, validating local production capabilities.

Competitive positioning faces headwinds from global overcapacity, particularly Chinese manufacturers' cost advantages in solar panel production. Technology licensing costs and specialized skills shortages constrain rapid scaling. However, strategic advantages include local content mandates for renewable projects, regional export potential to Africa and neighbouring markets, and integration opportunities with mega-projects like NEOM's green hydrogen facility targeting 600 tonnes daily production by 2027.

Digital Intelligence in Industrial Policy

Saudi Arabia's industrial transformation under Vision 2030 positions digital intelligence—particularly artificial intelligence—as a cornerstone of competitiveness, decision-making optimization, and production efficiency.

The National Strategy for Data and AI (NSDAI), approved in October 2020, targets Saudi Arabia's ranking among the global top 15 AI nations by 2030 while securing SAR 75 billion (USD 20 billion) in AI investments. This strategic framework operates through six core components: ambition, skills, policies and regulations, investment, research and innovation, and ecosystem development.

Industrial AI Market Dynamics and Investment Framework

The Saudi Arabia artificial intelligence market reached USD 6.36 billion in 2024 and expected to grow rapidly over the coming years to 2033. This growth reflects coordinated public-private partnerships mobilizing substantial AI funding, with PIF's broader strategic deployment of USD 56.8 billion (SAR 213 billion) across priority sectors in 2024 including substantial investments in AI and industrial technology.

- The Kingdom's Industry 4.0 market reached USD 1.53 billion in 2024, driven by AI, IoT, robotics, and advanced analytics adoption.
- The Ministry of Industry and Mineral Resources' Factories of the Future program plans to transform 4,000 facilities by subsidizing up to 75% of project costs.

Case Study 1: Enhanced Competitiveness - Saudi Aramco Predictive Maintenance

Challenge: Saudi Aramco operates extensive oil and gas infrastructure with thousands of critical assets requiring constant monitoring to prevent unexpected failures, costly downtime, safety risks, and environmental hazards. Traditional reactive maintenance approaches fell short in predicting potential failures.

AI Solution Implemented

Beginning in 2021, Saudi Aramco deployed AI-driven predictive maintenance systems leveraging machine learning, IoT sensors, and real-time data analytics across major refining and gas-processing facilities. The system incorporates tens of thousands of IoT sensors—including 40,000 sensors at the Khurais oil field alone—feeding data into AI-powered analytics platforms, with ongoing expansion to over 120 sites planned by 2026. Machine learning models process historical and real-time performance data to identify patterns indicative of potential equipment failures.

Outcomes:

- **Maintenance cost reduction:** 30% decrease in overall maintenance expenditures through elimination of unnecessary servicing
- **Unplanned downtime reduction:** 40% decrease in production disruptions through failure prediction capabilities
- **Safety enhancement:** Early detection of equipment faults reduces catastrophic failure risks endangering workers or causing environmental damage
- **Asset lifecycle extension:** Proactive maintenance interventions preserve machinery integrity, leading to longer operational lifespans.

Case Study 2: Improved Decision-Making - SABIC Energy Optimization

SABIC required enhanced energy efficiency across complex petrochemical operations to maintain margin resilience amid volatile feedstock prices while meeting sustainability objectives and reducing operational costs at Al-Jubail production facilities.

AI Solution Implemented

SABIC deployed advanced energy management and optimization systems across Al-Jubail production facilities, utilizing real-time analytics and process control technologies to enhance energy efficiency. Multiple projects implemented between 2021-2024 achieved varying efficiency gains:

- **C3 splitter column upgrade:** Increased separation column tray efficiency by 24% and reduced steam consumption by 18.5%
- **Mt Vernon chlorine plant upgrade:** Increased operation efficiency by 30%, reduced steam consumption by 75%, and reduced electrical consumption by 20%
- **Petrokemya-North furnace-cleaning project:** Improved heating efficiency by 3.5%
- **Selkirk Mechanical Vapor Recompression system:** Lowered site energy intensity by 5%
- **Ibn Zahr facility optimization:** Reduced total site energy consumption by 830,000 GJ, representing a 1.5% reduction in absolute energy, with subsequent year achieving ~1.8% improvement.

Outcomes

- **Energy efficiency gains:** 15.6% cumulative reduction in energy intensity from 2010 baseline by 2024, with specific projects achieving 3.5-30% improvements in targeted systems
- **Process optimization:** Enhanced equipment efficiency through advanced process control and continuous monitoring across multiple production lines
- **Sustainability advancement:** SABIC achieved 8% absolute reduction in Scope 1 and 2 GHG emissions from 2018 baseline by 2022, with 13.95% reduction achieved by 2024, targeting 20% reduction by 2030
- **Long-term sustainability targets:** 25% reduction in energy, GHG, and water intensities by 2025 compared to 2010 baseline; carbon neutrality by 2050.

Case Study 3: Optimized Production - Ma'aden Technology Integration

Ma'aden required enhanced operational efficiency, exploration capabilities, and sustainability management across mining operations to support ambitious growth targets—including plans to triple mineral production by 2035—while meeting environmental performance standards.

AI Solution Implemented

Ma'aden deployed multiple technology initiatives across operations: Exploration Technology: Partnered with Fleet Space Technologies and Tahreez (January 2025) to deploy the ExoSphere platform—integrating satellites, smart sensors, and AI—for real-time 3D subsurface imaging up to 7 kilometers depth across 12,012 square kilometers of priority projects in the Arabian Shield. The platform enables AI-powered drill targeting with near-zero environmental impact compared to traditional exploration methods.

Operational Efficiency: Adopted AI tools including Microsoft 365 Copilot for productivity enhancement and developed an integrated data application for sustainability management and reporting across group-wide operations.

Outcomes

- Exploration advancement: Deployed space-based 3D subsurface imaging technology across 12,012 sq. km to accelerate mineral discovery with near-zero environmental impact, supporting the goal to discover two new mines annually through AI-driven data mining
- Productivity enhancement: AI adoption (Microsoft 365 Copilot) saved approximately 2,200 hours monthly, enabling workforce productivity gains and supporting the company's aim to triple workforce output without proportional staff increases
- Operational visibility: Integrated sustainability management application provides group-wide data access for emissions monitoring, water usage tracking, and environmental metrics reporting
- Strategic positioning: Technology deployment targeting double-digit cost reduction percentages through operational efficiency improvements (CEO statement, 2021)
- Financial performance: Achieved 73% net profit increase to SAR 3.47 billion and 23% revenue growth to SAR 17.93 billion in H1 2025, with record operational results including record DAP production

Policy and Institutional Framework: National AI Strategy Implementation: SDAIA's National AI Index, launched July 2025, benchmarks readiness with participation by over 180 government and industrial stakeholders. This framework guides organizations from proof-of-concept through enterprise-scale AI deployment, supporting PwC's projection that AI will contribute USD 135.2 billion (12.4% of GDP) by 2030.

Industrial AI Support Mechanisms: The Saudi Industrial Development Fund and specialized financing programs provide comprehensive support for AI adoption, while NEOM's Oxagon represents flagship Industry 4.0 integration. The Ministry of Industry and Mineral Resources' Future Factories Program advances AI, 3D printing, IoT, and smart robotics across 4,000 existing facilities.

Regulatory Environment: Current AI governance frameworks include SDAIA's AI Adoption Framework published September 2024, establishing governance structures and operational standards for industrial enterprises. The Personal Data Protection Law provides comprehensive data governance for AI deployments, while regulatory sandboxes facilitate compliant implementation.

Performance Analysis

Saudi Arabia demonstrates strong progress toward Vision 2030 diversification targets, with 85% of initiative milestones completed or on-track by end-2024.

Non-oil GDP contribution expanded to 56% (from 40% pre-2016), economy doubled to USD 1.3 trillion, and NIDLP sectors contributed 39% of non-oil GDP growth. Non-oil exports grew 13.2% y/y (SAR 515 billion, 2024), representing 113% cumulative expansion since Vision 2030 launch.

Comprehensive Performance Dashboard

Metric	2023	2024	YoY Change (%)	Vision 2030 Target	Progress (%)	Status
Industrial Output (NIDLP GDP)	SAR 949bn	SAR 986bn	%3.90	—	—	On Track
Non-oil Exports	SAR 455bn	SAR 514bn	%13.00	SAR 557bn	%92.30	Ahead
Private Investment (NIDLP)	SAR 524bn	SAR 665bn	%26.90	SAR 1 trillion	%66.50	On Track
Employment (Industrial & Logistics)	1.92mn	2.43mn	%26.60	2.1mn (2030)	%115.70	Exceeded
Industrial Licensing Activity	1,379	1,346	%2.40-	—	—	Stable
Manufacturing GDP	SAR 411bn	SAR 427bn	%3.90	SAR 895bn	%47.70	Gap
Non-oil GDP Share	%53.20	%55.00	%1.8+pp	%65	%84.60	On Track
Industrial Production Index	%2.50	%7.9+ (Jun'25)	%5.4+pp	—	—	Accelerating

Sources: NIDLP Annual Report 2024; GASTAT National Accounts Q4 2024; Vision 2030 Strategic Objectives Document; GASTAT Foreign Trade Statistics 2024

SMEs Technology Challenge

Saudi SMEs face digital transformation barriers including financial constraints limiting automation investments, technical expertise deficits (72% struggle to attract/retain skilled tech talent), and limited training infrastructure.

Approximately 72% of Saudi SMEs face difficulties attracting technical talent due to salary competitiveness versus large enterprises, while fewer than 20% successfully access government technology funding despite extensive program availability.

Riyadh Chamber of Commerce Manufacturing Sector Survey (2024) found 62% of SME manufacturers are concerned about Saudization target feasibility given technical skill gaps, particularly in advanced manufacturing roles requiring 5+ years specialized experience [Riyadh Chamber Industrial Report 2024].

M&A POLICY & INDUSTRIAL CONSOLIDATION TRENDS; FISCAL COST ANALYSIS

Saudi Arabia's industrial transformation essentially operates through two complementary policy instruments: M&A consolidation and targeted fiscal support.

We examine how PIF orchestrates market rationalization while state subsidies, concessional financing, and tax incentives maintain sectoral competitiveness during diversification.

SECTION A: M&A POLICY & INDUSTRIAL CONSOLIDATION TRENDS

Strategic Context & Policy Framework

Vision 2030's National Industrial Strategy targets manufacturing GDP expansion from SAR 331 billion (2020) to SAR 895 billion by 2030, prioritizing consolidation for economies of scale and export competitiveness.

The General Authority for Competition (GAC) administers merger control under the Competition Law (Royal Decree M/75, 2019), requiring notification when combined worldwide turnover exceeds SAR 200 million. GAC issued 202 No Objection Certificates in 2024—the highest annual total and 17.4% increase from 2023—signalling both intensified consolidation activity and regulatory maturity. Foreign ownership liberalization enables 100% foreign participation in most sectors, with Special Economic Zones offering zero-percent corporate tax for 30 years, further incentivizing cross-border M&A.

PIF's Strategic Role in Industrial Consolidation

Streamlining Smaller Firms into Larger, Competitive Entities

PIF, with USD 913 billion assets under management in 2024 (an annual increase in 19%), has emerged as the primary architect of Saudi industrial consolidation.

The Fund operates through multiple mechanisms: acquiring controlling stakes in existing companies, establishing wholly-owned subsidiaries designed as national champions, and orchestrating mergers between portfolio companies to eliminate redundancies and achieve operational efficiencies.

Elm-Thiqah merger (January 2025) exemplifies PIF's digital infrastructure consolidation strategy. Elm Company acquired PIF's entire stake in Thiqah Business Services for SAR 3.4 billion (USD 907 million), creating a combined SAR 6.9 billion national champion in Saudi Arabia's ICT sector. Thiqah, specializing in government digital transformation, generated SAR 1.6 billion revenues in 2023, while Elm recorded SAR 5.3 billion, positioning the merged entity to dominate Saudi Arabia's government digitalization market.

In Q2 2025, following merger completion on April 21, Elm reported revenue growth of 27% y/y (reaching SAR 2.24 billion) and Earnings Before Interest and Taxes growth of 23.4%, with Thiqah contributing to consolidated results despite initial integration costs.

The quantifiable synergies include cost savings through operations consolidation, sales/distribution integration, and shared services rationalization, plus revenue synergies from cross-selling capabilities and access to combined customer bases.

The transaction structure—PIF holding majority stakes in both entities—positioned the Fund to orchestrate consolidation while monetizing one holding, demonstrating dual objectives of portfolio rationalization and creation of national champion.

The construction sector consolidation (February 2023) demonstrates PIF's strategic minority investment approach. PIF deployed USD 1.3 billion across four industry leaders—Nesma & Partners Contracting Company, ElSeif Engineering Contracting Company, AlBawani Holding Company, and Almabani General Contractors—acquiring significant minority stakes through capital increases. These investments provided growth capital while positioning PIF to influence strategic direction without operational control burdens. The four companies possess established track records executing complex large-scale projects, collectively accounting for a substantial domestic construction market share prior to PIF investment.

Strategic objectives include scaling capacity to absorb unprecedented construction demand from Vision 2030 megaprojects (NEOM, Red Sea Project, Qiddiya), adopting advanced construction technologies (modular building, BIM, automation), strengthening local supply chains, and expanding internationally beyond Saudi operations.

SAMI defense consolidation exemplifies systematic sector rationalization. Saudi Arabian Military Industries, established in 2017 as a wholly-owned PIF subsidiary, systematically acquired existing domestic defense companies—including Aircraft Accessories & Components Company (2019), Advanced Electronics Company (AEC) in 2020 (the largest military industries deal ever concluded in the Kingdom), and 51% of Saudi Rotorcraft Support Company (2022)—consolidating a previously fragmented sector.

The AEC acquisition, completed in 2021Q1, brought AEC's SAR 2.07 billion in 2018 net sales into SAMI's portfolio, significantly expanding combined capabilities. By 2024, SAMI's workforce expanded to over 7,000 employees (71% Saudi nationals), up from approximately 3,600 in 2023, reflecting rapid scaling to support localization objectives.

Contract backlogs exceeded USD 10 billion (as of mid-2024), with the company securing SAR 9 billion in new contracts during 2024, while localization rates approached 15%, positioning the conglomerate among global defense industry leaders. The consolidation formed the core of SAMI's Original Equipment Manufacturer-agnostic defense electronics division, facilitating technology transfer, local production deepening, and Maintenance, Repair, and Overhaul work expansion. SAMI has stated 2030 objectives: achieving top 25 global defense company status and 50% domestic production localization.

(PS: Original Equipment Manufacturer-agnostic means that the division's solutions, products, or services are designed to be compatible with or adaptable to various OEMs' systems and equipment, rather than being exclusive to one manufacturer.)

(PS: Maintenance, Repair, and Overhaul — these are critical activities involved in maintaining equipment, systems, or machinery to ensure their proper functioning, safety, and longevity.)

Eliminating Non-Productive Entities

PIF's consolidation strategy explicitly targets elimination of non-productive enterprises through asset reallocation and market rationalization. Criteria for identifying non-productive firms include sustained sub-optimal profitability, low capacity utilization rates (typically below 60-70% in capital-intensive sectors), misalignment with Vision 2030 strategic priorities, and inability to achieve competitive scale independently.

Cement sector rationalization illustrates market-driven consolidation pressures addressing chronic overcapacity. With 17 producers serving fluctuating domestic demand, the sector experiences periodic oversupply—industry analysts project total installed capacity reaching approximately 99 million tonnes by 2028-2029 (from current 86.6 million tonnes), with demand estimated at 67 million tonnes, potentially creating approximately 28-30 million tonnes surplus capacity absent consolidation or robust export markets. Qassim Cement's USD 378 million acquisition of Hail Cement (completed 2024) through share-swap represented the sector's inaugural major consolidation, creating the second-largest domestic player capturing 11.43% market share with combined sales capacity expanding significantly.

The transaction enabled coordinated capacity management, preventing destructive price competition that emerges when struggling producers independently maximize volumes to cover fixed costs.

Broader M&A Trends Beyond PIF

Saudi Arabia's M&A activity surged dramatically in 2024, with 59 transactions valued at USD 9.6 billion—a remarkable 55% y/y increase.

Manufacturing led 2025Q1 with 13 merger filings, followed by wholesale & retail trade (10 filings), professional & technical services (8 filings), and ICT (7 filings).

Sectoral distribution reveals strategic priorities: industrials (25%), technology (20%), consumer & retail (14%), accounted for 59% of deal volume.

Private sector M&A activity demonstrates maturation, with acquisitions constituting 81% of 2024 filings compared with 15% for joint ventures and 2% for full mergers, indicating strategic preference for ownership control over integration.

Foreign institutions accounted for 56% of total 2024 submissions, while cross-border M&A reached USD 9.6 billion, with the Kingdom attracting USD 2.5 billion in total investment inflows during 2025 HI, primarily in chemicals, technology, industrials, and real estate.

Strategic Gaps & Policy Recommendations

M&A Data Transparency: GAC's 2024 report included limited transaction details—only types, foreign entity involvement, and industries, lacking specific company names, deal values, and post-merger performance metrics.

Recommendation: Establish mandatory disclosure requirements for material transactions (those exceeding SAR 500 million or involving market share changes >10%), publish anonymized deal outcome studies tracking consolidation's impact on productivity, employment, and competitiveness, and create centralized M&A database accessible to researchers and policymakers for evidence-based policy optimization.

Recommendations

Reducing industrial licensing timelines from 4-6 months to 30 days for qualifying transactions.

Implement post-merger performance audits for transactions

Establish clear guidance on acceptable market concentration levels by sector.

Implement consolidation ROI tracking framework, it should measure:

a) Productivity gains (output per worker, capacity utilization)

b) Employment impact (net job creation/job losses by sector)

c) R&D spending and patent activity

FISCAL COST ANALYSIS OF STATE SUPPORT TO INDUSTRIAL SECTOR

Comprehensive fiscal cost analysis estimates total industrial support at an estimated SAR 42 billion (1.03% of GDP) for 2024, with a sensitivity range SAR 35-49 billion.

(PS The sensitivity range SAR 35-49 billion indicates the possible variation in the total industrial support cost for 2024 due to uncertainties or changing factors. It shows the lower and upper bounds of potential costs around the estimated SAR 42 billion.)

This comprises four primary categories:

energy subsidies	SAR **15** billion, **0.37%** GDP
Saudi Industrial Development Fund concessional financing	SAR **5** billion, **0.12%** GDP
tax expenditures through SEZ/RHQ programs	SAR **10** billion, **0.25%** GDP
Industrial electricity subsidies	SAR **12** billion, **0.30%** GDP

Since around 2016 or 2018, Saudi Arabia made changes to how it manages energy prices. Previously, the government provided a lot of financial support—covering around 5-6% of the country's total economic output (GDP)—to keep energy prices low for consumers.

After these reforms, that support was cut significantly, reducing it to just about 1.04% of GDP. This brings Saudi Arabia's energy support levels in line with what other countries typically spend.

GCC peers 0.8-2.5% GDP (UAE 0.8-1.2%, Qatar 1.5-2.0%, Kuwait 2.0-2.5%), emerging market industrializers 0.8-2.0% GDP average.

The reduction in energy subsidies and support directly impacts the industrial sector because energy costs are a major part of manufacturing and industrial operations. When energy prices are no longer heavily subsidized and are determined more by market rates, industrial companies face higher energy costs.

Category 1: Energy Subsidies to Industrial Sector

Fiscal Cost: SAR 15 billion (0.37% of GDP); Sensitivity Range: SAR 13-17 billion Confidence: Medium

Industrial feedstocks (ethane, propane, naphtha, natural gas) supplied to petrochemical and manufacturing sectors at administered prices below export netback opportunity costs, creating implicit fiscal transfer.

Calculated using price-gap methodology (IMF standard): subsidy equals difference between international benchmark prices and administered prices, multiplied by industrial consumption volumes. Petrochemical sector (SABIC, Aramco subsidiaries, joint ventures) consumes roughly 75% of subsidized feedstocks, supporting SAR 310-400 billion sector revenue (reference: SAR 310 billion historical base) and 80% GCC petrochemical output share.

Primary data sources: Export benchmarks from IEA World Energy Outlook 2024; industrial consumption volumes from GASTAT Energy Statistics 2024; administered pricing estimates based on IMF Article IV historical references (2016-2018 reforms). Data limitation: Saudi Aramco industrial feedstock contract prices not publicly disclosed; estimates use credible historical policy references. Confidence level Medium reflects rigorous methodology and verified consumption data, with (plus or minus) 10% pricing estimate uncertainty.

Strategic Assessment: Energy subsidies demonstrate strong ROI—SAR 15 billion support enables SAR 310-400 billion petrochemical output (reference: SAR 310 billion historical base) (4.8% support-to-output ratio on historical baseline), sustaining export competitiveness vs. international producers.

Recommendation: Maintain through 2030 with performance accountability (50% downstream integration, 5% annual export growth, 60% localization by 2030) to justify continued support. (Mathematical derivations and detailed pricing assumptions in Technical Appendix.)

WORLD BANK

Category 2: SIDF Concessional Financing Subsidy

Fiscal Cost: SAR 5 billion (0.12% of GDP); Sensitivity Range: SAR 4-6 billion

Confidence: Medium

Saudi Industrial Development Fund provides below-market interest rates (2.0-2.5% vs. commercial 6.0-6.5%) for industrial project financing, creating implicit subsidy. Calculated using interest differential methodology (World Bank DFI standard): difference between commercial lending rates and SIDF concessional rates applied to outstanding loan portfolio, plus credit loss provision for non-performing loans. SIDF cumulative loans approved through 2024 total SAR 198 billion; outstanding portfolio estimated SAR 120-130 billion supporting 300,000+ manufacturing/industrial jobs.

Primary data sources: SIDF Annual Reports (cumulative lending), SAMA Quarterly Bulletin Q4 2024 (commercial rates), NIDLP reports. Data limitation: Outstanding portfolio share estimated from loan aging analysis; non-performing loan rate inferred from portfolio performance indicators (not explicitly disclosed). Confidence level Medium reflects verified SIDF portfolio data and SAMA commercial benchmarks, with ±10% portfolio/NPL rate uncertainty.

Strategic Assessment: SIDF financing demonstrates medium ROI—SAR 5 billion annual subsidy supports capital-intensive projects unfeasible at commercial rates (15-20 year payback periods). Cost per job created SAR 16,700 annually competitive vs. direct employment subsidies. However, estimated 37% non-repayment rate indicates selection/monitoring weaknesses. Sensitivity analysis across plausible NPL rate scenarios shows fiscal cost range: at 25% NPL rate (international DFI benchmark), fiscal cost reduces to SAR 4.5 billion (0.11% GDP); at 30% NPL rate, SAR 4.8 billion (0.12% GDP); at current 37% estimate, SAR 5.0 billion (0.12% GDP)—representing ±SAR 0.5 billion variance dependent on portfolio performance assumptions.

Recommendation: Continue but reform—tighten project appraisal to reduce NPL rate to international 20-25% benchmark, link concessional rates to performance milestones (employment, exports, localization), publish detailed portfolio performance data. (Detailed interest differential and credit loss calculations in Technical Appendix.)

Organisation for Economic Co-operation and Development

Category 3: Tax Expenditures (SEZ and RHQ Programs)

Fiscal Cost: SAR 10 billion (0.25% of GDP); Sensitivity Range: SAR 8-12 billion Confidence:

Medium-Low

Revenue foregone from preferential tax treatment vs. standard 20% corporate rate: Special Economic Zone incentives (0-10% reduced rates), Regional Headquarters Program benefits (660 entities), industrial customs/VAT exemptions on machinery and export-oriented materials.

Calculated using revenue foregone methodology (OECD standard): tax rate differential multiplied by beneficiary aggregate tax base. Program supports SEZ operational entities (estimated 150-200 companies) and 660 confirmed RHQs creating 15,000-20,000 high-skill positions.

Primary data sources: Ministry of Investment incentive schedules, Zakat & Tax Authority rates, RHQ participant count, GASTAT trade statistics. Data limitation: Aggregate taxable income for SEZ/RHQ entities not publicly disclosed by tax authorities; tax base estimated from sectoral GDP contributions and RHQ operational scale assumptions. Confidence level Medium-Low reflects substantial tax base estimation uncertainty given absence of entity-level public financial disclosure.

Strategic Assessment: Tax expenditures demonstrate medium-low ROI—SAR 10 billion revenue foregone supporting diverse beneficiaries with unclear additionality. RHQs create quality jobs but limited manufacturing spillovers; SEZ incentives overlap with broader energy/financing support, risking redundancy.

Recommendation: Sunset review by 2027-2028 assessing whether RHQs generated intended regional integration benefits or merely tax arbitrage. Target SEZ incentives to specific high-value technologies (semiconductors, biotechnology) where tax differential critical for FDI, not industries already receiving energy subsidies. (Tax base estimation methodology and sectoral allocation details in Technical Appendix.

ELECTRICITY SUBSIDIES

Category 4: Industrial Electricity Subsidies

Fiscal Cost: SAR 12 billion (0.30% of GDP); Sensitivity Range: SAR 10-14 billion

Confidence: Medium

Industrial electricity tariffs (SAR 0.18-0.20/kWh, ECRA Tariff Schedule 2024, Industrial Category) maintained below cost-recovery levels, subsidizing ~115 TWh annual industrial consumption. Calculated using cost-recovery gap methodology (IMF utility subsidy standard): difference between full supply cost and administered tariff multiplied by consumption. Petrochemicals consume ~40% of subsidized electricity, manufacturing ~35%, mining ~15%.

Primary data sources: Electricity & Co-generation Regulatory Authority (ECRA) Tariff Schedule 2024 (industrial rates), GASTAT Energy Statistics (consumption), IEA generation cost data and GCC regional benchmarks for cost-recovery estimation.

Data limitation: Saudi Electricity Company does not publish official cost-recovery tariff; estimate based on IEA gas-fired power generation costs and regional comparisons (UAE 0.27/kWh, Qatar 0.29/kWh). Confidence level Medium reflects verified tariff and consumption data, with cost-recovery estimate uncertainty (each SAR 0.01/kWh variance = ±SAR 1.2 billion impact).

Strategic Assessment: Electricity subsidies demonstrate low-medium ROI—SAR 12 billion supporting diverse industrial base with unclear additionality; many industries viable even at cost-recovery tariffs. Blanket subsidy prevents price signals driving energy efficiency investment. Petrochemicals already receive feedstock subsidies; only mining (remote locations, infrastructure gaps) presents strong additionality case.

Recommendation: Phase down by 2028-2030—increase industrial tariffs to SAR 0.25/kWh (partial cost recovery), retaining differential for strategic energy-intensive industries. Redeploy SAR 4-5 billion savings to targeted automation/efficiency subsidies generating permanent cost reductions vs. perpetual tariff support. (Cost-recovery calculation details and regional benchmarking in Technical Appendix.)

Table 1: Fiscal Cost of State Support by Category (2024)

Support Category	SAR billion	% GDP	Range	Confidence
Energy Subsidies	15	%0.37	17-13	Medium
SIDF Concessional Financing	5	%0.12	6-4	Medium
Tax Expenditures (SEZ/ RHQ)	10	%0.25	12-8	Medium-Low
Industrial Electricity	12	%0.30	14-10	Medium
TOTAL	42	%1.03	49-35	Medium

Note: *This table contains estimated fiscal costs calculated using multiple data sources, benchmarking methodologies, and analytical assumptions.*

Not all figures are directly or officially published by Saudi Arabia. Estimates follow international best practices for fiscal cost analysis (IMF, IEA methodologies).

Table 2: Fiscal Cost by Industrial Sector (2024)

Sector	Total Support (SAR bn)	% of Total	Primary Mechanisms
Petrochemicals	20-22	%52-48	Energy feedstock (%70), electricity (%20), SIDF (%10)
Manufacturing (non-petrochemical)	12-14	%33-29	SIDF loans (%40), tax incentives (%35), electricity (%25)
Mining & Metals	4-5	%12-10	SIDF projects (%50), electricity (%30), tax (%20)
Other Industrial	4-5	%12-10	Tax expenditures, SIDF diversification, electricity

This table allocates Table 1 total fiscal costs - our calcuated estimate (SAR 42 billion) across industrial sectors using proportional distribution methodology. Figures represent analytical allocations, not direct sectoral cost official data.

Allocation Methodology: Distribution based on sectoral energy consumption intensity (GASTAT, GPCA), SIDF portfolio allocation (Annual Reports), estimated SEZ/RHQ distribution. (Detailed sectoral breakdowns in Technical Appendix.)

METHODOLOGY OVERVIEW

Note: Comprehensive calculation methodologies, detailed data sources, mathematical derivations, assumptions, sensitivity analyses, and stakeholder Q&A are provided in Technical Appendix: Fiscal Cost Calculation Methodology (see separate document). The Technical Appendix enables detailed verification and supports stakeholder technical discussions.

Industrial policy & higher-value products; global value chain positioning

In this section, Saudi Arabia's industrial transformation through two lenses is examined: domestic policy-driven efforts to shift toward higher-value products, and the kingdom's evolving positioning within global value chains.

INDUSTRIAL POLICY & HIGHER-VALUE PRODUCTS

Current Value-Addition Profile

Saudi Arabia's industrial sector remains in transition along the value chain, with most output still concentrated in basic assembly, commodity processing, and intermediate manufacturing.

In petrochemicals, production is weighted toward basic chemicals, though specialty chemicals and polymers now represent a growing share of output—SABIC, for example, increased its specialty chemicals portfolio from 17% in 2019 to 22% by 2024.

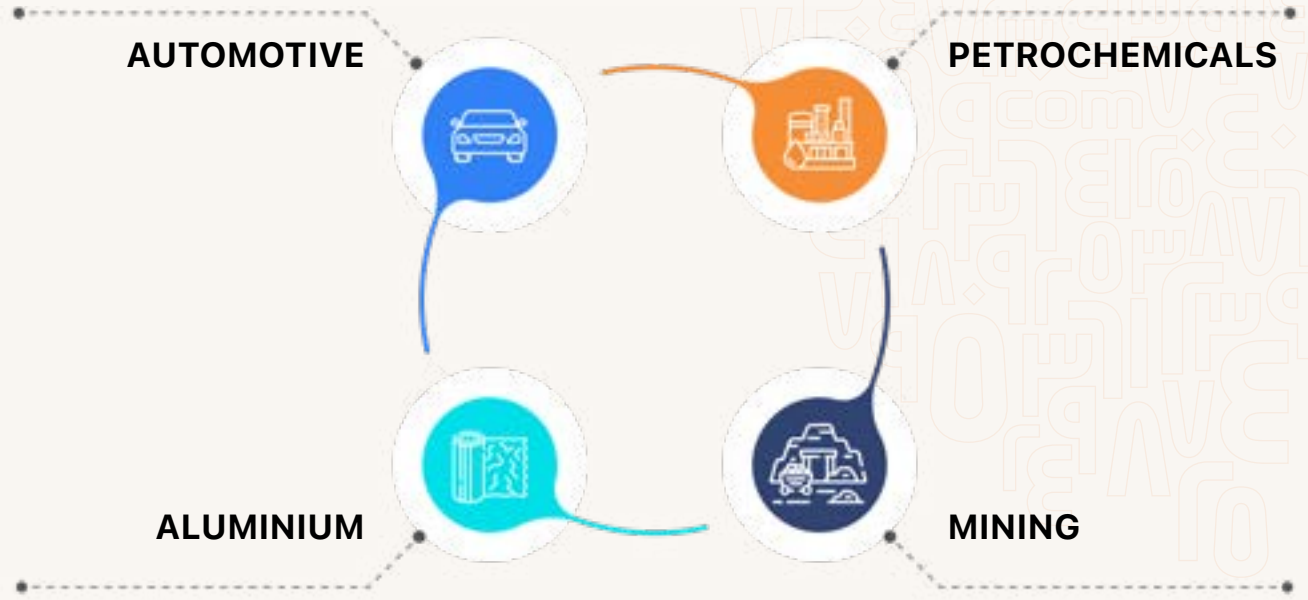
Manufacturing likewise is skewed toward assembly rather than design or engineering, and mining predominantly exports raw ores, though beneficiation and downstream processing initiatives are underway. The current state can be summarized as:

- **Petrochemicals:** Specialty chemicals now represent 22% of SABIC's product portfolio (up from 17% in 2019), though the GCC region overall dedicates only 1.6% of total chemical production to specialty chemicals compared to higher proportions in advanced chemical economies.
- **Manufacturing:** Value-added intensity remains below advanced manufacturing economies, with the sector contributing 15.57% of GDP (2024) as the Kingdom focuses on transitioning from assembly operations to higher value-added production.
- **Mining:** Beneficiation and downstream processing remain in early development stages, with the sector positioned as the planned "third pillar" of the industrial economy alongside oil and petrochemicals.

Policy Instruments Driving Upgrading

Vision 2030's National Industrial Strategy targets manufacturing GDP expansion from SAR 331 billion (2020) to SAR 895 billion by 2030, with non-oil exports rising from SAR 169 billion to SAR 557 billion. To achieve these objectives, the Kingdom deploys four complementary policy instruments:

Localization mandates: Aramco's In-Kingdom Total Value Add (IKTVA) program, established in 2015, has driven local content in the energy supply chain from 35% to 67% by 2024, unlocking cumulative procurement of SAR 1.6 trillion from domestic suppliers. The program mandates minimum local content thresholds for suppliers—failure to meet targets results in disqualification from contracts or reduced bid weights—obliging foreign firms to establish local manufacturing facilities, transfer technology, and develop indigenous capabilities. Similar frameworks now extend to defense (through SAMI's supplier development), mining (through mandatory processing requirements for exploration licenses), and infrastructure projects (through government procurement rules).



Tariff and trade policy adjustments: Saudi Arabia applies selective tariffs (5-20%) on finished goods while maintaining zero tariffs on raw materials and machinery—creating effective protection for domestic assembly and manufacturing. For example, automotive assembly faces 7% tariffs on fully-built units versus 0% on imported kits and components, incentivizing local assembly.

Meanwhile, ongoing FTA negotiations (GCC-South Korea, GCC-UK, GCC-China) prioritize reciprocal access in sectors where Saudi firms demonstrate competitive advantage (petrochemicals, aluminum) while maintaining protection for nascent industries (automotive, pharmaceuticals, electronics). Export subsidies through Saudi EXIM Bank—which grew credit facilities from SAR 30.6 billion (H1 2023) to SAR 69.1 billion (end-2024)—further support higher-value exports by financing working capital, trade insurance, and buyer credit.

Investment in R&D and innovation

Saudi R&D spending reached SAR 22.6 billion in 2023, a 17.4% y/y increase, with the R&D workforce expanding 22%. Patent filings grew 13% in 2024, reaching 8,029 applications, with industrial patents representing a growing share reflecting increased domestic R&D activity.

Public investments flow through the King Abdulaziz City for Science and Technology (KACST), King Abdullah University of Science and Technology (KAUST), and sectoral research centers (petrochemicals, mining, agriculture), while private-sector R&D receives tax incentives and deductions for qualified R&D expenditures and co-investment from PIF, though absolute spending and intensity levels remain below advanced manufacturing economies in Asia and OECD countries.

Special Economic Zones (SEZs)

Special Economic Zones (SEZs) in Jazan, Ras Al-Khair, and King Abdullah Economic City offer 5% corporate income tax for up to 20 years (compared to standard 20% rate), exemption from import duties on machinery/ inputs, 100% foreign ownership, and streamlined licensing.

These zones target sectors requiring significant capital (petrochemical derivatives, aluminum processing, automotive assembly) and aim to attract multinational investors willing to co-locate production, R&D, and training facilities—essentially creating industrial clusters. Total industrial investment reached SAR 50 billion (USD 13.3 billion) in 2024 through 1,346 new industrial licenses, with automotive manufacturing representing a strategic priority as part of broader industrial diversification.

Policy implementation has yielded measurable progress:

Localization rates:

Beyond IKTVA's **67%** achievement.

defence localisation

SAMI approaches **15%**

Higher-value exports:

Non-oil exports reached SAR **515** billion in 2024 (**113%** increase since Vision 2030 launch)

Manufacturing sophistication:

11,549 manufacturing establishments now operate (**60%** increase since 2016)

GLOBAL VALUE CHAIN POSITIONING

Saudi firms predominantly occupy upstream and midstream positions in global value chains across petrochemicals, manufacturing, and mining sectors. Value capture analysis indicates opportunities for enhanced participation in downstream processing, branding, and advanced manufacturing to increase the Kingdom's share of final product value.

Moving toward higher-value GVC positions requires:

Vertical integration in petrochemicals: Beyond expanding base capacity, the Kingdom must develop downstream specialty production (high-performance polymers, engineering plastics, fine chemicals).

This requires joint ventures with technology holders (licensing deals, co-investment), domestic R&D scaling, and customer co-location incentives (attracting converters, compounders, formulators to Saudi SEZs). SABIC's partnerships with Sinopec (China) and ExxonMobil (US) demonstrate this model—combining Saudi feedstock advantages with partner technology for derivatives production.

Design and engineering capabilities in manufacturing: Transitioning from assembly to design requires substantial human capital investment—expanding engineering education and vocational training capacity (TVTC operates 260 facilities nationwide attracting 28% of high school graduates, with ongoing expansion to meet 2030 workforce targets), attracting global R&D centers through incentives (attracting global R&D centers through incentives (100% foreign ownership, 5% corporate income tax for up to 20 years in SEZs, IP protection)), and mandating technology transfer in government procurement.

Vertical integration in petrochemicals

develop downstream specialty production
joint ventures with technology holders

Design and engineering capabilities in manufacturing

substantial human capital investment
expanding engineering education
vocational training capacity

Mining value-chain completion

extensive road networks
power grid expansion
deploying desalination capacity
Replicating aluminum model with copper

Export market diversification

Reducing dependence on Asian buyers
Free Trade Agreement expansion
targeted export promotion

Automotive sector offers near-term opportunity: Ceer's partnership with BMW (design/engineering), Hyundai's joint venture structure, and Lucid's expansion create platforms for Saudi engineers to absorb EV technology, battery management systems, and autonomous driving capabilities—provided training programs, co-location of R&D teams, and IP-sharing arrangements accompany production agreements.

Mining value-chain completion: Beneficiation infrastructure requires front-loading: accelerating Northern Corridor development (accelerating Northern Corridor development (extensive road networks and power grid expansion supporting remote mining regions, with infrastructure deployment aligned to 2030 mining strategy timelines)), deploying desalination capacity (deploying desalination capacity to address water scarcity in remote mining regions), and co-locating processing facilities with extraction sites. Ma'aden's aluminum model—integrated bauxite-alumina-aluminum-rolling—should extend to copper (smelting, wire rod, cable production), zinc (galvanizing, die-casting alloys), and rare earths (separation, oxide production). This captures 3-5x value versus raw ore exports while generating skilled employment and technology clusters.

Export market diversification: Reducing dependence on Asian buyers (reducing dependence on Asian buyers (currently the dominant destination for non-oil exports, with UAE, India, and China as top markets) through FTA expansion (GCC-UK, GCC-South Korea, potential GCC-US agreements) and targeted export promotion (specialty chemicals to Europe, pharmaceuticals to Africa/MENA, processed metals to North America). Saudi EXIM Bank credit expansion (SAR 69.1 billion, 128% growth since H1 2023) and digital customs processing (<24-hour clearances) facilitate this shift, though sustained effort requires buyer financing, quality certifications (ISO, GMP, CE marking), and long-term supply agreements to penetrate developed markets.

Emerging Industrial Clusters

Saudi Arabia's industrial transformation extends beyond traditional manufacturing into next-generation ecosystems designed to anchor long-term competitiveness. These emerging clusters—NEOM Oxagon, automotive manufacturing, aerospace and defense, and renewable energy equipment—represent strategic bets that will determine whether Vision 2030's diversification objectives translate into sustainable competitive advantages.

NEOM Oxagon: Advanced Manufacturing and Industry 4.0

Oxagon represents the Kingdom's most ambitious industrial innovation, positioning itself as the world's largest floating industrial city spanning 48 square kilometers. The development integrates Industry 4.0 technologies—robotics, automation, artificial intelligence, and Internet of Things—with circular economy principles to create a clean manufacturing ecosystem fundamentally different from legacy industrial zones. Target sectors encompass sustainable energy, advanced manufacturing, mobility solutions, and water and food technologies, all powered by 100% renewable energy by 2030.

Progress milestones include Terminal 1 of Port of NEOM scheduled to open in 2026 with 1.5 million TEU annual capacity, supported by Saudi Arabia's first fully automated ship-to-shore cranes delivered in June 2025. Infrastructure completion includes a 900-meter quay wall and port channel deepening to 18.5 meters, enabling the world's largest container vessels to call at the facility.

Oxagon's manufacturing ecosystem embraces circular economy principles targeting 90% industrial waste recycling by 2026, while logistics operations have already achieved an estimated 25% carbon emissions reduction compared to traditional models. Strategic differentiation lies in Oxagon's greenfield advantage—unlike retrofitted legacy facilities, the industrial city embeds automation and sustainability from inception, enabling manufacturers to operate more efficiently while meeting global environmental standards. Advanced and Clean Manufacturing pilot programs launched with leading Saudi manufacturers have delivered measurable productivity gains and operational savings, validating the framework's commercial viability.

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PART II: SECTORAL DEEP DIVE

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