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KING ABDULLAH PETROLEUM STUDIES AND RESEARCH CENTER

Annual Report 2025

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KAPSARC

TABLE OF CONTENTS

05

Produce Internationally Recognized Research

06

Strategic Engagement and Global Positioning

07

KAPSARC School of Public Policy (KSPP)

08

Workforce Growth and Employee Development

09

Enhancing Operational Efficiency and Institutional Visibility

10

Advancing Sustainability and Environmental Performance

PREFACE

01

The Kingdom of Saudi Arabia continues to advance its transformative national agenda under Vision 2030, consolidating its position as a leading force in global energy markets, sustainability, and economic diversification. This progress unfolds at a time of profound global transition, as energy systems are redefined, consensus on climate imperatives evolves unevenly, and geopolitical dynamics reshape economic relationships. In such a complex and changing landscape, the value of rigorous analysis, evidence-based policy, and principled international dialogue cannot be overstated. Within this context, KAPSARC stands as a trusted advisory institution and a globally engaged research center.

The unveiling of KAPSARC's refreshed corporate identity this year reflects not merely a visual evolution, but a strategic affirmation of its expanding role, institutional maturity, and sharpened purpose. While retaining its core identity, the refined design introduces a more contemporary visual language. Anchored in emerald green and graphite gray, it symbolizes foresight, sustainability, and analytical clarity, reinforcing the Center's position as a trusted advisory institution and globally engaged research think tank.

The Center's enduring strength lies in its people. Throughout 2025, KAPSARC reinforced its institutional foundations through sustained investment in leadership capability, professional excellence, and long-term talent development. A set of deliberately structured initiatives, including leadership programs, graduate development, and academic sponsorships, enhanced institutional capacity and reinforced long-term impact. By cultivating a culture grounded in accountability, intellectual curiosity, and continuous improvement, KAPSARC ensures that its human capital remains the cornerstone of its resilience and future readiness.

Advisory remains integral to KAPSARC's mandate. In 2025, the Center significantly expanded its consulting activities, supporting a broader range of entities within and beyond the immediate energy ecosystem, while remaining firmly anchored in its core energy expertise. KAPSARC contributed to several high-priority national-level initiatives, providing rigorous, policy-relevant analysis to inform strategic decision-making. This progress was further strengthened by the establishment of the Energy Market Insights Department, enhancing the Center's ability to deliver timely and data-driven advisory services. The year also saw an expansion of the consulting team and a record number of completed engagements, marking 2025 as the Center's most active and impactful year to date in advisory delivery.

Research distinction continues to reinforce KAPSARC's international reputation. The Center's experts actively contribute to leading global platforms, advance frontier modeling methodologies, and shape dialogue in energy policy, energy market, and security, and sustainability. In 2025, particular emphasis was placed on advancing a more nuanced understanding of the energy transition and its practical implications. This was articulated through a series of key thematic areas, including the role of oil in enabling low-carbon technologies, the advancement of circular plastics systems, global oil market dynamics, transport emissions, and the measurement of methane emissions using advanced satellite-based methodologies. Such contributions reinforce KAPSARC's role in grounding global discussions in rigorous and context-specific analysis. Recognition across leading national and international communities underscores the technical rigor, credibility, and intellectual leadership that KAPSARC contributes to critical discourse on energy-related issues.

Global engagement and strategic dialogue continued to expand in 2025. KAPSARC strengthened its international presence through active participation in leading global forums including COP30, the Think20 South Africa Summit, and the 46th IAEE International Conference, alongside high-level engagements with international partners. Through these interactions, the Center contributed to shaping informed perspectives on energy transitions and climate challenges, thereby consolidating its role as a trusted platform for evidence-based dialogue within the global policy landscape.

Through the KAPSARC School of Public Policy, the Center continues to invest in the development of future public leaders. The School has witnessed growing demand for its academic programs, particularly the Master of Public Policy, while expanding its portfolio of executive education through tailored programs delivered in partnership with leading institutions. This sustained growth has been accompanied by the initiation of a major project in 2025 to develop a new KSPP building with substantial progress achieved this year reflecting the need to accommodate the School's expanding scale and ambition.

Looking forward, KAPSARC remains unwavering in its commitment to serving the Kingdom and the international community with integrity, intellectual distinction, and a continued dedication to advancing sustainable energy solutions and shaping informed perspectives on energy security and sustainability through rigorous analysis, for the prosperity of present and future generations.

CHAIRMAN'S MESSAGE

ABDULAZIZ BIN SALMAN BIN ABDULAZIZ AL SAUD

CHAIRMAN, KAPSARC

The year 2025 marked another defining chapter in KAPSARC's institutional journey. It reflected a period of continued growth, expanding global engagement, and deepening impact across the Center's core areas of work. This progress builds on KAPSARC's evolving mandate in recent years and reinforces its role as a globally engaged advisory think tank in energy markets and security, energy policy, and sustainability. It also reflects a clearer articulation of the Center's purpose, positioning, and long-term direction.

During the year, KAPSARC introduced its refreshed corporate identity and new digital presence, marking an important milestone in the Center's continued evolution. The updated identity preserves the core logo while introducing a more refined and contemporary visual language, supported by a distinctive color palette of emerald green and graphite gray. These elements reflect key dimensions of KAPSARC's mandate, combining foresight, sustainability, and growth with clarity, analytical rigor, and effective communication. In particular, the prominence of emerald green underscores themes of prosperity, long-term growth, and environmental stewardship, while also reflecting the Kingdom's cultural identity and its ambitious agenda aimed at advancing societal well-being and national excellence. Beyond its visual expression, the refreshed identity reinforces KAPSARC's positioning as a globally engaged advisory think tank, committed to delivering evidence-based insights and contributing to informed dialogue on energy and the environment.

Our people form the foundation of KAPSARC's continued success. The Center continues to invest in developing its talent through a structured and forward-looking approach that strengthens both current capabilities and future leadership. Key initiatives including the Leadership Development Program, the High Potential Program (HiPo), and the Graduate Development Program, continue to build a strong internal pipeline of leaders and specialists equipped to navigate complex energy and policy challenges. The Graduate Development Program alone attracted more than 9,500 applicants for 17 positions in its fourth cohort, reflecting the growing appeal of KAPSARC as a destination for top talent. In parallel, 26 employees pursued advanced degrees through the KAPSARC Employee Education Program (KEEP), strengthening the Center's long-term capability base.

In 2025, five KAPSARC experts were appointed to the IPCC Seventh Assessment Cycle, representing the highest number of contributors from a single institution globally, while the Center's research community continued to receive international recognition for academic excellence, including best paper awards and the recognized influence of KAPSARC experts across international academic and policy communities. These accomplishments reinforce KAPSARC's culture of excellence and its commitment to advancing knowledge at the highest levels.

KAPSARC's advisory function continued to advance in both scope and complexity. In 2025, advisory work increasingly incorporated advanced analytical tools, including the application of artificial intelligence to enhance the quality, efficiency, and timeliness and relevance of analytical outputs. This evolution has enabled the Center to address more complex and interconnected challenges, while maintaining its

PRESIDENT'S MESSAGE

FAHAD ALAJLAN
PRESIDENT, KAPSARC

commitment to independence and public value. In 2025, completed projects accounted for 46% of all advisory projects delivered since the function's inception reflecting rapid growth and increasing demand for the Center's services. The team also addressed a significant number of short-term consultation requests, maintaining a strong client satisfaction rate and reinforcing KAPSARC's reputation as a trusted provider of rigorous, evidence-based advisory support. Building on this momentum, the advisory function is well positioned for continued expansion, further strengthening its role in supporting decision-making on increasingly complex energy and economic issues. A key enabler of this progress has been the continued development and activation of the Energy Markets Insight function. Since its establishment, the function has strengthened KAPSARC's ability to monitor trends and developments shaping global energy markets across short- and medium-term horizons, providing timely, data-driven insights that complement the Center's broader advisory role.

Research performance continued to demonstrate both depth and relevance. During the year, KAPSARC produced 196 publications across energy systems transformation, market design, carbon management, advanced modeling, and sectoral analysis. Research efforts addressed critical challenges across energy transition pathways, market dynamics, and emissions management, supported by rigorous analytical frameworks and data-driven insights. This is reflected in a range of applied research, including quantifying the role of oil and oil-derived products in enabling the global energy transition, assessing opportunities within the circular plastics economy, and examining the influence of speculative trading on oil futures markets. In parallel, research examined key questions shaping the energy transition, including a life cycle assessment of passenger vehicles in Saudi Arabia, highlighting the role of evolving energy systems in determining emissions outcomes. The Center also advanced the use of satellite-based methodologies to improve the measurement and transparency of methane emissions across the MENA region. Moreover, the Center advanced flagship initiatives such as the Circular Carbon Economy (CCE) Index, further strengthening its contribution to the global energy dialogue. Collectively, these efforts reinforce KAPSARC's role in delivering applied, decision-relevant research that informs both national priorities and international dialogue.

Global engagement and strategic dialogue expanded considerably in 2025. KAPSARC co-hosted high-level engagements with international partners, including the European Union delegation. The Center also actively contributed to major international platforms, including the CLIMIT Summit 2025, the 46th IAEE International Conference, the Think20 South Africa Summit, and COP30. These engagements reflect KAPSARC's expanding international footprint and its growing role in shaping evidence-based dialogue on global energy and climate policy.

The KAPSARC School of Public Policy (KSPP) continued its institutional growth, with increasing demand for the Master of Public Policy program and the expansion of executive education offerings. Customized programs delivered in collaboration with leading national institutions further reinforce KSPP's role in supporting public sector capability building and leadership development. This momentum was further reflected in KSPP's role as host of the 2025 NASPAA Regional Conference, the first of its kind in the Kingdom, which attracted attendees from 27 countries and convened over 90 distinguished speakers, providing a dynamic platform for dialogue, knowledge exchange, and international collaboration in public policy and governance. Construction of KSPP's new building commenced in 2025, with significant progress achieved and approximately half of the project completed. Upon completion, the facility will mark the beginning of a new chapter for the School, strengthening its capacity to deliver world-class public policy education.

As we look ahead, KAPSARC remains committed to deepening its impact across advisory, research, education, and global engagement. With a strong foundation, a clear mandate, and a dedicated team, the Center will continue to serve as a catalyst for knowledge, informed policymaking, and meaningful progress in the global energy dialogue. I extend my sincere appreciation to the Center's Board of Trustees, partners, stakeholders, and employees for their continued commitment and contribution to KAPSARC's success.

ABOUT KAPSARC

02

ABOUT KAPSARC

King Abdullah Petroleum Studies and Research Center (KAPSARC) is an advisory think tank focused on global energy economics and sustainability, providing services to entities and authorities in the Saudi energy sector.

Based in Riyadh, we are a community of thinkers who combine human ingenuity, expertise, and research to address pressing global energy challenges. Through our advisory services to the energy ecosystem, KAPSARC experts provide day-to-day insights and updates using a multidisciplinary team approach to drive long-term value and deliver tangible results at scale.

Vision

To be a leading advisory think tank in energy economics and sustainability.

Mission

To advance Saudi Arabia's energy sector and inform global policies through evidence-based advice and applied research.

STRATEGIC OBJECTIVES

01

Provide advice to the Saudi energy sector using our analytical capabilities and expertise.

02

Produce internationally recognized research, tools, and data to impact global policymaking.

03

Incubate distinctive talents for the advancement of Saudi Arabia's energy sector.

04

Use KAPSARC's unique foundations and resources for novel initiatives to maximize institutional impact.

OUR VALUES

Our values serve as the cornerstone of the Center. They represent a set of fundamental beliefs and assumptions that guide and motivate our employees to achieve our desired culture. Grounded in our vision and mission, they drive everything we do and they form the foundation of our strategic objectives.

Upholding these values fosters a workplace that encourages collaboration, creativity, and growth. They inspire us to be accountable, respectful, and inclusive in all our endeavors as we strive to build a culture that values diversity, promotes learning, and supports personal and professional development.

Transparency

Transparency is a fundamental principle, and we act with integrity and honesty. Our teams rely on one another to share information and make their actions visible. By fostering a culture of transparency, we build trust and accountability, within our organization and with our partners and stakeholders.

Learning

A core value at KAPSARC is that every employee has the potential to grow and improve. We encourage our team members to pursue learning and development opportunities. By finding opportunities to learn in everything we do, we continue to push ourselves to be the best we can be.

Excellence

At KAPSARC, we are dedicated to excellence, hold ourselves to the highest standards, and strive to deliver the best possible results. Our commitment to continuous improvement drives us to pursue new and innovative ways to enhance our work.

Collaboration

Collaboration is a key part of how we work. We recognize that the best results come from individuals with diverse skills and perspectives working together toward a common goal. We build strong, respectful relationships grounded in trust, fairness, and open communication. By working together, we accomplish more than we could individually.

Innovation

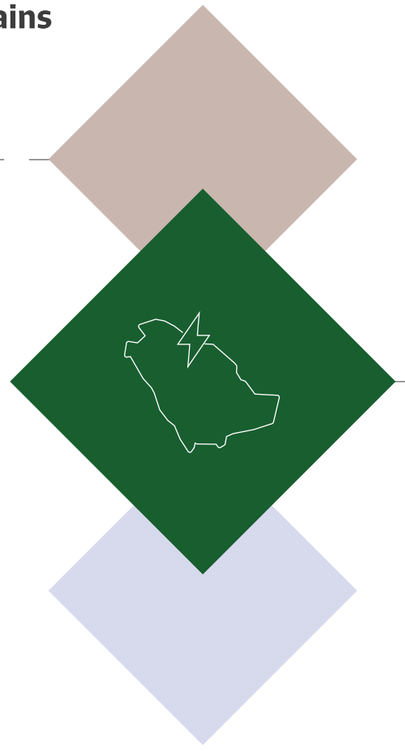
Our employees are encouraged to generate new ideas and translate them into practical solutions that add value to KAPSARC and the energy ecosystem. By embracing innovation, we stay ahead of the curve and continue to have a positive impact on our industry.

DOMAINS AND FOCUS AREAS

Domains are broad fields that encompass the key areas of the energy sector. Together, they enable KAPSARC to analyze the complexities of energy markets and sustainability challenges, with a particular focus on energy transitions and the evolving pathways toward more sustainable energy systems. We identify specific focus areas within these domains that drive our yearly project selection and strategic capability planning. These focus areas are crucial in defining the scope and direction of KAPSARC's work, guiding our research and thought leadership within Saudi Arabia and the global energy ecosystem.

By homing in on these focus areas, we align our expertise and resources to address the most pressing issues in the energy sector, from global hydrocarbon markets to the Saudi energy sector and climate change. This ensures that our research is impactful, timely, and directly aligned with the Kingdom's energy strategies and the evolving dynamics of the global energy landscape.

Three domains



Global Energy Markets

KSA Energy Sector
(including power and renewables)

Climate and Sustainability
(including carbon management)

Global Energy Markets

- Hydrocarbons
- Petrochemicals
- Transportation
- Industrial Demand
- Renewables
- Electricity
- Critical Minerals

KSA Energy Sector

- KSA Transport
- Infrastructure
- KSA Power
- Energy Efficiency
- KSA Industry

Climate and Sustainability

- Hydrogen
- Nature-Based Solutions
- CCUS
- Storage
- Climate and Sustainability – Targets and Financing

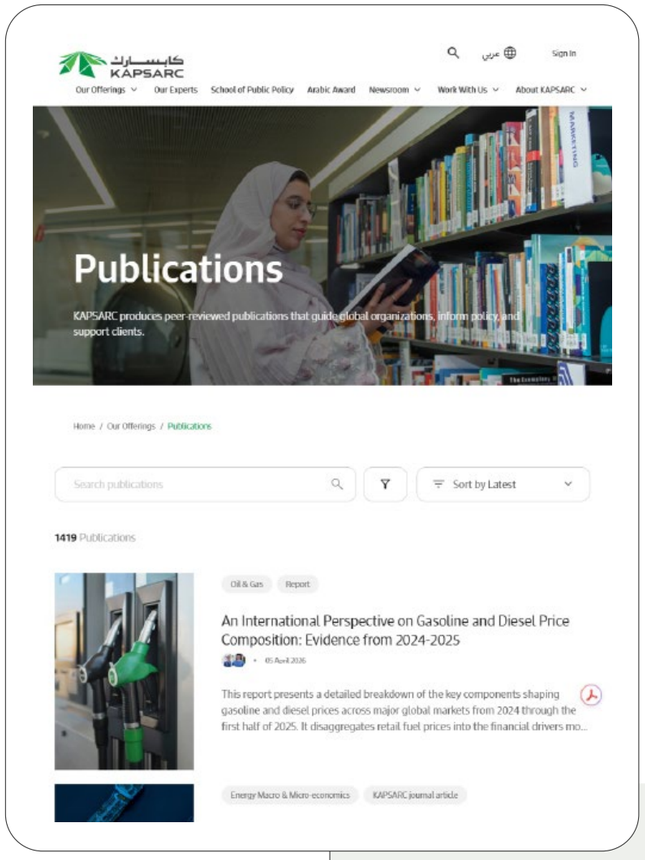
2025 KEY UPDATES

03

KAPSARC LAUNCHED ITS NEW CORPORATE IDENTITY

In 2025, KAPSARC unveiled its new corporate identity in the presence of HRH Prince Abdulaziz bin Salman bin Abdulaziz Al Saud, Chairman of the Board of Trustees. The launch marked the final initiative delivered under the TASAMI transformation project, initiated in 2021, and signaled the formal completion of the Center's multi-year institutional transformation.

The refreshed identity retains the original logo artwork to preserve continuity and institutional recognition, while introducing a refined, more contemporary design and updated color palette. The primary colors – emerald green and graphite gray – were selected to reflect the Center's evolving role and strategic positioning.



Old Logo

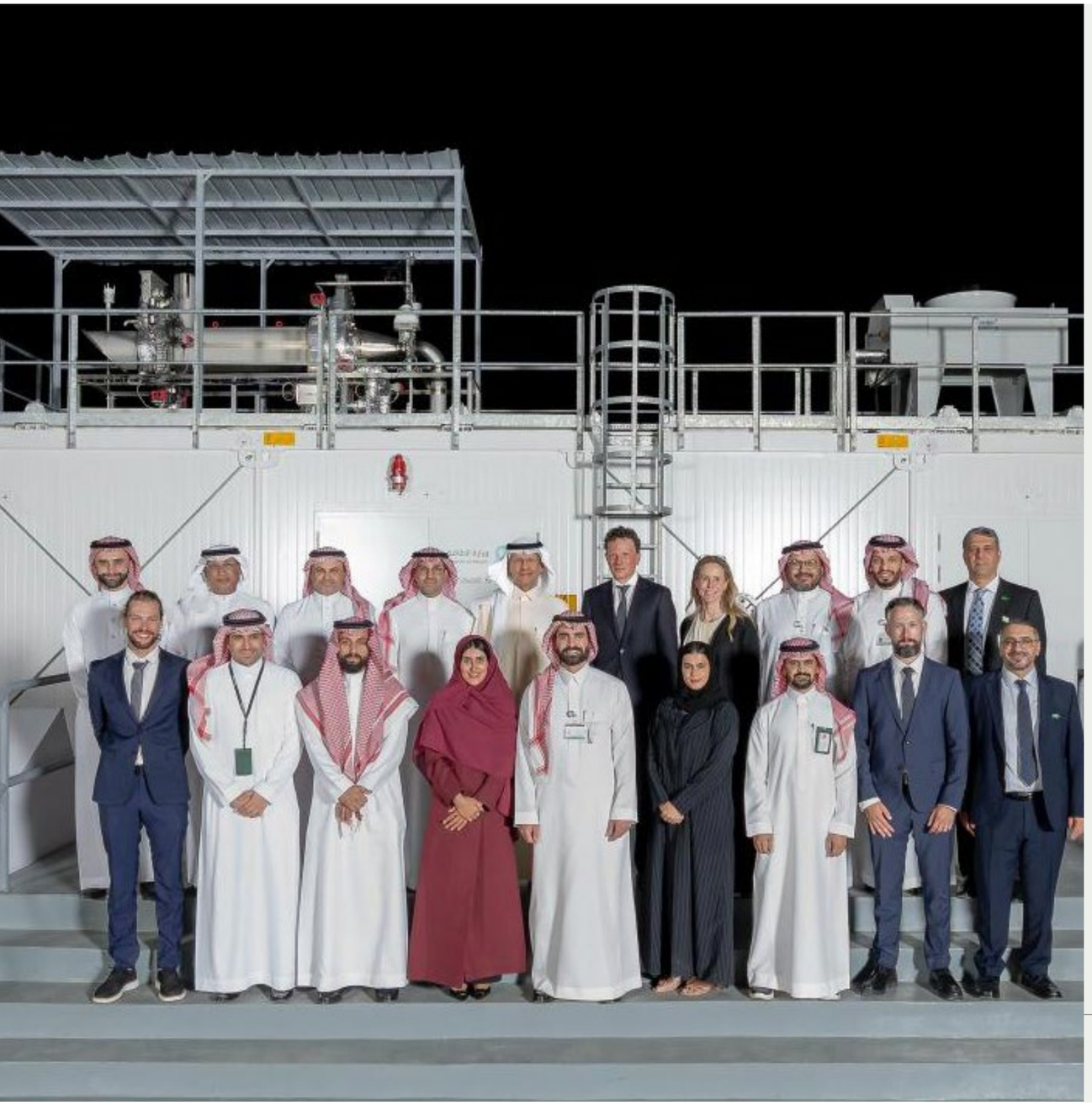
New Logo

Emerald green symbolizes foresight, sustainability, and analytical depth, aligning with KAPSARC's focus on rigorous data and long-term policy insight.
It also embodies the Kingdom's cultural identity and its forward-looking vision to promote prosperity and national development.

Graphite gray represents clarity and effective communication, while also referencing graphite's role in energy storage technologies, underscoring the Center's engagement with the global energy transition.

Complementing the rebrand, a redesigned website was launched to enhance accessibility, strengthen content architecture, and improve user experience in line with KAPSARC's expanded advisory and research mandate.

The announcement received coverage from local and international media outlets, reaching an estimated audience exceeding 380,000 and reinforcing KAPSARC's institutional positioning within the global energy policy community.



THE LAUNCH OF THE DIRECT AIR CAPTURE DEMONSTRATION

Building on the Memorandum of Understanding signed in 2024, KAPSARC and Climeworks marked a significant milestone with the launch of a live direct air capture (DAC) demonstration unit, sponsored by the Ministry of Energy. The inauguration took place at a special event attended by HRH Prince Abdulaziz bin Salman, Minister of Energy and Chairman of the Board of Trustees.

This initiative reflects the Kingdom's commitment to advancing circular carbon economy technologies and accelerating the deployment of innovative carbon removal solutions. By testing DAC performance under hot, arid conditions, the project generates practical insights into operational efficiency, scalability, and technology readiness in the Saudi context.

The demonstration underscores KAPSARC's role as a platform for piloting climate technologies and supporting the Kingdom's long-term decarbonization and sustainability ambitions.

وزارة الطاقة
MINISTRY OF ENERGY

climeworks

كابسارك
KAPSARC

CONTRIBUTION TO THE IPCC SEVENTH ASSESSMENT CYCLE (AR7)

In 2025, KAPSARC recorded a significant milestone in its international research engagement. Five KAPSARC experts, the highest number selected globally from a single institution, were appointed to contribute to the Intergovernmental Panel on Climate Change (IPCC) Seventh Assessment Cycle (AR7), which runs through 2029.

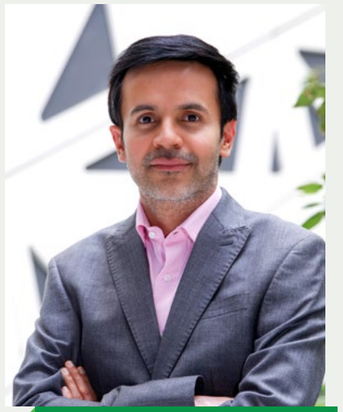
Among those selected, four were appointed as lead authors, with one serving as an expert reviewer. These appointments reflect international recognition of KAPSARC's technical leadership in energy systems, climate economics, modeling, and policy analysis.

Participation in AR7 positions KAPSARC at the forefront of global climate assessment efforts, strengthening its role as a scientific contributor to international climate discourse and reinforcing its credibility within the IPCC community. It also expands the Center's engagement in international modeling consortia and collaborative research networks.

Anwar Gasim
Lead Author

Mohammad Aldubyan
Lead Author

Mohamad Hejazi
Lead Author



Rubal Dua
Lead Author

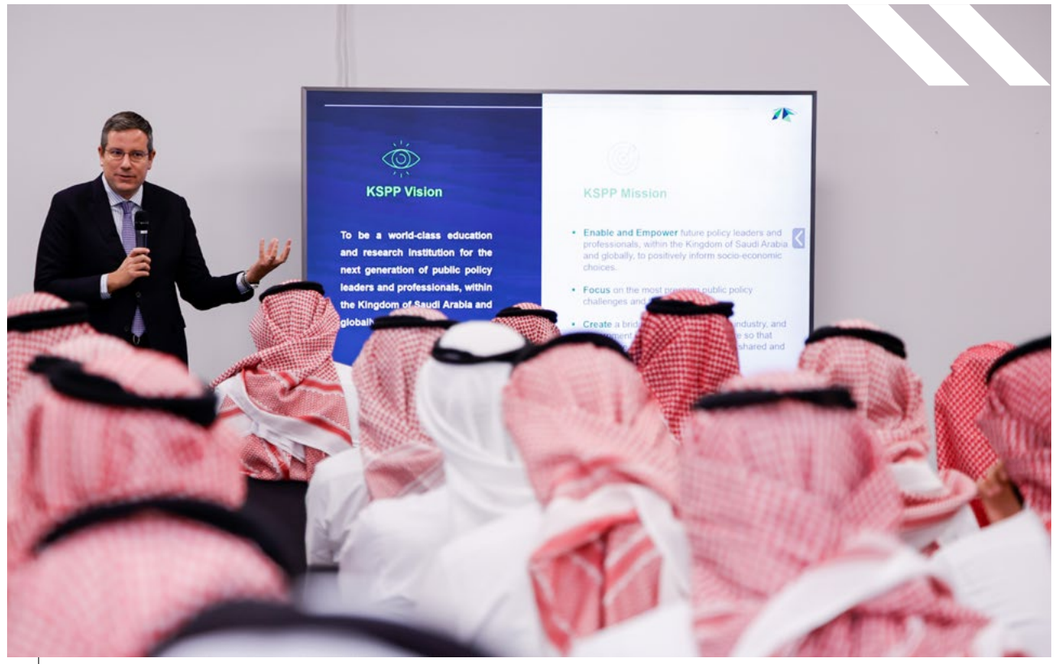
Naser Odeh
Reviewer

KSPP'S MASTER OF PUBLIC POLICY PROGRAM UPDATES

In 2025, the KAPSARC School of Public Policy (KSPP) welcomed 59 students into the second cohort of the Master of Public Policy (MPP) program, marking a significant milestone in the program's expansion. Applications submitted increased with 97% growth ratio and acceptances increased from 25 to 60 (140% growth), reflecting strong momentum across all stages of the admissions pipeline.

60
students accepted

97%
increase from 2024



26 female | **34 male** | **58 Saudi** | **2 international**

- The 2025 cohort reflects strong demographic, academic, and professional diversity. It comprises 26 female students (43%) and 34 male students, including 58 Saudi nationals and two international students. Most students hold bachelor's degrees, with a significant proportion possessing master's degrees and a smaller segment holding doctorates. The cohort also brings a broad range of professional experience, spanning early-career professionals and seasoned practitioners.

- The Master of Public Policy program continues to strengthen KSPP's role in developing the next generation of policy leaders. Designed to equip students with rigorous analytical skills and a deep understanding of energy, economic, and public policy challenges, the program contributes to national capacity building and supports evidence-based policymaking in Saudi Arabia and beyond.

KSPP HOSTED THE FIRST NASPAA REGIONAL CONFERENCE IN SAUDI ARABIA

KSPP hosted the first Network of Schools of Public Policy, Affairs, and Administration (NASPAA) Regional Conference in Saudi Arabia, marking a significant milestone for public policy education in the Kingdom. The conference convened more than 600 participants from 27 countries, bringing together global academic leaders, policymakers, and practitioners.

The event featured more than 90 speakers. A total of four plenary sessions, 23 concurrent sessions, 11 networking sessions, and two interactive workshops were organized around five key thematic areas shaping the future of public policy education and research.

By hosting this landmark gathering, KSPP reinforced its role as a regional hub for policy dialogue and academic exchange, expanded its global academic partnerships, and elevated Saudi Arabia's visibility within the international public policy community.

11
networking sessions

2
interactive sessions

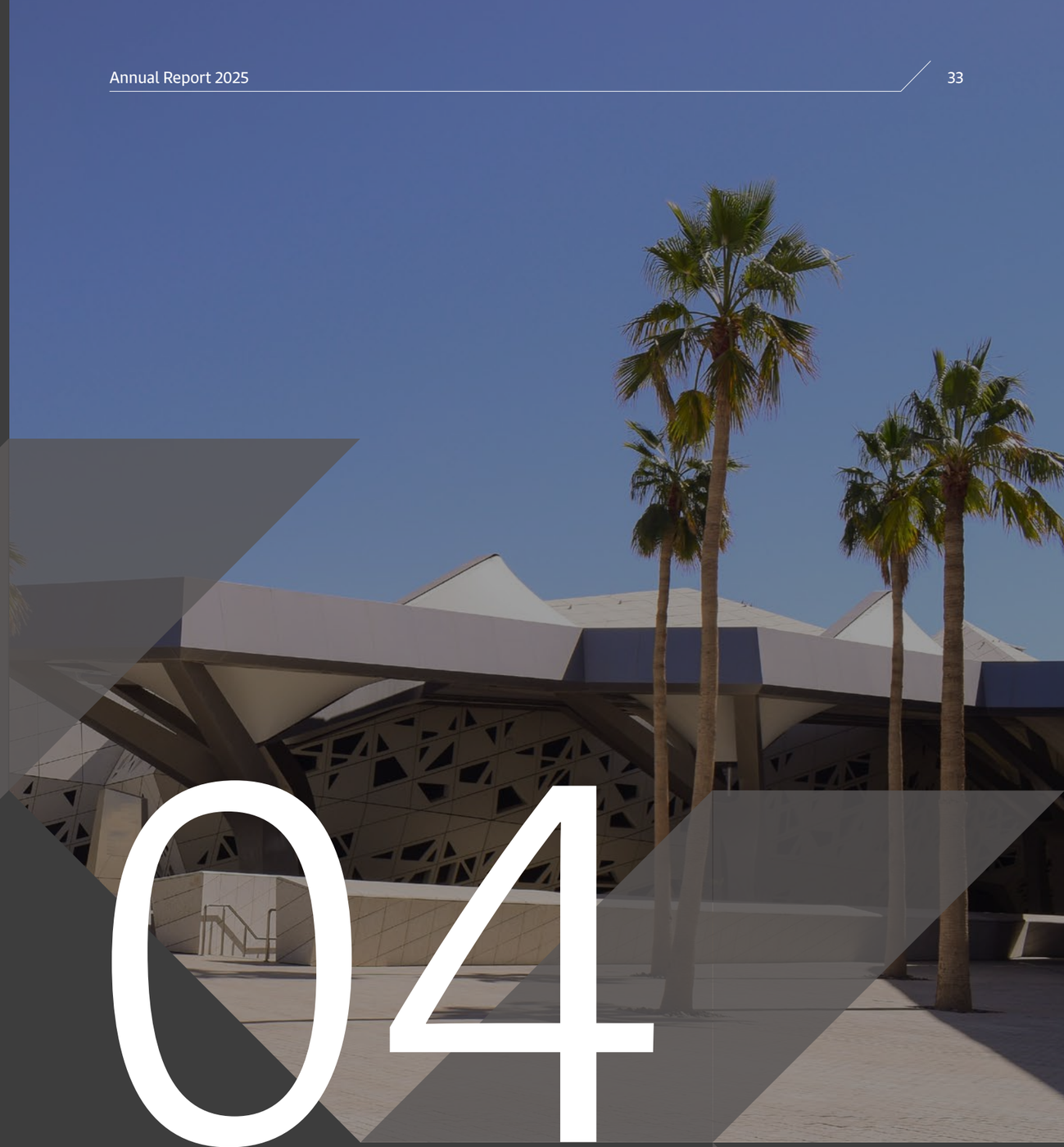
90+
speakers

270
attendees

27
countries

4
plenary sessions

23
concurrent sessions

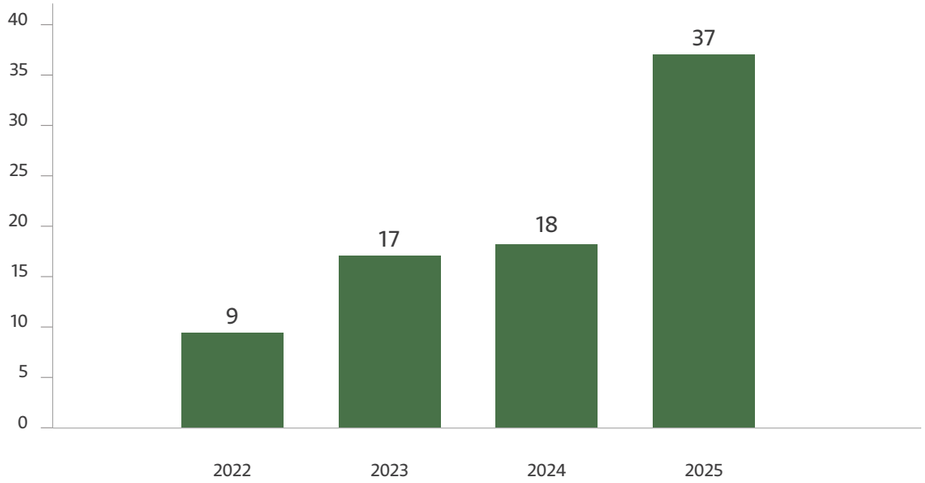


ADVISING THE SAUDI ENERGY SECTOR

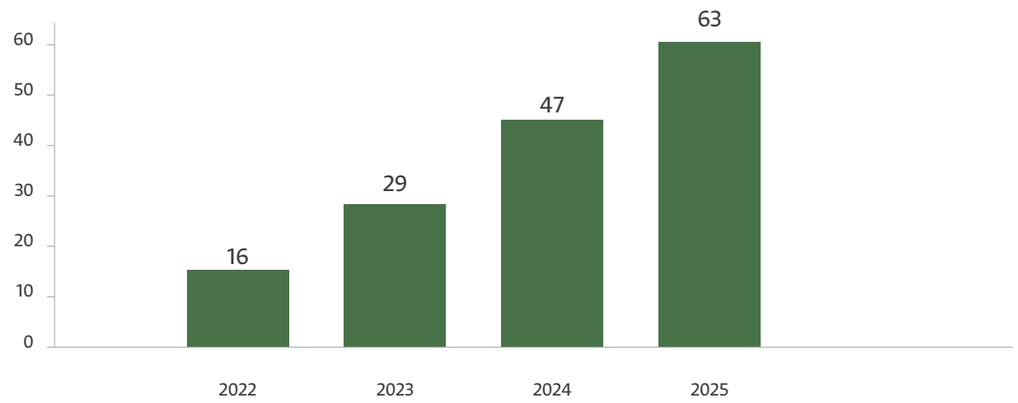
04

CHARTING THE PATH OF ADVISORY EXCELLENCE

Completed Advisory Projects

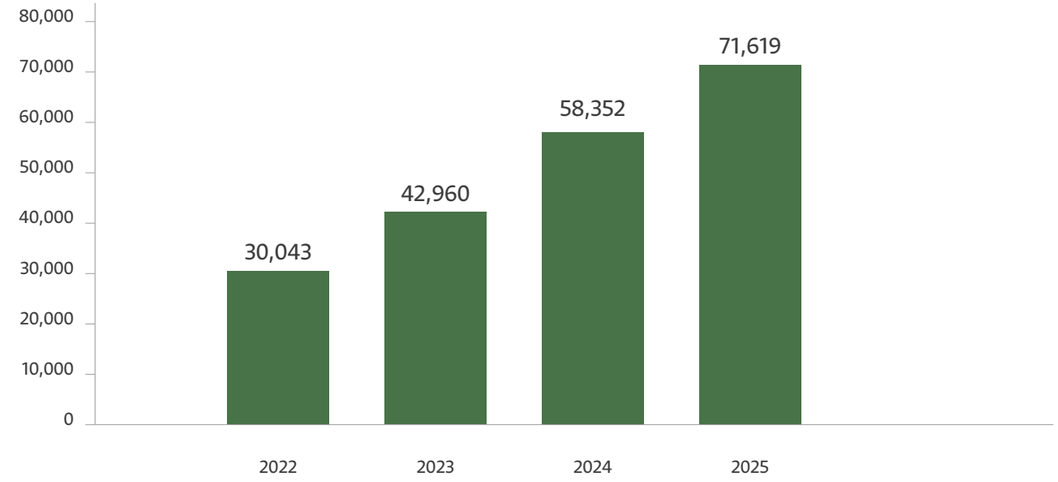


Growth of the Consulting Team



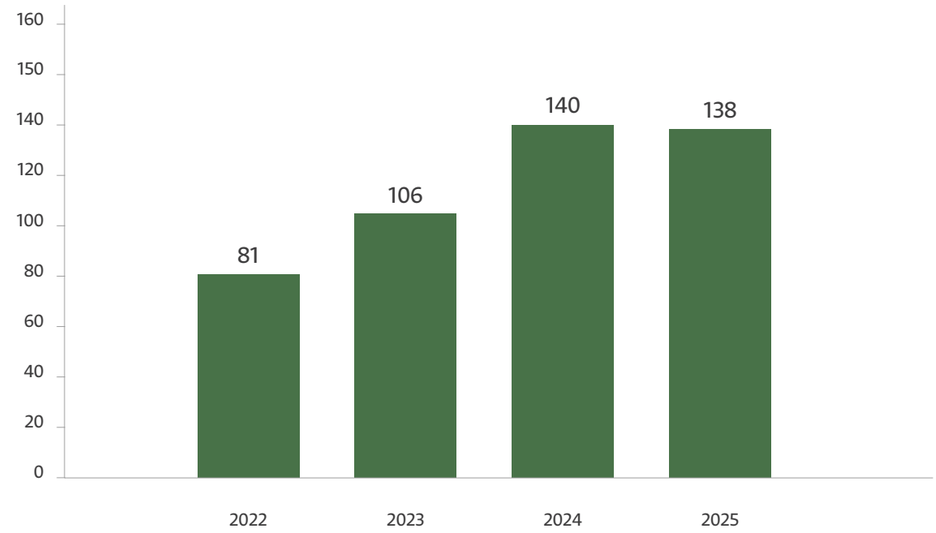
The Consulting team continued its expansion in 2025, achieving an average annual growth rate (CAGR) of approximately 58% between 2022 and 2025. This growth was supported by the onboarding of nine professionals from the Graduate Development Program (GDP).

Expanded Efforts in Advisory and Short-Term Consultation Projects



Consulting activities continued to scale, with total hours dedicated to advisory projects and related activities growing at an average annual rate (CAGR) of approximately 34%.

Short-Term Consultation Requests



Average annual growth (CAGR) = ~19%

ENERGY MARKET INSIGHTS DEPARTMENT (EMI)

To further enhance its advisory offerings, KAPSARC established the Energy Market Insights (EMI) department. The department monitors trends and developments shaping global energy markets across short- and medium-term horizons, providing timely, data-driven insights to stakeholders.

The team leverages advanced analytics, modeling, and market intelligence to support informed decision-making and strengthen KAPSARC's position as a trusted advisor in the global energy landscape.

During 2025

The department expanded from three to five experts to support its growing mandate.

It produced proactive commentaries on oil markets, electric vehicles, renewable energy, and critical minerals.

Analyses incorporated insights from leading international institutions, including OPEC, the IEA, IRENA, Bloomberg, S&P Global, and Rystad Energy.

30

proactive commentaries produced

5

experts supporting EMI

50+

insights requests

PRODUCE INTERNATIONALLY RECOGNIZED RESEARCH

05

KAPSARC'S EFFORTS TO PRODUCE INTERNATIONALLY RECOGNIZED RESEARCH, TOOLS, AND DATA FOR GLOBAL POLICYMAKING

Expanding Intellectual Frontiers: Thought Leadership Through Publications

In 2025, KAPSARC continued to advance its thought leadership through a strong portfolio of diverse research outputs, contributing to the global dialogue on energy and sustainability. The Center's publications spanned multiple formats, underscoring its integrated and multidisciplinary research approach.

32 commentary

3 workshop briefs

71 discussion paper

8 methodology paper

3 data insight

5 instant insight

4 book/book chapter

61 journal article

8 report

195 publications

2025 SELECTED RESEARCH PROJECTS

01 Quantifying the Use of Oil to Enable the Global Energy Transition

Overview

The global shift to net-zero emissions requires massive deployment of renewables, electric vehicles (EVs), transmission lines, and related infrastructure. Paradoxically, producing these clean technologies demands significant oil-based materials (e.g., plastics, petroleum coke) and oil-based products throughout production and in the supply chains of the critical minerals they require. Most research to date has focused on a narrative discussion of the importance of oil-based materials to renewables and EVs. In this paper, experts extend this research by providing a quantitative analysis of these requirements for individual technologies and for net-zero scenarios. In doing so, experts also examine how, and in what form, oil and oil-based products are used in the supply chains for renewables and EVs.

Objectives

- To quantify the oil requirements for producing individual renewable technologies and electric vehicles and then the total oil required for the projected global scale-up of these technologies under net-zero scenarios.
- To identify where, and how, oil is used across the supply chains of renewable technologies, electric vehicles, and high-voltage transmission.

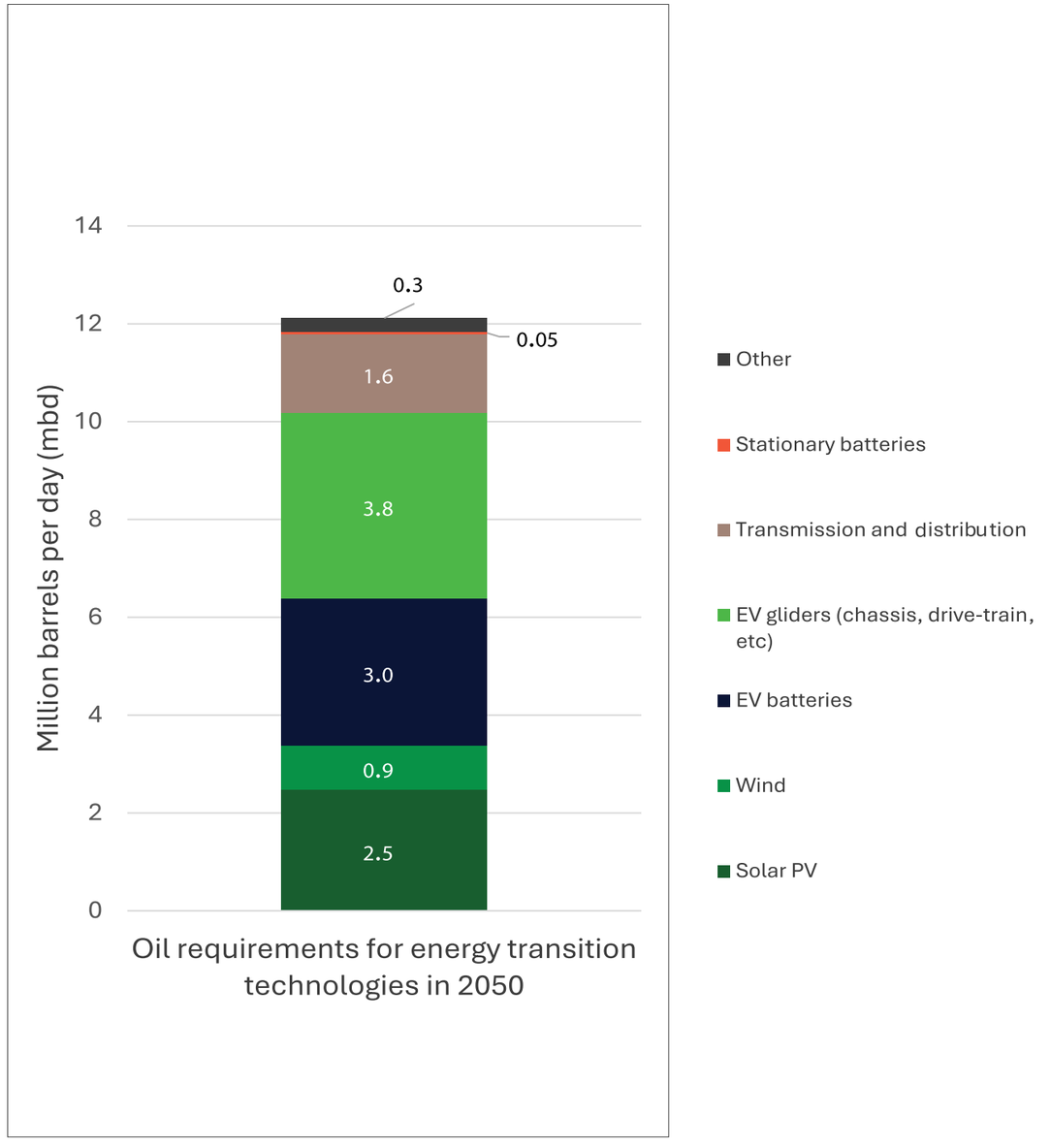
Methodology

The paper applies a two-stage, bottom-up dynamic material flow analysis model to quantify the oil required to build a net-zero energy system under current production processes. A scenario-level model uses IEA net-zero scenarios, combined with technology lifetimes and life-cycle inventory data from the Ecoinvent database, to calculate annual oil demand to 2050 for a broad portfolio of technologies (power generation, storage, grids, EVs and chargers). Second, a technology-level supply chain disaggregation is performed for four key technologies (solar PV, onshore wind, lithium-ion batteries and transmission lines), tracing oil through major material chains (e.g., steel, aluminum, silicon, copper, graphite) from mine to final product and allocating it to functional uses: transport, heat, electricity, oil-based materials, infrastructure, and unallocated flows. Oil-derived products are further split to the product level (e.g., petroleum coke, plastics, petrochemicals).

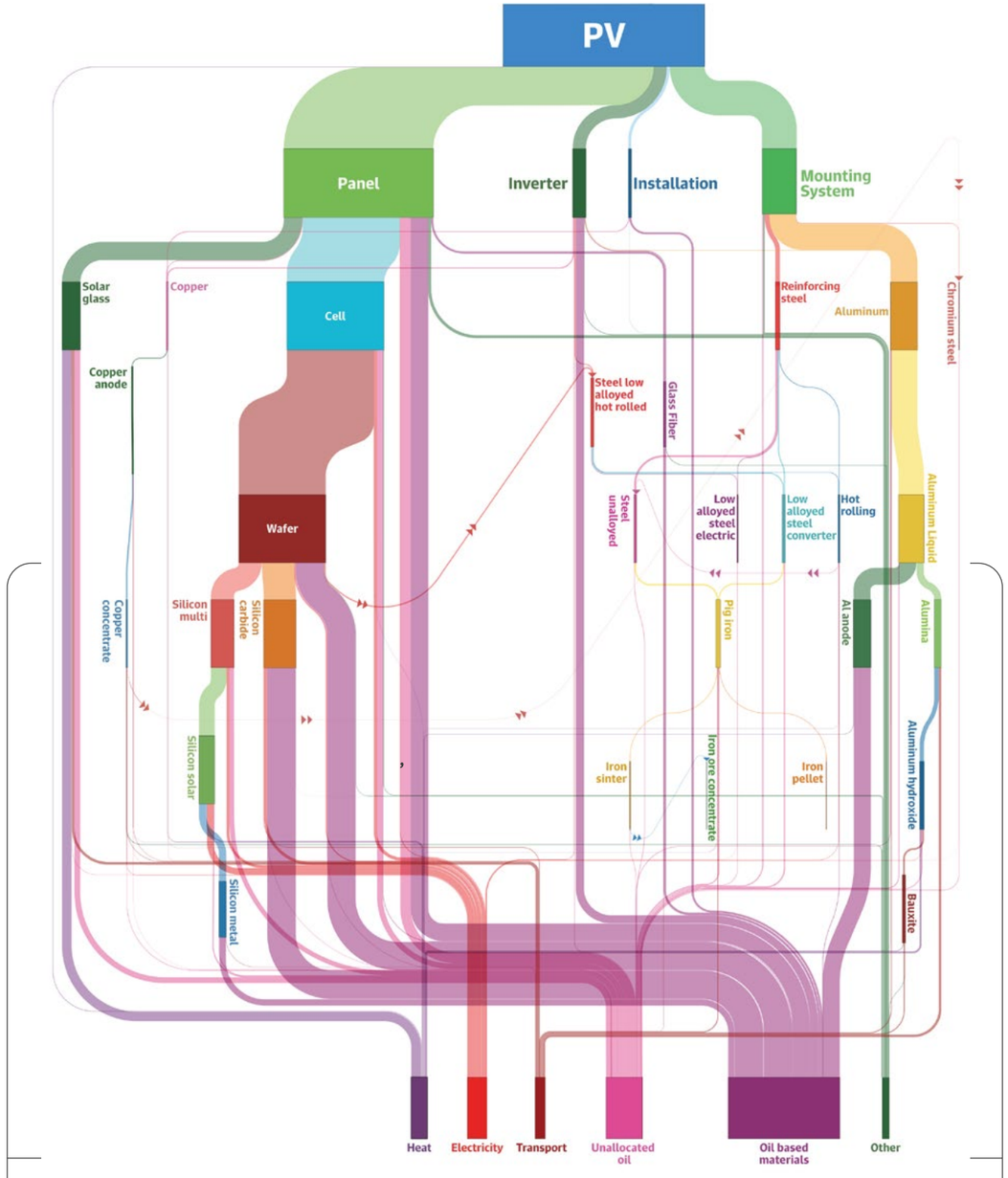
Outcomes

The study highlighted that:

- Achieving the net-zero energy system, as projected by the IEA, will require at least 12 million barrels a day of oil by 2050 (under current production processes), rising to close to 16 mbd if technology lifetimes are shorter.
- Lower carbon capture and sequestration and lower nuclear deployment for electricity increase oil requirements to close to 14 mbd.
- The largest share of this oil requirement is in the form of oil-based products (45%) (petroleum products, petrochemicals, plastics).
- Within these oil-based products the largest requirement is for petroleum coke, used in manufacturing processes such as silicon wafers for solar PV and synthetic graphite for EV batteries.



Under current production processes, 12–16 million barrels per day of oil will be required in 2050 to manufacture clean-energy technologies, with the largest share for electric-vehicle production, both the battery and the glider (chassis, drivetrain, and all other vehicle components), along with solar PV manufacturing.



Flow of Oil Through the Supply Chain for Solar PV

Solar PV requires about 900 barrels per MW, mainly in silicon wafers, aluminum frames, and glass, with most oil (57%) needed in the form of oil-based materials (such as petroleum coke and triethylene glycol).

02 The Future Plastics Economy

Overview

The project assesses opportunities for Saudi Arabia and the GCC in the circular plastics economy, focusing on recycling and material innovation to support industrial growth.

Objectives

- A study co-authored with Strategy& examines how the GCC region can link Asia's plastic waste supply with Western market demand for recycled materials.
- Another work co-authored with the Gulf Petrochemicals and Chemicals Association (GPCA) presents an analysis of the current plastic waste management landscape in the GCC, benchmarking it against global trends.

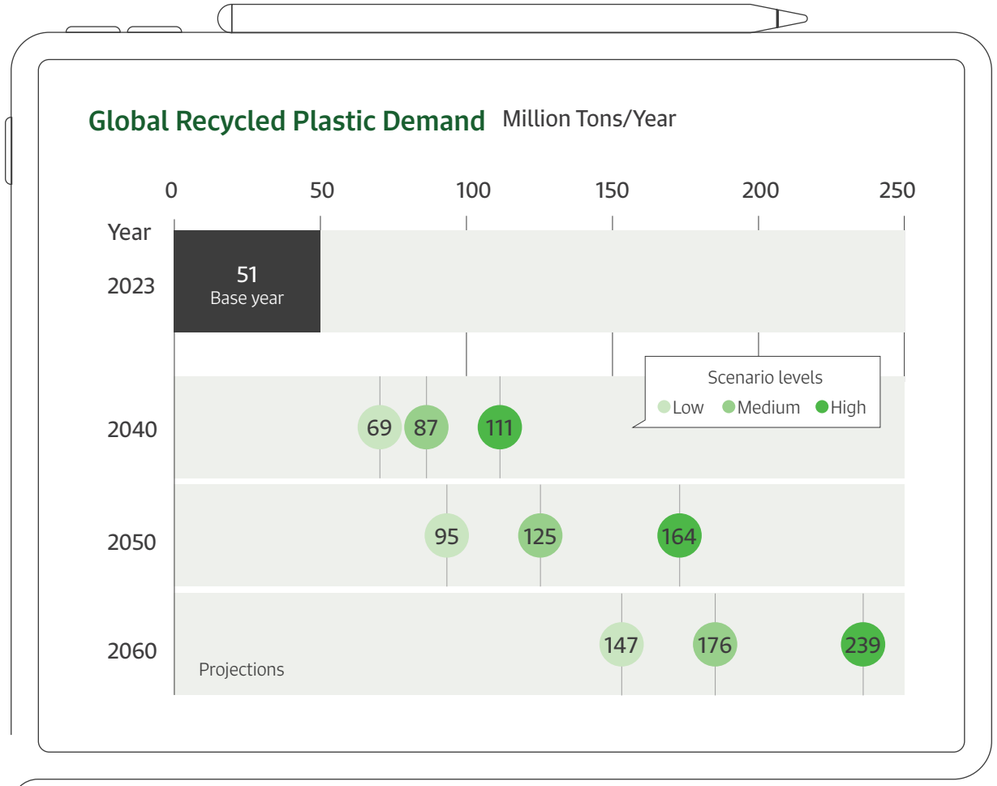
Methodology

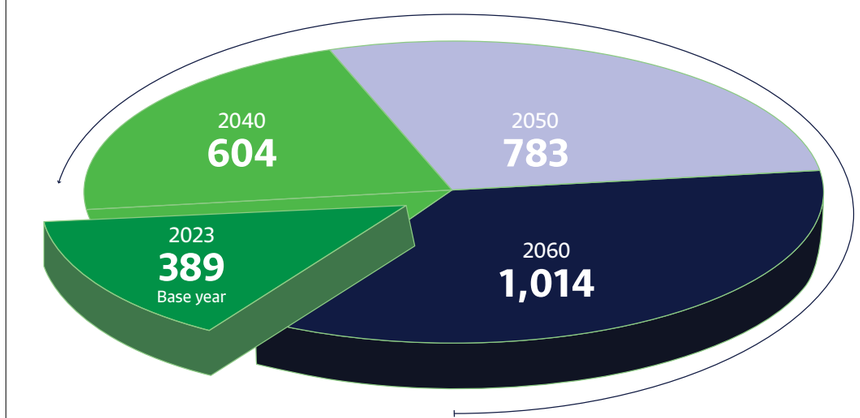
The project applies economic analysis to assess the profitability of plastic recycling. Scenarios are developed for the long-term supply and demand of recycled plastic, assuming different levels of plastic waste production, recycling rates, and global recycling capacity.

Outcomes

The study highlighted that:

- The GCC currently recycles only 10% of its plastics, but increasing this to 40% could unlock US$6 billion market share.
- By 2030, global demand for recycled plastics is expected to exceed supply by 25-35 million tons, creating strong export potential.
- Policy action is needed to build regional supply chains and scale up demand for recycled polymers.
- Plastic waste could double by 2050, reaching 783 million tons per year globally, underscoring the urgency of developing recycling capacity.





03 Life Cycle Assessment of Passenger Cars in Saudi Arabia

Overview

This project assesses the full greenhouse gas (GHG) footprint of passenger cars in Saudi Arabia by evaluating emissions from material extraction, manufacturing, fuel and energy production, vehicle use, and end-of-life treatment. It compares petrol and diesel cars, hybrids, plug-in hybrids, battery electric vehicles, and hydrogen vehicles under the 2024 energy system and projected 2024-2035 conditions. The study also examines how charging patterns and seasonal factors influence overall emissions.

Objectives

- Compare the total climate impact per kilometer for key passenger car technologies in the Saudi context.
- Show how results change when electricity and hydrogen production become cleaner over time (2024-2035).
- Test how charging choices (home at night vs. public during the day) and season (summer vs. winter) can change EV outcomes (GHG footprint) in Saudi Arabia.
- Identify the primary drivers of emissions outcomes, enabling policy to focus on the highest-impact levers, particularly the electricity grid and energy supply chain.

Methodology

- Used ISO standards (14040/14044) for life cycle assessment (LCA).
  Compared vehicles on a common driving basis: per kilometer, assuming a total vehicle life of 250,000 km.
- Modeled two energy scenarios for the use phase:
  - 2024 grid conditions (today)
  - average 2024-2035 grid conditions (to reflect the expected energy transition over the vehicle lifetime)
- Tested real-world factors relevant to Saudi Arabia, including EV charging behavior and seasonal electricity conditions
- Checked robustness by varying key assumptions to show which inputs change results the most.

Outcomes

The study highlighted that:

- Petrol and diesel cars were the highest-emitting option in the baseline results (about 347383 gCO_2e/km), mainly because of tailpipe fuel combustion.
- Hybrids were the strongest near-term option under today's Saudi electricity mix (about 244269 gCO_2e/km).
- Battery electric cars were not automatically the lowest-emission option in Saudi Arabia: in the baseline, they were roughly 15% higher than hybrids (example: 281 vs. 244 gCO_2e/km for sedans).
- Hydrogen fuel cell cars were also relatively high (about 252-277 gCO_2e/km) because hydrogen supply was still largely tied to carbon-intensive production routes.
- If the grid decarbonizes as expected over 2024-2035, battery EVs improve the most: about 76 gCO_2e/km (sedans) and 86 gCO_2e/km (SUVs) lower than their 2024 baseline (about 28% improvement).
- Charging timing mattered: when the share of home or night charging rose from 20% to 80%, the emissions linked to EV charging increased (because nighttime electricity can be more carbon intensive in the scenarios tested).
- Summer conditions resulted in higher emissions for EV charging than winter in Saudi Arabia in the scenarios tested (because higher cooling demand changes power generation): about 97.8 vs. 82.0 gCO_2e/km for sedans (charging-related emissions).
- The biggest driver was how fast electricity and energy production became cleaner. These factors affected results more than most vehicle-side assumptions.
- Policy implication: where power sector reforms have just started, hybrids may remain more effective in the near term, and the electrification strategy should be aligned with the energy transition.

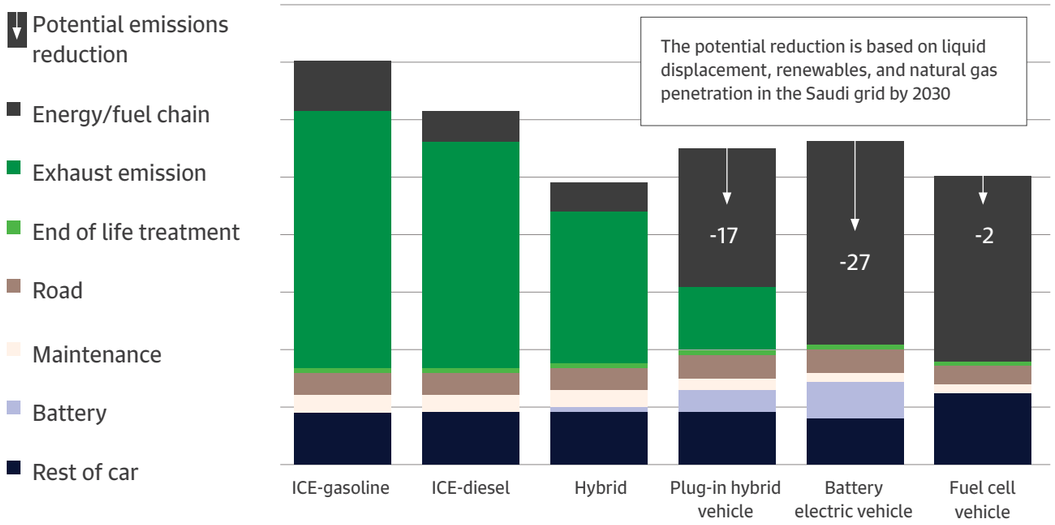


Figure 1. Life-cycle GHG emissions of passenger cars with potential reductions in the Saudi context.

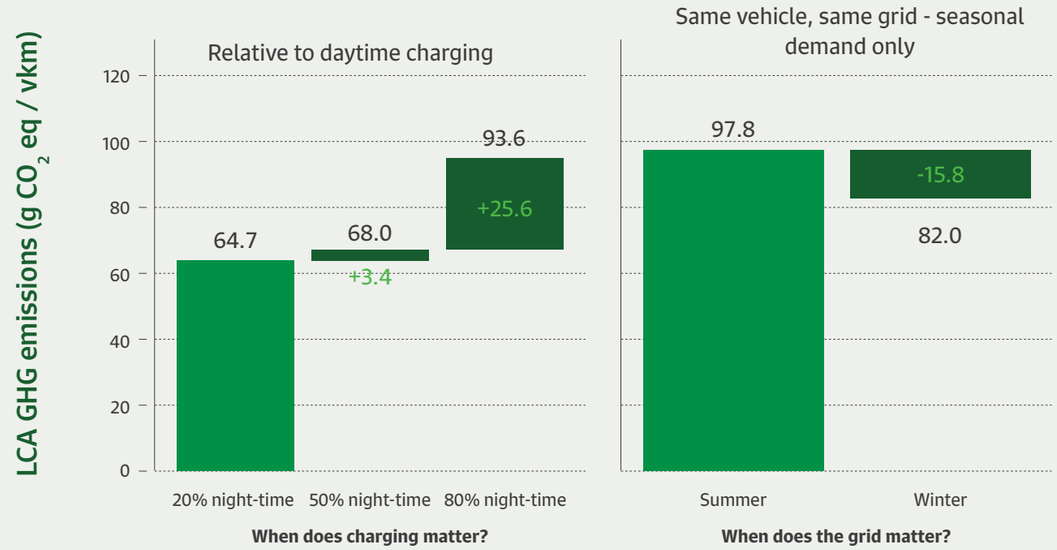


Figure 2. (a) Estimated well-to-wheel GHG emissions for sedans by home-based (night-time) charging share in Saudi Arabia. (b) Seasonal variation in well-to-wheel GHG emissions.

04 Using Satellite Technology to Measure Methane Emissions in MENA Countries for Oil and Gas Operations

Overview

Methane emissions are difficult to measure, which has led to large discrepancies across different data sources. Methane emissions are conventionally calculated using activity data and assumptions about emission factors. Satellites have recently emerged as a powerful tool for directly measuring methane without relying on such assumptions. This project uses satellites to measure methane emissions in nine Middle East and North Africa (MENA) oil and gas producers: Saudi Arabia, the United Arab Emirates (UAE), Kuwait, Oman, Iraq, Iran, Egypt, Algeria, and Libya.

It also covers two key methane-emitting sectors

Oil and gas

Waste

Objectives

- To analyze discrepancies in methane emissions data across MENA oil and gas producers.
- To estimate annual national-level methane emissions for each sector in each MENA country using satellites.
- To compare satellite-based estimates with other publicly available estimates.
- To benchmark countries in terms of methane performance.

Methodology

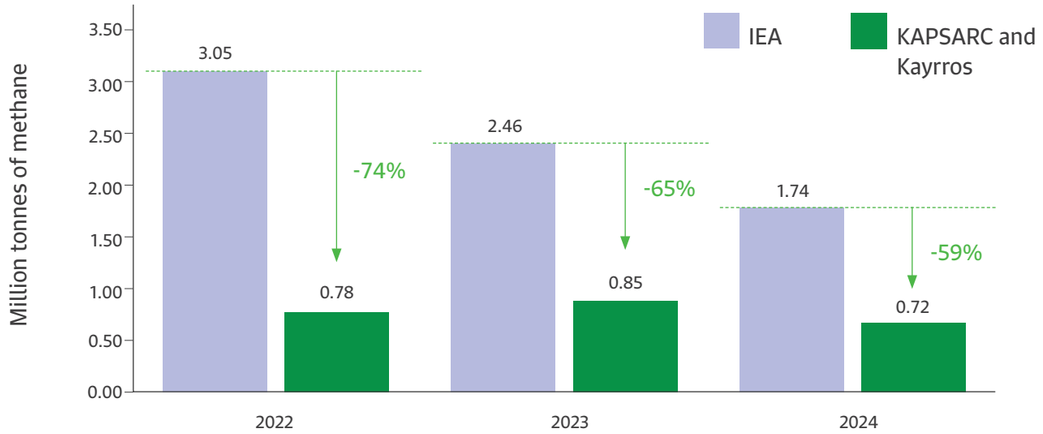
This project develops a comprehensive and transparent satellite-based framework for generating annual national-level methane emission estimates by sector. Specifically, it combines satellite observations of methane concentrations from the Sentinel-5P satellite with two models: the basin inversion model and wind-rotated models. Furthermore, extrapolations are used when needed to ensure full national coverage, so that the satellite-based estimates are comparable with other publicly available estimates made using conventional methods.

Outcomes

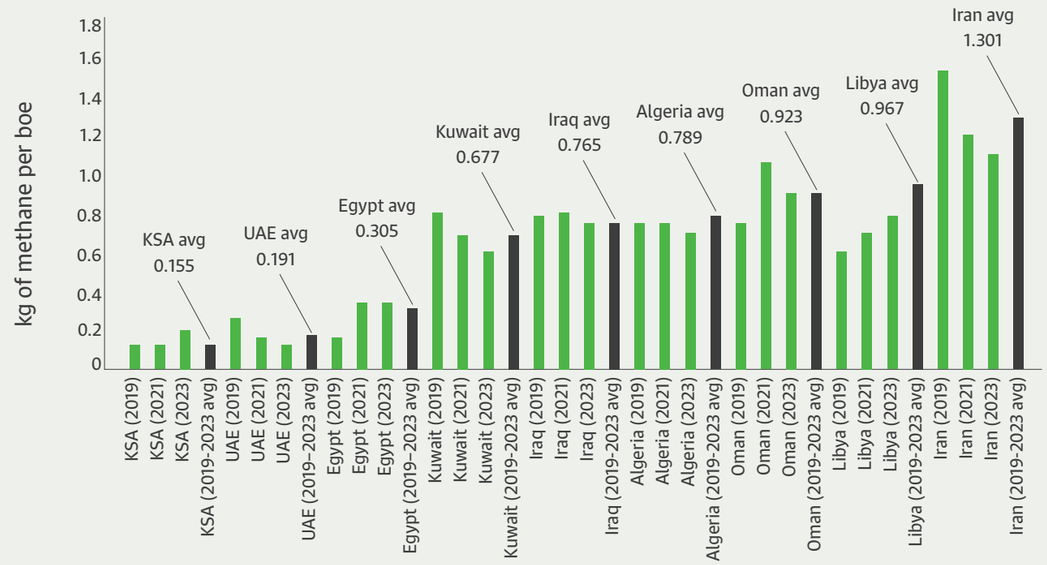
The study highlighted that:

- There were significant discrepancies in methane emissions data for MENA countries. In the case of their oil and gas sectors, methane emission estimates from different sources differed by more than 100 times for some MENA countries.
- For most MENA countries, satellite estimates were consistently higher than the estimates from their official national GHG inventories submitted to the UNFCCC.
- However, for most MENA countries, satellite estimates were also consistently lower than the estimates provided by organizations such as the IEA.
- According to satellite measurements for the oil and gas sector, Saudi Arabia and the UAE emerged as the top-performing countries with the lowest methane intensities (methane emissions per barrel of oil and gas equivalent).
- With the emergence of such satellite-based studies, methane data from different sources appeared to be starting to converge.

Saudi Arabia's oil and gas sector



Satellite-based oil and gas methane intensity



05 KAPSARC National Renewables Tracker

Overview

The KAPSARC National Renewables Tracker is an interactive geospatial dashboard that serves as a central hub for official renewable energy information in Saudi Arabia. It enables continuous monitoring of national renewable energy projects and supports transparent tracking of the Kingdom's energy transition. A national map displays the geographic distribution of projects, while summary indicators highlight total project count and overall progress toward the 2030 target capacity, currently shown at 63.8%. Visualizations illustrate the technology mix and annual installed capacity by technology, allowing users to observe growth trends over time.

Objectives

- To provide a centralized and official reference for renewable energy projects in Saudi Arabia.
- To enable transparent monitoring of renewable deployment and capacity growth.
- To enhance global visibility and accessibility of Saudi renewable energy progress.

Methodology

The National Renewables Tracker compiles verified project-level data from the Ministry of Energy. This data is structured within an interactive GIS-based platform that allows users to explore renewable facilities spatially and analytically. Users can examine project locations across regions, analyze trends in installed capacity, compare technology shares between solar and wind, and review commissioning timelines and development status. The integration of geospatial mapping and data visualization provides insights into renewable capacity growth over time.

Outcomes

- Elevated global visibility of Saudi Arabia's renewable energy growth, strengthening its position as a transparent and credible player in the global energy transition.
- A comprehensive national inventory of 53 renewable energy projects

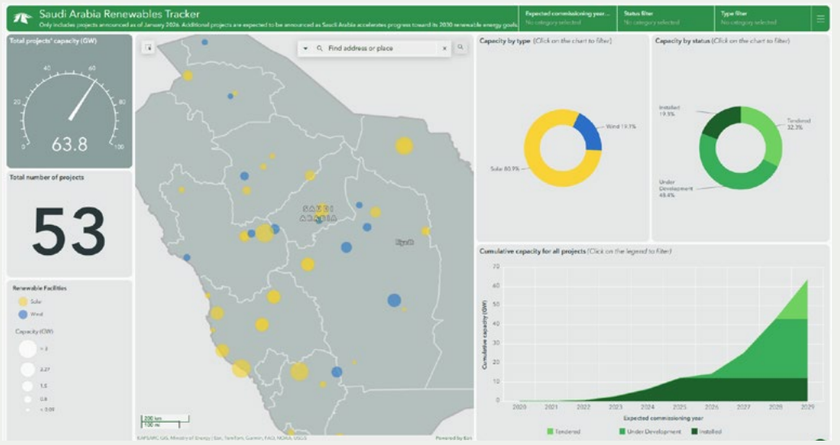
with a technology mix dominated by solar at **81%** of total capacity

wind at **19%**

a performance indicator showing **63.8%** progress toward the 2030 target capacity

- An interactive platform that enables monitoring of capacity growth and technology trends, serving as a globally accessed reference with more than 9,700 active users across more than 80 countries.

The National Renewables Tracker converts renewable deployment data into measurable, transparent, and globally accessible intelligence, strengthening accountability and informed decision-making in Saudi Arabia's energy transition.



STRATEGIC ENGAGEMENT AND GLOBAL POSITIONING

06

ADVANCING PARTNERSHIPS

KAPSARC Arabic Language Award – Fourth Edition

In continued partnership with the King Salman Global Academy for Arabic Language, KAPSARC hosted the closing ceremony of the fourth edition of the KAPSARC Arabic Language Award 2025, during which the winners were announced.

This edition of the award was held under the theme “Integration of Artificial Intelligence and Energy Technologies,” reflecting the evolving intersection of language, technology, and energy discourse. The 2025 cycle witnessed strong engagement, with 105 participants across the Kingdom. This represents a significant increase compared with 15 participants in the inaugural cycle in 2022, reflecting the growing interest in and impact of the award.

The award featured three main tracks

- Enrichment
- Translation
- Authorship

The ceremony concluded with the recognition of

10 winners across the Authorship and Translation tracks.

مجمع الملك سلمان العالمي للغة العربية
King Salman Global Academy for Arabic Language

Authorship (Article Writing) Track Winners

Gold

Dr. Yasser Al-Juhani
Ministry of Education – Custodian of the Two Holy Mosques Scholarship Program

Silver

Al-Hanouf Al-Nayan
Ministry of Foreign Affairs

Bronze

Rana Al-Qahtani
King Faisal University

Dr. Ibrahim Al-Rammah
Research, Development and Innovation Authority

Dr. Jihad Al-Arabi
Economic Cities and Special Zones Authority

Translation Track Winners

Gold

Dr. Ibrahim Al-Furaih
King Saud University

Silver

Dr. Riam Al-Muqrin
Majmaah University

Bronze

Dr. Amer Qubti
King Khalid University

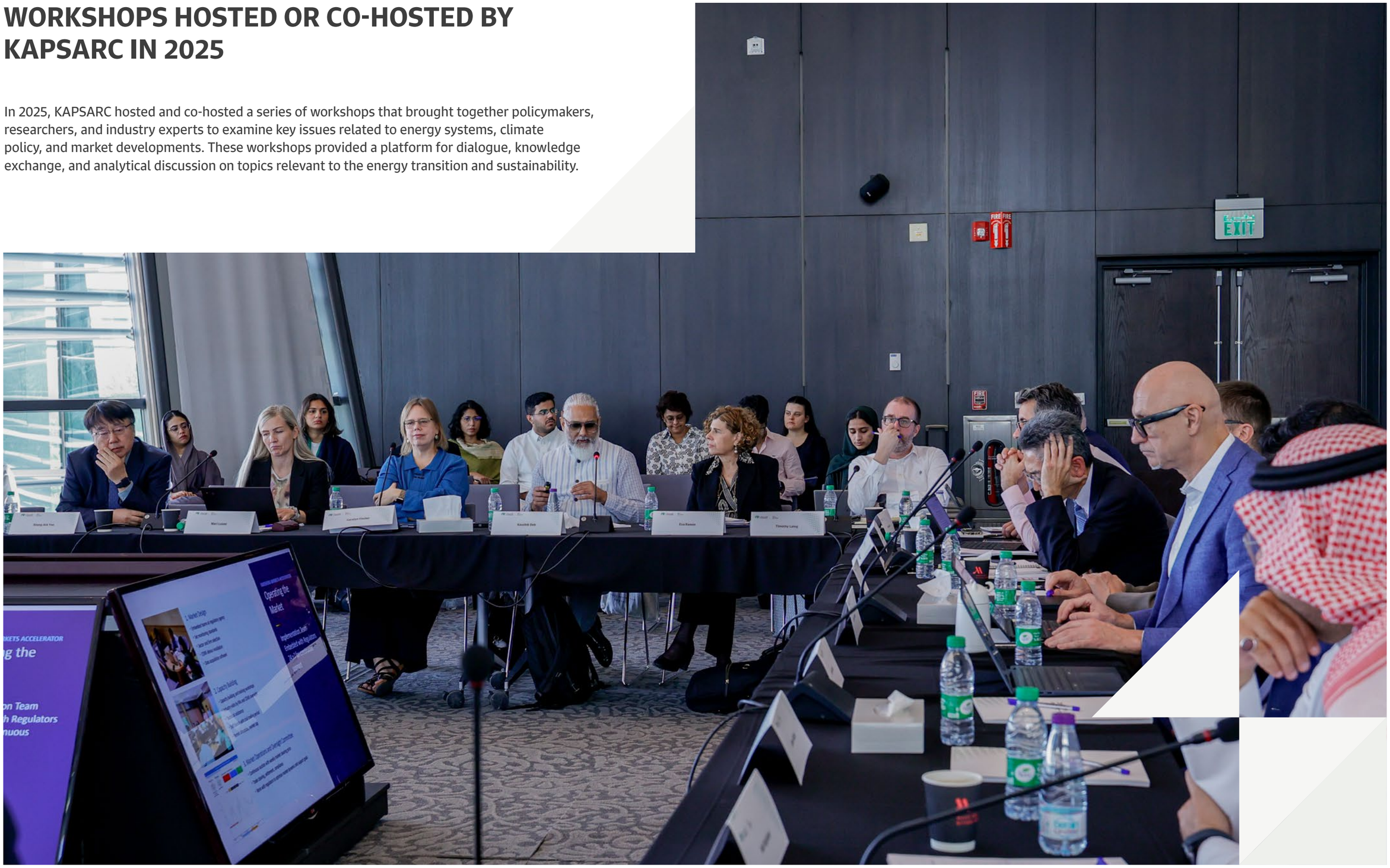
Dr. Abdullah Nour Al-Deen
Islamic University of Madinah

Bandar Al-Sharif and Dr. Hassan Al-Qarni
Royal Commission for Jubail and Yanbu – Jubail Industrial College

You may review the articles here

WORKSHOPS HOSTED OR CO-HOSTED BY KAPSARC IN 2025

In 2025, KAPSARC hosted and co-hosted a series of workshops that brought together policymakers, researchers, and industry experts to examine key issues related to energy systems, climate policy, and market developments. These workshops provided a platform for dialogue, knowledge exchange, and analytical discussion on topics relevant to the energy transition and sustainability.



Energy, Trade, and Climate Policy in Turbulent Times: Opportunities and Challenges for Saudi Arabia and the European Union

KAPSARC hosted its second workshop in Brussels to explore opportunities and challenges in energy cooperation between the European Union and Saudi Arabia. The closed-door roundtable convened 35 participants including representatives from the European Commission (DG ENER, DG CLIMA, and DG TAXUD), Brussels-based think tanks, academics, trade associations, and industry leaders.

ERCST Roundtable on Climate Change and Sustainable Transition

35 participants

The discussion was framed within the context of current global trends in trade relations.

It emphasized Saudi Arabia's stability as a trading partner and its sustained commitment to declared policy objectives – goals that align with and remain competitive within the framework of the EU's stated preferences.

Energy in the Transport Sector

In collaboration with the World Bank, KAPSARC held a workshop at the World Bank's Riyadh office to examine energy consumption and emissions across Saudi Arabia's transportation sector, including land transport, logistics, maritime activity, and aviation. The event benchmarked local trends against global practices and supported discussions on strategies to enhance sustainability and reduce emissions.

Mapping the Pathways to Sustainable Transport in Saudi Arabia

KAPSARC convened a workshop, jointly developed with the World Bank, focusing on scenario-based analysis of policy options, technological developments, and decarbonization pathways across different transport modes. The session examined approaches supporting Saudi Arabia's progress toward net-zero emissions by 2060.

National and Global Net-Zero Strategies – ELEVATE Consortium Workshop

KAPSARC hosted a workshop that convened stakeholders from the Saudi energy ecosystem and international modeling experts to discuss ways to enhance and align climate modeling with policymakers' needs. The workshop was held in collaboration with ELEVATE, a European Commission-funded consortium that supports the assessment of Nationally Determined Contributions (NDCs) and climate policies under the Paris Agreement.

Watt's Next? The Future of Electricity Market Design and Regulation

KAPSARC hosted a workshop examining evolving trends in power sector regulation.

Discussions focused on

01
The Gulf Cooperation Council single-buyer market model

02
Renewable energy integration

03
Private-sector participation

04
Challenges facing competitive electricity markets

Participants highlighted considerations related to electricity market design during the energy transition.

Carbon Markets in Emerging Economies

KAPSARC co-hosted the workshop with the Council on Energy, Environment and Water (CEEW). The session focused on the design and implementation of compliance carbon markets and examined policy considerations related to emerging market systems.

Natural Gas at a Crossroads: Global Shifts and Strategic Realignments

KAPSARC and Baker Hughes co-hosted a closed, technical workshop examining developments in U.S. energy markets, global gas dynamics, and the European Union's influence on LNG trade and infrastructure. Participants also examined the strategic role of natural gas in the MENA region's energy landscape.

GLOBAL ENGAGEMENTS AND EVENT PARTICIPATION

In 2025, KAPSARC participated in several international forums and conferences addressing the energy transition, climate policy, and global energy markets. Through these engagements, the Center contributed to discussions with international stakeholders and shared insights from its research and analytical work.

Examples of these engagements include:

Conference of the Parties (COP 30)

KAPSARC participated in COP30 in Belém, Brazil, reinforcing its role in advancing climate and energy policy dialogue. During the conference, the Center launched the expanded 2025 Circular Carbon Economy (CCE) Index, which now covers 125 countries, strengthening its analytical contribution to global climate frameworks.

In addition, KAPSARC co-hosted an official side event in collaboration with the Institute of Energy Economics, Japan, examining the role of artificial intelligence in accelerating the energy transition and supporting climate resilience. Discussions addressed projected growth in AI-related electricity demand, opportunities to enhance energy system forecasting, and the importance of managing AI's environmental footprint.

CLIMIT Summit 2025

KAPSARC participated in the CLIMIT Summit 2025 in Norway, highlighting its collaboration with Mission Innovation on the first global carbon dioxide removal (CDR) competition.

The SMART-CDR competition invited university students worldwide to develop solutions for monitoring, reporting, and verification in carbon removal. KAPSARC experts served as jury members, evaluating submitted projects.

Knowledge Partner at the 46th IAEE International Conference

KAPSARC participated in the 46th International Association for Energy Economics (IAEE) International Conference in Paris as a knowledge partner. KAPSARC experts contributed to sessions addressing electric vehicle adoption, applications of artificial intelligence in the power sector, and balancing power systems amid increasing renewable energy penetration.

The 9th OPEC International Seminar

KAPSARC participated in the 9th OPEC International Seminar, engaging in discussions on global energy markets and transition dynamics.

The Center also showcased its research, publications, and advisory initiatives through a dedicated booth and engaged with international delegates during the event.

Hydrogen and Carbon Capture Seminar

KAPSARC participated in the seminar titled “From Molecules to Markets: Advances in Hydrogen and Carbon Capture in Saudi Arabia & the Netherlands,” hosted by the Embassy of the Kingdom of the Netherlands in Saudi Arabia during the visit of H.E. Ms. Aukje de Vries, Minister for Foreign Trade and Development.

The seminar brought together stakeholders to discuss developments in hydrogen and carbon capture technologies and opportunities for collaboration.

Think20 South Africa Summit

As a member of the Think20 (T20) network, KAPSARC participated in a panel titled “Quo Vadis Global Governance?” alongside representatives from the United Nations. The session explored the future of global cooperation amid growing political divisions and institutional challenges. KAPSARC also contributed to a discussion titled “Whole-of-Economy, Whole-of-Society Energy Transitions,” examining how achieving a fair energy transition requires systemic changes across economic and societal structures.

2025 World Bank and International Monetary Fund (IMF) Annual Meetings

KAPSARC President Fahad Alajlan participated in a panel titled “Unlocking Capital, Innovation & Jobs for a Resilient Energy Future” held in Washington, DC.

The session explored the role of investment, innovation, and policy frameworks in supporting resilient energy systems and advancing the broader energy transition.

Drake Energy Security Forum

KAPSARC President Fahad Alajlan and Board Advisor Adam Sieminski participated in the Drake Energy Security Forum, a nonpartisan, senior-level conference held annually in the United States. The forum brings together policymakers, industry leaders, and experts to discuss major issues related to energy security and sustainable energy development from a U.S. perspective.

World Energy Council

KAPSARC President, Fahad Alajlan, who also serves as Chair of the Middle East and Gulf States at the World Energy Council, participated in a session titled "Energizing Abundance: Realizing Success Beyond Supply." The discussion examined perspectives on energy supply, market dynamics, and the broader considerations shaping the future of global energy systems.

United Nations Industrial Development Organization (UNIDO) 21st General Conference

KAPSARC contributed to the UNIDO 21st General Conference through high-level interventions addressing clean hydrogen investment and international carbon market mechanisms.

The discussions highlighted the role of innovation and the implementation of Article 6 of the Paris Agreement in mobilizing private-sector finance for decarbonization initiatives.

Institute of Electrical and Electronics Engineers (IEEE) Power & Energy Society Innovative Smart Grid Technologies Middle East Conference

KAPSARC presented peer-reviewed research examining the use of artificial intelligence to enhance the resilience of Saudi Arabia's power grids during extreme heat waves. The presentation highlighted analytical approaches to improving grid stability under climate-related stress conditions.

9th GCC Economic Modeling Workshop

KAPSARC participated in the 9th workshop titled "Exchanging Experiences in the Field of Building and Using Economic Models," organized by the Economic and Development Affairs Office of the General Secretariat of the Gulf Cooperation Council (GCC).

During the workshop, KAPSARC showcased its modeling expertise and applied research, including recent analytical work supporting fiscal, monetary, and energy transition policy discussions. The participation contributed to strengthening regional collaboration in applied economic modeling and supported capacity building across GCC member states.

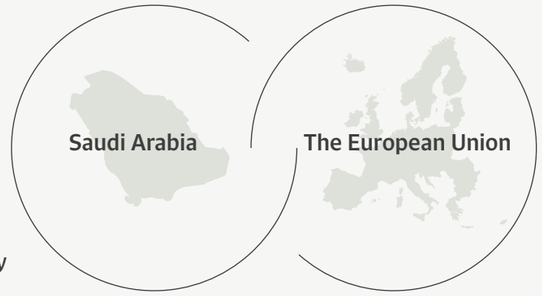
Bridging Policy and Practice: EU-KSA Cooperation for a Secure Energy Future

KAPSARC co-hosted a high-level workshop with the Delegation of the European Union to Saudi Arabia to advance strategic cooperation on energy security and transition pathways.

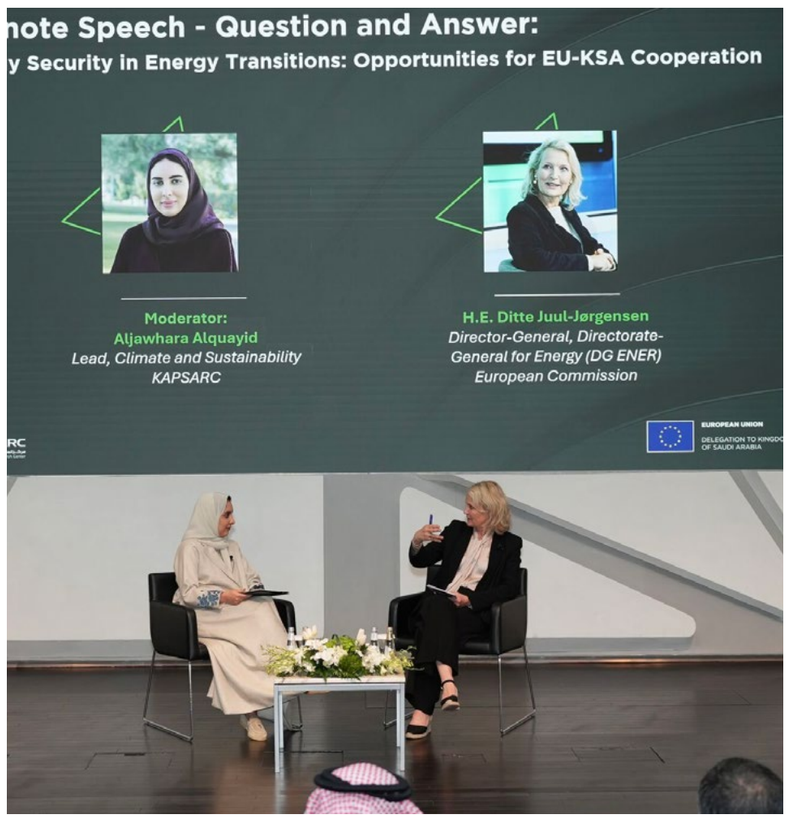
The workshop brought together senior policymakers, industry leaders, and technical experts, including representatives from Électricité de France, and ACWA Power, under the theme “Powering the Transition: Industry Insights and Policy Strategy for a Sustainable Future.” Senior EU officials emphasized the importance of pragmatic, cross-regional collaboration to strengthen energy system resilience amid evolving global market dynamics.

Discussions focused on aligning policy frameworks with industry realities

Enhancing cooperation between



These discussions identified practical approaches to balancing energy security with long-term sustainability objectives.



KAPSARC-KAUST Strategic Collaboration

King Abdullah University of Science and Technology

KAPSARC advanced its strategic collaboration with King Abdullah University of Science and Technology (KAUST), identifying priority areas for institutional alignment and establishing structured pathways for sustained cooperation.

Dedicated engagements between KSPP and KAUST counterparts further integrated complementary strengths across research, education, and policy engagement.

This milestone laid the foundation for joint initiatives that bridge scientific research and public policy development, strengthening evidence-based decision-making within the Kingdom and beyond.

Power and Carbon Markets: How Well-Designed Markets Can Address Climate Change

جمعيـــة اقتصاديـــات الطاقـــة
Saudi Association for Energy Economics

In collaboration with the Saudi Association for Energy Economics, KAPSARC hosted Professor Michael Pollitt from the University of Cambridge for a lecture examining European and Chinese power market experiences and their relevance to Saudi climate policy.

The session brought together 86 participants from government, academia, and industry, fostering valuable dialogue on market design, regulatory frameworks, and climate-mitigation strategies.

Editor-in-Chief at the Stanford Doerr School of Sustainability

KAPSARC organized a high-level knowledge-sharing program featuring Jeffrey Ball, Editor-in-Chief at Stanford University's Doerr School of Sustainability, in collaboration with the Ministry of Energy and the KAPSARC School of Public Policy (KSPP).

The program concluded with an evening fireside chat that convened KAPSARC leadership and staff alongside guests from the Stanford Club of Saudi Arabia, the Saudi Columbia Alumni Club, and the Saudi Energy Leaders Assembly (SELA), fostering meaningful exchange across academic and policy communities.

SELECTED HIGH-LEVEL ENGAGEMENTS

German Delegation

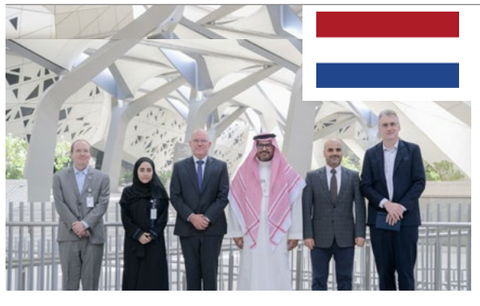
The delegation, led by Jochen Flasbarth, State Secretary for the Environment, Climate Action, Nature Conservation, and Nuclear Safety, engaged in discussions on KAPSARC and KSPP's work in climate policy, sustainability, hydrogen development, and carbon capture, utilization, and storage (CCUS).

Swiss Delegation

A Swiss delegation led by Dr. Martina Hirayama, State Secretary for Education, Research, and Innovation, and Mrs. Yasmine Chatila Zwahlen, Ambassador of Switzerland to Saudi Arabia, met with KAPSARC leadership for an overview of the operations of the Center and KSPP programs and areas of collaboration.

Australia Delegation

KAPSARC hosted H.E. Mr. Miles Armitage, Ambassador of Australia to Saudi Arabia, for discussions on hydrogen development, critical minerals, and electricity market dynamics.



Dutch Embassy Delegation

The delegation, led by H.E. Hans Peter van der Woude, Ambassador of the Kingdom of the Netherlands to Saudi Arabia, explored opportunities for a future Dutch business delegation to engage with KAPSARC on bilateral exchange in emerging carbon removal and hydrogen technologies.

Japan Embassy Delegation

KAPSARC hosted a delegation from the Embassy of Japan to exchange views on developments in Saudi Arabia's evolving energy sector.

Conference of Parties 30

KAPSARC hosted Ambassador André Corrêa do Lago, President of COP30, for discussions on the Circular Carbon Economy (CCE) Framework as a flexible approach to implementing the Paris Agreement. The dialogue highlighted areas of alignment between the CCE Framework and COP30 priorities.

Gas Exporting Countries Forum

KAPSARC hosted H.E. Mohammed Hamel, Secretary General of the Gas Exporting Countries Forum (GECF), for discussions on natural gas market developments, methane emissions mitigation, and broader energy security considerations.

Électricité de France

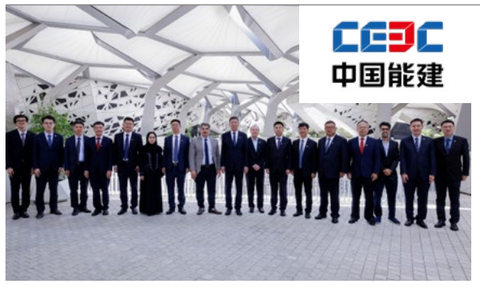
KAPSARC engaged with Électricité de France (EDF) to discuss developments in power markets, hydrogen, and advanced energy technologies.

Global Bridges

KAPSARC hosted a 31-member German delegation as part of a study tour to Saudi Arabia organized by Global Bridges. The delegation was led by Ambassador Wolfgang Ischinger, President of the Munich Security Conference Foundation Council, and facilitated by Malte Hohlfeld, Chairman of Global Bridges. The program included presentations on KAPSARC's advisory services and climate and energy economics programs.

World Bank Delegation

KAPSARC hosted senior delegations from the World Bank Group, including Axel van Trotsenburg, Senior Managing Director; Ousmane Dione, Vice President for the Middle East and North Africa, Afghanistan, and Pakistan; Suhail Saeed, Saudi Arabia's Executive Director; and Safaa El Tayeb El-Kogali, GCC Country Director. Discussions addressed energy transition, CCUS viability, hydrogen economics, and opportunities to strengthen collaboration.



Energy China Delegation

KAPSARC hosted senior leaders from Energy China's headquarters and local offices to explore opportunities for collaboration. Discussions focused on leveraging Energy China's technological capabilities to support joint techno-economic studies, with follow-up meetings planned to assess potential areas of cooperation.

International Monetary Fund

KAPSARC met with a joint delegation from the International Monetary Fund (IMF) and the Ministry of Finance to discuss global oil market trends, the energy transition, and Saudi Arabia's sustainable development priorities.

GOLDMAN SACHS

KAPSARC hosted Goldman Sachs to exchange views on financial market influences on oil prices, global demand forecasts, and the impact of geopolitical developments on energy markets.

CITI

KAPSARC hosted Max Layton, Global Head of Commodities Research at Citi, along with representatives from the Ministry of Energy, for discussions on the role of financial markets in oil price formation, U.S. energy policy developments, short-term global oil market outlooks, and long-term demand prospects.

Honeywell

KAPSARC hosted Honeywell to discuss developments in artificial intelligence, aviation sustainability, and energy innovation.

Morgan Stanley Capital International

KAPSARC welcomed Henry Fernandez, Chairman and CEO of Morgan Stanley Capital International (MSCI), along with Sebastien Lieblich, Head of Index Products, and Justin Kennedy-Lunde, Head of Middle East, for discussions on the Center's work and areas of engagement.

Additional Visits to KAPSARC in 2025

The Oxford Institute for Energy Studies · EPRI Electric Power Research Institute · Wood Mackenzie · SIA Energy · Center for a New American Security

ERCST Roundtable on Climate Change and Sustainable Transition · IEA · Agora Energiewende · choose new jersey · PIK

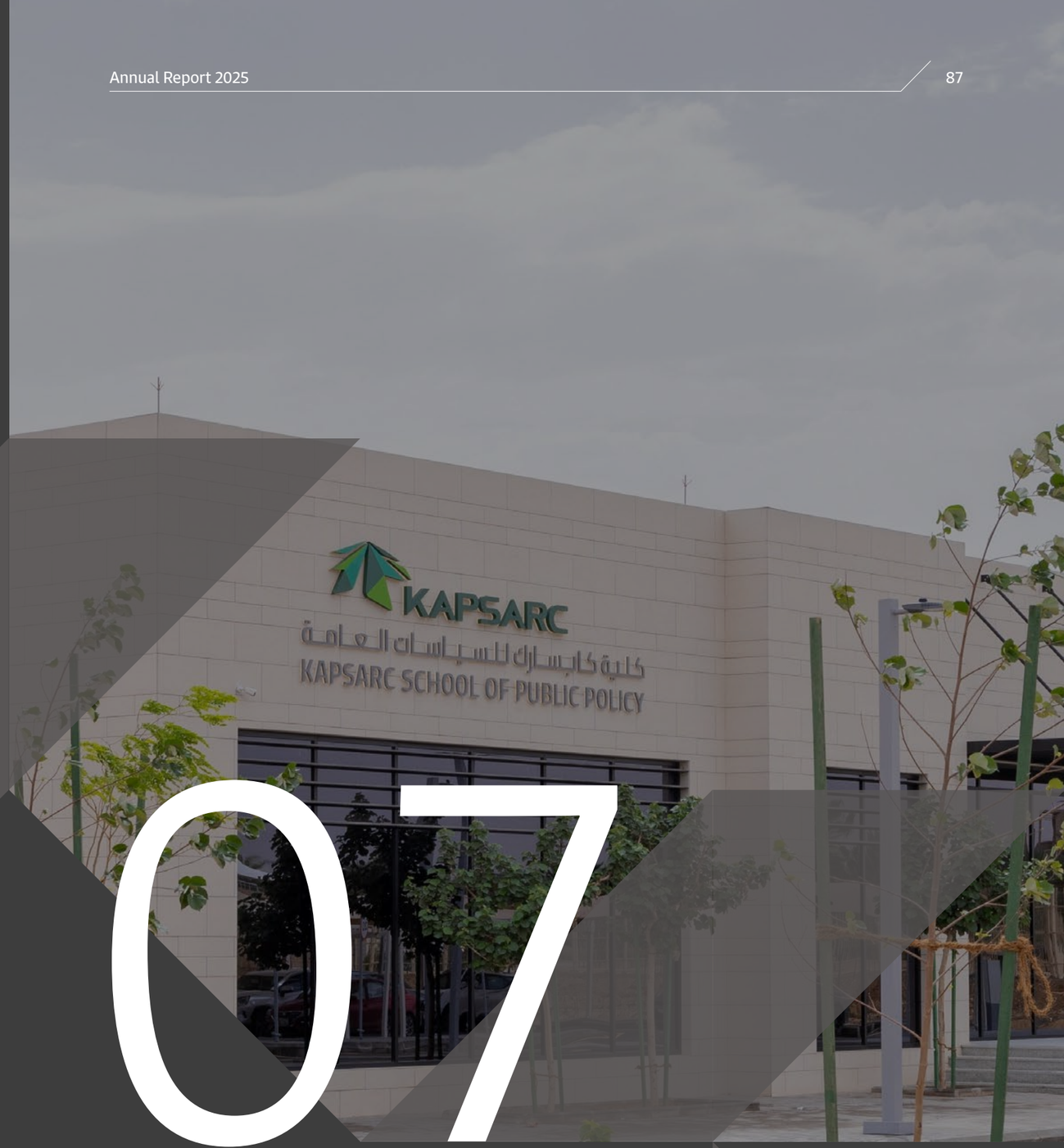
Atlantic Council Global Energy Center · HSBC · S&P Global Commodity Insights

J.P.Morgan · Institute for Advance Studies and Cooperation · Sinopec · Northern Trust

JBIC 国際協力銀行 · ExxonMobil · EDC Export Development Canada Exportation et développement Canada · Gaffney Cline

KAPSARC SCHOOL OF PUBLIC POLICY (KSPP)

07



ADVANCING PUBLIC POLICY EDUCATION AND CAPACITY BUILDING

In 2025, KSPP achieved significant progress across its core areas of operation. It launched the second cohort of the Master of Public Policy (MPP) program, with a significant increase in enrollment applications. It also delivered a broad portfolio of executive education and continuous professional development programs targeting leaders and employees across the public and private sectors, contributing to institutional capacity building and strengthening leadership and analytical skills.

On the academic front, KSPP strengthened its scholarly presence by hosting specialized international conferences and actively participating in regional and international academic forums. It also supported student engagement in research and scholarly activities.

GRADUATE PROGRAMS

Overview of the Master of Public Policy Program

The MPP program serves as the School's flagship academic offering. It is designed to meet the growing need for highly qualified national cadres equipped with the analytical knowledge and leadership skills required to formulate and evaluate public policy in the Kingdom of Saudi Arabia and globally.

The program provides students with a strong foundation in:

Policy Analysis	Enabling them to address challenges related to	Economic
Strategic Thinking		Social
Data-Driven Decision-Making		Environmental

STUDENT AFFAIRS

Admission Statistics

The program demonstrated measurable growth between its first and second cohorts. While the inaugural cohort reflected strong diversity in academic and professional backgrounds across engineering, science, social sciences, and health disciplines, the second cohort recorded substantial increases in both applications and admissions. The expanded intake also maintained diversity in academic qualifications and professional experience, indicating rising demand for the program and continued institutional development.

First Cohort

25
Students

28%

Female

Second Cohort

60
Students

43%

Female

Academic disciplines

40	STEM	21	Social sciences	14	Health sciences
8	Humanities	2	Other disciplines		

Students' academic qualifications

42	Bachelor's degree	32	Master's degree	11	Doctoral degree

6.2

Average years of experience

EXECUTIVE EDUCATION AND CONTINUOUS PROFESSIONAL DEVELOPMENT PROGRAMS

In 2025, the School delivered a diverse portfolio of executive education programs, including both open-enrollment offerings and customized programs tailored to specific organizations. The number of programs delivered reflects the School's operational capacity to scale and its responsiveness to the growing demand for public policy and leadership development programs:

33
programs

912
participants

180
days of training

+100
beneficiary organizations

90%
participant satisfaction rate

Beneficiaries

The executive education programs targeted a wide range of beneficiaries, including leaders and professionals from:

- Government organizations
- Semi-governmental organizations
- The private sector
- Civil society organizations

This diversity contributed to cross-sector knowledge exchange and enriched the overall training experience for participants.

The executive education and continuous professional development programs delivered in 2025 were implemented in partnership with nine academic institutions, including leading international universities and colleges, as well as specialized local universities.

A number of programs were delivered by KSPP faculty members and specialized researchers at KAPSARC, who contributed to the design and delivery of tailored training content. Their contributions were grounded in academic research and practical expertise in public policy, energy, sustainability, and leadership.

Program Partners

جامعة الملك عبدالله للعلوم والتقنية
King Abdullah University of Science and Technology
Luiss Business School
IMD
Duke
Georgetown University
VENTURE INTERNATIONAL
FULLBRIDGE Get Ahead. Stay Ahead.®
Center for Creative Leadership
Hertie School
LIMINALARC

Training Areas

The executive education programs covered a range of priority areas of national importance, most notably:

- Public policy and decision-making
- Public sector management and leadership
- Energy, sustainability, and climate policy
- Economics and public finance
- Applied analysis and governance

Flagship Executive Education Programs

The Public Leadership Executive Program – Cohort Four

The Public Leadership Executive Program offers an advanced, transformative learning experience at the intersection of public policy and leadership. It is designed for senior executives with extensive leadership experience, with a strong emphasis on practical application through group projects and simulation-based exercises. This approach ensures that participants return to their organizations equipped with applicable skills and a broad leadership perspective.

Target audience

Mid-career executive leaders

37 participants

6 months

6 training modules

- Program learning journey (September 2024 – May 2025):

Module 01	Module 02	Module 03	Module 04	Module 05	Module 06
Strategy and Policy	Leading Self, Teams, and Organizations	Public Policy: Design and Implementation for Success	Scenario Planning	Leading Negotiation	Capstone Project

The Emerging Leaders Executive Program – Cohort Three

The Emerging Leaders Executive Program is designed for high-potential professionals nominated for future leadership roles. It integrates leadership development, innovation, business acumen, and applied policy studies.

The program spans 12 months and is delivered in collaboration with academic partners, enabling participants to develop the core competencies required to address future governance challenges.

41
participants

12
months

6
training modules

- Program learning journey (September 2024 – September 2025):

Module 01	Module 02	Module 03	Module 04	Module 05	Module 06
Leadership Essentials	Driving AI with Impact and Introduction to the Enterprise Project	Introduction to Developing Policies	New Business Fundamentals and Value Creation	Discovery Expedition	Capstone Project

Customized Training Programs

Customized programs constituted a core pillar of KSPP's executive education portfolio in 2025. Several training programs were designed and delivered in direct collaboration with national organizations, with the objective of addressing specific institutional needs and building qualitative capabilities among their employees.

Ministry of Energy

01 Leadership Program

The School delivered a leadership program in collaboration with the Center for Creative Leadership (CCL), targeting 48 mid-level managers from the Ministry of Energy. The program focused on developing leadership and behavioral skills and strengthening the participants' ability to translate strategy into operational performance. The program was delivered in 16 training days across two training modules.

16 days | **48** participants | Partner: Center for Creative Leadership

02 Graduate Development Program

Through this program, the School targeted 39 participants from among Ministry of Energy graduates. The program focused on developing professional and behavioral skills, while strengthening knowledge in the areas of public policy, energy, and the environment. This approach aimed at enhancing participants' readiness for their career pathways at the Ministry.

2 weeks | **39** participants

Public Investment Fund (PIF)

01 The Business Process Management Program

The Business Process Management Program provided participants with structured methodologies and practical tools to analyze, enhance, and optimize organizational processes. The curriculum focused on strengthening process efficiency, improving workflow design, and ensuring alignment with strategic objectives and governance standards.

4 days | **26** participants | Partner: VENTURE INTERNATIONAL

02 The Policy Development Program

The Policy Development Program was designed to strengthen participants' capabilities in analyzing, designing, and implementing public policies. The curriculum emphasized applied policy tools and evidence-based approaches, with a focus on aligning policy outcomes with PIF's strategic priorities and national transformation objectives.

3 days | **28** participants | Partner: LIMINALARC

Saudi Awwal Bank (SAB)

Graduate Development Program in Sustainability

KSPP delivered a customized Sustainability Training Program for Saudi Awwal Bank (SAB). The four-month program was designed for 14 graduate participants as part of the bank's internal graduate development pathway.

4 months

14 participants

The program was structured to introduce participants to core sustainability concepts within the financial sector, with a particular focus on the integration of sustainability considerations into banking operations and strategic decision-making.

The curriculum covered:

- Sustainable banking principles and frameworks
- Sustainability policy and regulatory developments
- Sustainable finance instruments and market trends
- Commercial and forward-looking skills relevant to emerging sustainability requirements

The program combined structured theoretical sessions with practical components, including applied discussions and case-based learning. This blended approach enabled participants to engage with sustainability topics from both conceptual and operational perspectives.

DEVELOPING FUTURE TALENTS

As part of KSPP's commitment to developing national talent and building capacity in public policy, the School launched two summer programs in 2025 targeting university and high school students.

01 KSPP Acceleration Program

The KSPP Acceleration Program targeted university students and recent graduates, focusing on developing skills in economic analysis, policymaking, and data analytics. It also enhanced participants' understanding of energy markets, sustainability, and climate policy, while strengthening leadership and financial skills. The program is designed to support participants' readiness for advanced professional and academic pathways in public policy.

50
participants

20
universities

56%
female

25%
GCC/International universities

Universities of participating students

جامعة الملك عبدالله للعلوم والتقنية
King Abdullah University of Science and Technology

الجامعة السعودية الإلكترونية
SAUDI ELECTRONIC UNIVERSITY
2011-1432

جامعة طيبة
TAIBAH UNIVERSITY

جامعة الإمام عبدالرحمن بن فيصل
IMAM ABDULRAHMAN BIN FAISAL UNIVERSITY

جامعة الأميرة نورة بنت عبدالرحمن

جامعة اليمامة
Al Yamamah University

جامعة الملك سعود
King Saud University

جامعة الشارقة
UNIVERSITY OF SHARJAH

جامعة الأمير سلطان
PRINCE SULTAN UNIVERSITY

جامعة الفيصل
Alfaisal University

جامعة أم القرى
UMM AL-QURA UNIVERSITY

Massachusetts Institute of Technology

THE UNIVERSITY of EDINBURGH

UNIVERSITY OF LIVERPOOL

KING'S College LONDON

JOHN CABOT UNIVERSITY

جامعة تبوك

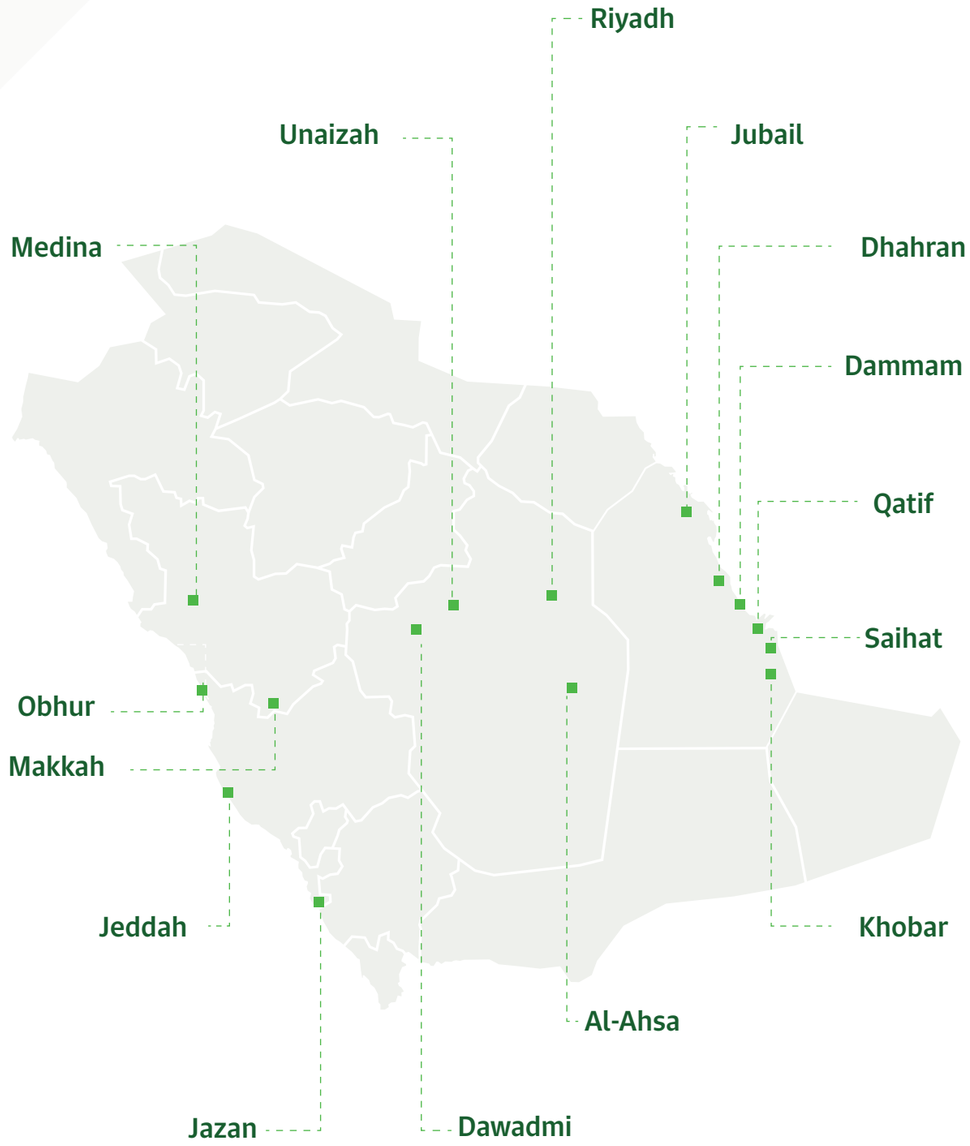
02 Summer Policy Immersion Program

The program was designed for gifted high school students in Saudi Arabia and focused on introducing participants to sustainability concepts and related global challenges. It also covered the foundations of public policy, the Sustainable Development Goals (SDGs), and the development of foundational skills in data collection and analysis. The program contributed to raising students' awareness of the role of public policy in addressing environmental and development issues and preparing them for future academic pathways.

68
students

64%
female

15
cities around Saudi Arabia



CONFERENCES AND SCHOLARLY ENGAGEMENT

Events Hosted

Young Researchers and Professionals Day – Middle East and North Africa (MENA) Region

KSPP hosted the Young Researchers and Professionals Day for the Middle East and North Africa (MENA) region in collaboration with the International Association for Energy Economics (IAEE-MENA). Held as part of the Third IAEE MENA Conference in Riyadh, the event brought together Ph.D. students, recent graduates, and early-career professionals in the energy sector.

The program provided a platform for mentorship and professional networking, featuring discussions on leveraging research for career advancement and navigating academic publishing. The initiative supported knowledge exchange and strengthened regional engagement within the energy policy and research community.

Participation in Exhibitions and Conferences

Local Participation

The Global Conference for Giftedness and Creativity (Mawhiba), with the School contributing to discussions focused on human capital development.

The Human Capability Initiative 2025, with the School contributing through the delivery of scholarly sessions on transition risk measurement and decarbonization scenarios.

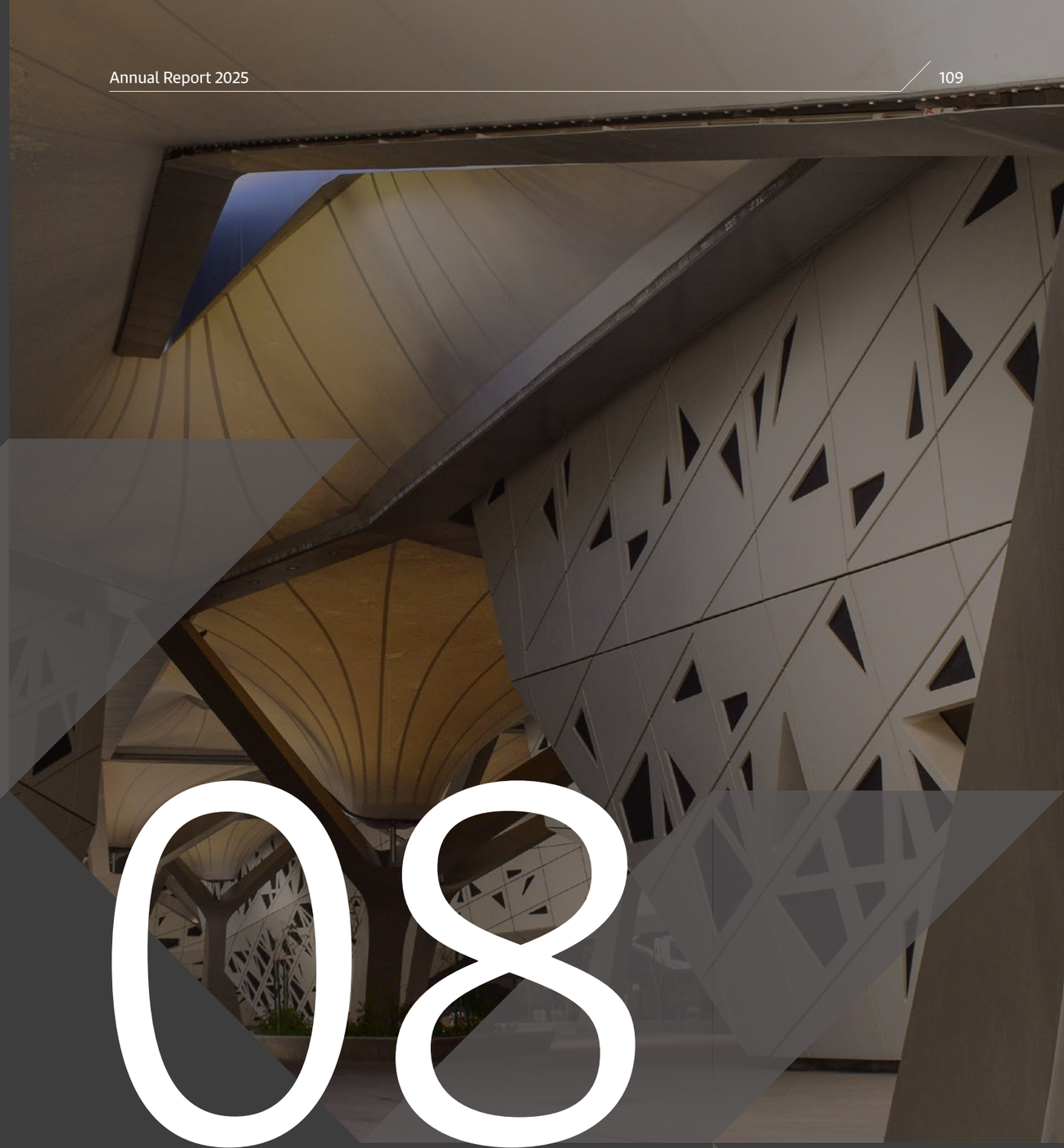
International Participation

The International Conference of the International Public Policy Association (IPPA)

The Annual Meeting of the Allied Social Science Associations (ASSA)

The Conference of the Association for Public Policy Analysis and Management (APPAM)

The OPEC International Seminar

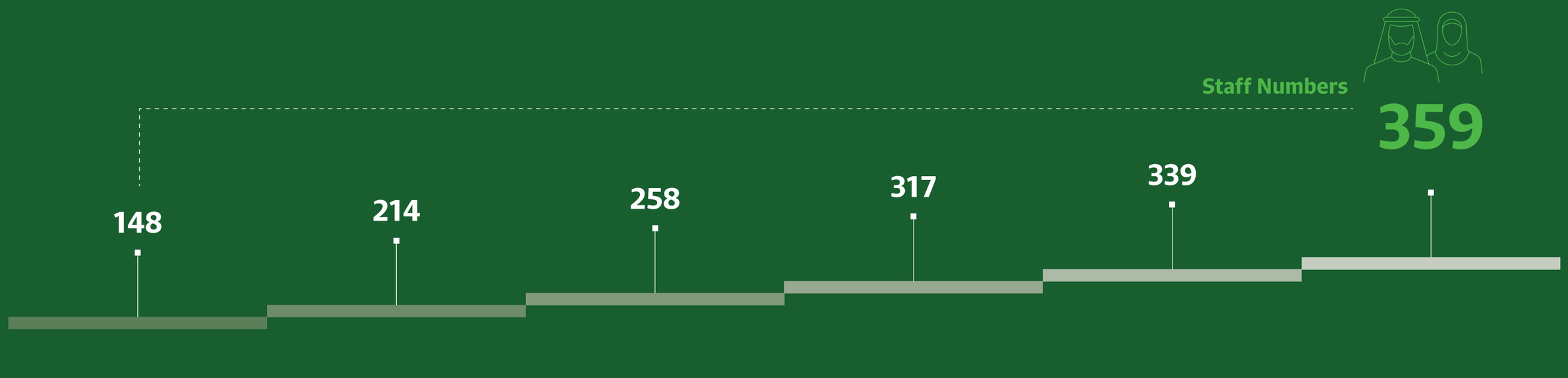


WORKFORCE GROWTH AND EMPLOYEE DEVELOPMENT

08

STAFF GROWTH 2020-2025

In 2025, KAPSARC's journey of institutional strengthening was reflected most clearly in its people. With 41 new joiners, the Center's total headcount reached 359, more than doubling since 2020. KAPSARC's growth reflects its expanding mandate and increasing impact.



STRENGTHENING LEADERSHIP IMPACT FOR EXECUTIVE DIRECTORS AND DIRECTORS

Center for Creative Leadership

In 2025, KAPSARC advanced its leadership capability through the “Lead with Insights and Impact” program by the Center for Creative Leadership (CCL), designed for Executive Directors, Directors, and Senior Managers.

The program is anchored in a structured 360° leadership assessment, generating comprehensive and confidential feedback across the organization. In this cycle, 43 leaders participated, generating a total of 640 assessment ratings.

43
Leaders

8
coaching sessions

The program focuses on three core objectives:

01 Enhancing people management coaching and feedback capabilities.

02 Increasing employee engagement and retention.

03 Strengthening leaders’ self-awareness through structured feedback.

Participants undertake a personalized development journey that includes eight coaching sessions delivered over several months. These sessions are separate from performance evaluations, allowing participants to translate assessment insights into focused leadership development plans. This structured approach strengthens accountability, enhances leadership maturity, and supports sustained organizational impact.

Coaching is provided exclusively for the senior team as part of the Leadership Development Program and is not linked to performance evaluations or assessment processes.

BUILDING THE FUTURE LEADERSHIP PIPELINE: HIGH POTENTIAL PROGRAM (HIPO)

In 2025, KAPSARC launched its High Potential Program (HiPo) to systematically identify and develop future leaders from within the organization.

The program adopted an inclusive approach, enabling employees to self-nominate. Following an independent assessment center process conducted in collaboration with a third party, participants were selected for the inaugural cohort, representing an acceptance rate of 46%. Of those selected, 38% are female, reinforcing the Center's commitment to inclusive talent development.

The key objectives of the program are:

- Identify employees who possess the potential to take on leadership positions or roles critical to the organization's future success
- Focusing on developing the leadership skills and competencies required for future roles
- Increase the organization's ability to be flexible and successfully respond to new challenges

Each participant undergoes a customized learning and development pathway designed to address individual strengths and growth areas.

Through a blended format combining in-person sessions and virtual modules, the program strengthens strategic thinking, decision-making, and cross-functional collaboration. More than a development initiative, HiPo establishes a structured internal leadership pipeline to support institutional continuity and long-term sustainability.

FROM LEARNING TO IMPACT: GRADUATE DEVELOPMENT PROGRAM (GDP)

The Graduate Development Program (GDP) continues to serve as a structured entry pathway for junior talent at KAPSARC, strengthening the Center's long-term capability pipeline.

Since its launch, the program has attracted increasing interest.

In 2025 alone

9,500+
applicants applied

comprising **17** graduates

65%
placed in the Consulting Division and the remainder across other functions

The cohort reflects strong diversity

59%
female participation

29%
holding master's degrees

GDP participants represent leading global and national universities, including:

This builds on previous cycles:

2022
- 2,000+ Applicants
- 19 Accepted
- 12 Hired

2023
- 3,000+ Applicants
- 26 Accepted
- 22 Hired

2024
- 3,600+ Applicants
- 22 Accepted
- 17 Hired

In 2025, the third GDP cohort concluded its one-year journey with a Capstone Initiative designed to translate learning into practical impact. Five projects were presented to leadership and senior management teams, addressing institutional priorities including:

01

Advancing institutional excellence in research and advisory operations.

02

Enhancing cost efficiency and utilization of services.

03

Strengthening data infrastructure and systems.

04

Increasing green energy utilization on the KAPSARC campus.

05

Promoting ethical AI practices in consulting and research.

EXPANDING TARGETED LEARNING OPPORTUNITIES

In 2025, KAPSARC continued to strengthen its institutional capabilities through structured and targeted learning.

A total of 170 training programs were completed across technical, professional, and leadership domains, reinforcing the Center's commitment to continuous development.

collectively, employees accumulated
1,644
training days

averaging
3.2
training days per employee

Training efforts were concentrated in priority competency areas central to KAPSARC's mandate, including:

- Energy Sector Fundamentals
- Economic Modeling
- Climate Change Mitigation
- Oil and Market Modeling
- Consulting Skills

The learning portfolio drew on programs delivered by leading global and regional institutions, including:

aramco · KAPSARC School of Public Policy · The Oxford Institute for Energy Studies · BCG · LSE The London School of Economics and Political Science · ETC The Energy Training Centre · pwc

INVESTING IN ADVANCED ACADEMIC DEVELOPMENT: KAPSARC EMPLOYEE EDUCATION PROGRAM (KEEP)

The KAPSARC Employee Education Program (KEEP) remains a key pillar of the Center's long-term talent strategy, supporting employees in pursuing advanced academic qualifications aligned with institutional priorities. Since its inception, the program has benefited 55 employees.

total of
55
KEEP beneficiaries

In 2025, the program recorded

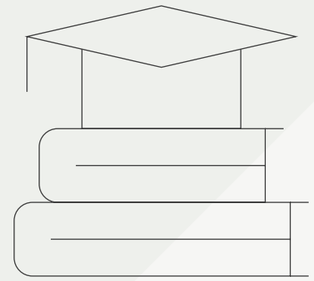
26
total beneficiaries

20
ongoing enrollments across full-time and flexible study tracks

6
employees completing their degrees during the year

Participants are enrolled across

12 leading international universities



Berkeley UNIVERSITY OF CALIFORNIA
MANCHESTER 1824 The University of Manchester
COLUMBIA UNIVERSITY
London Business School
ie BUSINESS SCHOOL
INSEAD The Business School for the World®
Yale University

Reflecting the Center's emphasis on academic quality and global exposure.

GLOBAL RECOGNITION OF RESEARCH EXCELLENCE

Stanford University's Top 2% Scientists

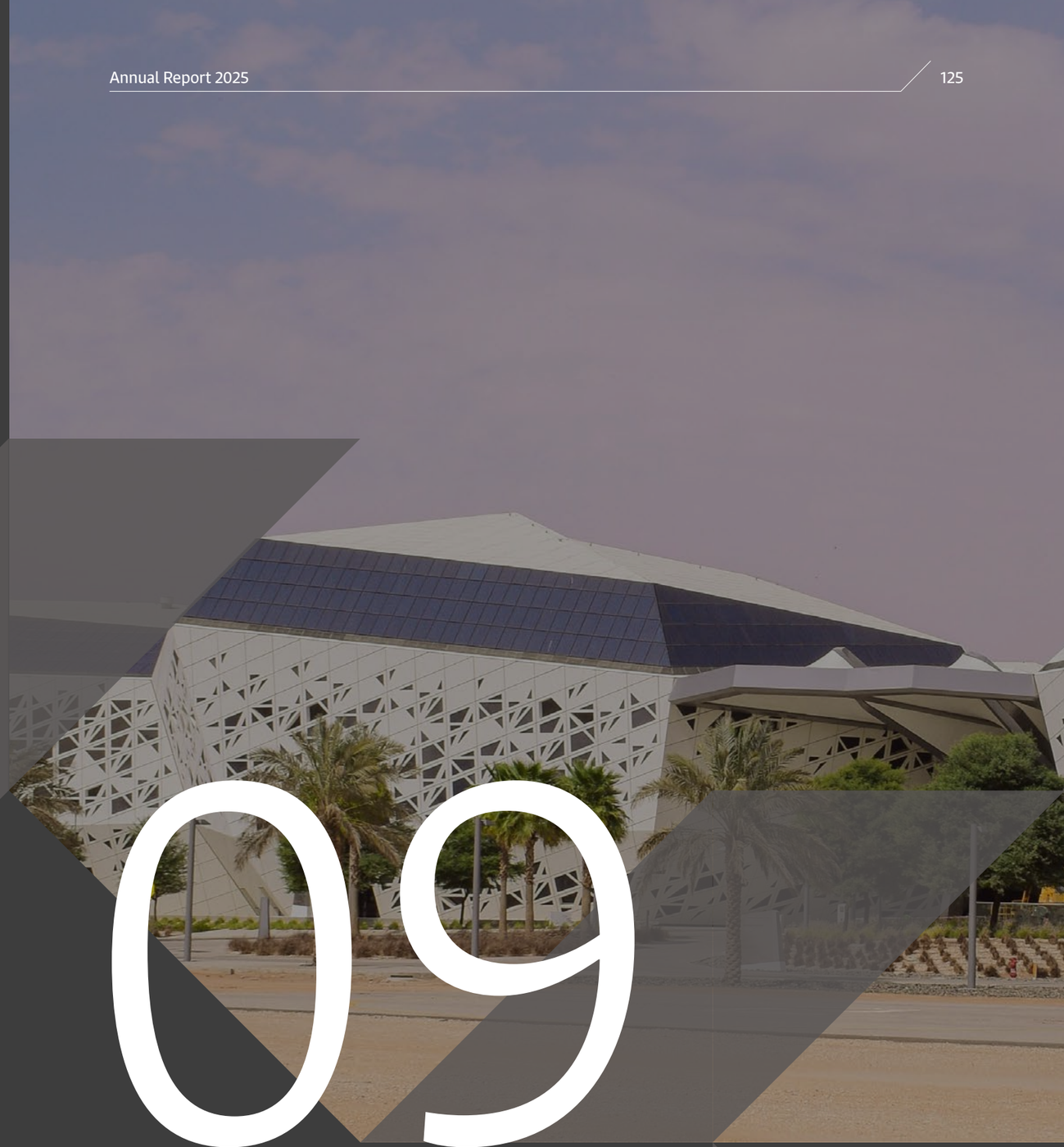
Two KAPSARC experts, Fateh Belaid and Fakhri Hasanov, were named among Stanford University's top 2% of the world's most influential scientists, based on citation impact and scholarly contribution. This recognition highlights the global influence and sustained academic impact of research produced at KAPSARC.

Best Paper Award SASG25 Conference

A research paper titled "Implications of Time-Varying Electricity Tariff Design for the Energy Transition in the Kingdom of Saudi Arabia," co-authored by Marie Petitet, received the Best Paper Award at the SASG25 Conference.

The study provides evidence-based insights into how tariff design can support energy transition objectives, enhance efficiency in electricity markets, and inform regulatory decision-making in Saudi Arabia. This recognition underscores KAPSARC's contribution to high-quality, policy-impactful research within the global energy dialogue.

ENHANCING OPERATIONAL EFFICIENCY AND INSTITUTIONAL VISIBILITY



09

DIGITAL TRANSFORMATION AND ENTERPRISE INTEGRATION

In 2025, KAPSARC advanced a series of initiatives aimed at strengthening digital capabilities, enhancing operational performance and governance maturity and improving user experience.

These initiatives

Enhanced institutional resilience

Expanded scalable analytical capabilities

Improved infrastructure performance

Reinforced data-driven decision-making across

- Consulting
- Knowledge and Analysis
- Finance and Operations

This transformation was delivered through a coordinated portfolio of initiatives spanning:

- Research platforms
- Enterprise performance management
- Governance digitization
- Operational systems
- Infrastructure modernization
- Cybersecurity resilience

Key initiatives included

- Research Content Management System (RCMS)
- Enterprise Project Management Solution - Clarity Program
- Operational and Employee Experience Platforms
- Network Refresh - Phase 2
- Security System Modernization and National Compliance

The initiatives collectively strengthened integration, automation, and institutional oversight across the Center.

EXPANSION OF DIGITAL PRODUCTS AND ANALYTICAL TOOLS

In 2025, KAPSARC expanded its portfolio of simulators and digital tools to strengthen policy modeling and scalable analytics.

New products included

- Residential Energy Efficiency Model (REEM) covering all 13 regions of Saudi Arabia
- Methane Emissions Dashboard for satellite-based monitoring
- CO_2 Remove tool supporting direct air capture site analysis
- Global Vector Autoregressive simulator for macroeconomic and energy shock analysis
- StationPulse AI analyzer
- Liquid Displacement Program dashboard

Data Platforms and Visual Narratives

The data.kapsarc.org platform recorded significant growth in 2025:

- **3,000** New registered users
- **15,000** Downloads
- **1,500,000** Searches
- **184** New datasets

Eight visual narratives were released to translate complex datasets into accessible insights across

- Energy
- Climate
- Economic topics

INSTITUTIONALIZING OPERATIONAL EXCELLENCE: PROCESS REPOSITORY INITIATIVE

In 2025, KAPSARC completed the development and organization-wide rollout of an internally developed Process Repository, establishing a structured foundation for operational clarity, accountability, and cross-functional alignment.

The initiative progressed through a structured journey that included:

- Organization-wide introductory workshops
- Development of a standardized process documentation template
- Department-level mapping and documentation of workflows
- Iterative review and refinement cycles
- Formal endorsement and validation

As a result

- **100% of core operations** were documented
- Approximately **230 key processes** were captured and standardized
- **100% of organizational units** were covered
- **30+ training sessions and working meetings** were conducted

The initiative established a centralized, accessible knowledge base that enhances transparency, supports onboarding, and reinforces consistent operational practices across the Center.

ADVANCING SUSTAINABILITY AND ENVIRONMENTAL PERFORMANCE

10

ADVANCING SUSTAINABILITY AND ENVIRONMENTAL PERFORMANCE

Sustainability remains integral to KAPSARC's operational framework and campus development. In 2025, the Center continued to enhance environmental performance through efficient resource management, sustainable infrastructure, and responsible operational practices. Guided by international standards and aligned with national priorities, these efforts delivered measurable progress across energy efficiency, water conservation, waste management, and biodiversity, reinforcing KAPSARC's commitment to sustainable and resilient institutional operations.

KAPSARC's Research and Office Complex (ROC) achieved LEED Platinum certification under the "Existing Buildings: Operations and Maintenance" category, reinforcing the Center's commitment to sustainability and operational excellence. This milestone builds on KAPSARC's broader portfolio of green building certifications across the campus.

KAPSARC sustainability certifications include:

LEED EBOM Platinum
community buildings

LEED NC Platinum
Research Office Complex (ROC)

LEED NC Platinum
community buildings

LEED Homes – Gold
community villas

LEED ND Certified
entire site

Energy and Water Management

Continuous conservation measures delivered:

6.6% ▲
reduction in normalized energy consumption

3.2% ▶
increase in solar production

2.65% ▲
reduction in normalized water consumption

10.7% ▲
decrease in water purchased from the national grid

Waste and Circular Practices

Waste management performance improved significantly

82%
overall recycling rate
42% increase
comparison with 2024

116,000 KG
of solid waste recycled
58% increase

4,000 KG
compost produced
26% increase

Landscaping and Biodiversity

Campus landscaping initiatives expanded environmental coverage

356
additional trees planted

22,625 M²
increase in green ground cover


كابسارك
KAPSARC