

2023 ANNUAL REPORT

King Abdullah Petroleum
Studies and Research Center



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--- Preface

01

Chairman's Message





In an era of swift global transformations, the Kingdom of Saudi Arabia remains steadfast in its pursuit of the ambitious objectives of Saudi Vision 2030. This vision aims to revolutionize our energy landscape, targeting 50% renewable energy by 2030. Supporting this mission, KAPSARC serves as a center of innovation, providing valuable insights and strategies to help shape the future of energy.

In 2021, we embarked on the transformative Tasami project, marking a significant milestone in our journey. By 2022, we had implemented a new strategy and operating model, positioning ourselves for even greater achievements. In 2023, we amplified our efforts with substantial expansions in hiring, advisory projects, publications, and the launch of the KAPSARC Academy, all of which are shaping our future trajectory.

This year, we proudly hosted the 44th International Association for Energy Economics (IAEE) Conference in Riyadh. Under the theme 'Pathways to a Clean, Stable, and Sustainable Energy Future. It brought together global energy leaders to tackle pressing energy challenges and explore innovative solutions, further cementing our position as a key player in the international energy dialogue.

In a major accomplishment, KAPSARC was recognized for its impactful energy research at the 8th OPEC International Seminar, receiving both the Best Energy Research Institute Award and the Best Energy Research Paper Award for its work on oil market stability. This prestigious recognition underlines KAPSARC's position as a world-class research center and trusted advisor on global energy challenges.

KAPSARC's research and publications have been instrumental in shaping global energy policy and sustainability discussions. From studies on energy transition in oil-dependent economies to analyses of residential electricity consumption efficiency, our work has provided invaluable insights and influenced policy decisions worldwide. Our efforts in advancing the Circular Carbon Economy (CCE) were also highlighted in the 2023 edition CCE Index, which provides a comparative overview of countries' readiness for net-zero transitions. KAPSARC's research has been crucial in identifying effective policies and strategies to balance economic growth with sustainability goals.

Strategic partnerships have been pivotal to our success. Collaborations with the World Energy Council, the Electric Power Research Institute (EPRI), and The Institute of Energy Economics in Japan have enriched our work and extended our influence in shaping global energy policies. These partnerships highlight our commitment to global sustainability and innovation.

Looking ahead, KAPSARC remains committed to driving progress and innovation in energy-related topics and policy advancement. Our previous accomplishments have laid a robust foundation for continued progress. KAPSARC employees will continue to lead and innovate, significantly contributing to the energy sector locally and globally.

We take pride in our accomplishments and are excited about the future. Together, we are shaping a brighter, more sustainable energy landscape for our Kingdom and the world.



Abdulaziz bin Salman Al Saud

President's Message



Reflecting on 2023, KAPSARC has significantly contributed to advancing global energy discourse and supporting the transition toward a sustainable energy future. This year has been marked by pivotal initiatives, collaborative efforts, and innovative research to address our time's critical challenges.

In 2023, we hosted the 44th International Association for Energy Economics (IAEE) Conference in Riyadh. This prestigious event was a first for the Middle East, bringing together global leaders to tackle pressing energy challenges and explore innovative solutions. The conference program provided a robust platform for exploring crucial energy issues, featuring 11 plenary sessions with a distinguished roster of 67 speakers. We received 388 submissions and held 50 concurrent sessions featuring 274 speakers. The conference concluded with an outstanding turnout of over 2,000 attendees from 90 different countries and an impressive satisfaction rate of 98%.

KAPSARC achieved a significant milestone at the 8th OPEC International Seminar in Vienna. We were honored with both the Best Energy Research Institute Award and the Best Energy Research Paper Award. This recognition underscores our impactful research shaping global energy discourse, providing solutions to critical energy challenges, and solidifying our position as a leading energy and sustainability research center.

As a key participant in MENA Climate Week, KAPSARC co-hosted four significant events and led nine in-depth sessions, showcasing our commitment to advancing climate action. These forums, spanning topics from data-driven policymaking to equitable net-zero transitions, highlighted the importance of regional solutions in combating climate change. Discussions were anchored by Saudi Arabia's ambitious sustainability goals, including the Saudi Green Initiative and its 2060 net-zero target, with active participation from diverse stakeholders. MENA Climate Week exemplified both Saudi Arabia's proactive approach to climate issues and KAPSARC's role in facilitating crucial dialogue. Our participation at COP28 in Dubai marked a significant achievement for the year.



We actively engaged in over 20 events, including hosting six panels on critical issues such as Hydrogen, the Circular Carbon Economy Index, Decarbonizing Aviation and Maritime, Clean Cooking, Satellite Technology for GHG Measurement, and the Net-Zero Knowledge Consortium. These contributions underscore our commitment to providing evidence-based insights crucial for developing effective global climate action strategies.

Our collaborative initiatives extended to forming strategic partnerships, such as our agreement with the Institute of Energy Economics, Japan (IEEJ), to accelerate innovation in energy research.

These partnerships are essential in driving forward our mission to provide impactful & practical solutions to the complex energy challenges faced by our stakeholders globally. This year, KAPSARC witnessed remarkable growth in its staff and capabilities. We onboarded 39 new hires, reflecting a 23% increase in our workforce, which includes a diverse and vibrant mix of talent. This growth underscores our ability to attract top professionals committed to advancing energy research and policy.

KAPSARC's commitment to impactful engagement extends beyond research. In 2023, we saw a significant rise in advisory engagement hours, reaching +57%. This reflects our growing role in providing policymakers and industry leaders with expert advice. Our dedication to knowledge dissemination is further evidenced by a remarkable 145% increase in publications, rising from 77 in 2022 to 189 in 2023. This publication surge ensures our research findings reach a wider audience & contribute meaningfully to global energy discourse.

KAPSARC's Employee Education Program (KEEP) supported 25 employees across various departments, emphasizing our commitment to continuous learning and development. These efforts ensure our team remains at the forefront of industry knowledge and innovation.

KAPSARC's digital transformation has been the foundation of our efforts to enhance efficiency and scalability. We have automated numerous processes, creating a smoother experience for our employees. Investments in advanced network technology have improved data handling, collaboration, and overall productivity while strengthening our cybersecurity measures.

In closing, 2023 has been a year of substantial progress and impactful contributions for KAPSARC. Our achievements are a testament to our team's dedication and expertise and our partners' unwavering support. As we move forward, we remain committed to fostering innovative research, facilitating informed policy discussions, and driving the global transition towards a sustainable energy future.

Together, as we march into 2024, let us carry the torch of innovation and leadership, ready to illuminate the path toward a sustainable energy future.

”

Fahad Alajlan



02

About
KAPSARC

About KAPSARC

King Abdullah Petroleum Studies and Research Center (KAPSARC)

KAPSARC is an advisory think tank within 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 combining human ingenuity, expertise, and research to solve pressing global energy challenges. Through our advisory services to the energy ecosystem, KAPSARC's 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

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

Strategic Objectives



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



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



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



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



Modernize and improve the efficiency and visibility of KAPSARC.

Our Values



Excellence



Transparency



Learning



Innovation



Collaboration

Our values serve as the cornerstone of our center. They are a set of fundamental beliefs and assumptions that guide and motivate our employees to achieve our desired culture.

Our values are based on our new vision and mission and are the driving force behind everything we do; they form the bedrock of our strategic objectives.

Upholding our values can create a workplace that encourages collaboration, creativity, and growth.

Our values inspire us to be accountable, respectful, and inclusive in all our endeavors as we strive to create a culture that values diversity, promotes learning, and encourages personal and professional development.



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 seek new and innovative ways to enhance our work constantly.



Transparency

Transparency is a fundamental principle, and we believe in acting with integrity and honesty. Our teams know they can rely on each other to share information and make their actions visible. By fostering a culture of transparency, we can build trust and accountability, both 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 seek new learning and development opportunities. By finding learning in everything we do, we can continue to push ourselves to be the best we can be.



Innovation

Our employees are encouraged to generate new ideas and turn them into useful solutions that add value to KAPSARC and the energy ecosystem. By embracing innovation, we can stay ahead of the curve and continue to impact our industry positively.



Collaboration

Collaboration is at the heart of everything we do. We recognize that no one person has all the answers and that the best solutions often come from a diverse group working together toward a common goal. Our teams work together, building purposeful relationships grounded in cooperation, fairness, and respect. By working together, we can achieve more than we ever could alone.

Domains and Focus Areas



Domains are broad fields that encompass the key areas of the energy sector. These domains represent the overarching fields in which KAPSARC can engage to understand the complexities of energy markets and sustainability challenges. We identify specific focus areas within these domains that drive our yearly project selection and strategic capability planning.

These focus areas are crucial to 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 our research is impactful, timely, and directly aligned with the energy strategies of the Kingdom and the evolving dynamics of the global energy landscape.

The Three Domains



01 Global Hydrocarbon Markets

Definition:

Global demand-supply trends, policies, economics, and technological advancements related to hydrocarbons.

Identified focus areas:

- Upstream Oil and Gas
- Petrochemicals
- Transportation
- Industrial Demand



02 Saudi Energy Sector

Definition:

The study of KSA's energy demand-supply trends, policies, economics, and technological advancements in power, renewables, hydrogen, and mobility.

Identified focus areas:

- Transport
- Infrastructure
- Power
- Energy efficiency
- Industry



03 Climate and Sustainability

Definition:

Carbon management, global energy transition, environmental and resource energy footprint, adaptation, and the resilience of energy systems.

Identified focus areas:

- Hydrogen
- Carbon capture, utilization, and storage (CCUS)
- Nature-based solutions
- Storage
- Climate and sustainability – targets and financing

KAPSARC's Advisory Offerings

KAPSARC's comprehensive advisory services offerings are grounded in rigorous research and supported by cutting-edge tools and methodologies.

Our advisory offerings are tailored to meet the specific needs of stakeholders in the energy sector. We empower our partners to make informed decisions in a rapidly evolving energy landscape by focusing on data-driven insights, strategy development, and knowledge sharing.

Below is a list of our primary offerings:



01 Evidence-Based Research and Insights

- Sector-specific outlooks, such as those from energy-intensive industries.
- Analysis of technology, markets, and risk.
- Sensitivity, feasibility, and impact analysis.
- Publication of journal papers and reports, including academic papers.
- Policy analysis.
- Ad hoc expert interviews/insights.
- Review/validation of external reports and data.
- Sensitivity analysis (e.g., scenario planning).
- Feasibility analysis (e.g., cost analysis).
- Needs-based assessment.
- Market analysis.
- Technology assessment (e.g., new tech).



02 Data, Models, and Tools (Analytics)

- Data sharing (e.g., datasets).
- Development of models, tools/software, and data platforms.
- Benchmarking.



03 Strategy

- Strategy development.



04 Knowledge Sharing

- Workshops, forums, and seminars.
- Virtual offerings, such as podcasts and webinars



03 Organizational Structure and Operating Model

Organizational Structure

KAPSARC operates with a structure that leverages advisory services, research insights, and operational efficiency, enabling us to achieve our goals.

Our functions are divided into three main areas:



Consulting



Finance and Operations



Knowledge and Analysis

Additionally, we have a Management Support function that provides strategic direction and encompasses strategic planning, partnerships, legal affairs, internal audits, and the KAPSARC Academy initiative.

President

01

Consulting

02

Knowledge and Analysis

03

Finance and Operations

04

Management Support

01 Consulting

As part of KAPSARC’s new operating model, the consulting function offers tailored, client-focused advisory services to the energy ecosystem. By collaborating closely with stakeholders, we understand their challenges and design solutions that leverage KAPSARC’s extensive knowledge and research expertise.

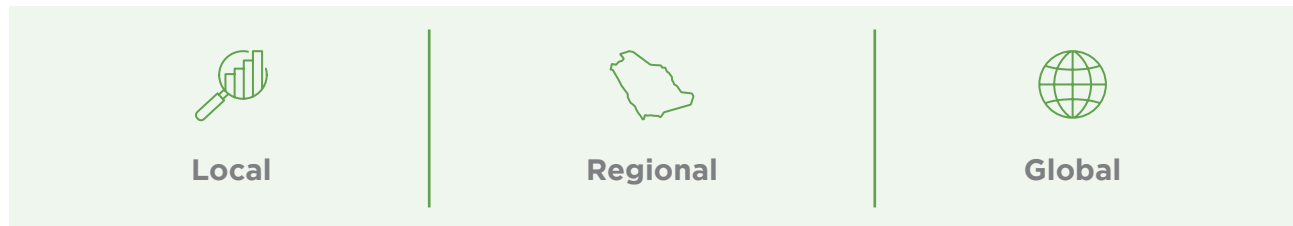
The consulting function brings together a team of experts to transform our services into practical solutions for our clients. Through a collaborative process, we engage with stakeholders, precisely define project requirements, set up the right team, and oversee project execution to deliver successful **advisory services that meet our client’s needs:**

▲ Pool of Consultants	Leverages a talent pool of highly skilled experts in various fields to deliver advisory projects based on their specific knowledge and experience.
▲ Staffing Management	Ensures the right consultants match the specific needs of each project.
▲ Project Planning and Management	Oversees the planning, execution, and delivery of successful consulting engagements.



02 Knowledge and Analysis

Focuses on bridging the gap between energy economics, the environment, and policy by tackling critical challenges:



The experts transform these challenges into actionable research questions, employing existing or new methodologies to analyze data and generate insights. The resulting knowledge is then disseminated to inform policy and contribute to the social and economic development of the Kingdom and the world.

Below are the programs and the departments that fall under Knowledge & Analysis:

Climate and Sustainability

Creates advanced models and analyses to guide policy decisions. Key initiatives include formulating net-zero strategies, expanding the Circular Carbon Economy Index, and exploring energy access and finance issues. The team actively engages in international forums to share its findings.

Energy Micro and Macroeconomics

Examines the interplay between energy markets and economies. This area addresses policy matters within the energy sector and constructs models to evaluate the economic ramifications of changes in energy markets. These models elucidate the implications of economic policies on energy use and inform sustainable development choices.

Oil and Gas

Investigates trends and directs the energy sector's path. It confronts current and anticipated industry challenges through research initiatives in vital areas, such as crude oil and natural gas markets. Its empirical insights offer economic and policy recommendations, carving a more secure and flexible energy landscape.

Utilities and Renewables

Addresses major challenges in the energy sector, including renewable energy integration, net-zero objectives, and regulatory shifts. It employs sophisticated modeling techniques to furnish pragmatic solutions, aiding the electricity industry in overcoming obstacles and progressing toward sustainability.

▲

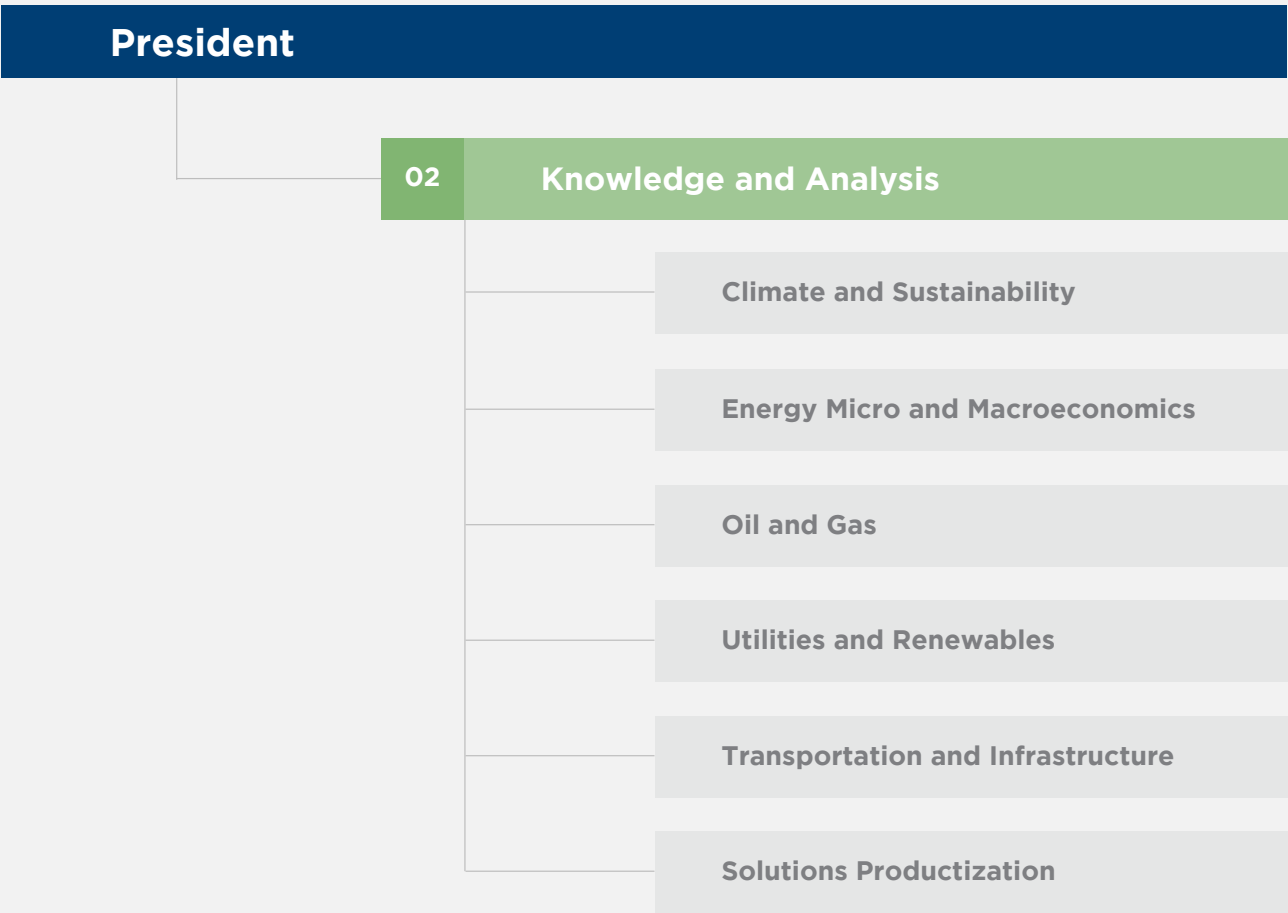
Transportation and Infrastructure

Studies how technological advancements, policy decisions, and investments shape transportation systems. It evaluates their effects on global and local oil demand by focusing on road, rail, aviation, and maritime transport. The T&I program investigates how evolving transportation dynamics alter our dependence on oil.

▲

Solutions Productization

Capitalizes on KAPSARC’s resources to simplify complex energy data into accessible products. Its objective is to cultivate a sustainable and informed energy sector in Saudi Arabia by developing cutting-edge data analysis tools, enhancing the KAPSARC open data portal, and creating web-based policy simulators. This holistic approach enables stakeholders to extract valuable policy insights from KAPSARC’s extensive data, models, and simulations.



03 Finance and Operations

The Finance and Operations function at KAPSARC is crucial for ensuring the smooth and efficient operation of the organization. It provides support across various areas essential to achieving KAPSARC's objectives, encompassing departments responsible for managing resources, infrastructure, and staff.

Human Resources

Leverages a talent pool of highly skilled experts in various fields to deliver advisory projects based on their specific knowledge and experience.

Information Technology

Fosters innovation by driving digital transformation initiatives and maintaining the organization's IT infrastructure. Delivers software solutions and ensures reliable network connectivity to support KAPSARC's growth and modernization.

Procurement

Handles acquiring essential supplies and services to ensure KAPSARC's operational needs are met, focusing on transparency, efficiency, and ethical standards in procurement processes.

Finance

Oversees KAPSARC's financial health, managing budgeting, forecasting, and financial practices. Ensures compliance with standards and regulations, manages cash liquidity, and maximizes the efficient use of funds.

Cybersecurity

Protects KAPSARC's data and systems against cyber threats by implementing robust security measures, maintaining vigilance against potential attacks, and ensuring the resilience of digital infrastructure.

Communications and Public Relations

Builds and maintains KAPSARC's public image through strategic communication initiatives. Manages internal and external communications to ensure consistent messaging and promote KAPSARC's work to diverse audiences.

▲

Facilities Management

Maintains a well-functioning environment by overseeing the upkeep and functionality of KAPSARC’s physical infrastructure, ensuring all facilities meet international standards, and providing a comfortable and effective workspace.

▲

Safety, Security, and Transportation

Prioritizes the safety of employees and assets by establishing robust safety protocols and providing efficient transportation solutions. It also manages security measures to maintain a safe working environment.



04 Management Support

The Management Support function at KAPSARC provides strategic direction and oversight.

It ensures alignment with long-term goals and adherence to strategic objectives, and it fosters collaboration. It drives success and responsible operations through partnerships, legal guidance, internal audits, and knowledge dissemination.

This structure ensures a collaborative environment where deep knowledge creation, consulting services, and efficient operations work together to achieve our organizational objectives.



Internal Audit and Risk

Reviews internal controls and risk management practices to identify and mitigate potential risks proactively, ensuring KAPSARC's financial health and operational integrity.

Legal Counsel

Provides legal guidance across the organization, ensuring compliance with applicable laws and protecting KAPSARC from legal risks.

Strategic Planning and Institutional Initiatives

Develops long-term strategic plans and oversees strategic initiatives, ensuring KAPSARC remains aligned with its goals and adapts to emerging opportunities. KAPSARC Academy, one of KAPSARC's institutional initiatives, offers training programs in public policy, leadership, and management for professionals across sectors. Collaborating with global and local educational institutions empowers stakeholders with the knowledge and skills to navigate the energy sector.

Strategic Partnerships

This department fosters valuable partnerships that enhance KAPSARC's success. Collaborating with key stakeholders leverages partnerships to strengthen KAPSARC's global influence.





2023 Key Milestones

01

Award-Winning
Achievement

02

Recognizing KAPSARC's
Research Pioneers

03

Hosting an International
Conference

01 Award-Winning Achievement

Recognized as the Best Energy
Research Institute by OPEC



The Center received the “Best Energy Research Institute Award” recognizing its influential role in producing impactful research that shapes public discourse on critical energy-related issues.

The OPEC Award for the Best Energy Research Institute recognizes past research efforts and encourages future endeavors.

In this regard, it honors energy institutes, which have made outstanding

contributions to increasing knowledge of the oil and energy industry.

The awarded entity is selected by a panel of professionals in energy research and industry from within and outside OPEC Member Countries and the OPEC Secretariat.

This award not only acknowledges KAPSARC’s past research efforts but also serves as an encouragement for the Center’s future endeavors.

02 Recognizing KAPSARC's Research Pioneers

(01) OPEC's Best Energy Research Paper Award by OPEC

KAPSARC has also received the "OPEC Award for the Best Energy Research Paper" for a paper on oil market stability, which was co-authored by Axel Pierru, Hossa Almutairi, and James Smith.

This award recognizes this influential study, which highlights the importance of OPEC's spare capacity in price stabilization through four critical journal papers.

This award underscores KAPSARC's significance and the valuable insights it offers to the energy industry. KAPSARC's exceptional contribution to energy research is further exemplified by its publications, and obtaining this award solidifies its position at the top of the field.

These recognitions underscore KAPSARC's steadfast adherence to its core values of innovation and collaboration, reflecting our commitment to conducting high-quality research that tackles global energy challenges.

Merging industry with academic expertise and a Middle Eastern perspective, KAPSARC is a crucial contributor to global energy and sustainability efforts, partnering with international research institutes and policy organizations.

These awards underscore KAPSARC's esteemed standing in the research community and its dedication to a sustainable energy future.



(02) Best Paper Award at IEEE Smart Grid Conference

This accolade was awarded for KAPSARC's research paper, "Competitiveness of Renewable Hydrogen Production in Saudi Arabia: Insights from a P2X Model."



Presented at the Renewable Energy Integration Track of the esteemed Institute of Electrical and Electronics Engineers (IEEE) Smart Grid Conference, co-hosted by the Ministry of Energy and IEEE, **this award is a testament to the exceptional work and dedication of KAPSARC researchers: Ahmed Albalawi, Amro Elshurafa, Khalid Alhadhrami, and Shahid Hassan.**

This study brings to light the economic competitiveness of renewable hydrogen production within two pivotal markets — Saudi Arabia and Germany.

Using a sophisticated power-to-X (P2X) model, the research analyzes and compares the production costs associated with green hydrogen, offering invaluable insights into the nuances of renewable energy economics and the potential for sustainable development.

The recognition of this work by a leading institute such as the IEEE highlights KAPSARC's role as a vanguard of renewable energy research. It underscores our collective effort toward fostering sustainable energy practices and policies that align with global sustainability goals.



03 Hosting an International Conference

The
44th

**International Association
for Energy Economics
(IAEE) International
Conference**



Hosted by KAPSARC
in Riyadh



February, 2023



This conference brought together a global audience to explore critical topics in energy economics and sustainability. Held under the theme *“Pathways to a Clean, Stable, and Sustainable Energy Future,”* the conference attracted attendees globally, reflecting KAPSARC’s efforts in energy economics and sustainability.

The conference program provided a robust platform for exploring crucial energy issues. Eleven plenary sessions featured a distinguished roster of 67 speakers, with a strong international presence.

Over 60% hailed from Asia, Europe, and Africa, while representation from North and South America provided a truly global perspective. These sessions tackled pressing topics like energy transition strategies, clean energy solutions, and the evolving dynamics of the global energy landscape. Complementing the plenary sessions, 50 concurrent sessions offered a deeper dive into specific areas of energy economics and sustainability.



Featuring 274 experts, these sessions facilitated in-depth discussions and fostered a valuable exchange of knowledge among attendees. This format ensured a comprehensive exploration of critical energy challenges from a variety of viewpoints.

The conference’s global reach was a significant factor in its success. With attendees representing over 90 nationalities, the discussions benefited from a rich diversity of perspectives. This global representation was further strengthened by the fact that 63% of the plenary speakers were international figures. This diversity of nationalities and viewpoints enriched the dialogues and debates, ensuring a well-rounded exploration of critical energy challenges.

The overwhelmingly positive feedback from participants, with a reported 98% satisfaction rate, speaks volumes about the conference’s success. The event served as a testament to KAPSARC’s dedication to fostering dialogue, collaboration, and research within the energy sector. **By setting a high bar for future conferences, KAPSARC has positioned itself as a key player in driving the global energy economics conversation forward.**





04

— Forging Meaningful Connections

Forging Meaningful Connections



01 MENA Climate Week

MENA Climate Week is a pivotal platform for global leaders, policymakers, and organizations to come together and address the pressing challenges of climate change.



4

Events



9

Sessions



Hosted by the Government of the Kingdom of Saudi Arabia in Riyadh



Held from October 8 to October 12, 2023

This significant event provides an opportunity to foster collaboration and accelerate climate action across the Middle East and North Africa region.

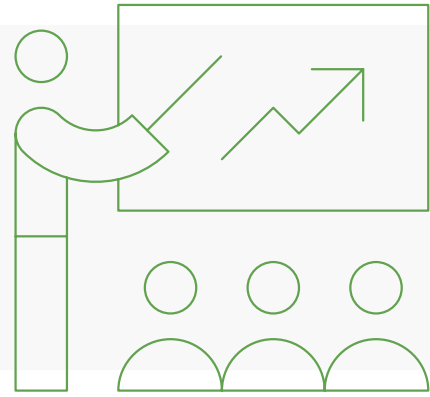
During MENA Climate Week, KAPSARC showcased its commitment to advancing climate action by co-hosting four significant events and leading nine in-depth sessions.

These forums spanned a variety of crucial topics, from leveraging data for informed policymaking to navigating equitable transitions towards net-zero emissions, highlighting the critical role regional

solutions play in combating climate change.

The discussions were set against Saudi Arabia's ambitious environmental goals, including the Saudi Green Initiative, which aims for net zero by 2060 and the target to generate half of the country's electricity from renewable sources by 2030, and the week featured active involvement from various stakeholders, underscoring Saudi Arabia's proactive approach to addressing climate issues and KAPSARC's instrumental role in facilitating this critical dialogue.

Sessions Led by KAPSARC as Part of MENA Climate Week



01

Data-Driven Policymaking for Just Transitions - KAPSARC/ Mohammed bin Rashid School of Government (MBRSG).

02

The Promises of Smart Cities: Energy Transition, Environmental Challenges, and Opportunities for Local Authorities.

03

From the CDM to Article 6 in the Arab Region.

04

Satellite Technology for Measuring and Tracking GHG Emissions - KAPSARC and Kayrros.

05

The Challenges of a 3-degree Warmer World for Saudi Arabia - KAUST-AEON-KAPSARC.

06

The Role of LPG in Enabling the Just and Inclusive Energy Transition in the MENA and Africa Regions is as Follows: KAPSARC and the Economic and Social Commission for Western Asia (ESCWA).

07

From Vision to Reality: MENA's Net Zero Emissions Journey - KAPSARC /Khalifa University.

08

The Role of Clean Hydrogen and CCUS to Achieve Climate Ambitions.

09

Emerging Priorities for Equitable Net-Zero Transportation: Insights for MENA Region.

10

Urban Transitions Mission Global Innovation Summit 2023 (MOU signing)



02 The 28th Conference of the Parties (COP28)



Dubai, United Arab Emirates



November 30 to
December 12, 2023



20 Events

KAPSARC's Engagement at COP28

KAPSARC significantly enhanced its presence in the global climate dialogue by contributing to over 20 events. These discussions were rich in valuable insights and were aligned with four critical themes. Through partnerships with leading industry entities, KAPSARC co-hosted numerous noteworthy events, showcasing its commitment to impactful climate conversations:

- Bridging the Gap in ESG Financing of Critical Technologies for the Hard-to-Abate Sectors
- Hard-to-Abate Sectors in the Energy Transition: Bridging Gaps in Implementation and Enablers
- Role of LPG in Enabling the Just and Inclusive Energy Transition in MENA and Africa Regions
- Launch of the 2023 Circular Carbon Economy Index
- Satellite Technology for Measuring and Tracking GHG Emissions

**Also, KAPSARC
hosted**

6

**panels
on key issues**

including:

- Hydrogen
- CCE Index
- Decarbonizing Aviation and Maritime
- Clean Cooking
- Satellite Technology for GHG Measurement
- Net-Zero Knowledge Consortium

This wide range of topics demonstrated KAPSARC's holistic approach to addressing climate challenges.

Additionally, COP28 served as a launching platform for significant KAPSARC reports, including:

01

The 3rd edition of the Circular Carbon Economic Index

02

Role of LPG in Enabling a Just and Inclusive Energy Transition in Africa and the Arab region.

03

Net-Zero Knowledge Consortium: Empowering Climate Action from Oil and Gas Producing Economies

04

Using Satellite Technology to Measure Greenhouse Gas Emissions in Saudi Arabia

05

Long-term Decarbonization Pathway for Saudi Arabia to Reach Net-Zero GHG Emissions by 2060

03 The 2nd Net-Zero Knowledge Consortium (NKC)

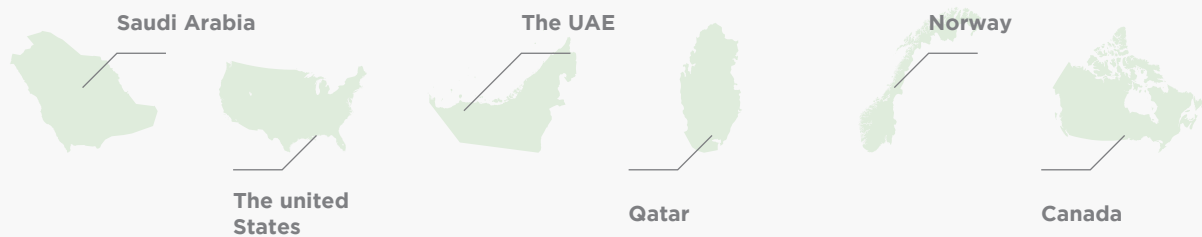


2023

In 2023, KAPSARC established an alliance of independent think tanks and research centers committed to constructive recommendations based on rigorous research and evidence to help producer nations minimize greenhouse gas (GHG) emissions through pragmatic, inclusive strategies and policy solutions.

The NKC's work is intended to support and inform the Net-Zero Producers Forum (NPF) to drive positive climate action while maximizing the value of producing countries' resources.

The NPF is a government forum comprised of six countries:



The Consortium includes nine partners:



The NKC worked together over the year to produce a jointly authored report launched in Dubai during COP28. The report provided an independent assessment of NPF countries' net-zero emissions pathways. It provided policy recommendations for NPF members to lead globally on methane reduction and promulgate carbon capture, utilization, and storage (CCUS) technologies. The Consortium will continue its work and extend its network of partners in 2025.

04

Securing Observer Status at the United Nations Environment Assembly (UNEA)

In a landmark achievement that underscores its commitment to contributing to global environmental governance,

KAPSARC has been accredited by the United Nations Environment Programme (UNEP) as an official non-governmental organization (NGO) with observer status in the United Nations Environment Assembly (UNEA).



This accreditation continues to highlight KAPSARC's role as an independent and influential think tank engaged in the international dialogue around sustainability.

The accreditation enhances KAPSARC's capacity to engage with and influence environmental policy on a global scale.

The observer status allows KAPSARC to participate actively in the official proceedings of the Assembly and UNEP consultation meetings, where it can submit policy briefs and working documents for consideration.

This platform provides an invaluable opportunity for KAPSARC to present its evidence-based policy and economic analysis, offering insights that can shape international environmental policy and action.

KAPSARC immediately exercised this new status as an active participant in the UN's ongoing multilateral negotiations on a treaty to provide governance over the future of plastics: *the Intergovernmental Negotiating Committee (INC)*, which is developing an international legally binding instrument on plastic pollution, including in the marine environment.

Through its UNEP accreditation and observer status at UNEA, KAPSARC is poised to become more influential in shaping global environmental policies.

05 The Clean Energy Ministerial and Mission Innovation (CEM14-MI8)

The Strategic Partnership domain has seen significant progress this year, with our efforts bifurcating into two main categories that have fortified our position in global energy and environmental discourse. Our active involvement in forums like the Clean Energy Ministerial and Mission Innovation (CEM14-MI8) meeting has amplified our voice in the international energy community.



06

Milestone KAPSARC Partnership Agreements

This MOU will facilitate expanded engagement across CEM's initiatives, particularly related to CCUS, industrial deep decarbonization, energy efficiency, hydrogen, and long-term energy scenarios.

Also, during MENA Climate Week, KAPSARC signed an MOU with Mission Innovation (MI). MI is a global initiative of 23 countries to catalyze action and investment in research, development, and demonstration to make clean energy affordable, attractive, and accessible.

In 2024, KAPSARC formally agreed to join WEC's Patron programme, which includes a limited number of organizations worldwide. This agreement facilitates a closer relationship between KAPSARC and WEC within the larger WEC community in the biennial World Energy Congress and the World Energy Leaders' Dialogue, enabling KAPSARC to help shape WEC's approach to achieving its mission.

Throughout 2024, KAPSARC formalized, deepened, and established relationships with many of the top think tanks and research centers in energy economics, energy policy, and sustainability around the globe, firmly establishing itself as a peer among the most prestigious think tanks in the world. **Among others, this included MOUs to establish concrete joint work programs with:**



MENA Climate Week in Riyadh

During MENA Climate Week in Riyadh, KAPSARC signed an MOU with the Clean Energy Ministerial (CEM).

CEM is a high-level forum that brings together a community of 50 countries, several companies, and international experts to accelerate clean energy transitions.

The MOU with MI will facilitate KAPSARC collaboration around MI's missions and workstreams, particularly on carbon dioxide removal, clean hydrogen, urban transitions, and the MI Think Tank. Both CEM and MI are important multilateral entities that support dialogue and policy discussion in support of the energy transition.

An agreement with the World Energy Council (WEC) deepened a third strategic partnership.





05 — Advising the Saudi Energy Sector

Advising the Saudi Energy Sector

Charting the Path of Advisory Excellence:

The growth of our Consulting team marks a significant expansion of our talent pool. Each new member has brought a wealth of experience, skills, and fresh perspectives, contributing to a dynamic and innovative work environment. Our focus on nurturing talent has led to an enriched consultancy pool where knowledge flourishes, innovation is routine, and professional growth is limitless.



Hours Dedicated to Advisory Projects and Activities:

+57%

+57% increase
of hours compared
to 2022

Our employees are devoted to showcasing our commitment to delivering exceptional results. These dedicated efforts highlight the depth of our involvement and the substantial work undertaken to address the diverse needs of our clients.

Client Satisfaction

90%

Our achievements stand as a testament to our commitment to excellence, adaptability, and meaningful stakeholder engagement. While these accomplishments are cause for celebration, they serve as a constant reminder to strive for more. Success is not solely measured by project completions but by the valuable insights we deliver, significantly shaping energy policies and strategies. By actively listening, adapting to evolving needs, and consistently surpassing expectations, we have solidified long-term partnerships and reaffirmed our impact in the energy sector, fueling our motivation to do even better.

Our Stakeholders







—
**Produce
Internationally
Recognized
Research**

2023 Publications

Expanding Intellectual Frontiers:

Thought Leadership through Publications

In 2023, KAPSARC demonstrated its thought leadership through a robust output of diverse research materials, contributing to the global discourse on energy and sustainability. Our publications spanned various formats, **reflecting our comprehensive research approach**:

189

Research Papers

These papers were published, showcasing the depth and breadth of the Center's analytical work across multiple facets of energy research.



34

Journal Articles

These articles were contributed to the academic community, making KAPSARC's research findings globally accessible to scholars and industry experts alike.



47

Discussion Papers

KAPSARC enhanced dialogue and exchange among policymakers, researchers, and the general public on crucial energy issues.



7

Methodology Papers

These papers introduced new and innovative research techniques, improving the rigor and relevance of studies in the energy field.



35

Commentaries

Our experts shared insights and analyses, engaging with current trends and developments within the energy sector.



22

Conference Papers

KAPSARC experts presented these papers, contributing valuable perspectives and research findings at major industry conferences.



17

Data Insights

These published insights offered timely and data-driven analysis pertinent to contemporary energy challenges.



13

Workshop Briefs

These briefs summarized critical discussions, findings, and recommendations from various workshops, ensuring knowledge sharing and collaborative learning.



15

Published Reports

In 2023, KAPSARC published these reports,, providing comprehensive insights into various energy and sustainability topics. The reports were aimed at policymakers, industry stakeholders, and researchers.



15

Instant Insights

KAPSARC delivered impactful analyses on emerging energy trends and news, facilitating immediate understanding and responses.



4

Released Books

KAPSARC released four books in 2023, including notable works such as **“Renewables and Geopolitics in the Middle East”** and **“Smart Cities from an Indian Perspective: Evolving Ambitions”**, which explore cutting-edge strategies and technologies for sustainable urban development, aligning with our dedication to tackling climate challenges.

In addition, **“China’s Energy Investment through the Lens of the Belt and Road Initiative”** and **“A Macroeconometric Model for Saudi Arabia: A Case Study on the World’s Largest Oil Exporter”** are key resources in their respective fields.



Additionally, the contributions to the thought leadership included significant reports and books aimed at influencing policy and advancing knowledge.

Other Thought Leadership Activities

01

Launched the 3rd edition of the CCE Index.

02

Launched the 1st CAMP KSA Net-Zero Scenario and associated reports.

03

Published the Climate Futures Report with KAUST-AEON.

04

Quantified the potential financial savings of Demand Side Management in the industrial sector in Saudi Arabia.

05

Developing a comprehensive, integrated downstream model represents a groundbreaking endeavor to simulate the global refining industry. This model provides invaluable insights into operational efficiencies, market dynamics, and refineries' strategic positioning worldwide.

06

A field experiment analyzing electricity consumption behaviors of households in Saudi Arabia offered a unique look into consumer patterns, contributing to more effective demand-side management strategies and policy development.

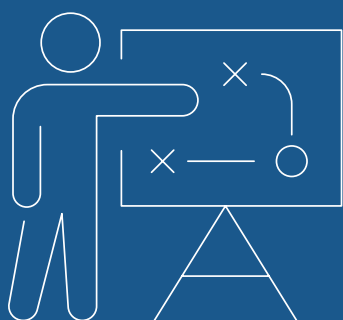


Workshops hosted by KAPSARC in 2023

- 01 | Circular Carbon Economy: Walking the Talk in Saudi Arabia and Beyond
- 02 | Clean Energy Technologies Driving the Circular Carbon Economy
- 03 | Achieving KSA's Vision of Becoming a Transport & Logistics Mobility Hub (Collaborated with the University of Antwerp to advance Saudi Arabia's goal of becoming a transport and logistics mobility hub, discussing land, maritime, and aviation transport modes. Engaged participants, discussants, and attendees from various countries)
- 04 | Volatility of Crude Oil Prices and the Mitigation of Oil Price Risk
- 05 | China and the Gulf Cooperation Council Countries: Strategic Partnerships in Sustainable Energy
- 06 | Energy Efficiency Policy
- 07 | The Domestic Energy Consumption
- 08 | Energy Security Scenarios



Workshops KAPSARC Co-Hosted in 2023



01 | Building Energy Demand and Efficiency.
Co-Hosted by KAPSARC and the Gulf University of Science and Technology

02 | Sustainable Finance Innovation: Partnerships and Leveraging Resources for
Private Sector Sustainability.
Co-led by KAPSARC and the Islamic Development Bank

03 | SAUDI-GERMAN ENERGY DIALOGUE: A Workshop on Net-Zero Modelling,
Climate Mitigation Costs & Benefits, and CCUS).
Held in collaboration with Guide House

Thought Leadership

Key Projects

01 Satellite Technology for Measuring Greenhouse Gas Emissions

Overview

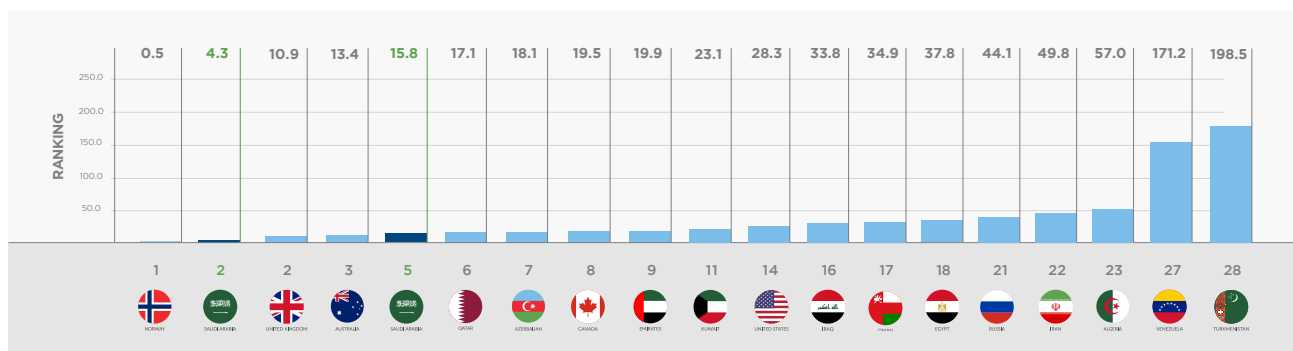
The project leverages advanced satellite remote sensing technology to estimate KSA's methane, carbon dioxide, and nitrous oxide emissions across several sectors.

Objectives

- Evaluate the technology's maturity and limitations, addressing several challenges, such as image quality and environmental interferences, which may affect accuracy.
- Compare satellite-derived data with established databases like IEA and EDGAR to validate and refine emission estimation methodologies.

Selected countries ranking by methane intensity

*(kg of CO2 equivalent / barrel of oil equivalent)



Satellite estimates yield a 73% decrease in methane intensity versus the intensity value reported by the IEA. KSA has improved its ranking to the country with the 2nd lowest methane intensity after Norway.

*Countries included with a total oil and gas production above 1 million boepd; Intensities were calculated using IEA's 2022 methane emissions data and 2022 production data from Rystad

Methodologies

The project utilized public satellite observations from Sentinel-2 and Sentinel-5P. A wind-rotated approach and basin model were employed to quantify methane emissions specifically for the Oil and Gas and Urban Sectors.

Outcomes



01

Achieved estimates of methane emissions between 2019 and 2022. The project revealed lower emissions than those reported by IEA and EDGAR.



02

Initiated the expansion of this methodology to other GCC countries, focusing initially on methane measurement.



03

An executive summary is being developed to compile and present the results across the studied countries.



02

Role of LPG in Enabling a Just and Inclusive Energy Transition in Africa and the Arab Region

Project Summary

This study examines the unequal burden of cooking within households in Least Developed Countries (LDCs) in the Arab region and Madagascar, highlighting the need for gender-responsive clean cooking policies.

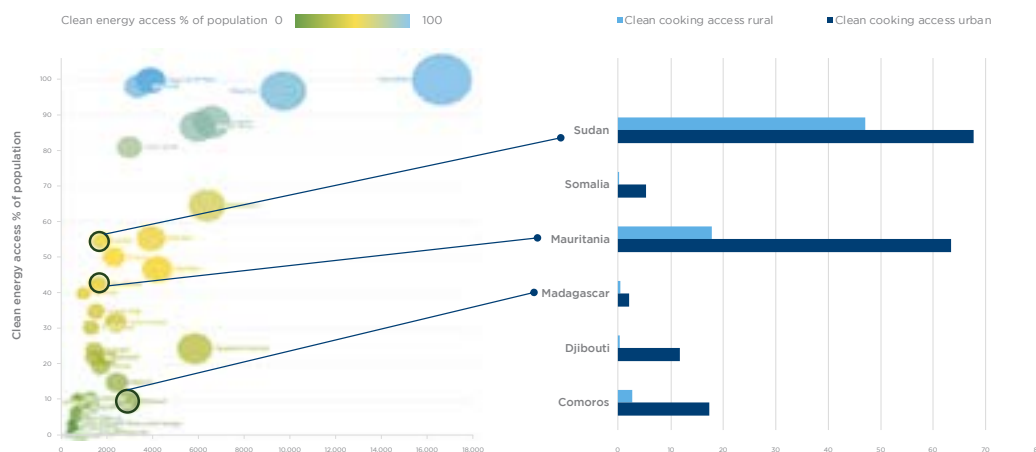
It explores the potential of clean fuel technologies, particularly Liquefied Petroleum Gas (LPG), analyzing both the benefits and challenges of adoption. The study offers practical recommendations for policymakers and stakeholders to promote clean cooking solutions that consider the specific social, cultural, and economic contexts of different communities. It also showcases successful clean cooking business models to encourage wider implementation.

Objectives

The project has a threefold objective to address critical clean cooking access issues in specific regions of Africa and the Arab world:

- It analyzes the landscape of clean cooking access across least developed countries (LDCs) like Comoros, Djibouti, Madagascar, Mauritania, Somalia, Sudan, and Yemen.
- The project identifies and dissects the challenges and barriers hindering the adoption of clean cooking technologies and Liquefied Petroleum Gas (LPG). It also highlights the consequences of continuing with traditional cooking methods.
- The project identifies key enablers to improve access to clean cooking and LPG in these target regions. By understanding and addressing these enablers, the project aims to pave the way for a more sustainable and healthier cooking environment for these communities.

Clean Cooking Access in the Selected Countries



- ▲ Despite 88% access to clean cooking fuels in the Arab region, disparity persists (particularly in Sudan, Somalia, and Yemen).

Outcomes (Deliverables)



Joint report publication with UN-ESCWA. The report was first presented at MENA Climate Week in Riyadh and later launched at COP28 in Dubai.

LPG emerges as a key solution to bridge the clean cooking gap in the studied countries. It offers a modern, clean fuel alternative that supports renewable energy use. Widespread adoption could deliver significant benefits:



Reduced Health Risks

Exposure to harmful pollutants from traditional cooking methods leads to serious health issues, particularly for women and children. In 2020, a staggering 3.2 million deaths were attributed to household air pollution, with over 237,000 involving children under five. LPG can significantly reduce these health risks.



Environmental Benefits

These countries' heavy reliance on charcoal contributes to the deforestation of around 3 billion kilograms of renewable wood annually, releasing 32 million tons of GHGs. LPG can help mitigate deforestation and reduce emissions.



Time Savings and Economic Benefits

Compared to traditional methods, LPG cookstoves can save households over 1.6 billion hours per year across the studied countries. Valued at the minimum wage, this translates to nearly a billion dollars (US\$955 million) of wasted potential annually.

03

Value of OPEC/OPEC+'s Spare Capacity to the Oil Market and Global Economy

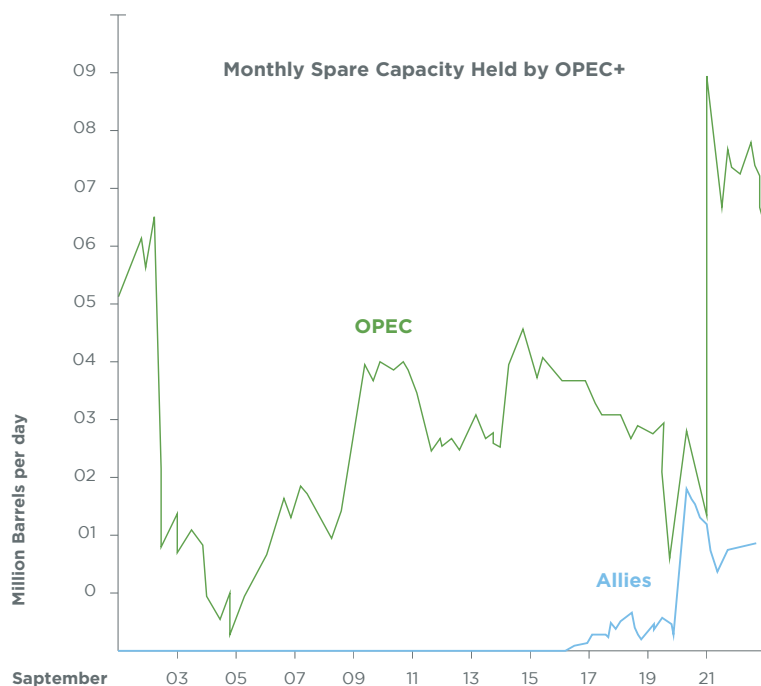
Overview

This project provides an in-depth analysis of the impact of OPEC and OPEC+'s spare capacity on oil market stability and the global economy, focusing on the cooperative dynamics between OPEC members and other OPEC+ oil producers. It critically examines the role of these entities in stabilizing oil prices, especially in the wake of demand shocks precipitated by the COVID-19 pandemic.

Model Visuals

An integral part of the project is the visual representation of OPEC+'s monthly spare capacity, which offers an illustrative overview of spare capacity trends over time.

These visuals are crucial in enhancing comprehension of the study's findings. They provide stakeholders with a clear, graphical illustration of how OPEC+'s spare capacity has evolved and its significance in global oil market stability.



*This project's thorough methodology, significant findings, and the prestigious recognition it has garnered contribute to an enhanced understanding of the strategy.

Objectives

The study aimed to achieve two primary objectives in 2023:

- Measure the extent to which cooperation provided by non-OPEC oil producers (the Allies) impacted OPEC's ability to stabilize prices.
- Assess the capability of OPEC+ to offset the unprecedented demand shocks related to COVID-19.

Key Methodologies

To achieve its objectives, the project employed the following methodologies:

- Specification and maximum-likelihood estimation of a structural model to delineate the interaction dynamics between OPEC and its Allies. This involved a comprehensive analysis of these entities' cooperation strategy to achieve market stabilization.
- Construction of counterfactual scenarios based on the estimated model to evaluate potential outcomes and impacts had different strategic decisions been made.

Outcomes

The research culminated in significant achievements:

Journal Publication

Publication of the journal paper titled "Oil Market Stabilization: The Performance of OPEC and its Allies" in *The Energy Journal*, 2023. This publication thoroughly examines the strategies OPEC and its allies implemented, contributing valuable insights into their effectiveness in market stabilization.

OPEC Award

The project was honored with the OPEC Award for Best Energy Research Paper in Vienna, 2023, recognizing the study's contribution to understanding the dynamics of oil market stabilization and its implications for the global economy.

04

Net-Zero Emissions Pathways for Saudi Arabia

Overview

The project evaluated Saudi Arabia's progress towards its climate ambitions for 2030 and explored the feasible pathways to achieve net-zero greenhouse gas emissions by 2060.

The study employed advanced modeling techniques to quantify the impact of current policies and future strategies on the nation's energy system and economic landscape.

Objectives

- Assess the effectiveness of existing policy measures in meeting Saudi Arabia's 2030 NDC emissions goals.
- Identify and model potential pathways to realize a net-zero GHG emissions scenario by 2060.

Methods

Two complementary models were utilized:

- **GCAM-KSA:** Integrates energy, water, agriculture, land use, and economic sectors within a unified framework.
- **KEMGEv2:** Provides a detailed economic assessment factoring in adjustments caused by international oil price fluctuations and their impact on GDP during a global energy transition.

Key Findings



Highlighted the complexity of achieving net-zero emissions by 2060, necessitating comprehensive sectoral transformations

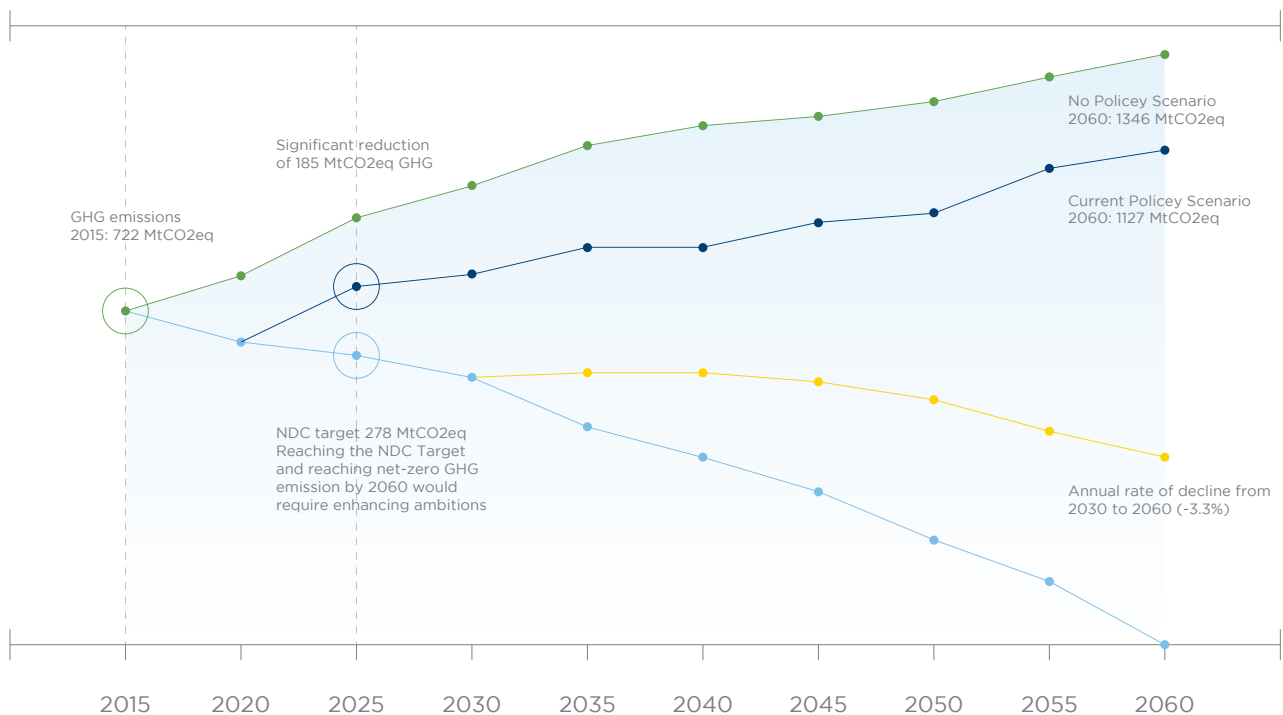


Emphasized the need for significant enhancements in emission reduction targets in upcoming NDCs.

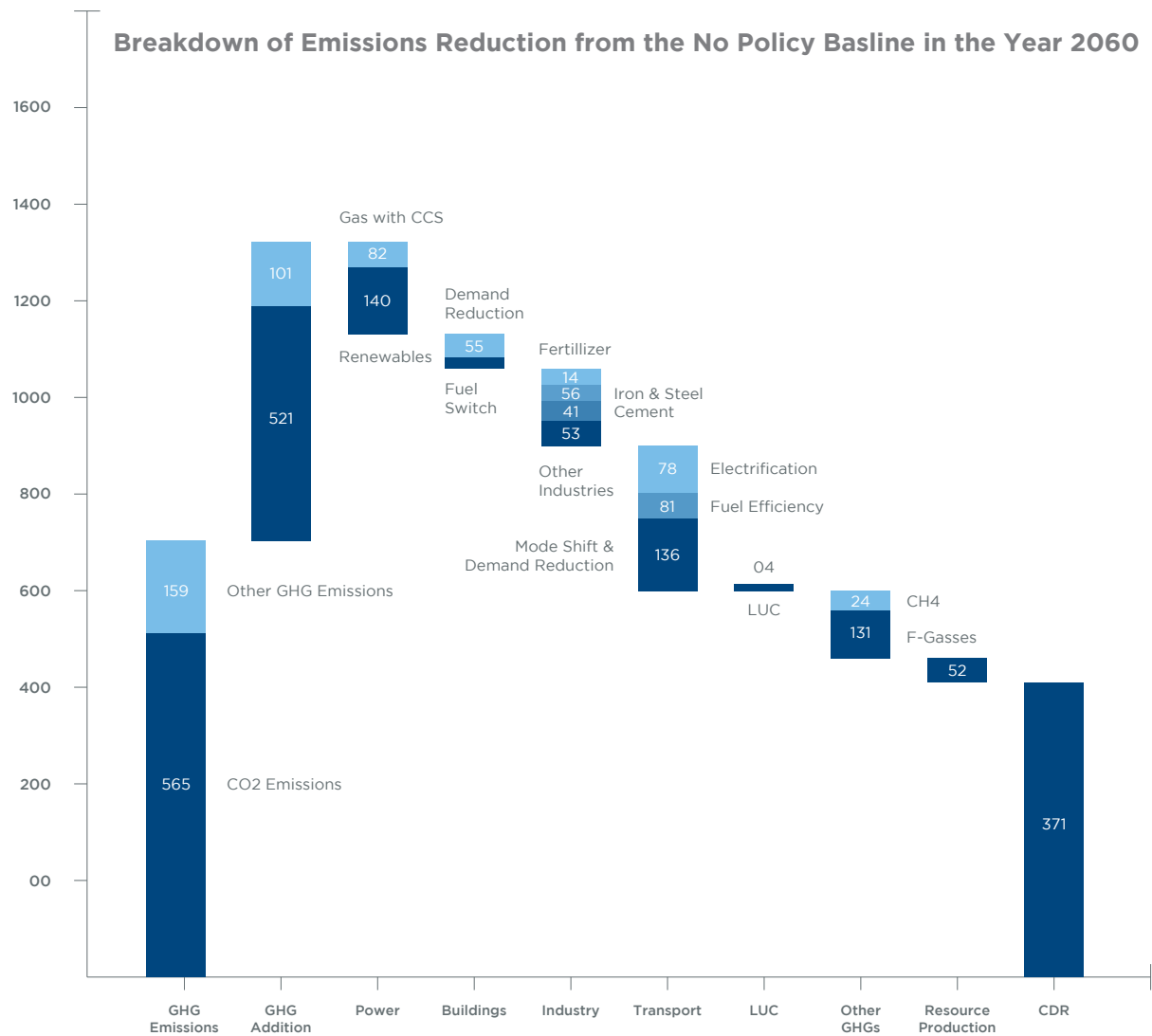


Underlined the importance of early action to mitigate reliance on high-emission infrastructure.

Achieving net-zero GHG emissions by 2060 requires increasing ambitions.

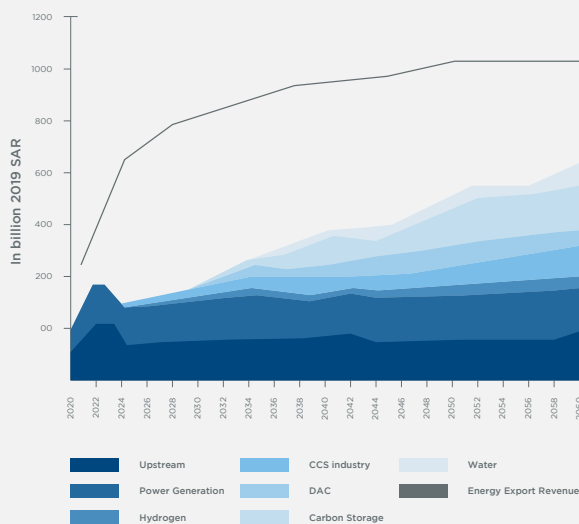


Early decarbonization of electricity generation provides the pace required for achieving net-zero emissions.



In a net-zero scenario, energy system costs increase faster than oil revenue.

Capex requirements per energy sector and export revenues in a net-zero scenario are shown below:



1. Long-Term Decarbonization Pathway for Saudi Arabia To Reach Net Zero GHG Emissions by 2060 (published November 2023).



2. Saudi Arabia Net Zero GHG Emissions by 2060: Transformation of the Electricity Sector (published December 2023).



3. Net Zero Emissions in Saudi Arabia by 2060: Least-Cost Pathways, Influence of International Oil Price, and Economic Consequences (published November 2023).

05

Green Hydrogen Production in Saudi Arabia and Export Potential to Germany

Overview

This project delved into the feasibility and competitiveness of producing green hydrogen in Saudi Arabia.

The project assessed the integration of renewable and electrolyzer technologies to establish a comprehensive view of green hydrogen production for domestic use and export, mainly to Germany.

Objectives

Analyze the techno-economic aspects of green hydrogen production, incorporating the latest renewable energy sources and electrolyzer technology developments, and evaluate Germany as a potential export market.

Methodology

A power-to-carrier (P2X) model was developed utilizing an hourly temporal resolution and unit commitment approach. This model was crucial for accurately assessing green hydrogen production's energy requirements and economic viability.

Outcomes



Conference Paper

Produced a conference paper that received the Best Paper Award at the IEEE Smart Grid Conference.



Discussion Paper

Published a discussion paper and a journal article in the *International Journal of Hydrogen Energy*.

06 Model of the Global Oil Refining Industry

Overview

This project developed a comprehensive model of the global oil refining industry designed to evaluate the impact of crude oil supply dynamics on the availability and competitiveness of refined products at national, regional, and global levels.

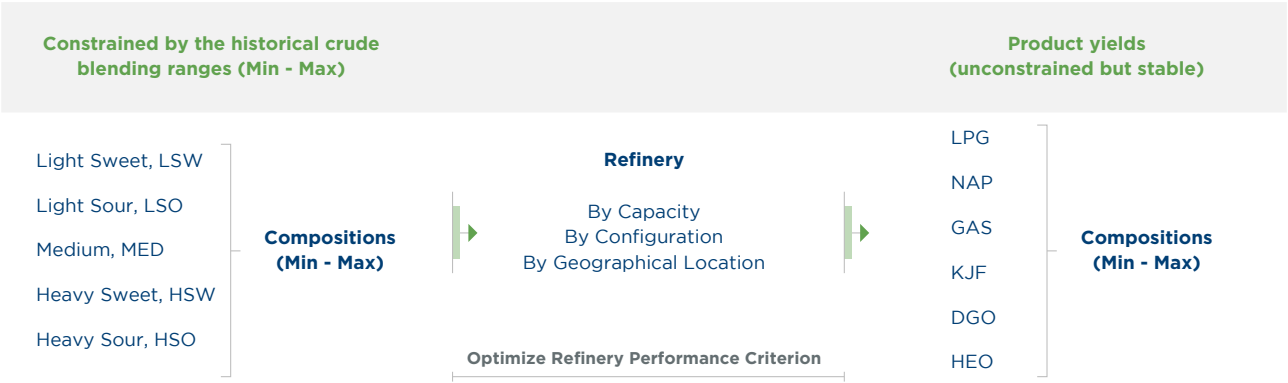
Objectives

Create a model that supports analysis of the oil refining industry across different geographies, focusing on their capabilities, configurations, and opportunities for decarbonization and petrochemical integration.

Methodology

- Employed a graphical clustering algorithm to categorize global refineries into 40 configurations based on existing refinery designs.
- Developed a machine learning model trained on operational data that predicts production behaviors.
- Integrated a global optimization model to benchmark the performance of each refinery against its global optimum.

Highlight of the Modeling Workflow:



Outcomes



Publications Series

Produced a series of publications: methodology papers on global crude oil refinery models, data insights on refining capacities, and commentaries on refinery configurations.



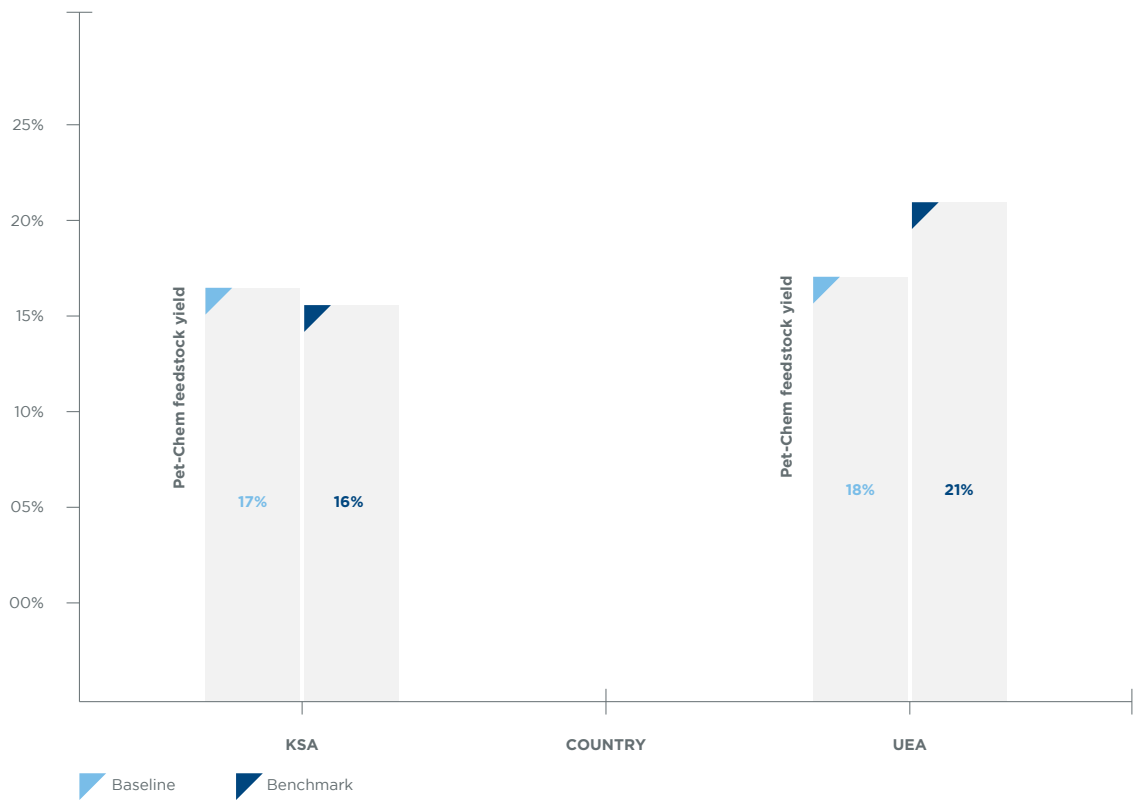
Findings Presentation

Presented findings at the IAEE Conference, focusing on the geopolitics of oil disruptions and the industrial-level analysis of oil sanctions on global oil markets.

Model Visuals

The comparison showcases petrochemical feedstock yield performances between KSA and UAE refineries. It benchmarks a specific refinery’s yields (Baseline) against the optimal yields from similar global refineries (Benchmark), illustrating differences due to operational conditions and operator expertise.

Baseline vs. Benchmark Yields in KSA and UAE Refineries:



Source: KORA, KAPSARC

07

KSA as a Global Transport and Logistics Hub – Maritime and Aviation

Overview

This project investigated the future energy demands of the maritime and aviation sectors in Saudi Arabia and globally. The project considered the expansive growth of seaborne trade and the evolution of the aviation industry.

The analysis focused on the energy implications of these sectors, which are pivotal to Saudi Arabia's ambition to become a global transport and logistics hub.

Objectives



01

Understand the dynamics of seaborne trade and predict future energy demands in the maritime sector as a business-as-usual scenario.



02

Develop a comprehensive model to assess the energy impacts of evolving air transportation demands and operational challenges.

Key Methodologies Used

Two complementary models were utilized:

- **Maritime Model:** Utilized econometric models and energy intensity numbers (MJ/ton-km) to forecast energy demands associated with increasing seaborne trade.
- **Aviation Model:** The project employed a multi-method simulation approach, integrating System Dynamics (SD), Agent-Based Modeling (ABM), and Discrete Events Simulation (DES) to explore the aviation sector's complexities.

Outcomes



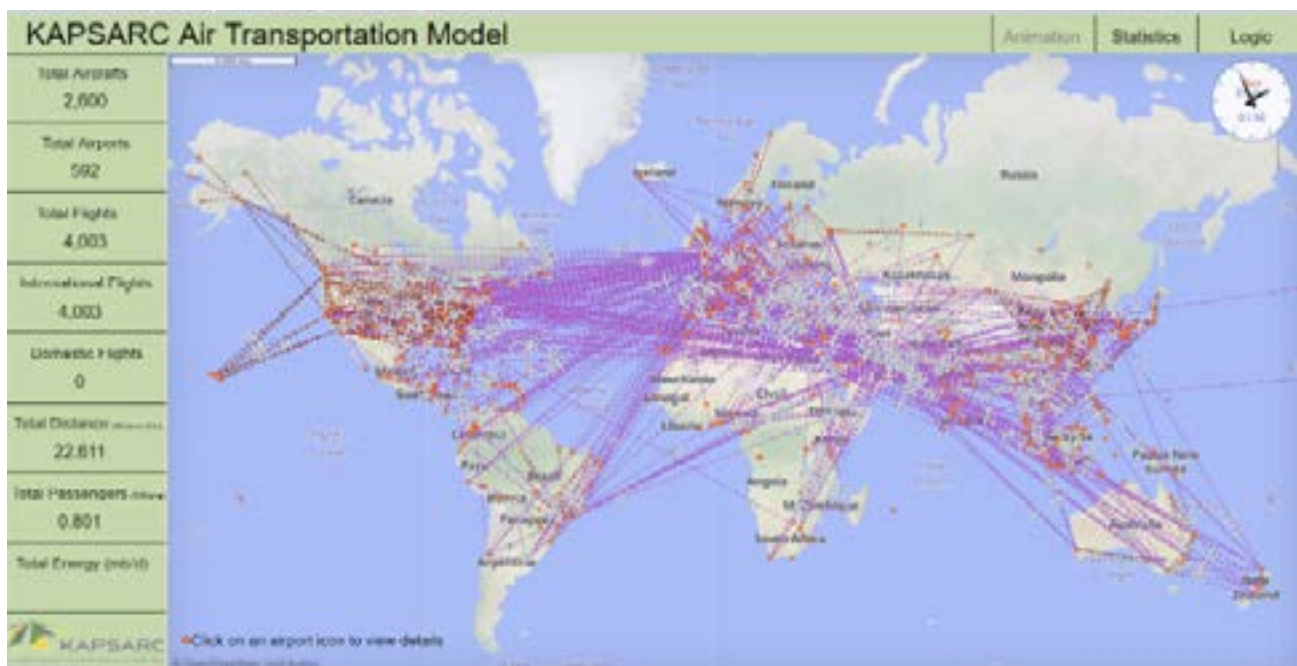
Maritime Model

Forecast a significant increase in seaborne exports by 2040 under various growth scenarios and provided detailed predictions on how interventions by the International Maritime Organization might influence future fuel demands.



Aviation Model

The model analyzed factors influencing fuel consumption in the aviation sector and projected a substantial increase by 2030. The model offers insights into how passenger numbers, fuel prices, and load factors will drive energy use in aviation.



The model is designed using AnyLogic software, which provides a visual interface and interactive features, including detailed management dashboards.



O7 Academy

Academy

KAPSARC Academy has made significant strides in advancing public policy education and leadership development, marking a year of achievements. Delivering **12 unique programs** throughout the year, the school has enhanced the skills and knowledge of professionals across various sectors. This range of programs underscores the Academy's commitment to offering diverse and impactful learning opportunities covering participants from different educational and professional levels:



Management

- Business Skills & Communication
- Acceleration Program



Leadership

- The Emerging Leaders Executive Program
- The Public Leadership Executive Program 2022 & 2023



Public Policy

- Leading with Policy Innovation Across Sectors
- Summer Policy Immersion Program



Energy Policy

- Sustainability — Principles and Practice Course
- Energy Economics and Financing
- Economics of Energy and Environment
- Energy Security and Energy Diplomacy

Participation from 26 organizations highlights the programs' broad appeal and relevance, attracting engagement from a spectrum of public and private sector entities. This collaborative approach enriches the learning experience by incorporating diverse perspectives and expertise.



Statistics on the Number of Programs and Participants

In 2023, KAPSARC made remarkable strides in fostering leadership and excellence in public policy-related education.



12 Programs

offered throughout the year



1,486 Registrations

from this pool of applicants



139 Days

of intensive training



684 Individuals

were accepted to participate.



Highlighted Programs

01

**The Public Leadership
Executive Program**

02

**The Emerging Leaders
Program**

03

**Sustainability Principles
and Practice**

04

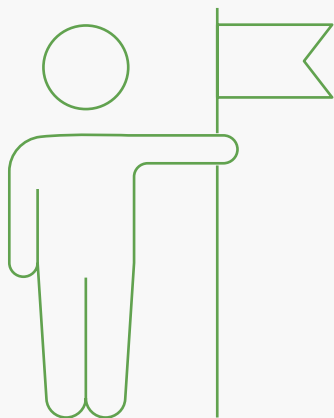
**The Policy Summer
Program for High School
Students**

01

The Public Leadership Executive Program

KAPSARC Academy's Public Leadership Executive Program has played a pivotal role in shaping the future of public policy education and leadership development.

Starting in October 2022, the program offered comprehensive modules that span various aspects of public policy and strategic communication.



Designed to equip participants with the necessary skills and knowledge to excel in leadership roles.

The program's curriculum was enriched by the contributions of leading institutions, including:

- International Institute for Management Development (IMD)
- Lee Kuan Yew School of Public Policy from the National University of Singapore

In the first quarter of 2023, the program continued with Modules 3, 4, and 5, each delivered **over three days through 12 sessions.**

The curriculum employed a dynamic blend of expert lectures, case study analysis, and small group work, fostering a practical and engaging learning environment.

A closer look at the modules:

Public Policy Making: Idea to Implementation

This module aimed at providing participants with a deep dive into the public policy-making process.

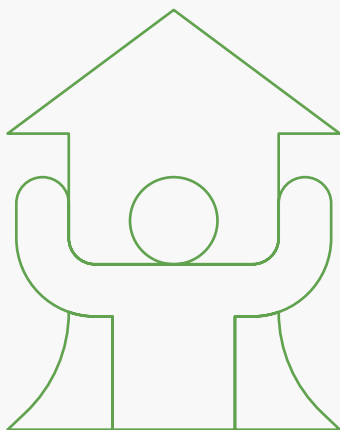
It covered the entire policy cycle framework, from ideation to implementation, and explored various policy instruments and tools.

Participants learned to identify common gaps and bottlenecks within the policy process and were introduced to strategies for mapping, managing, and effectively communicating with stakeholders throughout the cycle.

02 The Emerging Leaders Program

The Academy Emerging Leaders Program is a pioneering initiative cultivating high-potential leaders across diverse sectors.

Launched in 2023, this year-long program is a testament to the commitment to nurturing leadership excellence.



It offers comprehensive training in business fundamentals, modeling, and essential leadership skills in partnership with the International Institute for Management Development (IMD) and the Hertie School.

The highly selective program was offered to 45 high-potential leaders chosen from a pool of 254 nominations from various sectors, including energy, finance, economy industry, and communication and technology.

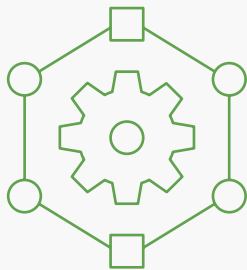
It equipped participants with the skills to excel in their fields through six focused modules on leadership innovation, public policy management, and business expertise. The program began with a five-week online course on core leadership skills, including team management, influence, and fostering creativity.

This initial phase utilized individual and group work and personalized coaching to maximize learning impact.

03 Sustainability Principles and Practice

As part of KAPSARC Academy's commitment to sustainability,

we offered a five-day program called “Sustainability: Principles and Practice”



This was designed to provide participants with a solid foundation in sustainability principles and practices.

The program featured a comprehensive curriculum that covers a wide range of sustainability topics, including:

- Sustainability in Action
- Socioeconomics of Sustainability Governance
- Ethics & Policy

The program represents a significant stride in integrating sustainability into the core of professional development. It attracted **87 nominations, and 40 were accepted to participate in the program.**

Starting in May 2023, the program's faculty of 20 instructors, each a recognized expert in their domain, shared their knowledge and experience with participants.

This diverse group involves experts from KAPSARC and King Abdullah University of Science and Technology (KAUST), fostering a rich learning environment. Among the distinguished speakers, William McDonough, a renowned Research Professor at KAUST, stands out for his contributions to the field of sustainability.

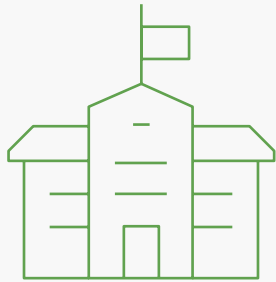


04

The Policy Summer Program for High School Students

The Academy's Policy Summer Program aims to provide high school students with a foundational understanding of policy-making

and the skills to develop and introduce public policies.



The program utilized a dynamic learning environment that blended engaging lectures, collaborative group discussions, and a hands-on project.

Through this process, students delved into the process of evidence-based survey design methodology and techniques to identify interesting policy issues and translate them into survey questionnaires for qualitative and quantitative evidence analysis.

In collaboration with King Abdulaziz and his Companions Foundation for Giftedness and Creativity, "Mawhiba," the program welcomed 153 participants registered in Mawhiba out of 200 applicants.

The program fostered a sense of exploration among these participants.

By engaging directly with the intricacies of public policy, students gained valuable insights into potential career paths in this field.

Academy Partners





08

—
**Incubating
Distinctive
Talents**

2018-2023 Staff Growth

Year	Staff Numbers
2018	129
2019	137
2020	148
2021	214
2022	258
2023	317

23%

Staff number growth between 2022 - 2023

demonstrates the organization's growth and capacity to attract top talent, contributing to a diverse and vibrant workforce.

Incubating Distinctive Talents

01 KAPSARC Employee Education Program (KEEP)

KAPSARC remains dedicated to supporting the educational pursuits of its employees through the KAPSARC Employee Education Program (KEEP).

The program continues to attract a diverse range of applicants, including both experts and support employees from various departments,

The program supported 25 employees, highlighting KAPSARC's ongoing commitment to fostering continuous learning and professional development among its valuable workforce.


KEEP
Program


25
Supported
Employees



02 The Graduate Development Program

One notable milestone was the successful launch of the second batch of our esteemed Graduate Development Program (GDP).

This 12-month initiative was carefully crafted to attract and develop high-achieving graduates, laying the foundation for a strong talent pipeline within our organization.

The new batch of graduates included talent from disciplines such as Engineering, Information & Technology, Computer Science, Business & Management and others. The GDP has bolstered our workforce and enhanced our brand image by supporting community development and fostering top-tier talent.

This achievement exemplifies our commitment to nurturing excellence and investing in the future of our organization.



17.9

**Average of
training days**



+50%

**Applicants
in 2023**



+32%

**Accepted GDP
in 2023**

03 The Mentorship Program

KAPSARC has also launched a new program designed to leverage the valuable knowledge, skills, and experience of its senior employees (mentors) and accelerate their transfer to newer or less experienced employees (mentees). This one-year program, initiated in 2023, pairs 13 volunteer mentors with 13 mentees.



13

Mentees

04 Coaching Program

Coaching is a significant component of many leadership development programs.

The leadership coaching program involves a one-on-one relationship between a coach and a leader to enhance leadership effectiveness, achieve personal and professional goals, and address specific challenges or developmental areas.

Twelve leaders have enrolled since quarter 4, accumulating 74 coaching hours.



12

Leaders



74

Coaching
Hours

05 Get Together Initiative

KAPSARC implemented the **'Get Together'** initiative to foster a more collaborative work environment. This program offers a series of activities designed to enhance teamwork. By gathering employees in a casual setting outside the traditional office space, we aim to improve communication, cooperation, and problem-solving skills. Additionally, 'Get Together' promotes trust-building, stress reduction, and a stronger sense of synergy among team members.





**KAPSARC's Commitment
to Efficiency & Visibility
through Modernization**

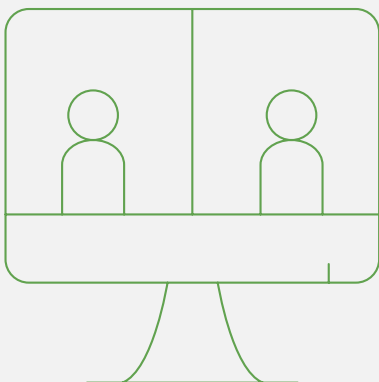
Digital Transformation

01

KAPSARC's Digital Transformation Journey

KAPSARC has undergone a significant digital transformation, making us a more efficient and scalable organization. Here's how:

- ▲ Our website boasts a **modern design, intuitive navigation, and improved functionality**. Finding the information you need about our research, publications, and insights is now easier.
- ▲ **Automated many HR processes**, like compensation, onboarding, and training. It creates a smoother experience for employees throughout their time at KAPSARC.
- ▲ Invested in **advanced network technology** to handle more data, improve collaboration, and boost productivity. This also strengthens our cybersecurity, keeping our systems and data safe.
- ▲ Implemented **robust security measures** and streamlined visitor access management. This makes KAPSARC a more secure and welcoming environment for everyone while automating processes for faster access control.
- ▲ **The latest Building Management System has been implemented** to monitor and control utilities within our facilities efficiently. This allows us to operate more efficiently and sustainably.



Through digital advancements, KAPSARC is committed to a three-pronged approach:

boosting efficiency and productivity across the organization, embracing modern technology for a better user experience for both employees and visitors and fostering a positive work environment with a focus on employee empowerment while also ensuring a secure and welcoming space for visitors.

02

Amplifying Organizational Efficiency through Active Employee Engagement

▲ Employees Representation in Oversight Committees

Oversight committees were established in 2022 to promote inclusive governance and employee engagement. Staff representatives are cycled yearly, ensuring diverse perspectives are incorporated. Conducted quarterly meetings with staff representatives in key areas to review and monitor operations in Capital Projects, Cybersecurity, Human Capital, Health & Safety, and Institutional Performance.

▲ The Launch of the Internal Satisfaction Survey

At KAPSARC, the launch of the Internal Satisfaction Survey initiative marked a significant step in our ongoing commitment to fostering a workplace environment that emphasizes employee engagement, satisfaction, and holistic well-being. Understanding that the foundation of a thriving research center lies in the happiness and contentment of its employees, we pursued this initiative to gather actionable insights directly from our staff.

03

Energy Management Enhancement

▲ Sustainable Energy Production

+5.5% | Power
Production

Our energy management has made significant progress, resulting in noteworthy improvements. A steadfast commitment to sustainable practices has achieved an additional +5.5% power production from our PV Plant, further strengthening our renewable energy generation capabilities. This increase in power production reduces dependence on conventional energy sources and aligns with our environmental objectives.

▲ Advancing Sustainable Waste Management

102%

Increase in Composting

437%

Increase in Mulching

65%

Increase in Solid Waste Recycling

In addition to the efforts made in energy and water usage management, advanced waste management measures were implemented, resulting in remarkable improvements.

Compared to the previous year, we have witnessed a substantial increase of over 102% in composting, a remarkable 437% increase in mulching, and a commendable 65% increase in solid waste recycling. These sustainable waste practices contribute to our environmental goals and demonstrate our dedication to responsible waste management.

04 Optimizing Service Delivery

▲ Streamlining Internal Service Level Agreements (SLAs) for Enhanced Operational Efficiency

The Finance & Operations function has comprehensively reviewed and consolidated multiple internal Service Level Agreements (SLAs) for critical services to enhance operational efficiency. This initiative aims to streamline and standardize service delivery, ensuring consistent and efficient operations across the organization.

The revised SLAs promote transparency, accountability, and optimal service outcomes by establishing clear expectations for service providers and recipients. This endeavor underscores our commitment to continuous improvement and setting high standards in delivering exceptional services within the organization.

05

Increased Efforts for Better Reach and Publicity

108

Stakeholder activities

Engagement activities to showcase KAPSARC's impact on global energy challenges.

30

communication activities

Fostered a collaborative and knowledgeable internal culture through.

21

Initiatives for the public

Engaged the public on critical energy issues by making energy research accessible.

57

Hosted corporate visits

To strengthen partnerships with policymakers and industry leaders.

31

Managed key events and conferences

These extended KAPSARC's global reach and influence in energy conversation.





10

**KAPSARC's
Novel Initiatives**

Saudi Energy Leaders Assembly

In its unwavering commitment to novel initiatives and maximizing its impact, KAPSARC continued its steadfast support for the Saudi Energy Leaders Assembly (SELA).

Serving as a dynamic platform connecting young professionals within the energy sector in Saudi Arabia, SELA, incubated within KAPSARC, has become a catalyst for collaboration and knowledge exchange. Significant events were hosted by SELA throughout the past year, showcasing the remarkable milestones achieved and the transformative influence it has had on the energy landscape.



01

The Inauguration of SELA

A significant milestone for SELA occurred *in 2023 when SELA was officially inaugurated by HRH*, the Minister of Energy, and the Chairman of the Board of Trustees of KAPSARC, Prince Abdulaziz bin Salman Al-Saud.

This momentous occasion marked the official launch of SELA and set the stage for a year of impactful events. Subscribers of the assembly had the opportunity to hear directly from HRH Prince Abdulaziz bin Salman.

His unwavering support and trust in the assembly members and insights on the energy sector's global impact were emphasized. Moreover, subscribers were granted the invaluable chance to engage with HRH through interactive Q&A sessions, enabling an enriching experience and fostering collaboration and a shared vision.



02

The Youth Climate Dialogue

With the support of KAPSARC, SELA hosted the Youth Climate Dialogue, marking a significant event leading up to the MENA Climate Week.

A key highlight was a thought-provoking "Youth Empowerment" session delivered by HRH Prince Abdulaziz Bin Salman Al-Saud, the Minister of Energy and the Chairman of the Board of Trustees of KAPSARC.

The session fostered engaging discussions centered around collaborative strategies for achieving NetZero (CCE) goals and showcased inspiring youth-led initiatives focused on climate mitigation and resilience.

This insightful dialogue empowered the youth and underscored the commitment of SELA and its partners toward addressing climate change challenges and creating a sustainable future.



03

Leadership Towards Vision 2030

SELA organized a panel discussion titled “Leadership Towards Vision 2030,” featuring esteemed panelists, including Faisla AlNughaimish, Vice President & Chief Petroleum Engineer, Petroleum Engineering at Aramco; Ghada Alarifi, the Dean of KAPSARC Academy; and Noor Shabib, the Vice President of Strategic Planning and Business Development at SIDF.

This exceptional gathering provided a platform for these accomplished leaders to share their invaluable expertise and real-life experiences with the young generation.

The panelists engaged in thought-provoking discussions, shedding light on effective leadership practices and strategies aligned with Vision 2030. The event also offered an interactive Q&A session, enabling the enthusiastic audience to directly pose questions and gain insightful perspectives from these distinguished panelists.

Through this empowering initiative, SELA continues to inspire and empower the youth, nurturing their leadership potential and propelling them toward a future of success.

04

Energy Voices

With the support of KAPSARC, SELA successfully hosted the Energy Voices event, a remarkable gathering that united Misk’s Ignited Voices with SELA’s young leaders.

This dynamic event created an environment conducive to sharing insights, experiences, and innovative ideas, fueling enriching discussions, knowledge-sharing sessions, and valuable networking opportunities.

The initiative played a pivotal role in amplifying voices, broadening horizons, and collectively shaping a future where the youth actively contribute to defining our national ambitions.

SELA continues to pave the way towards a prosperous and inclusive energy sector by empowering the next generation.



