



**3rd IAEE MENA
CONFERENCE**
Riyadh, Saudi Arabia
8-9 December 2024

CONCURRENT SESSION PROGRAM

**Domestic Energy & Economic
Transformations in a Transitioning World**

3rd IAEE MENA Conference,
Venue: [APEX Convention Center](#),
Riyadh, Saudi Arabia, 8-9 December 2024



Program Structure

Day 1

Sunday, 8 December 2024

Time	Event
8:00-9:00	Registration and Networking
9:00-9:10	Opening Remarks
9:10-10:30	Opening Plenary - The New Global Energy Landscape: Challenges and Opportunities for MENA
10:30-11:00	Coffee Break
11:00-12:15	Plenary - Financing the Energy Transition in MENA
12:15-14:00	Lunch
14:00-15:30	Concurrent Sessions
15:30-16:00	Coffee Break
16:00-17:30	Concurrent Sessions
18:00-21:00	Gala Dinner

Day 2

Monday, 9 December 2024

Time	Event
8:00-9:00	Networking
9:00-10:15	Plenary - Pathways for MENA's Energy and Economic Diversification
10:15-10:45	Coffee Break
10:45-12:15	Concurrent Sessions
12:15-12:45	Coffee Break
12:45-14:15	Concurrent Sessions
14:15-15:00	Award Ceremony, Closing Remarks, and Lunch

Sunday, December 8, 2024
Concurrent Session Block 1
14:00-15:30

Concurrent Session 1A: Optimizing Energy Models and Strategies for Sustainable Transitions

Session Location: First Floor Room 2, APEX Convention Center, KAPSARC

Session Presider: *Fakhri Hasanov, King Abdullah Petroleum Studies and Research Center*

Leveraging Energy System Models Towards Optimal Synergies Between Net-Zero Transitions And Sustainable Development Goals

Presenter: *Sara Zaidan, Khalifa University*

Authors: *Sara Zaidan¹, Mutasem El Fadel¹*

¹*Khalifa University*

Forecasting The Sectoral Energy Demand Of Saudi Arabia: An Application Of LEAP Framework

Presenter: *Muhammad Shahid, King Fahd University of Petroleum and Minerals*

Authors: *Muhammad Shahid¹, Amjad Ali¹, Sikandar Abdul Qadir¹, Md. Tasbirul Islam¹,*

¹*King Fahd University of Petroleum and Minerals*

The Path To 2060: Saudi Arabia's Long-Term Strategy For Ghg Emission Reduction

Presenter: *Puneet Kamboj, King Abdullah Petroleum Studies and Research Center*

Authors: *Puneet Kamboj¹, Mohamad Hejazi¹, Yang Qiu², Page Kyle², Gokul Iyer²*

¹*King Abdullah Petroleum Studies and Research Center (KAPSARC),*

²*Pacific Northwest National Laboratory (PNNL)*

Investments In Fossil Fuels And Renewables: Crowding In Or Crowding Out? A Global And Regional Analysis

Presenter: *Fakhri J. Hasanov, King Abdullah Petroleum Studies and Research Center*

Authors: *Fakhri J. Hasanov¹, Samar Mohammed²,*
¹*King Abdullah Petroleum Studies and Research Center,* ²*Alexandria University*

Energy Transition, Economic Development, And The Role Of Investments: Empirical Evidence From The GCC Region (2000-2022)

Presenter: *Nagwa Amin Abdelkawy, King Faisal University*

Authors: *Nagwa Amin Abdelkawy¹, Abdullah Sultan Al Shammre¹,*

¹*King Faisal University*

Concurrent Session 1B: Artificial Intelligence for Energy and Emissions Management: Innovations Across Sectors

Session Location: Second Floor Room 1, APEX Convention Center, KAPSARC

Session Presider: *Ales Marsal, King Abdullah Petroleum Studies and Research Center*

AI-Driven Energy Efficiency In The UK Retail Sector: A Comparative Analysis Of Tesco, Sainsbury's, And Marks & Spencer

Author & Presenter: *Rami El Hamad, Manchester Metropolitan University*

Harnessing AI for Energy Sustainability: A Path Toward A Greener Future

Author & Presenter: *Hamad Ali ALawad, MoI AI Center, Saudi Arabia*

Concurrent Session 1C: Driving Policy and Investment for Global Hydrogen Markets

Session Location: Second Floor Room 2, APEX Convention Center, KAPSARC

Session Presider: *Shahid Hasan, King Abdullah Petroleum Studies and Research Center*

What Matters Most For Hydrogen R&D Spending? Evidence From OECD Countries.

Presenter: *Saheed Layiwola Bello, Energy Policy Research Group, Cambridge Judge Business School, University of Cambridge*

Authors: *Saheed Layiwola Bello¹, David Reiner¹*
¹*Energy Policy Research Group, Cambridge Judge Business School, University of Cambridge*

Hydrogen Horizons: Breaking Down The Cost Of Green Hydrogen In Saudi Arabia

Author & Presenter: *Salaheddine Soummane, Saudi Aramco*

The Effect Of Financing Costs On The Global Renewable Hydrogen Trade Outlook

Presenter: *Khalid Alanazi, Department of Chemical Engineering, Imperial College*

Authors: *Khalid Alanazi¹, Shivika Mittal², Luke Hatton¹, Yousef Alshammari¹, Nilay Shah¹, Adam Hawkes¹*

¹*Department of Chemical Engineering, Imperial College*

²*CICERO Centre for International Climate Research*

How To Create A Hydrogen Market? Lessons From Electricity And Gas Markets On Pricing And Investment Approaches

Presenter: *Shahid Hasan, King Abdullah Petroleum*

Studies and Research Center

Authors: *Shahid Hasan¹, Rolando Fuentes²*

¹King Abdullah Petroleum Studies and Research Center

²EGADE Business School, Tec de Monterrey

Green Hydrogen Supply from Saudi Arabia to Germany: Analyzing the Prospective Supply Chain for Europe's Energy Transition

Presenter: *Ali Abdelshafy, RWTH Aachen University*

Authors: *Ali Abdelshafy^{1,2}, Martin Lambert², Grit Walther¹*

¹RWTH Aachen University

²The Oxford Institute for Energy Studies

Concurrent Session 1D: Innovative Approaches to Decarbonizing the Built Environment

Session Location: Ground Floor Room 1, APEX Convention Center, KAPSARC

Session Presider: *Fateh Belaid, King Abdullah Petroleum Studies and Research Center*

Long-Term CO2 Emissions Reduction in KSA's Power Sector: The Potential of Building Energy Efficiency

Presenter: *Fateh Belaid, King Abdullah Petroleum Studies and Research Center*

Authors: *Fateh Belaid¹, Jeyhun Mikayilov¹*

¹King Abdullah Petroleum Studies and Research Center

Decarbonization In The Saudi Building Sector: Strategies And Way Forward

Presenter: *Shahad Altheeb, King Fahd University of Petroleum and Minerals*

Authors: *Shahad Altheeb¹, Muhammad Asif¹*

¹King Fahd University of Petroleum and Minerals

The Role of Circular Economy in Improving Energy Efficiency and Decarbonization in the Building Sector in Saudi Arabia

Presenter: *Zahwa Moustafa, King Fahd University of Petroleum and Minerals*

Authors: *Zahwa Moustafa¹, Muhammad Asif¹*

¹King Fahd University of Petroleum and Minerals

Strategies For Building Energy Conservation: A Review Of Policies, Trends, And Best Practices

Presenter: *Bushra Jan, King Fahd University of Petroleum and Minerals*

Authors: *Bushra Jan¹, Muhammad Asif¹*

¹King Fahd University of Petroleum and Minerals

Concurrent Session 1E: The Future of Fossil Fuels: Demand, Markets, and Strategic Resilience

Session Location: First Floor Room 3, APEX Convention Center, KAPSARC

Session Presider: *Colin Ward, King Abdullah Petroleum Studies and Research Center*

Outlook On Energy Demand Growth And Non-Combustion Use Of Hydrocarbons

Presenter: *Faisal Bin Salem, King Saud University*

Authors: *Zaid Binhazzaa¹, Faisal Bin Salem¹*

¹King Saud University

The Need To Invest In Fossil Fuels: Growth Of Energy Use And Non-Combustion Use Of Hydrocarbons

Presenter: *Zaid M Binhazzaa, SABIC*

Authors: *Zaid M Binhazzaa¹, Faisal Bin Salem¹, Mohammed Alawad¹, Majid Al Otaibi¹, Hattem Alhuaimel¹, Shatha Alahmadi²*

¹SABIC

²Imam Abdulrahman bin Faisal University

Pandemic, Ukraine, OPEC+ and Strategic Stockpiles: Taming the Oil Market in Turbulent Times

Presenter: *Axel Pierru, King Abdullah Petroleum Studies and Research Center*

Authors: *Hossa Almutairi¹, Axel Pierru¹, James L. Smith²*

¹King Abdullah Petroleum Studies and Research Center

²Edwin L. Cox School of Business, Southern Methodist University

Saudi's Oil and Gas Related Industries Growth and Foreign Trade: A Panel Data Level Analysis

Author & Presenter: *Moodhi Raid, College of Business, Al Yamamah University*

Concurrent Session 1F: Financing the Energy Transition: Strategic Investments and Climate Risk in the Middle East

Session Location: First Floor Room 1, APEX Convention Center, KAPSARC

Session Presider: *John Ballantine, Brandeis University*

Jumpstarting Our Energy Transitions With Regional Merchant Banks: Bridging Market Failures And Imperfect Financial Markets

Author & Presenter: *John W. Ballantine, Jr., Brandeis University*

State Financing The Energy Future: The Role Of Strategic Sovereign Wealth Funds In Driving The GCC's Energy Transition

Author & Presenter: *Duncan Mayall, CONSULUM*

Impact Of Climate Scenario Choice On Climate Financial Risk Assessment In The Middle East

Author & Presenter: Kevin A Tang, Judge Business School, University of Cambridge

Balancing Investment In Renewables, Electric Vehicles And Carbon Capture

Presenter: Harif Daniel Fontecha, King Abdullah University of Science and Technology

Authors: Harif Daniel Fontecha¹, Ricardo M. Lima¹, Omar Knio¹

¹King Abdullah University of Science and Technology

Hypothetical Carbon Pricing In Saudi Arabia: Simulating Emission Reductions And Fiscal Impact

Presenter: Heyran Aliyeva, King Abdullah Petroleum Studies and Research Center

Authors: Fakhri Hasanov¹, Heyran Aliyeva¹, Majed Almozaini¹, Carlo Andrea Bollino²

¹King Abdullah Petroleum Studies and Research Center

²University of Perugia and LUISS University

Hejazi¹, Yoshihide Wada², Raphael Apeaning¹

¹King Abdullah Petroleum Studies and Research Center

²King Abdullah University of Science and Technology

Middle East and North Africa and the Circular Carbon Economy: Seizing the Potential for Action

Presenter: Mari Luomi, King Abdullah Petroleum Studies and Research Center

Authors: Laura El Katiri, Fatih Yilmaz¹, Mari Luomi¹

¹King Abdullah Petroleum Studies and Research Center

Concurrent Session 1G: Strategic Pathways to Net-Zero: Technological Innovation and Energy Optimization

Session Location: Second Floor Room 3, APEX Convention Center, KAPSARC

Session Presider: Mari Luomi, King Abdullah Petroleum Studies and Research Center

Co-Located Battery Storage And Wind Power Plant: Optimization Of Revenue Streams And Role In Net-Zero Strategy

Author & Presenter: Qusai Alabbassi, University of Edinburgh

Technology Road Mapping for Achieving Net-Zero Emissions by 2060: A National RDI Mission

Author & Presenter: Ibrahim A. Alrammah, Research, Development and Innovation Authority

Net-Zero Emissions Strategy Using LEAP: A Case Study Of Pakistan

Presenter: Stefano Landini, University of East Anglia

Authors: Gordhan Das Valasai¹, Stefano Landini², Danish Ali¹

¹Quaid -e- Awam University of Engineering, Science and Technology

²University of East Anglia

Assessing The Opportunities And Techno-Economics Of Carbon Dioxide Removals (CDRs) In Saudi Arabia

Presenter: Naser Odeh, King Abdullah Petroleum Studies and Research Center

Authors: Naser Odeh¹, Julian Hunt², Mohamad

Sunday, December 8, 2024
Concurrent Session Block 2
16:00-17:30

Concurrent Session 2A: Innovative Mechanisms for Electricity Markets and Emission Reductions

Session Location: Second Floor Room 2, APEX Convention Center, KAPSARC

Session Presider: *Rolando Fuentes, Tec De Monterrey*

Beyond Prices: A Quantity-Based Approach To Electricity Subsidies In Resource-Rich Countries

Presenter: *Rolando Fuentes, Tec De Monterrey*

Authors: *Rolando Fuentes¹, Roberto Duran¹, Miguel A. Montoya¹*

¹*Tec De Monterrey*

Power Sector Emissions and Allowances in the European Union Emissions Trading System after the Paris Agreement

Author & Presenter: *Akin Ayberk Cilekoglu, King Abdullah Petroleum Studies and Research Center & University of Barcelona*

A Novel Demand Response Strategy for Loads Using Price Signals and Predictive Control

Author & Presenter: *Talal Alharbi, Qassim University*

Incremental Unsupervised Detection of Financially Motivated Attacks in Energy Markets

Presenter: *Ghadeer Alsharif, University of Glasgow*

Authors: *Ghadeer Alsharif¹, Christos Anagnostopoulos¹, Angelos Marnerides²*

¹*University of Glasgow*

²*University of Cyprus*

Leaders And Laggards: Regulatory Regimes And Solar Power Deployment In The Gulf

Authors & Presenters: *Li-Chen Sim, Khalifa University and Karen E. Young, Center on Global Energy Policy, Columbia University*

Concurrent Session 2B: ESG in Energy: Market Impacts, Corporate Strategies, and Global Implications

Session Location: First Floor Room 1, APEX Convention Center, KAPSARC

Session Presider: *Anvita Arora, King Abdullah Petroleum Studies and Research Center*

Energy Sector Stock Prices – Are ESG Measures Significant?

Presenter: *Patrycja Chodnicka-Jaworska, University of Warsaw*

Authors: *Patrycja Chodnicka-Jaworska¹, Sebastian Skuza¹*

¹*Faculty of Management, University of Warsaw*

Navigating the Triple Challenge: An In-depth Exploration of Climate Change, Carbon Emission and Rapid Urbanization's Impact on ESG Practices in the ASEAN Markets

Presenter: *Siti Nur Aqilah Ab Wahab, Universiti Malaysia Sabah*

Authors: *Siti Nur Aqilah Ab Wahab¹, Nurshila Ahmad¹, Jaizah Othman²*

¹*Labuan Faculty of International Finance, Universiti Malaysia Sabah*

²*Imam Abdulrahman Bin Faisal University*

Impact Of ESG Regulations On Abnormal Returns In The Energy Sector

Presenter: *Marcin Kot, University of Warsaw*

Authors: *Piotr Jaworski¹, Marcin Kot¹*

¹*University of Warsaw*

A Multi-Faceted Analysis Of Factors Influencing Corporate Net-Zero Activities

Presenter: *Abdullah Tirgil, Ankara Yildirim Beyazit University*

Authors: *Derya Fındık¹, Ali Direkçi², Abdullah Tirgil¹*

¹*Ankara Yildirim Beyazit University*

²*Alanya University*

Renewable Energy and ESG Metrics in U.S. E&P Companies: Strategic Implications for MENA Oil Producers

Presenter: *Lamyaa Ibrahim AlGhofaili, Aston University*

Authors: *Lamyaa Ibrahim AlGhofaili¹, Shubham Singh²*

¹*Aston University*

²*New York University*

Concurrent Session 2C: Optimizing Hydrogen Systems for a Sustainable Future

Session Location: Second Floor Room 3, APEX Convention Center, KAPSARC

Session Presider: *Saud Saad Albadeea, Sharq-SABIC*

Optimization And Modeling Hydrogen System Production From Renewable Energies (PV, Wind, Hybrid) Using Julia Software. Case Study: Algeria

Presenter: *Nadji Agadi, Pan African University Institute of Water and Energy Sciences*

Authors: *Nadji Agadi¹, Kristin Dietrich²*

¹*Pan African University Institute of Water and Energy*

Sciences

²Technische Universität Berlin

Integrated Co-Optimization Of A Green Water-Power-Hydrogen System

Presenter: Minzhuo Huang, King Abdullah University of Science and Technology

Authors: Minzhuo Huang¹, Ricardo M. Lima¹, Omar Knio¹

¹King Abdullah University of Science and Technology

Modeling GHG Intensity For Low-Carbon Hydrogen Production And Transportation In Saudi Arabia

Presenter: Majid M Alotaibi, King Fahd University Of Petroleum And Minerals

Authors: Majid M Alotaibi¹, Awad B.S. Alquaity¹
¹King Fahd University Of Petroleum And Minerals

Hydrogen and Biofuels: Opportunity Cost Approach to Decarbonize Refinery Industry

Presenter: Svetlana A. Ikonnikova, TUM School of Management

Authors: Svetlana A. Ikonnikova^{1,2}, Tommaso Bonini¹, Sofia A. Berdysheva²

¹TUM School of Management

²Bureau of Economic Geology, University of Texas

European Oil Refineries And Decarbonization: Analyzing Opportunities For The Adoption Of Saudi Arabian Clean Hydrogen

Presenter: Tommaso Bonini, Technical University of Munich

Authors: Tommaso Bonini¹, Abdulaziz AlTurki², Svetlana A. Ikonnikova¹

¹TUM School of Management

²King Abdulaziz University

Concurrent Session 2D: Oil Price Dynamics and Energy Consumption in Global and Regional Contexts

Session Location: First Floor Room 3, APEX Convention Center, KAPSARC

Session Presider: Sid Ahmed Hamdani, King Abdullah Petroleum Studies and Research Center

Asymmetric Effects Of Oil Prices On Saudi Arabia's Non-Oil Trade Balance. Insights From NARDL And Autometrics.

Presenter: Majed Almozaini, King Abdullah Petroleum Studies and Research Center

Authors: Majed Almozaini¹, Fakhri Hasanov¹,
¹King Abdullah Petroleum Studies and Research Center

Long-Term Forecasting Models of Oil Demand Emerging from the Global Petrochemical Sector

Presenter: Raed Al Mestneer, King Abdullah Petroleum Studies and Research Center

Authors: Raed Al Mestneer¹, Carlo Andrea Bollino¹
¹King Abdullah Petroleum Studies and Research Center

The Dynamic Effects Of Oil Prices Changes On The Industrial Production In The G20: Cross-Section Dependence Approach

Presenter: Oubeid Rahmouni, Imam Mohammad Ibn Saud University

Authors: Oubeid Rahmouni¹, Dalal Alkahtani²
¹Imam Mohammad Ibn Saud University

²Princess Noura University

Temporal and Impact Behavior Analysis of Oil Price Cyclical Components

Presenter: Atiq W Siddiqui, Al Yamamah University

Authors: Atiq Siddiqui¹, Yazeed Al Suhaibany
¹Al Yamamah University

²Imam Abdulrahman Bin Faisal University²

Estimating The Demand For Natural Gas In The MENA Region: A Panel Analysis With Time-varying and Cross-Sectionally Heterogeneous Relationships

Presenter: Sid Ahmed Hamdani, King Abdullah Petroleum Studies and Research Center

Authors: Jennifer Considine¹, Sid Ahmed Hamdani¹, Abdullah AlDayel¹

¹King Abdullah Petroleum Studies and Research Center

Concurrent Session 2E: Advancing Electric Mobility and Decarbonization in Transportation

Session Location: Second Floor Room 1, APEX Convention Center, KAPSARC

Session Presider: Xun Xu, King Abdullah Petroleum Studies and Research Center

From Policy To Practice: Morocco's Decarbonization Strategies And Lessons For The MENA Transport Sector

Presenter: Sunitha Anup, The International Council on Clean Transportation

Authors: Carol Mungo¹, Sunitha Anup²
¹UNHCR, Mauritania

²The International Council on Clean Transportation

Grid-Aware Electric Fleet Management

Presenter: Qadeer Ahmed, The Ohio State University

Authors: Joon Moon¹, Athar Hanif¹, Qadeer Ahmed¹
¹The Ohio State University

Decarbonizing Road Freight Transportation In Saudi Arabia

Presenter: Xun Xu, King Abdullah Petroleum Studies and Research Center

Authors: Xun Xu¹, Yagyavalk Bhatt¹, Puneet Kamboj¹, Saif Almutairi¹, Thomas Gertin¹, Anvita Arora¹

¹King Abdullah Petroleum Studies and Research Center

Saudi Arabia's Road Passenger Transport Sector Decarbonization

Author & Presenter: Yagyavalk Bhatt, King Abdullah Petroleum Studies and Research Center

Concurrent Session 2F: Energy Security and Policy Responses to Global Challenges

Session Location: First Floor Room 2, APEX Convention Center, KAPSARC

Session Presider: Nader Alkathiri, King Abdullah Petroleum Studies and Research Center

How Far Does OECD Countries' Environmental Policy Stringency Curve Their Reliance On Russian Energy? A Dose-Response Analysis

Author & Presenter: Kazi Sohag, Ural Federal University

Energy Security Performance in MENA Countries: An Integrated Approach

Presenter: Hicham Benamirouche, Research Center in Applied Economics for Development

Authors: Hicham Benamirouche¹, Nour El Islam Djedaa¹

¹Research Center in Applied Economics for Development

The Importance Of Fossil Natural Gas With CCS Toward The Carbon Neutral Society.

Author & Presenter: Satoru Hashimoto, Aomori Public University

LNG Exports: Opportunity And Geopolitics In The Energy Transition

Presenter: Callum Ashcroft, Gas Strategies

Authors: Moon Hussain¹, Callum Ashcroft¹, Pat Breen¹, Martin Lambert¹

¹Gas Strategies

Concurrent Session 2G: Advancing Renewable Energy Adoption Through Policy and Investment

Session Location: Ground Floor Room 1, APEX Convention Center, KAPSARC

Session Presider: Fakhri Hasanov, King Abdullah Petroleum Studies and Research Center

Role Of Foreign Direct Investment In Renewable Energy Development: Case Of Azerbaijan

Presenter: Mayis Azizov, Baku Engineering University

Authors: Mayis Azizov¹, Murad Isgenderov², Fuzuli Aliyev³, Farid Jabiyev⁴

¹Baku Engineering University

²Karabakh University

³ADA University

⁴Baku Higher Oil School

The Impact Of PV System Degradation Rate, Initial System Efficiency, And Interest Rate On The Levelized Cost Of Energy For PV Projects

Author & Presenter: Hamoud Alafnan, University of Ha'il

Enhancing Local Content in Renewable Energy Projects through Building Strong Demand from Industrial and Commercial Sectors

Presenter: Shahad Turkistani, Johns Hopkins University, School of Advanced International Studies

Authors: Shahad Turkistani¹, Majid Alotaibi², Khaled Wahbi³, Hind Alhashem⁴, Deema Alhenakj⁵, Mohammed Fidah⁶, Yaser Albaker⁷

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³King Saud University

⁴Massachusetts Institute of Technology

⁵The University of Manchester

⁶Pennsylvania State University

⁷University of California, San Diego

Domestic And International Effects Of Renewable Energy Transitions In Advanced Economies: The Case Of Germany

Presenter: Fakhri Hasanov, King Abdullah Petroleum Studies and Research Center

Authors: Fakhri Hasanov¹, Shahriyar Mukhtarov²

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²Vistula University

The Limits Of Investment In EVs And Batteries: Domestic Demand, Market Competition And Industrial Policy For Energy Transition

Author & Presenter: June Park, Middle East Institute, National University of Singapore

Monday, December 9, 2024
Concurrent Session Block 3
10:45-12:15

Concurrent Session 3A: Decarbonizing Aviation: Innovations and Strategies for Sustainable Air Transport

Session Location: First Floor Room 3, APEX Convention Center, KAPSARC

Session Presider: *Andres F Guzman, King Abdullah Petroleum Studies and Research Center*

Decarbonization Pathways for the Aviation Sector: Exploring Point-to-Point Networks as a Sustainable Alternative for the Kingdom of Saudi Arabia

Presenter: *Andres F Guzman, King Abdullah Petroleum Studies and Research Center*

Authors: *Andres F Guzman¹, Freddy S. Navarro-Pineda²*

¹King Abdullah Petroleum Studies and Research Center

²Universidad Autónoma de Yucatán

Combining Expert Insight And Local Context: Determining Multi-Criteria Weights For Evaluating Airport Locations

Presenter: *Juan Nicolas Gonzalez, King Abdullah Petroleum Studies and Research Center*

Authors: *Juan Nicolas Gonzalez¹, Andres F Guzman¹*

¹ King Abdullah Petroleum Studies and Research Center

Sustainable Aviation Fuels (SAFs): Future Outlook For Reducing Aviation Emissions In Light Of Potential Production Capacities Across Regions Of The World

Presenter: *Chetan Talwar, King Abdullah Petroleum Studies and Research Center*

Authors: *Chetan Talwar¹, Andres F Guzman¹, Anvita Arora¹*

¹King Abdullah Petroleum Studies and Research Center

Concurrent Session 3B: Critical Minerals and Strategic Market Forecasting: Insights and Collaborations

Session Location: Ground Floor Room 1, APEX Convention Center, KAPSARC

Session Presider: *Colin Ward, King Abdullah Petroleum Studies and Research Center*

Forecasting Copper Prices: Bridging Econometric and Machine Learning Models for Medium-Term Horizons

Presenter: *Maylis Peyret, Université Paris-Dauphine-PSL*

Authors: *Maylis Peyret¹, Frédéric Gonand¹*

¹Université Paris-Dauphine-PSL

Unfolding Potential of GCC-China Collaboration on Critical Minerals

Presenter: *Dongmei Chen, King Abdullah Petroleum Studies and Research Center*

Authors: *Dongmei Chen¹, Jianping Ge²*

¹King Abdullah Petroleum Studies and Research Center

²China University of Geosciences

Saudi Arabia In The Global Critical Minerals Market: Opportunities, Challenges, And Lessons From China

Presenter: *Kaho Yu, Asia Carbon Institute*

Authors: *Kaho Yu¹, Jinsok Sung²*

¹Asia Carbon Institute

²Energy Studies Institute, National University of Singapore

Does Participation In Energy GVCs Promote Value-Added Growth?

Presenter: *Halit Yanikkaya, Gebze Technical University*

Authors: *Taner Turan¹, Halit Yanikkaya¹, Hüseyin Alperen Özer¹*

¹Gebze Technical University

Concurrent Session 3C: Emerging Leaders in Green Hydrogen: Middle East and North Africa Perspectives

Session Location: First Floor Room 2, APEX Convention Center, KAPSARC

Session Presider: *Rida Rikabi, Arab Energy Club*

Recent Progress And Strategic Positioning Of Morocco's Emerging Green Hydrogen Production Sector

Author & Presenter: *Rida Rikabi, Arab Energy Club*

Assessing Hydrogen Potential In The MENA Region – A Three-Dimensional Index Approach

Presenter: *Jakob Baumgarten, TU Dresden*

Authors: *Jakob Baumgarten¹, Dominik Möst¹*

¹Technische Universität Dresden

Hydrogen Economy In Saudi Arabia: Opportunities And Limitations Towards Sustainable Energy

Author & Presenter: *Ghufran Hamad AIMaghlouth, King Faisal University*

Hybrid Renewable Hydrogen Systems in Oman: Techno-economic Evaluation for Three Diverse

Locations

Author & Presenter: Sulaiman S Al Hashmi, Sultan Qaboos University

Concurrent Session 3D: Hydrogen and Alternative Fuels in Maritime Shipping: Pathways to Decarbonization

Session Location: Second Floor Room 3, APEX Convention Center, KAPSARC

Session Presider: Nora Nezamuddin, King Abdullah Petroleum Studies and Research Center

Multi-Criteria Decision Analysis of Hydrogen Refueling Infrastructure for Decarbonizing Maritime Cargo Shipping Routes

Presenter: Maryam M Jamal, Istanbul Bilgi University

Authors: Mine Güngörmüşler¹, Maryam M Jamal¹
¹Istanbul Bilgi University

Assessing Hydrogen As A Shipping Fuel: A Very Large Crude Carrier Case Study

Presenter: Nora Nezamuddin, King Abdullah Petroleum Studies and Research Center

Authors: Michael Samsu Koroma¹, Nora Nezamuddin¹, Anvita Arora¹

¹King Abdullah Petroleum Studies and Research Center

Exploring The Impact Of Energy Efficiency Improvements On Fuel Consumption In The Shipping Sector: Insights From The Middle East & Africa Region

Presenter: AHM Mehabub Anwar, King Abdullah Petroleum Studies and Research Center

Authors: AHM Mehabub Anwar¹, Rubal Dua¹, Abdulrahman Alwosheel¹

¹King Abdullah Petroleum Studies and Research Center

Concurrent Session 3E: The Nexus of Climate, Migration, and Energy Consumption

Session Location: Second Floor Room 1, APEX Convention Center, KAPSARC

Session Presider: Carlo Andrea Bollino, Università di Perugia

Is There An Impact Of International Migration Flows On CO₂ Emissions?

Presenter: Carlo Andrea Bollino, Università di Perugia

Authors: Carlo Andrea Bollino¹, Marzio Galeotti²

¹Università di Perugia

²University of Milan

Impact Of Temperature On Energy Consumption: A Climate Perspective

Presenter: Jeyhun I. Mikayilov, King Abdullah Petroleum Studies and Research Center

Authors: Jeyhun I. Mikayilov¹, Fateh Belaid¹

¹King Abdullah Petroleum Studies and Research Center

Heterogeneous Effects of Government Energy Assistance Programs: Covid-19 Lockdowns in the Republic of Georgia

Presenter: Levan Bezhanishvili, Institute of Economic Studies, Charles University

Authors: Anna Alberini¹, Levan Bezhanishvili², Milan Ščasný²

¹University of Maryland

²Institute of Economic Studies, Charles University

The Legal Character of the Paris Agreement and Obligations Relating to Nationally Determined Contributions (NDCs) for Effective Implementation of the Agreement: Focus on Gulf Countries

Author & Presenter: Sarah Alotaibi, King Faisal Center for Research and Islamic Studies

Concurrent Session 3F: Design and Innovation for Energy-Efficient Urban Development

Session Location: Second Floor Room 2, APEX Convention Center, KAPSARC

Session Presider: Anvita Arora, King Abdullah Petroleum Studies and Research Center

Designing for Energy-Efficient Cities: A Contextualized Approach

Author & Presenter: Anna Laura Petrucci, University La Sapienza / King Saud University

Effect of Aspect Ratio and Orientation on Energy Performance of Mixed-Use High-Rise Buildings in Riyadh

Presenter: Mohammed Raihan, King Saud University

Authors: Mohammed Raihan¹, Sami Al Sanea¹
¹King Saud University

The Advances In HVAC Refrigerants: Addressing Environmental And Regulatory Challenges

Presenter: Saly Abdou, King Fahd University of Petroleum and Minerals

Authors: Saly Abdou¹, Muhammad Asif¹

¹King Fahd University of Petroleum and Minerals

The Role Of Microgrids In Achieving Energy Transition And Sustainability: Case Study Of Sulaiman Al-Rajhi University

Author & Presenter: Mohammed AL-Haj, Sulaiman AL-Rajhi University

Analysis of the Performance of a Solar Absorption
Cooling System in Riyadh

Presenter: Abdulaziz Bundayel, King Saud
University

Authors: Abdulaziz Bundayel, Jamel Orfi¹
¹King Saud University

Concurrent Session 3G: Technological and Service Innovations for Energy Efficiency in MENA

Session Location: First Floor Room 1, APEX
Convention Center, KAPSARC

Session Presider: Muhammad Asif, King Fahd
University of Petroleum and Minerals

The Role Of Energy Service Companies (ESCOs) In
Driving Energy Efficiency In Saudi Arabia

Presenter: Syed Ilyas, King Fahd University of
Petroleum and Minerals

Authors: Syed Ilyas¹, Muhammad Asif¹
¹King Fahd University of Petroleum and Minerals

The role of IoT in HVAC maintenance and
Energy efficiency: A review paper

Presenter: Gulab Jan, King Fahd University of
Petroleum and Minerals

Authors: Gulab Jan¹, Muhammad Asif¹
¹King Fahd University of Petroleum and Minerals

Decarbonization In The GCC Energy Sector:
Techno-Economic Analysis Of The Potential Energy
Technologies

Author & Presenter: Muhammad Asif, King Fahd
University of Petroleum and Minerals

Activated Carbon From Date Palm Fronds As Green
Catalyst For Biodiesel Synthesis

Presenter: Raiedhah Alsaiani, Najran University

Authors: Raiedhah Alsaiani¹, Khulud Alhammani¹,
Nourah Alsaiani¹, Nouf Alamiri¹, Shuruq Alsaiani¹,
Jawaher Alasmari¹, Reem Alsaiani¹, Moustafa Rizk¹
¹Najran University

Regression-Based Lighting Energy Efficiency
Modeling for Office Buildings in Hot Climates: Case
Study Saudi Arabia Dhahran

Presenter: Maimonah N. Al Maqremi, King Fahd
University of Petroleum and Minerals

Authors: Maimonah N. Al Maqremi¹, Ahmed
Ghaithan¹, Salah Abdo²

¹King Fahd University of Petroleum and Minerals

²The National University

Monday, December 9, 2024
Concurrent Session Block 4
12:45 -14:15

Concurrent Session 4A: Optimizing Regional Power Infrastructure and Economic Interconnections

Session Location: Second Floor Room 1, APEX Convention Center, KAPSARC

Session Presider: *Marie Petitot, King Abdullah Petroleum Studies and Research Center*

Forecasting, Renewables, And Balancing:
Navigating Saudi Arabia's Power System
Transformation

Presenter: *Marie Petitot, King Abdullah Petroleum Studies and Research Center*

Authors: *Marie Petitot¹, Sandrine Wachon¹*

¹*King Abdullah Petroleum Studies and Research Center*

Developing A Demand Response Framework For
The Kingdom Of Saudi Arabia

Presenter: *Amit Pinjani, London Economics International*

Authors: *Amit Pinjani¹, Shashwat Nayak¹*

¹*London Economics International*

Geopolitical Determinants Of Cross-Border Energy
Trade: A Gravity Model Assessment

Presenter: *Emre Hatipoglu, KAPSARC School of Public Policy*

Authors: *Emre Hatipoglu¹, Mehmet Ali Soytas²*

¹*KAPSARC School of Public Policy*

²*Human Resources Development Fund*

Concurrent Session 4B: Innovative Approaches to Sustainable Energy and Resource Optimization

Session Location: Second Floor Room 2, APEX Convention Center, KAPSARC

Session Presider: *Saud Albadeea, Sharq-SABIC*

Design And Analysis Of Saudi Dams And Retrofitting
Into Pumped Hydro Storage

Presenter: *Saud Albadeea, King Fahd University of Petroleum and Minerals*

Authors: *Saud Albadeea¹, Tawfiq Albeshri¹*

¹*King Fahd University of Petroleum and Minerals*

Produced Water From The Oil And Gas Industry As
A Resource—South Kuwait As A Case Study

Presenter: *Feras Adel AlSalem, Kuwait Gulf Oil Company*

Authors: *Feras Adel AlSalem¹, Thies Thiemann², Fawaz Adel AlSalem³, Khaled Aldeyain⁴*

¹*Kuwait Gulf Oil Company*

²*United Arab Emirates University*

³*Kuwait Oil Company*

⁴*Ministry of Oil*

Geothermal Energy Feasibility And Economics In
Saudi Arabia

Author & Presenter: *Khaled Alusaimi, Saudi Aramco*

Compressed Air Energy Storage: Bridging The Gap
Between Renewables And Reliable Power

Presenter: *Mohamed Alemam, EDF*

Authors: *Mohamed Alemam, Alwaleed AlQuraini*

¹*EDF*

²*NEOM*

Advancement Of Strategic Policy Frameworks For
Biogas-Based Clean Cooking In Uganda: An
Empirical Approach

Presenter: *Maureen Kizza Lugolobi, Makerere University Business School*

Authors: *Maureen K Lugolobi¹, Nicholas Mukisa¹, Pamela Nader², Bamwebaze George³, Ronnette Atukunda¹, Ruth Atuhaire¹*

¹*Makerere University Business School*

²*Université Saint-Joseph*

³*Pan African University, Institute for Basic Sciences, Technology and Innovation*

Concurrent Session 4C: Balancing Water and Energy for Hydrogen Sustainability

Session Location: Second Floor Room 3, APEX Convention Center, KAPSARC

Session Presider: *Tarek Fettahi, IFP School*

Green Hydrogen & Water Consumption: Evaluating
Energy Mix Impact On Water Consumption In Saudi
Arabia

Presenter: *Selma Benazir Khalil, Johns Hopkins University*

Authors: *Selma Benazir Khalil¹, Bahaa Joudieh¹*

¹*Johns Hopkins University*

Navigating Water's Role In The Green Hydrogen
Economy: Challenges And Opportunities

Presenter: *Muhammad Imran Khan, King Fahd University of Petroleum and Minerals*

Authors: *Muhammad Imran Khan¹, Muhammad Asif², Faisal Asfand³, Sami G. Al Ghamdi⁴*

¹*Prince Mohammed Bin Fahd University*

²*King Fahd University of Petroleum and Minerals*

³*University of Huddersfield*

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The Role Of Power Systems in Supporting Clean Hydrogen Production In The Middle East

Presenter: Tarek Fettahi, IFP School

Authors: Tarek Fettahi¹, Benjamin Ricaud², Marie Petitet³, Olivier Massol⁴

¹IFP School

²EDF

³King Abdullah Petroleum Studies and Research Center

⁴Centralesupélec Paris-Saclay University

Evaluation Of Green And Blue Hydrogen Production Potential In Saudi Arabia

Presenter: Talal Abdulkarem Al-Masaabi, KAPSARC School of Public Policy

Authors: Talal Abdulkarem Al-Masaabi¹, Muhannad S. Al-Khelaiwi², Hany Farag³, Shafiqur Rehman²

¹KAPSARC School of Public Policy

²King Fahd University of Petroleum and Minerals

³York University

Design And Simulation Of A Photovoltaic Power Plant For Green Hydrogen Production In Saudi Arabia

Author & Presenter: Mohammed S Alghamdi, University of Sheffield and King Abdulaziz City for Science and Technology

Concurrent Session 4D: Strategic Pathways to an Energy Transition

Session Location: Ground Floor Room 1, APEX Convention Center, KAPSARC

Session Presider: **Marcello Contestabile, Qatar Environment and Energy Research Institute**

Corporate Responses To Climate Risks: The Strategic Shift Toward Green Patents In A Transitioning World

Presenter: Fatima Shuwaikh, Léonard de Vinci Pôle University

Authors: Fatima Shuwaikh¹, Ludovico Giustino²

¹Léonard de Vinci Pôle University

²Catolica Lisbon School of Business and Economics

The Struggle For A Just Energy Transition

Author & Presenter: Osamah Alsayegh, Kuwait Institute for Scientific Research

Financial Inclusion, Governance, Diversification, And Environmental Sustainability In G20 Nations-Quantile On Quantile Approach

Author & Presenter: Rozina Shaheen, Effat University

The Impact Of Natural Climate Cycles On Global Climate Change

Author & Presenter: Ibrahim S Al-Mutaz, King Saud University

Analyzing Trade-Offs In Qatar's Energy System Transition Under Future Emission Pathways

Presenter: Marcello Contestabile, Qatar Environment and Energy Research Institute

Authors: Pankaj Kumar¹, Carlos Mendez¹, Ariane Millo², Pooya Hoseinpoori², Shivika Mittal², Maroua Benlahrech¹, Adam Hawkes², Marcello Contestabile¹

¹Qatar Environment and Energy Research Institute

²Imperial College

Concurrent Session 4E: Balancing Energy Transition and Economic Resilience: Insights from MENA

Session Location: First Floor Room 3, APEX Convention Center, KAPSARC

Session Presider: **Fatih Karanfil, King Abdullah Petroleum Studies and Research Center**

Oil Dependence In Transition: The Role Of Labor Market Dynamics In Maintaining A Resilient Economy

Presenter: Fatih Karanfil, King Abdullah Petroleum Studies and Research Center

Authors: Dramane Coulibaly¹, Fatih Karanfil², Luc Désiré Omgba³

¹University Lumière Lyon 2

²King Abdullah Petroleum Studies and Research Center

³University of Lorraine

The Impact Of Economic Policy Uncertainty On CO₂ Emissions In Selected Mena Countries

Presenter: Fuzuli Aliyev, ADA University

Authors: Fuzuli Aliyev¹, Ayşe Nur Şahinler², Nijat Gasim³, Hazi Eynalov⁴, Mayis Azizov⁴

¹ADA University

²Ankara Yildirim Beyazit University

³Baku State University

⁴Baku Engineering University

Assessing The Impact Of Public-Private Partnerships On Carbon Emissions Reduction In Saudi Arabia's Energy Sector

Author & Presenter: Haifa Albelaid, Georgetown University

Concurrent Session 4F: Strategies for Diversifying Economies in a Climate-Constrained World

Session Location: First Floor Room 2, APEX
Convention Center, KAPSARC
Session Presider: *Max Åhman, Lund University*

Green Commodity Exports For Diversifying In A
Climate-Restricted World - A Comparison Of
Benefits And Challenges Of Future Iron And
Petrochemicals Exports

Author & Presenter: *Max Åhman, Lund University*

New Industrial Policies: Analysis Of Coordination
Axis For Policy Entrepreneurship In Energy
Transition

Author & Presenter: *Arzu Ulusoy Shipstone, Prince
Sultan University*

Foreign Direct Investment, Trade Openness And
Ecological Footprint In Developing Economy: Saudi
Arabia

Author & Presenter: *Najla T Almutairi, King Saud
University*

Impact Of Foreign Direct Investment On Emission
Intensity Embedded In Trade

Presenter: *Abdullah Altun, Gebze Technical
University*

Authors: *Halit Yanikkaya¹, Abdullah Altun¹, Pinar
Tat¹*

¹*Gebze Technical University*

The Role of Crude Oil Exports in Foreign-Domestic
Investments, Economic Growth and Development in
Oil-rich Countries: New Empirical Evidence from
Nigeria Using Bayesian Time-Varying Parameter
Structural VAR Model with Stochastic Volatility

Presenter: *Auwal Isah, Central Bank of Nigeria*

Authors: *Auwal Isah¹, Ladi Bala-Keffi Raulatu¹,
Amina Ahmad Aliyu², Esther Okeke Ngozi¹*

¹*Central Bank of Nigeria*

²*Ahmadu Bello University Zaria*

Evaluating The Impact Of Capital Incentives On The
Economic Viability Of Solar Rooftop Systems

Presenter: *Sikandar Abdul Qadir, King Fahd
University of Petroleum and Minerals*

Authors: *Sikandar Abdul Qadir¹, Amjad Ali¹,
Muhammad Shahid¹, Md Tasbirul Islam¹*

¹*King Fahd University of Petroleum and Minerals*

The Impact Of Renewable And Non-Renewable
Energy On Environmental Performance In GCC
Countries: Threshold Analysis Insights And The Role
Of Moderating Variables

Presenter: *Thouraya Hadj Amor, Shaqra University*

Author: *Thouraya Hadj Amor¹, Ridha Nouira²,
Samia Gmidene³, Christophe Rault⁴*

¹*Shaqra University*

²*LAMIDED and ISFF University of Sousse*

³*University of Sfax*

⁴*University of Orléans, CESifo, and IZA*

Wind Energy Potential Assessment And Turbine
Optimization Using Weibull Distribution: A
Comparative Study Of Selected Cities In Saudi
Arabia

Presenter: *Meer Abdul Mateen Khan, King Fahd
University of Petroleum and Minerals*

Authors: *Talal Al Masaabi¹, Muhannad Al Khelaiwi¹,
S. K. Shuja¹, Meer Abdul Mateen Khan¹*

¹*King Fahd University of Petroleum and Minerals*

Concurrent Session 4G: Optimizing Costs and Performance of Renewable Energy Projects

Session Location: First Floor Room 1, APEX
Convention Center, KAPSARC

Session Presider: *Meer Abdul Mateen Khan,
King Fahd University of Petroleum and Minerals*

Design And Simulation Of 25kWp PV System
Connected To Grid Using PVSYS

Presenter: *Mustafa Mohammed Alrehaili, Islamic
University of Madinah*

Authors: *Adebayo Sodiq Ademola¹, Rahman
Alkassem¹, Mustafa Mohammed Alrehaili¹, Nader
Saud Alharbi¹*

¹*Islamic University of Madinah*