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**Day 2: Sunday, February 5, 2023**  
**Concurrent Session Block 1**  
**11:15 – 12:45**

### Concurrent Session 1A: Geopolitical Risk and Energy Security

**Session Location:** Auditorium, Ground Floor, APEX Convention Center  
**Session Presider:** Tilak Doshi, Doshi Consulting

#### The Security of Energy Demand

**Author & Presenter:** Michael Lynch, Energy Policy Research Foundation, Inc. (EPRINC)

#### Energy Security in Mexico

**Author & Presenter:** Emily Medina, Asia Pacific Energy Research Centre (APEREC)

#### Quantifying Energy Security Risks in Southeast Asia

**Author & Presenter:** Glen Sweetnam, Asia Pacific Energy Research Centre (APEREC)

#### Competing Interests: Energy Transition, Energy Security and Energy Justice

**Presenter:** Slawomir Raszewski, University of East London  
**Authors:** Slawomir Raszewski<sup>1</sup>, Eduardo G. Pereira<sup>2</sup>, Ngozi Chinwa Ole<sup>3</sup>  
<sup>1</sup>University of East London, <sup>2</sup>University of West Indies, <sup>3</sup>African Centre of Excellence for Water and Environmental Research

### Concurrent Session 1B: Disruptions in Natural Gas Markets

**Session Location:** Room 2A, Second Floor, APEX Convention Center  
**Session Presider:** Nathalie Hinchey, The Brattle Group, Inc.

#### On the Geopolitical Disruption of the EU Natural Gas Market: A Correction Model

**Author & Presenter:** Pierluigi Nichilo, Colorado School of Mines and IFP School

#### Market Integration in the Global Natural Gas Market - Empirical Evidence on Asymmetric Price Transmission

**Author & Presenter:** Markos M Farag, University of Cologne

#### Short-Term Actions To Address The Current Oil And Gas Crisis In The APEC Region

**Author & Presenter:** Christopher J Doleman, Asia Pacific Energy Research Centre (APEREC)

#### Natural Gas Consumption In Azerbaijan: Is There Room To Export More?

**Presenter:** Sarvar Gurbanov, ADA University  
**Authors:** Sarvar Gurbanov<sup>1</sup>, Jeyhun Mikayilov<sup>2</sup>, Shahin Maharramli<sup>3</sup>

<sup>1</sup>School of Public and International Affairs, ADA University, <sup>2</sup>King Abdullah Petroleum Studies and Research Center (KAPSARC), <sup>3</sup>Azerbaijan Energy Regulatory Agency

#### Natural Gas Export Capacity And Domestic Consumers: A Tale Of Two Australia's

**Author & Presenter:** Mathew C Horne, Asia Pacific Energy Research Centre (APEREC)

### Concurrent Session 1C: Energy, Risk and Electricity Markets

**Session Location:** Room 1A, First Floor, APEX Convention Center

**Session Presider:** Peter Hartley, Baker Institute, Rice University

#### Gas Games With Electricity

**Author & Presenter:** Kelly Neill, University of Sydney

#### Occupational Choice And Energy Access – Electricity For More And Better Jobs

**Author & Presenter:** Ulrike G Lehr, World Bank Group

#### Tail-Based Risk Network In Energy Sectors

**Presenter:** Layla H Khoja, Dar Al-Hekma University  
**Authors:** Gazi Salah Uddin<sup>1</sup>, Axel Hedström<sup>2</sup>, Muhammad Yahya<sup>3</sup>, Layla Khoja<sup>4</sup>  
<sup>1,2</sup>Linköping University, <sup>3</sup>Inland Norway University of Applied Sciences, <sup>4</sup>Dar Al-Hekma University

#### Impacts Of The COVID-19 Pandemic On Natural Gas Use In The APEC Region Based On The Joint Organizations Data Initiative (JODI) Data

**Author & Presenter:** Nobuhiro Sawamura, Asia Pacific Energy Research Centre (APEREC)

#### Roadmap For Smart Energy Solutions To Reach A Sustainability To Reach A Sustainable And Secure Electricity Supply In Europe

**Author & Presenter:** Philipp Riegebauer, Centre of Innovative Energy Systems, University of Applied Sciences, Dusseldorf and BABLE GmbH

### Concurrent Session 1D: Modeling Volatility and Risk in Energy Markets

**Session Location:** Room 2B, Second Floor, APEX Convention Center

**Session Presider:** John Ballantine, Brandeis University

#### Strategic Commodities' Price Risk And Financial Contagion In Oil Importing And Oil Exporting Countries

**Presenter:** Khaled Guesmi, Center of Research for Energy and Climate Change (CRECC) - Paris School of Business & Telfer School of Management, University of Ottawa, Canada

**Authors:** Ilyes Abid<sup>1</sup>, Saad Alshammari<sup>2</sup>, Khaled Guesmi<sup>3</sup>, Ramzi Benkariem<sup>4</sup>, Christian Urom<sup>5</sup>

<sup>1</sup>ISC Paris, <sup>2</sup>University of Rhodes Island, <sup>3</sup>Center of Research for Energy and Climate Change (CRECC) - Paris School of Business & Telfer School of Management, University of Ottawa, Canada, <sup>4</sup>Audencia Business School, <sup>5</sup>Paris School of Business

#### Global Oil Inventory Responses To Geopolitical Shocks

**Presenter:** Philipp Galkin, King Abdullah Petroleum Studies and Research Center (KAPSARC)

**Authors:** Philipp Galkin<sup>1</sup>, Jennifer Considine<sup>1</sup>, Emre Hatipoglu<sup>1</sup>  
<sup>1</sup>King Abdullah Petroleum Studies and Research Center (KAPSARC)

#### Oil Price Cycles And The Choice Of Private Vs Public Schools

**Author & Presenter:** Abdullah Almansur, KFUPM Business School

#### The Cost-Effectiveness Of Physical Versus Financial Risk Mitigation For Hydropower Suppliers

**Presenter:** Rui Shan, University of North Carolina at Chapel Hill

**Authors:** Rui Shan<sup>1</sup>, Rosa I. Cuppari<sup>1</sup>

<sup>1</sup> University of North Carolina at Chapel Hill

### Concurrent Session 1E: Balancing Resiliency and Volatility

**Session Location:** Room 2C, Second Floor, APEX Convention Center

**Session Presider:** Mustafa Babiker, Saudi Aramco

#### Minimizing Oil Revenue Volatility For Saudi Arabia: Statistical Analysis And Impact Overview

**Presenter:** Khalid Aldubayyan, Ministry of Energy, Saudi Arabia

**Authors:** Khalid Aldubayyan<sup>1</sup>, Abdulkarim Alfalaj<sup>2</sup>, Ali Alsaeed<sup>3</sup>, Abdullah Alayed<sup>4</sup>

<sup>1</sup>Oil Sustainability Program, Ministry of Energy, <sup>2</sup> Saudi Aramco, <sup>3</sup> Accenture, <sup>4</sup>King Abdullah City for Atomic and Renewable Energy (KA CARE)

#### Resilience Of Saudi Arabia's Economy To Oil Shocks: Effects Of Economic Reforms

**Presenter:** Hossa Al Mutairi, King Abdullah Petroleum Studies and Research Center (KAPSARC)

**Authors:** Hossa Al Mutairi<sup>1</sup>, Marzio Galeotti<sup>2</sup>, Baltasar

Manzano<sup>3</sup>, Axel Pierru<sup>1</sup>

<sup>1</sup> King Abdullah Petroleum Studies and Research Center (KAPSARC), <sup>2</sup> KAPSARC and University of Milan, <sup>3</sup> KAPSARC and Universidade de Vigo

#### Economic Impacts Of Investment In Renewables For Energy Exporters With Oil Price Uncertainty: A Diversification Strategy?

**Author & Presenter:** Christopher M Hannum, University of Central Asia

#### The Russian Invasion Of Ukraine And The Interests Of The GCC Oil Producers

**Author & Presenter:** Nikolay Kozhanov, Gulf Studies Center, Qatar University

#### Establishing Dialogue In The International LNG Market: A Decade Of LNG Producer-Consumer Conferences

**Author & Presenter:** Kazutomo Irie, Asia Pacific Energy Research Centre (APERC)

### Concurrent Session 1F: Integrating Energy Efficiency and Renewables

**Session Location:** Room 1C, First Floor, APEX Convention Center

**Session Presider:** Adam Cohen, Associated Universities. Inc.

#### What Role Does Energy Efficiency Play In Climate Mitigation In Saudi Arabia? Time Series Quantile And Out-Of-Sample Forecast Approaches

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

**Authors:** Fateh Belaid<sup>1</sup>, Camille Massié<sup>2</sup>

<sup>1</sup> King Abdullah Petroleum Studies and Research Center (KAPSARC), <sup>2</sup> FGES, Lille Catholic University

#### Emissions Pricing Instruments With Intermittent Renewables: Second-Best Policy

**Author & Presenter:** Nandeeta Neerunjun, Aix Marseille School of Economics

#### Causal Relationships Between Renewable Energy Patents And Renewable Electricity Generation Among 18 OECD Countries

**Presenter:** Eunnyeong Heo, Seoul National University

**Authors:** Eunnyeong Heo<sup>1</sup>, Yeongju Yun<sup>1</sup>

<sup>1</sup> Seoul National University

#### What Do We Know About Electricity Demand Elasticities For The Future?

**Author & Presenter:** Carol A Dahl, Colorado School of Mines

#### Renewable Resource Rents, Taxation And The Effects Of Wind Power On Rural Economies

**Presenter:** Nhu Nguyen, Purdue University

**Authors:** Russell Hillberry<sup>1</sup>, Nhu Nguyen<sup>1</sup>

<sup>1</sup> Department of Agricultural Economics, Purdue University

### Concurrent Session 1G: Energy and the Economy (conducted in Arabic)

**Session Location:** Room 1B, First Floor, APEX Convention Center

**Session Presider:** Radia Sedaoui, UN Economic Social Commission of West Asia (UNESCWA)

الاستثمار المستدام: بحث حول دور الصناديق السيادية في دعم وتمويل مشاريع الطاقة النظيفة بين فرص النجاح وكوابحه

**Presenter:** Salwa Al Mulla, Hamad bin Khalifa University

**Authors:** Salwa Al Mulla<sup>1</sup>, Mohammed Elmahdi Chenine<sup>1</sup> Hamad Bin Khalifa University,<sup>2</sup> University Kasdi Merbah-Ouargla

الاقتصاد الأخضر وأثره على التنمية المستدامة في المملكة العربية السعودية مقارنة بتجارب دولية

**Presenter:** Nada Alsaif, King Saud University (KSU)

**Authors:** Nada Alsaif<sup>1</sup>, Nashwa Mustafa Ali Muhammad<sup>1</sup> King Saudi University (KSU)

تحديات إنتاج الطاقة البحرية في الدول العربية: دراسة مقارنة

**Presenter:** Nawal Ali, King Saud University (KSU)

**Authors:** Sarah Almogbel<sup>1</sup>, Nawal Ali<sup>1</sup> King Saudi University (KSU)

### An Experiment On Plastic Waste Distillation And Plastic Waste Oil

**Author & Presenter:** Kamal Hamid, University of Njala

### Day 2: Sunday, February 5, 2023

#### Panel Discussion – Session 1

11:15 – 12:45 (Main Hall)

### Panel Discussion: Hydrogen-Fueling the Future: Opportunities and Challenges

**Session 1:** Hydrogen: Between affordability, energy security, and diversity

**Session Focus for Discussion:** A hydrogen economy is anticipated to include hydrogen as a globally traded commodity. Due to the multiple pathways to produce clean hydrogen, new entrants will compete with traditional energy exporters. In contrast, importers are expected to seek a multi-dimensional approach seeking affordability, diversity, and energy security, which will affect the geopolitics of energy and reshape energy trade flows. Procuring the raw materials, including precious metals, needed to advance the hydrogen value chain adds another layer of complexity. In this session, we explore the risks and opportunities of the hydrogen economy for MENA countries and potential importers. What is the importance of international collaboration to develop the hydrogen economy? Is there an opportunity for neighboring countries in MENA to cooperate in hydrogen development and trade? How will laws and regulations in importing countries impact future trade flows

of hydrogen? There will be a question-and-answer session at the end of the session.

**Panel Moderator:** Emre Hatipoglu, King Abdullah

Petroleum Studies and Research Center (KAPSARC)

Panelists will be updated on the conference website and the app.

### Day 2: Sunday, February 5, 2023

#### Poster Session 1A

10:45 – 11:15 (Lobby Area During Coffee Break)

دراسة تحليلية لواقع استهلاك الطاقات المتجددة في الدول العربية

**Presenter:** Benlahbib Taha, University of Ouargla

**Authors:** Benlahbib Taha<sup>1</sup>, Ben Seghiér Fatima Zohra<sup>2</sup>

<sup>1</sup>University of Ouargla, <sup>2</sup> Université Larbi Tebessi - Tébessa

### Towards Sustainable Transportation: The Development Of Hydrogen Train In Saudi Arabia

**Author & Presenter:** Hamad Almujiabah, Taif University

### The Relationship Between Financial Development And Renewable Energy Consumption On CO<sub>2</sub> Emissions And Economic Growth In The G20 Countries

**Author & Presenter:** Fatimah Saad Al-kaboor, JATCO

### Hydrogen Production Utilizing Concentrated Solar Power (CSP) in Saudi Arabia

**Author & Presenter:** Abdullah Ayed Alrwili, Northern Border University

### Day 2: Sunday, February 5, 2023

#### Poster Session 1B

15:45 – 16:15 (Lobby Area During Coffee Break)

### Incorporating ESG Indicators Into Financial Models For Hydrogen Assets

**Presenter:** Georgia Giannakidou, Hellenic Association for Energy Economics and Audencia Business School

**Authors:** Georgia Giannakidou<sup>1</sup>, Nikolaos Georgiadis<sup>1</sup>, Andriosopoulos Konstantinos<sup>2</sup>

<sup>1</sup> Hellenic Association for Energy Economics, <sup>2</sup> Audencia Business School

### An Exploratory Study Of Hydrogen Production By Natural Gas With And Without Carbon Sequestration

**Presenter:** Jameel Jamhar, National Institute of Technology, Agartala

**Authors:** Jameel Jamhar<sup>1</sup>, Sukriti Sharma<sup>2</sup>, Asad Sahir<sup>2</sup>

<sup>1</sup> National Institute of Technology, Agartala <sup>2</sup> Indian Institute of Technology, Ropar

### Position Of Petroleum Resources In The Africa's Gulf Of Guinea Region: Environment, Economy And Development

**Author & Presenter:** Babagana Abubakar, K Computers

**Day 2: Sunday, February 5, 2023**  
**Concurrent Session Block 2**  
**16:15 – 17:45**

**Concurrent Session 2A: Commodities, Wealth Funds and Bonds – Instruments to Manage Energy Markets**

**Session Location:** Auditorium, Ground Floor, APEX Convention Center

**Session Presider:** Glen Sweetnam, Asia Pacific Energy Research Centre (APEREC)

**Opportunity Costs And Discount Rates For Public Assessment Of Oil-Related Projects And Policies In Oil-Exporting Countries**

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

**Authors:** Fatih Karanfil<sup>1</sup>, Axel Pierru<sup>1</sup>

<sup>1</sup> King Abdullah Petroleum Studies and Research Center (KAPSARC)

**Sovereign Wealth Funds And Natural Resources Links To Shock Responses: Evidence From The Covid-19 Pandemic**

**Presenter:** Stella Tsani, University of Ioannina

**Authors:** Stella Tsani<sup>1</sup>, Wee Chian Koh<sup>2</sup>

<sup>1</sup> University of Ioannina, <sup>2</sup> Centre for Strategic and Policy Studies, Bandar Seri Begawan

**Structural And Policy Drivers Of The EU Energy Crisis: Exploring Their Nexus Beyond Current Exogenous Shocks**

**Author & Presenter:** Roberto Cardinale, The American University in Cairo

**A First Assessment Of The EU Taxonomy And Its Impact**

**Presenter:** Lucia Visconti Parisio, Università di Milano – Bicocca

**Authors:** Susanna Dorigoni<sup>1,2</sup>, Lucia Visconti Parisio<sup>2</sup>, Paola Galfrascoli<sup>2</sup>

<sup>1</sup> Bocconi University, Milan, <sup>2</sup> Università di Milano – Bicocca

**Time Frequency Connectedness Between Green Bond And The Energy Commodities**

**Presenter:** Fuzuli Aliyev, ADA University

**Authors:** Ayşe Nur Şahinler<sup>1</sup>, Fuzuli Aliyev<sup>2</sup>, Elsevar Ibadov<sup>3</sup>

<sup>1</sup> Ankara Yıldırım Beyazıt University, <sup>2</sup> ADA University, <sup>3</sup> Baku Engineering University

**Concurrent Session 2B: Full Disclosure- ESG and Green Finance**

**Session Location:** Room 1C, First Floor, APEX Convention Center

**Session Presider:** Michael Lynch, Energy Policy Research Foundation, Inc. (EPRINC)

**Closing The Investment Gap To Achieve The Paris Agreement Goals**

**Presenter:** Fatih Yilmaz, King Abdullah Petroleum Studies and Research Center (KAPSARC)

**Authors:** Fatih Yilmaz<sup>1</sup>, Fahad Alswaina<sup>1</sup>, Fateh Belaid<sup>1</sup>, Mohamad Hejazi<sup>1</sup>, Mari Luomi<sup>1</sup>, Salahaddine Soummane<sup>1</sup>

<sup>1</sup> King Abdullah Petroleum Studies and Research Center (KAPSARC)

**ESG And Its Impact On Oil & Gas Investments**

**Author & Presenter:** Julio Arboleda Larrea, King Abdullah Petroleum Studies and Research Center (KAPSARC)

**Energy Transition And Regulatory Actions**

**Presenter:** Amani Mustafa, King Abdulaziz University

**Authors:** Wejdan Asiri<sup>1</sup>, Amani Mustafa<sup>2</sup>, Sarah Alsaadi<sup>3</sup>

<sup>1</sup> The General Authority for Survey and Geospatial Information, <sup>2</sup> King Abdulaziz University, <sup>3</sup> Naft AlSafi Company

**Corporate Disclosure And Green Finance Market: A Legal Perspective**

**Author & Presenter:** Wejdan Asiri, The General Authority for Survey and Geospatial Information

**Concurrent Session 2C: Pricing Electricity Markets – Challenges?**

**Session Location:** Room 1B, First Floor, APEX Convention Center

**Session Presider:** David Omom, Saudi Aramco

**Ex-Post Assessment Of Energy Price Reforms In Saudi Arabia**

**Author & Presenter:** Salahaddine Soummane, King Abdullah Petroleum Studies and Research Center (KAPSARC)

**Privatization And Electricity Sector Performance: A Case Of Electricity Distribution Companies In Nigeria**

**Author & Presenter:** Iyabo A Olanrele, Nigerian Institute of Social and Economic Research

**Competition And Greening Of The French Retail Electricity Market: The Effects On Household Electricity Prices**

**Presenter:** Sandra Moreno, Universite de Perpignan Via Domitia

**Authors:** Sandra Moreno<sup>1</sup>, Sophie Masson<sup>1</sup>

<sup>1</sup> Universite de Perpignan Via Domitia

### Pricing Schemes For Solar Energy Matter In Residential Electricity Use

Presenter: Hideki Shimada, National Institute of Advanced Industrial Science and Technology

Authors: Hideki Shimada<sup>1</sup>, Tomonori Honda<sup>1</sup>

<sup>1</sup> National Institute of Advanced Industrial Science and Technology

### Forecasting Of Korean Electricity Market Price Using Seasonal Decomposition Methods

Presenter: Arim Jin, Konkuk University

Authors: Arim Jin<sup>1</sup>, DaHan Lee<sup>1</sup>, JaeHyung Roh<sup>1</sup>, Jong-Bae Park<sup>1</sup>

<sup>1</sup>Konkuk University

### Concurrent Session 2D: Modelling Energy Futures

**Session Location:** Room 2C, Second Floor, APEX Convention Center

**Session Presider:** Jessica Obeid, Middle East Institute

### Modelling Energy Price Reform Outcomes And Understanding The Determinants Of Success

Presenter: Anwar Gasim, King Abdullah Petroleum Studies and Research Center (KAPSARC)

Authors: Anwar Gassim<sup>1</sup>, Lama Yaseen<sup>1</sup>, Paolo Agnolucci<sup>2</sup>, Paul Ekins<sup>2</sup>

<sup>1</sup> King Abdullah Petroleum Studies and Research Center (KAPSARC), <sup>2</sup> University College London

### The Effects Of Opportunity-Based And Necessity-Based Entrepreneurship On Environmental Performance: A Cross-Country Analysis

Presenter: Boumediene Ramdani, Qatar University

Authors: Boumediene Ramdani<sup>1</sup>, Fateh Belaid<sup>2</sup>, Mahmoud Abdellatif<sup>1</sup>

<sup>1</sup>College of Business and Economics, Qatar University, <sup>2</sup> King Abdullah Petroleum Studies and Research Center (KAPSARC)

### Public Utilities' Corporate Growth And Environmental Conservation: Evidence From Japan

Author & Presenter: Masao Tsujimoto, Japan University of Economics

### Modelling Climate Change Impact On Hydroelectric Power Plant Energy Production

Presenter: Cem Avci, Bogazici University

Authors: Cem Avci<sup>1</sup>, Cem Tiranlar<sup>1</sup>, Irem Akcan<sup>1</sup>, Masume Atam<sup>1</sup>

<sup>1</sup> Bogazici University

### Modelling The Future Of Energy: What Are The Present Tools Missing?

Presenter: Afsal Mr. Najeeb, IIT Bombay

Authors: Afsal Najeeb<sup>1</sup>, Anand B Rao<sup>1</sup>, Satish Agnihotri<sup>1</sup>,

Vinod Mishra<sup>2</sup>, Srinivas Sridharan<sup>2</sup>

<sup>1</sup>IIT Bombay, <sup>2</sup>Monash University.

### Concurrent Session 2E: Carbon Neutrality and Hydrocarbons

**Session Location:** Room 2B, Second Floor, APEX Convention Center

**Session Presider:** Carol Dahl, Colorado School of Mines

### Carbon-Neutral LNG And Oil: The Future Of Hydrocarbons In The World Of Energy Transition?

Presenter: Zlata Sergeeva, King Abdullah Petroleum Studies and Research Center (KAPSARC)

Authors: Zlata Sergeeva<sup>1</sup>, Colin Ward<sup>1</sup>, Rami Shabaneh<sup>1</sup>, Hamid Al Sadoon<sup>1</sup>

<sup>1</sup> King Abdullah Petroleum Studies and Research Center (KAPSARC)

### A Tool For Measuring Countries' Circular Carbon Economy Potential And Progress: The Circular Carbon Economy Index

Presenter: Thamir Al Shehri, King Abdullah Petroleum Studies and Research Center (KAPSARC)

Authors: Fatih Yilmaz<sup>1</sup>, Mari Luomi<sup>1</sup>, Thamir Alshehri<sup>1</sup>

<sup>1</sup> King Abdullah Petroleum Studies and Research Center (KAPSARC)

### Carbon Neutrality Of Oil Majors – Current Status, Targets, And Economic Rationale

Author & Presenter: Matthias Pickl, Saudi Aramco

### How CCS Works For Future Power Market In Japan And Its Impact On The Demand Of Fossil Fuels Especially Coal

Author & Presenter: Hisanori Nei, National Graduate Institute for Policy Studies

### What Changed In The IPCC Report Before And After The Paris Agreement?

Author & Presenter: Jinmi Kim, Korea University

### Concurrent Session 2F: Comparing Investment Strategies in Renewables

**Session Location:** Room 1A, First Floor, APEX Convention Center

**Session Presider:** Nils-Henrik M von der Fehr, University of Oslo

### The Economic And Financial Impact Of Reforms To The Electricity Supply Industry In Saudi Arabia

Author & Presenter: Jeremy Rothfield, King Abdullah Petroleum Studies and Research Center (KAPSARC)

### Economic And Energy Impacts Of Saudi's Giga Tourism Projects

Presenter: David Omom, Saudi Aramco

Authors: David Omom<sup>1</sup>, Sijesh Aravindhakshan<sup>1</sup>, Laila Alabdrabalnabi<sup>1</sup>

<sup>1</sup>Saudi Aramco

### Firm Investment In Renewable Energy: An Empirical Evidence From The People's Republic Of China

*Presenter: Dina Azhgaliyeva, Asian Development Bank Institute*

*Authors: Dina Azhgaliyeva<sup>1</sup>, Hai Le<sup>1</sup>*

<sup>1</sup> Asian Development Bank Institute

### Analytical And Prospective Study Of The Turkish Experience In The Field Of Renewable Energy Investments

*Presenter: Abdelmalek Mahri, Larbi Tebessi University – Tebessa*

*Authors: Abdelmalek Mahri<sup>1</sup>, Abdelmalek Meriem, Laib Sana*

<sup>1</sup>Larbi Tebessi University – Tebessa

### Long Term Energy Policy Vs. Dynamic Public Preferences? A Review Of German Energy Policy 2008-2023

*Presenter: Christina Kockel, RWTH Aachen University*

*Authors: Christina Kockel<sup>1</sup>, Aaron Praktijnjo<sup>1</sup>, Jakob Kulawik<sup>1</sup>*

<sup>1</sup>Institute for Future Energy Consumer Needs and Behavior (FCN), RWTH Aachen University

### Concurrent Session 2G: Reduced Investments and Energy Volatility

**Session Location:** Room 2A, Second Floor, APEX Convention Center

**Session Presider:** Adonis Yatchew, University of Toronto

### Flexibility Requirements And Incentives For Storage Investments In Future European Power Systems

*Author & Presenter: Derck Koolen, European Commission*

### Investment In Oil Industry And Renewable Energy: Crowding-In Or Crowding-Out Effect?

*Author & Presenter: Samar Mohamed, Alexandria University*

### Ukrainian Crisis And Market Power In The Italian Electricity Market

*Presenter: Carlo Andrea Bollino, Università di Perugia*

*Authors: Carlo Andrea Bollino<sup>1</sup>, Maria Chiara D'Errico<sup>1</sup>,*

<sup>1</sup>Università di Perugia

### The State-Led Afforestation And Socioeconomic Wellbeing: Evidence From The Billion Trees Afforestation Project, Pakistan

*Author & Presenter: Nasir Iqbal, Pakistan Institute of Development Economics (PIDE)*

### Day 2: Sunday, February 5, 2023

#### Panel Discussion – Session 2

16:15 – 17:45 (Main Hall)

### Panel Discussion: Hydrogen-Fueling the Future: Opportunities and Challenges

#### Session 2: Financing the low carbon hydrogen

**Session Focus for Discussion:** ESG has become an essential factor for financial institutions and the driver to invest in low-carbon energy technologies. However, the low-carbon hydrogen value chain is complex, capital-intensive, and absent a merchant price. With the hydrogen market still nascent and facing a chicken-and-egg problem between potential suppliers and demand centers, investors must ensure that these investments are de-risked. What do investors need to see to make a project bankable and provide a return on investment? What, from the point of view of an investor, is the role of governments in such projects (if any)? Other than low-cost hydrogen production, what are investors looking for to meet their ESG requirements (particularly the “social” and “Governance” part)? There will be a question-and-answer session at the end of the session.

**Panel Moderator:** Rami Shabaneh, King Abdullah Petroleum Studies and Research Center (KAPSARC)

Panelists will be updated on the conference website and the app.

### Day 3: Monday, February 6, 2023

#### Concurrent Session Block 3

11:00 – 12:30

### Concurrent Session 3A: Economic Implications of Energy Transitions

**Session Location:** Room 1B, First Floor, APEX Convention Center

**Session Presider:** Roula Inglesi-Lotz, University of Pretoria

### Economic Growth And Convergence: Implications Of Energy Transition Pathways

*Presenter: Nader Alkathiri, King Abdullah Petroleum Studies and Research Center (KAPSARC)*

*Authors: Nader Alkathiri<sup>1</sup>, Abdulelah Darandary<sup>1</sup>*

<sup>1</sup>King Abdullah Petroleum Studies and Research Center (KAPSARC)

### The Economic Impact Of Energy Poverty And Sustainable Development Goals (SDGs)

*Presenter: Moodhi Alotaibi, Arab Open University*

*Authors: Moodhi Alotaibi<sup>1</sup>, Omaimh Ali<sup>1</sup>*

<sup>1</sup> Arab Open University

### Is Small Powerful? An Evaluation Of The Ecological, Economic, And Social Aspects Of The Decentralized Energy Transformation

*Presenter: Jens Weibezahn, Copenhagen Business School (CBS)*

*Authors: Jens Weibezahn<sup>1</sup>, Raluca Dumitrescu<sup>2</sup>, Daniel*

Philipp<sup>2</sup>

<sup>1</sup>Copenhagen Business School, <sup>2</sup> Technische Universität Berlin

### Economic Impacts Of Renewable Energy In Egypt By Using A CGE Model

Presenter: Tarek Safwat Kabel, University of Sadat City

Authors: Tarek Safwat Kabel<sup>1</sup>, Mohga Bassim<sup>2</sup>

<sup>1</sup> Department of Economics, University of Sadat City, <sup>2</sup> Department of Economics and International Studies, University of Buckingham

### Total Greenhouse Gas Emission Trends And Projections In The Egyptian Electricity Sector

Presenter: Mostafa Mohamed Hasaneen, The Regional Center for Renewable Energy and Energy Efficiency

Authors: Mostafa Mohamed Hasaneen<sup>1</sup>, Jauad El Kharraz<sup>1</sup>, Mahmoud Mohieldin<sup>2</sup>

<sup>1</sup> The Regional Center for Renewable Energy and Energy Efficiency, <sup>2</sup> Cairo University

### Concurrent Session 3B: Renewables, Emissions and Electricity

**Session Location:** Room 2B, Second Floor, APEX Convention Center

**Session Presider:** Gerardo Rabinovich

### Saudi Arabia Net-Zero Emissions By 2060: The Transformation Of The Power Sector

Presenter: Puneet Kamboj, King Abdullah Petroleum Studies and Research Center (KAPSARC)

Authors: Puneet Kamboj<sup>1</sup>, Mohamad Hejazi<sup>1</sup>, Khalid Alhadhrami<sup>1</sup>, Gokul Iyer<sup>2</sup>, Page Kyle<sup>2</sup>, Silvia Regina Santos Da Silva<sup>3</sup>

<sup>1</sup> King Abdullah Petroleum Studies and Research Center (KAPSARC), <sup>2</sup> Pacific Northwest National Laboratory, <sup>3</sup> George Mason University

### Demand-Side Management And Economic Dispatch For Energy Transition In Karnataka, India

Presenter: Yuan Xu, The Chinese University of Hong Kong

Authors: Balasubramanian Sambasivam<sup>1,2</sup>, Yuan Xu<sup>1</sup>

<sup>1</sup> Department of Geography and Resource Management, The Chinese University of Hong Kong, <sup>2</sup> Department of Mechanical Engineering, The University of Texas at Austin

### Determinants Of Urban Household Cooling Electricity Consumption- Evidence From India

Presenter: Divya Jain, TERI School of Advanced Studies

Authors: Divya Jain<sup>1</sup>, Gopal K. Sarangi<sup>1</sup>, Sukanya Das<sup>1</sup>

<sup>1</sup> TERI School of Advanced Studies

### Six Regions One Sun One Grid

Author & Presenter: Xiaoming Kan, Department of Space, Earth and Environment, Chalmers University of Technology

### Long-Term Assessment Of CSP Entry Into Saudi Arabia's Power System Using PLEXOS

Presenter: Khalid Alhadhrami, King Abdullah Petroleum Studies and Research Center (KAPSARC)

Authors: Khalid Alhadhrami<sup>1</sup>, Ahmed Albalawi<sup>1</sup>

<sup>1</sup> King Abdullah Petroleum Studies and Research Center (KAPSARC)

### Concurrent Session 3C: Renewables and the Environment

**Session Location:** Room 1C, First Floor, APEX Convention Center

**Session Presider:** Hans Auer, Vienna University of Technology

### Forecasting Saudi Arabia's 2060 Carbon Dioxide Emission Pathways: A Multivariate Approach

Presenter: Abdulelah Darandary, King Abdullah Petroleum Studies and Research Center (KAPSARC)

Authors: Abdulelah Darandary<sup>1</sup>, Anwar Gasim<sup>1</sup>, Lester C. Hunt<sup>1,2</sup>, Jeyhun Mikayilov<sup>1</sup>

<sup>1</sup> King Abdullah Petroleum Studies and Research Center (KAPSARC), <sup>2</sup> University of Portsmouth

### GCC Renewable Energy Development – Road To Meet 2030 Targets

Author & Presenter: Salem Alhajraf, EdamaConsult

### Assessment Of Price Policies In The Power Matrix Of Saudi Arabia Under The Scope Of Vision 2030

Presenter: Harif Fontecha, King Abdullah University of Science and Technology (KAUST)

Authors: Harif Fontecha<sup>1</sup>, Shashank Nagaraja<sup>1</sup>, Mani Sarathy<sup>1</sup>

<sup>1</sup> King Abdullah University of Science and Technology (KAUST)

### The Effect Of Green Hydrogen Production Growth To The Renewable Energy Sector

Author & Presenter: Muhammad I Akimaya, King Fahd University of Petroleum and Minerals (KFUPM)

### Concurrent Session 3D: The Role of Oil in Energy Transitions

**Session Location:** Room 2C, Second Floor, APEX Convention Center

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

### The Contribution Of National Oil Companies (Nocs) To The Energy Transition

Author & Presenter: Cesar Baena, EM Normandie Business School

### The New Geopolitics Of Energy Transition In The Middle East

Presenter: Ahmed Alrashed, Columbia University

Authors: Kaushik Deb<sup>1</sup>, Ahmed Alrashed<sup>1</sup>

<sup>1</sup> Columbia University

### Global Oil Market In Constrained Energy Transition Scenarios

*Presenter:* Abdullah A Aljarboua, King Abdullah Petroleum Studies and Research Center (KAPSARC)

*Authors:* Abdullah A Aljarboua<sup>1</sup>, Fatih Karanfil<sup>1</sup>, Axel Pierru<sup>1</sup>  
<sup>1</sup> King Abdullah Petroleum Studies and Research Center (KAPSARC)

### Beyond Clean Energy Technological Fixes: A Critical Assessment On The Hydrogen Partnerships Between Germany And Arab Gulf States

*Author & Presenter:* Tobias Zumbraegel, University of Hamburg & Center for Applied Research in Partnership with the Orient (CARPO)

### Peak Demand Vs. Declining Supply

*Author & Presenter:* Evonne Tan, Saudi Aramco

### Concurrent Session 3E: Just Transitions and the Environment

**Session Location:** Room 2A, Second Floor, APEX Convention Center

**Session Presider:** Salaheddine Soummane, King Abdullah Petroleum Studies and Research Center (KAPSARC)

### Evaluating Spatial Spillover Effects Of Renewable And Non-Renewable Energy On Environmental Degradation

*Presenter:* Amjad Naveed, Aarhus University

*Authors:* Amjad Naveed<sup>1</sup>, Nisar Ahmed<sup>2</sup>, Reza Fathollahzadeh<sup>2</sup>

<sup>1</sup> Aarhus University, <sup>2</sup> Sultan Qaboos University

### The Impact Of Digital Financial Inclusion On Energy Consumption In Sub-Saharan Countries

*Presenter:* Nancy Muvumbu Mukalayi, University of Pretoria

*Authors:* Nancy Muvumbu Mukalayi<sup>1</sup>, Roula Inglesi-Lotz<sup>1</sup>

<sup>1</sup> University of Pretoria

### CO<sub>2</sub> Emissions, Financial Inclusiveness And Economic Governance

*Presenter:* Jihan Bousrih, University of Princess Nourah Bint Abdulrahman

*Authors:* Jihan Bousrih<sup>1</sup>, Fatma Mabrouk<sup>1</sup>, Hela Borgi<sup>1</sup>, Mohamed Mehdi Mekni<sup>2</sup>

<sup>1</sup> Economics Department, College of Business and Administration, University of Princess Nourah Bint Abdulrahman, <sup>2</sup> Faculty of Law, Economics and Management Sciences, University of Jendouba

### Health Effects Of Fuel Transitions In India: Evidence From Panel Data

*Author & Presenter:* Mehtabul Azam, Department of Economics, Oklahoma State University

### The Four Dynamics (4Ds) Of Energy Transition: Decarbonization, Decentralization, Decreasing Use, And Digitalization

*Author & Presenter:* Muhammad Asif, King Fahd University of Petroleum and Minerals (KFUPM)

### Concurrent Session 3F: Pathways for Hydrogen

**Session Location:** Auditorium, Ground Floor, APEX Convention Center

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

### Green Hydrogen: A Key Power For The Energy Transition

*Author & Presenter:* Amal Ebrahiem Ismail, New & Renewable Energy Authority

### Assessing The Performance Dimensions Of Hydrogen Supply Chain Pathways Using Life Cycle Sustainability Analysis (LCSA) And Network Analytics For The Hydrocarbon Industry's Energy Transition

*Author & Presenter:* Camilo Fernando, University of Aberdeen

### Which Way To Choose? Technical, Economic And Environmental Evaluation Of Different Hydrogen Production Pathways

*Presenter:* Jakob Kulawik, RWTH Aachen University

*Authors:* Jakob Kulawik<sup>1</sup>, Christina Kockel<sup>1</sup>, Aaron Praktijnjo<sup>1</sup>,  
<sup>1</sup>Chair For Energy Systems Economics, RWTH Aachen University

### A Techno-Economic Analysis Perspective On Hydrogen Production And Utilization For India

*Presenter:* Sukriti Sharma, Indian Institute of Technology, Ropar

*Authors:* Sukriti Sharma<sup>1</sup>, Asad Sahir<sup>1</sup>

<sup>1</sup> Indian Institute of Technology, Ropar

### Towards Developing A Green Hydrogen Potential Map For The Kingdom Of Saudi Arabia

*Presenter:* Mohammed Alquhays, Saudi Aramco

*Authors:* Mohammed Alquhays<sup>1</sup>, Abdulaziz Almohammadi<sup>2</sup>, Ali Al Awami<sup>2</sup>

<sup>1</sup> Saudi Aramco

<sup>2</sup> King Fahd University of Petroleum and Minerals (KFUPM)

### Concurrent Session 3G: Assessing Solar PV in the Energy Mix

**Session Location:** Room 1A, First Floor, APEX Convention Center

**Session Presider:** David Omom, Saudi Aramco

### Solar Photovoltaic End Of Life Disposal Policy Assessment For The Kingdom Of Saudi Arabia

*Presenter:* Amjad Ali, King Fahad University of Petroleum and Minerals (KFUPM)

*Authors:* Amjad Ali<sup>1</sup>, Fahad A. Alsulaiman<sup>1</sup>, Kashif Irshad<sup>1</sup>, Md Shafiullah<sup>1</sup>, Sheraz Alam Malik<sup>2</sup>, Muhammad Zeeshan Malik<sup>3</sup>, Md. Hasan Zahir<sup>1</sup>



<sup>1</sup> *Interdisciplinary Research Center in Renewable Energy and Power Systems, King Fahd University of Petroleum and Minerals (KFUPM)*

<sup>2</sup> *College of Business, Al Faisal University,* <sup>3</sup> *School of Electronics and Information Engineering, Taizhou University*

### Forecasting Solar Irradiance In Saudi Regions Via Machine Learning & Artificial Neural Networks

*Author & Presenter: Subah M Alkhalidi, Saudi Aramco*

### Overcoming Weather Data Scarcity To Aid Policymakers In Effective Renewables Deployment For Saudi Arabia

*Presenter: Marie Petitet, King Abdullah Petroleum Studies and Research Center (KAPSARC)*

*Authors: Marie Petitet<sup>1</sup>, Amro ElShurafa<sup>1</sup>, Frank Felder<sup>1</sup>*

<sup>1</sup> *King Abdullah Petroleum Studies and Research Center (KAPSARC)*

### Optimal Site Selection For A Solar PV Plants In Saudi Arabia

*Author & Presenter: Hassan Z. Al Garni, Royal Commission of Jubail and Yanbu - Jubail Industrial College*

### Net Billing Tariff Assessment In The Kingdom Of Saudi Arabia For A Feasible Integration Of Distributed On-Grid Residential Roof-Tops Solar Pv

*Presenter: Fahad A Alsulaiman, King Fahad University of Petroleum and Minerals (KFUPM)*

*Authors: Abdul Hafiz AlHariri<sup>1</sup>, Fahad Al Sulaiman<sup>2</sup>, Nasser Al Kaabi<sup>3</sup>, Shafiqur Rehman<sup>2</sup>*

<sup>1</sup> *Mechanical Engineering Department, King Fahd University of Petroleum and Minerals (KFUPM),* <sup>2</sup> *Interdisciplinary Research Center in Renewable Energy and Power Systems, King Fahd University of Petroleum and Minerals (KFUPM),* <sup>3</sup> *Saudi Iron and Steel Company (HADEED -SABIC)*

## Day 3: Monday, February 6, 2023

### Panel Discussion – Session 1

11:00 – 12:30 (Main Hall)

#### Panel Discussion: Circular Carbon Economy: Walking the Talk in Saudi Arabia and Beyond

**Session 1:** From Concept to Implementation – Case of Saudi Arabia

**Session Focus for Discussion:** Focusing on energy and emission flows, the Circular Carbon Economy (CCE) concept aims to prevent atmospheric emissions via the 4Rs pillars: Reduce, Recycle, Reuse and Remove. Through its flexible framework, it enables a holistic assessment of all available energy and emission management technologies that can support the design of net-zero emission pathways adapted to countries' national circumstances, resource endowments, and competitive advantages. Aiming to quantify countries' CCE progress and potential, the CCE Index

(<https://cceindex.kapsarc.org/cceindex/home>) was developed by King Abdullah Petroleum Studies and Research

Center by putting forward a set of shared indicators in diverse country contexts.

The session aims to illustrate how the CCE concept is being operationalized into policies and implementation at various levels in Saudi Arabia. The session starts with a deep dive into the CCE Index results for Saudi Arabia to set the scene for discussions on the Kingdom's plans to accelerate its CCE implementation and enhance the enabling environment. It will bring perspectives from Saudi policymakers and private sector leaders, as well as domestic researchers.

**Panel Moderator:** *Noura Mansouri, King Abdullah Petroleum Studies and Research Center (KAPSARC)*

Panelists will be updated on the conference website and the app.

## Day 3: Monday, February 6, 2023

### Poster Session 2A

10:30 – 11:00 (During Coffee Break)

#### Sustainable Energy Development In Saudi Arabia: Multi-Level Perspective

*Author & Presenter: Sarah Alotaibi, King Faisal Center for Research and Islamic Studies (KFCRIS)*

#### Grid-Connected Renewable Power System With Electric Vehicle Charging Stations For Car Parks On Academic Campuses

*Presenter: Shafiqur Rehman, King Fahad University of Petroleum and Minerals (KFUPM)*

*Authors: Shafiqur Rehman<sup>1</sup>, Abdul Baseer Mohammed<sup>2</sup>, Fahad Al Sulaiman<sup>1</sup>*

<sup>1</sup> *Interdisciplinary Research Center in Renewable Energy and Power Systems, King Fahd University of Petroleum and Minerals (KFUPM),* <sup>2</sup> *Mechanical and Manufacturing Engineering Technology Department, Jubail Industrial College*

#### Techno-Economic Study Of Lighting Street And Residential Buildings Using Renewable Energy Resources: A Case Study Of Riyadh City

*Presenter: Ahmad F Tazay, Al Baha University*

*Authors: Megren Awad Alharthy<sup>1</sup>, Ahmed F Tazay<sup>1</sup>*

<sup>1</sup> *Al Baha University*

#### Performance Assessment Of Air Conditioning System Assisted By Photovoltaic Cold Thermal Storage

*Presenter: Kashif Irshad, Interdisciplinary Research Center in Renewable Energy and Power Systems, King Fahd University of Petroleum and Minerals (KFUPM)*

*Authors: Kashif Irshad<sup>1,2</sup>, Firoz Khan<sup>1</sup>, Md. Hasan Zahir<sup>1</sup>, Amjad Ali<sup>1</sup>*

<sup>1</sup> *Interdisciplinary Research Center in Renewable Energy and Power Systems, King Fahd University of Petroleum and Minerals (KFUPM),* <sup>2</sup> *KA CARE Energy Research and Innovation Center*

**Day 3: Monday, February 6, 2023**  
**Poster Session 2B**  
**15:30 – 16:00 (During Coffee Break)**

**The Relationship Between Economic Growth And Co<sub>2</sub> Emissions In Saudi Arabia: An Empirical Analysis Of The Environmental Kuznets Curve**

*Presenter:* Rawaa Ahmed Alafari, King Faisal University  
*Authors:* Rawaa Ahmed Alafari<sup>1</sup>, Oussama Zaghdoud<sup>1</sup>  
<sup>1</sup>Department of Economics, School of Business Administration, King Faisal University

**Unexpectedly Very Low Percentage Of Thermally-Insulated Apartment Buildings In Amman, Jordan, And Investigation Of Stakeholders' Responsibilities**

*Presenter:* Sudki Sameer Hamdan, Department of Statistics, Jordan  
*Authors:* A.N. Abdel Fattah<sup>1</sup>, Sudki Sameer Hamdan<sup>2</sup>, O. Ayadi<sup>3</sup>  
<sup>1</sup> Water, Food and Energy For Environmental Resource Management, <sup>2</sup> Department of Statistics, Ministry of Planning and International Cooperation, Jordan, <sup>3</sup> Mechanical Engineering Department, The University of Jordan

**Households' Willingness To Adopt Solar Energy For Business Use In Uganda**

*Presenter:* Jennifer Nabaweesi, Makerere University Business School  
*Authors:* Jennifer Nabaweesi<sup>1</sup>, Kabuye Frank<sup>1</sup>, Muyiwa Samuel Adaramola<sup>2</sup>  
<sup>1</sup> Makerere University Business School, <sup>2</sup> University of Life Sciences, Norway

**Day 3: Monday, February 6, 2023**  
**Concurrent Session Block 4**  
**16:00 – 17:30**

**Concurrent Session 4A: Decarbonizing Hard to Abate Sectors**

**Session Location:** Room 1A, First Floor, APEX Convention Center  
**Session Presider:** Edmar de Almeida, Instituto de Energia – PUC-Rio

**Alternative Fuels For Saudi Cement Manufacturing With Time-Varying Carbon Pricing**

*Presenter:* Walid Matar, King Abdullah Petroleum Studies and Research Center (KAPSARC)  
*Authors:* Walid Matar<sup>1</sup>, Doaa K. Filali<sup>2</sup>  
<sup>1</sup> King Abdullah Petroleum Studies and Research Center (KAPSARC), <sup>2</sup> Princess Nourah Bint Abdulrahman University

**Decarbonization Policies And Energy Price Reforms In Bangladesh**

*Presenter:* Sakib Amin, North South University  
*Authors:* Sakib Amin<sup>1</sup>, Tooraj Jamasb<sup>2</sup>, Manuel Llorca<sup>2</sup>, Laura

Marsilian<sup>3</sup>, Thomas I Renström<sup>4</sup>

<sup>1</sup>School of Business and Economics, North South University, <sup>2</sup>Copenhagen School of Energy Infrastructure, Copenhagen Business School, <sup>3</sup>Durham University Business School and Durham Energy Institute, <sup>4</sup>Durham University Business School

**Biogas As Clean Energy Alternative For Rural Poor At West Kordofan-Sudan**

*Presenter:* Muna Ahmed, University of Khartoum  
*Authors:* Abdel-Mahmoud Banazeer<sup>1</sup>, Muna Ahmed<sup>2</sup>  
<sup>1</sup>Agriculture Technological Transfer Society, <sup>2</sup> University of Khartoum

**Potential Fly Ash Utilization For Concrete Admixture And Carbon Capture Technology From Biomass-Coal Co-Firing Power Plant In Indonesia**

*Presenter:* Rachmat Hermawan, PT PLN (Persero)  
*Authors:* Rachmat Hermawan<sup>1</sup>, Muhammad Idris<sup>1</sup>  
<sup>1</sup> Perusahaan Listrik Negara (PLN)

**The Effect Of Technological Innovations On Energy Efficiency In Tunisia**

*Author & Presenter:* Oussama Zaghdoud, Department of Economics, School of Business Administration, King Faisal University

**Concurrent Session 4B: Air Quality, Emissions and Innovations**

**Session Location:** Room 1B, First Floor, APEX Convention Center  
**Session Presider:** Colin Ward, King Abdullah Petroleum Studies and Research Center (KAPSARC)

**Impact Of Financial Development On Carbon Dioxide Emissions: Empirical Evidence From Azerbaijan, Russia, And Kazakhstan**

*Presenter:* Samra Talishinskaya, Central Bank of the Republic of Azerbaijan  
*Authors:* Samra Talishinskaya<sup>1</sup>, Jeyhun Mikayilov<sup>2</sup>  
<sup>1</sup> Central Bank of the Republic of Azerbaijan, <sup>2</sup> King Abdullah Petroleum Studies and Research Center (KAPSARC)

**Analyzing The Impacts Of Technological Innovation On Co<sub>2</sub> Emission "Innovation Claudia Curve Theory (ICC)" In MENA Countries**

*Presenter:* Nouf Al-Nafisah, Princess Nourah Bint Abdulrahman University and King Saud University  
*Authors:* Nouf Alnafisah<sup>1</sup>, Eman Alsmari<sup>2</sup>, Amal Alshehri<sup>2</sup>  
<sup>1</sup>Princess Nourah Bint Abdulrahman University and King Saudi University, <sup>2</sup> Princess Nourah Bint Abdulrahman University

**ESG And CFP In Emerging Markets – A U-Shaped Relationship?**

*Author & Presenter:* Alexander Schult, Technical University of Munich

**Effective Options For Addressing Air Quality–Related Environmental Public Health Burdens In Saudi Arabia**

*Presenter:* Mashael AlOmran, Public Health Authority of Saudi Arabia,

*Authors:* Jared Woollacott<sup>1</sup>, Wael AlSufyani<sup>2</sup>, Robert H. Beach<sup>1</sup>, Laura T.R. Morrison<sup>1</sup>, Alison Bean de Hernandez<sup>1</sup>, Severin Rakic, Mashael AlOmran<sup>2</sup>, Reem Alsukait<sup>3</sup>, Christopher Herbst<sup>3</sup>, Salem AlBalawi<sup>2</sup>

<sup>1</sup>RTI International, <sup>2</sup>Public Health Authority of Saudi Arabia, <sup>3</sup>World Bank Group

**The Effect Of Greenhouse Gas Emissions And Green Innovation On Corporate Investors’ Financial Performance: Toward Net Zero Emissions**

*Presenter:* Fatima Shuwaikh, Léonard de Vinci Pôle Universitaire, Research Center

*Authors:* Fatima Shuwaikh<sup>1</sup>, Thomas Chemmanur<sup>2</sup>

<sup>1</sup>Léonard de Vinci Pôle Universitaire, Research Center, <sup>2</sup>Boston College, Carroll School of Management

**Concurrent Session 4C: Valuing Risk in Developing Energy Markets**

**Session Location:** Room 2A, Second Floor, APEX Convention Center

**Session Presider:** Baltasar Manzano, Universidade de Vigo

**Quantifying The Value Of Reduced Investment Risk Under Different Green Energy Support Policies**

*Presenter:* Peio Alcorta, University of the Basque Country

*Authors:* Peio Alcorta<sup>1</sup>, Maria Paz Espinosa<sup>1</sup>, Cristina Pizarro-Irizar<sup>1,2</sup>

<sup>1</sup>Department of Economics, University of the Basque Country  
<sup>2</sup>Basque Centre for Climate Change

**Renewable Energy And Job Creation: An Automation Risk Assessment**

*Author & Presenter:* Cian Mulligan, King Abdullah Petroleum Studies and Research Center (KAPSARC)

**Performance Of Power Generation In The Pre-&-Post-Covid-19 Oman: A Dynamic Productivity And Efficiency Analysis**

*Presenter:* Reza FathollahZadeh Aghdam, Sultan Qaboos University

*Authors:* Reza FathollahZadeh Aghdam<sup>1</sup>, Sami Al Kharusi<sup>1</sup>, Nisar Ahmad<sup>1</sup>, Adham Al Said<sup>1</sup>, Bahareh Berenjforoush Azar<sup>2</sup>

<sup>1</sup>Sultan Qaboos University,<sup>2</sup>University of Technology Sydney

**Financial Sector Development And Energy Poverty: Empirical Evidence From Developing Countries**

*Author & Presenter:* Muhammad Khan, IQRA University, Islamabad

**Rolling-Out Biogas Production To Empowering Rural Women In Sudan**

*Presenter:* Hazir Farouk, Sudan University of Science and Technology

*Authors:* Hazir Farouk<sup>1,2</sup>, Andrew Lang<sup>2</sup>

<sup>1</sup>Sudan University of Science and Technology, <sup>2</sup>World Bioenergy Association

**Concurrent Session 4D: Role of Hydrogen in Decarbonization**

**Session Location:** Room 2C, Second Floor, APEX Convention Center

**Session Presider:** Peter Hartley, Baker Institute, Rice University

**Economic Analysis Of Sustainable Hydrogen Production From Thermolysis And Electrolysis Relying On Nuclear Power**

*Presenter:* Ahmed Eslam Salman, Egyptian Atomic Energy Authority

*Authors:* Ahmed Eslam Salman<sup>1</sup>, Ashraf Aboshosha<sup>1</sup>

<sup>1</sup>Radiation Eng. Department, NCRRT, Egyptian Atomic Energy Authority

**Hydrogen Economy Development In South Korea: Lessons To Learn**

*Presenter:* Jinsok Sung, Hankuk University of Foreign Studies.

*Authors:* Jinsok Sung<sup>1</sup>, Zlata Sergeeva<sup>2</sup>

<sup>1</sup>Hankuk University of Foreign Studies, <sup>2</sup>King Abdullah Petroleum Studies and Research Center (KAPSARC)

**Decarbonizing The German Power Sector – A Case Study On The Integration Of Power-To-Hydrogen And H2-Imports**

*Presenter:* Marco Sebastian Breder, University Duisburg-Essen

*Authors:* Marco Sebastian Breder<sup>1</sup>, Julian Radek<sup>1</sup>, Christoph Weber<sup>1</sup>

<sup>1</sup>University Duisburg-Essen

**Potential Role Of Hydrogen Storage Technology In The Uk Electricity Grid**

*Author & Presenter:* Saheed Bello, Loughborough University

**Support Mechanisms For Accelerating Decarbonization Using Hydrogen.**

*Presenter:* Alexander Hoogsteyn, KU Leuven & Energyville

*Authors:* Alexander Hoogsteyn<sup>1</sup>, Kenneth Bruninx<sup>2</sup>, Jelle Meus<sup>1</sup>, Erik Delarue<sup>1</sup>

<sup>1</sup>KU Leuven & Energyville, <sup>2</sup>TU Delft

**Concurrent Session 4E: Carbon Pricing and Emissions Trading**

**Session Location:** Room 1C, First Floor, APEX Convention Center

**Session Presider:** Mustafa Babiker, Saudi Aramco

### Baseline Greenhouse Gas Forecasts For Saudi Arabia Using The Structural Time Series Model And Autometrics

*Presenter:* Lester C Hunt, University of Portsmouth

*Authors:* Anwar Gassim<sup>1</sup>, Lester C Hunt<sup>1,2</sup>, Jeyhun Mikayilov<sup>1</sup>  
<sup>1</sup> King Abdullah Petroleum Studies and Research Center (KAPSARC), <sup>2</sup>University of Portsmouth

### Emission Trading Or Lower Energy Prices? Re-Assessing The Impact Of The Greenhouse Gas Initiative On The Energy Transition

*Presenter:* Daniel Gatscher, Technical University of Munich

*Authors:* Daniel Gatscher<sup>1</sup>, Svetlana A. Ikonnikova<sup>2</sup>

<sup>1</sup>Center for Energy Markets, Technical University of Munich, <sup>2</sup>Technical University of Munich

### The Network Effects Of Carbon Pricing

*Author & Presenter:* Emanuele Campiglio, University of Bologna

### Determinants Of Carbon Dioxide Emissions: Role Of Renewable Energy, Governance, Urbanization And Economic Growth

*Presenter:* Jacob Otim, Kyambogo University

*Authors:* Jacob Otim<sup>1</sup>, Susan Watundu<sup>2</sup>, John Mutenyo<sup>3</sup>, Vincent Bagire<sup>2</sup>

<sup>1</sup>Department of Economics, Kyambogo University, <sup>2</sup>Department of Management Science, Makerere University Business School, <sup>3</sup>College of Business and Management Sciences, Makerere University

### The Role Of Renewable Energy And TFP In Reducing CO<sub>2</sub> Emissions In RECAI Countries. Fresh Insights From A New Theoretical Framework Coupled With Advanced Panel Methods

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

*Authors:* Fakhri Hasanov<sup>1</sup>, Shahriyar Mukhtarov<sup>2</sup>, Elchin Suleymanov<sup>3</sup>, Sa'd Shannak<sup>4</sup>

<sup>1</sup> King Abdullah Petroleum Studies and Research Center (KAPSARC), <sup>2</sup>Vistula University, <sup>3</sup>Baku Engineering University, <sup>4</sup>Qatar Environment and Energy Research Institute

### Concurrent Session 4F: Extractive Risks and Geopolitics

**Session Location:** Room 2B, Second Floor, APEX Convention Center

**Session Presider:** Adam Cohen, Associated Universities. Inc.

### Impact Of The Global Energy Transition On Hydrocarbon Economies

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

### Technical Constraints, Cost Risks And Failure Modes Of The Energy Transition (Implications For Energy Security And Guidance For Policymakers)

*Presenter:* Lucian Pugliaresi, Energy Policy Research Foundation Inc. (EPRINC)

*Authors:* Lucian Pugliaresi<sup>1</sup>, Batt Odgere<sup>1</sup>

<sup>1</sup> Energy Policy Research Foundation Inc. (EPRINC)

### Extractives: Challenges And Opportunities For The South In The Energy Transition

*Presenter:* Adam Cohen, Associated Universities Inc

*Authors:* Ricardo Raineri<sup>1</sup>, Adam Cohen<sup>2</sup>

<sup>1</sup> Pontificia Universidad Catolica de Chile and Associated Universities, Inc. and Associated Universities Inc.

<sup>2</sup> Associated Universities Inc.

### Investment In Fossil Fuels And Environmental Degradation In Nigeria: Policy Options To Mitigate The Potential Trade-Off

*Author & Presenter:* Ladi Raulatu Balakeffi, Central Bank of Nigeria

### Preventive Approach In Optimizing Electricity Market Structure Using Market Power Mitigation And Forward Contract

*Author & Presenter:* Dzikri Hakam, School of Business and Management, Institut Teknologi Bandung

### Concurrent Session 4G: Minerals, Materials and Energy Transitions

**Session Location:** Auditorium, Ground Floor, APEX Convention Center

**Session Presider:** Frank Felder, King Abdullah Petroleum Studies and Research Center (KAPSARC)

### Lithium & Battery Metals Refining – New Opportunities In The Refining Industry

*Author & Presenter:* Lukasz Bednarski, IHS Markit

### Development Of All-Solid-State Lithium Metal Batteries For High Temperature Applications

*Presenter:* Firoz Khan, King Fahd University of Petroleum and Minerals (KFUPM)

*Authors:* Firoz Khan<sup>1</sup>, Hasan Jamal<sup>2</sup>, M. Abdul Majid<sup>3</sup>, Jae Hyun Kim<sup>2</sup>

<sup>1</sup> Interdisciplinary Research Center in Renewable Energy and Power Systems, King Fahd University of Petroleum and Minerals (KFUPM), <sup>2</sup> Division of Energy Technology, Daegu Gyeonbuk Institute of Science and Technology, <sup>3</sup> Mathematical Sciences Department, Dammam Community College and Interdisciplinary Research Center in Renewable Energy and Power Systems, King Fahd University of Petroleum and Minerals (KFUPM)

### Material Transition In An Energy Transition World

*Presenter:* Samuel Liew, Saudi Aramco

*Authors:* Samuel Liew<sup>1</sup>, Mohammed A Abusham<sup>1</sup>

<sup>1</sup> Saudi Aramco

### Critical Minerals In The 8th Energy Demand And Supply Outlook: A Post Hoc Analysis

Presenter: Yu Hsuan Wu, Asia Pacific Energy Research Centre (APERC)

Authors: Mathew Horne<sup>1</sup>, Yu Hsuan Wu<sup>1</sup>

<sup>1</sup> Asia Pacific Energy Research Centre (APERC)

### Cash-Flow-at-Risk

Author & Presenter: Shamsul Anuar, Saudi Aramco

## Day 3: Monday, February 6, 2023

### Panel Discussion – Session 2

16:00 – 17:30 (Main Hall)

### Panel Discussion: Circular Carbon Economy: Walking the Talk in Saudi Arabia and Beyond

#### Session 2: Carbon Circularity in Diverse Country Contexts

**Session Focus for Discussion:** Building on the earlier discussion in the first session, this session brings the focus to a global level. It aims to identify the global CCE transition progress and potential through the lens of the CCE Index in a diverse country and regional contexts. Utilizing the index findings, the session begins with providing an overview of regional CCE transition gaps in key mitigation and carbon management technologies and activities, as well as enabling policy environments to lead the discussion toward urgent action areas for the planning of net-zero pathways. The panel discussion highlights regional perspectives from Europe, the Middle East and North Africa, Gulf Countries, and South Asia on the efforts and plans to address these urgencies from different countries' experiences to accelerate the sustainable energy transition.

**Panel Moderator:** Aljawhara Al Quayid, King Abdullah Petroleum Studies and Research Center (KAPSARC)

Panelists will be updated on the conference website and the app.

## Day 4: Tuesday, February 7, 2023

### Concurrent Session Block 5

11:00 – 12:30

#### Concurrent Session 5A: Plugging the Energy Transition

**Session Location:** Auditorium, Ground Floor, APEX Convention Center

**Session Presider:** Roula Inglesi-Lotz, University of Pretoria

#### Choosing To Diet: The Impact And Cost-Effectiveness Of China's Vehicle Ownership Restrictions

Presenter: Rubal Dua, King Abdullah Petroleum Studies and Research Center (KAPSARC)

Authors: Antung Liu<sup>1</sup>, Rubal Dua<sup>2</sup>, Wei-min Hu<sup>3</sup>, Arthur Lin Ku<sup>1</sup>

<sup>1</sup>Indiana University O'Neill School of Public and Environmental Affairs, <sup>2</sup> King Abdullah Petroleum Studies and Research Center (KAPSARC), <sup>3</sup>National Chengchi University

#### Evaluation Of The Impact Of Public Policy Measures On California's Fuel Cell Electric Vehicle Market Development

Author & Presenter: Pawel Brusilo, Wroclaw University of Economic and Business / University of California San Diego

#### Electric Vehicles And Electricity Consumption: Honey, Did I Plug In The Car?

Presenter: Jacobus A Nel, University of Pretoria

Authors: Jacobus A Nel<sup>1</sup>, Roula Inglesi-Lotz<sup>1</sup>

<sup>1</sup> University of Pretoria

#### What Do People Think About The Wireless Roadway Charging Systems For Electric Vehicles?

Presenter: Mingyue Selena Sheng, The University of Auckland

Authors: Mira Simunic<sup>1</sup>, Mingyue Selena Sheng<sup>1</sup>, Le Wen<sup>1</sup>

<sup>1</sup> The University of Auckland

#### Equitable Ridepooling With Community-Driven Stops Using A Fleet Of Autonomous Electric Vehicles

Presenter: Rami S Ariss, Carnegie Mellon University

Authors: Rami Ariss<sup>1</sup>, Jeremy Michalek<sup>1</sup>, Matteo Pozzi<sup>1</sup>

<sup>1</sup> Carnegie Mellon University

### Concurrent Session 5B: Decarbonizing Transport

**Session Location:** Room 2B, Second Floor, APEX Convention Center

**Session Presider:** Edmar de Almeida, Instituto de Energia – PUC-Rio

#### Analyzing The Impact Of Online Freight Platform Using Data From Chinese Cities

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

Authors: Xun Xu<sup>1</sup>, Tianduo Peng<sup>2</sup>

<sup>1</sup> King Abdullah Petroleum Studies and Research Center (KAPSARC), <sup>2</sup> Institute of Climate Change and Sustainable Development, Tsinghua University

#### Transport Infrastructure And Manufacturing Sector: An Energy Perspective From India

Author & Presenter: Mohammed Shameem, University of Hyderabad

#### Decarbonizing Medium And Heavy-Duty On-Road Vehicles

Presenter: Matteo Muratori, National Renewable Energy Laboratory (NREL)

Authors: Matteo Muratori<sup>1</sup>, Catherine Leda<sup>1</sup>

<sup>1</sup> National Renewable Energy Laboratory (NREL)

#### Impact Of Sustainable Energy Transition In Transportation Sector On The National Oil Companies Of Emerging Economies - A Case Study Of ONGC Of India

Presenter: Athreya Cheppela, University of Groningen

Authors: Athreya Cheppela<sup>1</sup>, M. Mulder<sup>1</sup>

<sup>1</sup> University of Groningen

### Impact Of Non-Tailpipe Emissions On Local Air Pollution: Evidence From New Zealand

*Presenter:* Le Wen, The University of Auckland

*Authors:* Mingyue Selena Sheng<sup>1</sup>, Le Wen<sup>1</sup>, Quan Truong<sup>2</sup>, Perry Davy<sup>3</sup>

<sup>1</sup>Energy Centre, The University of Auckland, <sup>2</sup>Department of Property, The University of Auckland, <sup>3</sup>GNS Science

### Concurrent Session 5C: Energy Transition on land and in air

**Session Location:** Room 1C, First Floor, APEX Convention Center

**Session Presider:** Kelly Neill, University of Sydney

### Unveiling The Factors Influencing Energy Consumption In The Aviation Sector Of Saudi Arabia (2010-2019)

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

*Authors:* Andres F Guzman<sup>1</sup>, Abdulrahman Alwosheel<sup>1</sup>

<sup>1</sup> King Abdullah Petroleum Studies and Research Center (KAPSARC)

### Techno-Economic Analysis: Charging Airport's Electrical Baggage Tractors With Hydrogen Fuel Cell

*Presenter:* Sadeq A Alfatesh, King Saud University

*Authors:* Sadeq A Alfatesh<sup>1</sup>, Musab Fahad Alsalamah<sup>1</sup>, Mansour Alhoshan<sup>1</sup>, Abdulaziz Bentalib<sup>1</sup>

<sup>1</sup>King Saud University

### Saudi Arabia's Aviation Sector Ambitions And Potential Pathways For Decarbonizing The Sector

*Presenter:* Muhammad Akmal, Saudi Aramco

*Authors:* David Omom<sup>1</sup>, Muhammad Akmal<sup>1</sup>

<sup>1</sup> Saudi Aramco

### Energy Recovery And Cost Analysis For Conventional Vehicle And Hybrid Electric Vehicles

*Presenter:* Abdulrhman Alghamdi, Al Baha University

*Authors:* Abdulrhman Alghamdi<sup>1</sup>, Eid Mohamed<sup>1,2</sup>

<sup>1</sup>Faculty of Engineering, Mechanical Engineering Department, Al Baha University, <sup>2</sup> Department of Automotive Engineering, Helwan University

### Impact Of E-Mobility On Distribution Systems: The Role Of Smart Tariffs For Vehicle Grid Integration

*Presenter:* Pierluigi Vicini, CESI FZE

*Authors:* Marco Cabano<sup>1</sup>, Bruno Cova<sup>1</sup>, David Dresco<sup>1</sup>, Luca Migliorini<sup>1</sup>, Pierluigi Vicini<sup>2</sup>

<sup>1</sup>CESI S.p.A., <sup>2</sup>CESI FZE

### Concurrent Session 5D: Vehicle Fleet Electrification and the Power Sector

**Session Location:** Room 2C, Second Floor, APEX Convention Center

**Session Presider:** Hans Auer, Vienna University of Technology

### Modelling The Determinants Of Electrical Vehicles Adoption: A Saudi Perspective

*Presenter:* Ryan Alyamani, King Abdullah Petroleum Studies and Research Center (KAPSARC)

*Authors:* Ryan Alyamani<sup>1</sup>, Dimitrios Pappelis<sup>2</sup>, Maria Kamargianni<sup>2</sup>

<sup>1</sup> King Abdullah Petroleum Studies and Research Center (KAPSARC), <sup>2</sup> University College London

### Investigating The Economic Granularity Gap In The Modelling Of Battery Electric Vehicles: An Analysis From A Power-System And A User-Centric Perspective

*Presenter:* Fabia Miorelli, German Aerospace Center (DLR), Institute of Networked Energy Systems

*Authors:* Fabia Miorelli<sup>1</sup>, Hans Christian Gils<sup>1</sup>, Patrick Jochem<sup>1</sup>

<sup>1</sup> German Aerospace Center (DLR), Institute of Networked Energy Systems

### Comparative Assessment Of LCA For PEM Fuel Cell Bus With Diesel And Electric Bus: A Case Study In Saudi Arabia

*Presenter:* Chengcheng Zhao, King Abdullah University of Science and Technology (KAUST)

*Authors:* Chengcheng Zhao<sup>1</sup>, Leiliang Zheng Kobayashi<sup>1</sup>, Awad Alquaity<sup>2</sup>, S. Mani Sarathy<sup>1</sup>

<sup>1</sup> King Abdullah University of Science and Technology (KAUST)

<sup>2</sup> King Fahd University of Petroleum and Minerals (KFUPM)

### Investigating Mass Transit Effects On Energy Demand & Emissions In Kuwait

*Presenter:* Norah H Alsafi, Kuwait Institute for Scientific Research

*Authors:* Norah H Alsafi<sup>1</sup>, Rawan AlKandari<sup>1</sup>, Yousef M. Al-Abdullah<sup>1</sup>, Sreekanth K. J.<sup>1</sup>, Fotouh Al-Ragom<sup>1</sup>

<sup>1</sup> Kuwait Institute for Scientific Research

### The Consequence Of Electrification Of Road Vehicles Faster Than The Transition In The Power Sector

*Author & Presenter:* Mohd Rahman, Saudi Aramco

### Concurrent Session 5E: Tactical Innovations to Reduce Emissions

**Session Location:** Room 1A, First Floor, APEX Convention Center

**Session Presider:** Lukasz Bednarski, IHS Markit

### Aero-Thermal Performance Investigation Of Refrigerated Truck Equipped With Phase Change Materials Encapsulated In Rectangular Rods

*Presenter:* Mustapha Mahdaoui, Abdelmalek Essaadi University

*Authors:* M.A. Ben Taher<sup>1</sup>, M. Mahdaoui<sup>1</sup>, T. Kousksou<sup>2</sup>, M. Ahachad<sup>1</sup>

<sup>1</sup> Abdelmalek Essaadi University, <sup>2</sup> Université de Pau et des Pays de l'Adour (UPPA)

### Is Learning Curve On Solar Photovoltaic Installation Affected By Renewable Policy And Regional Characteristics?

Author & Presenter: Saiful Arefeen, Graduate School of Economics, Ritsumeikan University

**Techno-Economic Analysis Of Solar-Assisted Integrated Energy Optimization System For Steel Making Plants Located In Ras Al-Khair Industrial City**

Presenter: Faisal Bader Almutairi, Saudi Aramco  
Authors: Faisal Bader Almutairi<sup>1</sup>, Ali Abdulaziz Uglu<sup>1</sup>  
<sup>1</sup> Saudi Aramco

**Improved Coordinated Protection Scheme For DFIG Based Wind Turbines**

Presenter: Arshad Arshad, Glasgow Caledonian University  
Authors: Arshad Arshad<sup>1</sup>, Wahab Ali Shah<sup>2</sup>, Sali Issa<sup>3</sup>  
<sup>1</sup>School of Computing, Engineering and Built Environment, Glasgow Caledonian University, <sup>2</sup> Namal University, <sup>3</sup> Department of Physics, Mechanical and Electrical Engineering, Hubei University of Education

**Optimal Planning And Operation Of Isolated Micro-Grid For Sustainable Development**

Presenter: Mohammed M Mishref, National Graduate Institute for Policy Studies (GRIPS)  
Authors: Mohammed Mishref<sup>1</sup>, Makoto Tanaka<sup>1</sup>  
<sup>1</sup>Graduate School of Policy Studies, National Graduate Institute for Policy Studies (GRIPS)

**Concurrent Session 5F: Geospatial Analysis of Energy**

**Session Location:** Room 1B, First Floor, APEX Convention Center

**Session Presider:** Ricardo Raineri, Pontificia Universidad Católica de Chile, and Associated Universities, Inc.

**Assessing The Development Of KSA As A Sustainable Logistics Hub – A Geospatial Multi-Criteria Analysis**

Presenter: Nourah Alhosain, King Abdullah Petroleum Studies and Research Center (KAPSARC)  
Authors: Nourah Alhosain<sup>1</sup>, Lama Yaseen<sup>1</sup>, Nora Nezamuddin<sup>1</sup>  
<sup>1</sup> King Abdullah Petroleum Studies and Research Center (KAPSARC)

**Geospatial Agent-Based Modelling Of Household Long-Term Energy Transition In The MEA Region Using High-Resolution Gridded Data And The MUSE-RASA Model**

Presenter: Diego Moya, Imperial College London and Technical University of Ambato  
Authors: Diego Moya<sup>1</sup>, Sara Giarola<sup>2</sup>, Adam Hawkes<sup>3</sup>  
<sup>1</sup> Imperial College London and Technical University of Ambato, <sup>2</sup> Imperial College London and Polytechnic University of Milan, <sup>3</sup> Imperial College London

**Energy Consumption, Urbanization, Economic Growth And Carbon Dioxide Emissions: Evidence From Middle East And North Africa**

Presenter: Geoffrey. S. Mutumba, Kyambogo University  
Authors: Geoffrey. S. Mutumba<sup>1</sup>, Jacob Otim<sup>1</sup>  
<sup>1</sup> Economics, Faculty of Science, Kyambogo University

**Achieving Sustainable Freight Movement In Saudi Arabia Via Transport Policy**

Author & Presenter: Nora Nezamuddin, King Abdullah Petroleum Studies and Research Center (KAPSARC)

**A Micro-Spatial Economic Model For Riyadh Energy Use**

Presenter: Abdelrahman Muhsen, King Abdullah Petroleum Studies and Research Center  
Authors: Abdelrahman Muhsen<sup>1</sup>, John Edward Abraham<sup>2</sup>, Amila Sandaradura<sup>2</sup>, Geraldine Fuenmayor<sup>2</sup>, Kevin Stefan<sup>2</sup>  
<sup>1</sup> King Abdullah Petroleum Studies and Research Center, <sup>2</sup> HBA Specto Incorporated

**Concurrent Session 5G: Sustainability, Resiliency and Smart Cities**

**Session Location:** Room 2A, Second Floor, APEX Convention Center

**Session Presider:** Gerardo Rabinovich

**Smart Cities Indicators, Human-Centric Development And The Impact On Energy Sustainability**

Presenter: Lama Yaseen, King Abdullah Petroleum Studies and Research Center (KAPSARC)  
Authors: Lama Yaseen<sup>1</sup>, Robert Marinescu-Muster<sup>2</sup>, Nourah Alhosain<sup>1</sup>  
<sup>1</sup> King Abdullah Petroleum Studies and Research Center (KAPSARC), <sup>2</sup> University of Twente

**Nuclear Power Reactors Based Hydrogen Production For The Sustainable Development Of Smart Cities**

Author and Presenter: Ashraf Aboshosha, Radiation Eng. Department, NCRRT, Egyptian Atomic Energy Authority

**Why Invest In Hydrogen? A Sustainable Path Forward**

Presenter: John Ballantine, Brandeis University  
Authors: John Ballantine<sup>1</sup>, Mohammed AlMehdar<sup>1</sup>  
<sup>1</sup> Brandeis University

**Heating In German City Quarters: How Does The Regulatory Framework Influence Investments In Renewable Technologies?**

Presenter: Frieder Borggreffe, RWTH Aachen University  
Authors: Frieder Borggreffe<sup>1</sup>, Marius Tillmanns<sup>1</sup>, Max Hoffmann<sup>2</sup>, Chuen-Fung Tang<sup>1</sup>, Lars Nolting<sup>3</sup>, Aaron Praktijnjo<sup>4</sup>  
<sup>1</sup>Chair For Energy System Economics, RWTH Aachen University, <sup>2</sup> RWTH Aachen University, <sup>3</sup> Chair For Energy System Economics, RWTH Aachen University and TenneT GmbH, <sup>4</sup> E. ON Energy Research Center, RWTH Aachen University

**Solar Energy Access In Rural Off-Grid Areas Of Bangladesh: Determinants And Impacts**

Presenter: Mainul I Chowdhury, North South University  
Authors: Sakib Bin Amin<sup>1</sup>, Mainul Islam Chowdhury<sup>1</sup>, S.M.

Asif Ehsan<sup>1</sup>, S.M. Zahid Iqbal<sup>1</sup>  
<sup>1</sup>North South University

**Day 4: Tuesday, February 7, 2023**  
**Panel Discussion – Session 1**  
**11:00 – 12:30 (Main Hall)**

**Panel Discussion: Data, Models, and Simulators to Advance Energy and Climate Policy Decisions**

**Session 1:** Policy decisions enabling data availability and gaps.

**Session Focus for Discussion:** To support policymakers, there is a need for regular, up-to-date, and detailed time series data supply to models and simulators that evaluate policy options and pathways. In this session, we will discuss the availability of regional data sources and new tools to access machine-readable energy, economic, and climate data:

- Regional data availability perspectives from publishers and consumers
- Challenges and solutions addressing data transparency issues and data use licenses
- Primary and secondary data sources for vital energy and climate models.

**Panel Moderator:** Sadeem AlHosain, King Abdullah Petroleum Studies and Research Center (KAPSARC)  
Panelists will be updated on the conference website and the app.

**Day 4: Tuesday, February 7, 2023**  
**Poster Session 3A**  
**10:30 – 11:00 (During the Coffee Break)**

**Renewables Opportunities And Challenges**

**Presenter:** Ayidh Al Swidan, Baker Hughes  
**Authors:** Sara Alalqam<sup>1</sup>, Ayidh Al Swidan  
<sup>1</sup>Baker Hughes

**Ground Source Ventilation And Solar PV Towards Zero Carbon Houses In Riyadh**

**Author & Presenter:** Osamah Alanazi, King Saud University

**Functionalized Fullerenes Cages (C59m) As Promising Materials For Capturing Environmental Pollutions CO<sub>2</sub>, NO<sub>2</sub> And SO<sub>2</sub> Gases**

**Presenter:** Iman Aldosari, Jazan University  
**Authors:** Iman Aldosari<sup>1</sup>, Ahlam El Barbary<sup>1</sup>  
<sup>1</sup> Physics Department, Jazan University

**Optimal Design And Scheduling Of A Grid-Connected PV/CHP Hybrid System With Incentive-Based Demand Response And Electric Vehicles: A Case Study Of A Multi-Residential Complex Building**

**Presenter:** Mohamed Elkadeem, Tanta University  
**Authors:** Mohamed Elkadeem<sup>1</sup>, Mohamed Abido<sup>2</sup>, Fahad Al Sulaiman<sup>2</sup>  
<sup>1</sup>Tanta University, <sup>2</sup> Interdisciplinary Research Center in Renewable Energy and Power Systems, King Fahd University of Petroleum and Minerals (KFUPM)

**Day 4: Tuesday, February 7, 2023**  
**Poster Session 3B**  
**15:30 – 16:00 (During the Coffee Break)**

**Synthesis And Fabrication Of Mos2 QDS Thin Films For Novel Optoelectronic Devices With Cost-Efficient Technique**

**Presenter:** Maymunah Alwehaibi, Princess Nourah bint Abdulrahman University  
**Authors:** Maymunah Alwehaibi<sup>1</sup>, Yasmeen Khoja<sup>1</sup>, Reem Alghamdi<sup>1</sup>, Fahdah Alsuhaybi<sup>1</sup>, Norah Alwadi<sup>1</sup>, Manar Alshatwi<sup>1</sup>  
<sup>1</sup> Princess Nourah bint Abdulrahman University

**Virtual Power Plant: A Smart Way Of Managing Solar Systems**

**Presenter:** Muhammad Ali, University of Glasgow  
**Authors:** Zahid Ullah<sup>1</sup>, Arshad Arshad<sup>2</sup>, Muhammad Ali<sup>3</sup>  
<sup>1</sup> Institute for Globally Distributed Open Research and Education, <sup>2</sup> Glasgow Caledonian University, <sup>3</sup> University of Glasgow

**Contribution To Improving The Energy Performance Of A Hotel In Tangier - Morocco**

**Presenter:** Mohammed Ahachad, Abdelmalek Essaadi University  
**Authors:** Mohammed Ahachad<sup>1</sup>, F Akzoun<sup>1</sup>, Z. Romani<sup>2</sup>, M. Mahadaoui<sup>1</sup>  
<sup>1</sup> Abdelmalek Essaadi University, <sup>2</sup> National School of Architecture

**Day 4: Tuesday, February 7, 2023**  
**Concurrent Session Block 6**  
**16:00 – 17:30**

**Concurrent Session 6A: Comparing the Economics of Energy Efficiency and Renewables**

**Session Location:** Auditorium, Ground Floor, APEX Convention Center

**Session Presider:** Marzio Galeotti, University of Milan

**Demand Response Program Design: Environmental And Economic Perspectives**



**Presenter:** Mohammed Al-Sadig Al-Haj, Qassim University

**Authors:** Mohammed Al-Sadig Al-Haj<sup>1</sup>, Azzam Hamad Alhumaidi<sup>1</sup>, Abdulaziz Saleh Al Harbi<sup>1</sup>, Mohammed Khalid Althunayyan<sup>1</sup>

<sup>1</sup> Qassim University

**A Bayesian Approach To Analyse The Nexus Between The Environmental And Financial Factors To Affect Energy Efficiency In The GCC Region**

**Author & Presenter:** Rozina Shaheen, Finance Department, College of Business, Effat University

**Renewable energy and employment in Saudi Arabia: Assessment and Prospects**

**Author and Presenter:** Sylvain Cote, Saudi Aramco

**Impact Of PV Distributed Generation On Loop Distribution Network In Riyadh City**

**Author and Presenter:** Mohammed Alruwaili, King Saud University-SASO

**Concurrent Session 6B: Impact of Policies on Social and Industrial Societies**

**Session Location:** Room 1A, First Floor, APEX Convention Center

**Session Presider:** Sakib Bin Amin, North South University

**Inter-Fuel Substitution In Industrial Sector Of Saudi Arabia**

**Presenter:** Muhammad Javid, King Abdullah Petroleum Studies and Research Center (KAPSARC)

**Authors:** Muhammad Javid<sup>1</sup>, Fakhri Hasanov<sup>1</sup>, Abdulelah Darandary<sup>1</sup>

<sup>1</sup> King Abdullah Petroleum Studies and Research Center (KAPSARC)

**Financial And Energetic Investigation Of Saudi District Cooling System**

**Author and Presenter:** Mohammad Saleh Alobaid, Department of Mechanical Engineering, Majmaah University

**Energy Subsidies Reform And Homebuyer Choices: Evidence From Saudi Arabia**

**Presenter:** Hussain Alshammasi, King Fahd University of Petroleum and Minerals (KFUPM)

**Authors:** Hussain Alshammasi<sup>1</sup>, Abdullah Almansur<sup>1</sup>

<sup>1</sup> King Fahd University of Petroleum and Minerals (KFUPM)

**Present And Future Trend In Saudi Seaborne Trade And Oil Demand: Could BAU Scenario Meet NTL's Maritime Target?**

**Presenter:** AHM Mehbub Anwar, King Abdullah Petroleum Studies and Research Center (KAPSARC)

**Authors:** AHM Mehbub Anwar<sup>1</sup>, Rubal Dua<sup>1</sup>, Nora Nezamuddin<sup>1</sup>, Abdulrahman Alwosheel<sup>1</sup>

<sup>1</sup> King Abdullah Petroleum Studies and Research Center (KAPSARC)

**An Analysis Of Power Outages Induced Electricity Backup Choice In Pakistan**

**Presenter:** Faisal Jamil, National University of Sciences and Technology (NUST)

**Authors:** Faisal Jamil<sup>1</sup>, Tanweer ul Islam<sup>1</sup>

<sup>1</sup> School of Social Sciences and Humanities, National University of Sciences and Technology (NUST)

**Concurrent Session 6C: The Role of Sustainability in Building Energy Efficiency**

**Session Location:** Room 2A, Second Floor, APEX Convention Center

**Session Presider:** Rejean Casaubon, The Institute of Energy Economic, Japan (IEEJ)

**Improving Energy Performance In Residential Buildings In Saudi Arabia**

**Author & Presenter:** Mana M Alyami, Najran University

**Energy Efficiency Initiatives Towards Sustainability On University Campuses In Saudi Arabia**

**Presenter:** Saleh Albadaily, Imam Mohammad Ibn Saud Islamic University

**Authors:** Saleh Albadaily<sup>1</sup>, Abdullah Alhaqbani<sup>1</sup>, Walied Alfraidi<sup>1</sup>

<sup>1</sup> Department of Electrical Engineering, College of Engineering, Imam Mohammad Ibn Saud Islamic University

**The Role Of Residential Energy Efficiency In Reducing Energy Demand And Reaching Saudi Arabia's 2060 Net Zero Target**

**Author & Presenter:** Mohammad H Aldubyan, King Abdullah Petroleum Studies and Research Center (KAPSARC)

**Regulations And Contract Design In Multi-Agent District Heating And Cooling Systems**

**Presenter:** Maximilian Hoffmann, RWTH Aachen University

**Authors:** Maximilian Hoffmann<sup>1</sup>, Frieder Borggreffe<sup>1</sup>, Aaron Praktijnjo<sup>1</sup>

<sup>1</sup>Chair For Energy System Economics, RWTH Aachen University,

**Impact Of Energy Labels On Selecting Houses Of Consumers: Validation By Logistic Regression Analysis**

**Author & Presenter:** Mieko Fujisawa, Kanazawa University

**Concurrent Session 6D: Risks and Rewards from Downstream Investments**

**Session Location:** Room 2C, Second Floor, APEX Convention Center

**Session Presider:** Athreya Cheppela, ONGC

**Linear And Factor Oil Price Forecasts**

**Presenter:** Abdullah S Al Shammre, King Faisal University

**Authors:** Abdullah S Al Shammre<sup>1</sup>, Benaissa Chidmi<sup>2</sup>

<sup>1</sup> King Faisal University, <sup>2</sup> Texas Tech University

### Cost-Benefit Analysis For Petrochemical Projects: The Case For Saudi Arabia

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

*Authors:* Dongmei Chen<sup>1</sup>, Philipp Galkin<sup>1</sup>, Colin Ward<sup>1</sup>

<sup>1</sup> King Abdullah Petroleum Studies and Research Center (KAPSARC)

### Sustainable Energy Efficiency Improvements Through Methodology Of Prioritizing Selections

*Presenter:* Abdulrahman Hazazi, Saudi Aramco

*Authors:* Abdulrahman Hazazi<sup>1</sup>, Zeeshan Farooq<sup>1</sup>

<sup>1</sup> Saudi Aramco

### Virtual Gas Pipeline As Prudent Solution In Gas Infrastructure Investment In Saudi Arabia

*Author & Presenter:* Dicky Suriakusumah, Saudi Aramco

### Financial Liabilities And Environmental Implications Of Unplugged Wells For Gulf Of Mexico And Coastal Waters

*Presenter:* Greg B. Upton, Louisiana State University

*Authors:* Mark Agerton<sup>1</sup>, Siddhartha Narra<sup>2</sup>, Brian Snyder<sup>3</sup>, Gregory B. Upton<sup>2</sup>

<sup>1</sup>Department of Agricultural and Resource Economics, University of California Davis, <sup>2</sup>Center for Energy Studies, Louisiana State University, <sup>3</sup>Department of Environmental Studies, Louisiana State University

### Concurrent Session 6E: Petrochemicals and the Energy Transition

**Session Location:** Room 1B, First Floor, APEX Convention Center

**Session Presider:** Ricardo Raineri, Pontificia Universidad Católica de Chile, and Associated Universities, Inc.

#### Plastics To Oil: Saudi And Global Perspectives

*Presenter:* Evar Umeozor, King Abdullah Petroleum Studies and Research Center (KAPSARC)

*Authors:* Julio Arboleda<sup>1</sup>, Evar Umeozor<sup>1</sup>, Jitendra Roychoudhury<sup>1</sup>

<sup>1</sup> King Abdullah Petroleum Studies and Research Center (KAPSARC)

#### Unlocking Industrial Demand-Side Flexibility For The Power System Through Local Green Hydrogen Production: A Case Study In Germany

*Presenter:* Marius Tillmanns, RWTH Aachen University

*Authors:* Marius Tillmanns<sup>1</sup>, Jan Priesmann<sup>1</sup>, Aaron Praktijnjo<sup>1</sup>

<sup>1</sup> Institute for Future Energy Consumer Needs and Behavior, Chair for Energy Systems Economics, RWTH Aachen University

### The Role Of The Petrochemical Sector In Economic Diversification In Saudi Arabia

*Presenter:* Heyran Aliyeva, King Abdullah Petroleum Studies and Research Center (KAPSARC)

*Authors:* Fakhri Hasanov<sup>1</sup>, Muhammad Javid<sup>1</sup>, Heyran Aliyeva<sup>1</sup>

<sup>1</sup> King Abdullah Petroleum Studies and Research Center (KAPSARC)

### Models Of The Demand For Petrochemical Feedstocks Worldwide

*Presenter:* Raed Al Mestneer, King Abdullah Petroleum Studies and Research Center (KAPSARC)

*Authors:* Raed Al Mestneer<sup>1</sup>, Carlo Andrea Bollino<sup>1,2</sup>

<sup>1</sup> King Abdullah Petroleum Studies and Research Center (KAPSARC), <sup>2</sup>Università di Perugia

### Attracting Investments To The Petroleum Industry By Using Distributed Ledger Technology

*Presenter:* Khaled Omar Hantosh, University of Dundee

*Authors:* Khaled Omar Hantosh<sup>1</sup>, Sayed Mehdi Alizadeh<sup>2</sup>, Mohammed Saleh Al Ali<sup>3</sup>

<sup>1</sup> Centre for Energy, Petroleum & Mineral Law and Policy, University of Dundee, <sup>2</sup>Australian University of Kuwait, <sup>3</sup>Kuwait Institute for Scientific Research

### Concurrent Session 6F: Managing Volatility Through Technical Innovations and Price Signals

**Session Location:** Room 1C, First Floor, APEX Convention Center

**Session Presider:** Nils-Henrik M von der Fehr, University of Oslo

### The Evolution Of Electricity Prices And Its Impacts On Consumption In Saudi Arabia

*Presenter:* Abeer Alghamdi, King Abdullah Petroleum Studies and Research Center (KAPSARC)

*Authors:* Abeer Alghamdi<sup>1</sup>, Jeyhun Mikayilov<sup>1</sup>

<sup>1</sup> King Abdullah Petroleum Studies and Research Center (KAPSARC)

### Energy Storage Economics And Future Market Potentials In Saudi Arabia

*Author & Presenter:* Khaled S. Alusaimi, Saudi Aramco

### Techno-Economic Analysis Of Green Hydrogen Storage Systems Based On Photovoltaic Energy To Guarantee Electricity Feeding In Off-Grid Environment - Case Study

*Presenter:* Younes Faydi, Moroccan Agency for Sustainable Energy (MASEN)

*Authors:* Younes Faydi<sup>1</sup>, Hichame Laabassi<sup>1</sup>, Hicham Bouzekri<sup>1</sup>

<sup>1</sup> Moroccan Agency for Sustainable Energy (MASEN)

### On The Role Of Residential Battery Storage And Photovoltaic Systems In Shaping Behavioral Changes And General Welfare

*Author & Presenter:* Liliana Nowakowska, Imperial College Business School

### Forecasting The Rate Of Cost Reductions In Blue And Green Hydrogen

*Author & Presenter: Anders Norlen, Saudi Aramco*

### Concurrent Session 6G: Pathways for Low-Carbon Energy Transition

**Session Location:** Room 2A, Second Floor, APEX Convention Center

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

### A Panel VAR Analysis Of Oil Supply And Demand Shocks And Macroeconomic Performance: The Case Of Gulf Cooperation Council Countries

*Presenter: Youssef Saidi, Gulf Monetary Council*

*Authors: Youssef Saidi<sup>1</sup>, Atef Saleh Alrashidi<sup>1</sup>*

<sup>1</sup> Gulf Monetary Council

### Energy Efficiency For Sustainable Development In Nigeria

*Presenter: Humphrey Oruwari, Nigerian National Petroleum Corporation*

*Authors: Humphrey Oruwari<sup>1</sup>, Lucky Itsekor<sup>2</sup>*

<sup>1</sup> NNPC Upstream Investment Management Services, Nigerian National Petroleum Corporation, <sup>2</sup> Valourteyn Nigeria Limited

### Non-Linear Effects Of Environmental Policies On Low-Carbon Technical Change: The Case Of The French Buildings Sector

*Author & Presenter: Valentin Laprie, Université Paris Nanterre*

### Is Institutional Quality The Missing Piece Between Economic Growth And CO<sub>2</sub> Emissions?

*Presenter: Alanda Venter, Department of Economics, University of Pretoria*

*Authors: Alanda Venter<sup>1</sup>, Roula Inglesi-Lotz<sup>1</sup>*

<sup>1</sup> Department of Economics, University of Pretoria

### Advancing Environmental Stewardship Through Circular Economy In Oil & Gas Facility

*Author & Presenter: Mubarak Al-Rashid, Saudi Aramco*

## Day 4: Tuesday, February 7, 2023

### Panel Discussion – Session 2

16:00 – 17:30 (Main Hall)

### Panel Discussion: Data, Models, and Simulators to Advance Energy and Climate Policy Decisions

**Session 2:** Energy models and simulators advancing policy decisions.

**Session Focus for Discussion:** To support policymakers, there is a need for easy-to-use web-enabled models and

policy simulators with up-to-date data, documented model assumptions, easy to walk-across models and scenarios that evaluate policy options and pathways. In this session, we will discuss the availability of models, policy simulator design patterns, and technologies that can accelerate data and energy/economic/climate model development.

- Availability and accessibility of energy and climate models to policymakers
- Software innovations that can accelerate the development of models and policy simulators
- Integration and crosswalk across diverse models for effective policy pathway solutions

**Panel Moderator:** Amar Amarnath, King Abdullah Petroleum Studies and Research Center (KAPSARC)

Speakers will be updated on the conference website and the app.

## Day 5: Wednesday, February 8, 2023

### Concurrent Session Block 7

11:00 – 12:30

### Concurrent Session 7A: Trading Energy on the Path to Energy Transition

**Session Location:** Auditorium, Ground Floor, APEX Convention Center

**Session Presider:** Fatima Shuwaikh, Léonard de Vinci Pôle Universitaire, Research Center

### Energy Transition And Export Diversification In Oil-Dependent Countries: The Role Of Structural Factors

*Presenter: Fatih Karanfil, King Abdullah Petroleum Studies and Research Center (KAPSARC)*

*Authors: Fatih Karanfil<sup>1</sup>, Luc Désiré Omgba<sup>2</sup>*

<sup>1</sup> King Abdullah Petroleum Studies and Research Center (KAPSARC), <sup>2</sup> University of Lorraine

### Asymmetric Effects Of Energy Dependence On Interstate Relations

*Presenter: Mehmet Soytas, King Fahd University of Petroleum and Minerals (KFUPM)*

*Authors: Mehmet Soytas<sup>1</sup>, Emre Hatipoglu<sup>2</sup>*

<sup>1</sup> King Fahd University of Petroleum and Minerals (KFUPM)

<sup>2</sup> King Abdullah Petroleum Studies and Research Center (KAPSARC)

### The Role Of The Circular Economy In Fostering Sustainable Economic Growth In The GCC

*Presenter: Jawaher Ali Binsuwadan, Princess Nourah Bint Abdulrahman University*

*Authors: Jawaher Ali Binsuwadan<sup>1</sup>, Ghadda Mohamed Yousif<sup>1</sup>, Hiyam Ahmed Abdulrahman<sup>1</sup>*

<sup>1</sup> Department of Economics, Princess Nourah Bint Abdulrahman University

### Lighting The Path: Challenges And Opportunities In MENA Power Sectors

*Author & Presenter: Jessica Obeid, Middle East Institute*

### Linking Electrical Grids Between Europe And The MENA Region: Potentials And Opportunities

*Presenter: Menna Elsobki, RWTH Aachen University*

*Authors: Menna Elsobki<sup>1</sup>, Aaron Praktiknjo<sup>1</sup>*

<sup>1</sup> Institute for Future Energy Consumer Needs and Behavior (FCN), Chair for Energy Systems Economics, RWTH Aachen University

### Concurrent Session 7B: Volatility, Geopolitics and Energy Transition

**Session Location:** Main Hall, Ground Floor, APEX Convention Center

**Session Presider:** Eunnyeong Heo, Seoul National University

### The Impact Of World Population Growth On Global Energy Consumption: A Probabilistic Analysis

*Author & Presenter: Peter Pflaumer, Department of Statistics, Technical University of Dortmund*

### The Eastern Mediterranean Energy Geopolitics: A "Cyprus-Centric" Analysis Of The Current And Future Challenges

*Author & Presenter: Savvas Papasavvas, Strategy International*

### Cross-Border Power Trade And Renewable Energy Development In Southeast Asia: Economic And Environmental Implications

*Author & Presenter: Youngho Chang, Singapore University of Social Sciences*

### The Korean Rec Spot Market Price Forecasting

*Presenter: Jong-Bae Park, Konkuk University*

*Authors: Jong-Bae Park<sup>1</sup>, Sung-Hee Lee<sup>2</sup>, Woo-Nam Lee<sup>3</sup>, Manho Joung<sup>4</sup>, Da-Han Lee<sup>1</sup>*

<sup>1</sup>Konkuk University, <sup>2</sup>BRFrame Inc., <sup>3</sup>Korea Electrotechnology Research Institute, <sup>4</sup>Sempra Energy

### Time-Varying Price Elasticity Of Electricity Demand

*Presenter: Jieyang Chong, University of Reading*

*Authors: Jieyang Chong<sup>1</sup>, Jacopo Torriti<sup>1</sup>*

<sup>1</sup> University of Reading

### Concurrent Session 7C: Powering Nuclear towards Energy Transition

**Session Location:** Room 1B, First Floor, APEX Convention Center

**Session Presider:** Hisanori Nei, National Graduate Institute for Policy Studies

### Nuclear Energy In Emerging Markets, MENA And The Impact Of Energy Transition

*Presenter: Yagyavalk Bhatt, King Abdullah Petroleum Studies and Research Center (KAPSARC)*

*Authors: Yagyavalk Bhatt<sup>1</sup>, Jitendra Roychoudhury<sup>1</sup>*

<sup>1</sup> King Abdullah Petroleum Studies and Research Center (KAPSARC)

### Fourth IV Generation Nuclear Reactors As Sustainable And Safe Energy Resources

*Author & Presenter: Moustafa Aziz Ibrahim, Atomic Energy Authority - Nuclear Safety Research Center*

### Impact Of Replacement Coal And Fossil Energy By Nuclear Energy On Global Greenhouse Gases Emission

*Presenter: Mohamed Abdelaziz, Egyptian Atomic Energy Authority*

*Authors: Mohamed Abdelaziz<sup>1</sup>, Hesham Elkhatib<sup>1</sup>, Abdelfatah Abdelmaksoud<sup>1</sup>, Mohamed Esawy<sup>1</sup>*

<sup>1</sup> Egyptian Atomic Energy Authority

### Peaceful Uses Of Nuclear Energy In Less Industrialized Countries: Challenges, Opportunities, And Acceptance

*Presenter: Ricardo Raineri, Pontificia Universidad Católica de Chile, and Associated Universities, Inc.*

*Authors: Jeffrey Binder<sup>1</sup>, Adam Cohen<sup>2</sup>, Antonio Muller<sup>3</sup>, Ricardo Raineri<sup>4</sup>*

<sup>1</sup>Associated Universities, Inc. and Boston Government Services, LLC., <sup>2</sup> Associated Universities, Inc., <sup>3</sup>AEM Capital, <sup>4</sup> Pontificia Universidad Católica de Chile, and Associated Universities, Inc.

### Concurrent Session 7D: Role of Hydrogen in MENA's Energy Transition

**Session Location:** Room 1C, First Floor, APEX Convention Center

**Session Presider:** Sausan Al Riyami, Oman Hydrogen Center & German University of Technology in Oman

### Quest For Energy Diversification In MENA – Opportunities And Challenges For Hydrogen Economy

*Presenter: Shahid Hasan, King Abdullah Petroleum Studies and Research Center (KAPSARC)*

*Authors: Shahid Hasan<sup>1</sup>, Rami Shabaneh<sup>1</sup>*

<sup>1</sup> King Abdullah Petroleum Studies and Research Center (KAPSARC)

### The Role Of Civil Law In Environmental Protection For The Suez Canal Axis Development Project

*Author & Presenter: Farouk Abdel Rahman, Egyptian Atomic Energy Authority*

### Emissions & Economic Implications Of Low-Cost Blue Hydrogen Supply From The Gulf States

*Presenter: Manal Shehabi, Oxford University*

*Authors: Manal Shehabi<sup>1</sup>, Frank Jotzo<sup>2</sup>*

<sup>1</sup>St. Anthony's College, Oxford University, SHEER Research and Advisory, <sup>2</sup>Crawford School of Public Policy, Australian National University

### Production Potential And Economic Viability Of Green Hydrogen In Algeria

*Author & Presenter: Nadjib Drouiche, Agence Nationale de la Valorisation des Résultats de la Recherche et de Développement Technologique (ANVREDET)*

### How The Arabian Gulf Could Become The World's Clean Hydrogen Hub

*Presenter: Abdullah Alshangiti, Columbia University*  
*Authors: Kaushik Deb<sup>1</sup>, Abdullah Alshangiti<sup>2</sup>*  
<sup>1</sup>Center on Global Energy Policy, Columbia University,  
<sup>2</sup>Columbia University.

### Concurrent Session 7E: Modelling the Dynamics of Electricity Markets

**Session Location:** Room 2B, Second Floor, APEX Convention Center

**Session Presider:** Kelly Neill, University of Sydney

### Improving The Techno-Economic Pattern For Distributed Generation-Based Distribution Networks Via Nature-Inspired Optimization Algorithms

*Presenter: Ahmed S. Hassan, Ministry of Electricity and Renewable Energy, Egypt*  
*Authors: Ahmed Hassan<sup>1</sup>, Araby Sayed<sup>1</sup>, ElSaeed Othman<sup>2</sup>, Mohamed Ebrahim<sup>3</sup>*  
<sup>1</sup> Ministry of Electricity and Renewable Energy, Egypt, <sup>2</sup> Department of Electrical Engineering, Faculty of Engineering, Al Azhar University, <sup>3</sup> Department of Electrical Engineering, Benha University

### Modeling, Simulation And Experimental Validation Of A Membrane Distillation Unit Solar Part

*Presenter: Khalifa Zhani, Bisha University*  
*Authors: Haled Alserhan<sup>1</sup>, S Mejbr<sup>2</sup>, M.M. Alquraish<sup>1</sup>, K. Zhani<sup>1</sup>*  
<sup>1</sup>Department of Mechanical Engineering, College of Engineering, University of Bisha, <sup>2</sup>Laboratory of Electromechanical Systems, National Engineering School of Sfax

### Dynamic Electricity Tariffs And Willingness To Engage On The Residential Side: Quantifying The Potential Of Energy Intensive Consumers In A Real Case Scenario

*Presenter: Faisal Alsallum, Center of Excellence for Complex Engineering Systems, King Abdulaziz City for Science and Technology (KACST)*  
*Authors: Faisal Alsallum<sup>1</sup>, Carlos Batlle<sup>2</sup>, Tim Schittekatte<sup>2</sup>, Abdulelah Habib<sup>1</sup>*  
<sup>1</sup>Center of Excellence for Complex Engineering Systems, King Abdulaziz City for Science and Technology (KACST), <sup>2</sup>MIT Energy Initiative

### Quantifying The Non-Linear Impact Of Extreme Temperatures On Power Generation Efficiency

*Presenter: Jineon Moon, Center for Sustainable Development, Korea Advanced Institute of Science & Technology (KAIST)*  
*Authors: Jineon Moon<sup>1</sup>, Jiyong Eom<sup>2</sup>*  
<sup>1</sup> Center for Sustainable Development, Korea Advanced Institute of Science & Technology (KAIST), <sup>2</sup> School of Business and Technology Management, Korea Advanced Institute of Science & Technology (KAIST)

### Short-Term System Marginal Price Forecasting Using 2-Stage Variable Selection Approach

*Presenter: SangWoo Shim, Konkuk University*  
*Authors: SangWoo Shim<sup>1</sup>, DaHan Lee<sup>1</sup>, JaeHyung Roh<sup>1</sup>, Jong-Bae Park<sup>1</sup>*  
<sup>1</sup> Konkuk University

### Concurrent Session 7F: Techno-Economic Analysis of Solar Installations

**Session Location:** Room 1A, First Floor, APEX Convention Center

**Session Presider:** Carlo Andrea Bollino, Università di Perugia

### Can Hybrid Solar Projects Pave The Way For CSP Development?

*Author & Presenter: Ahmed A Albalawi, King Abdullah Petroleum Studies and Research Center (KAPSARC)*

### Design Of Solar Power System For Fish Farm

*Presenter: Mutlaq Maktaf Albogame, Al Baha University*  
*Authors: Mutlaq Maktaf Albogame<sup>1</sup>, Zuhair Ahmed Alqarni<sup>1</sup>*  
<sup>1</sup>Al Baha University

### Future R&D Prospects In DNI Forecasting For An Efficient CSP Integration In The Energy Mix

*Presenter: Saad Benbrahim, Moroccan Agency for Sustainable Energy (MASEN)*  
*Authors: Saad Benbrahim<sup>1</sup>, Ismail Belhaj<sup>1</sup>, Hicham Bouzekri<sup>1</sup>*  
<sup>1</sup>Department of R&D and Industrial Integration, Moroccan Agency for Sustainable Energy (MASEN)

### Performance Investigation Of Two Types Of Solar Chimney Used For Air Conditioning

*Presenter: Faouzi Nasri, University of Bisha*  
*Authors: Hamod Ghorn Ali Alshomrsni<sup>1</sup>, Faouzi Nasri<sup>1</sup>*  
<sup>1</sup>Mechanical Engineering Department, College of Engineering, University of Bisha

### Effective Load Carrying Capacity ("ELCC") Of Solar Photovoltaic ("PV") Resources In A KSA Context

*Presenter: Amit Pinjani, London Economics International*  
*Authors: A.J. Goulding<sup>1</sup>, Amit Pinjani<sup>1</sup>, Victor Chung<sup>1</sup>, Shashwat Nayak<sup>1</sup>*  
<sup>1</sup>London Economics International LLC

**Concurrent Session 7G: Just Governance towards Just Transition**

**Session Location:** Room 2C, Second Floor, APEX Convention Center

**Session Presider:** Lin Zhang, City University of Hong Kong

**Will Current Global Climate Governance Deliver?**

**Author & Presenter:** Nadhmi M Alkhamis, CSM

**Energy Transition Is No Longer The Same Idea It Used To Be**

**Author & Presenter:** Sami A Alnuaim, Society of Petroleum Engineers

**Cifal Center Methodology In Leveraging The Awareness Towards Improving The Energy Sustainability**

**Author & Presenter:** Aiman J Albarakati, Majmaah University

**Deploying National Gas Expansion Strategy And The Smart Towns Urbanization Nexus To Stimulate Sustainable Economic Development**

**Presenter:** Oluwaseun T. Tubi, Centre for Petroleum, Energy Economics and Law, University of Ibadan and Nigerian Institute Of Social And Economic Research

**Authors:** Oluwaseun T. Tubi<sup>1</sup>, Adeola Adenikinju<sup>2</sup>

<sup>1</sup> Centre for Petroleum, Energy Economics and Law, University of Ibadan and Nigerian Institute Of Social And Economic Research, <sup>2</sup> University of Ibadan

**Dependence Between The Gcc Energy Equities And Select Global Energy Markets: Evidence From Wavelet Analysis**

**Presenter:** Mohammed Alkathery, The Unified Platform in Saudi Arabia

**Authors:** Mohammed Alkathery<sup>1</sup>, Kausik Chaudhuri<sup>2</sup>, Muhammad Ali Nasir<sup>2</sup>

<sup>1</sup>The Unified National Platform in Saudi Arabia, <sup>2</sup>University of Leeds

**Concurrent Session 7H: Technology Case Studies in Energy Transition**

**Session Location:** Room 2A, Second Floor, APEX Convention Center

**Session Presider:** Radia Sedaoui, UN Economic Social Commission of West Asia (UNESCWA)

**Short-Term Energy Forecasting System For A Photovoltaic Power Plant Installed In Southern Algeria: Oued Nechou**

**Author & Presenter:** Reski Khelifi, Unité de Recherche Appliquée en Energies Renouvelables (URAER)

**Efficiency Of Zinc Oxide Nanorods (ZnO Nrs) In Real Produced Water Treatment**

**Presenter:** Fatema Al Hajri, Oman Hydrogen Centre, German University Technology

**Authors:** Fatema Al Hajri<sup>1</sup>, Sausan Al Riyami<sup>1</sup>, Mohammed Al Abri<sup>2</sup>

<sup>1</sup> Oman Hydrogen Centre, German University Technology, <sup>2</sup> Nanotechnology Research Center, Sultan Qaboos University

**Formulate Of Fault Ride Through (FRT) Criteria With Large-Scale Wind Integration To Maintain System Stability (System Operator Perspective)**

**Presenter:** Mohamed Atia Hazzaa, Ministry of Electricity and Renewable Energy, Egypt

**Authors:** Mohamed Hazzaa<sup>1</sup>, Sayed El Banna<sup>2</sup>, Dalal Helmi<sup>1</sup>

<sup>1</sup>Egyptian Electricity Holding Company, Ministry of Electricity and Renewable Energy, <sup>2</sup> Electrical Engineering Department, Faculty of Engineering, Al Azhar University

**Use Of Transfer Prices For Intra-Company Transactions**

**Author & Presenter:** Thorsten Fischer, Saudi Aramco

**Tracking Innovation Networks In Electricity Using Twitter**

**Presenter:** Rolando Fuentes, Tec De Monterrey

**Authors:** Rolando Fuentes<sup>1</sup>, Frank Felder<sup>2</sup>

<sup>1</sup>Tec de Monterrey and KAPSARC, <sup>2</sup> King Abdullah Petroleum Studies and Research Center (KAPSARC)