

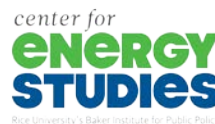
# RIDING THE ENERGY CYCLES

## FINAL PROGRAM

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## SUNDAY, NOVEMBER 12

## PHD DAY SESSION

9:00 am - 3:30 pm ■ Champions III

A pre-conference event for students only. Each paper presented at this session will be reviewed by a discussant for a more in-depth and stimulating analysis.

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## TOUR: OFFSHORE DRILLING RIG MUSEUM

1:00 pm - 5:00 pm ■ Offshore Drilling Rig Museum

Join us for a tour on the Ocean Star Offshore Drilling Rig Museum and Education Center. Meet at the front of the Royal Sonesta Hotel, porte-cochere to board bus.

## REGISTRATION

12:00 noon - 7:00 pm ■ Directors Room

## CASE COMPETITION SESSION

4:00 pm - 5:30 pm ■ Champions III

Parth Vaishnav (*Presiding*)

ASST. RESEARCH PROFESSOR, CARNEGIE MELLON UNIVERSITY

## Team #1 - Energy Wranglers

Scott Vitter

Thomas Deetjen

Phillip White

Katrina Ramirez-Meyers

UNIVERSITY OF TEXAS, AUSTIN

## Team #2 - EcoFin Environment

Salaheddine Soummame

Fatima Shuwaikh

UNIVERSITY OF PARIS-SACLAY

## Team #3 - The Live Wires

Liza Reed

Tobi Adekanye

Anne Walker

CARNEGIE MELLON UNIVERSITY

## Team #4 - Team Lehigh

Huilai Gu

Adhitya Jayasinghe

Salvador (Josh) Tarun

LEHIGH UNIVERSITY

## OPENING RECEPTION

SUNDAY 6:00 PM - 7:30 PM

■ Discovery Center A

## MONDAY, NOVEMBER 13

## REGISTRATION

7:00 am - 7:00 pm ■ Directors Room

STUDENT BREAKFAST MEETING  
WITH MENTORING OPPORTUNITIES

7:00 am - 8:30 am ■ Discovery Center B

Kick-off your conference experience at the Student Breakfast Meeting with an opportunity to meet your fellow students attending the conference as well as a selection of mentors who will be present at this event.

Come, have breakfast, and get to know the other students at the conference before the first session begins. Melanie Craxton, the USAEE Student Representative, will also be there to make some general announcements and answer any questions you may have. We have also organized for 5 seasoned professionals in various fields to be available at tables in the room for you to sit with and chat about their careers and personal experiences.

## MORNING NETWORKING COFFEE

7:45 am - 8:30 am ■ Legends Ballroom

## WELCOME &amp; INTRODUCTION

8:30 am - 9:00 am ■ Legends IV

OPENING PLENARY SESSION:

## The U.S. as an International Oil and Natural Gas Market Maker — Markets, Geopolitics and U.S. Energy Policy

9:00 am - 10:30 am ■ Legends IV

The shale technology revolution is shifting the U.S. role in world oil and natural gas markets from market taker to market maker. Saudi Arabia, Russia, Qatar and China will vie for market position, but none looks likely to have the same market clout in the new geopolitics of excess supply. How will this affect and be affected by market forces, geopolitical dynamics and emerging U.S. energy policy & politics in the Trump Administration? What will this mean for oil and natural gas price and supply security, and future energy cycles?

Edward L Morse (*Presiding & Presenting*)

GLOBAL HEAD OF COMMODITIES RESEARCH, CITIGROUP

Sarah Ladislaw

DIRECTOR AND SENIOR FELLOW, ENERGY AND NATIONAL SECURITY PROGRAM, CENTER FOR STRATEGIC AND INTERNATIONAL STUDIES

Amy Jaffe

DAVID RUBENSTEIN SR FELLOW FOR ENERGY AND THE ENVIRONMENT AND DIRECTOR, PROGRAM ON ENERGY SECURITY AND CLIMATE CHANGE, COUNCIL ON FOREIGN RELATIONS

## COFFEE BREAK

10:30 am - 11:00 am ■ Legends Ballroom Pre-Function

## CONCURRENT SESSIONS 1-9

11:00 am - 12:45 pm

### 1. Does Nuclear Have a Place in 21<sup>st</sup> Century Energy Supply?

■ Legends IV

Christophe Bonnerly (*Presiding*)

DIRECTOR ECONOMICS &amp; PROSPECTIVE, ENEDIS

### The Economic Impact of Nuclear Power Plant Shutdowns

Jung You

CALIFORNIA STATE UNIVERSITY-EAST BAY

Minsoo Jeong

YONSEI UNIVERSITY

### Scenarios for a Low-Carbon European Electricity Sector

Clemens Gerbaulet

Casimir L Lorenz

BERLIN UNIVERSITY OF TECHNOLOGY

Oei Pao-Yu

Claudia Kemfert

GERMAN INSTITUTE FOR ECONOMIC RESEARCH (DIW BERLIN)

### Economic Aspects of Nuclear Power in the 21<sup>st</sup> Century

Christian R von Hirschhausen

PROFESSOR, BERLIN UNIVERSITY OF TECHNOLOGY

### Decomposing the Public's Fear of Nuclear Power

Parth Vaishnav

CARNEGIE MELLON UNIVERSITY

Ahmed Abdulla

UNIVERSITY OF CALIFORNIA SAN DIEGO

### 2. Electricity Market Design Issues for Accommodating Renewables

■ Legends V, VI

Andrew Coleman (*Presiding*)

GOVERNMENT LEAD, EPRI

### Market Design, Welfare, and Environmental Implications of Recognizing Wind Production Uncertainty in PJM

Ali Daraeepour

Dalia Patino-Echeverri

DUKE UNIVERSITY

### Flexible Forward Contracts for Renewable Energy Generators in Deregulated Electricity Markets

Zamiyad Dar

GE ENERGY CONSULTING - GE POWER

Aparna Gupta

Koushik Kar

RENSSELAER POLYTECHNIC INSTITUTE

MONDAY, NOVEMBER 13, CONTINUED

**Two-sided and Non-Convex Markets for Electricity Markets**

Alberto Lamadrid  
Luis F Zuluaga  
Xiaolong Kuang  
LEHIGH UNIVERSITY

**Forward Contracts and Generator Market Power: How Externalities Reduce Benefits in Equilibrium**

Ian Schneider  
MIT

Audun Botterud  
ARGONNE NATIONAL LABORATORY AND MIT LIDS

Mardavij Roozbehani  
MIT LIDS

**3. Alternatives to Fossil Fuels in Future Energy Supply**

■ Legends VII

Ricardo Raineri Bernain (*Presiding*)  
PROFESSOR, PONTIFICIA UNIV CATOLICA DE CHILE

**Sensitivity of Solar Fossil Hybrid Electricity Technology Penetration to Price and Efficiency Projections**

Kristen E Brown  
U.S. ENVIRONMENTAL PROTECTION AGENCY

**Designing a Global Energy System Based on 100% Renewables for 2050**

Pao-Yu C Oei  
BERLIN UNIVERSITY OF TECHNOLOGY

Thorsten Buhrandt  
Konstantin Loeffler  
Karlo Hainsch  
BERLIN UNIVERSITY OF TECHNOLOGY (TU BERLIN)

**Examining a “No Regrets” Policy to Facilitate a Transition to a Lower Carbon Future**

Frances Wood  
Sharon Showalter  
ONLOCATION, INC.

**A Review of Hydrogen Production Pathways, Cost and Decarbonization Potential**

Fan Tong  
CARNEGIE INSTITUTION FOR SCIENCE

Ines L Azevedo  
Jeremy Michalek  
CARNEGIE MELLON UNIVERSITY

**4. Modeling North American Natural Gas and NGL Markets: Focus on Exports**

■ Legends II

Robert Borgstrom (*Presiding*)  
INDEPENDENT CONSULTANT

**A MARKAL-Based Analysis to Assess the Role of Natural Gas in Electricity Sector Emission Reductions for Future Energy Scenarios**

Bandyopadhyay Rubenka  
Ozge Kaplan  
U.S. EPA

**Prospects for North American LNG Exports—How Much and How Soon**

Robert E Brooks  
Ning Lin  
RBAC, INC.

**RBAC's 2017 North American NGL Market Forecast**

Robert E Brooks  
RBAC, INC.  
Ken Chow  
MUSE, STANCIL & CO.

**5. Macroeconomics and Energy: GE Models, Cycles and Growth**

■ Legends I

Ronald Ripple (*Presiding*)  
PROFESSOR OF ENERGY BUSINESS AND FINANCE, THE UNIVERSITY OF TULSA

**The U.S. Shale Oil Boom, the Oil Export Ban and the Economy: A General Equilibrium Analysis**

Michael Plante  
Mine Yucel  
FEDERAL RESERVE BANK OF DALLAS

Nida Melek  
FEDERAL RESERVE BANK OF KANSAS CITY

**An Evaluation of U.S. Macroeconomic and Petroleum Market Outcomes under Future Economic Scenarios**

Gbadebo Oladosu  
Paul N Leiby  
OAK RIDGE NATIONAL LAB

Jennifer C Li  
U.S. DEPARTMENT OF ENERGY

**Credit Market Frictions and Business Cycle Dynamics in an Oil-Rich Emerging Economy Model**

Fred O Iklaga  
Fadimah Yusuf  
Moses K Tule  
CENTRAL BANK OF NIGERIA

**Non-Renewable Resources, Extraction Technology and Endogenous Growth**

Martin Stuermer  
FEDERAL RESERVE BANK OF DALLAS

Gregor Schwerhoff  
MCC BERLIN

**6. Role of OPEC in the World Oil Market**

■ Legends III

Samiha Khayyat (*Presiding*)  
ASSISTANT PROFESSOR, KING ABDULAZIZ UNIVERSITY

**The Value of Exporting an Additional Barrel of Oil Saved in Saudi Arabia**

Jorge Blazquez  
Axel Pierru  
KAPSARC

Baltasar Manzano  
UNIVERSIDAD DE VIGO AND KAPSARC

Lester C Hunt  
UNIVERSITY OF PORTSMOUTH AND KAPSARC

**Integration in the Global Production of Energy Commodities**

Neil A Wilmot  
ASSOCIATE PROFESSOR, UNIVERSITY OF MINNESOTA

**Shale Producers' Erosion of OPEC Market Power: Captured in an Empirical Dominant Firm Model**

Peter N Volkmar  
PHD STUDENT, RICE UNIVERSITY

**Investment in Incremental Production Capacity by a Dominant Oil Producer**

Yaser Faquih  
RICE UNIVERSITY

**7. Coping with Risks in the Natural Gas Industry**

■ Champions III

James Smith (*Presiding*)  
PROFESSOR OF FINANCE, SOUTHERN METHODIST UNIVERSITY

**Securing Regulatory Stability for International Gas Commercialisation and LNG Projects: The Nigerian Experience**

Tade Oyewunmi  
CENTRE FOR CLIMATE CHANGE, ENERGY AND ENVIRONMENTAL LAW

**The Cost of the Missing Pipeline — Constraints and Adaptation**

Patty S VanHorn  
NEWLAND CONSULTING

**How Reliable Is Natural Gas? An Historical Overview of Natural Gas Transmission's Outage Track Record**

Carly J Page  
NEVADA PUBLIC UTILITIES COMMISSION

**Diagnostic Metrics for The Adequate Development of Efficient-Market Base-Load Natural Gas Storage Capacity**

Ernesto Guzman  
COLORADO SCHOOL OF MINES



MONDAY, NOVEMBER 13, CONTINUED

8. Student Best Paper Competition

■ Champions VII

**Anastasia Shcherbakova** (*Presiding*)  
ASST PROF DEPT OF AG ECON, TEXAS A&M UNIVERSITY

**Natural Gas Salt Cavern Storage Cost Predictability**  
**Nathalie Hinchey**  
RICE UNIVERSITY

**Fuel Switching from Coal to Gas: The Impact of Coal Stockpiling at U.S. Coal-fired Plants**  
**Sul-Ki Lee**  
COLORADO SCHOOL OF MINES

**Peaking Interest: How Awareness Drives the Effectiveness of Time-of-use Electricity Pricing**  
**Brian Prest**  
DUKE UNIVERSITY

**Dam Spillovers: Direct Costs and Spillovers from Environmental Constraints on Hydroelectric Generation**  
**Brian Archsmith**  
UNIVERSITY OF CALIFORNIA DAVIS

9. Costs, Benefits and Pricing of Renewable Generation

■ Champions V

**Thomas Drennen** (*Presiding*)  
PROFESSOR OF ECONOMICS,  
HOBART AND WILLIAM SMITH COLLEGES

**U.S. Wind and Solar Are Much Less Efficient Decarbonizers than Combined Cycle Gas Turbines**  
**James L. Plummer**  
CLIMATE ECONOMICS FOUNDATION

**Charles R. Frank**  
BROOKINGS INSTITUTION

**Robert R. Michaels**  
CALIFORNIA STATE U FULLERTON

**On Renewable Energy Pricing**  
**Julian I. Silk**  
KEEE

**Evaluating Net Energy Metering: Insights into Welfare Impacts from an Economic Efficiency Approach**  
**Melanie Craxton**  
**James Sweeney**  
STANFORD UNIVERSITY

**Renewable Energy Levelized Energy Cost Modeling: Lessons for Marine Energy Conversion Technologies**  
**Peter H Kobos**  
**Vincent S Neary**  
**Bernadette A Hernandez-Sanchez**  
**Ryan G Coe**  
SANDIA NATIONAL LABORATORIES

AWARDS LUNCHEON

12:45 pm - 2:30 pm ■ Discovery Center A & B

USAEE Adelman Frankel Award to:  
**Mine K. Yucel**

USAEE Senior Fellow Awards to:  
**James T. Jensen**  
**Edward L. Morse**  
**Samuel A. Van Vactor**

**Robert McNally** (*Keynote Speaker*)  
FOUNDER AND PRESIDENT, THE RAPIDAN GROUP

"Welcome Back to Boom-Bust Prices"

DUAL PLENARY SESSION:

**Innovation in Energy Finance and Investment — Accelerating a Transition**

2:30 pm - 4:00 pm ■ Legends IV

Rapidly changing dynamics in energy infrastructure, consumer demands, and technology innovations are stimulating change and innovation in energy sector finance. The financing of and investment in the energy industry is increasingly occurring through more innovative vehicles and techniques. From third party financing of rooftop solar to leveraging the yieldco model to provide liquidity to debt financings, these changes introduce complexity and opportunity for the investment community and economic stakeholders.

**Martha Goodell** (*Presiding*)  
MANAGING PARTNER, ENIGAMI PARTNERS LLC

**Jason Blumberg**  
CEO AND MANAGING DIRECTOR, ENERGY FOUNDRY

**Ric Abel**  
MANAGING DIRECTOR,  
PRUDENTIAL CAPITAL ENERGY PARTNERS

**Caitlin MacLean**  
DIRECTOR, INNOVATIVE FINANCE, MILKEN INSTITUTE

DUAL PLENARY SESSION:

**Future of the Refining Sector — Trumponomics and Low Oil Prices**

2:30 pm - 4:00 pm ■ Legends V & VI

Globalization has transformed the downstream refining sector, but can global product demand keep pace with expectations for new supply amid emerging new environmental regulations? How will downstream refiners, in both domestic and international markets, evolve to regain market balance? What are the myths versus realities? Our panel of experts will provide insights into the changing conditions and answers to these questions.

**Tina Vital** (*Presiding*)  
DIRECTOR, AEGIS ENERGY ADVISORS CORP

**Carol A Dahl**  
SENIOR FELLOW, COLORADO SCHOOL OF MINES

**Garfield L Miller III**  
PRESIDENT AND CHIEF EXECUTIVE OFFICER,  
AEGIS ENERGY ADVISORS CORP

**Susan W Grissom**  
CHIEF INDUSTRY ANALYST, GOVERNMENT RELATIONS/  
OUTREACH, AMERICAN FUEL & PETROCHEMICAL MANUFACTURERS

COFFEE BREAK

4:00 pm - 4:30 pm ■ Legends Ballroom Pre-Function

CONCURRENT SESSIONS 10-18

4:30 pm - 6:15 pm

10. Evolution of the North American Electricity Supply System

■ Legends IV

**Peter Balash** (*Presiding*)  
SENIOR ECONOMIST, U.S. DEPARTMENT OF ENERGY - NETL

**Efficiency and Productivity of U.S. Coal-Burning Power Plants**  
**Jermaine A Moulton**  
BELOIT COLLEGE

**Natural Gas Combined Cycle Innovations in the U.S.: The Impact of the Advanced Turbine System Program**  
**Kelly A. Stevens**  
UNIVERSITY OF CENTRAL FLORIDA

**Risky Business: Marginal Switching and Price Volatility in PJM**  
**Anastasia V Shcherbakova**  
TEXAS A&M UNIVERSITY  
**Jeremy Lin**  
PJM INTERCONNECTION

**Alessio Saretto**  
UNIVERSITY OF TEXAS AT DALLAS

**Evolution of North American Gas Power in the Post-Obama Era**  
**Robert E Brooks**  
**Bethel A King**  
RBAC, INC.

**Rahul Dhal**  
EPIS, LLC

MONDAY, NOVEMBER 13, CONTINUED

**11. Risk in Electricity Markets and Effects on Suppliers and Customers**

■ Legends V, VI

**Alberto J. Lamadrid** (*Presiding*)

ASSISTANT PROFESSOR OF ECONOMICS, LEHIGH UNIVERSITY

**The Effect of Procuring Electricity In-House on Utility's Performance: Evidence from the U.S. Electric Utility Industry**

**Takuro Tanaka**

CENTRAL RESEARCH INSTITUTE OF ELECTRIC POWER INDUSTRY

**Effect of Suppliers' Risk Appetite on Market Performance in Electricity Markets**

**Masahiro Ishii**

SOPHIA UNIVERSITY

**Koichiro Tezuka**

NIHON UNIVERSITY

**Who Pays in Deregulated Electricity Markets?: Quasi-Experimental Evidence of Inter Class Subsidization from Ohio Complete Bill Data**

**Noah C Dormady**

**Alfredo Roa-Henriquez**

OHIO STATE UNIVERSITY

**Matthew Hoyt**

EXETER ASSOCIATES

**Price Dispersion in the Norwegian Electricity Market**

**Kari-Anne Fange**

OSTFOLD UNIVERSITY COLLEGE/  
NORWEGIAN UNIVERSITY OF LIFE SCIENCES

**Olvar Bergland**

NORWEGIAN UNIVERSITY OF LIFE SCIENCES

**12. CO<sub>2</sub> Emissions: Taxes, Cap-and-Trade, Vehicle Emissions**

■ Legends VII

**Martha Goodell** (*Presiding*)

MANAGING DIRECTOR, ENIGAMI PARTNERS LLC

**Price and Carbon Tax Elasticities of Diesel Demand in British Columbia**

**Jean-Thomas Bernard**

**Maral Kichian**

UNIVERSITY OF OTTAWA

**Flexibility in Petroleum Product Mix Undermines Greenhouse Gas Benefits from Biofuel Policies**

**I. Daniel Posen**

UNIVERSITY OF TORONTO

**W. Michael Griffin**

**Paulina Jaramillo**

**Inês L Azevedo**

CARNEGIE MELLON UNIVERSITY

**Richard J Plevin**

UNIVERSITY OF CALIFORNIA, BERKELEY

**A Spatial Assessment of Vehicles' Climate Change and Air Pollution Damages Across the United States**

**Fan Tong**

CARNEGIE INSTITUTION FOR SCIENCE

**Inês L Azevedo**

**Paulina Jaramillo**

CARNEGIE MELLON UNIVERSITY

**Cost-Effective Methane Mitigation Policy in an Era of Low Natural Gas Prices**

**Arvind P Ravikumar**

**Adam R Brandt**

STANFORD UNIVERSITY

**13. Modeling Energy Supply, Demand and Prices**

■ Legends II

**Melanie Craxton** (*Presiding*)

PHD CANDIDATE, STANFORD UNIVERSITY

**Long-Run Productivity Models of Oil and Gas for Energy and Climate Policy: A Stable Equilibrium or Inherent Volatility?**

**Justin Ritchie**

**Hadi Dowlatabadi**

UNIVERSITY OF BRITISH COLUMBIA

**The Dependence of Commodity Spot-Futures Markets: How Can This Help Investors to Make Profit? A Copula Approach**

**Sana Ben Kebaier**

PHD STUDENT, UNIVERSITY OF PARIS DAUPHINE

**The Cost Implications of Managing Outliers in Energy Commodity Prices**

**Joe Byers**

FINANCIALSEAL

**Betty J. Simkins**

OKLAHOMA STATE UNIVERSITY

**Ivilina Popova**

TEXAS STATE UNIVERSITY

**Analysis of Electricity Demand and Price Patterns of the United States Electricity Sector**

**Suman Gautam**

ECONOMIST, DAYMARK ENERGY ADVISORS

**14. Energy Intensity and Energy Transition in Japan and China**

■ Legends I

**David H. Knapp** (*Presiding*)

CHIEF ENERGY ECONOMIST, ENERGY INTELLIGENCE GROUP

**Economic Cycles and the Responsiveness of Natural Gas Demand in China's Residential Sector – An Unobserved Components Model**

**Noha Razek**

SENIOR RESEARCH ASSOCIATE, KAPSARC

**Regional Electricity Demand and Economic Transition in China**

**Jiang Lin**

**Xu Liu**

LAWRENCE BERKELEY NATIONAL LABORATORY

**Jin Guo**

CHINA NDRG MACRO ECONOMIC RESEARCH INSTITUTE

**Gang He**

STONY BROOK UNIVERSITY

**Induced Technological Change and the Declining Energy Intensity of the Japanese Economy**

**Toshihiro Mukai**

CENTRAL RESEARCH INSTITUTE OF ELECTRIC POWER INDUSTRY

**Embodied and Disembodied Capital in Energy Conservation: The Case of Chinese Industry**

**Sarah Tang**

SUFFOLK UNIVERSITY

**Gary Jefferson**

BRANDEIS UNIVERSITY

**15. Interactions between Energy Markets and Monetary and Fiscal Policy**

■ Legends III

**Peter Hartley** (*Presiding*)

MITCHELL PROFESSOR OF ECONOMICS, RICE UNIVERSITY

**The Empirical Relationship between U.S. Monetary Policy and Oil Prices**

**Jungho Baek**

UNIVERSITY OF ALASKA

**Dragan Mijjkovic**

NORTH DAKOTA STATE UNIVERSITY

**Finders, Keepers?**

**Niko Jaakkola**

IFO INSTITUTE

**Daniel Spiro**

OSLO BUSINESS SCHOOL

**Arthur van Benthem**

THE WHARTON SCHOOL

**A Merged Biophysical and Monetary Model Linking Natural Resources and Debt**

**Carey King**

THE UNIVERSITY OF TEXAS AT AUSTIN

**Evaluating the Impact of Oil Price Volatility on Investor and Fiscal Revenues**

**Akil Zaimi**

KAPSARC

**Baltasar Manzano**

KAPSARC AND UNIVERSIDADE DE VIGO

**16. The Future of LNG and Natural Gas Markets More Generally**

■ Champions III

**Burcu Cigerli Esmerok** (*Presiding*)

SENIOR ANALYST, SHELL OIL COMPANY

**Will There Still be a Golden Age of Gas?**

**Kirsten N Smith**

**James Kendall**

ASIA PACIFIC ENERGY RESEARCH CENTRE

**Yoshikazu Kobayashi**

INSTITUTE OF ENERGY ECONOMICS, JAPAN

## MONDAY, NOVEMBER 13, CONTINUED

**Future LNG Market in Japan Based on the Potential Capacity Back of its Nuclear by 2020**

Hisanori Nei  
PROFESSOR, GRIPS

**Will the Natural Gas Price Remain Low?**

Jean-Pierre M Favennec  
CONSULTANT, WD COOPERATION

**What Drives LNG Spot Prices?**

Ziya Cologlu  
PH.D. CANDIDATE, UNIVERSITY OF TEXAS AT DALLAS

## 17. Transportation: Electric Vehicles, Fuel Economy Standards and Other Policies

■ Champions VII

Benjamin Schlesinger (*Presiding*)  
PRESIDENT, BENJAMIN SCHLESINGER & ASSOC LLC

**An Analysis of the Macroeconomic Effects of 2017-2025 Federal Fuel Economy and Greenhouse Gas Emissions Standards**

Sanya Carley  
Denvil Duncan  
Nikos Ziropiannis  
John D Graham  
INDIANA UNIVERSITY

Saba Siddiki  
SYRACUSE UNIVERSITY

**Energy Policies in the Transportation Sector**

Paulo Henrique de Mello Santana  
Luiza P Bertazzoli  
ABC FEDERAL UNIVERSITY

**Understanding Latent Demand for Hybrid and Plug-In Electric Vehicles Using Large-Scale Longitudinal Survey Data of U.S. New Vehicle Buyers**

Rubal Dua  
Kenneth White  
KAPSARC

**Evaluating Future Emissions from Electric Vehicles Across the United States with a Changing Electric Grid Mix Under the Clean Power Plan**

Alan Jenn  
UNIVERSITY OF CALIFORNIA, DAVIS

## 18. Solar PV: Deployment and Impacts

■ Champions V

Peter Kobos (*Presiding*)  
MGR WATER POWER TECHNOLOGIES,  
SANDIA NATIONAL LABORATORIES

**The Impacts of Photovoltaic Electricity Self-Consumption on Value Transfers Between Private and Public Stakeholders in France**

Jonathan Richard Ludovic Roulot  
Ricardo Raineri Bernain  
PONTIFICIA UNIVERSIDAD CATÓLICA DE CHILE

**Measuring PV Technical Potential and Financial Feasibility for Educational Buildings in the United States**

Nichole Hanus  
Gabrielle Wong-Parodi  
Ines Azevedo  
Alex Davis  
CARNEGIE MELLON UNIVERSITY

**The Political Economy of Community Solar: Lessons from Minnesota**

Gabriel Chan  
UNIVERSITY OF MINNESOTA

**Screening Solar PV Adopters and Non-adopters: An Application of Machine Learning Methods**

Changgui Dong  
RENMIN UNIVERSITY OF CHINA  
Benjamin Sigrin  
NATIONAL RENEWABLE ENERGY LABORATORY

## USAEE CHAPTER LEADERSHIP MEETING

5:15 pm - 6:15 pm ■ Champions II

## POSTER SESSION & NETWORKING RECEPTION

6:30 pm - 8:00 pm ■ Discovery Center A & B

**1. Opportunities and Risk Factors in Construction of Solar Photovoltaic Plant with Venture of Public Private Partnership. Case Study of Largest PV Plant**

Bilal Anwar  
PHD RESEARCH SCHOLAR, XI'AN JIAOTONG UNIVERSITY

**2. The Design of Flat Energy Management Structure for Iron & Steel Enterprises in China**

Yuhui Jin  
Shiping Jin  
Junyin Zhang  
Yan Long  
HUAZHONG UNIVERSITY OF SCIENCE AND TECHNOLOGY

Yonghong Huang  
WISDRI ENGINEERING & RESEARCH INCORPORATION LIMITED

**3. The Future of the Energy Sector and Geopolitical Impact**

Ikechukwu Igwe  
EMERALD ENERGY INSTITUTE

**4. Why is There a Gap for Energy Performance? Evidence from Green Commercial Buildings**

Jing Liang  
Yueming (Lucy) Qiu  
UNIVERSITY OF MARYLAND

**5. An Analyze of Oil Royalties Impacts on the Southeastern Municipalities per Capita GDP: A Spatial Econometric Approach for the Natural Resource Curse**

Felipe Tavares  
Augusto Seabra  
Alexandre Almeida  
UNIVERSITY OF SÃO PAULO

**6. Optimum Hybrid Configuration For Off-Grid Rural Electricity Generation In The Six Geopolitical Zones Of Nigeria**

Nathaniel A Babajide  
CENTRE FOR ENERGY,  
PETROLEUM AND MINERAL LAW AND POLICY

**7. Welfare Impacts of Optimal Virtual Bidding in a Multi-Settlement Electricity Market with Transmission Line Congestion**

Hyungkwan Kim  
Andrew L Liu  
Paul V Preckel  
PURDUE UNIVERSITY

Douglas Gotham  
STATE UTILITY FORECASTING GROUP

**8. Energy Storage Reshaping The Grid**

Hudson R Howard  
FROSTBURG STATE UNIVERSITY

**9. Effectiveness of Feed-in Tariff and Renewable Portfolio Standard under Strategic Pricing in Network Access**

Kurakawa Yukihide  
WASEDA UNIVERSITY  
Hibiki Akira  
TOHOKU UNIVERSITY

**10. Modeling Complexity in Energy Systems: A Fuzzy Logic Approach**

Mohammed AlMehdar  
BRANDEIS UNIVERSITY

**11. Stochastic versus Deterministic Grid-Evolution Models- A Case Study on MISO**

Naga S. Goteti  
Eric Williams  
Eric Hittinger  
ROCHESTER INSTITUTE OF TECHNOLOGY

**12. Energy Efficiency and Machine Learning: Understanding Technology Adoption Decisions**

Aramayis Dallakyan  
Reid Stevens  
TEXAS A&M UNIVERSITY

## STUDENT HAPPY HOUR MONDAY 8:00 PM - 10:00 PM ■ THE RAILYARD

Immediately following the Poster Session & Networking Reception, come join fellow students at The Railyard, a 15 minute walk from the conference hotel, for further drinks and networking opportunities. Gather at the Meeting Point (Hotel Lobby) at 7:45 pm to walk over with the first group, or join us at your convenience. **Railyard – 4206 San Felipe St., Houston, TX 77027**

TUESDAY, NOVEMBER 14

REGISTRATION

7:00 am - 6:30 pm ■ Directors Room

MORNING NETWORKING COFFEE

7:45 am - 8:30 am ■ Legends Ballroom Pre-Function

CONCURRENT SESSIONS 19-27

8:30 am - 10:15 am

19. Energy Storage in Electricity Supply Systems

■ Legends IV

John Jimison (Presiding)  
ATTORNEY AT LAW - ENERGY

Effects of Grid-Scale Electricity Storage on System Carbon Dioxide Emissions as a Power System Decarbonizes

Michael Craig  
Paulina Jaramillo  
CARNEGIE MELLON UNIVERSITY

Bri-Mathias Hodge  
U.S. NATIONAL RENEWABLE ENERGY LABORATORY

Can Energy Storage Operation Be Clean? Reducing System Emissions While Retaining Revenue

Eric Hittinger  
Laura Arciniegas  
ROCHESTER INSTITUTE OF TECHNOLOGY

Renewable Electricity Storage with Ammonia Fuel: A Case Study in Japan with Optimal Power Generation Mix Model

Ryoichi Komiyama  
Yasumasa Fujii  
THE UNIVERSITY OF TOKYO

Arbitrage Strategies for Energy Storage Units

Olvar Bergland  
NMBU

20. Electricity Transmission and Trade in Electricity

■ Legends V, VI

Paul Christie (Presiding)  
SENIOR ANALYST, ALPINE ENERGY

The Impact of International Trade on Electric Loads in Mexico

Marc H Vatter  
MARC H. VATTER, PH.D.

Daniel F Suurkask  
BIRCH ENERGY ECONOMICS, LLC

A Review of Literature on Electricity Network Pricing Against Recent Findings in New Zealand

Paul A Christie  
SENIOR ANALYST, ALPINE ENERGY LIMITED, NEW ZEALAND

California's Cap-and-Trade Program and Emission Leakage: An Empirical Analysis

Chiara Lo Prete  
Cody Hohl  
Ashish Tyagi  
THE PENNSYLVANIA STATE UNIVERSITY

Reducing Variable Generation Curtailment Through Flexible Transmission Expansion and Operation in the United States

Yinong Sun  
Wesley Cole  
NATIONAL RENEWABLE ENERGY LABORATORY

21. Environmental Issues Arising from Energy Production

■ Legends VII

Troy Thompson (Presiding)  
BUSINESS PLANNING & ANALYTICS MGR, CHEVRON

Life Cycle Cost Analysis Comparing the Conventional and a Prototype Bio-Based Manufacturing Process for a Wind Turbine Blade

Katerin Yessenia Ramirez Tejada  
David A. Turcotte  
Daniel Schmidt  
Kelechi Adejumo  
Enmanuelle Reynaud  
UNIVERSITY OF MASSACHUSETTS LOWELL

The Impact of Environmental Regulation on the U.S. Coal Industry: A Counterfactual Analysis

Isaac A Duah  
WASHINGTON STATE UNIVERSITY

Climate Change and Energy Production: The Effect of Drought on Hydraulic Fracturing Productivity

Reid B Stevens  
Gregory L. Torell  
TEXAS A&M UNIVERSITY

Case Study - Dynamic Pressure-Limited Capacity and Costs of CO<sub>2</sub> Storage in the Mount Simon Sandstone

Steven T. Anderson  
Hossein Jahediesfanjani  
U.S. GEOLOGICAL SURVEY

22. Modeling Interactions between Energy Markets and CO<sub>2</sub> Emissions

■ Legends II

David H. Knapp (Presiding)  
CHIEF ENERGY ECONOMIST, ENERGY INTELLIGENCE GROUP

The Effect of Restricting Coal Consumption on Coal Exports and Greenhouse Gas Emissions

Andre J Barbe  
U.S. INTERNATIONAL TRADE COMMISSION

The Impact of Climate Change on Residential Energy Demand: A Case Study of Australia

Nnaemeka V Emodi  
Rabiul Beg  
Taha Chaiechi  
JAMES COOK UNIVERSITY

Decarbonization of Power Markets and Fairness: An Application of Cooperative Game Theory

Christoph Weissbart  
IFO INSTITUT

Electric Generation Scenario Modelling with Uncertainty in CO<sub>2</sub> Price

Joel R Theis  
Charles A Zelek  
Christopher J Nichols  
Peter C Balash  
NATIONAL ENERGY TECHNOLOGY LABORATORY

23. Energy Security and Emergency Oil Stockpiling

■ Legends I

Shirley Neff (Presiding)  
SENIOR ADVISOR, ENERGY INFORMATION ADMINISTRATION

Impacts of Oil Price Shocks on the U.S. Economy: a Meta-Analysis of Oil Price Elasticity of GDP for Net Oil-Importing Economies

Gbadebo Oladosu  
Paul Leiby  
David Bowman  
Megan Johnson  
Rocio Uria-Martinez  
OAK RIDGE NATIONAL LABORATORY

Economic Benefits of Alternative Configurations of the Strategic Petroleum Reserve

Paul Leiby  
Rocio Uria-Martinez  
Gbadebo A Oladosu  
OAK RIDGE NATIONAL LABORATORY

David C Bowman  
ECONOTECH LLC

Megan Johnson  
ORISE/ORNL

Using Meta-Analysis to Estimate World Oil Demand Elasticity

Rocio Uria-Martinez  
Megan M Johnson  
Paul N Leiby  
OAK RIDGE NATIONAL LABORATORY

David Bowman  
ECONOTECH

Gbadebo Oladosu  
OAK RIDGE NATIONAL LABORATORY



TUESDAY, NOVEMBER 14, *CONTINUED***The Strategic Determinants of Oil Stockpiling Behavior**

**Kenneth R Vincent**  
DEPARTMENT OF ENERGY

**Informing SPR Policy Through Oil Futures and Inventory Dynamics**

**Richard G. Newell**  
RESOURCES FOR THE FUTURE

**Brian C Prest**  
DUKE UNIVERSITY

**24. Information about North American Energy Markets**

■ Legends III

**Tina Vital, Presiding**  
DIRECTOR, AEGIS ENERGY ADVISORS CORP.

**Impact of Incidences in Regional Natural Gas Price**

**Negar Dahi Taleghani**  
**Arash Dahi Taleghani**  
LOUISIANA STATE UNIVERSITY

**Are U.S. Federal Reporting Thresholds Adequate to Address an Interdependent Electricity and Natural Gas Grid?**

**Gerad M Freeman**  
**Jay Apt**  
CARNEGIE MELLON UNIVERSITY

**BLM Oil and Gas Economic Impact Analysis: Methods, Desk Guide, and Tool to Facilitate IMPLAN Analysis for Oil and Gas Activities on the Federal Mineral Estate**

**Holly W Bender**  
**Lisa A McDonald**  
PINYON ENVIRONMENTAL

**Josh Sidon**  
BUREAU OF LAND MANAGEMENT

**Chris Dixon**  
LOUIS BERGER

**David (Tex) Taylor**  
UNIVERSITY OF WYOMING

**North American Cooperation on Energy Information**

**Shirley Neff**  
**Natalie Kempkey**  
ENERGY INFORMATION ADMINISTRATION (EIA) DOE

**25. Issues Arising from the Shale Revolution**

■ Champions III

**Michael Plante, Presiding**  
SENIOR RESEARCH ECONOMIST,  
FEDERAL RESERVE BANK OF DALLAS

**Revisiting the Economic Impacts of Fracking in the Pennsylvania**

**Timothy Considine**  
UNIVERSITY OF WYOMING

**The Impact of Shale Boom on North American Natural Gas Market**

**Xiaoli Zheng**  
UNIVERSITY OF CALGARY

**How Spot Prices Shape Future Drilling Activity: an Empirical Analysis in New Mexico**

**Elmira Kalhor**  
**Janie M. Chermak**  
UNIVERSITY OF NEW MEXICO

**Optimal Royalty Rates in the Haynesville Shale**

**Mark Agerton**  
RICE UNIVERSITY

**26. Financing Energy Projects, with a Focus on Government Enterprises**

■ Champions VII

**Kim Coffman, Presiding**  
ECONOMIST, U.S. BUREAU OF OCEAN ENERGY MGMT.

**Why Federal Agency Energy Projects are Privately Financed**

**Michael E Canes**  
DISTINGUISHED FELLOW, LMI

**Performance Measurement for Oil and Gas Companies: Functional Currency**

**Fumihiko Matsubara**  
HOSEI UNIVERSITY

**Empirical Relationship Between Energy Infrastructure, Project Finance and Other Conventional Sources of Financing Using Generalised Method of Moments to Explain the Variations in Energy Projects in Developing Nations (Nigerian Energy Sector)**

**Nasir A Kolade**  
UNIVERSITY OF THE WEST OF SCOTLAND

**Have the Chinese National Oil Companies Paid Too Much in Overseas Asset Acquisition?**

**Xiaoyi Mu**  
UNIVERSITY OF DUNDEE

**27. Global Adoption of Solar Power and Solar Technology Transfer**

■ Champions V

**Seth Blumsack, Presiding**  
ASSOCIATE PROFESSOR, PENN STATE UNIVERSITY

**Patent Quality, Intellectual Property Rights, and Technology Transfer in the Solar Sector: All in the Family?**

**Amanda Phalin**  
LECTURER, WARRINGTON COLLEGE OF BUSINESS,  
UNIVERSITY OF FLORIDA

**Assessing the Effectiveness of Feed-in-Tariffs and Renewable Portfolio Standards: An Analysis of Global Renewable Energy Policy**

**Gregory B Upton**  
LOUISIANA STATE UNIVERSITY

**Sanya Carley**  
INDIANA UNIVERSITY BLOOMINGTON

**Cross-Border Cost Reductions from PV Capacity in Germany**

**Felix Muesgens**  
BRANDENBURG UNIVERSITY OF TECHNOLOGY

**International Model for Diffusion of Residential Solar Power**

**Eric Williams**  
**Matthew Ronnenberg**  
**Rexon Carvalho**  
ROCHESTER INSTITUTE OF TECHNOLOGY

**COFFEE BREAK**

10:15 am - 10:45 am ■ Legends Ballroom Pre-Function

**DUAL PLENARY SESSION:****Changing Ties with Mexico**

10:45 am - 12:15 pm ■ Legends IV

Mexican energy regulators and operators will discuss their expectations on the country's outlook as the Energy Reform is implemented as well as the vulnerabilities and potential impacts of a policy shift in the U.S.. The trends toward larger foreign direct investments and trade links with the U.S. have strengthened. Most of the natural gas consumed in Mexico today is imported from the U.S. through pipelines and LNG vessels. Furthermore, U.S. oil and gas companies participated in tendering processes for oil fields, and some will start operations soon.

**Alejandra Elizondo (Presiding)**  
RESEARCH FELLOW, CIDE

**Guillermo Garcia Alcocer**  
PRESIDENT COMMISSIONER, ENERGY REGULATORY COMMISSION

**Jimena Marvan**  
DEPUTY EXECUTIVE DIRECTOR, ASEA

**Hector Moreira Rodriguez**  
COMMISSIONER, NATIONAL HYDROCARBONS COMM. OF MEXICO

**DUAL PLENARY SESSION:****Electricity Markets**

10:45 am - 12:15 pm ■ Legends V & VI

The electricity industry is undergoing significant change. This panel will explore some of the rapidly evolving characteristics within electricity markets such as the role of different market players, legal issues that may arise at the grid's edge, and resource price dynamics.

**William C (Bill) Starnes (Presiding)**  
PARTNER, RESOLVED ENERGY CONSULTING LLC

**Michael Wara**  
ASSOCIATE PROFESSOR OF LAW, JUSTIN M ROACH, JR.  
FACULTY SCHOLAR, STANFORD LAW SCHOOL

**Elizabeth Wilson**  
PROFESSOR, DARTMOUTH COLLEGE

**Joshua D Rhodes**  
POSTDOCTORAL RESEARCH FELLOW, UNIVERSITY OF TEXAS AUSTIN

**Jean-Baptiste Galland**  
SVP STRATEGY, ENEDIS

TUESDAY, NOVEMBER 14, CONTINUED

**AWARDS LUNCHEON**

12:15 pm - 2:00 pm ■ Discovery Center A & B

*Student & Other Awards/Recognitions*

*Case Competition Presentation*

**GOVERNMENT TRACK & CONCURRENT SESSIONS 28 TO 36**

2:00 pm - 3:45 pm

**28. Customer Response to Electricity Prices**

■ Legends IV

**Eric Hittinger** (*Presiding*)

ASSISTANT PROFESSOR,  
ROCHESTER INSTITUTE OF TECHNOLOGY

**A Novel Approach to Improve the Estimation of Customer Baseline Loads in Residential Demand Response Programs**

**Peter M Schwarz**  
**Saeed Mohajeryami**

UNC CHARLOTTE

**Optimizing the Generation Capacity Expansion Cost in Presence of Demand Response in the German Electricity Market**

**Hamid Aghaie**  
AIT AUSTRIAN INSTITUTE OF TECHNOLOGY

**How Do Households Respond to Critical Peak Pricing? Experimental Evidence on the Role of Information and Incentives**

**Kenneth Gillingham**  
ASSOCIATE PROFESSOR, YALE UNIVERSITY

**Analysis on the Relationship Between Literacy and Energy Choices in Japan**

**Miwa Nakai**  
**Yasunori Kikuchi**  
**Tatsuya Okubo**  
THE UNIVERSITY OF TOKYO

**29. Some Wider Lessons from the ERCOT Experience?**

■ Legends V, VI

**Karl Nalepa** (*Presiding*)  
PRESIDENT, RESOLVED ENERGY CONSULTING

**Operating Reserve Demand Curve, Scarcity Pricing and Intermittent Generation: Lessons from the Texas ERCOT Experience**

**Raul Bajo-Buenestado**  
UNIVERSITY OF NAVARRA

**Smooth Transition and Integration of the ERCOT Market**

**Xiaodong Du**  
UNIVERSITY OF WISCONSIN-MADISON

**Ofir D Rubin**  
BEN-GURION UNIVERSITY OF THE NEGEV, ISRAEL

**Does Electricity Get Cheaper and Cleaner with More Wind in ERCOT**

**Chen-Hao Tsai**  
CENTER FOR ENERGY ECONOMICS,  
THE UNIVERSITY OF TEXAS AT AUSTIN

**Derya Eryilmaz**  
NERA ECONOMIC CONSULTING INC.

**The Cost of Policy Uncertainty in Electric Sector Capacity Planning: Implications for Instrument Choice**

**Benjamin D Leibowicz**  
ASSISTANT PROFESSOR, THE UNIVERSITY OF TEXAS AT AUSTIN

★ GOVERNMENT TRACK ★

**30. Electricity System Flexibility**

■ Legends VII

As electricity systems include more variable energy resources and experience changing use patterns, greater flexibility may be needed to ensure reliability. In the near-term, existing generation assets could deliver adequate flexibility if market rules provided sufficient incentives. Without rule changes, however, such assets may be inefficiently utilized and their long-term viability threatened. Meanwhile, nascent technologies such as transactive controls may allow demand-side assets to deliver flexibility, but their impacts on utilities and customers, as well as their public acceptability, are uncertain. This session will explore these diverse perspectives on flexibility by bringing together experts from Department of Energy headquarters and its National Laboratories to review recently completed and ongoing analytical work that is helping to inform operations, planning, policy, and other decisions in this space. This session also will feature a Federal Energy Regulatory Commission presentation concerning market design efforts underway to enable economically efficient deployment and utilization of the myriad of flexibility resources available.

**Eric Hsieh**, (*Moderator*)  
DIRECTOR, OFFICE OF ENERGY FINANCE AND INCENTIVES ANALYSIS, U.S. DEPARTMENT OF ENERGY

**Josh Novacheck**  
SENIOR ANALYST, ELECTRICITY SYSTEM RESEARCH ENGINEER, GRID SYSTEM ANALYSIS, NATIONAL RENEWABLE ENERGY LABORATORY

**Abhishek Somani**  
SENIOR RESEARCH ECONOMIST, ELECTRICITY INFRASTRUCTURE INTEGRATION, PACIFIC NORTHWEST NATIONAL LABORATORY

**Fletcher Fields**  
ECONOMIST, OFFICE OF ENERGY POLICY AND SYSTEMS ANALYSIS, U.S. DEPARTMENT OF ENERGY

**Mary Wierzbicki**  
MANAGER, OFFICE OF ENERGY POLICY AND INNOVATION, FEDERAL ENERGY REGULATORY COMMISSION

**31. Modeling CCS, Energy Efficiency and Non-fossil Energy Alternatives**

■ Legends II

**John Holding** (*Presiding*)  
INDEPENDENT ENERGY ANALYST

**Are U.S. Coal-Fired Power Plants Quantity-Quality Efficient?**

**Saleem Shaik**  
**Dragan Miljkovic**  
**David Ripplinger**  
NORTH DAKOTA STATE UNIVERSITY

**Older Wind Power Projects: Market Performance and Planning Considerations**

**Michael Giberson**  
TEXAS TECH UNIVERSITY  
**Michael Reed**  
WEST VIRGINIA UNIVERSITY

**Hydrogen Storage Applications in Industrial Microgrids**

**Marie-Louise Arlt**  
**Goncalo Cardoso**  
LAWRENCE BERKELEY NATIONAL LAB  
**Dean Weng**  
ELECTRIC POWER RESEARCH INSTITUTE

**The Transition from Enhanced Oil Recovery to Carbon Capture and Sequestration**

**Dana M Abdulbaqi**  
**Mohammed AlShaikh**  
SAUDI ARAMCO  
**Carol Dahl**  
COLORADO SCHOOL OF MINES AND LULEO TECHNICAL UNIVERSITY

**32. Energy and Geopolitics with a Focus on LNG**

■ Legends I

**Nathalie Hinchey** (*Presiding*)  
PHD CANDIDATE, RICE UNIVERSITY

**Implications of the Panama Canal Expansion on the Global LNG Market: Lessons for African LNG Producers**

**Israel J Onyije**  
**Omowumi Iledare**  
**Onuoha I Nnachi**  
EMERALD ENERGY INSTITUTE,  
UNIVERSITY OF PORT HARCOURT

**U.S. Potential as a Swing Supplier in the Atlantic Basin**

**Hannah Gagarin**  
OAK RIDGE INSTITUTE FOR SCIENCE AND EDUCATION  
**Carly J Page**  
NEVADA PUBLIC UTILITIES COMMISSION

TUESDAY, NOVEMBER 14, *CONTINUED***Energy Security Implications of Biofuels: Welfare Effects of Biomass Supply Shocks**

Rocio Uria-Martinez

Paul N Leiby

OAK RIDGE NATIONAL LABORATORY

Maxwell Brown

COLORADO SCHOOL OF MINES/ORNL

**Consequences of U.S. LNG Exports on Gazprom and European Gas Markets**

Chi Kong Chyong

EPRI, UNIVERSITY OF CAMBRIDGE

**33. Growth of Renewables in the U.S. and China: Explanations and Environmental Consequences**

- Legends III

Suman Gautam (*Presiding*)

ECONOMIST, DAYMARK ENERGY ADVISORS

**Drivers of Economic Wind and Solar Penetration in the United States**

David Young

John Bistline

EPRI

**Modeling the Energy, Climate, and Water Nexus and Tradeoffs in China's Power Sector**

Gang He

STONY BROOK UNIVERSITY

**The Environmental Potentials of China's Electricity Reform**

Yu Yang

Jianxiao Wang

TSINGHUA UNIVERSITY

**Climate, Air Quality and Human Health Benefits of Various Solar Photovoltaic Development Scenarios in China in 2030**

Junnan Yang

Denise L Mauzerall

Xiaoyuan Li

PRINCETON UNIVERSITY

Wei Peng

HARVARD KENNEDY SCHOOL

Fabian Wagner

INTERNATIONAL INSTITUTE FOR APPLIED SYSTEMS ANALYSIS

**34. Estimating Energy Demand**

- Champions III

Benjamin Hobbs (*Presiding*)

PROFESSOR, JOHNS HOPKINS UNIVERSITY

**Energy Demand Estimation and Forecasting in Qatar**

Ahmed A Khalifa

QATAR UNIVERSITY

Massimiliano Caporin

DEPARTMENT OF STATISTICAL SCIENCES, UNIVERSITY OF PADOVA

**Revisiting the Long-run Income Elasticity of Energy Consumption: An OECD-country Panel Analysis**

Brantley Liddle

ENERGY STUDIES INSTITUTE

**The Long Run Price Elasticity of Demand for Residential Gas Consumption in the United States: A Time Varying Approach**

Kelly R Burns

CURTIN UNIVERSITY

**Forecasting Motor Gasoline Consumption in the United States**

Melissa Lynes

ENERGY INFORMATION ADMINISTRATION

**35. Energy Finance**

- Champions VII

William Kemp (*Presiding*)

PARTNER, ENOVATION PARTNERS, LLC

**Skew Preference in Energy Commodity Option Design**

Rafael Emmanuel A Macatangay

UNIVERSITY OF DUNDEE

Alebachew D Yimer

NV ENERGY INC.

**Modelling the Volatility of Electricity Spot Price in Brazil**

Andre L S Leite

PROFESSOR, FEDERAL UNIVERSITY OF SANTA CATARINA

**Relative Efficiency of Hedging U.S. Saudi Crude Oil Imports: Employing WTI and Brent Futures Contracts**

Kelly D. Burns

Julian Inchauspe

CURTIN UNIVERSITY

Ronald D Ripple

UNIVERSITY OF TULSA

**Identifying and Quantifying Risks and Uncertainties in Developing an Offshore Oilfield Under Varying Oil Price Regimes**

Oyebimpe Adeogun

Ovunda O. Green

Omowumi O. Iledare

EMERALD ENERGY INSTITUTE, UNIVERSITY OF PORT HARCOURT

**36. Environmental and other Effects of Renewable and Bioenergy Sources**

- Champions V

James C. McDonnell (*Presiding*)

COO, AVALON ENERGY SERVICES, LLC

**Intended and Unintended Consequences of U.S. Renewable Energy Policies**

Nisal Herath

Wally Tyner

PURDUE UNIVERSITY

**Renewable Energy Projects: A Socioeconomic and Environmental Case Study for New Mexico**

Jamal Mamkhezri

UNIVERSITY OF NEW MEXICO

Jennifer Thacher

ASSOCIATE PROFESSOR

Janie M Chermak

PROFESSOR

**Bioenergy Prospects in Mexico**

Hector M Nunez

CENTRO DE INVESTIGACIÓN Y DOCENCIA ECONÓMICAS

**General Equilibrium Effects of Mitigation Actions in the Primary Sector in Mexico**

Alejandra Elizondo

CIDE

María Eugenia Ibararán

IBERO PUEBLA

Roy Boyd

OHIO UNIVERSITY

**COFFEE BREAK**

3:45 pm - 4:15 pm ■ Legends Ballroom Pre-Function

## DUAL PLENARY SESSION:

**Entrepreneurship in the Energy World**

4:15 pm - 5:45 pm ■ Legends IV

Innovation and entrepreneurship are growing in the energy eco-system. New Startups are proposing improvements, sometimes incremental, sometimes disruptive, to energy production, delivery or consumption. Low and volatile prices pressure businesses to reduce costs, while high and volatile prices encourage consumers to reduce demand and look for alternatives. Universities are also playing a vital role in connecting researchers and collegiate entrepreneurs to investors in launching successful ventures.

Shree Vikas (*Presiding*)

DIRECTOR MARKET INTELLIGENCE &amp; BUSINESS ANALYSIS, CONOCOPHILLIPS

Brad Burke

MANAGING DIRECTOR, RICE ALLIANCE FOR TECHNOLOGY AND ENTREPRENEURSHIP

Jim Sledzik

DIRECTOR, HALL LABS LLC

Kemal Anbarci

MANAGING VENTURE EXECUTIVE, CHEVRON TECHNOLOGY VENTURES

Surya Rajan

MANAGING PARTNER AND VICE PRESIDENT, PROFITABILITY3

## TUESDAY, CONT.

DUAL PLENARY SESSION:

### Renewable Energy - Integration Challenges and Emerging Solutions

4:15 pm - 5:45 pm ■ Legends V & VI

This plenary explores challenges related to the integration of renewable energy generation into electrical grids and emerging solutions implemented in U.S. wholesale electricity markets. Topics of interest include the need for better coordination between renewable energy assets and transmission planning; the definition of new markets and products to maintain grid stability and accommodate renewable penetration; and interactions with climate change policy.

**Alberto J Lamadrid** (*Co-Presiding*)  
ASSISTANT PROFESSOR, LEHIGH UNIVERSITY

**Chiara Lo Prete** (*Co-Presiding*)  
ASSISTANT PROFESSOR ENERGY ECONOMICS,  
THE PENNSYLVANIA STATE UNIVERSITY

**Benjamin F. Hobbs**  
PROFESSOR OF ENVIRONMENTAL MANAGEMENT,  
JOHNS HOPKINS UNIVERSITY

**Michael Robinson**  
PRINCIPAL ADVISOR OF MARKET DESIGN, MISO

**Nitika Mago**  
SUPERVISOR OPERATIONS ANALYSIS, ERCOT

### USAEE GENERAL MEMBERSHIP MEETING

5:45 pm - 6:15 pm ■ Champions II

### OPTIONAL NETWORKING DINNERS TUESDAY 6:30 PM - 9:00 PM

Sign up at registration desk; cost not included in registration fee. See page 12 for more information.

## WEDNESDAY, NOVEMBER 15

### REGISTRATION

7:00 am - 6:00 pm ■ Directors Room

### WASHINGTON CONFERENCE PLANNING MEETING

7:30 am - 8:30 am  
■ Champions III

### MORNING NETWORKING COFFEE

7:45 am - 8:30 am ■ Legends Ballroom Pre-Function

DUAL PLENARY SESSION:

### Strategies to Adapt, Survive and Evolve in the Upstream Oil and Gas Markets

8:30 am - 10:00 am ■ Legends IV

The downturn in global crude prices negatively impacted all segments of the upstream sector, and has forced a broad rethink in how firms operate. What strategies have companies across the upstream sector, from service companies to operators, both onshore and offshore, employed to emerge in better position after the downturn? What structural changes have upstream players employed? Have these lessons been learned for the long-term or are we in danger of repeating history? Our panel of experts from across the upstream sector will speak from their experiences on these and other questions affecting the upstream.

**Caldwell Bailey** (*Presiding*)  
INVESTOR RELATIONS, HI CRUSH

**Ron Gusek**  
PRESIDENT, LIBERTY OILFIELD SERVICES

**John Daniel**  
SENIOR RESEARCH ANALYST, OILFIELD SERVICES, SIMMONS

**Robert Kleinberg**  
SCHLUMBERGER FELLOW EMERITUS, SCHLUMBERGER

**Laura Fulton**  
CHIEF FINANCIAL OFFICER, HI-CRUSH PROPPANTS LLC

DUAL PLENARY SESSION:

### Intelligent Energy Systems

8:30 am - 10:00 am ■ Legends V & VI

Infrastructure, technologies, and the 'Internet of Things' are changing the energy sector in ways that were recently only science fiction. From using 'Big Data' for real-time electricity grid monitoring to cutting-edge technologies in smart buildings, smart grids, and autonomous vehicle networks, the prospects, management tools, as well as the cyber risks continue to gyrate upward. This panel of experts will explore such issues including the intelligent energy systems of today, what they envision as enablers and opportunities for the energy systems of the future, along with accompanying risks and challenges.

**Melanie Craxton** (*Presiding*)  
PHD CANDIDATE, STANFORD UNIVERSITY

**Anna Scaglione**  
PROFESSOR, ARIZONA STATE UNIVERSITY

**Zoltan Nagy**  
PROFESSOR, UT AUSTIN

**Ram Rajagopal**  
ASSISTANT PROFESSOR OF CIVIL AND ENVIRONMENTAL  
ENGINEERING, STANFORD UNIVERSITY

### COFFEE BREAK

10:00 am - 10:30 am ■ Legends Ballroom Pre-Function

CLOSING PLENARY SESSION:

### Pulling It All Together: Are We Cycling Uphill or Downhill?

10:30 am - 12:15 pm ■ Legends IV

The closing plenary session will gather three nationally-recognized experts from industry and academia in a participatory discussion of the state of energy markets and policy in North America. The panelists will make brief remarks and the audience will then be invited to have a highly interactive discussion with the panelists and the panel moderator. As much of the time for this session will be dedicated to the audience rather than the panelists, this session is a great chance for conference participants to engage in sustained and meaningful dialogue with the panelists and each other.

**David H Knapp** (*Presiding*)  
CHIEF ENERGY ECONOMIST, ENERGY INTELLIGENCE GROUP

**Adam E Sieminski**  
ENERGY & NATIONAL SECURITY PROGRAM,  
CENTER FOR STRATEGIC & INT'L STUDIES

**Michael Webber**  
DEPUTY DIRECTOR, ENERGY INSTITUTE,  
UNIVERSITY OF TEXAS AT AUSTIN

**Guy Caruso**  
SENIOR ADVISOR, CENTER FOR STRATEGIC  
AND INTERNATIONAL STUDIES



**WEDNESDAY, CONT.****NOTES**

WORKSHOP:

**Global Energy Risk Management: Turning Risk into a Competitive Opportunity**

12:45pm - 5:00pm ■ Champions III

Energy risk management requires focus on the complexities associated with asset transformation, storage, processing, treatment and transportation of energy commodities to develop sound risk management strategies. This session will communicate from lectures and case studies to gain an understanding of:

- The basics of energy risk management.
- Fostering a mindset of real option valuation to address risk and value added strategies.
- Hedging strategies to add extrinsic value to a company's asset structure.

**Separate registration required. See Registration Desk.**

**Glenn Labhart** (*Presiding*)

CHAIRMAN OF ENERGY OVERSIGHT COMMITTEE OF THE GARP ERP PROGRAM & SENIOR PARTNER LABHART RISK ADVISORS

**Spyros Maragos**

MANAGER ANALYTICS, DIRECT ENERGY

**Gordon E. Goodman**

INDEPENDENT ENERGY CONSULTANT

**TOUR: PETRA NOVA**

12:45pm - 5:00pm

Attendees of the USAEE/IAEE North America Conference will have the unique opportunity to visit and tour the Petra Nova generation and carbon capture facility, located southwest of Houston. Meet at the front of the Royal Sonesta Hotel, porte-cochere to board bus.

## PROGRAM COMMITTEE

### GENERAL CONFERENCE CHAIR

**Shree Vikas**, *ConocoPhillips*

### PLENARY SESSION COORDINATOR

**Thomas Drennen**, *Hobart and William Smith Colleges*

### CONCURRENT SESSION CHAIR

**Peter Hartley**, *Rice University*

### POSTER SESSION CHAIR

**John Holding**, *Independent Practitioner*

### CASE COMPETITION CHAIR

**Parth Vaishnav**, *Carnegie Mellon University*

### TECHNICAL TOUR COORDINATOR

**Caldwell Bailey**, *IHS Energy*

### SPONSORSHIP COMMITTEE CHAIR

**Andrew Slaughter**, *Deloitte Services LP*

### STUDENT PROGRAM COORDINATOR

**Melanie Craxton**, *Stanford University*

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**Seth Blumsack**, *Penn State University*

**Sanya Carley**, *Indiana University*

**Guy Caruso**, *CSIS*

**Kim Coffman**, *U.S. Bureau of Ocean Energy Management*

**Melanie Craxton**, *Stanford University*

**Carol Dahl**, *Colorado School of Mines*

**Thomas Drennen**, *Hobart and William Smith Colleges*

**Peter Hartley**, *Rice University*

**Eric Hittinger**, *Rochester Institute of Technology*

**Marianne Kah**, *ConocoPhillips*

**David Knapp**, *Energy Intelligence Group*

**Chiara Lo Prete**, *The Pennsylvania State University*

**Kenneth Medlock**, *Baker Institute - Rice University*

**Karl Nalepa**, *ReSolved Energy Consulting*

**Vick Natrajan**, *Chevron*

**Ronald Ripple**, *The University of Tulsa*

**Benjamin Schlesinger**,  
*Benjamin Schlesinger and Associates, LLC*

**Anastasia Shcherbakova**, *Texas A&M University*

**Andrew Slaughter**, *Deloitte Services LP*

**James Smith**, *Southern Methodist University*

**Jesse Thompson**, *FRB Dallas - Houston Branch*

**Shree Vikas**, *ConocoPhillips*

**Tina Vital**, *Aegis Energy Advisors Corp*

**Meal tickets are only valid for conference provided meal functions. Meal tickets are not transferrable to general hotel restaurants or bars.**

## ELECTRONIC COMMUNICATIONS

We encourage all delegates to use our conference website. The Conference Program; Session Abstracts, Full Papers, & Bios (if available); Detailed Session Descriptions & Speaker Biographies; and more can all be accessed at [www.usaee.org/usaee2017/](http://www.usaee.org/usaee2017/)

Our Mobile website at [www.usaee.org/usaee2017/mobile](http://www.usaee.org/usaee2017/mobile) provides abridged information for on-the-go delegates, including Hotel & City Maps, Weather forecasts, and a link to the Conference Survey.

## CONFERENCE SURVEY

Please visit <https://tinyurl.com/USAEE17> to take our Houston Conference Survey. We very much value your opinions to help shape our next conference.

## USAEE CASE COMPETITION

The United States Association for Energy Economics (USAEE) Case Competition is a team-based competition focused on energy economics, open to teams of students across the globe. This year, the topic for the competition involves the potential impact on fossil fuel resource-holders of policies aimed at keeping anthropogenic global warming to below 2°C. Participating teams worked on the designated case problem over a period of

three weeks and submitted a written report detailing their methods and solution to USAEE. The four teams with the best solutions will be presenting their results in a special session on Sunday afternoon from 4:00–5:30pm in the Champions III Room, immediately preceding the Opening Reception. These four teams will be competing for first, second and third place with cash prizes to be awarded. Furthermore, the winning team will present their research to all conference delegates during Tuesday's lunch.

*This program would not be possible without the financial support of the following organization:*



Besides a special thanks to our sponsor, we are also grateful to the USAEE Case Competition committee that has worked hard over the past year to ensure the success of this event!

## OPTIONAL NETWORKING DINNERS

The Royal Sonesta hotel is located in the Galleria area of Houston and is surrounded by numerous award-winning and acclaimed restaurants. On Tuesday evening some of the USAEE leaders will host interested conference attendees to networking dinners at various restaurants (American, Italian, Mexican, and Seafood) within a 5-10 minute walk of the hotel. This will be a great opportunity for you to mix, mingle and network in an informal setting. Please note that attendees will be responsible for paying for their own dinner. Signup sheets will be available at the Conference registration desk from Sunday until Tuesday noon time. Signup will be first-come first-serve and seating for each restaurant will be limited. Those signed up will leave from the Royal Sonesta main lobby at 6:30pm to walk to the restaurants.

## PLEASE NOTE

*By the act of registering and attending this USAEE/IAEE North American conference, you agree that USAEE/IAEE shall acquire the right to use your name, photograph, video recording, and/or audio recording in reporting on the conference in their publications or website, in publicity for future conferences, or in other reasonable manners for the benefit of the Association(s). You further agree to waive any liability on the part of the USAEE/IAEE, and to hold the USAEE/IAEE harmless, for any damages, injury, or loss of benefits that you incur during your travel to or from or attendance at this conference. Presentations will be collected from conference laptops for placement in the Online Conference Proceedings.*



## USAEE SUSTAINING MEMBERS

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 Engineering, Pennsylvania State University  
 KAPSARC  
 National Renewable Energy Laboratory  
 Rice University, Baker Institute  
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 Toyota Motor North America  
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## IAEE INSTITUTIONAL MEMBERS

Administración del Mercado Eléctrico,  
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 UTE, *Uruguay*

## FUTURE IAEE EVENTS

### 2018

**April 22-24**

Abuja, Nigeria

**11<sup>th</sup> NAEE/IAEE Conference**

*Theme to be Announced*

**June 10-13**

Groningen, The Netherlands

**41<sup>st</sup> IAEE International Conference**

*Transforming Energy Markets*

**September 23-26**

Washington, DC, USA

**36<sup>th</sup> USAEE/IAEE North American Conference**

*Evolving Energy Realities: Adapting to What's Next*

**October 18-20**

Tbilisi, Georgia

**3<sup>rd</sup> IAEE Eurasian Conference**

*Theme to be Announced*

**November 2-4**

Wuhan, China

**6<sup>th</sup> IAEE Asian Conference**

*Energy Exploitation and Cooperation in Asia*

### 2019

**May 26-29**

Montreal, Canada

**42<sup>nd</sup> IAEE International Conference**

*Local Energy, Global Markets*

**August 25-28**

Ljubljana, Slovenia

**16<sup>th</sup> IAEE European Conference**

*Energy Challenges for the Next Decade*

**October 17-19**

Astana or Almaty, Kazakhstan

**4<sup>th</sup> IAEE Eurasian Conference**

*Theme to be Announced*

## The USAEE Government Track

This is the second year that the USAEE is offering a Government Track. It is designed to serve members who are affected by actions of Federal, state, and local governments and to appeal to a wider audience as well. It seeks to provide both topics of interest and opportunities for collaboration and professional development.

The Inaugural Government Track was offered at our North American Conference in Tulsa, Oklahoma. It took place two weeks before the U.S. Presidential election in 2016 and focused on lessons learned in previous Presidential and other government transitions.

This year, the USAEE Government Committee has arranged the opening plenary session on international oil and natural gas markets, geopolitics and U.S. energy policy, which extends beyond the Government Track, and a separate Government Track panel discussion on the need for electricity system flexibility in the face of variable generation sources and changing use patterns.

This Government Track session, **Electricity System Flexibility**, will take place on **Tuesday, November 14, 2:00 - 3:45pm in Legends VII**. The panel of speakers will bring together experts from the Department of Energy headquarters offices, DOE's National Laboratories, and the Federal Energy Regulatory Commission. They will discuss recent analytical work to help inform operations, planning, policy, and other decisions in this space as well as to describe market design efforts underway at FERC to enable economically efficient deployment and utilization of the myriad of flexibility resources available.

Although Government Track sessions will tend to be discussions regarding policy, rather than presentations of individual research projects, in future conferences these sessions may vary considerably and are expected to include plenary-level talks and discussions, panel discussions of policies, laws, and regulations, skill-based workshops, and other events. Often, these will be developed in collaboration with other parts of the USAEE organization, as was the case of the post-conference energy risk workshop in 2016. Please include any suggestions for future Government Track session with your conference evaluation or submit them directly to [usae@usae.org](mailto:usae@usae.org).

