





ADI Analytics is a consulting and advisory firm specializing in oil and gas, energy, power, chemicals, and industrials. In late 2017, ADI expanded its coverage across petrochemicals and polymers by acquiring the assets of Chemical Market Resources.

In the past nine years, we have completed over 300 projects for more than 100 clients including ExxonMobil, Shell, Chevron, ConocoPhillips, Marathon Oil, Saudi Aramco, Phillips 66, BASF, LyondellBasell, GE, Honeywell, KKR, and U.S. Department of Energy.

We help clients with market research, strategic planning, competitive benchmarking, and technology assessments along with offering a number of other services. Our team differentiates itself through deep, field-based industry expertise; proprietary analytics; and cost-effective yet flexible delivery models.

www.adi-analytics.com





Welcome to the 2018 ADI Natural Gas & NGL Forum!

Thank you for joining us at the 2018 ADI Natural Gas & NGL Forum. Enthused by the turnout, your feedback, and our experience in organizing the inaugural conference in 2017, ADI is pleased to bring the Forum again this year and, hopefully, will have an opportunity to do so every year.

There is no dearth of energy conferences, and, yet, clients and colleagues had frequently asked why ADI had not considered offering a conference. Also, we saw a siloed approach to conferences specializing only in LNG, gas-fired power, or gas-to-liquids. So we conceptualized the ADI Forum to deliver participants value in three ways:

- Facilitate a strategic perspective across the <u>entire</u> natural gas value chain
- Catalyze dialogue through panel sessions that build on presentations
- Leverage insights from ADI research and consulting in gas and NGLs

The ADI team has worked hard to design the 2018 Forum so it delivers on these goals. Eight panels will span the gas value chain covering (1) upstream, (2) midstream, (3) power and industrial gas demand, (4) LNG, (5) gas conversion, (6) NGLs, (7) industrial equipment, and (8) innovation.

Each session features external speakers – a total of 20 from ConocoPhillips, Antero Resources, Saudi Aramco, Halliburton, Williams, Cheniere, Burckhardt Compression, and others – and a moderator who will set context with ADI research and facilitate an insightful dialogue. We welcome your active participation today.

Thank you, again, for joining us!



Uday Turaga Forum Chair



Ron SillsForum Vice-Chair



Faiza Tanvir
Forum Producer





Agenda

7:30 am **Registration and Breakfast** 8:30 am **Welcome and Forum Logistics Uday Turaga**, CEO, ADI 8:40 am **Keynote Presentation** Thomas McAndrew, President & CEO, Enchanted Rock Ltd. 9:10 am The Outlook for Oil and Gas in 2018 Uday Turaga, CEO, ADI 9:40 am Panel Session 1: Upstream and Supply Colin McHattie Shree Vikas Diptabhas Sarkar Tulio Scacciati Dir, Tech Assess. Director, Mkt Intel & Lead Engineer, Project ADI Unconv New Ventures **Business Analysis** Mgmt & Control Halliburton ConocoPhillips Statoil 10:30 am **Break** 10:45 am Panel Sessions 2: Midstream and Gas Processing Shelley Corman-Frisby **David McKellips** Justin Rencurel VP, Business Dev. Manager, Commercial Dev. ADI Boardwalk Pipeline Partners Williams 11:30 am Panel Session 3: LNG Markets Oliver Tuckerman Allyn Risley **Blake Roberts** VP Corp. Dev Chairman ADI Cheniere Energy GTT North America

12:15 pm Lunch





1:15 pm	Panel Sessions 4: Natural Gas in Power and Industrial Markets			
	Mark Darnell US Energy Manager Air Liquide	Nisha Desai Managing Director Aurora Clean Energy Partners	Alan Grosse VP, Bus Development FlexGen Power Systems	Bruce Rising ADI
2:00 pm	Panel Session 5: Gas Conversion to Chemicals and Fuels			
	James Lamoureaux Managing Director IGP Methanol	Esben Sorensen Sr. Tech Specialist Haldor Topsoe	Evan Visser CTO, VP Bus. Dev Gas Technologies	Ron Sills ADI
2: 50 pm	Panel Session 6: Natural Gas Liquids (NGL) Outlook			
	Steven Woodward Sr. Vice President Antero Resources	Doug Coleman VP, New Ventures Prism Midstream LLC	David Dickinson Sr. Product Mktg Mgr, NGL Recovery Honeywell	Brandon Johnson ADI
3:35 pm	Break			
3:50 pm	Panel Session 7: Industrial Equipment in Oil and Gas Value Chain			
	Michael O'Neil Managing Director Burckhardt Compression	Colman de Jong VP of Oil & Gas New Equipment Sales Siemens	Tony Gioffredi CEO Zahroof Valves	Swetha Sivaswamy ADI
4:40 pm	Break			
5:00 pm	Panel Session 8: Innovation in Energy Markets			
	Jason Arnoldy Vice President Intervale Capital	Johanna Schmidtke Investment Dir. Saudi Aramco Energy Ventures	Madhav Acharya Technology-to-Market Advisor ARPA-E	Uday Turaga ADI
5:45 pm	Reception			





Speakers



Alan Grosse serves as Vice President of Development at FlexGen, a private power technology company based in Durham, NC. Previously, he led business development for the MobileFlex product line within General Electric's Distributed Power business. Earlier, Grosse served in the US Coast Guard as a small boat mission commander, 87ft ship captain, and Command Duty Officer. Grosse graduated from the United States Coast Guard Academy with a degree in Naval Architecture and Marine Engineering, and holds an MBA from Emory University's Goizueta Business School



Allyn Risley is the Chairman of GTT (Gaztransport & Technigaz) North America. Risley began his career with ConocoPhillips, and earned a reputation as a top expert in the industry in Liquefied Natural Gas project development. He updated and modernized a strategy to recoup "stranded" gas and ship it to population centers in a cost-effective, environmentally safe way. Risely retired from ConocoPhillips in 2004, and took a position as vice president of Global Shipping for the BG Group in the United Kingdom. Risley holds B.S in Petroleum Engineering from Kansas University.



Colin McHattie is Director of Technical Assessment for Unconventional New Ventures for Halliburton. He is responsible for evaluating and developing worldwide oil and gas projects for which Halliburton can provide consulting, project management, oilfield services, and funding. Colin has 36 years of petroleum industry experience in technical and commercial functions, business development, large-scale oil, gas, and LNG project development, emerging technology assessments, reservoir characterization, field development and prospect generation.



Colman de Jong is North American Vice President of Oil and Gas New Equipment sales for Dresser-Rand a Siemens Business. De Jong brings 39 years of gas compression and power generation experience. De Jong began his career in 1979 with Worthington Compressors in Buffalo, NY, from there he moved to sales and marketing leadership roles for Demag Delaval Turbomachinery, GE Oil and Gas, and the last 11 years with Dresser-Rand. De Jong holds a B.S. degree in Marketing from California State University, Chico.



David Dickinson is the Business Manager for NGL Recovery at UOP Russell. He is responsible for business management of the end to end product lines, including new product development, execution / service excellence, business profitability, and execution of the company's strategic business plan. Prior to his current role, Dickinson has served in Project Execution, Project Controls, Risk Assessment and Internal Control for Midstream and E&P organizations. He has a Bachelor degree from the University of Oklahoma in Economics and an MBA from Oklahoma State University.







David McKellips is the Manager for Commercial Development at Williams. He is responsible for commercial development and negotiation of complex and standard midstream agreements focused on achieving long-term optimization and growth. Prior to this role, McKellips has served various roles in Commodity Optimization Group, Health & Safety Group, E&P Measurement Quality Assurance Group, and Financial Project Analysis Group. He holds a Bachelors and an MBA in Business from Oklahoma State University.



Diptabhas Sarkar in an accomplished energy sector professional with deep knowledge in driving full value chain profitability for upstream oil and gas assets. He is currently a Lead Engineer in the US Offshore facilities group focusing on Statoil's field of the future initiatives. Prior to this he served as the planning manager in the US Onshore division, managing rig lines in three shale assets and as the field development planner for their Marcellus asset. Sarkar began his career with Halliburton. Diptabhas holds a PhD in applied Chemistry from Columbia University, New York and an MBA from the University of Texas at Austin.



Doug Coleman has over 25 years of energy industry experience. Prior to joining Prism Midstream as VP of New Ventures, he was a Partner at Midstates Petroleum, and Vice President at Marlin Midstream where he led the engineering, construction, and operation of four processing plants and associated gathering systems. Coleman has also held various engineering, business development, finance and operations positions with Sid Richardson Gasoline Company and Union Pacific Resources. Coleman holds a BS in Mechanical Engineering from Rice University and a MBA from SMU.



Esben Sorensen is Senior Technology Specialist working with syngas technology sale and promotion with Haldor Topsoe, as well as with technical support for Haldor Topsoe's clients in Northern America. Prior to this position, he was General Manager for the R&D syngas department at Haldor Topsoe in Denmark. Sorensen was responsible for development of novel technologies and catalysts for synthesis gas generation and applications: Processes for production of methanol, gasoline, CO, syngas, formaldehyde, ammonia, DME and many more. Sorensen has a M.Sc. in Chemical Engineering and a PhD in process simulation from Technical University of Denmark.



Evan Visser is the Chief Technology Officer and VP of Buisness Development at Gas Technologies LLC. He has continued to optimize many of the GasTechno process models as well as design and model many of the process add-on technologies. Prior experiences include positions at Waller Marine Inc., PetroRio S.A, and HRT Oil and Gas. Visser holds B.S. in Mechanical Engineering from Iowa State University and his M.S. in Biosystems Engineering from the Federal University of Vicosa in Brazil.







James S. Lamoureaux is an entrepreneur and start-up company architect that has successfully invented products and business models for companies for the last 30 years. In 2014, Lamoureaux formed IGP Methanol to develop a major Clean Energy Methanol Development on the US Gulf Coast in Louisiana. He founded IGP Energy Inc. in 2007 and currently serves as its CEO and Chairman. Prior experiences include Industry Consultant at Energy Power Group, and Founder, President and Inventor at Advanced Building Products. He holds Business Management degree from Hofstra University and Executive education from Massachusetts Institute of Technology.



Jason Arnoldy is Vice President of Intervale Capital. Prior to Intervale, Arnoldy co-founded Recapture Solutions, an oilfield services company that Intervale acquired in late 2014. Before co-founding Recapture, he led restructuring and turnaround efforts for a private drilling services company, Arnco Technology. He started his career as an analyst at a multi-strategy capital management firm, Farallon Capital, where he worked with the Special Situations Group, evaluating and monitoring credit and equity investments in public and private securities. He received a B.A. from the University of Denver, with a major in International Business and minor in Psychology.



Johanna Schmidtke is an Investment Director with Saudi Aramco Energy Ventures, the corporate venturing arm of Aramco. She offers of a unique combination of technical insight and commercial aptitude in the industrial space. Prior to her current position, Johanna worked with the Advisory practice at PricewaterhouseCoopers, Corporate Development & Strategy at First Solar Inc., and the consulting practice at Lux Research. She serves as a board director at ConXtech and as a board observer at Novomer. Schmidtke holds a Ph.D. in Physics from the University of Cambridge as a Gates Scholar and a B.S. from the University of Arizona.



Madhav Acharya currently serves as a Technology-to-Market Advisor at the Department of Energy's Advanced Research Projects Agency — Energy (ARPA-E). His focus at ARPA-E includes conversion of renewable energy into carbon neutral liquid fuels through catalytic and electrochemical pathways. Acharya began his career at ExxonMobil and held various managerial roles including Manager of Research Guidance and Valuation, Operations Supervisor at a catalyst manufacturing plant, and Process Engineering Section Head. Acharya is currently pursuing a Masters in Sustainability Management at America University. He holds a PhD in Chemical Engineering from University of Delaware.



Mark Darnell is a Senior Energy Manager at Air Liquide and is responsible for Natural Gas sourcing and strategy for its Gas Turbines, Steam Methane Reformers, and Air Separation facilities. With over 30 years of energy experience, Darnell has worked for a producer (UTP), a marketing company (Hadson gas), a pipeline company (Delhi Gas Pipeline) and a producer trading company (BP). Darnell holds a BA Business from Michigan State University and MBA from University of Dallas and is also a CPA.







Michael O'Neil currently serves as the Managing Director at Burckhardt Compression. O'Neil brings over 20 years of experience with him in extensive gas compression and management. Prior to joining Burckhardt Compression, O'Neil was Vice President & GM at Emco Wheaton (A KKR & GardnerDenver Division). Previous experiences include various executive positions in sales, operations, engineering, and aftermarket division at Cameron International and Dresser-Rand. He holds B.S. in Mechanical Engineering from Lehigh University.



Nisha Desai is the Managing Director of Aurora Clean Energy Partners and a board member of Puerto Rico Electric Power Authority. Previously, she has served as the Vice President, Distributed Generation for NRG Energy. Prior to NRG, Desai had a number of leadership roles in the energy and water industries, with a significant focus on business model and technology innovation. She has also served several years with Booz & Company's energy practice, Enron and Mobil. Desai holds an economics degree from Yale and an MBA from Harvard Business School.



Oliver Tuckerman is the Vice President of Commercial Structuring & Corporate Development. He oversees pricing and structuring of all commercial LNG business opportunities and is responsible for evaluating and sourcing business development and capital investments along the LNG value chain. Prior to this position, Tuckerman was a Director in Corporate Strategy group. Before Cheniere, Tuckerman worked in the New York office of Bayern LB. He began his career in 2003 with The Transportation Group. Tuckerman received a B.A. in Economics from Kenyon College and an M.B.A. from Southern Methodist University's Cox School of Business.



Shelley Corman-Frisby is the VP of Business Development for Boardwalk Pipeline Partners. She has over 30 years of experience in business development, commercial operations and regulatory affairs for natural gas transmission assets, pipeline expansion projects, deal origination, midstream agreements. Prior experiences include various executive roles at Howard Energy, Energy Transfer Partners, Transcontinental Gas Pipeline, and the Federal Energy Regulatory Commission. She holds a B.S. in Mineral Economics from Pennsylvania State University, as well as an MBA and a J.D. from the University of Houston.



Shree Vikas is the Director of Market Intelligence and Business Analysis at ConcoPhillips. Prior to that he was the Director of Technology and Projects and Director of Market Intelligence and Strategy. Prior experiences include Director of Energy Markets at SAIC and Senior Manager — Oil and Gas Groups at ICF International. He holds B.S. in Petroleum Engineering from India, MEng in Evironmental Pollution Control and a PhD in Pertoleum and Natural Gas Engineering from Penn State University.







Steven Woodward is the Senior Vice President of Business Development at Antero Resources. Prior to Antero, Woodward served in various business development roles for Dynegy Inc., Natural Gas Clearinghouse, and NGC Corp. He has served as Manager of Business Development for Reliance Pipeline, a division of Nicor Inc., and as a Project Development Representative for Western Gas Resources. Has has also served in various engineering roles with ARCO. Woodward holds a B.S. in Mechanical Engineering from University of Colorado at Boulder.



Thomas McAndrew founded Enchanted Rock Ltd. in 2006 and currently serves as the President and CEO. McAndrew brings over 34 years of experience in energy asset management ranging from large, complex nuclear plants to small distributed generation. Prior experiences include VP of Trading and Risk Management at Calpine, CEO at Progressive Power Solutions, VP of West Power Trading at Statoil, and Director at Enron. McAndrew has also served in U.S. Navy as Lieutenant. He holds B.S. in Mechanical Engineering from Texas A&M University and an MBA from Harvard Business School.



Tony Gioffredi brings extensive compression, power generation and industrial capabilities to Zahroof Valves as well as significant experience with mergers & acquisitions and global operations. The past twelve years include various executive positions at EnPro Industries. Prior to EnPro, Gioffredi was Vice President for the reciprocating division of Dresser-Rand. Prior experience also includes 15 years at Westinghouse Electric Corporation. Gioffredi holds a B.S. in Mechanical Engineering from ISU, and a graduate of the Advanced Management Program at the Harvard Business School.



Uday Turaga brings 18 years of industry experience gained at ConocoPhillips, ExxonMobil, Booz & Company, and ADI Analytics. He specializes in corporate strategy, market research, economic analysis, competitive intelligence, and technology assessments with rich domain expertise spanning oil and gas exploration, production, and refining, coal and power, and chemicals. Turaga holds a PhD in fuel science from Penn State and an MBA from the UT Austin.



Justin Rencurel has 18 years of experience in the energy industry. He has served as Director of Strategic Planning for Spectra Energy. Prior roles include positions in mergers and acquisitions; US gas storage marketing, investor relations and corporate business development. Prior to joining Spectra Energy, Rencurel was a manager of planning and performance at Royal Dutch Shell's Downstream business and held several roles at Boardwalk Energy. He holds an MBA from the University of Texas at Austin and Bachelor's in Finance from Eastern New Mexico University.



Ron Sills is an internationally recognized expert on energy conversion technologies in the natural gas/coal/biomass to products value chain. Prior experiences include Gas Conversion Network Leader at BP, manager of Mobil's Research Planning and Evaluation Group, and member of the commercialization team of the Methanol-to-Gasoline process. He co-authored a National Research Council report entitled *Fuels to Drive Our Future*. Sills holds a PhD and M.S. in





chemical engineering from MIT and a B.S. in chemical engineering from Columbia. He is the co-inventor for 10 patents.



Bruce Rising experience encompasses 30+ years in combustion, environmental control technology, and gas turbine technology issues. Prior experiences include Strategic Business Manager within Siemens Power Systems Sales, Manager of Marketing Intelligence and Manager of Regulatory Affairs for Siemens where he assisted the Gas Turbine Association in Washington DC as the chairman of the Environmental Affairs Committee, Manager of Emissions and Control Technology for RollsRoyce, and Research Scientist in Energy and Environmental R&D at Battelle Columbus Labs. Rising earned earned a BS in Chemical Physics and an MS in Fuel Science from Penn State.



W. Blake Roberts is a senior energy professional with diversified experience in leadership roles in the global energy and petrochemical industries. Roberts had several leadership roles with operating companies, EPC contractors and consulting companies. Roberts is experienced in management, business development, project development, commercial development, operations, strategy development and value chain financial analysis. Roberts holds B.S. in chemical engineering from UT Austin, and an MBA from Rice University.



Tulio Scacciati is an executive with 20 years of experience in the Energy Industry developing clear strategies with deep domain knowledge in the technology and business models. Scacciati was the VP of Strategy, M&A and Marketing for a Global leader in the O&G equipment and service industry covering, surface pressure control, pressure pumping, drilling and production equipment and services. He has worked previously with GE and Exelon as well. Scacciati holds M.S. in industrial engineering and received an MBA from UT Austin.



Brandon Johnson's expertise includes technology assessments, competitive benchmarking, market size modeling, and risk analysis using Monte Carlo uncertainty analysis in the oil and gas, chemical, power generation, and mining industries. He has utilized these skills to understand the economics, investment attractiveness, and competitive landscape of the engineered pump, wet gas and multi-phase compressor, bearing, seal, and heat exchanger markets. He holds a B.S. in physics from Stephen F. Austin State University.



Swetha Sivaswamy has three years of experience in research and consulting in oil & gas and chemicals space. She is proficient in data analytics and excel modeling and has completed several engagements on market entry, competitive benchmarking, market sizing, growth strategy and feasibility studies. Her previous employers were KPMG and Frost & Sullivan. Sivaswamy has double master's degree each in chemical engineering and business, from Georgia Institute of Technology and Indian School of Business respectively.



SAVE THE DATE THURSDAY, FEBRUARY 21, 2019 HOUSTON, TX









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