

Sustainable Gas Futures Scoping Workshop

Matthew Agarwala

Centre for Social and Economic Research on the Global Environment (CSERGE)

University of East Anglia

m.agarwala@uea.ac.uk

Matthew Agarwala is an environmental economist at the LSE and UEA, where he is Senior Research Associate. He has consulted for the VNN, the Natural Capital Initiative, the World Forum on Natural Capital and UNEP. Matthew's research on natural capital and carbon accounting, environmental valuation and sustainable development includes contributions to UNEP's Inclusive Wealth Report (2012), NCC (2014) and NEA-FO (2014). Matthew is co-editor of the Handbook of Sustainable Development (2014).

He is an environmental economist, jointly affiliated at the LSE and UEA. His particular research interests revolve around sustainable development, and specifically:

- Natural capital accounting
- Carbon accounting
- International trade in natural resources, natural capital and virtual carbon
- Environmental valuation

Sustainable Gas Futures Scoping Workshop

Dr Angus Ian Best
DST (Marine Geoscience)
National Oceanography Centre (NOC)
Southampton

angus.best@noc.ac.uk

As Head of Marine Geoscience at the National Oceanography Centre in Southampton, I have an interest in developing the group's strategic research portfolio, particularly in applied research areas such as natural gas.

My personal research interests concern laboratory physical properties studies of marine sediments and rocks for improving geophysical remote sensing technologies, particularly seismic and electromagnetic methods, for applications to hydrocarbon reservoir characterisation, underground CO₂ storage monitoring, seafloor methane hydrate dissociation and geohazards, deep sea mining, and naval defence.

I hope to communicate the scope and capabilities of NOC research and technology. This includes strategic research into: sub-seafloor fluid flow (deep water hydrocarbons, seafloor hydrates, carbon capture and storage, offshore natural gas storage), seafloor processes (e.g. habitat mapping, marine spatial planning and protected areas), marine sedimentology and geohazards (e.g. reservoir architecture modern analogues, seafloor landslides, sediment flows), and autonomous underwater vehicles and sensors (e.g. Autosub, wave gliders, ROVs, seafloor observatories).

Sustainable Gas Futures Scoping Workshop

Professor Paul Ekins
UCL Institute for Sustainable Resources
University College London

p.ekins@ucl.ac.uk

An environmental economist, I am Professor of Resources and Environmental Policy at and Director of the UCL Institute for Sustainable Resources, University College London. He is also Deputy Director of the UK Energy Research Centre, and the UKERC Co-Director leading on its Energy Resources theme. In addition, he is a member of UNEP's International Resource Panel; a Fellow of the Energy Institute; a Senior Consultant to Cambridge Econometrics; ; and he leads UCL's participation in the EPSRC SUPERGEN consortium on hydrogen fuel cells and on bioenergy research.

My expertise lies in a number of areas of energy-environment-economy interaction and environmental policy, including: sustainable development assessment methodologies; scenarios, modelling and forecasting; resource productivity; sustainable energy use; the adjustment of national accounts to take account of environmental impacts; environmental economic instruments and ecological tax reform; sustainable consumption; and environment and trade. I am the author of numerous papers, book-chapters and articles in a wide range of journals, and have written or edited twelve books, including *Global Warming and Energy Demand* (Routledge, 1995), *Economic Growth and Environmental Sustainability: the Prospects for Green Growth* (Routledge, London, 2000), *Trade, Globalization, and Sustainability Impact Assessment: A Critical Look at Methods and Outcomes* (Earthscan, London, 2009), *Carbon-Energy Taxation: Lessons from Europe* (Oxford University Press, Oxford, 2009), *Hydrogen Energy: Economic and Social Challenges* (Earthscan, London, 2010); *Energy 2050: the Transition to a Secure, Low-Carbon Energy System for the UK* (Earthscan, London, 2011); *Environmental Tax Reform: A Policy for Green Growth* (Oxford University Press, Oxford, 2011); and *Global Energy: Issues, Potentials and Policy Implications* (Oxford University Press, Oxford, 2014 forthcoming).

Sustainable Gas Futures Scoping Workshop

Dr Chris J Franklin CCHEM, MRSC
Head of Earth Sciences
Swindon Office
Natural Environment Research Council

01793 411708
cfr@nerc.ac.uk

Chris is responsible for leading the delivery of NERC investment in the Earth sciences and Science-Based archaeology, including research programmes, Research Centre interaction, Cross-Council programmes and other Stakeholder interaction. His role is supporting The Science and Innovation Director and Head of Research by co-leading the management of strategic science business activities and science team leaders.

He has over 30 years' experience of partnership building, programme and network commissioning and leading highly-skilled teams. The last 20 years has been developing and directing government-led initiatives.

Sustainable Gas Futures Scoping Workshop

Dr Ajay Gambhir
Grantham Institute – Climate Change and the Environment
Imperial College London

a.gambhir@imperial.ac.uk

I am an economist who uses and develops global and regional energy system models to help understand the economics and policy drivers of the development and deployment of low-carbon technologies. Over the past 4 years I have led research projects for the UK government on the low-carbon technology pathways to 2050 of India and China, using widely recognised energy models including MESSAGE and TIMES.

I am currently a lead scientist on the UK Government's AVOID 2 (Avoiding dangerous climate change) research programme. Within that programme I am leading the research on the feasibility of achieving different long-term temperature goals, with a view to understanding the global and regional role for low-carbon energy vectors and technologies. This work is being done in close collaboration with the UK Met Office Hadley Centre, as an integrated assessment of energy systems and climate science. Given its potentially significant role in low-carbon energy mixes, particularly in building and industrial heating, power generation (with carbon capture) and some forms of transport, this includes an explicit consideration of the role of natural gas.

Sustainable Gas Futures Scoping Workshop

Professor Jon Gluyas
Earth Sciences & Science Faculty
Durham University

j.g.gluyas@durham.ac.uk

I am a geologist with industrial (28 years) and academic (5 years) experience. This included 3.5 years working production geoscience (and living) in South America. During my time in industry I worked with multinational and independent companies, eventually founding two oil companies.

I have been responsible for the identification, acquisition and development of unconventional gas resources on the UK Continental Shelf as well as having a long career in development and production geoscience. Since joining academia I have developed research interests in CCS, EOR, EGR and other subsurface fluid flow phenomena including geothermal energy, helium generation migration and accumulation and water rock interaction.

Throughout my career in industry I retained technical and publication interests allowing me to transition into academia in 2009. Since arriving in academia I have initiated research in a variety of geoenergy areas and have brought around £7 million of funding into Durham and collaborating universities (funds from research councils, industry and government).

I am familiar with leadership roles. I am currently Dean for Knowledge Exchange and was until October 2014 Head of Department for Earth Sciences in Durham. I have served as president for both the Petroleum Exploration Society of GB and Earth Science Teachers Association. I have also been chairman of the BGS Board. I chaired the development board for the UK CCS Research Centre during 2011.

Sustainable Gas Futures Scoping Workshop

Dr Jeff Gomes
School of Engineering
University of Aberdeen

Jefferson.gomes@abdn.ac.uk

Jeff Gomes is a Lecturer in Energy in the School of Engineering, University of Aberdeen. His academic interests are in general Computational Fluid Dynamics (CFD, including multiphase and geophysical fluid flows), nuclear safety, optimisation and numerical research, including parallel solution techniques, a priori error measures and mesh adaptivity, discretisation schemes, resolution of linear and non-linear equations, coupling methods and non-linear dynamics. In summary, his research interests lie on:

- Numerical modelling and simulation of multi-physics and multi-scale problems;
- Computational fluid dynamics and computational multi-fluid dynamics (CFD and CMFD);
- Multiphase porous media flows (reservoir simulation);
- Self-adaptive computational methods;
- Computational thermodynamics;
- HPC.

He is a developer of the open-source general-purpose CFD Fluidity model/software (in which most of his research is based upon). Jeff is also an associated editor of the Brazilian Journal of Chemical Engineering.

Sustainable Gas Futures Scoping Workshop

Victoria Harding-Platt
Sustainable Gas Institute
Imperial College London

v.harding-platt@imperial.ac.uk

Victoria is a trained facilitator interested in the development and management of multidisciplinary research and education programmes through facilitation and collaboration activities.

- Oct 2014 - to date: Operations Director, Sustainable Gas Institute, Imperial College London
 - Responsible for all non-academic aspects of the SGI including: business development; research programme and governance development; costing and financial management; staff management and development; contract negotiation.
- May 2014 – Oct 2014: Corporate Partnerships Manager, Energy Futures Lab, Imperial College London.
 - Working with companies and academic colleagues to develop major programmes (£m) of research. Companies included oil and gas majors and service companies. Worked with Board level and other senior industrial colleagues.
- Aug 2009 – May 2014: Operations Manager, Energy Futures Lab, Imperial College London
- Sept 2012 – Sept 2013: Strategic Research Coordinator, Faculty of Engineering, Imperial College London (part-time secondment)
- Nov 2006 – Aug 2009: Administrator, and latterly, Assistant Manager, Energy Futures Lab, Imperial College London.

Sustainable Gas Futures Scoping Workshop

Dr Adam Hawkes
Sustainable Gas Institute
Imperial College London

a.hawkes@imperial.ac.uk

Adam is the Deputy Director of the Sustainable Gas Institute with expertise in:

Energy Systems Modelling: Developing and applying state of the art analytical methods to examine the interface between energy technology, infrastructure, economics/markets, energy security and the environment. Dr Hawkes leads a team applying whole systems approaches to understand the characteristics of CO2 mitigation strategies, focusing on interactions and trade-offs between infrastructures and technologies. Insights from these tools and broader policy experience are frequently applied to provide analytical advice to government and private sector organisations.

Gas Infrastructure Modelling: Developing optimisation and gas flow/pressure simulation modelling to assess the role of gas infrastructure in future energy systems. Particular focus of research on the role of unconventional sources of gas (e.g. Shale gas, coal bed methane), bio-sources of gas, and power-to-gas options. Key skill is spatially-resolved modelling of low pressure gas networks from engineering and economic perspectives.

Heat Decarbonisation: Decarbonising the provision of heat (and cooling) is a key challenge in broader energy system abatement approaches. This research applies thermo/techno-economic modelling to understand the relative merits of system-wide cross-sectorial heat decarbonisation strategy.

Sustainable Gas Futures Scoping Workshop

Dr Niall Mac Dowell

Centre for Process Systems Engineering/Centre for Environmental Policy
Imperial College London

niall@imperial.ac.uk

Niall is a Lecturer at the Centre for Process Systems Engineering & Centre for Environmental Policy at Imperial College London. He is specifically interested in Low carbon energy systems, carbon capture and storage, molecular thermodynamics, energy efficiency, mathematical modelling of dynamically interacting systems, carbon negative electricity, multi-scale modelling, whole-system analysis, techno-economic assessment, power-plant modelling, integration of CCS and power plants/industrial facilities.

In addition to his appointment at Imperial College, he is a Visiting Researcher at the Materials and Gases (MATGAS) Research Institute at the UAB, Barcelona, Spain and collaborates extensively with the Joint BioEnergy Institute (JBEI) in San Francisco, USA.

Sustainable Gas Futures Scoping Workshop

Mrs Debbie Mason
Science Programmes Officer
Swindon Office
Natural Environment Research Council

01793 411667
deso@nerc.ac.uk
newtonsgf@nerc.ac.uk

Debbie has been with the Natural Environment research Council (NERC) for 5 years and works across several science areas as part of the Science team.

She will be responsible for the administration of the programme from peer review activities through to award of successful proposals. Please contact me via the programme mail box with any questions you may have during the process.

Sustainable Gas Futures Scoping Workshop

Professor Peter Pearson
Welsh School of Architecture
Cardiff University

pearsonpj@cardiff.ac.uk

Peter is an expert in Whole systems analysis of energy transitions, including analysis of past and prospective transitions in electricity and gas. His broader research focus is on Past and prospective long run energy & infrastructure transitions in industrialised and emerging economies.

- He has been Director of the Low Carbon Research Institute of Wales (LCRI) since 2010.
- Visiting Professor at Imperial College London & University of Surrey.
- Until 2009, Professor of Energy & Environmental Studies & Director of the Imperial College Centre for Energy Policy & Technology (ICEPT).
- Chair (2014), International Scientific Advisory Board, E.ON Energy Research Centre, RWTH Aachen University, Germany;
- Member (2012), Academy of Finland Expert Evaluation Panel of the Finnish Strategic Centre for Science, Technology & Innovation (SHOK) in energy and environment.
- Economic Adviser (2001-10), World Bank Inspection Panel, reviewing economic analyses of major projects on energy and water in Uganda, Chad/Cameroon & Colombia.
- Member (2002-2006), European Commission Advisory Group on Energy (AGE).
- Chair (1992, 2002), British Institute of Energy Economics (BIEE).

Sustainable Gas Futures Scoping Workshop

Dr Meysam Qardran
Institute of Energy
Cardiff University

gardranm@cardiff.ac.uk

My area of expertise lies in modelling and analysis of multi vector energy systems, in particular combined gas and electricity networks. Using advanced optimisation techniques, I develop models to investigate optimal operation and expansion of integrated gas and electricity systems. More specifically, my research looks at how complementary benefits of both gas and electricity supply systems can be used to achieve a secure, clean and affordable energy system in future.

I am currently researching on technical and economic feasibility of injecting hydrogen (produced from renewable electricity) into gas networks (Power-to-Gas). Using a combined gas and electricity networks model (CGEN), I am also investigating whole system implications of employing Power-to-Gas to address the following research questions:

What is the role of Power-to-Gas in decarbonising the Great Britain gas network?

How can Power-to-Gas contribute to addressing the balancing challenges?

The outputs of this research have been submitted for publication in high profile journals.

Sustainable Gas Futures Scoping Workshop

Gordon Richardson

Associate Director: Environment & Sustainability

Ove Arup & Partners International Ltd

gordon.richardson@arup.com

Arup is a globally renowned consultancy in the built and natural environment, with 11,000 staff in over 90 offices throughout the world. As an employee-owned organisation, we invest in our own R+D programmes, with almost £20 million allocated to research projects in the UK alone.

I lead Arup's Environmental planning and Sustainable developments team in northern England. This role currently includes directing the Environmental Impact Assessment of shale gas exploration in Lancashire – the first major, fully researched project of its type in Europe.

My current Arup research projects include:

- Two related studies of Natural Capital and its integration into cost-benefit methodologies;
- Sponsorship and supervision of a PhD in the Social Value of Infrastructure;
- Scoping Social Return on Investment in Arup projects;

My applications for research funding focus on the role of precision agriculture in river catchment planning and management, and the application of ecosystem services valuation into interim land uses.

I expect to learn a great deal from our Brazilian partners in the Sustainable Gas Futures workshop.

Sustainable Gas Futures Scoping Workshop

Professor Dorrik Stow
Institute of Petroleum Engineering
Heriot-Watt University

dorrik.stow@pet.hw.ac.uk

Dorrik is Director of the Institute of Petroleum Engineering, with specialism as Geoscientist and Oceanographer and holds a senior role within university. In this role and as Professor of Petroleum Geoscience he is responsible for oversight of many large research programmes within the Institute and University.

He is a research scientist (40 y experience) with specialism in petroleum geoscience, shale rocks and deep-water systems.

He has capacity building experience through overseas campuses, reviews and partnerships, including China, Russia, Portugal (from Brazil-Mozambique-Angola), UAE, Malaysia, South Korea, India, Sri Lanka and Australia.

Dorrik is currently involved in the research programme Integrated Ocean Drilling Programme (IODP) involves > £10m funding and scientists from over 30 different countries, including Brazil.

Sustainable Gas Futures Scoping Workshop

Professor Peter Styles
School of Physical and Geographical Sciences
Keele University

p.styles@keele.ac.uk

As a Lecturer in Geophysics at Swansea University, I continued my past research in East Africa but also became interested in using induced earthquakes to predict catastrophic failures in coal mines, landslide and glacial instability and other aspects of Environmental Geophysics especially microgravity. I moved to Earth Sciences at the University of Liverpool in 1988 where my plate tectonics research moved to remote Chilean Patagonia, investigating the subduction of the Chile Rise beneath the Taitao Peninsula with colleagues from Liverpool and venturers from Operation Raleigh using seismology, gravity and heat flow.

The mining and environmental research also prospered and I spent a sabbatical with CSIRO Division of Geomechanics in Brisbane, Australia studying stress imaging using micro seismology and microgravity for the detection of abandoned gold workings at Kalgoorlie, Western Australia and cave systems in the Middle East and the Bahamas. I moved to Keele as Professor of Geophysics in 2000 to head up the Applied and Environmental Geophysics group and my research is principally in renewable energy and environmental problems rather than tectonics.

I give a lot of invited external lectures and I was both proud and amazed to be elected President of the Geological Society of London from 2004 to 2006. I have been asked to chair and serve on a number of Government Committees including the Board of BGS, Chair of the DEFRA/DTI Criteria Proposals Group (CPG) Sub-Surface Exclusion Criteria for Geological Disposal of Radioactive Waste and a member of the Geosphere Characterisation Panel of the Nuclear Decommissioning Agency.

I was awarded the William Smith Medal by the Geological Society of London in 2014.

I am a member of the Research Institute for the Environment, Physical Sciences and Applied Mathematics (Faculty of Natural Sciences Research Office).

Sustainable Gas Futures Scoping Workshop

Michelle Truman
Senior Science Programmes Officer
Swindon Office
Natural Environment Research Council

01793 411700
mitr@nerc.ac.uk
newtonsgf@nerc.ac.uk

Michelle Truman is a Senior Science Programme Officer within the NERC Science team working across the Earth Science and International Teams and is leading on the Sustainable Gas Futures programme.

Michelle has a background in Earth Sciences and has worked in the NERC Science Team since 2008. She has worked on a variety of NERC programmes during this time. For the past year Michelle has been leading on NERC's interests in energy research including developing and scoping new research programmes in partnership with others and maintaining existing relationships and ensuring that programmes are delivering.

Sustainable Gas Futures Scoping Workshop

Dr Guy Ziv
School of Geography
University of Leeds

g.ziv@leeds.ac.uk

Dr Guy Ziv's research is in the area of Ecosystem Services, in particular developing tools and approaches to estimate, account and consider ecosystem services in decision-making. His research group at Leeds also studies land use change and its impacts on ecosystems and ecosystem services. In particular, a joint PhD student with Arup Ltd looks at the use of coupled economic and hydrological model to consider risk of water scarcity to growth.

He contributed to several studies related to water ecosystem services, led by the Catalan Institute of Water Research and the SCARCE project. Dr Ziv also participated in a recent study (see Chaplin-Kramer et al. Proc Roy Soc B 2014) on the importance of pollinators to nutritional security, using a global spatial analysis of animal-pollinated crops. He also co-supervises a PhD student in Ohio State, in research on the use of ecological solutions (wetland and forest plantation) to offset ecosystem services needed by a combined utility (energy) and soybean trans esterification biodiesel plant in Cincinnati, OH. Before coming to the UK, Dr Ziv was a Lead Scientist in the Natural Capital Project, working with Prof. Gretchen Daily (Stanford). There, he led one large multi-annual grant demonstrating ecosystem services use in US Army Installations, and worked with the US EPA on impact of the Energy Independence and Security Act 2007. Prior, Dr Ziv was a postdoctoral research associated with Prof. Simon Levin at Princeton University, and studied how fish migration in the Mekong would be disrupted by hydropower development in the region (see Ziv et al PNAS 2012).

Sustainable Gas Futures Scoping Workshop

Dr. Álvaro Maia
Petrobras

amcta@petrobras.com.br

Bachelor's at Engenharia Civil from Universidade Federal do Rio de Janeiro (1976), master's at Civil Engineering from Universidade Federal do Rio de Janeiro (1978) and doctorate at Civil Engineering from Universidade Federal do Rio de Janeiro (1984). Has experience in Civil Engineering, focusing on Geotechnic, acting on the following subjects: elementos finitos, estabilidade, poço de petróleo, solo-estrutura and minas subterraneas.

Sustainable Gas Futures Scoping Workshop

Dr. Plinio Nastari

President and CEO of Datagro Consulting Ltd.,

plinio@datagro.com

Dr. Nastari holds M.Sc. and Ph.D. degrees in Agricultural Economics, from Iowa State University. Has been for 22 years Professor of Economics at FGV – The Getúlio Vargas Foundation, in São Paulo, in undergraduate and graduate level courses (MBA, Masters and Doctoral programs).

Themes of Interest:

Agricultural Economics

Biofuels

Cane, grains, coffee, concentrated orange juice, livestock & poultry

Ethanol, biodiesel, biogas/biomethane

Production economics

Regulation, trade integration

Sustainable Gas Futures Scoping Workshop

Professor Claudio Augusto Oller do Nascimento
Polytechnic School
University of Sao Paulo

oller@usp.br

Bachelor's at Engenharia Química from Universidade de São Paulo (1975), master's at Engenharia Química from Departamento de Engenharia Química, Escola Politécnica da Universidade de S (1979) and doctorate at Engenharia Química from University of Salford (1982). Has experience in Chemical Engineering, focusing on Industrial Processes and Chemical Engineering, acting on the following subjects: neural networks, modelagem matematica, water treatment photochemical process and biotechnology

Sustainable Gas Futures Scoping Workshop

Professor Marcelo de Lemos
Aeronautics Institute of Technology (ITA)

delemos@ita.br

Education:

B.Sc., PUC-RJ, Dept. Mech. Eng, Brazil, 1977

M.Sc., PUC-RJ, Dept. Mech. Eng, Brazil, 1979

Ph.D., Purdue University, USA, 1983

Post-Doct. Resident Associate, Argonne National Laboratory, USA , 1984-86

Post-Doct. Visiting Scientist, Ruhr-Universität-Bochum, Germany, 1991-92

Research Areas:

Turbulence Modeling

Computational Fluid Dynamics & Heat Transfer

Modeling of Flow in Porous Media

Simulation of Thermal Systems

Sustainable Gas Futures Scoping Workshop

Prof. Julio Romano Meneghini
Polytechnic School
University of Sao Paulo

jmeneg@usp.br

Full Professor of Applications and Principles in Mechanical Engineering, Escola Politécnica, University of São Paulo, PhD in Aeronautics, Imperial College - University of London (1993). DIC-Diploma of Imperial College in Aeronautical Engineering (1993). Livre Docente in Fluid Mechanics, University of São Paulo - USP (2002). Master of Science in Mechanical Engineering, USP (1989). He has a first degree in Physics (BSc) from Instituto de Física, USP (1989) and in Civil Engineering (EEM, 1984). He holds a CNPq's fellowship (PQ) Level 1B. He has been working in research projects in Aeronautical, Mechanical, Naval and Oceanic Engineering, as coordinator or consultant. His main areas of interest are investigations focusing on vortex shedding, vortex-induced vibration, computational fluid dynamics, bluff body flow and aeroacoustics. He worked as Research Associate at the Department of Aeronautics-Imperial College in 1995. Since 1994, he is an academic member of staff of the Mechanical Engineering Department of Escola Politécnica of University of São Paulo (EPUSP). He is the coordinator of the Fluid & Dynamics Research Group (NDF) at EPUSP. He is the author or co-author of more than 130 papers published. He has been coordinating research projects sponsored by Petrobras, Embraer, Fapesp, Finep/CTPetro, CNPq/CTPetro, Voith-Siemens, British Petroleum (BP), Oxiteno and BG-Group. He was one of the co-chairmen of the International Conference BBVIV5 (5th Bluff Body Wakes and Vortex-induced Vibration Conference) held in Costa do Sauípe, Brazil, in 2006. He is member of the Scientific Committee of BBVIV. He was the Co-Chairman of the IUTAM-ABCM Symposium on Laminar Turbulent Transition held in Rio de Janeiro, Brazil, in 2014. He is currently responsible for the undergraduate courses of Fluid Mechanics II and Aerodynamics at EPUSP. He is also responsible for the post-graduation courses of Vortex Shedding, Flow-induced Vibration and Hydrodynamic Stability at EPUSP. Member of the Scientific Committee of the BBVIV Conferences and revisor of scientific papers for the Journal of Fluid Mechanics, Journal of Fluids and Structures, International Journal of Heat Transfer, Physics of Fluids, Experiments in Fluids, Philosophical Transactions of the Royal Society A, among others. He is a consultant of Cape's Committee of the Three-Annual Evaluations (2007/08/09 e 2010/11/12) of the Engineering III Post-Graduation Programmes (Mechanical, Mechatronics, Naval and Ocean, Aeronautical, Production and Petroleum Engineering).

Sustainable Gas Futures Scoping Workshop

Prof. Guenther Carlos Krieger Filho
Polytechnic School
University of Sao Paulo

guenther@usp.br

Guenther C. Krieger Filho is an Associate Professor 1 at Polytechnic School of the University of São Paulo, Brazil. He has been developing research activities on combustion processes in gas turbines and internal combustion engines. He has supervised three Doctor Thesis (in Mechanical Engineering), 11 Master Dissertations (in Mechanical Engineering). He is author/co-author of 11 publications in peer-reviewed journals. He member of the Brazilian Society of Mechanical Sciences and Engineering and of the Brazilian Combustion Network. He has been involved in the past 5 years with research projects related to numerical modeling and experimental investigation of combustion processes with Natural Gas, LPG and Ethanol.

Sustainable Gas Futures Scoping Workshop

Prof. Emílio Carlos Nelli Silva

Departamento de Engenharia Mecatrônica e Sistemas Mecânicos

University of Sao Paulo

ecnsilva@usp.br

He began his work as Professor in the Department of Mechatronics and Mechanical Systems at the Polytechnic School of the University of São Paulo (EPUSP) in 1998. He was promoted to Associate Professor in 2003 and Professor in 2005. He is currently a researcher of CNPq 1A level. He obtained Bachelor's and master's degree in Mechanical Engineering from EPUSP in 1990 and 1993, respectively, and the Ph.D. degree in Mechanical Engineering from The University of Michigan - Ann Arbor, USA, in 1998. During his Ph.D., he received two awards: Distinguished Achievement Award and Ivor K. McIvor Award. The first award is given in recognition of excellence and academic staff, and the latter in recognition of performance in research. He specializes in Computational Mechanics, particularly in the application of finite element and topology optimization methods in smart structures and materials, such as piezoelectric actuators and sensors, piezocomposite materials (including functional gradient materials - FGM), energy harvesting devices, microelectromechanical systems (MEMS), and electrical impedance tomography. He was invited as visiting professor at Kyoto University, Japan, in 2003, and University of Illinois at Urbana-Champaign, USA in 2003, 2004, 2006 and 2007. He has published articles in international journals of selective editorial policy (in the areas of smart materials and structures, computational mechanics and structural optimization) and chapter books, given lectures at universities and national and foreign companies, acted as reviewer of journals, and national and international conferences, and as ad hoc consultant for national funding agencies such as FAPESP, CNPq, and CAPES, and international agencies such as NSF, USA, and NRF, South Africa. In 2006, a graduate student under the guidance of the author was awarded the ISSMO / Springer Prize for the 2005 Young Scientist for the best work in the category young scientist presented at the Sixth World Congress of Structural and Multidisciplinary Optimization (WCSMO-6) (Rio de Janeiro, Brazil 2005). In 2008, a doctoral student under the guidance of the author was awarded the EMBRAER ABCM-2008 prize for Research in Mechanical Engineering and a graduate student received a gold medal in the USP Olympics for innovation in the category Biotechnology. He has participated regularly in Symposiums and Conferences in the country and abroad, also with the publication of articles. Belonged to the program Committee of conference Modelling, Signal Processing, and Control - SPIE (Annual International Symposium on Smart Structures and Materials) from 2006 to 2009. He gave keynote lectures in the conferences: The 6th ICSSS, 2008, 10th USNCCM, 2009 and 12th ISMMFGM, 2012. He gave three plenary lectures, respectively, in the conferences CILAMCE XXVII (Belém, PA, Brazil, 2006), in 9th ISMMFGM, 2006 (Hawaii, USA, 2006), and more recently in WCCM 2012 conference (São Paulo, SP, Brazil, 2012) and USP Conference on Engineering 2012 (São Paulo, SP, Brazil, 2012), all of them, major conferences in their areas. He is a member of the editorial board of the journal Mechanics Research Communications and a member of International Advisory Committee of FGM - IACFGM. He participated as a panelist in the "Panel of Experts for Proposals" on "Mechanics of Materials (MoM-X)" from the National Science Foundation - NSF, 2010, USA and member voting panel "Frontier Ideas meeting" to decide potential topics for the announcement of the "Emerging Frontiers in Research and Innovation (EFRI-2011)", 2011, USA.

Sustainable Gas Futures Scoping Workshop

Prof. Celso Kazuyuki Morooka
Departamento de Engenharia de Petróleo
University of Campinas

morooka@dep.fem.unicamp.br

B.S. in Naval Engineering from Universidade de São Paulo (1981), Master's in Ocean Engineering from Yokohama National University (1983), and Doctor of Engineering in Ocean Engineering from the University of Tokyo (1986). Has experience in Naval and Ocean Engineering, focusing on Hydrodynamics of Ships and Ocean Systems, acting on the following subjects: offshore oil and gas production systems, offshore risers, offshore drilling, ocean waves and currents.

Sustainable Gas Futures Scoping Workshop

Prof. Edmilson Moutinho dos Santos
IEE
University of Sao Paulo

edmilson_em_viagem@yahoo.com.br

Graduated in Economics (1990) and Electrical Engineering (1988) by the University of Sao Paulo. Master in Energy Management and Policy (University of Pennsylvania, 1993) and Energy Systems Planning (University of Campinas, 1992). Ph.D. in Energy Economics at the French Petroleum Institute and Université de Bourgogne (1997). Currently Associate Professor at the Institute for Electricity and Energy at the University of Sao Paulo (IEE-USP) and, since October 2011, President of the Graduate Commission for the Graduate Energy Program at the University of Sao Paulo. Research and education activities with emphasis in Energy Economics and Politics. Independent consultant and coordinator of the Energy Forum, non-profit website for energy discussions (<http://www.energiabrasil.com.br>). Coordinates the Human Resources Training Programs in Oil and Gas at IEE-USP (PRH-04, with financial support from the National Agency for Petroleum, Natural Gas and Biofuels - ANP -, and Petrobras). 2011/2012 President of the Brazilian Society for Energy Planning SBPE and member of the International Association for Energy Economics, IAEE.

Sustainable Gas Futures Scoping Workshop

Prof. Claudio Mueller Sampaio
Polytechnic School
University of Sao Paulo

clasamp@usp.br

Areas of interest:

- Integrated functional ship and offshore design,
- Hull/appendages hydrodynamic performance improvements employing parametric hull representation coupled with modern computational (analytical/numerical) and optimization techniques,
- Unconventional alternatives for reduction of ships energy demands.

Sustainable Gas Futures Scoping Workshop

Professor Jurandir Itizo Yanagihara
Polytechnic School
University of Sao Paulo

jiy@usp.br

Interests in Optimization of Thermal Systems, Natural Gas Liquefaction Processes and Refrigeration Cycles, Heat Transfer Enhancement, Modeling and Experimental Analysis of Two Phase Phenomena, Experimental Techniques in Thermal Sciences, Modelling of Gas Permeation, Aircraft Cabin Comfort
Silvio de Oliveira Jr.

Silvio de Oliveira Júnior is an Associate Professor 3 at Polytechnic School of the University of São Paulo, Brazil. He has been developing research activities on heat pumps and refrigeration systems, solar energy, energy conservation in industrial processes, cogeneration systems and exergy and thermoeconomic analysis of thermal and chemical processes. He has supervised nine Doctor Thesis (in Mechanical Engineering), 18 Master Dissertations (in Mechanical Engineering, Automotive Engineering and Energy), 9 MBA in Energy and Cogeneration and Distributed Generation, and 73 Undergraduate Projects in Mechanical Engineering. He is author of the book Exergy: production, cost and renewability (Springer, 2013), author/co-author of about 190 publications and communications, senior member of the Brazilian Society of Mechanical Sciences and Engineering and has a Scholarship in Research Productivity of the National Council for Scientific and Technological Development. He is also member of the Editorial Board of Energy and the International Journal of Thermodynamics. He has been involved in the past ten years with research projects related to energy utilization in biodiesel production plants, sugar and alcohol utilities and production plants, offshore and onshore petroleum platforms, petroleum refinery plants, co/trigeneration and combined cycle plants, airplane energy systems modeling, modeling and simulation of twin-screw multiphase pumping systems and exergy behaviour of human body.
Alexandre Campana Vidal

Sustainable Gas Futures Scoping Workshop

Professor Eduardo Aoun Tannuri
Polytechnic School
University of Sao Paulo

eduat@usp.br

Associate Professor at the Department of Mechatronics Engineering, Escola Politécnica, University of São Paulo (EPUSP), and one of the coordinators of the Numerical Offshore Tank (TPN). Works on Dynamic Positioning (DP) Systems applied to offshore vessels and platforms, Maneuvering and Sea-keeping time-domain simulation codes development and application and Experimental analysis of floating structures. He was graduated in Mechatronics Engineering, in 1998, and completed his doctorate degree in 2002, both at EPUSP. He coordinates several R&D projects in the area of offshore oils&gas exploration, maritime and river navigation and port development. He has more than 100 publications in conferences and 20 publications in journals. He is member of 27th ITTC Manoeuvring Committee.

Sustainable Gas Futures Scoping Workshop

Colombo Celso Gaeta Tassinari
IEE-USP

ccgtassi@usp.br

Graduate at Geologia from Universidade de São Paulo (1975), master's at Geology from Universidade de São Paulo (1981) and ph.d. at Geoquímica e Geotectônica from Universidade de São Paulo (1988). Has experience in Geosciences, focusing on Geochronology, acting on the following subjects: geochronologia, geoquímica isotópica, metalogênese, tectônica and geologia isotópica.