



FAPESP-NERC

**Scoping Workshop for Brazil-UK Sustainable Gas Futures**

**25 – 27 February 2014**

**FAPESP Auditorium and Superior Council Room, Sao Paulo, Brazil**

**Aims:**

- To discuss the key science challenges that relate to the aims of this programme and how they could be best addressed.
- To facilitate networking, discussion and enable researchers to share ideas on key research questions relevant to the call.
- To explore opportunities for potential future collaboration in the area of whole systems approach to examining the use of gas in the energy system.
- The outcome of the workshop will be to define the scope of a new UK/Brazil, interdisciplinary call, supported by the Newton Fund, with a focus on research contributing to the economic development and welfare of Brazil as part of the Sustainable Gas Futures programme.

**Proposed goals for the Sustainable Gas Futures programme**

- 1) Develop new methodologies to characterise, explore, analyse and assess the role of gas in current and future energy systems, considering both economic and environmental sustainability indicators.
- 2) Deliver alternative views of the future of gas in low carbon energy systems, and to identify key sustainable technologies within those futures
- 3) Engage with current and possible future technology options throughout the gas value chain and across competing and synergistic energy vectors and technologies, to ensure that the analysis is grounded in engineering options in particular the synergies and differences between the UK and Brazil in gas.
- 4) Capacity building through a whole systems energy approach to address Ecosystem Services<sup>1</sup> across energy technologies associated with the development of a sustainable gas future
- 5) Develop common learning and understanding of the future of gas in both countries and worldwide.

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<sup>1</sup> See for example: Millennium Ecosystem Assessment - <http://www.unep.org/maweb/documents/document.300.aspx.pdf>

Date	Time	Programme	Notes
Tuesday, 24 <sup>th</sup> February 2015	15:30	NERC and FAPESP introductions and pre-meeting	
Wednesday, 25 <sup>th</sup> February 2015	09.30	<b>Welcome Coffee/tea</b> All delegates to arrive at the venue.	
	10:00 – 10:30	<b>Opening of the Session</b> <b>i) Welcome remarks from FAPESP</b> Welcome to the workshop; aims of the open session; introduction to FAPESP Prof. Roberto Marcondes – FAPESP  <b>ii) Welcome remarks from NERC</b> Introduction to NERC, RCUK Energy Programme and the Newton Fund Dr. Chris Franklin – NERC	To include expectations of the workshop. To also include presentation from BG Brazil Research Centre for Gas Innovation?
	10:30 – 11:10	<b>Theme 1: Challenges for Oil and Gas Exploration, particularly in the Pre-salt Region</b> 1) Brazil: Dr. Álvaro Maia (Petrobras) 2) UK: Prof. Dorrik Stow (Heriot-Watt University) Q&A (10 mins)	Scene setting
	11:10 – 11:50	<b>Theme 2: Energy System Deployment (opportunities/barriers) of Unconventional Hydrocarbons (eg Shale Gas/Oil)</b> 1) Brazil: Prof. Ildo Sauer (IEE-Poli-USP) 2) UK: Prof. Peter Styles (Keele University) Q&A (10 mins)	Scene setting
	11:50 – 12:30	<b>Theme 3: Transitions in Natural Gas Systems, including Transportation</b> 1) Brazil: Eduardo Tanuri (TPN-Poli-USP) 2) UK: Prof. Peter Pearson (Cardiff University) Q&A (10 mins)	Scene setting
	12:30 – 14:00	Lunch and networking	
	14:00 – 14:40	<b>Theme 4: Multi-Phase Fluid Flows in Reservoirs and Pipelines</b> 1) Brazil: <i>tbc</i> ; 2) UK: Dr. Jeff Gomes (University of	Scene setting

		Aberdeen) Q&A (10 mins)	
	14:40 – 15:20	<b>Theme 5: Carbon Capture and Storage (CCS) including Bioenergy CCS (BECCS)</b> 1) Brazil: Dr. Plínio M. Nastari (Datagro Consultoria) 2) UK: Prof. Jon Gluyas (Durham University) Q&A (10 mins)	Scene setting
	15:20 – 16:00	<b>Theme 6: Environmental Change and Low Carbon Emission, including Policies and Research</b> 1) Brazil: Prof. Claudio Oller (Poli-Eng. Química) 2) UK: Prof. Paul Ekins (University College London) Q&A (10 mins)	Scene setting
	16:00 – 16:40	<b>Theme 7: Industry-Academy Interaction, Diffusion of Knowledge and Technology Transfer</b> 1) Brazil: Julio R. Meneghini (Poli-USP) 2) UK: Dr Adam Hawkes (Sustainable Gas Institute at Imperial College London) Q&A (10 mins).	Scene setting
	16:40 – 17:00	<b>Coffee/tea break and Close of Open Session</b>	Invite only workshop participants back for final session of day
	17:00 – 18:15	<b>Speed networking</b> Facilitated opportunity for delegates to meet each other. Delegates can share research interests, current projects, experience of working with UK/Brazil. (2 minute presentations from each of 30 participants)	Opportunity for 1/2 slide(s) each
	18:15 – 18:30	<b>Close of day 1</b> Wrap up from day 1 and expectations for day 2 (FAPESP and NERC).	
<b>Thursday, 26<sup>th</sup> February 2015</b>	<b>08:00</b>	<b>Pre-meeting with NERC, FAPESP and facilitators/writing team</b>	
	<b>08:30</b>	<b>Welcome &amp; coffee/tea</b>	
	<b>08:45-09:00</b>	<b>General comments on day one and overview of day two</b>	
	<b>09:00 –</b>	<b>Identifying key science themes:</b>	5 groups of 6 people?

	10:00	<p><b>breakout groups</b></p> <p>Aim: for participants to discuss in groups the key science questions, challenges and opportunities for UK-Brazil collaboration. This is an initial discussion to identify the high level research themes.</p> <ul style="list-style-type: none"> <li>- Participants divided into pre-organised groups.</li> <li>- In their groups they have to list out key science questions, challenges and opportunities for UK-Brazil collaboration.</li> <li>- Each group will self-nominate a rapporteur to capture the discussion on flip-chart and feedback.</li> </ul>	
	10:00 – 10:15	<p><b>Identifying key science themes: marketplace</b></p> <p>Individuals from different groups move around flip charts to allow them to see the notes of the discussions of the other groups and add comments on post it notes.</p>	Rapporteur stays with notes.
	10:15- 10:45	<p><b>Identifying key science themes: analysis and priority feedback</b></p> <p>Aim: to review other groups' discussion results, cluster the challenges as themes and then prioritise the top 4-5 themes. Each group to feedback their discussion via their rapporteur and these will be clustered for the next stage.</p>	
	10:45- 11:15	<p><b>Identifying key science themes: voting</b></p> <p>Aim: to prioritise the top themes. Each participant will be given 5 sticky dots and asked to vote for their top 5 themes.</p>	
	11:15- 11:40	<p><b>Coffee/Tea</b></p> <p>Sign up for breakout groups as per below</p>	
	11:40 – 13:10	<p><b>Scoping key science themes: breakout groups</b></p> <p>Aim: to discuss in breakout groups how can the UK and Brazil work together to address the top priority themes. To discuss the detail under each theme, and importantly, the best delivery route.</p>	Attendees may wish to refer back to the original scope of the NERC action and the Announcement of Opportunity for the Brazil workshop. They should consider

	<ul style="list-style-type: none"> <li>- There will be a breakout group for each theme identified in the previous session. Each participant will choose the theme (one only) they would like to discuss but each group must include at least one Brazilian delegate and at least one UK delegate.</li> <li>- There will be a short introduction from a volunteer rapporteur to facilitate the discussion and agree the scope of the individual theme.</li> <li>- There will be an open discussion in each group looking at interesting and planned areas of research working, a summary of the key challenges and opportunities for UK-Brazil collaboration, and possible delivery routes.</li> </ul>	what types of grants would be best in delivering the research (e.g. few large consortium, many smaller proof of concept grants, a mixture).
13:10 – 14:30	<b>Networking lunch</b>	
14:30 – 15:30	<b>Scoping key science themes: breakout groups</b> Each group to prepare PowerPoint slides to feedback to the entire group which summarises the discussions.	
15:30 – 17:00	<b>Scoping key science themes: feedback from breakout</b> Each breakout session's rapporteur will report back in plenary session (approximately 5 minutes per group followed by discussion). A general discussion will follow to draw out common themes and cross-cutting issues. This will be used after the workshop to agree the scope of the call and how the research will be delivered.	
17.00 – 17:30	<b>Comments from each of the groups – to include a wider discussion</b> Discussion of further topics that might have arisen during the workshop to include improvements from other groups.	
17:30 – 18:00	<b>Final remarks</b>	
	<b>Dinner (hosted by FAPESP)</b>	

<b>Friday, 27<sup>th</sup> February 2015</b>	09.30	<b>Welcome coffee</b>	
	10.00	<b>Visits to the laboratories of FAPESP-BG Brasil Research Centre for Gas Innovation</b>	
	12:30 – 13:00	<b>Next steps, closing remarks and thanks</b> FAPESP NERC	
	13:00	<b>Lunch</b>	
	13:00-16:00	Room available for further networking/collaborating time	
	13:00-16:00	NERC/FAPESP/Call Writing team to discuss next steps and NERC/FAPESP to discuss call for proposals.	