

FAPESP Week London



# Opportunities and Challenges in University - Industry Collaborative Research

David Jones

BG Group

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# About BG Group

- Top 15 UK company
- LSE-listed, market cap circa \$60 billion
- Production; 70% gas/ 30% oil
- 6,500+ employees (65% outside UK)



# Group Technology; Aims and Needs

## Strategic

- Identify and prioritise group-wide technology challenges
- Link technology strategy to Brazil's national agenda for R&D
- Build strategic relationships to fast-track R&D capabilities
- Develop governance framework to support R&D investment

## Tactical

- Build R&D infrastructure, principally in Brazil
- Demonstrate value of technology through Group-wide field trials
- Increase Brazil's academic capacity
- Manage partnerships and emerging scientific networks



# Group Technology structure

## Global Technology Centre (Rio)

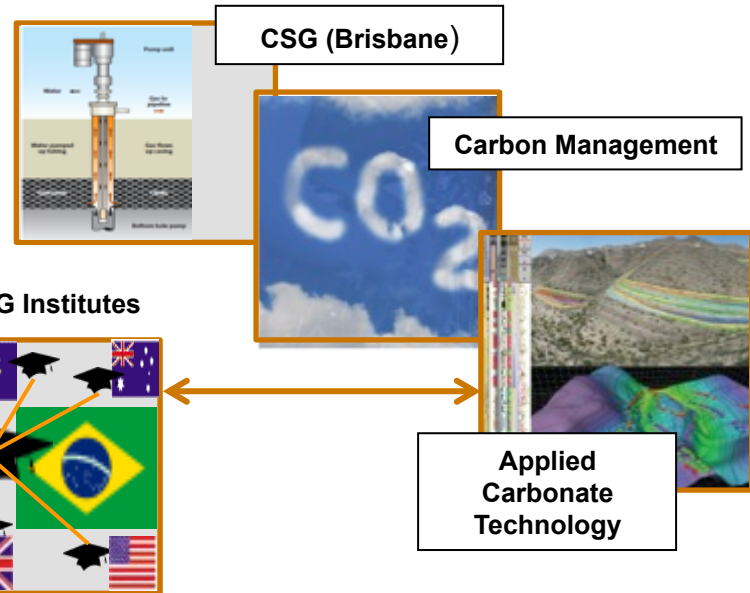
- Each business unit has a technology team
- Deliver R&D projects using levy



## Technology Hubs

- Thematic focal points for technology spend

### Technology Hubs



## BG Institutes

- Relationship model with Universities

# University-Industry collaborative research

## Opportunities

- Thought leadership and innovation
- Common technical/academic interests
- Greater access to technical capabilities
- Concurrent development of many projects

## Challenges

- Generating and measuring value
- Alignment of partner perspectives;
  - Technical
  - Commercial
  - Social and cultural
- Coordination of research
- Developing research contracts

What is the best model for  
BG?

# BG Group's opportunities and challenges

## Opportunities for BG

- Collaborative R&D focussing on specific technology challenge
- Broader access to infrastructure, technical capabilities etc.
- Concurrent development of a large number of projects
- Strategic decision of **not** performing in-house R&D

## Challenges for BG

- Convert R&D outcomes into technologies applicable worldwide
- Establish long-term R&D partnerships
- Perform R&D in a regulated environment
- BG's absorptive capacity

Institutes & Centres  
Dedicated Programmes  
Focussed Projects

# Institutes and Centres

## Centre for Coal Seam Gas (CCSG)

### Inputs

- Funding from sponsors
- Industrial challenges
- Partnership with leading universities
- Resources & expertise
- Research facilities



### Outputs

- Knowledge translation
- Thought leadership
- Technology insight
- Research & development
- Education & training
- Networking & communication



# Dedicated Programme Collaboration in Brazil

## FAPESP

- Collaboration based on
  - Advanced reserach in natural gas
  - Technology transfer
  - Knowledge dissemination
- Follows established institute model
- Benefits
  - Increases capacity in Brazil
  - Builds deep institutional relationships
  - Global recognition
  - Access to academic network



## Focussed Project

# Hytron Fuel Cell Reforming Technology

## Opportunity

- Natural gas reforming unit to supply hydrogen to commercial fuel cells in Brazil
- Develop clean, low carbon power technology with potential for large-scale generation

## Value to BG Group and Brazil

- Apply to BG Group globally
- Align with Brazilian policy to develop fuel cell technology, increase gas penetration in power generation
- First involvement under levy with university spin-off (from UNICAMP)



# Key takeaways

- Lessons;
  - All parties need to demonstrate commitment to world-class research
  - Linking business strategy to research
  - Large long-term programmes are more valuable than small short-term projects
  - Alignment/convergence of institutional perspectives
  
- Success factors;
  - Joint approach to developing the business plan, contracts etc.
  - Fit with BG Group industrial requirements
  - Technical capabilities of the university
  - Secure source of funding