



Newton Fund - Sustainable Gas Futures Workshop (SGF) 25th-27th February
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Industry-Academia Interaction, Diffusion of Knowledge and Technology Transfer

A UK Perspective

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SUSTAINABLE
GAS
INSTITUTE

Founded by BG Group

Contrasting motives



Industry

- Today's problems – real world science & engineering
- Profit/growth-driven
- Fundamentals sometimes change rapidly
- Skilled graduates now

Academia

- Tomorrow's problems - "Blue skies"
- Challenge-driven
- Fundamentals usually change slowly
- Bring forward future leaders

Why industry-academia



- Long-term view versus short/medium view (keeps academia relevant, helps industry stay ready)
- UK government investment in science and research of ~£6 billion in 2015/16
- Innovation creates competitive advantage
- Avoid the “valley of death”

What we want to achieve



- Research outcomes framed by grand challenges, grounded in industry needs
- Development of innovative technology that is relevant to industry needs
- Translation of academic outputs to industry stakeholders in the right format
- Education of skilled professionals
- Avoid the outcome-impact gap

Case study: SGI



- ANP levy – 1% of gross O&G production revenue is invested in R&D in Brazil
- BG Group estimate US\$1.5bln to \$2bln investment by 2025
- Targeted investment in topics with strategic interest

SGI Vision



The SGI will lead research and define the innovative technologies that enable natural gas to play a key role in a low carbon world

Case study: SGI Objectives

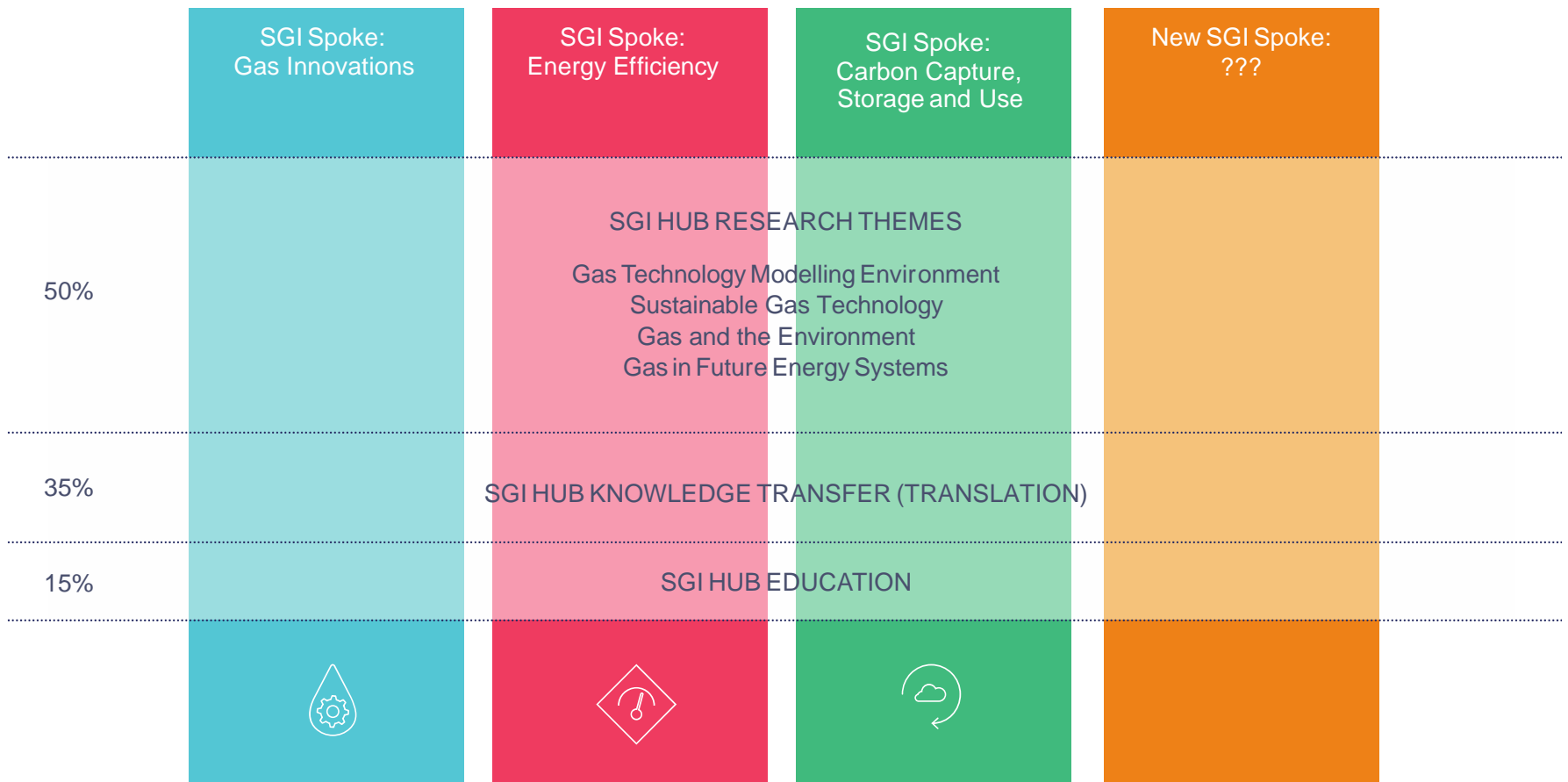


1. To build a global community of skilled researchers in sustainable gas.
2. To undertake world class research addressing key challenges related to natural gas production, distribution and utilisation in a low carbon world.
3. To translate research into impact by working with partners.
4. To evaluate and communicate the evidence base on sustainable gas.
5. To support our members in their research investment in sustainable gas, both in Brazil and globally.
6. To leverage other relevant research funding programmes to increase reach and impact.

Case study: SGI Structure



PROVIDES INTEGRATING RESEARCH, TRANSLATION AND EDUCATION ACTIVITIES



Case study: SGI Themes



INSTITUTE	Sustainable Gas institute			
THEMES	Carbon Capture Storage and Use	Gas Innovation	Energy Efficiency	< New Theme
SUB THEMES	CO ₂ separation	Power generation	Prime mover cycle efficiency	< ?
	CO ₂ utilisation & management	Gas-fuelled transport	Waste heat recovery	< ?
	CO ₂ accounting	New applications	Logistics efficiency	< ?
	CO ₂ storage (excluding EOR)	Systems & infrastructure		

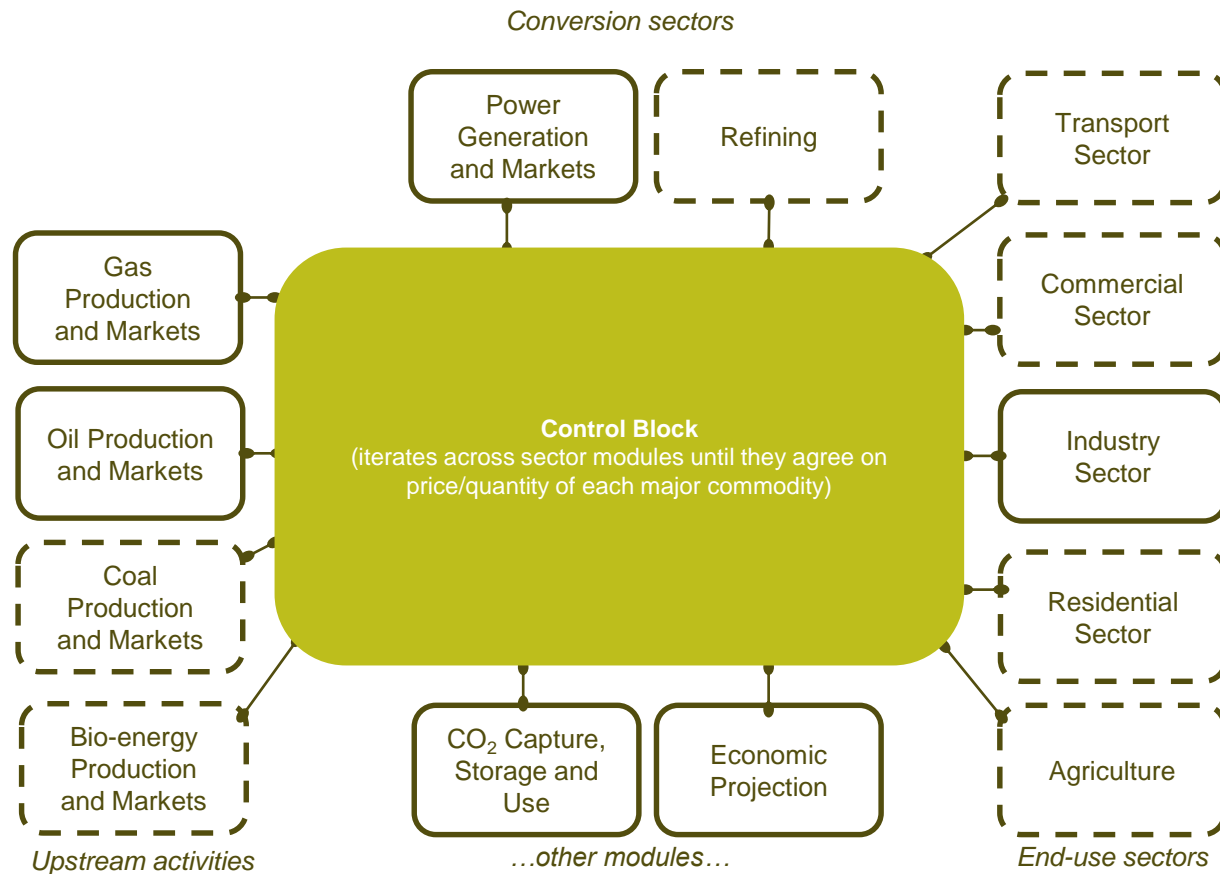


Case study: SGI Brazil

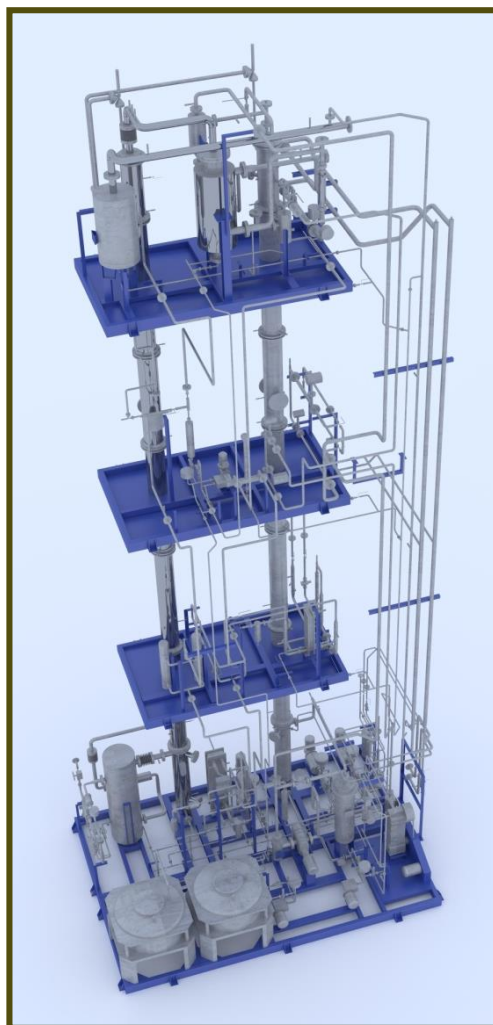


- BG-USP-Imperial Fellowship Programme
 - 20 PhD students
 - 5 post-doc researchers (4-year terms)
- SGI visiting researchers
 - Senior academic short-term visitors (e.g. 1-month) from Brazil
 - Long-term (e.g. 1-year) visiting researchers from Brazil

Case study: SGI Systems Modelling



Case study: SGI Engineering



Conclusions



- Define strategic context
- Team up with the right people
 - Industry people with cross-functional roles
 - Academics with industry knowledge
- Long-term relationship
- Personnel exchange. Communicate, face-to-face, frequently
- Build project awareness in industry organisation
- Support exploitation *after* project completion