



25th world gas conference
"Gas: Sustaining Future Global Growth"

World Shale Gas Potential

An insight into Shale Gas Exploration Outside of N. America

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Talk Outline



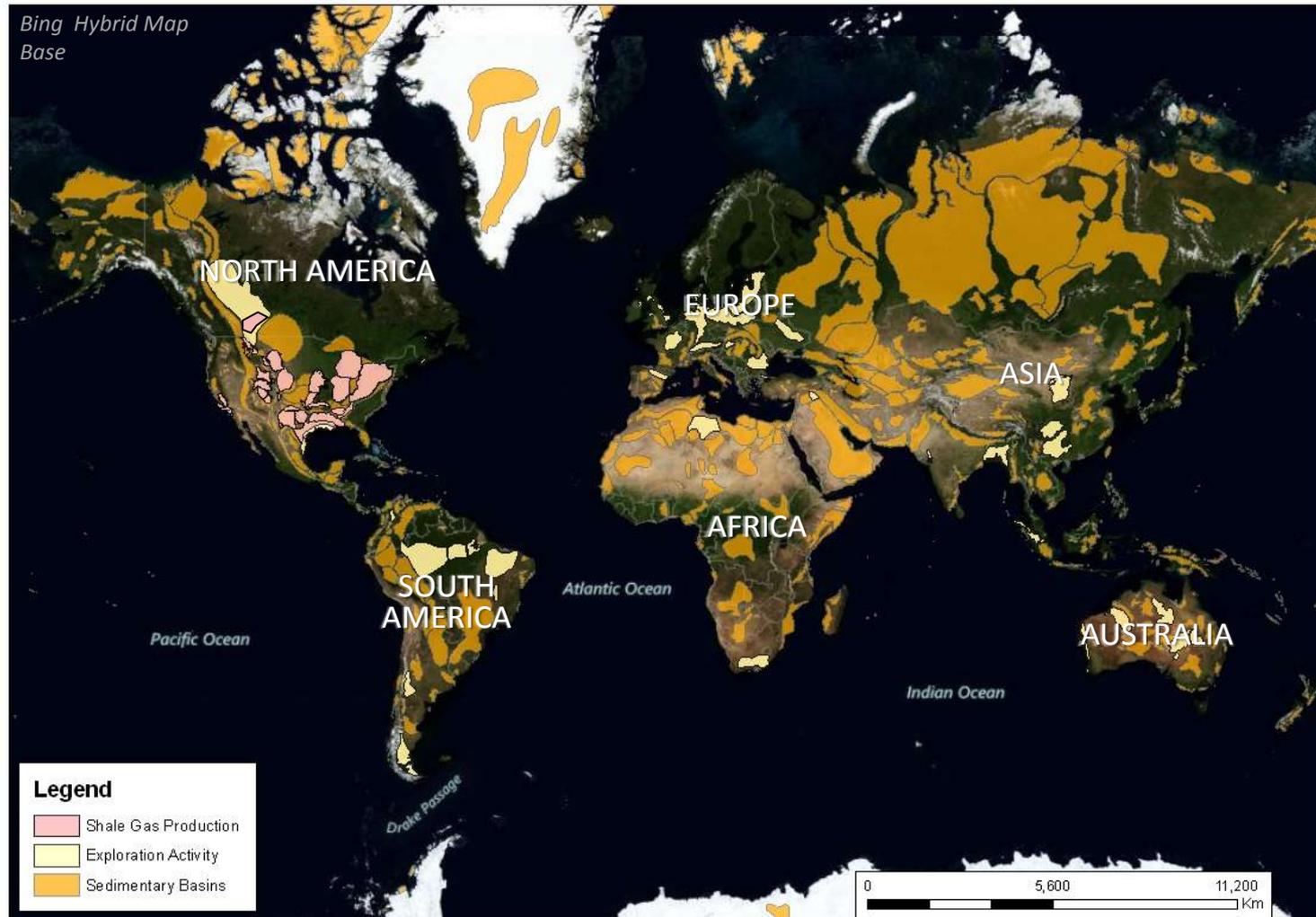
- Brief introduction to BG Group
- Global resource estimates
- Exploration critical factors
- Non-technical challenges
- Shale gas activity by region

BG Group Interests



BG Group has interests in 25 countries over 5 continents

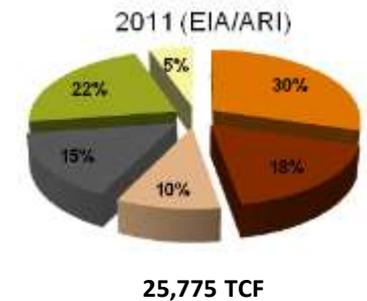
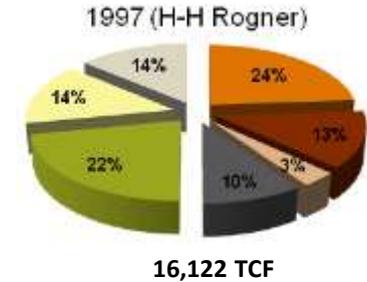
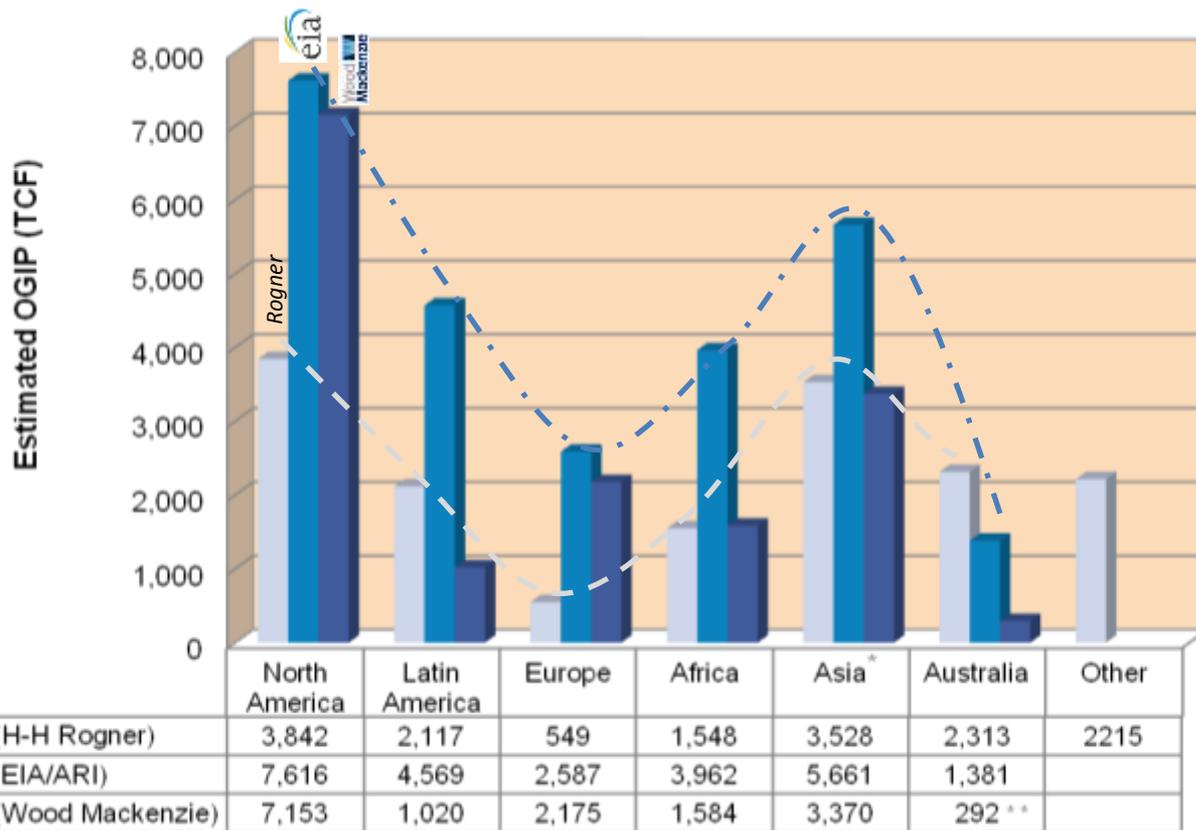
Onshore Basins Worldwide



Source of basins map :
Bill St John, AAPG

Potential in basins across the world – shale gas exploration becoming global

Shale Gas Resource Estimates



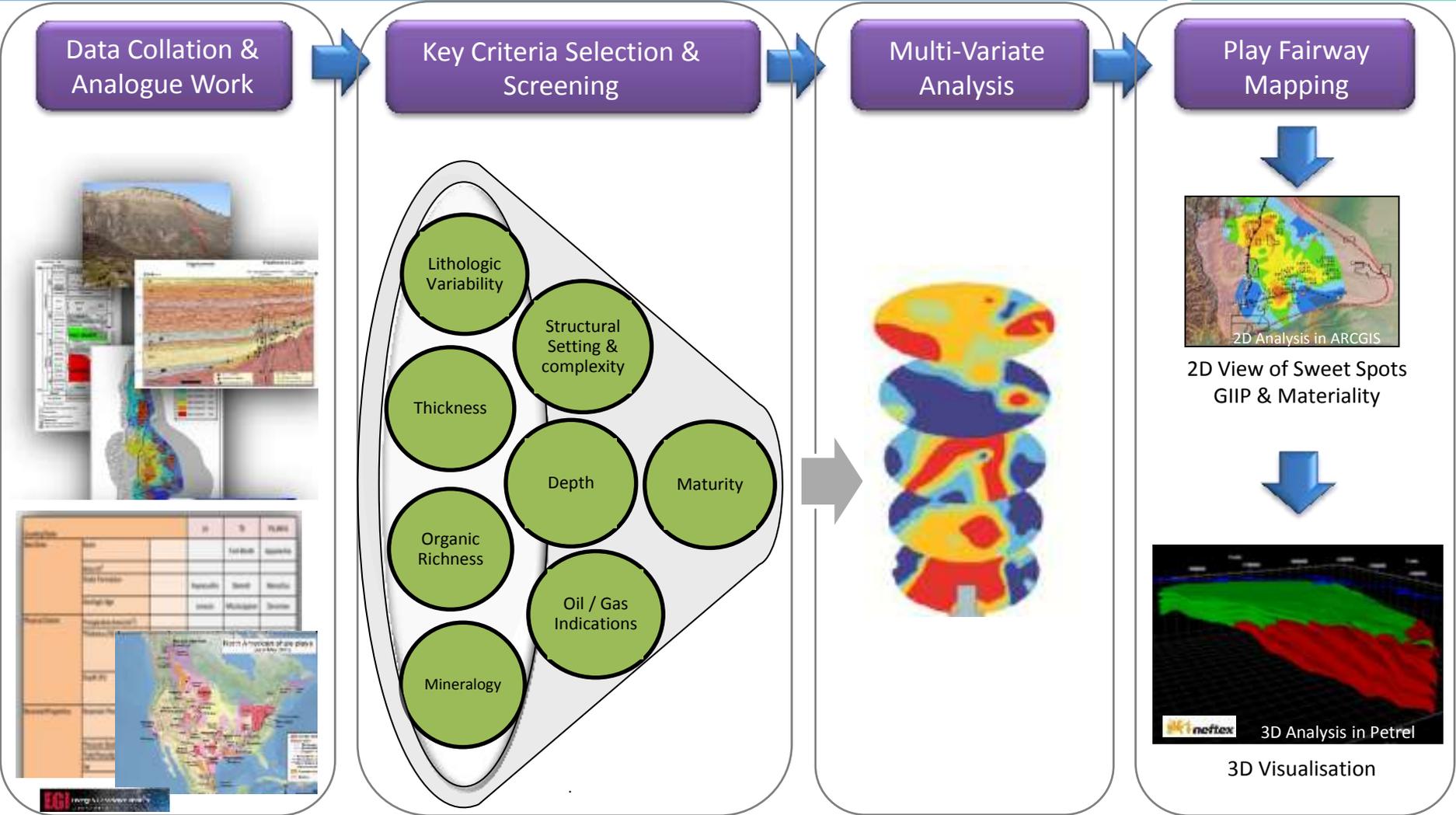
Estimates for each region may vary depending on which plays were included and play type variances

*Asia region includes China

** Only Cooper Basin

Huge potential with some distribution similarity

Technical Criteria – Exploration Screening



Typical evaluation approach – key criteria will vary between companies

Non-Technical Considerations



Degree of difficulty can vary by region, country, state or basin scale

2012 Global Activity Summary



- EUROPE & CENTRAL ASIA
- AFRICA, MIDDLE EAST & ASIA
- AUSTRALIA
- S. AMERICA

EUROPE

UK: Well operations restarting
 POLAND: Several operators drilling / testing
 UKRAINE: Recent shale gas block awards
 LITHUANIA: 2012 Licensing round announced
 SPAIN: First shale gas wells in 2012/13

ROMANIA: **Moratorium on shale gas**
 BULGARIA: **Ban on shale gas exploration**
 FRANCE: **Fracture stimulation ban**

CHINA

- Several shale gas JV projects underway
- Early drilling & testing success.
- 2nd Licensing round likely in 3Q 2012

NORTH AFRICA

ALGERIA: New unconventional hydrocarbon law aimed to promote exploration

INDONESIA

- Shale potential being evaluated

COLUMBIA

- 2 re-entry wells being tested
- 2012 Licensing round - 31 blocks

INDIA

- Licensing round in 2013
- 2011 well flowed gas

ARGENTINA

- 2012 shale licence awards
- Active drilling and well testing
- 20 wells planned (*Neuquen Basin*)
- **Nationalisation threat (YPF)**

SOUTH AFRICA

- Frac moratorium extended
- Fully licensed

AUSTRALIA

- Further testing of Cooper & Perth Basin wells
- Wells planned in other basins (Canning etc)

Notes:

1. Examples of activity - not all activity shown
2. Excludes activity in USA and Canada

Considerable shale gas activity already in 2012

Moving Forward – Outside North America

- US technology opens the door to international potential – but may not provide the perfect solution to crack the global shale code. Potential for further benefit from new liquid play focus in US
- More efficient use of resources required - US level of services, consumables, water and enabling logistics are not feasible
- European plays typically have challenging subsurface characteristics (stress regimes, burial history, faulting) – additional up front technical effort needed (eg 3D)
- Different commercial model – higher costs may be balanced by higher gas prices and better fiscal terms. This can present a challenge for small companies
- Its relatively easy to acquire large licence positions, at relatively low cost, but hydrocarbon laws and fiscal terms not established with unconventional plays in mind
- Different government support, stakeholder / landowner situation and population densities
- Strong and effective lobbying, with social networks promoting misconceptions that are having an impact in some areas

Combination of factors needed to make shale plays work outside of N. America

Thanks to WoodMac, NEFTEX and EGI

and

Thank you for your attention

ANY QUESTIONS ?