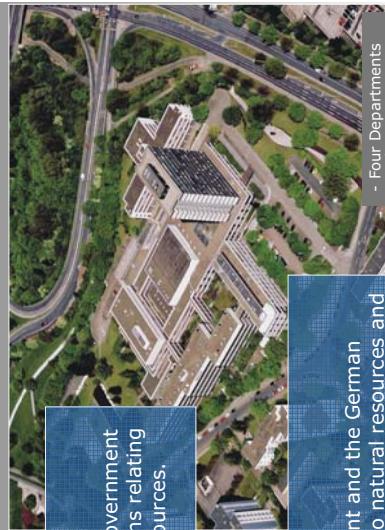


## BGR (Federal Institute for Geosciences and Natural Resources) - Responsibilities



### Remit (Founding Decree):

To advise and inform the federal government and German industry in all questions relating to the geosciences and natural resources.

### Tasks

- Advising the federal government and the German industry in questions relating to natural resources and the geosciences
- International geoscientific cooperation and Technical Cooperation
- Geoscientific research and development.

- Four Departments and
- 17 Sub-departments
- Staff > 700

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## Session 3 / Presentation 2: Resources and Production – from where and how

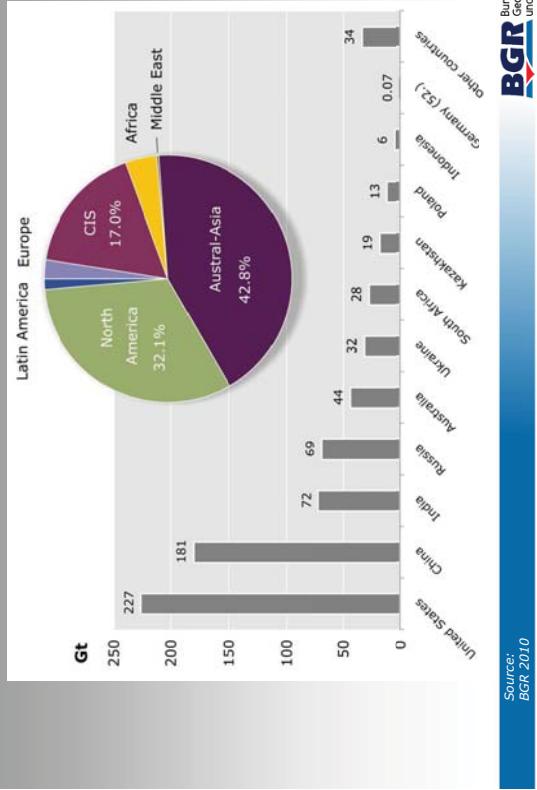


Sandro Schmidt  
Federal Institute for Geosciences and Natural Resources (BGR)  
Hanover

WEO 2011 coal workshop  
Beijing  
14th of April 2011

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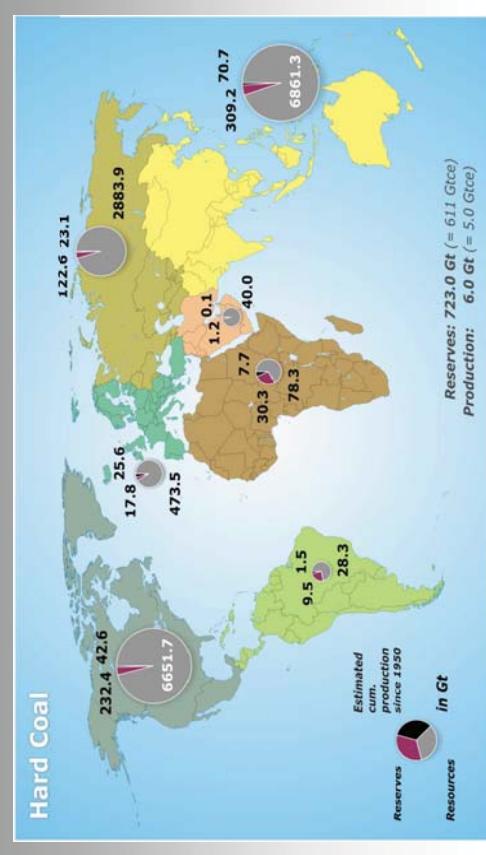
**Reserves of hard coal (total 723 Gt) in 2009 of the top ten countries and Germany as well as their distribution by region**



Source:  
BGR 2010

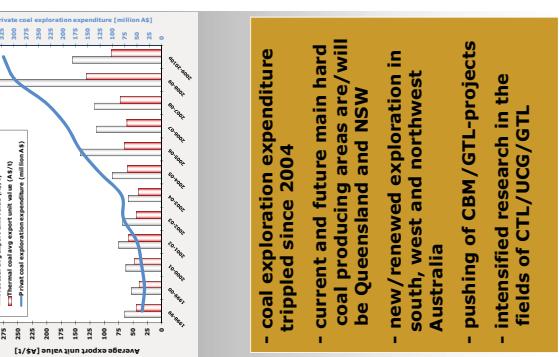
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**Regional distribution of the reserves, resources and the est. cumulative production of hard coal at the end of 2009**

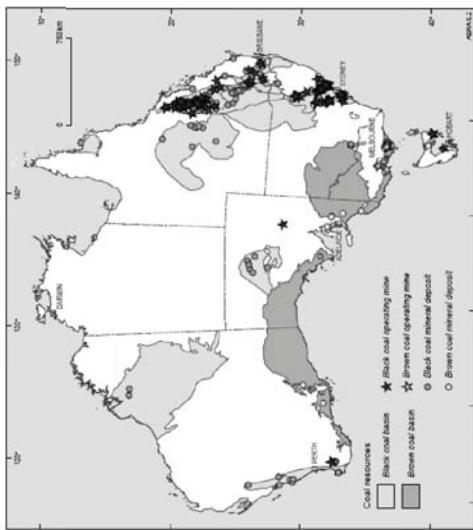


Source:  
BGR 2010

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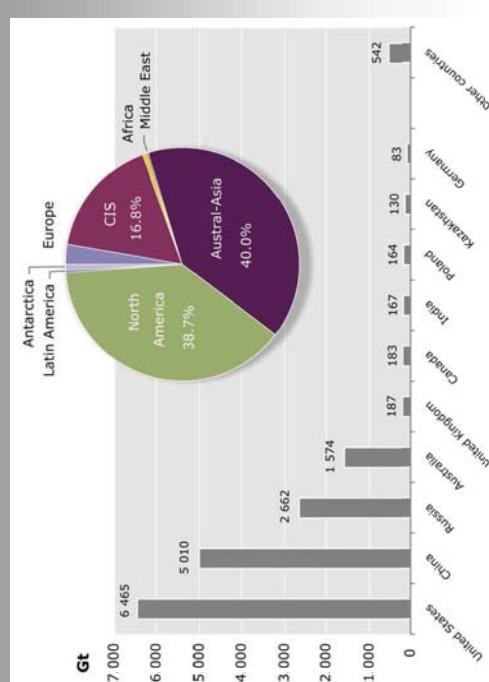


- coal exploration expenditure trippled since 2004
- current and future main hard coal producing areas are/will be Queensland and NSW
- new/renewed exploration in south, west and northwest Australia
- pushing of CBM/GTL-projects
- intensified research in the fields of CTL/UCG/GTL



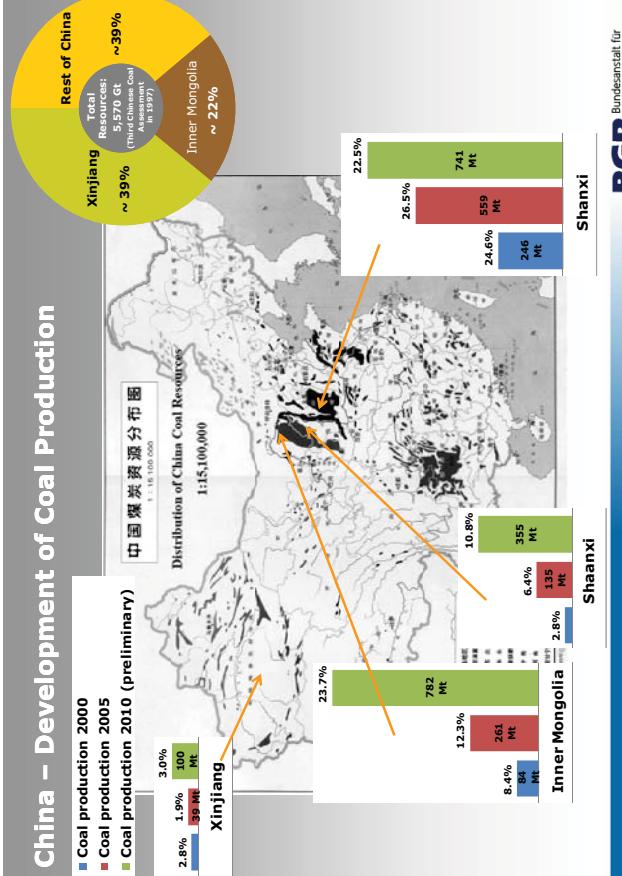
Sources: ABARE/ABARES, Department of Resources, Energy and Tourism, Geoscience Australia 2010/2011

**Resources of hard coal (total 17,167 Gt) in 2009 of the top ten countries as well as their distribution by region**



Source:  
BGR 2010

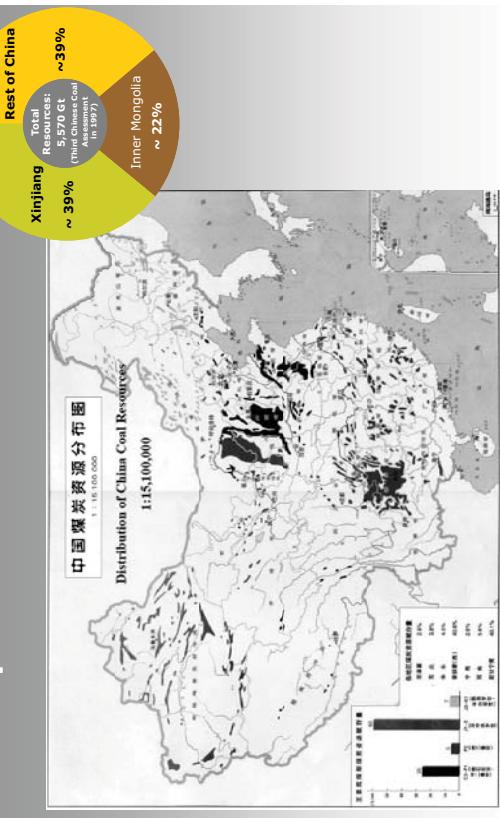
## China – Development of Coal Production



Sources: Tex Report, Xinhua, CNACG, Chen Qui

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## China – Development of Coal Production



Sources: Xinhua, CNACG, Chen Qui

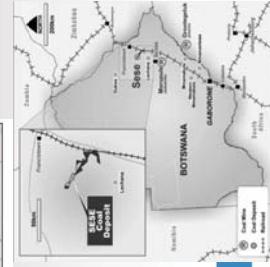
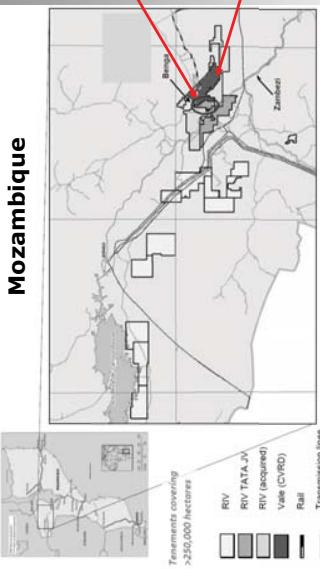
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## New Players in southern Africa: Mozambique, Botswana (?)

### Advanced projects:

Detailed exploration and and foreseeable production start (2011) in the Moatize Basin:  
**Benga Coal Project**  
 Australian Riversdale Mining Ltd. (Rio Tinto) (65%) and Indian Tata Steel (35%)

**Moatize Coal Project**  
 Brazilian Vale (former CVRD)



**Botswana:**  
 Several early exploration stage projects  
 in the eastern part of the country.

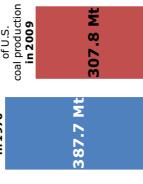
Sources:  
 Riversdale 2010, Vale 2010, African Energy 2011

## USA – Development of Coal Production

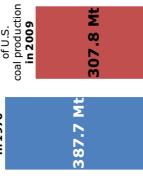


### Appalachian Basin

~ 70%  
of U.S.  
coal production  
in 1970



~ 32%  
of U.S.  
coal production  
in 2009



### Powder River Basin

< 2%  
of U.S.  
coal production  
in 1970



426.6 Mt

Sources: USGS, EIA 2010

## New Player in Asia: Mongolia

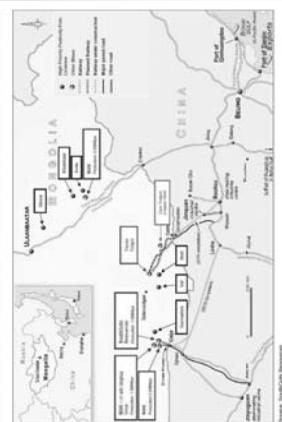
Several advanced projects and dozens of early exploration stage projects especially near the Chinese border.

Tavan Tolgoi deposit:  
(South Gobi desert)  
- thick seams,  
- low strip ratios  
- good coal qualities



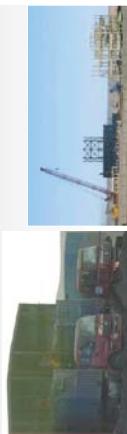
**Peabody**

Peabody JV Licenses and TT Close to Northern China Markets



Sources:  
Peabody Energy 2010, BGR 2010

Challenges:  
- infrastructure  
- workforce  
- climate, water



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## Summary

- › Since 2004 the global coal exploration was pushed by high coal prices and provided very promising results. A lot of new coal mines came and will come on stream in the next years in traditional and as well complete new hard coal mining regions.
- › From our perspective the geological availability of coal will only be a minor constraint for the future coal supply. The main challenge is the increasing spatial distance between the production and the consumption of coal. This aspect is related with huge investments in infrastructure in new mining regions.
- › Alternatives like 'coal by wire', coal derived gas and liquids from underground (CBM, UCG) or above ground facilities might ease the physical coal transport problems. Nonetheless such alternatives need large investments and/or as well a lot of R&D.
- › Especially in highly industrialized countries the public acceptance of coal is a serious issue which might affect coal consumption in several countries.

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**Thank you for your attention!**

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Further information: [www.bgr.bund.de](http://www.bgr.bund.de)

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