



HOW IN YOUR WORLD

KBR's Transport Gasifier (TRIG™): Market Projection and Project Updates

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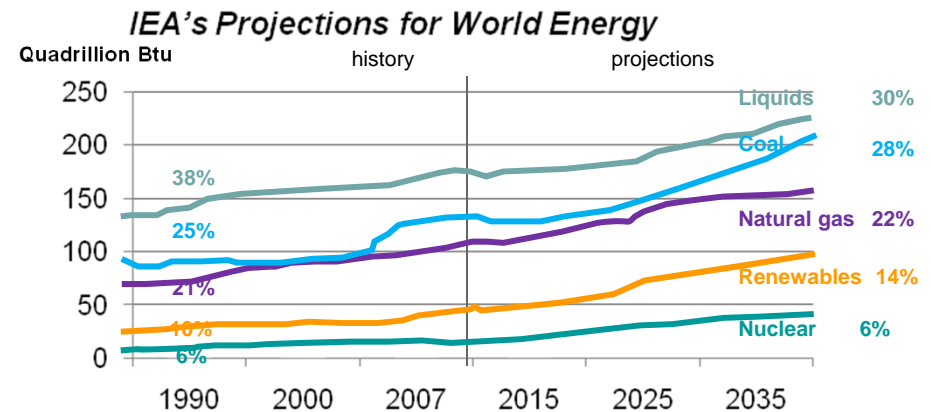
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Energy Market Projections



Coal will remain as one of the major energy sources worldwide in the next 20 years

Robust consumption and production growth worldwide for coal in 2010



2010 Consumption Growth Rate by Fuel

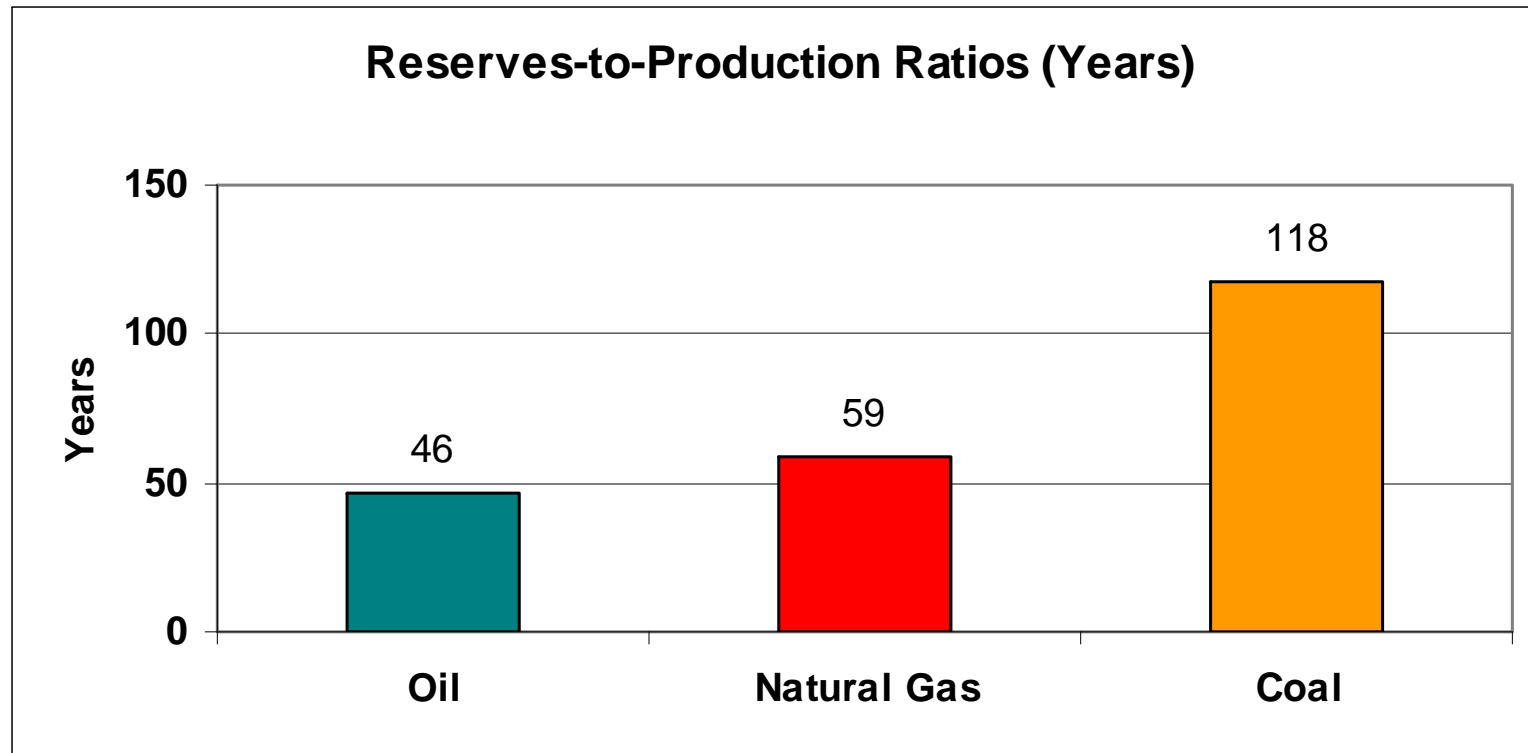
Coal	7.6%
Natural Gas	7.4%
Oil	3.1%
Hydroelectric	5.3%
Nuclear	2%

Source:
BP Statistical Review of World Energy 2011

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Global Fossil Fuel Reserves



Source:
BP Statistical Review of World Energy 2011

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Energy Sources

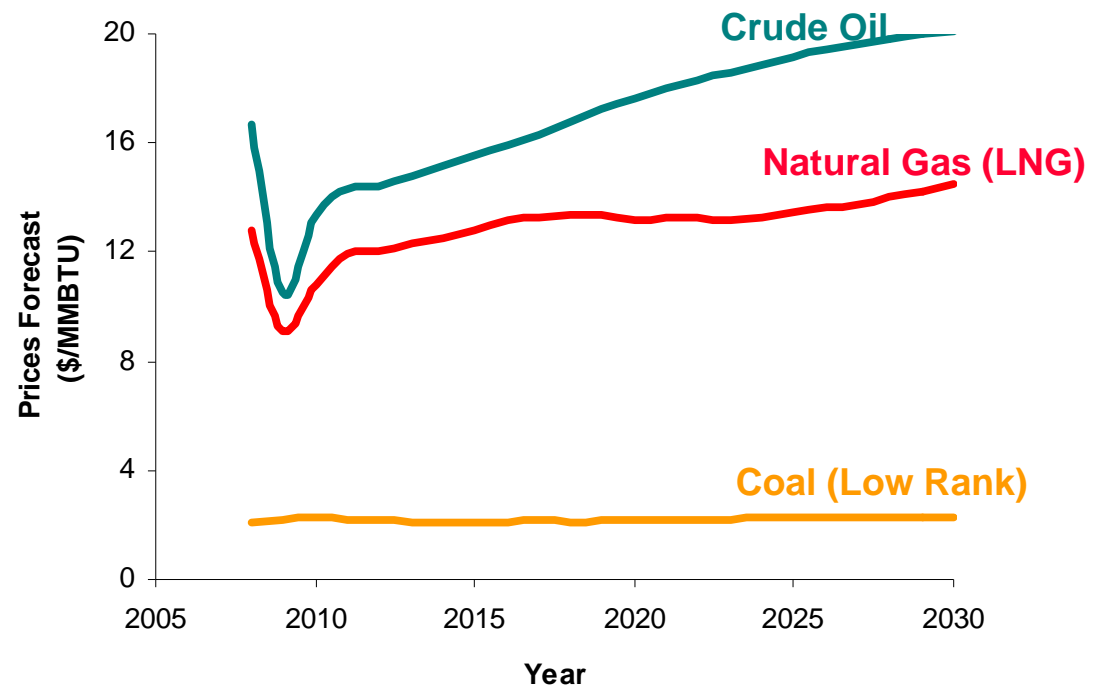


Coal

A low cost energy source

A stable and secure feedstock option

Fuel Prices History and Projection



Source: Annual Energy Outlook 2011, EIA
CERA

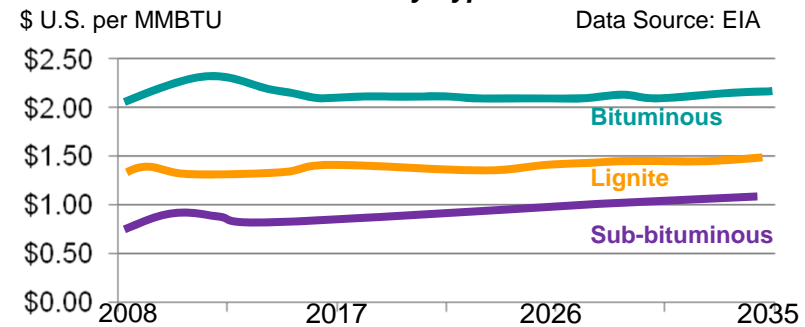
USA and World Coal Pricing



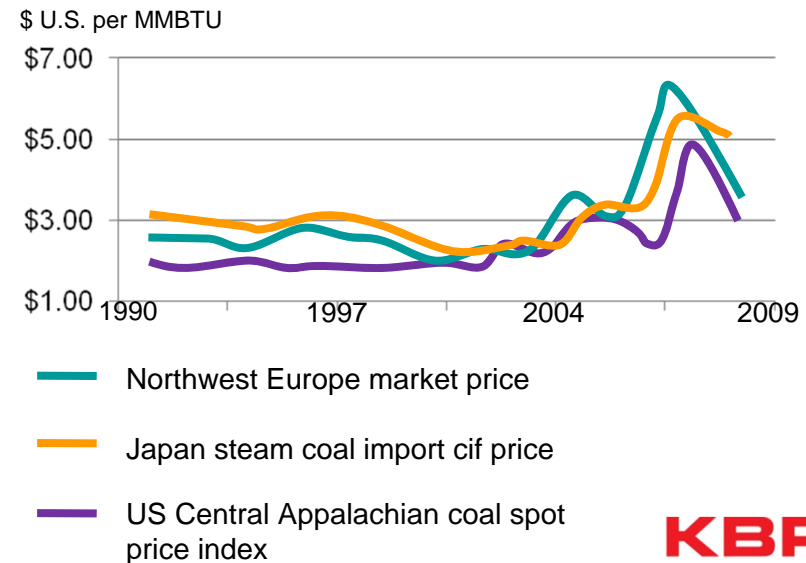
- Low rank coal prices are lower and provide a better cost per unit of energy than higher rank coals
- A parallel can be drawn between the utilization of low rank coal vs. high rank with the heavy crude oil and sweet crude oil exploitation and production
- The feedstock differential with a manageable investment cost is the key business opportunity to utilize low rank coal

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Coal Price by Type in US



World Prices for Various Bituminous Coals

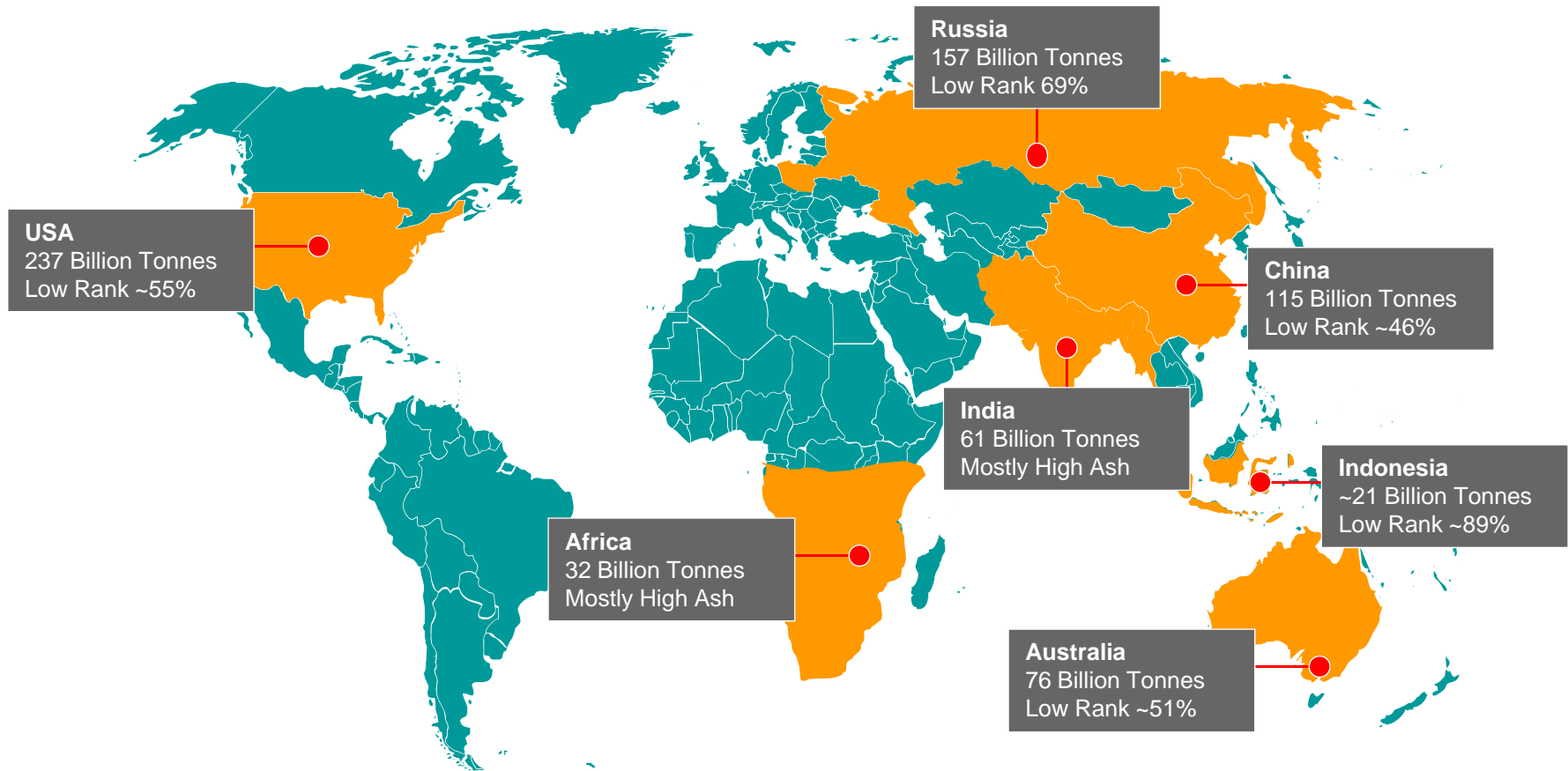


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Worldwide Coal Availability



Source:
BP Statistical Review of World Energy 2011,
Indonesia Geological Agency 2010

Total Proved Coal Reserves~ 900 Billion Tonnes
Low Rank + High Ash > 50%

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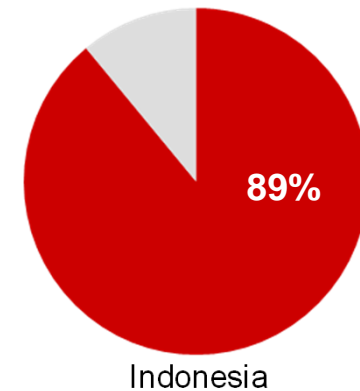
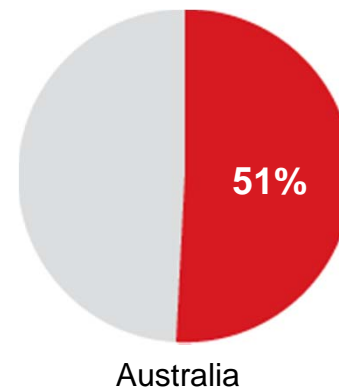
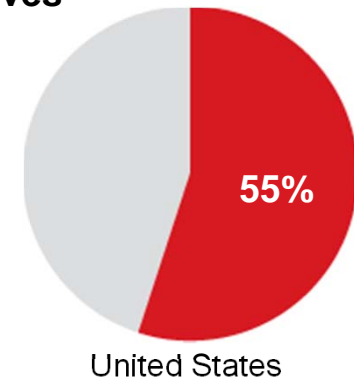
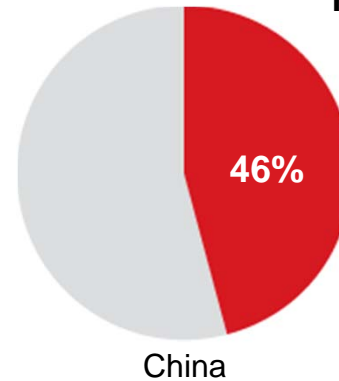
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Low Rank Coal's Market Position



- Most low rank coals are not tradable in the traditional coal markets due to impurities and other characteristics
- TRIG™ unlocks the value of low cost, low rank lignite, high ash and high moisture coal
- Huge potential in markets such as China, India, Australia, and Indonesia

Low Rank Coal as Percentage of Total Coal Reserves

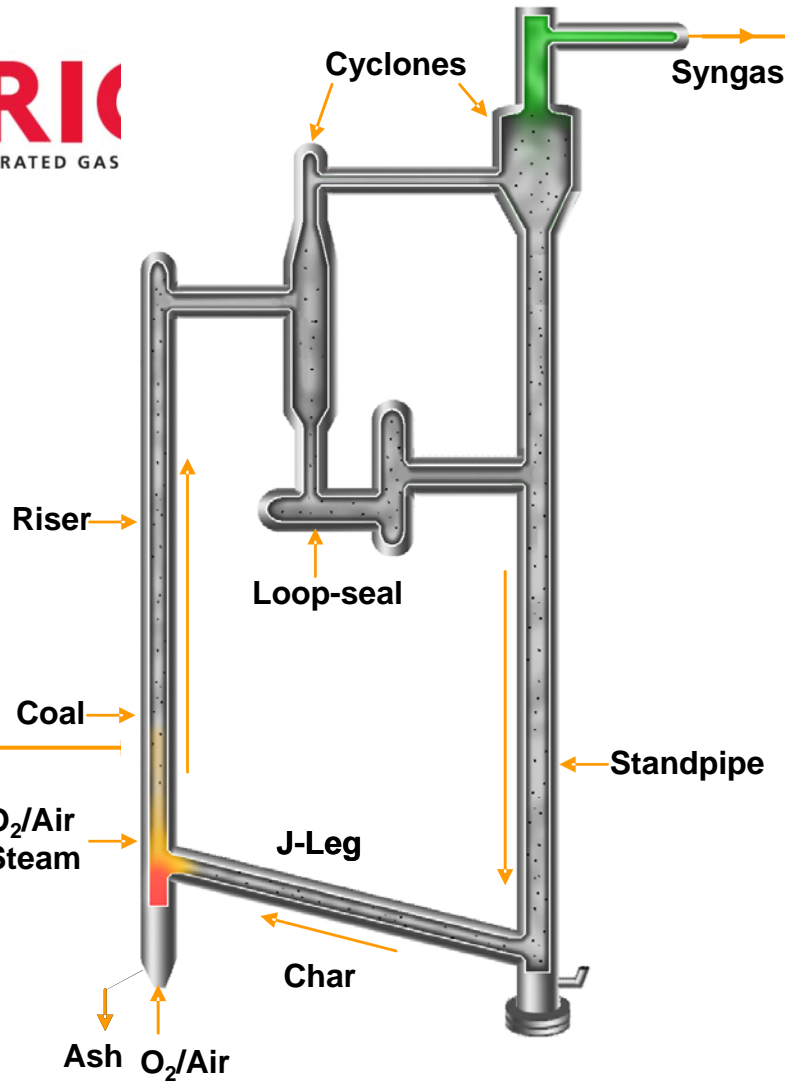


Source:
BP Statistical Review of World Energy 2011
Indonesia Geological Agency 2010

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TRIG™ and the Value Chain



Coal

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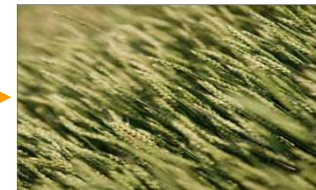
Syngas for DRI / Steel



SNG



CTL Liquid Fuels



Chemicals/ Fertilizers

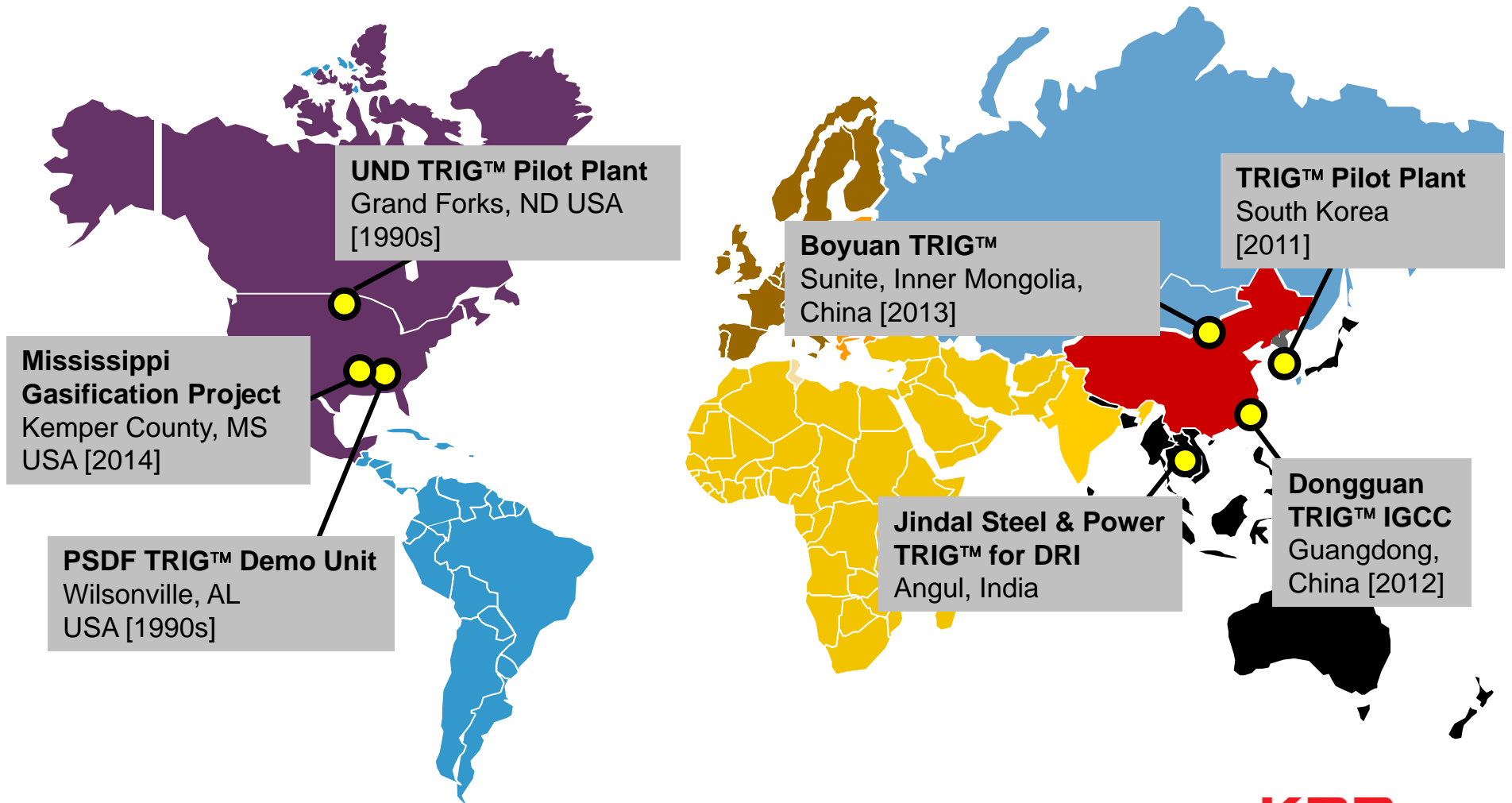


Syngas for Power

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TRIG™ Projects Worldwide



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Project Updates



SK Innovation TRIG™ Pilot Plant

Commissioned Early 2011

Location	Daejeon, South Korea
Capacity	3 MTPD TRIG™ Gasifier
Use	<ul style="list-style-type: none">• Technology Development• Feedstock Evaluation Studies
Project Progress	Pilot Plant Commissioned Early 2011 Shakedown Runs Completed



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Project Updates



Beijing Guoneng Yinghui Clean Energy Engineering Co., Ltd. Dongguan IGCC Retrofit Project

2012 Start-up

Plant owned and operated by Dongguan Tian Ming Electric Power Co., Ltd (TMEP)

Location	Dongguan, China
Design Capacity	120 MW IGCC
KBR & Southern Work Scope	<ul style="list-style-type: none">• Basic Engineering• Proprietary Equipment• Start-up Services
Project Progress	<ul style="list-style-type: none">• Basic and Detailed Design Review Completed• 90% Equipment purchased• Lead equipment in fabrication• Site construction in progress



Project Updates

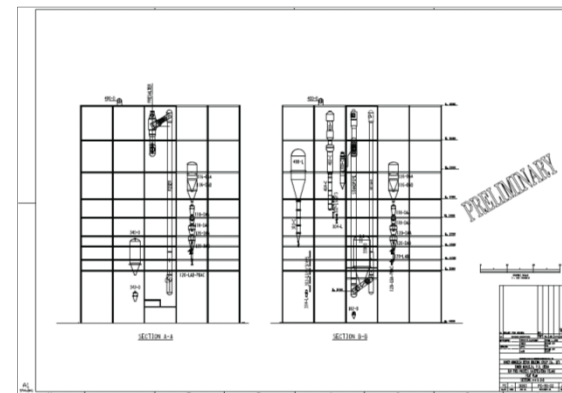


Berun Holding Group 100 KTA Glycol Project

Fall 2013 Start-up

First oxygen-blown TRIG™ gasifier

Location	Inner Mongolia, China
Design Feedstock	High ash lignite feedstock from adjacent mine
Design Capacity	35,000 Nm ³ /hr Syngas
Product Use	Feedstock to 100 KTA Grassroots Ethylene Glycol Plant
KBR Work Scope	<ul style="list-style-type: none">• Basic Engineering• Proprietary Equipment• Start-up Services
Project Progress	Basic Engineering and Detailed Engineering of TRIG™ Gasifier issued



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Project Updates



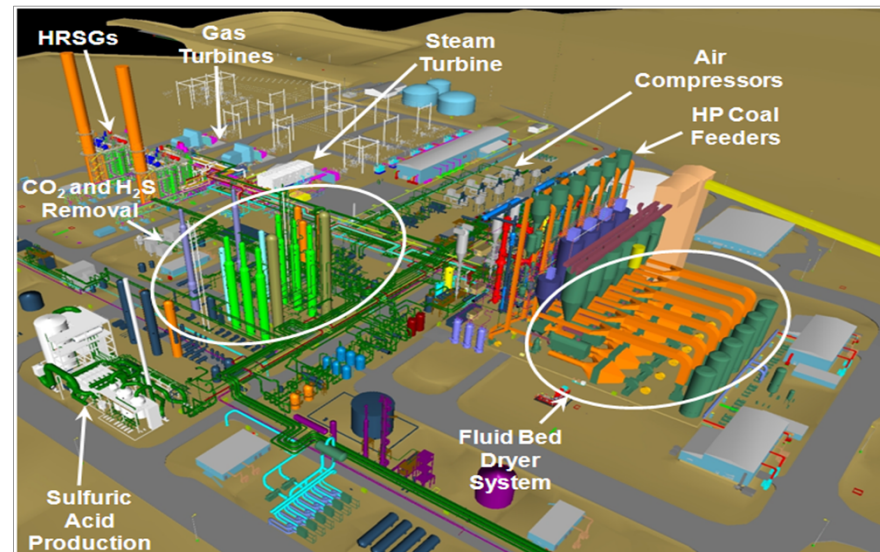
Kemper Project
IIGICIC

Kemper County IGCC Project

2014 Start-up

Plant owned and operated by Mississippi Power Company (MPC) and the Southeast Mississippi Electric Power Authority (SMEPA)

Location	Kemper County, Mississippi
Design Feedstock	Lignite feedstock from adjacent mine
Design Capacity	582 MW IGCC
Design Highlight	65% Carbon Capture
Project Progress	Construction in progress



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Project Updates — New Award



Location	Angul, India
Design Feedstock	Angul High Ash Coal (~40% Ash Content)
Design Capacity	360,000 Nm ³ /hr Syngas (3 x 120,000 Nm ³ /hr syngas gasifier)
Product Use	Reducing Gas for Direct Reduction of Iron (DRI)
KBR Work Scope	<ul style="list-style-type: none">•Licensing•Basic Engineering•Technical Services•Proprietary Equipment

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New Gasifier Contract by Jindal Steel & Power Ltd. for Direct Reduction of Iron Project



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KBR TRIG™ an Efficient & Reliable Choice



Delivery of the Total Plant

Technology	Studies	Engineering	Procurement	Construction	Start-Up	Operate	Revamp
Own or Licensed	Scoping Conceptual Feasibility	Basic Detailed FEED			Commission	Maintain	Debottleneck Turnaround

KBR provides the Full Spectrum of Services

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