

Synthesis Energy Systems

Gasification – Positioning for Growth

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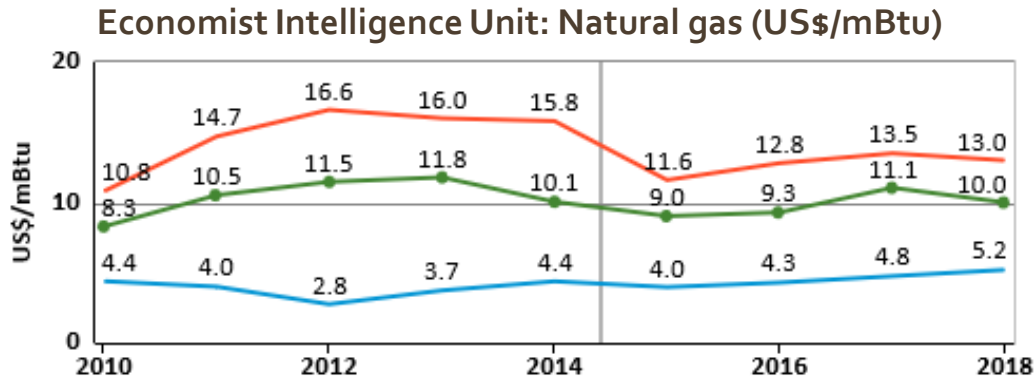
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Forward-looking Statements

This presentation includes "forward-looking statements" within the meaning of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended. All statements other than statements of historical fact are forward-looking statements. Forward-looking statements are subject to certain risks, trends and uncertainties that could cause actual results to differ materially from those projected. Among those risks, trends and uncertainties are the ability of our ZZ joint venture to effectively operate XE's methanol plant and produce methanol; our ability to successfully expand the ZZ joint venture through our partnership with Saikong; the ability of our project with Yima to produce earnings and pay dividends; our ability to develop and expand business of the Tianwo-SES joint venture in the joint venture territory; our ability to successfully partner our technology business; our ability to develop our power business unit and marketing arrangement with GE and our other business verticals, including DRI steel, through our marketing arrangement with Midrex Technologies, and renewables; our ability to successfully develop the SES licensing business; events or circumstances which result in an impairment of assets, including, but not limited to, at our ZZ Joint Venture; our ability to reduce operating costs; our ability to make distributions and repatriate earnings from our Chinese operations; our limited history, and viability of our technology; commodity prices, including in particular methanol, and the availability and terms of financing; our ability to obtain the necessary approvals and permits for future projects; our ability to raise additional capital, if any, and our ability to estimate the sufficiency of existing capital resources; the sufficiency of internal controls and procedures; and our results of operations in countries outside of the U.S., where we are continuing to pursue and develop projects. Although SES believes that in making such forward-looking statements our expectations are based upon reasonable assumptions, such statements may be influenced by factors that could cause actual outcomes and results to be materially different from those projected by us. SES cannot assure you that the assumptions upon which these statements are based will prove to have been correct.

Global NG and LNG Forecasts and Trends



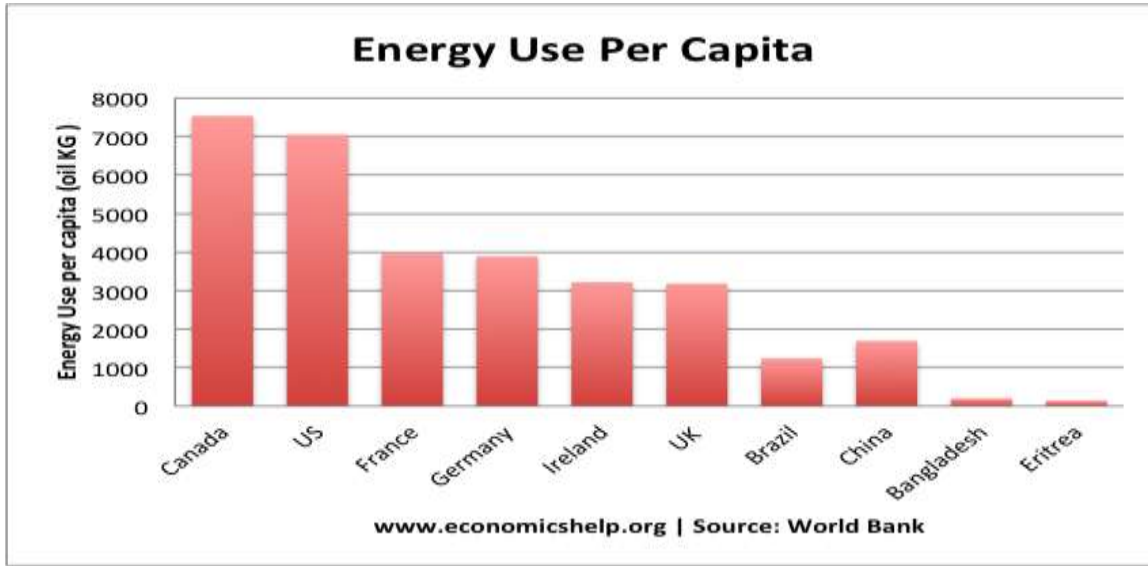
Source: [EIU Economic and Commodity Forecast, February 2015](#)

—●— Natural gas (US\$/mBtu, Europe)
 —●— Natural gas (US\$/mBtu, US)
 —●— Liquefied natural gas (US\$/mBtu, Japan)

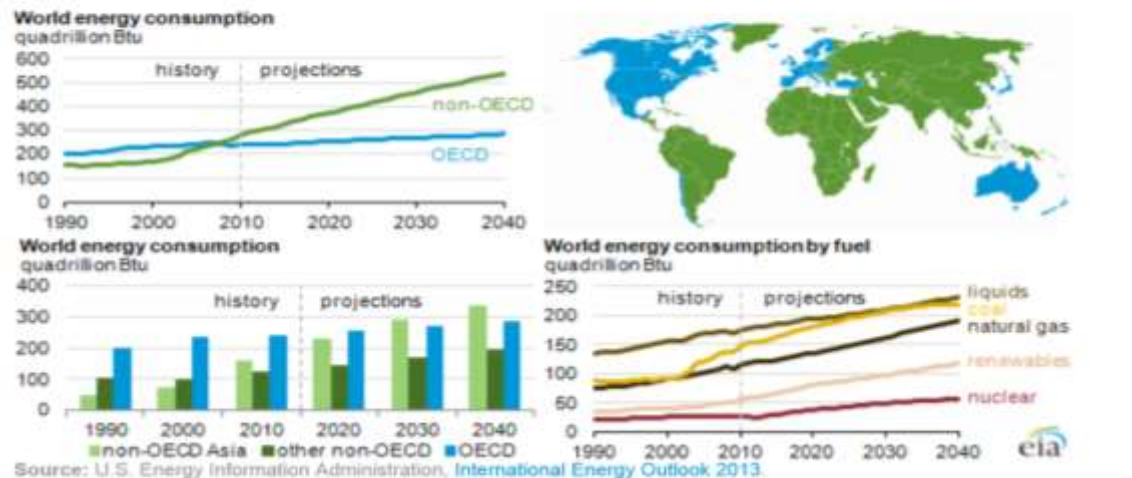


- Long term LNG price and NG price outlook in Asia support coal gasification project development
- Natural gas is still subject to high volatility. A major upset to production of natural gas in the US can drive prices up across the globe.
- Liquefaction and transportation across the regions will further increase the NG price. NG price for industrial user's in China seen recently from \$10-\$15/MMBTU
- Natural Gas prices in areas of highest growth are expected to remain high.

Population and Energy per Capita Growth

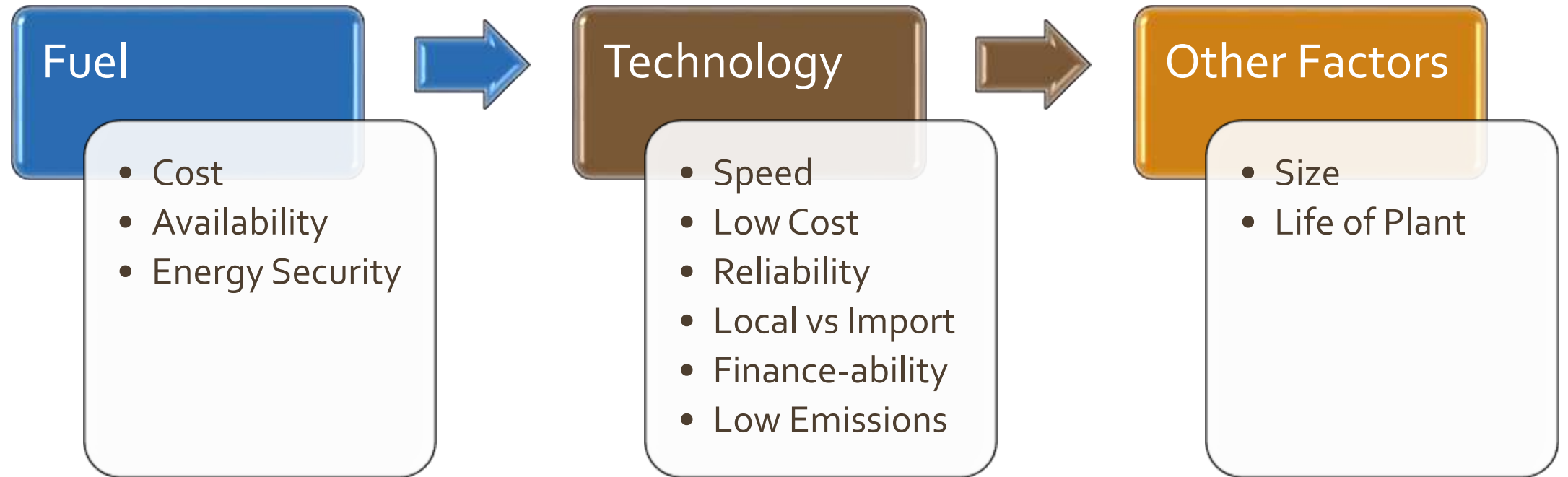


EIA projects world energy consumption will increase 56% by 2040



- Energy per capita is lowest in the highest growth areas.
- China energy per capita is roughly at the World average but far below the EU and the US with significant additional growth anticipated
- India/Vietnam/Indonesia energy per capita is less than half that of China and new energy will come from coal primarily
- Natural Gas and LNG prices expected to continue to be high in these areas for the foreseeable future
- Gasification can play a big role in these parts of the world. Clean energy from Gasification can be produced at a lower cost than natural gas.

New Power Generation Decision Process



Key Decision Factors for Power Plant Additions in Developing Countries

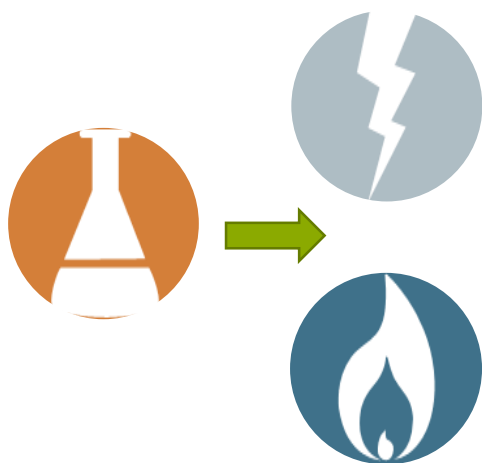
- Number 1 Criteria – low cost, reliable power
- Emissions are important if the cost is reasonable
- Carbon emissions are not a major factor

Gasification Derived Power Can Compete

- Must utilize low rank coals
- Minimize heat integration & optimization
- Meet World Bank Emissions Standards
- Carbon Capture Ready has value – Gasification is the lowest cost carbon capture retrofit for the future

The Future of Gasification

Products



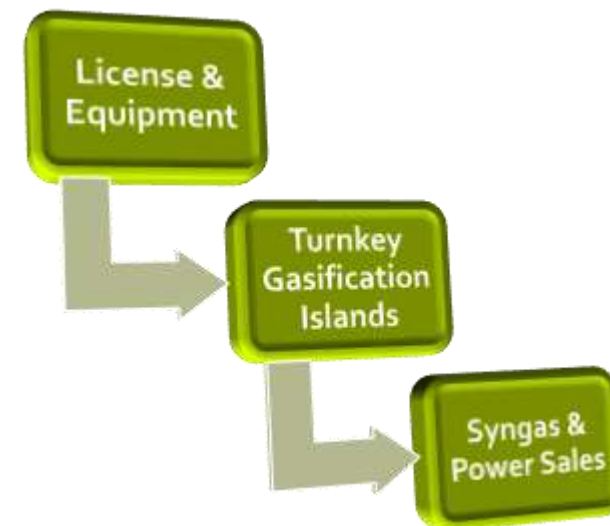
Transition from Chemicals to Clean Energy

Geography



China Continues to be big.
New markets emerging in Asia, Africa,
and South America

Technology Provider Scope



New Markets required additional
technology provider involvement

SES Areas of Focus



POWER: Flexible, reliable, and efficient on-site mini-IGCC **distributed power capacity additions** are projected to outpace electricity demand by 40% in developing regions whose GDP is impacted by electric grid instability⁽¹⁾



INDUSTRIAL SYNGAS: **Clean and inexpensive replacement for natural gas** fired use in industrial settings. Large demand growing in areas with high natural gas pricing



SUBSTITUTE NATURAL GAS (SNG): Coal-fueled SNG is projected to be a **large and fast-growing energy source** in China (est. 50B NCM by 2020).⁽²⁾



DRI STEEL: Clean and efficient **next-generation Direct Reduced Iron (DRI)** steel replaces outdated blast furnaces. Addresses high need for steel plants in developing markets, where LNG is cost-prohibitive



BIOMASS/MSW: The use of Biomass, MSW and other wastes as for methanol and transportation fuels. Emerging market in US, South America and potentially in EU. Potential CO₂ mitigation.



CHEMICALS & FERTILIZER: Large Scale projects, Economic alternative to current natural gas. Target for Licensing & Equipment Supply only, volume of projects will be low.

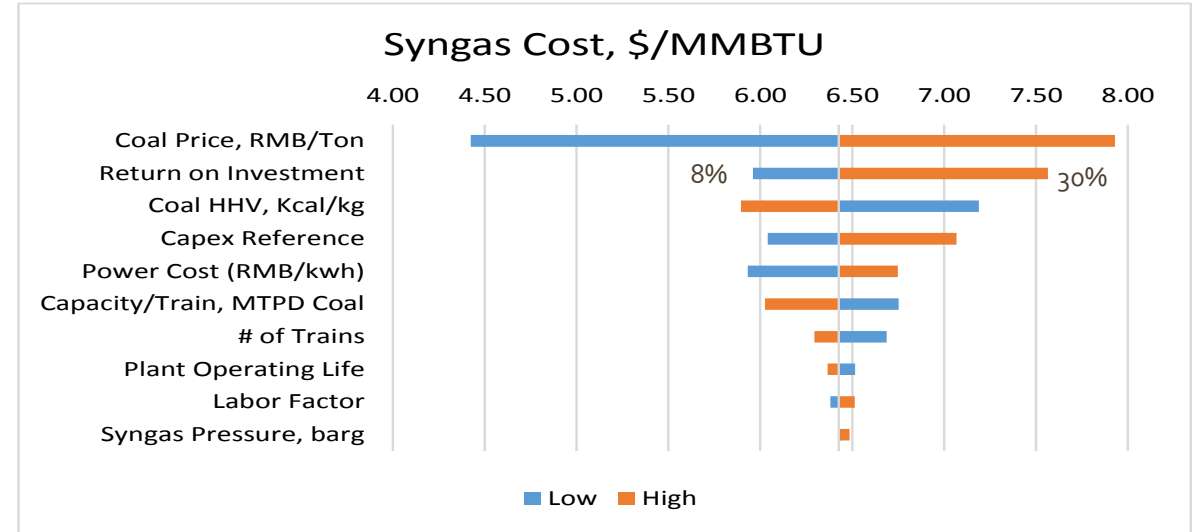
Industrial Syngas Economics

Preliminary Simplified Economics

Inputs:			
Coal Price	\$2.4/MMBTU	300 RMB/Ton	
Coal HHV	4500 kcal/kg		
Plant Size	2 Trains	1500TPD / Train	
Power Cost	\$0.1/kWh	0.63 RMB/kWh	
Plant Capex	\$130MM	840MM RMB	
Syngas Pressure	10 Bar		
Project IRR	15%		
Plant Life	20 Years		

Outputs:			
Syngas Production	1,985 MMBTU/hr	450,000 kkal/hr	
Operating Cost of Syngas	\$5.14/MMBTU	0.14 RMB/kkal	
Cost of Capital	\$1.28/MMBTU	0.04 RMB/kkal	
Total Cost of Syngas	\$6.78/MMBTU	0.18 RMB/kkal	

Preliminary Sensitivity Analysis



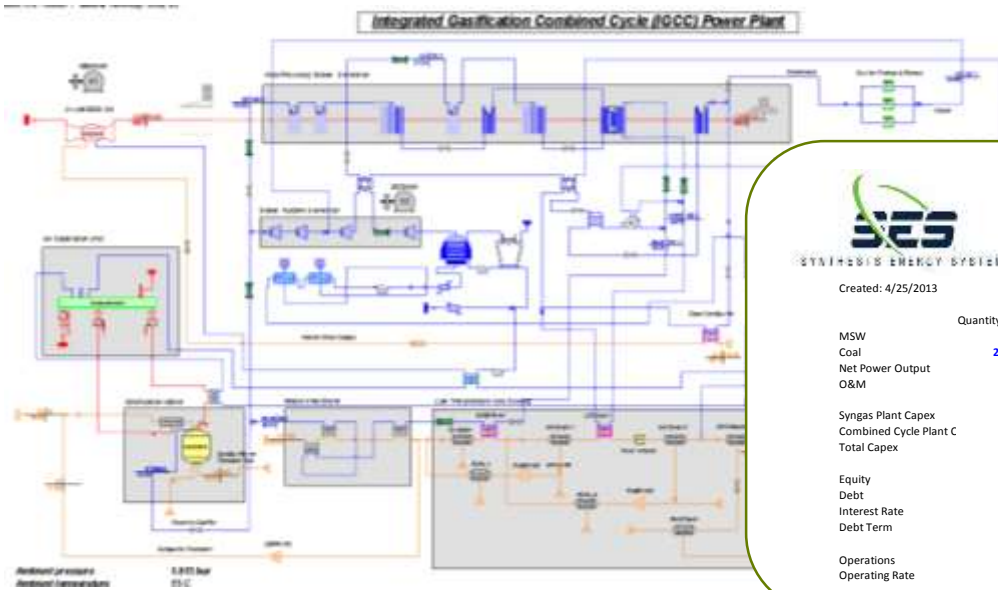
- Large opportunity in areas where natural gas is > \$8/MMBTU
- Gasification technologies that can utilize the lowest cost coal will be best positioned to win projects
- SES participating as a technology licensor but believes that plant investment and syngas sales is a tremendous growth opportunity
- Three Aluminum Industry applications utilizing SES Technology underway in China. First plant – started up June 2015 – expected to save the owner >\$50,000/day in energy costs.

iGAS Project Economics – China Example

	160MW	80MW
Coal Price (\$/MMBTU)	\$1.50	\$1.50
Output	160	80
Capex (\$/kw) ¹	\$1,980	\$2,150
COE (\$/kWh, RMB/kWh) ²	0.054, 0.33	0.057, 0.35

1) Based on internal SES Cost Estimating Methods, 2) 12% return on capital investment

SES Expects Power Pricing in China for IGCC Projects to be in the range of 0.6 to 0.75 RMB/kWh



Budgetary Project Return & Cost of Electricity - SES+GE Distributed Power Solution
 2 SES Gasifier x 4-LM-2500+G4 in Combined Cycle
 Chinese construction costs
 No escalation included
 O&M estimated as % of capital installed (annual)
 Capital has some owner's cost included (land, project contingency) but not insurance, financing fees, etc

	Quantity	Price	
MSW	0 mt/d		\$0 /mt Tipping fee for delivered to site and sorted into RDF.
Coal	2,052 mt/d		\$34 /mt Based on 45%wt ash coal
Net Power Output	160 MWh		\$98.36 /MWh Net of Syngas and Power Plant Aux Loads
O&M	2.0%		Estimate based on historical data from coal gasification plants.
Syngas Plant Capex			\$173 MM Based on SES' Yima Plant (Chinese basis)
Combined Cycle Plant C			\$144 MM Based on \$900/kWh installed cost
Total Capex			\$317 MM Syngas Plant plus Combined Cycle Plant
Equity		20%	
Debt		80%	
Interest Rate		8.0%	
Debt Term		15 years	
Operations		30 years	
Operating Rate		90%	Average for conventional IGCC availability with no spare gasifier

Cost of Electricity		
Expenses		
MSW Expense	\$	-
Coal Expense	\$	0.02
O&M Expense	\$	0.00
Return on Capital	12%	\$ 0.03
COE	\$	0.053622

Project Returns		
Project Level IRR	17.338194%	pre-tax
Unlevered ROE	27%	pre-tax
Levered ROE	68%	pre-tax

Summary

- Market forces in high growth regions are more aligned than ever before with the capabilities of gasification technology.
- Gasification Technology providers have a great opportunity in large, high growth mega markets of energy.
- Gasification “IS” a clean energy technology. Coal “WILL” be utilized heavily to fuel much of the global growth.
- Gasification is the best alternative for coal in a CO₂ constrained world.
- Project Decisions will be driven by a) speed b) low CAPEX cost c) economics d) environmental performance related to pollutants and water usage.....
- SES has aligned its focused to target growth regions and markets, lowering CAPEX and OPEX to drive compelling economics, as well as working toward securing project equity financing and expanding our project implementation capability.



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GROWTH WITH BLUE SKIES

