

GE
Energy

GE Energy Overview

CCA US-Africa Infrastructure conference

September 28, 2006



Mark Digby
Region Executive - Africa



GE imagination at work

African Market Overview

Regional landscape

Demographics

- Population growth rate around 3% (RSA at -0.3%). 850 million
- 54 countries (in 2010, GDP: \$1.5 Trillion, >1 billion people)
- Diverse customer base: 50+ languages
- >90% population without access to electricity

GDP trends

- Nigeria & RSA account >50% Sub-Saharan Africa's GDP
- GDP growth rate above 4.5% (driven by rise in oil and commodity prices)
- O&G monetization; FDI in Nigeria, Angola
- Small scale economies with dependence on agriculture and mining.



Regional landscape

Natural Resources

- 11% of proven world oil reserves - Estimated to reach 20% before end 2010
- Abundant gas reserves
- 70% of proven world gold & diamond reserves

Financial climate

- High oil prices and gas export
- Buoyant commodity prices
- Debt reduction/cancellation programs, international donors
- Socio-political instability in some countries



Regional market drivers

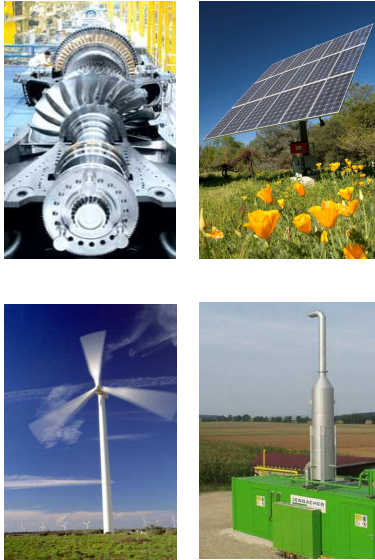
- Increased focus by Western countries on African debt issues
- Accelerated exploration of Oil & Gas resources driving economic growth in West and South Africa
- Large O&G investible funds fuelling growth investment and in infrastructure development - >\$60 billion in Africa by 2010.
- Previous SADC power surplus now a deficit. Will add 1.2GW per year for next 10 years
- Zero gas Flaring policy in Nigeria driving GTL, LNG and downstream investment
- Gas monetization in Egypt – LNG, pipelines, fertilizers
- Large scale integration in mining, metals and power - South Africa, Mozambique, Namibia.



GE Technology for Africa

Energy technology objectives

Diverse



Nuclear
Coal
Gas
Wind
Oil
Geothermal
Biomass
Hydro
Solar

+

Efficient



Affordable, Reliable & Environmentally Responsible



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Investing Across a Wide Range of Technologies

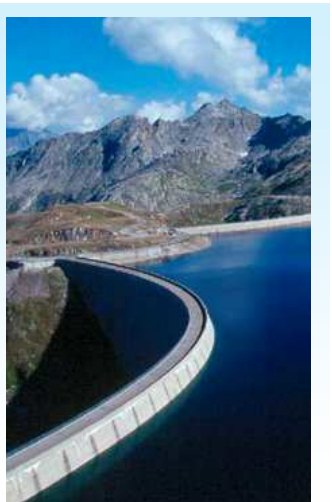
Gas



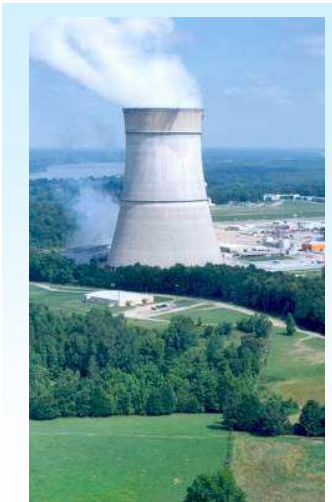
Cleaner Coal



Hydro



Nuclear



Wind



ork

Solar



Biomass

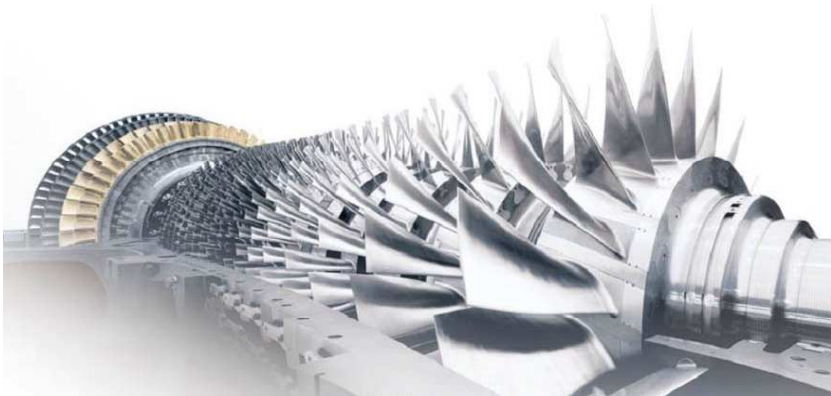


Fuel Cells



Gas turbine technology ... combined cycle

H system™ ... world's most advanced gas turbine



Execution

Baglan Bay, UK

- Only OEM demonstrating rotational steam cooling
- 480 MW, 13ppm NOx
- 14,000+ fired hours, 6.2MM+ MWhrs

TEPCO, Tokyo Japan

- 3 x 109H – 1,520 MW ... shipping '06-'08

Inland Empire, CA

- 2 unit 7H launch ... commercial '08

The future

- Platform for performance growth
- Advancing technology excellence



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Gas turbine technology ... air cooled

7FB/9FB ... lowering cost of electricity



Performance

- 2.5% heat rate improvement
- 7% increase in combined cycle output

Reliability and durability

- Latest evolution of proven FA technology turbine design
- Utilize aircraft engine and 9H experience

Operation and experience

- 7FB:
 - Launch unit commercial operation date October '03
 - 8 units in operation, 3 more on order
- 9FB:
 - Launch unit commercial operation date March '06
 - 2 units in operation, 11 more on order

Gas turbine technology ... simple cycle

LMS100® ... increasing operating flexibility

- Gas turbine core from Aviation ... CF6 / GE90 technologies
- Booster and Power Turbine from Energy
- Highest simple cycle efficiency ... 46%
- 10 minute start to 100 MW

Today

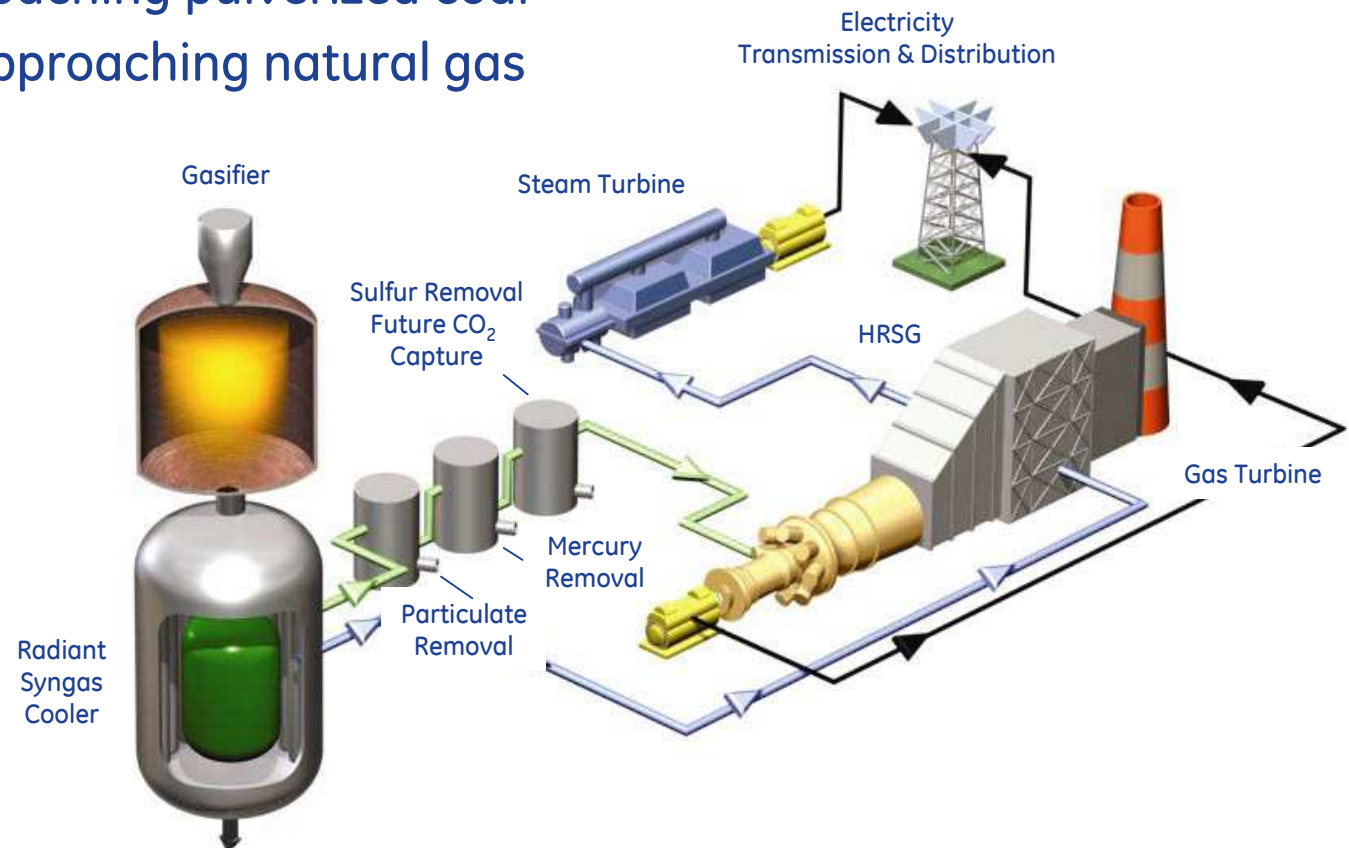
- Load test complete ... >104 MW to date
- 6 units on order + 14 commitments through '08 received year to date
- First commercial unit operating successfully ... Basin Electric



Cleaner coal

IGCC (Integrated Gasification Combined Cycle)

- Converts coal to synthetic gas ... cleaned prior to burning
- Produces useful by-products
- Driving down cost and emissions
 - CAPEX approaching pulverized coal
 - Emissions approaching natural gas



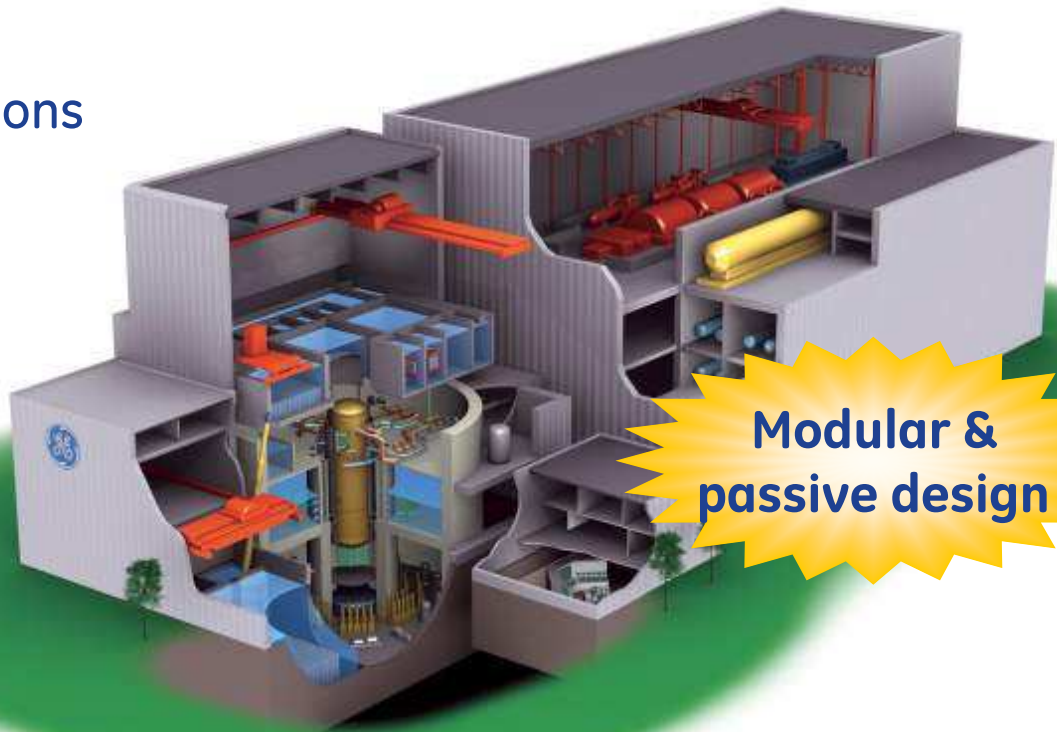
Nuclear

Advanced new nuclear ... ESBWR

- Simplified design, increased output, smaller footprint ... will reduce CAPEX and OPEX, and shorten construction schedule
- Part of the US Department of Energy 2010 Program, design certification submitted to NRC, selected by NuStart, Entergy & Dominion
- On plan for 2007 Combined Operation License applications

**Improved safety
& security**

**Modular &
passive design**



GE imagination at work

Wind

Complete range of products



1.5 MW platform

- Among the most proven and utilized technology
- Over 4,100 units worldwide
- 97%+ availability



Multi-megawatt

- Full power conversion
- Simplified servicing
- Larger farms with easier grid integration

Future: 3 MW

- Permanent magnet generator
- Advanced controls



3.6 MW offshore

- Arklow demonstration project ... 7 x 3.6s
- Largest commercial operation

Future: 5 - 7 MW

- Leading cost of energy
- Utilize GE technology strengths



GE imagination at work

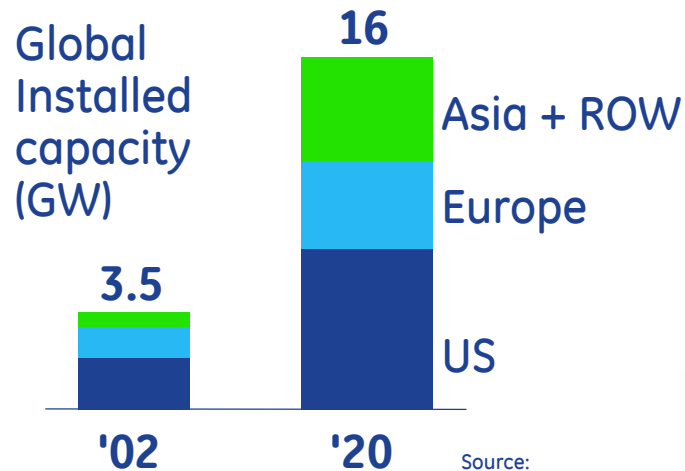
Biomass

Converting waste into energy

Efficiency, reliability & fuel flexibility

- 1.2 GW total GE installed base ... biomass
- 1,450 units delivered for use of biogas, landfill gas, and sewage gas
- 480+ engines shipping in 2006 ... up 54%
- Patented combustion technology ... CO₂ neutral

Bio power growth



Source:
Frost&Sullivan
http://ec.europa.eu/comm/energy_transport



Optimization & control solutions

Maximizes economic performance of key operating assets

Performance

- Optimization software for plants / assets
- Thermodynamic performance services

Control

- Plant-wide, turbine & generator control solutions

Cost of generation

- Software, coal blending, heat rate, load sharing, & dispatch

Asset management

- Asset condition monitoring
- Reliability implementation services

Radiation measurement

- Harsh environment and downhole drilling specialty sensors



Environmental services

Air pollution control technologies

- Particulate matter, mercury, NOx and SOx
- Baghouse, ESP and multipollutant sorbent
- Applications expertise in coal, gas and industrial

Meeting regulatory needs ... optimized system performance

- Fuel control & flexibility
- Combustion control
- Outage management
- Productivity improvements
- Emissions monitoring & testing



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