

COMMERCIAL ISSUES OF NATURAL GAS DOWNSTREAM SECTOR

{GHANA GAS FORUM, ACCRA, GHANA}

By
Integrated Gas & Energy Services, LLC
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OUTLINE

- **SPEAKER'S BACKGROUND**
- **WHAT IS DOWNSTREAM**
- **DOWNSTREAM CUSTOMER ISSUES**
- **SUPPLIER ISSUES**
- **REGULATORY OPPORTUNITIES**
- **QUESTIONS & COMMENTS**

SPEAKER'S BACKGROUND

SCHOOLS ATTENDED

- Lincoln University (HBCU), USA
- University of South Dakota, USA
- Cranfield University, UK
- Oxford University, UK

WORK EXPERIENCE

- Apple, Inc (Student Intern)
- IT Consultant - PriceWaterhouseCoopers
- Lecturer, University of Port Harcourt, Nigeria
- Shell Nigeria Upstream
- Shell Nigeria Downstream
- Nigeria's National Strategic Gas Aggregator (GACN)

PROFESSIONAL ACHIEVEMENTS

- Shell Nigeria Gas downstream (Agbara/Ota, Western Nigeria; Aba-
PH Eastern Nigeria)
- Shell Afam VI 640MW CCGT Power Plant
- Shell Okoloma 240MMscf/d Gas Plant
- Shell ANOH 300MMscf/d Gas Project
- Setup of Nigeria's National Strategic Aggregator Operations &
Commercial Processes

CURRENT STATUS

- FamilyMan - competing with Elon Musk
- Local Farmer
- Policy and Institutional Advisor



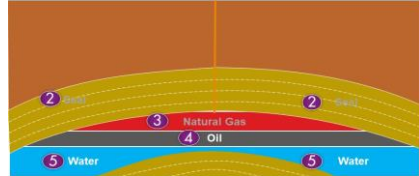
Emmanuel Ukachukwu Anyaeto

WHAT IS DOWNSTREAM



WHAT IS DOWNSTREAM

UPSTREAM



EXPLORATION & PRODUCTION

MIDSTREAM



GAS PROCESSING-LIQUIFACTION & DEWPOINTING



LNG Export



Domestic Transmission Pipeline

DOWNSTREAM

Residential



Industries



Power Generation



LNG/CNG/LPG

Fertilizer / Methanol



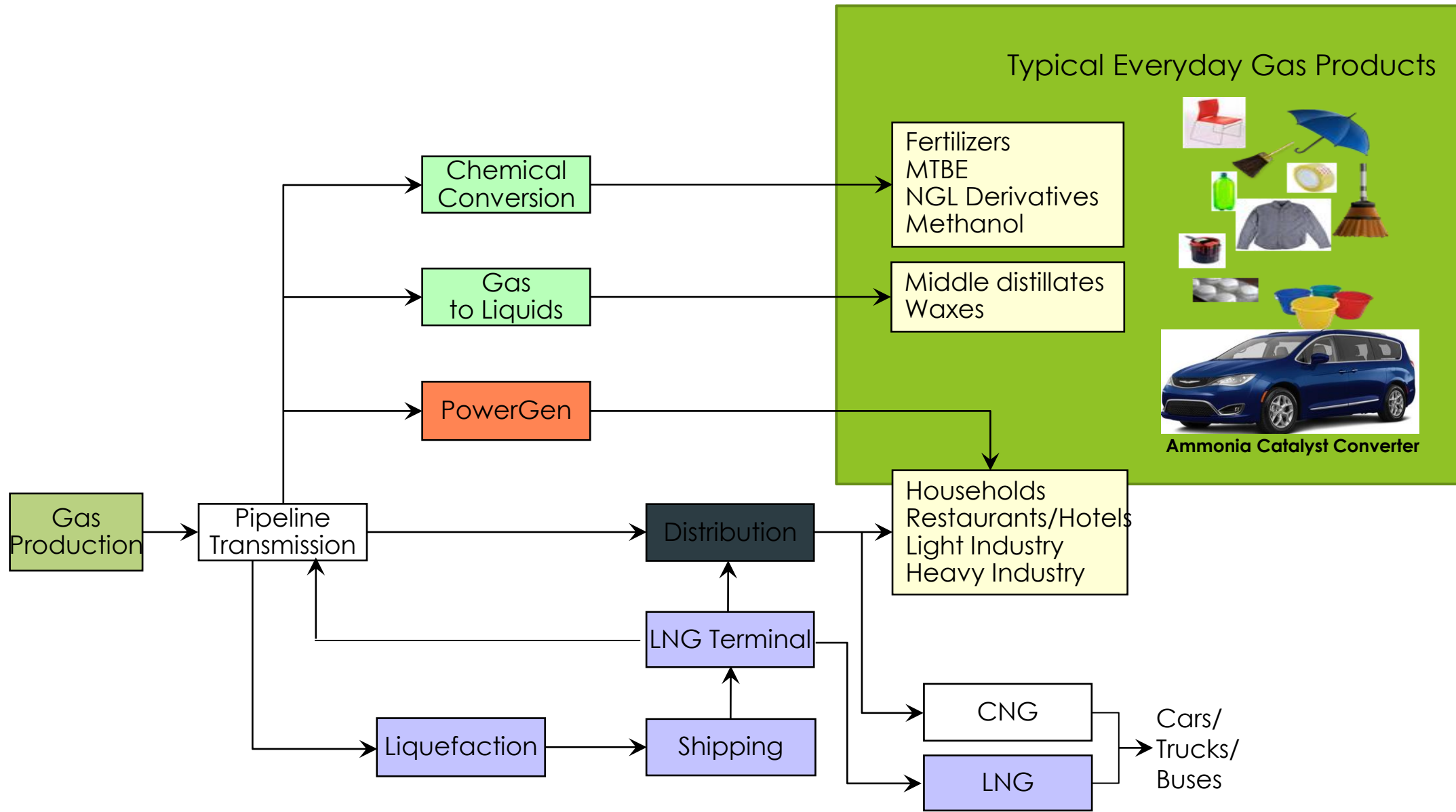
Fuel for Vehicles



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- * Industry Fundamentals - Govt
- Triggers & Catalysts - Industry Players
- Wealth & Poverty is driven by energy consumption per capita

DOWNSTREAM VALUE CHAIN



- ▶ Wood
- ▶ Hard coal / lignite

Heavy fuel oil

Light fuel oil

LPG

CNG

LNG

Propane

Imported across WA region

- ▶ The natural gas prices for consumers are equal to alternative fuel utilisation cost and are indexed to the relevant competing fuel prices to assure customers, that gas is always competitive and value is captured.

DOWNSTREAM CUSTOMER ISSUES



DOWNSTREAM GAS CUSTOMER INCENTIVES

MONEY TALKS



Upstream / Midstream Infrastructure



CRM



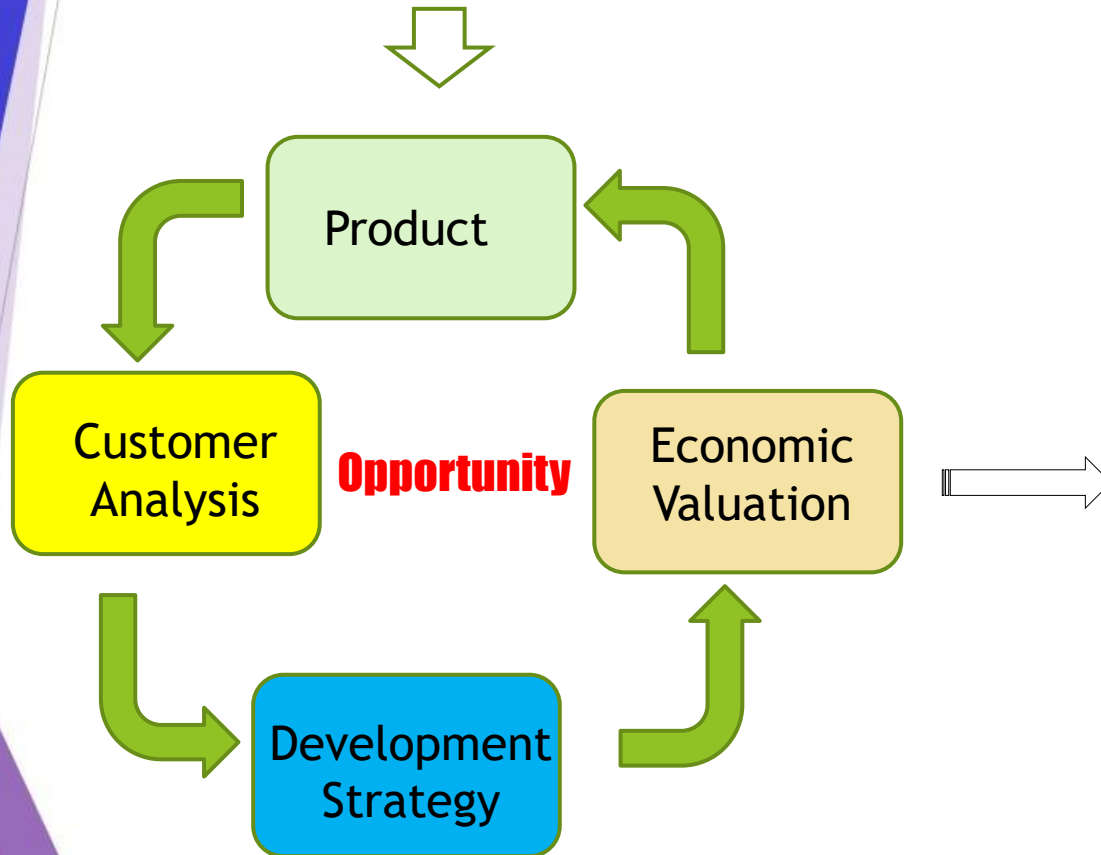
Technical Standards & Operations Safety

*SMEs are top employers
*SMES need affordable fuel and energy

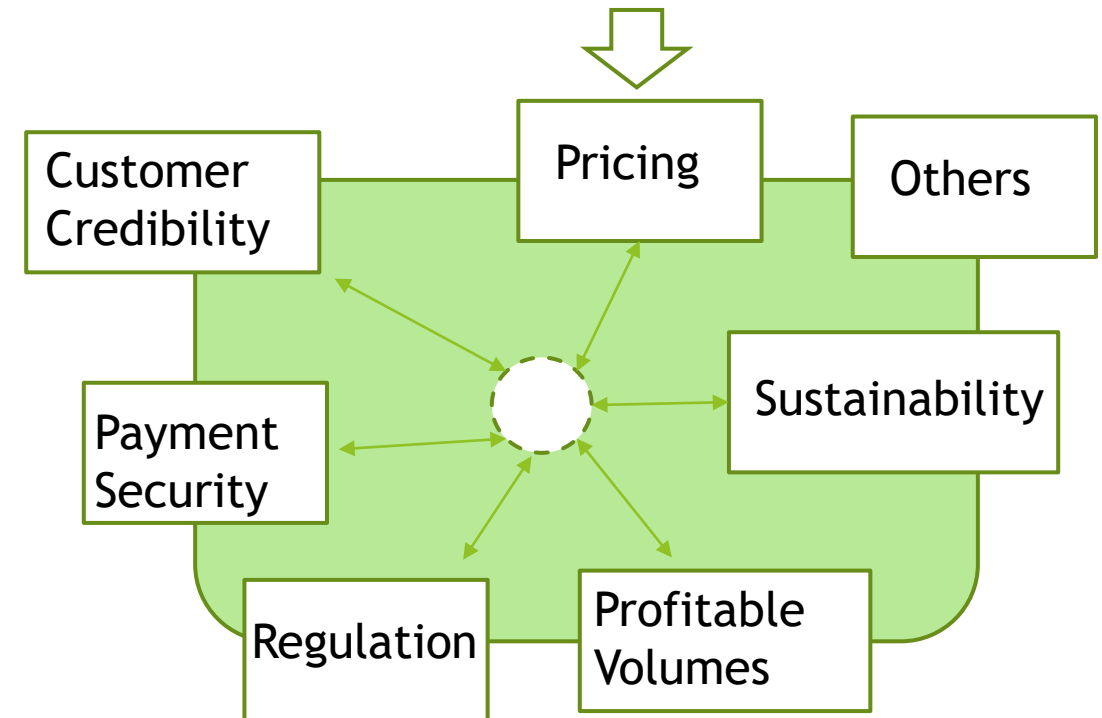
SUPPLIER ISSUES



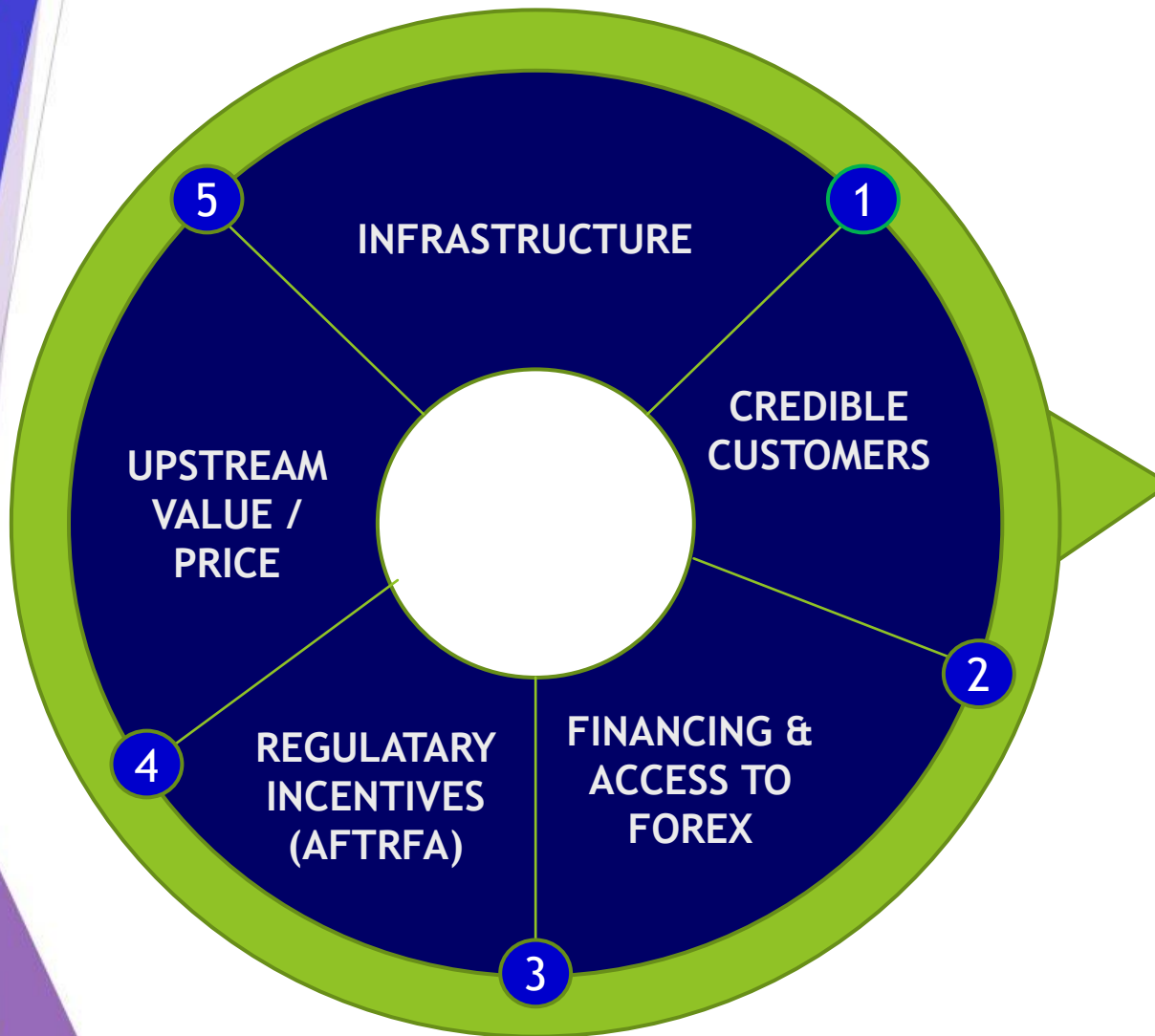
INTERNAL ASSESSMENT



MARKET VALUE CHAIN



SUPPLIER DRIVERS & MARKET SEGMENTATION



Industry



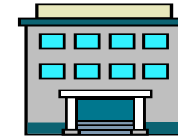
Premium Value Ceramics, paper, food processing, glass, textiles
Low Value Chemicals, steel, cement, etc.

Power



Combined / single cycle gas turbines. Boiler/ steam turbines

Commercial



Businesses, hospitals, hotels

Residential



Cooking, hot water, air conditioning and space heating

Transport



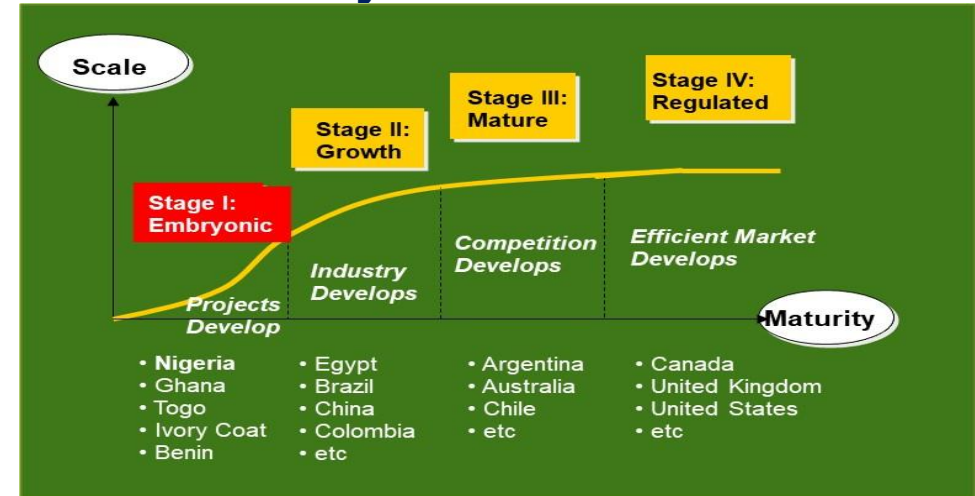
LNG, CNG, Etc

REGULATORY FRAMEWORK



- Regulations must be regionally competitive
- Regulators must be Attractive to Investors
- Create Debt-Free Commercial Value Chain
- Create standardized contracts terms
- Support Funding for both Customers and Suppliers business
- Energize Market Maturity
- Create opportunity for Capacity Building and Energy Industry Skill-pool (e.g. IC Engineers)

Market Maturity

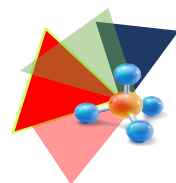


Capacity Development



THANKS, QUESTIONS.....

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