



Local Content in the Petroleum Sector: Implications for Maritime Clusters



IV Latin American and Caribbean
Meeting of Logistic Port Communities
Port of Spain, Aug. 2019

Anthony Paul
tony1paul@gmail.com

Outline

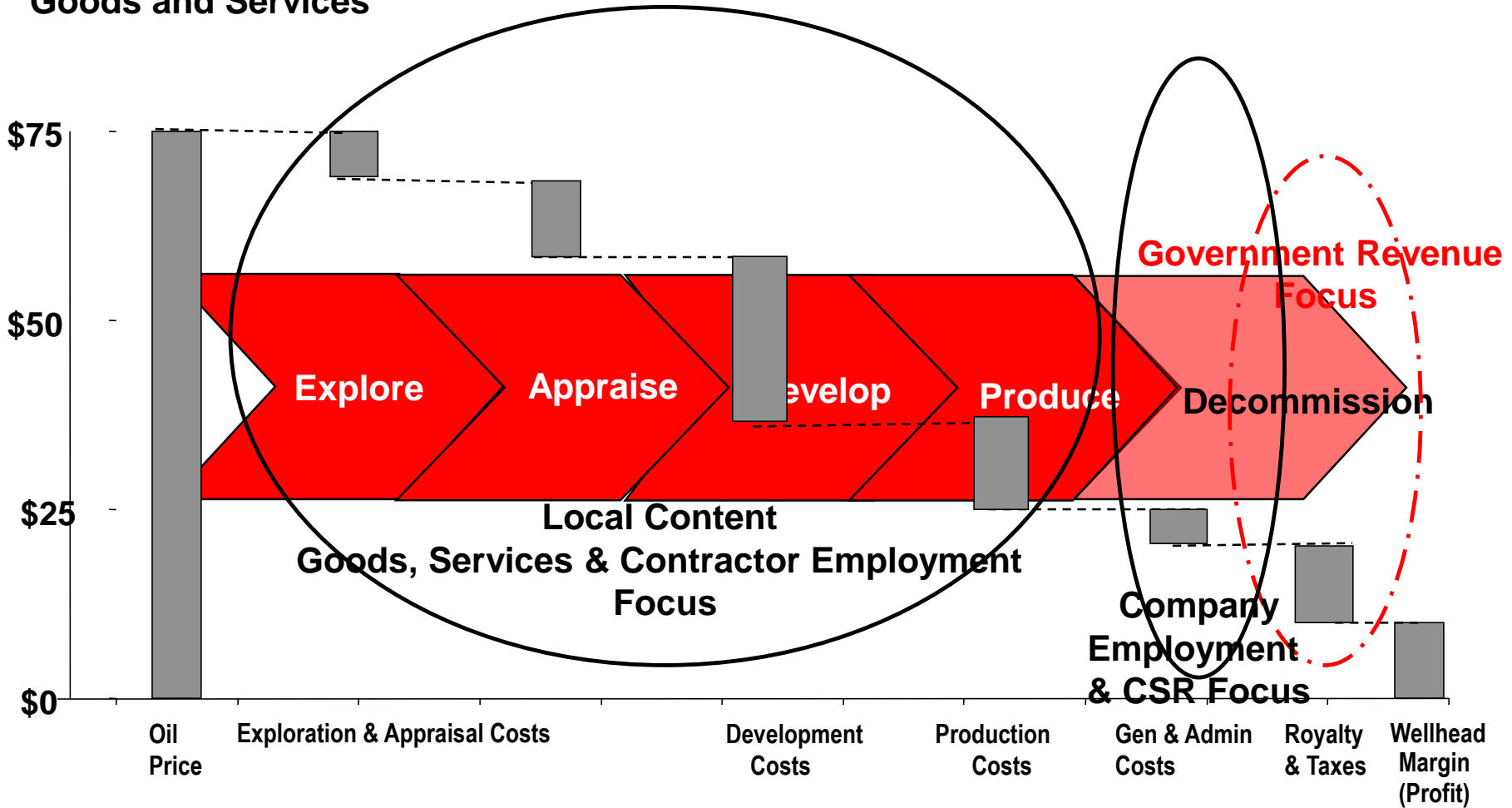
- Oil & Gas
 - Quick Intro
 - Local Content

- The Petroleum-Maritime Relationship
 - Sources of Value
 - T&T's Approach

Exploration & Production

- Where is the value?

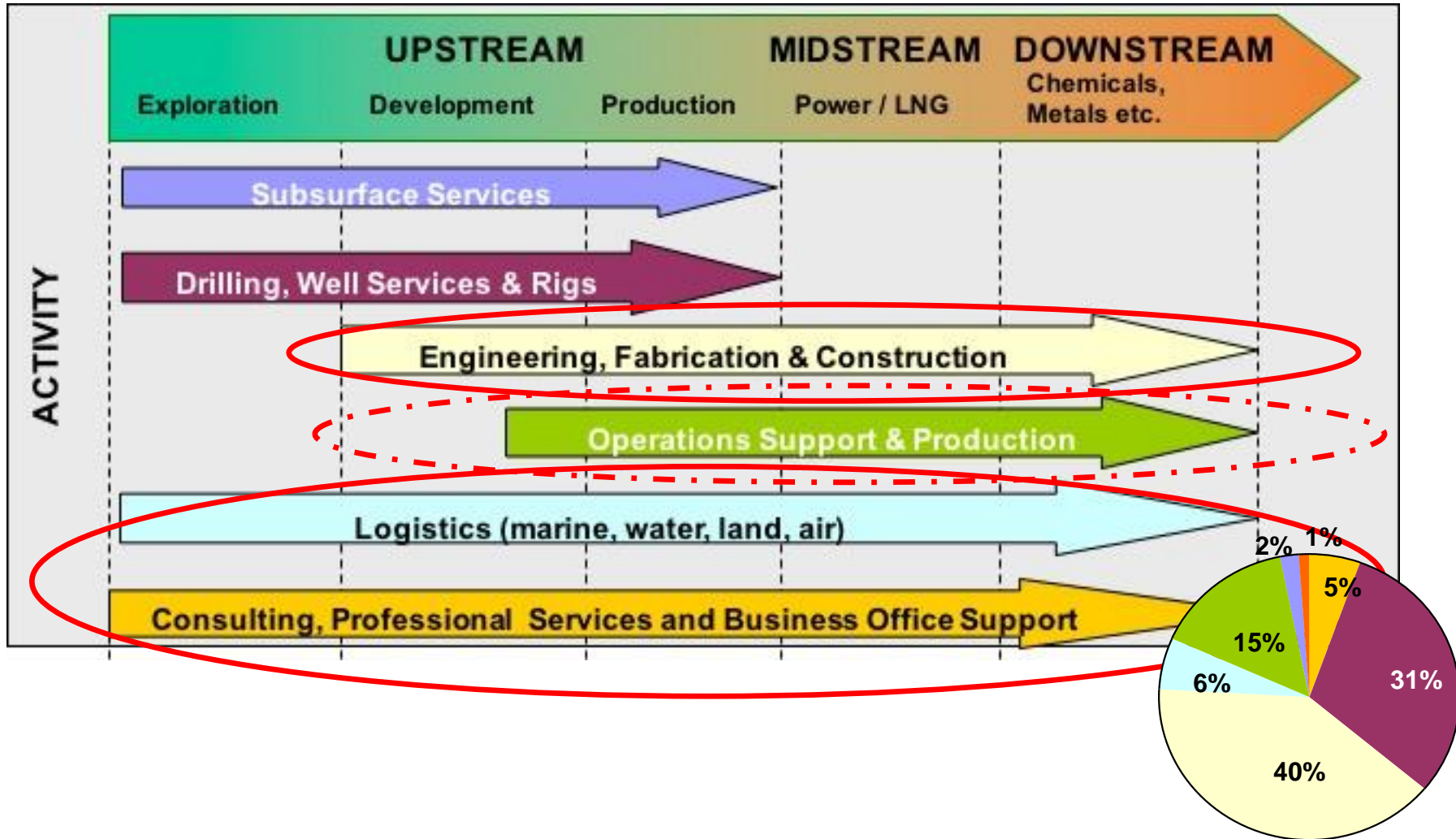
There is much more value potentially available to a country, other than taxes, especially in the cost side of the equation. **Up to 80% of Upstream spend is on 3rd Party Goods and Services**



Illustrative costs only

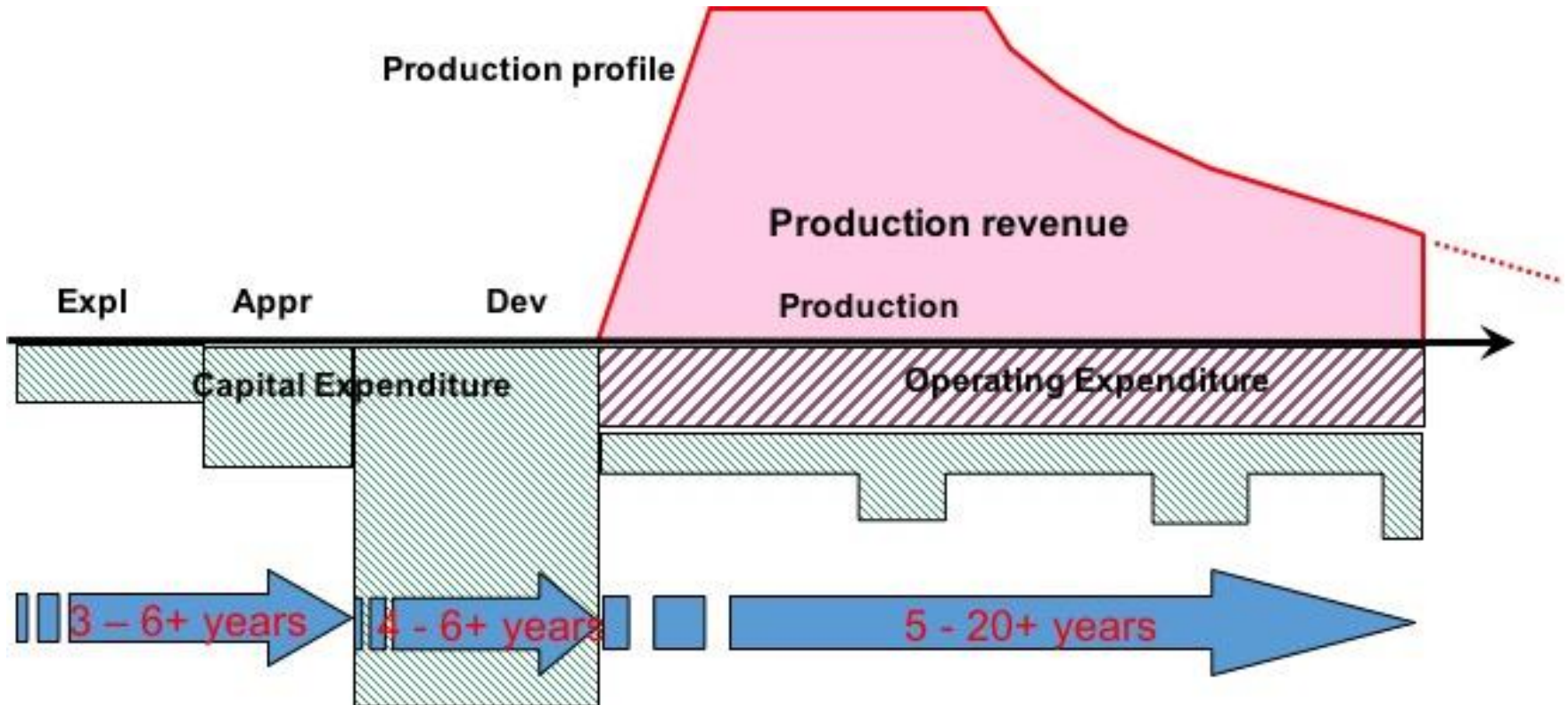
Major Upstream Third Party Service sub-sectors

- Some Services enable transfer to other sub-sectors and industries

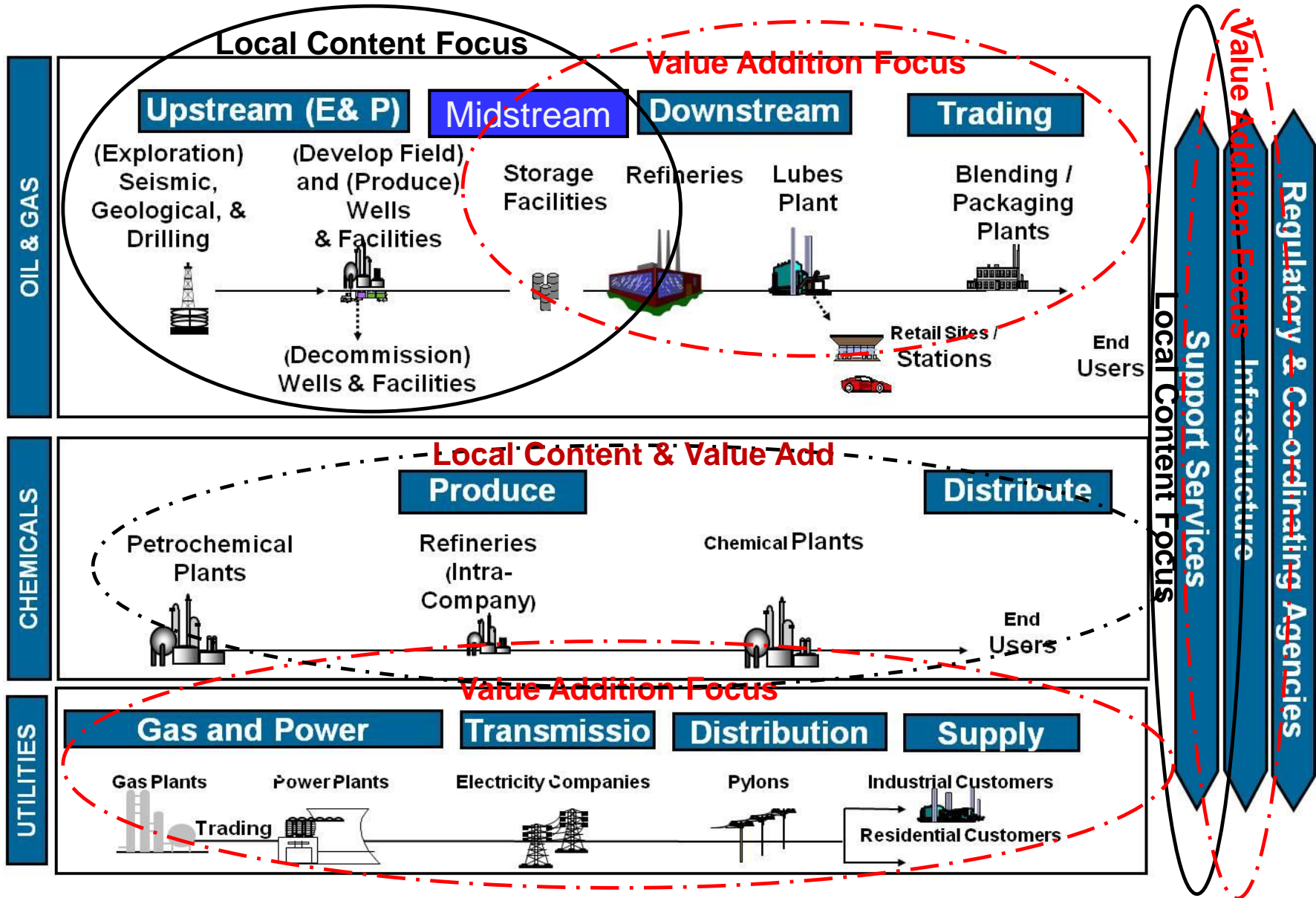


Exploration & Production

- Where is the value?



Oil & Gas Activities & "Full" Value Chain



Activity by country along the energy value chain

Country	Oil and Gas		Refining and Processing
	Exploration	Production	
Belize	✓	✓	✓
Barbados	✓	✓	
Dominican Republic	✓		✓
Guyana	✓	□	□
Jamaica	✓		✓
Grenada	✓		
Cuba	✓	✓	✓
Bahamas	✓		
French Guiana	✓		
Suriname	✓	✓	✓
Trinidad & Tobago	✓	✓	✓

Some services associated with the development of a typical oil and gas project

Project phase	Energy Services
Exploration	<ul style="list-style-type: none">• Seismic data acquisition• Geological evaluation• Seismic data storage• Rig positioning• Appraisal drilling• Wireline services• Mud engineering and logging• Snubbing Services• Fishing and downhole services
Development	<ul style="list-style-type: none">• Front End Engineering Design• Development drilling• Wireline services• Mud engineering and logging• Snubbing Services• Completions• Cementing• Fishing and downhole services• Equipment rental• Platform fabrication• Towing and position services• Pipeline construction• Sub-sea and diving services

Some services associated with the development of a typical oil and gas project

Project phase	Energy Services
Upstream operations	<ul style="list-style-type: none">• Platform operations• Supply boats• Hospitality (accommodation and food)• Helicopter services• Platform and pipeline maintenance• Non-destructive testing• Pumping services• Chemical supplies
Transportation	<ul style="list-style-type: none">• Pipeline transportation of gas or oil• Shipping of oil• Shipping of LNG, LPG or CNG
Refining and primary processing (mid-downstream)	<ul style="list-style-type: none">• Front End Engineering and Design• Engineering, Procurement Construction• <i>Plant construction</i>• Plant operations• <i>Plant “turn-arounds” and maintenance</i>• Port and pier operations

Maritime Transport Industry

- ◆ The maritime transport industry constitutes economic activities that have some direct and indirect relationship with the sea. This will include activities that are concerned with the exploitation of resources of the ocean, and seabed.
 - Entities involved in the transportation of goods via the sea and services ancillary to such transport.
 - Entities concerned with the manufacture, provisioning, maintenance and repair of marine equipment, including marine craft.
 - The commercial port system, authorities responsible for the provision and operation of navigational aids, including lighthouses.
 - Institutions concerned with the rescue, salvage and anti-pollution operations.
 - Government departments and agencies concerned with international maritime relations, administration of maritime safety, the protection and conservation of the marine environment and enforcement.
 - Institutions concerned with marine and maritime education, training and resources.
 - Labor in both onshore and offshore services.

Maritime-Energy Relationship

- ◆ **Import of inputs** for the energy industry
 - Components used in construction and fabrication of capital equipment such as plant, platforms, pipelines
 - Raw material – crude oil, iron ore, bauxite
- ◆ **Export of outputs** – methanol, urea, LNG, refined petroleum products, iron, steel
- ◆ **Port facilities**
 - Management
 - Security
- ◆ **Security** and vulnerability of vessels
- ◆ Provision of **support services to the offshore sector** – logistics, drilling, operations and maintenance, supplies to rigs, platforms/FPSOs, seismic surveys, pipe laying, vessel maintenance, warehousing, etc.
- ◆ **Environmental management, pollution control and emergency services**

Profile of Upstream Oil & Gas Goods & Services

- 4 Categories of Goods & Services

Equipment

Materials

1. **EQUIPMENT**
- 1.01. **DRILLING EQUIPMENT**
 - 1.01.01 Drilling Machinery, Mud Equipment and Accessories
 - 1.01.02 Production Surface Equipment
 - 1.01.03 Drilling Tools and retrievable Production Tools
 - 1.01.04 Casing, Tubing, Liner, Connectors and Accessories (OCTG)
 - 1.01.05 Cementing Equipment and Line Hanger Systems
 - 1.01.06 Fishing and Repair Tools (Drilling)
 - 1.01.07 Drilling and Mud Control Instruments
 - 1.01.08 Production Well Test and Monitoring Instruments
- 1.02. **MATERIAL AND PRODUCT HANDLING EQUIPMENT**
 - 1.02.01 Cranes, Davits, Hoists and Winches
 - 1.02.02 Elevators

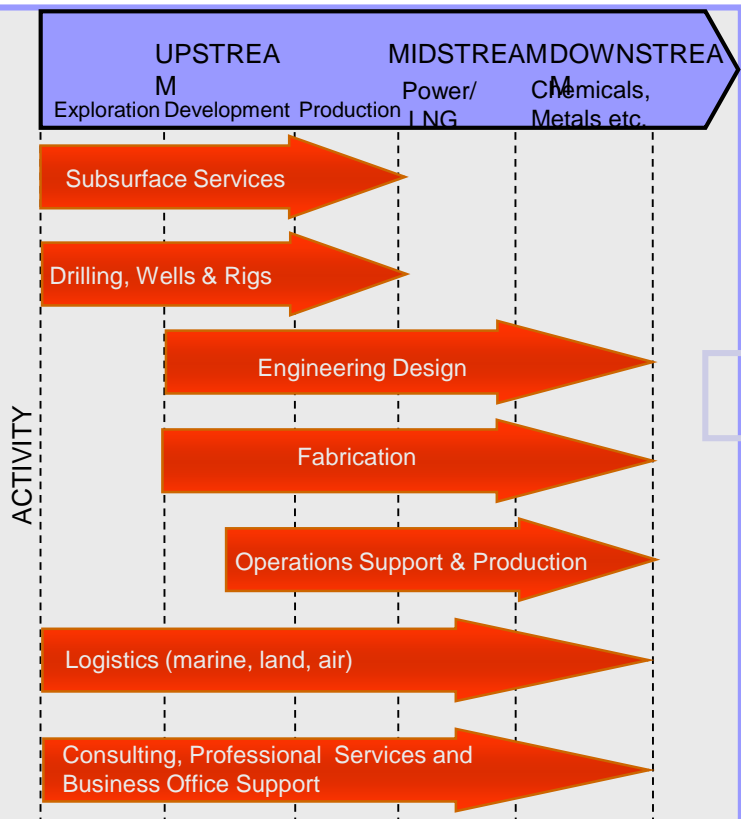
- 2.0 **MATERIALS**
- 2.01. **PIPES / TUBES / HOSES AND FITTINGS**
 - 2.01.01 Seamless Pipes and Tubes
 - 2.01.02 Welded Pipes and Tubes
 - 2.01.03 Non-metal Pipes and Tubes
 - 2.01.04 Hoses
 - 2.01.05 Flanges, Elbows, Fittings, Hangers and Pipe Supports
 - 2.01.06 Gaskets, Jointings and Packings
 - 2.01.07 Non-Metal Flanges, Elbows, Fittings and Pipe Supports
 - 2.01.08 Insulated Pipes, Tubes, Hoses and Accessories
 - 2.01.09 Flexible Pipes
 - 2.01.99 Other Pipes, Tubes, Hoses, Hubs, Pipe Penetrators and Fittings etc.
- 2.02. **VALVES AND ACCESSORIES**

Multi-discipline

Service

4. **MULTIDISCIPLINE / COMBINED SUPPLIES**
- 4.01. **ENGINEERING / PROCUREMENT**
 - 4.01.01 Steel/Metal/Concrete Structures/Platforms
 - 4.01.02 Floating Facilities/Systems incl. Storage/Loading
 - 4.01.03 Subsea Systems
 - 4.01.04 Pipeline Systems
 - 4.01.05 Risers
 - 4.01.06 Umbilicals
 - 4.01.07 Terminal/Oil Movement Systems
 - 4.01.08 Accommodation/Office/Workshop/Storage Modules

- 3.0 **SERVICES**
 - 3.01.15 Fire and Gas Protection Systems
 - 3.01.16 Production/Petroleum Engineering Services
 - 3.01.17 Construction Management and Supervision
 - 3.01.99 Other Engineering Services
- 3.02. **CONSULTANCY SERVICES**
 - 3.02.01 Quality Assurance QA/QC
 - 3.02.02 Safety, Health and Environment
 - 3.02.03 Risk Analysis
 - 3.02.05 Training, Personnel Systems
 - 3.02.06 Legal Services
 - 3.02.07 Purchasing and Contract Services
 - 3.02.08 Cost and Planning
 - 3.02.09 Material Administration



Standard Listing of Marine Transport Equipment, Materials and Services Procured by Upstream Operators

EQUIPMENT

MARINE EQUIPMENT

- Anchoring/Buoying Equipment
- ROV's, ROV Tools and Accessories
- Ship Gears
- Turrets
- Other Marine Equipment and Accessories

MATERIALS

OTHER PRODUCTS / EQUIPMENT AND MATERIALS

- Cars, Vehicles and Accessories
- Fuel
- Consumables

Standard Listing of Marine Transport Equipment, Materials and Services Procured by Upstream Operators

EQUIPMENT

MATERIAL AND PRODUCT HANDLING EQUIPMENT

- Cranes, Davits, Hoists and Winches
- Elevators
- Other Lifting Gear and Accessories
- Trucks, Forklifts etc.
- Trolleys, Containers and Baskets
- Conveyors, Feeders and Accessories
- Packing Equipment and Accessories
- Miscellaneous Docking Equipment
- Jetty Equipment incl. Loading Arms/Hoses etc.
- Scaffolding
- Tarpaulins
- Weighing Equipment and Accessories
- Other Material and Product Handling Equipment

Standard Listing of Marine Transport Equipment, Materials and Services Procured by Upstream Operators

SERVICES

TRANSPORTATION / SUPPLY / DISPOSAL SERVICES

- Tugs/Supply/Stand-by/ROV Support/Diving Support Vessels etc.
- Barges
- Air Transport Services of Passengers and Freight
- Accommodation Platforms/Vessels
- Rental - Containers, Baskets etc.
- Disposal Services and Waste Transport etc.
- Salvage Services etc.
- Rental - Cranes and Special Vehicles
- Courier Services
- Freight Forwarding Services
- Brokers
- Supply Base/Warehouse/Storage Services
- Ship Chandler Services
- Other Transportation/Supply Services/ Bunkering

Standard Listing of Marine Transport Equipment, Materials and Services Procured by Upstream Operators

SERVICES

SURVEYING / POSITIONING SERVICES

- Soil Investigation
- Navigation Systems
- Geotechnical Services
- Geophysical Services
- Oceanographic Services
- Rig Positioning
- Photogrammetry Surveying
- Chart and Map Production
- Rental of Surveying / Positioning Equipment
- Other Surveying/Positioning Services

The Maritime Sector in Local Content Policy Implementation

In implementing the policies and strategies required to deliver the maximum value-add from local content and participation, opportunities have to be identified and secured for:

- in-country activity
- Delivery by nationals and firms of host country
- Development of people, enterprises, infrastructure and utilities
- Focus on activities that
 - use and develop technology, innovation and business know-how
 - have high value and consistent/sustained demand
 - Develop capabilities that are transferable to other sectors of the economy.

The Maritime Services Sector has many of these characteristics

Thank You!

Questions?

tony1paul@gmail.com