
Session III

Perspectives on the Petrochemicals Sector

Moderator - A.Borruso

**4th IEA-IEF-OPEC Symposium on
Energy Outlooks**

22 January 2014

IEF Secretariat

Riyadh, Saudi Arabia



Borruso Polymers GmbH

Petrochemicals Markets Dynamics

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Market Dynamics

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Supply

Feedstocks

- Coal
- LPG
- Shale

- ..Ethane
- ..Bio Based..
- ..Oil Sands..
-

Technology

- GTL
- CTO/MTO
- Metathesis
-

**Refinery – PC
integration**

Demand

Fundamentals

- Population
- GDP/Capita
- GDP multipliers

**Converting
Industry**

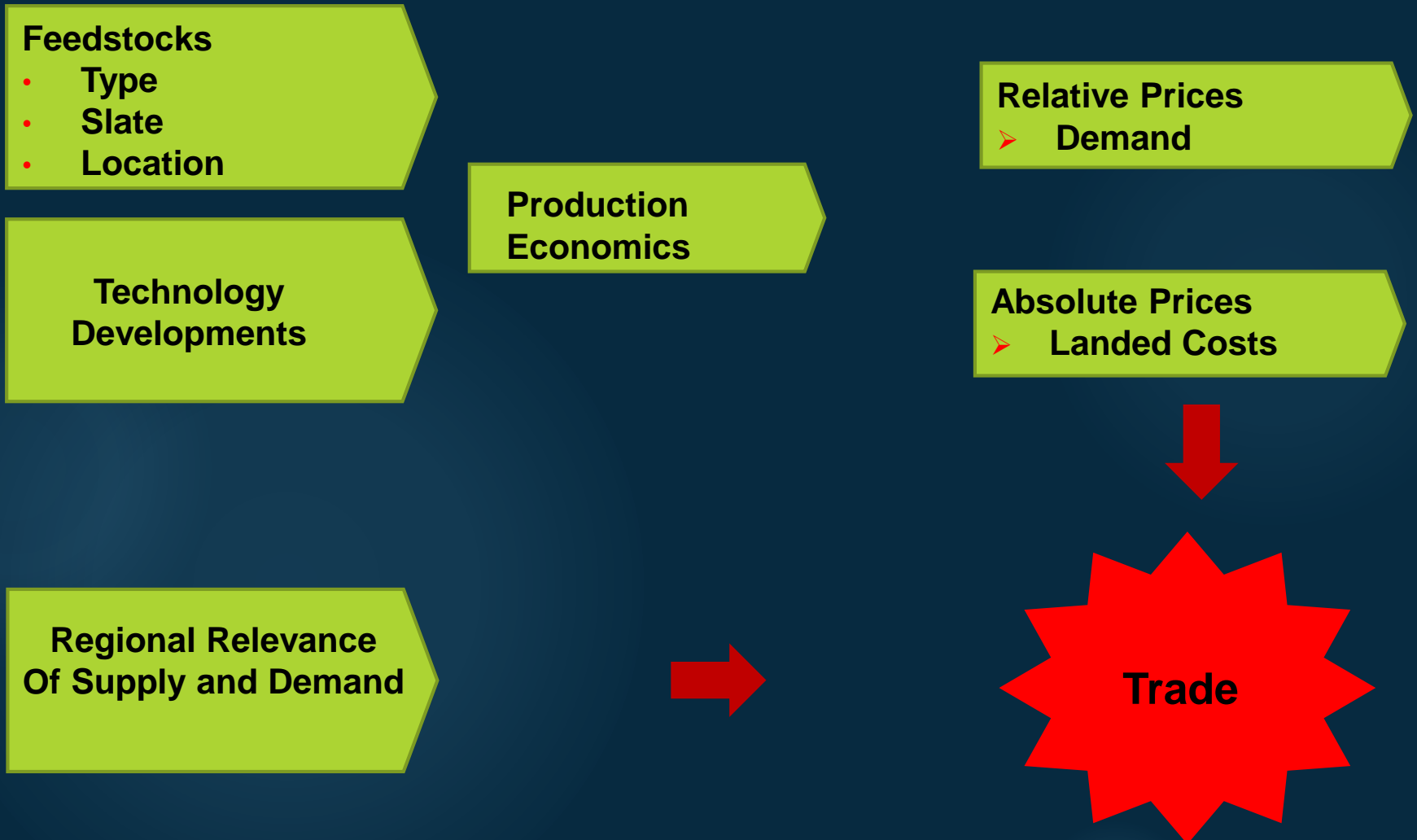
- ...Shifting:
- Low cost areas
 - Feedstock Proximity?

Environment

- Recycling
- ..CO2..Effect

Impact and Changes

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In the USA the Natural gas vs/ Crude Price Gap has been increasing:

- Since 2009 Nat Gas / Brent price ratio declined to 20-30 %
- the price ratio of Naphtha/Brent is higher than Propane/Brent and Butane/Brent
- Cracker Feed favours lighter slates: US ethane share in steam crackers feed expected to increase from 55 % in 2013 to 65 % by 2018

Coal in China

- Between 2013 – 18, approx. 50 % of propylene and 80 % of ethylene new capacities or over 15 new project will be based on CTO/MTO.

CIS and Baltic States

- With 23 % of global gas reserves, Russia has 3 % of global chem production
- Naphtha as cracker feed will decline from 60 to 25 % by 2023
- Feedstocks export tax as incentive for local upgrading

Ethylene Equivalent Net Trade

- W. Europe increasingly negative (net importer) from 0.5 to 2.5 mill ton by 2018

Propylene Equivalent Net Trade

- W. Europe declining from 1 mill tons to zero by 2017
- N. America Increasing net exports after 2016-17
- Asia and Pacific steady at 3 mill tons net import level

Trade Issues (Cont.ed)

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US LPG TRADE

- **US East Coast: traditionally an importer**
- **US Gulf Coast: importer and exporter to Caribbean, Latin America and Europe**
- **Proposed expansions in exports terminals to increase by over 400,000 BPD**

Open Questions

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- **Corporate Integration Gas->Oil->Refining->Base Chemicals -> Specialties ??**
- **European Steam crackers economics byproducts driven ??**
- **US LPG Exports as hope for European coastal crackers??**
- **Gasoline/naphtha/aromatics balance in Europe, N.Africa and Asia ??**
- **FCC's Changing role:**
 - **C3 production vs/ PDH??**
 - **Naphtha/gasoline price relation to FCC margins??**
- **Iran: new role and impact without sanctions??**
- **GCC gas policy in view of the impact from shale ??**

Possible Trends

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- **PC industry part of a global shift in industrial competitiveness**
 - Lower cost in Central and East Europe, in China and SEA
 - Feedstock availability at low cost creates an economic boost in USA, CIS, Africa, China
- **Refining – Petrochemical integration**
- **Shale is not exclusively in the USA**
- **On going shifts of**
 - Production centers towards low feedstock areas
 - Conversion hubs towards low manpower cost regions
- **Evolution of Trade flows to adjust to changing landed cost competitiveness**



Thank you !

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