



Gas Pricing? It's the Resource Rent !

**„In search of an efficient EU gas market model“
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Structure

- 1. Freedom of contract and regulation**
- 2. Gas and oil: One Market**
- 3. Pricing is about distribution of resource rent**
- 4. EU gas market structure**
- 5. Addressing the future**



1. Freedom of Contract and Regulation

■ Freedom of contract:

In a free market economy any two participants are free to conclude (or not) any commercial transaction they can agree on, if not against public order (incl. Competition law with ex post consequences)

■ (ex ante) regulation as a surrogate of market / competition in case of market imperfections:

- Public good /inelastic demand
- National monopoly (on ground for infrasturcture / on natural resources)
- Natural monopoly (large economies of scale of infrastrucutre)

■ Regulatory reach of an importing country

■ Regulatory consistency vs politics



2. Oil and Gas: One Market

- Similarities:

- way of production

- same combustion properties:

- high value: gas and LFO: Internal combustion in engines, turbines

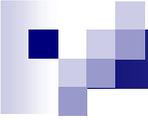
- low value: external combustion in boilers (HFO, but also coal)

- **BUT:** different energy density => different modes and higher costs of gas transport / storage

- oil lends itself to a global market, less so gas

- Oil futures: 98% paper market with cash settlement, subject to speculation (e.g. parallel to QE 1 -3)

- Gas futures: physical delivery dominant => matching supply /demand



2. Supply and Demand for Gas

■ Demand

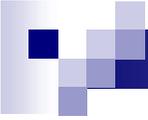
- largely inelastic demand, temperature dependent
- not defined by individual preferences, but by costs of replacement fuels
 - crude oil in Asia at landing point
 - fuel oil products at burner tip (EU)
 - fuel oil products in times of scarcity or coal as market clearing bottom (US)

■ Supply

- depends on depletion decisions for large fields
- domestic or import (transfer of resource rent)
- drivers of production: Industrial Process (shale), scattered fields, large fields/ depletion policy (Groningen, Yamal), gas as byproduct
- transport and storage costs
- rent taking along the chain

US, Rus, EU, JKT: One size does not fit all

	US	Rus	EU	JKT
Resources	scattered shale	large fields	limited, declining Groningen scattered	no resources
Ownership	Ground owner	State	State	not applicable
Driver	mining profit	depletion policy	Groningen depletion policy UK industrial policy Nor: nat. economics	no applicable
Export/Import	new: LNG exports	pipeline exports	import dependent pipeline /some LNG	import dependent LNG only
resource rent	standard 12.5%	upstream tax export tax	transfer to export country	transfer to export country
competing point	Hubs	increasingly SPIMEX	increasingly hubs plus at burner tip	at import point
competitor	gas on gas	regulated gas on gas	gas on gas fuel oils	crude oil



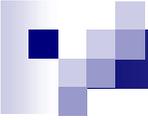
3. Resource Rent

- **Domestic** use within the country : optimizing its effects (US, early UK)
- **Export / import :**
 - highest (possible) level for exporting country
 - importing country: secure supply at lowest possible price
 - taxing oil, gas
 - transfer of resource rent / limited by oil substitution
 - create competition to lower the resource rent transfer
 - if gas is scarce: oil replacement value is upper limit for the customer supposing free substitution competition
 - when gas is abundant (also as must sell by-product) market clearing price at coal equivalent
 - oil prices may be high (due to financial speculation) not linked to the supply and demand => independent gas markets can protect against spill-over of oil speculation to gas pricing



4. Results of EU Market Reform

- How to measure results (success) of 20 years of EU reform? Objectives?
 - ESM (EU single market)
 - Public goods
 - Import bill, Consumers' welfare, cost reflectiveness
- ESM : Churn rate?
 - Rather reflecting the number of players (at the hub) and of re packaging
 - Restructuring of industry, breaking up of import aggregators
 - Pool model, regulating away spatial transport structure
- Public good, supply and security of supply:
 - Unbundling => unbundling of responsibility
- Cost reflectiveness
 - Not an issue in the 90s when gas was at 50 \$/1000m3
 - Became an issue, when
 - Oil prices increased from mid 00s until 2015 (partially parallel to QE 1 – 3)
 - Must sell gas in US (coal parity in power) cannot be exported to EU



5. Addressing the Future

- **Role of gas**

- for de carbonization (=> power, rent transfer, for global higher good)
- traffic pollution (LNG, CNG: replacement value, rent transfer for local improvement of pollution)

- **Additional gas infrastructure** (paid by supplier/ consumer)

- **Increasing import gap => filled by gas from Russia and / or LNG**

- Russia: subject to depletion /export policy, Yamal easily + 100 bcm/a
- LNG: large EU regas capacity 220 bcm/a+, subject to competition
 - competition for EU market by LNG if over supply of LNG
 - competition for LNG supply by EU if scarcity of LNG

- **Market structure:**

- allowing freedom of contract
- import aggregation?