

Natural gas: markets, supply, competition, networks and regulation



Competition and Market Power in Electricity and Gas
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&

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Natural gas: Markets, supply, competition, networks and regulation

- Changes to the gas system
- Challenges to gas system coordination: against the market.....
- Perspectives on infrastructure coordination
- Coherence in risk, rents, incentives and regulation: a hybrid approach

Changes in the EU gas system

- Demand
- Supply
- The industry
- The market
- Coordination

Changes in the gas system: Demand

- Growth in gas consumption
 - High oil prices
 - CO₂ emission reduction
 - Expansion power generation
 - Penetration in non-power markets
- Growing demand for flexible gas
- Growing demand for quality conversion

Changes in the gas system: Supply

- Declining EU indigenous production
- Growth in supply
 - via existing and new pipelines
 - via LNG
- Increasingly long distance
- Decline in destination dedicated supply
- Growth in storage

Changes in the gas system: Industry

- Up-stream
 - consolidation of industry
 - coordination by producer states
- Mid-stream
 - transit countries
 - restructuring and unbundling
 - entry and consolidation of suppliers
- Down-stream
 - retail competition
 - price regulation
 - entry and consolidation of retailers

Changes in the gas system: Markets

- Up-stream
 - E&P: producer states <> industry
- Mid-stream
 - transit: transit states <> producer states <> industry
 - wholesale commodity markets
 - transport capacity markets
 - storage markets
 - LNG conversion markets
- Down-stream
 - retail markets

Challenge to the gas system: Balancing flows and capacity in the supply chain

- Gas **flows** through the system:
 - occasional flows based on spot contracts
 - flows based on longer term contracts
 - seasonal flexibility
 - future flows and conversion needs
- Access to infrastructure **capacity**:
 - short term access provision
 - longer term access reservation
 - seasonal capacity reservation
 - future capacity planning and investment

Requirements to the gas system: Coordination of the **value** chain

Balance **value** chain by participant, time and risk:

- user value, revenue, cost and cash flow
- investment in capacities and ROI

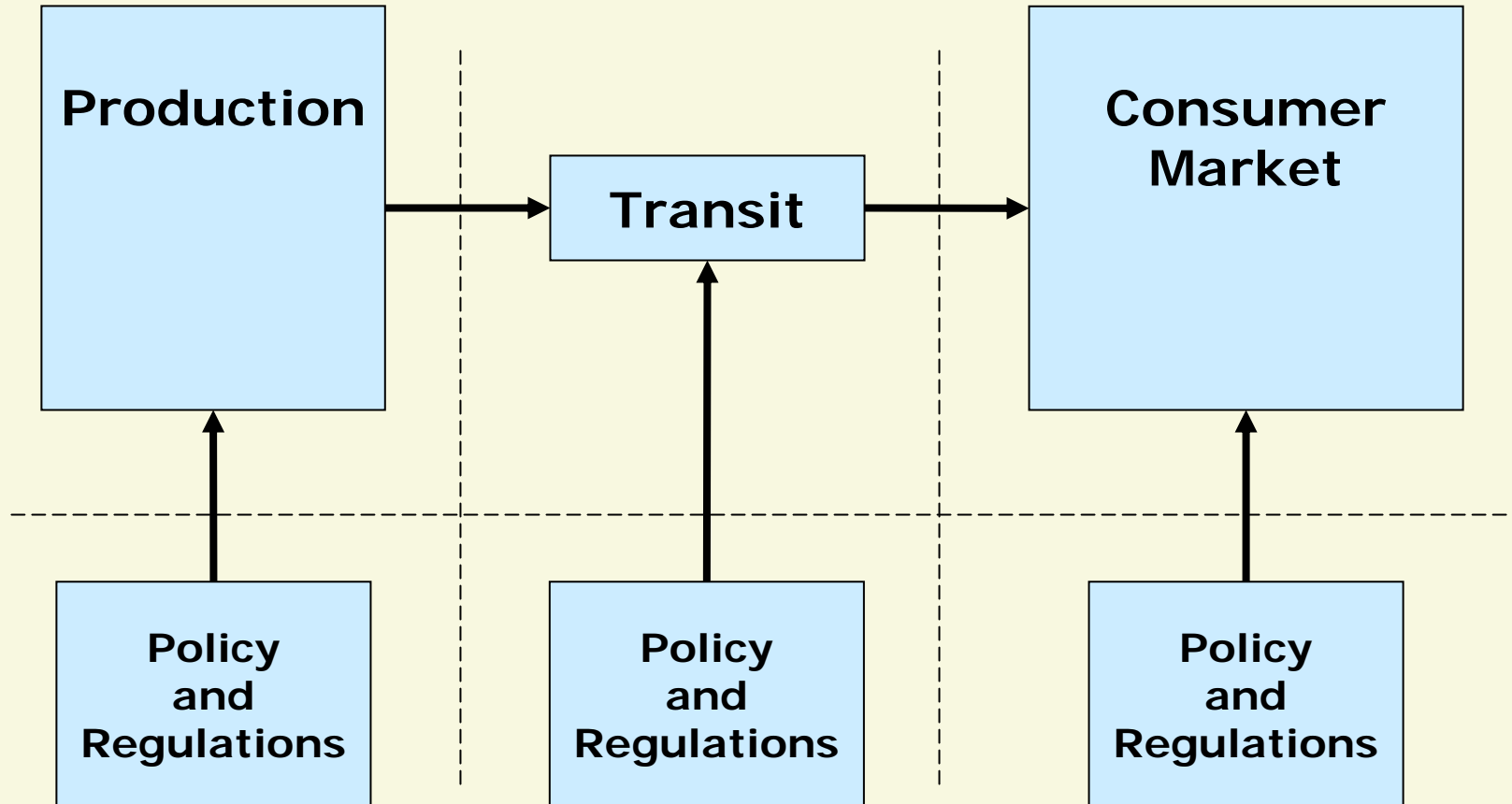
- Up-stream E&P
- LNG facilities
- Transit and transport
- Trade
- Storage
- Distribution
- Retail
- Consumption

Changes in the gas system: Coordination

From *traditional* unified structure:

- public/private cross-ownership
- concessions and coordination
- long term planning and contracting
- TOP contracts, pricing formulas
- destination clauses

To *transitional* pan-caked mixture.....



Changes in the gas system: Coordination

To *transitional* pan-caked country specific mixture:

- long(er) term concessions and contracts in E&P and transit
- monopoly access and tariff regulation, investment control and exemptions in networks, storage and LNG facilities
- spot and term pricing in more or less ‘free’ wholesale markets
- term contracts, price regulation and control in retail markets

Solutions to coordinating the gas flow, access to capacity and the financial flow

- The market(s) and competition
- Monopoly regulation and concessions
- Vertical integration
- Horizontal integration
- Public or private ownership

Balance between effective competition, regulation and industry stability, most favourable to the consumer interest

Perspectives on infrastructure coordination

Structure Conduct Performance

- Degree of Concentration > Competition > Efficiency
 - Unbundling, competition, free entry, regulation of monopoly elements, competition policy

Transaction Costs and Institutions

- Transaction > Risk > Coordination > Efficiency
 - Vertical integration and contracting structures, ex post/ex ante regulation

Structure, conduct, performance

- Accepted perspective
- Embedded in law
- Straightforward procedures

- Weak relationship between S-C-P
- What is the relevant market?
- Difficulties in testing and proving abuse
- Potential loss of synergies in value chain
- Difficulties in dealing with dynamic aspects

Transactions, risk and coordination

- Inherent uncertainty in up/down stream markets
- Ex post hazards in sales and prices
- Complexity of transaction
- Information asymmetry
- Hold up problems
- Lock-in: site, physical dedicate asset specificity.

Spot market > term contracts > joint ventures >
vertical and horizontal integration

Current situation according to CEC

- No internal market, as yet.
- Access conditions are opaque
- Large firms are at advantage
- Incomplete unbundling TSOs
- TSOs have a national and short term focus
- NRAs have a national and short term focus
- MS regulate wholesale, balancing and retail markets

Main solutions: further unbundling, regulatory coordination

Towards a hybrid approach in gas infra regulation

- Recognize up-stream oligopoly
- Recognize strategic trade-off made in countries (MS, NRA, TSO/ISO, Industry)
 - national versus community interest
 - regulatory competition
 - dependence of NRA
 - national focus of TSO/ISO
 - horizontal integration industry
- Recognize variation in market situation in MS
 - maturity, dependence, density

Elements of a hybrid approach in gas infra regulation

- a ‘workable’ balance between *market power* and *coordination* to facilitate investments...
- Measures that *enhance* coordination and stability, relative to market power...
- The relevant market...linking downstream with up.
- A shift from *ex ante* structural regulation to *ex post* competition policy...
- Role TSO/ISO in de-nationalizing supply chain system...
- Mirror transport contracts to commodity contracts...
- Lessons from the NRF in telecom for the energy/gas market...

The upshot.....

Security of supply = security of demand

But supply needs infrastructure

And infrastructure needs demand

What's in between is risk!