

# ***Foundation for Regulating Pipelines***



## **United States and Europe: Two Different Regulatory Worlds**

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**How Markets Work<sup>SM</sup>**

# ***Outline: Three Topics***



- 1. The great gulf between European gas pipelines and their US cousins**
  - What this means for European and US gas markets
- 2. The institutional foundation for effective pipeline regulation**
  - Economic governance as a general concept
  - Specific regulatory institutions for pipelines
- 3. Consequences of ineffective pipeline regulation in Europe**
  - Social costs and political consequences

# Part 1: The Differences



- How Europe differs from the United States
  - Inland gas transport industry
  - Gas markets
  - What state (or EU member state) regulators do

# Perspective: Gas and Electricity Transmission



## ■ Similarities

- Both are **inland energy transport** systems
- Both are highly capital intensive and linked to particular suppliers and energy users (they are “relationship-specific investments” in the language of transaction cost economics).

## ■ Differences

- Electricity moves at **15 million times** the speed of gas (or oil) in pipelines—and the flow paths are unpredictable.
- Physical-path transport contracts are **easy** for pipelines). But they are **impossible** on electricity grids given current technology.
- Transmission “**externalities**” are inherent in electricity, but there are none in gas that can’t be handled with operational transparency and commercial/accounting conventions.

# Perspective: Gas and Electricity Transmission



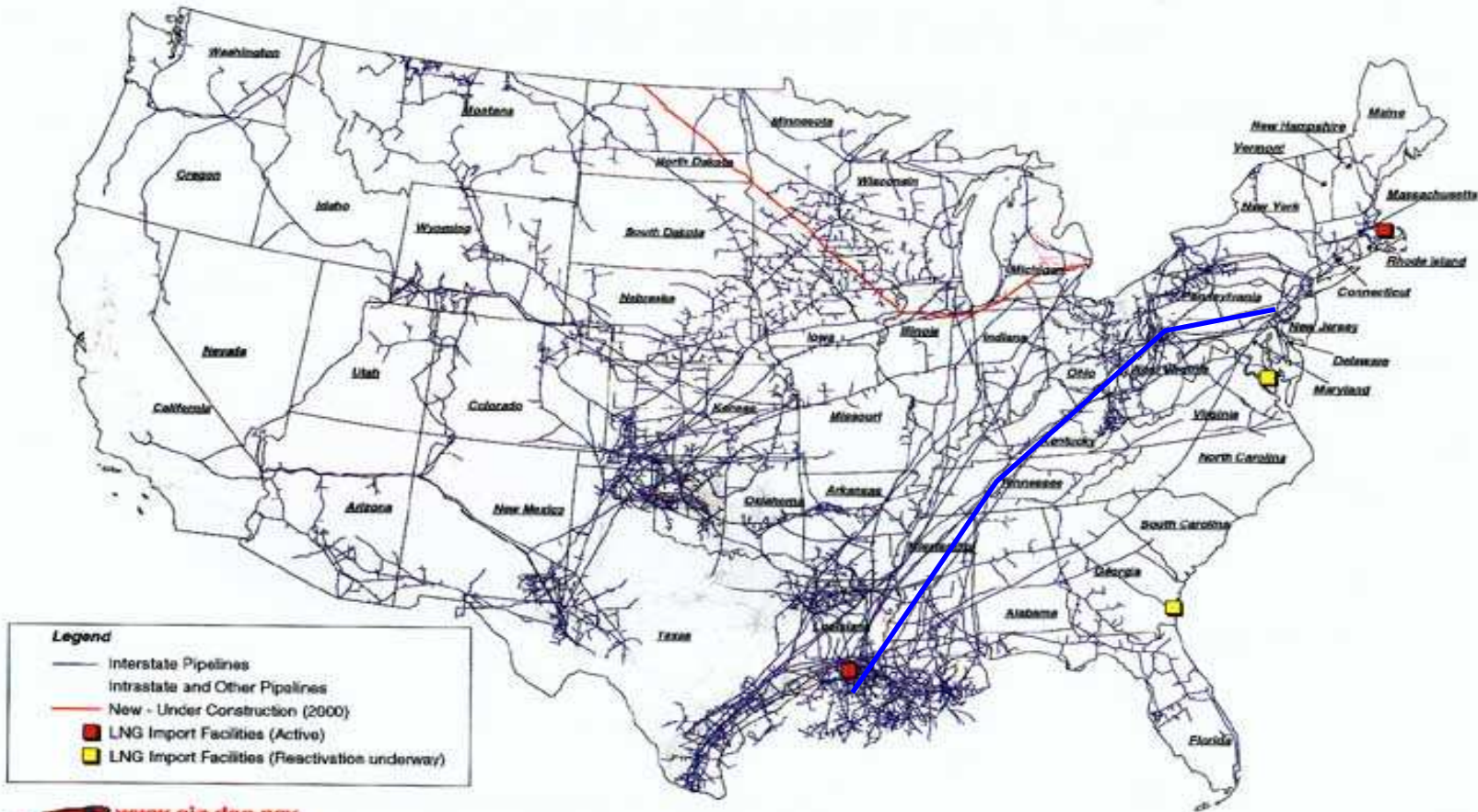
- Electricity transmission is a “Grid”
  - The grid is “pooled” energy transport system where users necessarily share costs and regulators oversee planning and tariffs.
  - Physical path contracts are impossible
  - Electricity markets and grid policies are interdependent.
- Gas transmission is an orderly inland transport system—not a “Grid”
  - The system need not be a pooled, shared-cost system. It’s use and expansion can be commercially competitive.
  - Physical path contracts are possible
  - Gas markets and pipeline transport markets are separable (as the US has proven).

# Pipelines are Pipelines

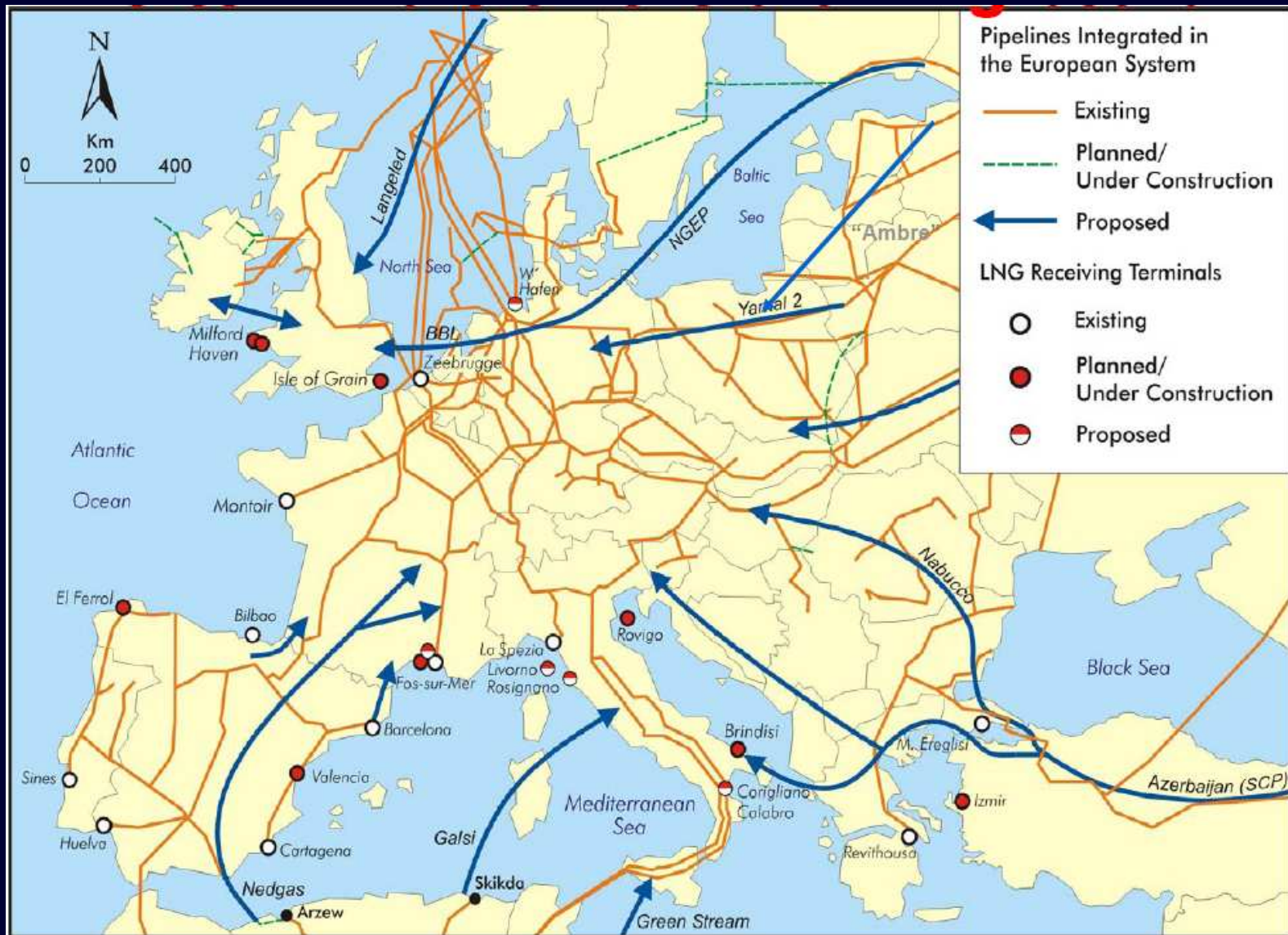


## Natural Gas Pipeline Network 2000

### National Natural Gas Pipeline Network 2000



# Pipelines are Pipelines



# European and US Gas Pipelines: Different Structures



## EUROPE

- Vertically **integrated** with gas distribution
- Transporters of their own gas
- Operating and financial data **private (closed)**
- Capacity kept **secret** from shippers
- **Protected from rivalry**
- **Monopoly** transport

## UNITED STATES

- Vertically **separate** from gas distribution
- Cannot transport their own gas
- Operating and financial data **public (open)**
- Capacity licensed by regulator and **well-known**
- **Exposed to entry**
- **Competitive** transport

# What State Regulators Do in Gas Transport



## EUROPE

- Regulate gas distribution
- Regulate inter-state transport
- Coordinate activities through ERGEG
- **Cede nothing** to the EU's DG Tren
- **Defend "national champions"**
- **Not independent** from State Executive Authority

## UNITED STATES

- Regulate gas distribution
- **Do not** regulate interstate transport
- Coordinate activities through NARUC
- The FERC deals with transport exclusively
- **Promote rivalry in pipeline transport**
- **Independent** from State Executive authority

# US Gas Transport Market



- **Pipelines:** Operate and maintain regulated pipeline capacity—no role in the gas commodity market
- **Contract Shippers:** Control licensed pipeline capacity, to use or sell in unregulated markets
- **FERC:** Prime (new) job is protecting the value of shippers' capacity rights and overseeing frictionless pipeline-maintained, on-line trading mechanisms. Secondary (traditional) FERC job is overseeing cost-based pipeline prices.
- **State Regulators:** No direct involvement in interstate pipeline transport.
- **Incumbents and Entrants:** Seek out buyers for additional capacity—to be built and charged at cost-based “incremental” regulated prices.
- **Non-contract shippers:** Buy firm capacity from contract shippers or interruptible capacity from regulated pipeline companies.

# What Makes Competitive Pipeline Transport Work?



## For Efficient Investment

Open seasons

Obligation to provide taps

## Key Benefits

Enables cooperation by private investors to exploit economies of scale

Avoids inefficient duplication of capacity

Preserves competition in pipeline expansion

## For Efficient Use

Point to point charging in long-term contracts

“Straight fixed variable” charging structure

## Key Benefits

Aligns the service offering with physical capacity and incremental costs

Promotes efficient utilisation:  
Variable usage charges = Variable costs

## For Efficient Access

Unbundling

Capacity Trading:  
Standardised terms and trading platforms

## Key Benefits

Allows a market price for capacity to emerge

Prevents vertical foreclosure

Traders are familiar with capacity products on all long-distance gas pipelines  
Market access to capacity is cheap and quick

# **Part 2: Why the Differences?**



## **Pipelines are Pipelines**

### **IT IS ALL ABOUT INSTITUTIONS!**

- **Role of private capital**
- **Political boundaries**
- **Constitutional protections of property**
- **Regulatory institutions**

# ***Institutional Pipeline Differences in the US***



- Source of capital
  - **Private** in the US since the 19<sup>th</sup> century
- Vertical integration with Distribution
  - **Prohibited** in the US since 1935
- Accounting
  - **No “commercial secrets”** since 1912—total transparency
- Strong federal jurisdiction
  - **Commerce Clause** of US Constitution of 1787
- Pipelines out of gas commodity business
  - **“Divorcement”** begun in 1992, finalized in 2000

# Highly-Evolved Regulatory Institutions

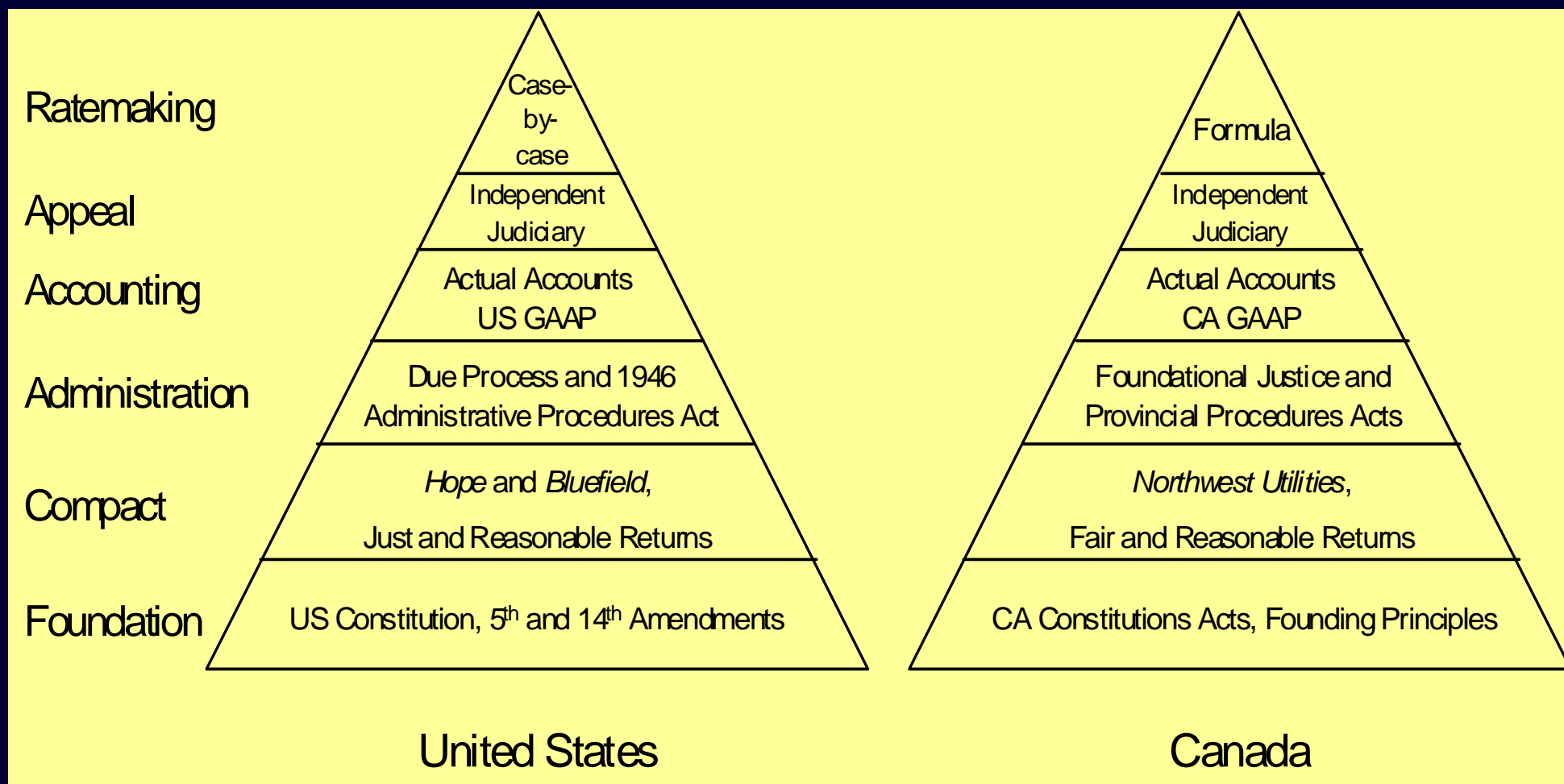


- **Total transparency** in capacity and finances for regulated pipeline capacity
- **Highly competitive trade** in access to regulated capacity at unregulated prices
- Operational limits, balancing, penalties all based on **empirical engineering and cost studies**
- No particular economic controversy
- System in market and regulatory **equilibrium**—no pressure to change the rules

# Uniqueness of North American Regulatory Institutions



- Canada and the U.S. Share Basic Regulatory Institutions:



# ***Uniqueness of North American Regulatory Institutions***



- European Pipeline Regulation Shares Little in Common with North America
  - Split jurisdiction—**weak EU regulator**
  - **Lack of transparency**—legislated accounting and operational information
  - No constitutional definition of regulated **property**
  - Heavy and **weakly-regulated vertical integration controlled by national regulators**

# What would US or Canadian Regulatory Staffs Think of European National Regulators?



- They would **never understand** why European regulators have not imposed strict accounting legislation.
- They would **search in vain** for solid regulatory book capital values.
- They would **not tolerate secrecy** by the regulated company.
- They would be **unused to any sort of direct pressure** from government Executive/Legislative authorities.
- With such a **powerful FERC**, they would wonder **why DG Tren is so lacking** in authority.
- They would look around and see **too many economists**, and not enough lawyers, accountants and engineers to suit them.
- They would look at **large scale “entry/exit” pricing** and wonder who cooked up such an overly-complex way of making simple distance-based, point-to-point pipeline prices.

# **Part 3: Consequences of Ineffective Regulation**



- **Market power in gas**
  - Cost of oil-linked gas contracts
  - Take or pay provisions
  - Prohibition on re-sale in contracts
  - Lack of forward markets
- **Market power in pipeline transport**
  - Redundant pipelines (especially to the east)
  - Lack of competitive pressure for existing pipelines

# **Cartelized European Gas Supply System**



- **Chris Patten** (Chancellor of U of Oxford, former member of the European Commission, Former Governor of Hong Kong, etc. etc.)
  - “...we have allowed Russia to divide EU members states over energy policy. ... Former Chancellor Gerhard Schröder became chairman of the Gazprom shareholders’ committee for a large fee shortly after leaving office. ... But big energy companies in some European countries—France, Austria, and Italy as well as Germany—continue to cut bilateral deals with Russia, and there is opposition to the creation of a single European energy policy that would enable Brussels to speak with one strong voice in dealing with Russia.”\*
  - Gazprom and pipeline suppliers to Europe are widely seen as **cartelizing structurally competitive gas and transport industries.**
  - The lack of transparent regulation of pipelines is the cause.

\* New York Review of Books, March 11, 2010.

# European and US Gas Pipelines: Consequences



## EUROPE

- No inland gas transport market, as such
- No gas market independent of oil markets
- Some spot gas trading
- No forward market of substance to shift risk of gas price changes
- Permits collusion and politicization of gas supply
- Worried about Russia

## UNITED STATES

- Competitive inland gas transport market
- Independent, competitive gas market
- Universal spot trading
- Large forward market (2,600 times the size of Europe's, end of 2008)
- Politics not a part of gas supply
- Not worried about Canada

# Gas Transport Markets in Europe: Prospects?



- Gas transport still treated like electricity transmission in the “Third Package” of EU gas pipeline regulations
  - Physical attributes of power grids and gas transport systems are not alike
  - Grids cannot sell physical point-to-point capacity rights; pipelines can do so easily.
- Current prospects are dim:
  - No effective pressure groups for consumers for rivalry in transport
  - Legislative packages obviously bend to narrow interests of incumbents
  - ERGEG moving toward more virtual hubs, not more realistic/transparent inland transport
- Political power in the hands of incumbent pipelines

# Gas Commodity Markets in Europe: Prospects?



- Except for small and isolated markets (like the UK), **gas commodity competition depends on competitive inland transport.**
  - NYMEX Henry Hub in the US arose with real unbundling and competition in transport
  - Competitive transport **destroyed long-term price and take-or-pay contracts**
- Prospect for rivalry in pipeline transport in EU is getting smaller
  - Incumbents bend legislation in their favor
  - Incumbents resist unbundling and transparency
  - National regulators defend interests

# Relevance of US Gas Pipelines?



## However, experience shows that gas and transport markets are separable and competitive

- Pipelines can be limited to compensatory transport service if:
  - **Unbundling** of trunk pipeline transport and distribution
  - **Further unbundling** of transport from commodity sales
- Capacity rights can form a new market if:
  - Transport is made fully **transparent**
  - **Regulatory accounts** dictate the foundation for regulated tariffs
  - EU regulators **defend property rights and defend frictionless markets for trade**
  - **Entry/exit is disaggregated into physical point-to-point service**
  - Pipeline capacity additions subject to **incremental pricing**

# ***Social Costs and Political Consequences in Europe***



- Lack of Competition in **Gas**
  - No effective gas-on-gas competition from different regions
  - Consumer surplus appropriated by gas producers
  - Gas not re-sellable, creating security of supply problems
  
- Lack of Competition in **Transport**
  - Redundant pipelines
  - Shippers unable to compare pipeline capacity to storage and other options
  
- **Political** Consequences
  - Europe exposed to Russian foreign policy

# ***Curing Pipeline Problems will be Difficult***



## ■ **Widespread Command and Control**

- Independent system operators reinforces the cartelization that create the problems at present.
- More regulation will not promote greater competition in inland transport or in gas markets.

## ■ **Institutions to Promote Competition**

- Accounting
- Transparency
- State borders and sovereignty
- High-level political alliances and protections from rivalry
- It took the United States 100 years to overcome such obstacles...

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