

Interstate Oil and Gas Compact Commission

Pipelines 101 Opportunities and Challenges

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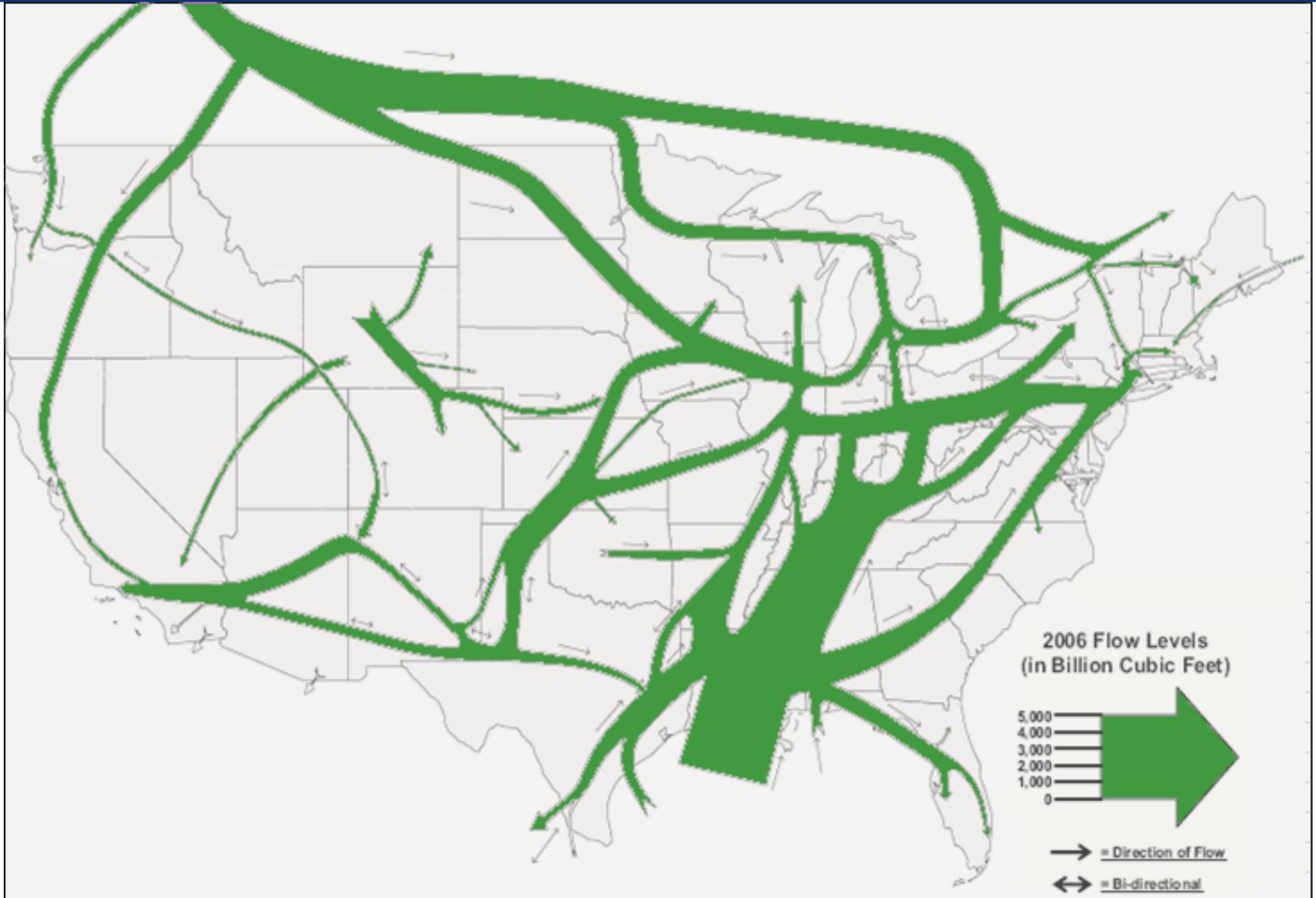


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PIPELINES— WHERE ARE THEY AND WHAT DO THEY DO?

Traditional Flows from Production to Market--2006

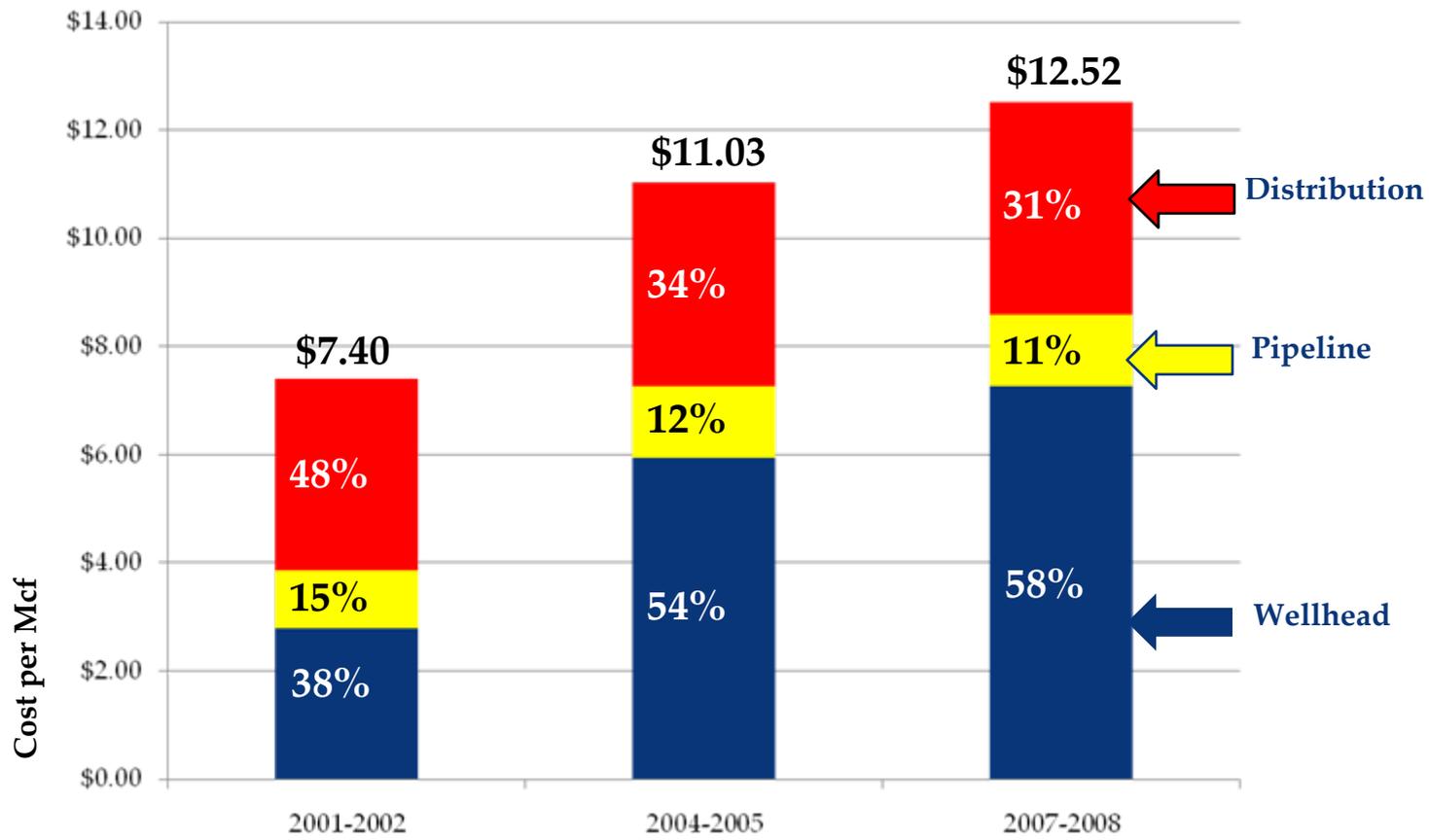


Pipeline	Holding Company Name	System Capacity (MMcf/d)	Transported (MDth/d)		System Mileage	Market Regions Served	Primary Supply Regions	States in Which Pipeline Operates
		2008	2007					
Algonquin Gas Transmission	Spectra Energy Corp	3347	962	1,003	1128	Northeast	Southwest	CT, MA, NJ, NY, RI
Alliance Pipeline LP	Alliance Pipeline LP	2053	1,756	1,732	888	Midwest	Canada	ND, MN, IA, IL
ANR	TransCanada Corp	7129	5,432	5,600	10600	Midwest	Southwest	AR, IA, IL, IN, KS, KY, LA, MI, MO, MS, NE, OH, OK, WI, GM
CenterPoint Energy Gas Trans	CenterPoint Energy Inc	5385	3,432	2,630	6374	Southwest	Southwest	AR, KS, LA, OK, TX
Colorado Interstate Gas Co.	El Paso Corp	4099	2,231	2,340	4143	Central	Central, Southwest	CO, KS, OK, TX, WY
Columbia Gas Transmission Corp	NiSource Inc	9350	5,234	5,066	10365	Northeast	Southwest, Appalachia	DE, PA, MD, KY, NC, NJ, NY, OH, VA, WV
Columbia Gulf Transmission Co	NiSource Inc	2386	2,722	3,049	4124	Southeast, Northeast	Southwest	KY, LA, MS, TN, GM
Dominion Transmission Inc	Dominion Resources Inc	6655	1,700	1,701	3505	Northeast	Southwest, Appalachia	PA, MD, NY, OH, VA, WV
El Paso Natural Gas Co.	El Paso Corp	6182	4,769	4,488	10302	Western, Southwest	Southwest	AZ, CO, NM, TX
Florida Gas Transmission Co.	Florida Public Utilities Co	2217	2,153	2,055	4889	Southeast	Southwest	AL, FL, LA, MS, TX, GM
Gas Transmission Northwest Corp.	TransCanada Corp	2636	2,186	2,296	1356	Western	Canada	ID, OR, WA
Great Lakes Gas Transmission	TransCanada Corp	2958	2,163	2,282	2115	Midwest	Canada	MI, MN, WI
Gulf South Pipeline Co	Boardwalk Pipeline Partners LP	6260	2,919	1,852	6886	Southeast, Southwest	Southwest	AL, FL, LA, MS, TX, GM
Kern River Gas Transmission Co	Berkshire Hathaway Inc	1833	2,291	2,263	1680	Western	Central	CA, NV, UT, WY
National Fuel Gas Supply Corp	National Fuel Gas Co	2312	857	841	1481	Northeast	Canada, Appalachia	NY, PA
Natural Gas Pipeline Co LLC	Kinder Morgan Inc	4848	5,275	4,885	9306	Midwest	Southwest	AR, IA, IL, KS, LA, MO, NE, OK, TX, GM
Northern Border Pipeline Co.	ONEOK Inc	2626	2,326	2,427	1400	Midwest, Central	Canada	IA, IL, IN, MN, MT, ND, SD
Northern Natural Gas	Berkshire Hathaway Inc	7442	3,133	2,890	15874	Central, Midwest	Southwest	IA, IL, KS, NE, NM, OK, SD, TX, WI, GM
Northwest Pipeline GP	Williams Companies Inc (The)	4950	2,421	2,225	3880	Western	Canada, Central	CO, ID, OR, UT, WA, WY
Panhandle Eastern Pipe Line	Southern Union Co	2840	1,922	1,814	6445	Midwest	Southwest	IL, IN, KS, MI, MO, OH, OK, TX
Questar Pipeline Co.	Questar Corp	3192	1,166	1,118	1858	Central	Central	CO, UT, WY
Rockies Express Pipeline	Kinder Morgan Energy Partners LP	1800	1,562	392	1679	Midwest	Rockies	CO, WY, NE, KS, MO, IL, IN, OH
Southern Natural Gas Co.	El Paso Corp	3967	2,409	2,375	7635	Southeast	Southwest	AL, GA, LA, MS, SC, TN, TX, GM
Southern Star Central Gas	General Electric Co	2801	921	871	5803	Central	Central	CO, KS, MO, NE, OK, TX, WY
Tennessee Gas Pipeline Co.	El Paso Corp	6686	4,976	4,986	14463	Northeast, Midwest	Southwest, Canada	AR, KY, LA, MA, NY, OH, PA, TN, TX, WV, GM
Texas Eastern Transmission LP	Spectra Energy Corp	7332	3,925	3,940	9212	Northeast	Southwest	AL, AR, IL, IN, KS, KY, LA, MI, MO, MS, NJ, NY, OH, OK, PA, TX, WV, GM
Texas Gas Transmission LLC	Boardwalk Pipeline Partners LP	4065	2,377	2,148	5671	Midwest	Southwest	AR, IN, KY, LA, MS, OH, TN
Transcontinental Gas Pipe Line	Williams Companies Inc (The)	8466	7,062	7,315	10450	Northeast, Southeast	Southwest	AL, GA, LA, MD, MS, NC, NY, SC, TX, VA, GM
Transwestern Pipeline Co. LLC	CCE Holdings LLC	2439	1,782	1,767	2387	Western	Southwest, Central	AZ, CO, NM, TX
Trunkline Gas Co	Southern Union Co	3025	1,763	1,770	4202	Midwest Southeast	Southwest	AR, IL, IN, KY, LA, MS, TN, TX, GM
Wyoming Interstate Company	El Paso Pipeline Partners LP	2736	2,550	2,071	848	Central	Central	CO, WY

In this whole set of transactions, transmission is a small part of the total cost.

Cost Components of the Price Paid for Natural Gas by Residential Consumers

Breakdown of Winter Residential Rates, 2001 to 2008

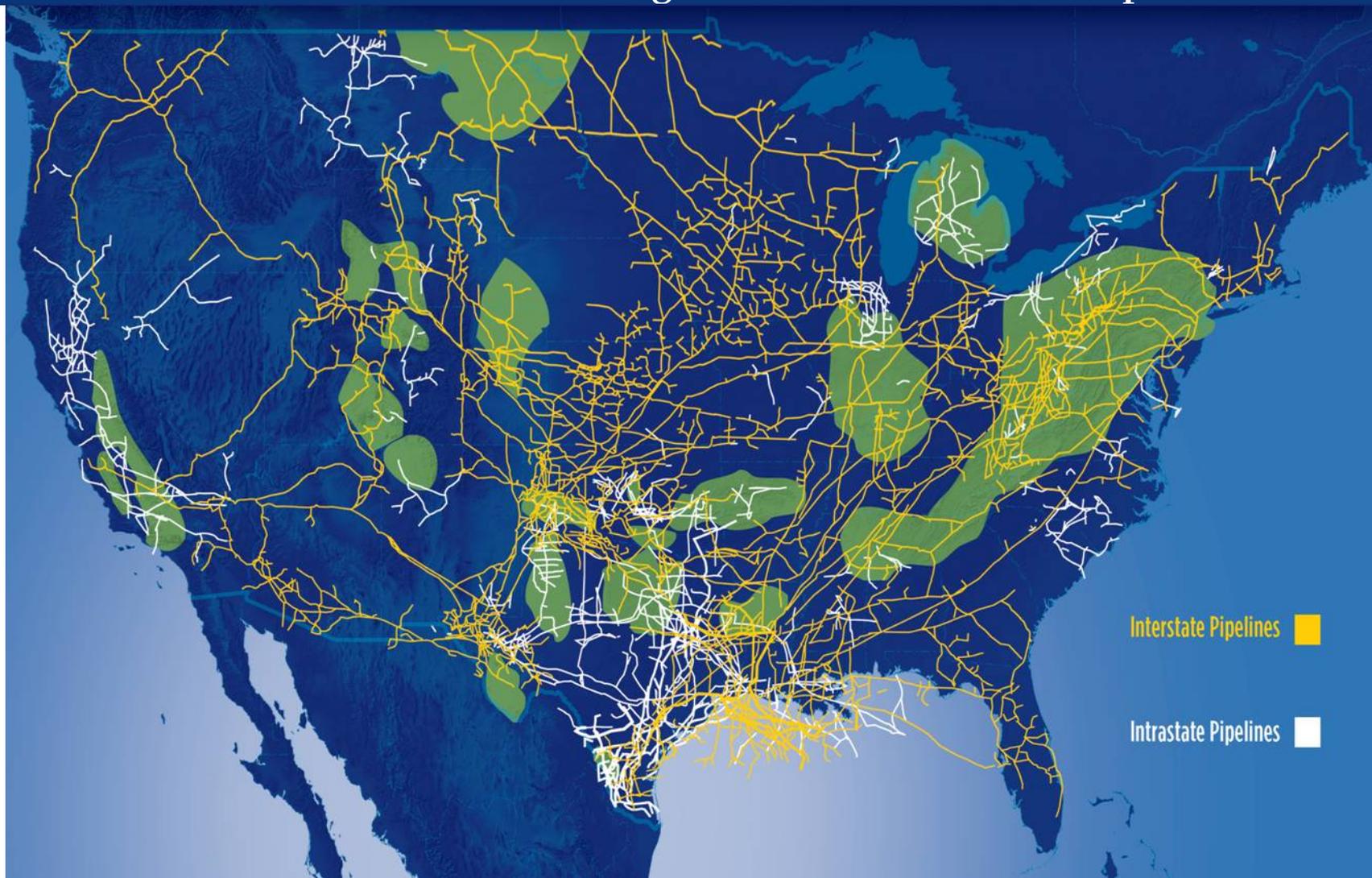


WHAT DOES SHALE MEAN FOR PIPELINES?

Shale Resources Span the Continent



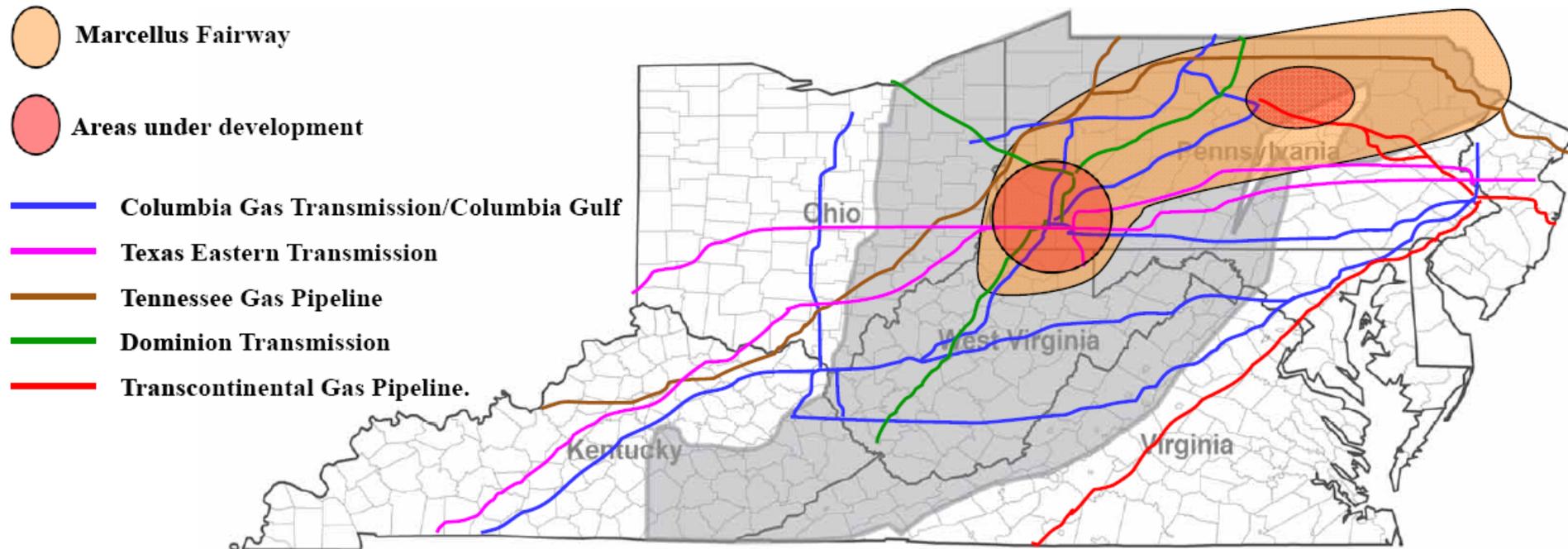
U.S. Natural Gas Shale Basins Align with the Nationwide Pipeline Grid



Sources: EIA, US Natural Gas Pipeline Network

HOW ABOUT HERE IN THE MARCELLUS?

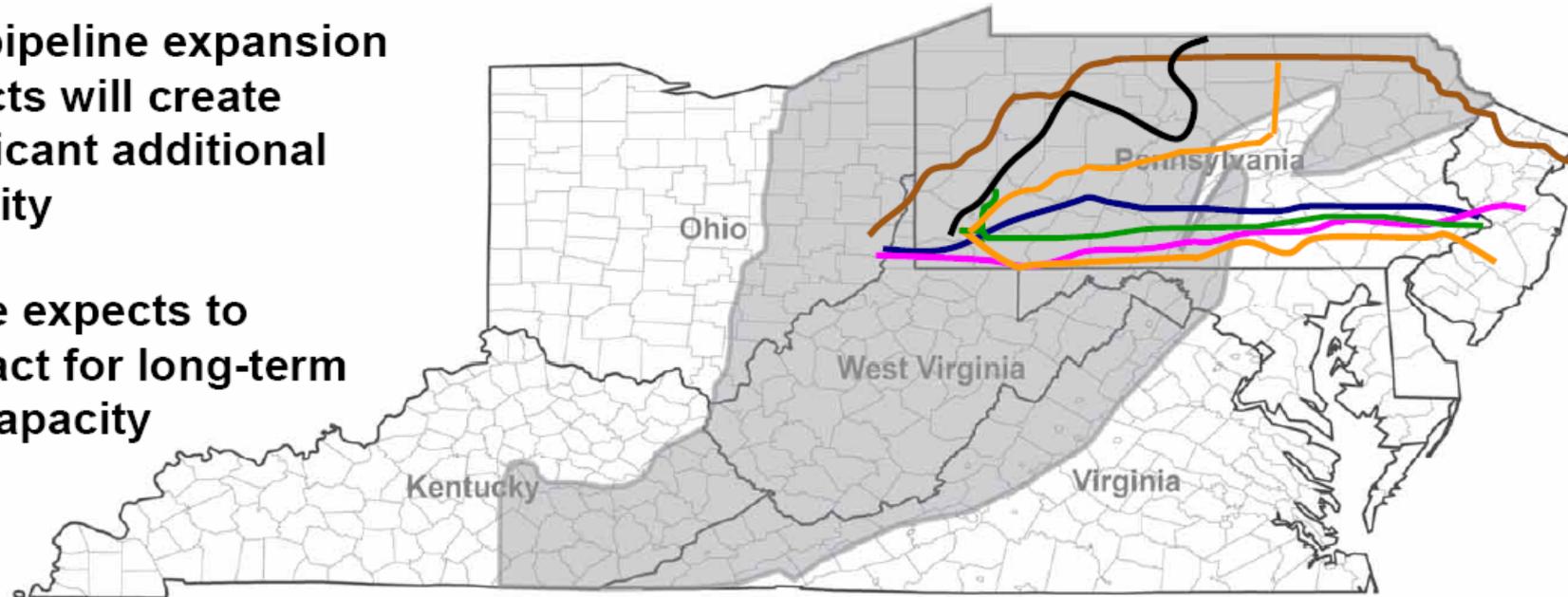
Existing Gas Pipelines Sufficient in Near Term



- Existing pipelines can support near-term development in southwestern Pennsylvania
- Range has short-term firm capacity of up to 150 MMcfd and interconnects with multiple pipelines – negotiating for additional capacity.
- Gating element in southwestern Pennsylvania may be gas processing and liquids handling

Multiple Potential Marcellus Gas Pipeline Projects

- New pipeline expansion projects will create significant additional capacity
- Range expects to contract for long-term firm capacity



- Columbia Gas Transmission “Appalachian Expansion Project and 1711 Expansion ” - Completed
- National Fuel “Appalachian Lateral Project” 625 MMcfd by 1Q 2012 (on hold)
- Texas Eastern Transmission “TEAM, TEMAX and Time III Projects” 300+ MMcfd by 1Q 2012
- Tennessee Gas Pipeline “300 Line Expansion Project” 300 MMcfd by Q1 2012 , Negotiating
- Dominion “Dominion Keystone Project” 1 Bcfd by 1Q 2012 Revised : JV with Transco – Northeast
- KM/Rockies Express Pipeline “REX-East Project” 500+ MMcfd by 4Q 2013

Source: Public Information

REGULATION

Who is Regulated, and by Whom?

Local Distribution Companies (LDCs)

- Regulated by State Utility Commissions (e.g., Arkansas regulation of Arkla)
- Individual City regulation (e.g., Entex in Texas)

Intrastate Pipelines

- State Utility Commissions or other state agencies (e.g., Railroad Commission of Texas)

Interstate Pipelines

- The Federal Energy Regulatory Commission (FERC)

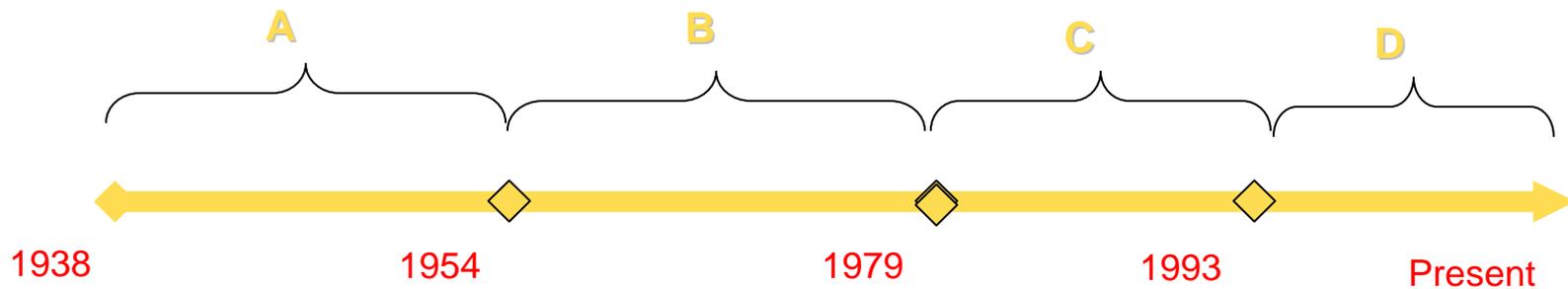
Gatherers, Producers, and Marketers

- Unregulated (neither Federal or State)

History of the Federal Energy Regulatory Commission (FERC)

- The Federal Power Commission (FPC) was created in 1920 with the passage of the Federal Water Power Act (changed in 1935 to the “Federal Power Act”).
- In 1938, the Natural Gas Act was passed giving the FPC broad authority over interstate gas pipelines.
- Until 1977, the regulatory agency was the Federal Power Commission. The Energy Organization Act of 1977 changed the agency to the Federal Energy Regulatory Commission (FERC), but the underlying law stayed the same.
- Regulation as leverage – “Who’s at the FERC and why?”

Regulation in the Four Broad Industry Eras



- A. 1938-1954:** Pipeline startups, huge growth, simple
- B. 1954-1979:** Wellhead regulation, looming and real shortages
- C. 1979-1993:** Oversupply and market-dysfunction crisis
- D. 1993-Now:** Wellhead deregulation and open-access

Natural Gas Act – Core Sections of FERC Regulation

Section 1 – Defines what is regulated

Section 3 – Authority over importation of gas (LNG, Canada, Mexico)

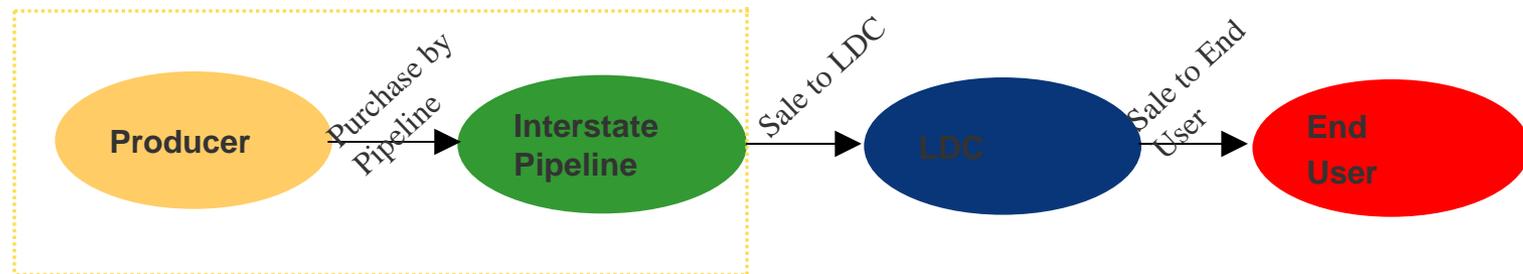
Section 4 – Authority over rates and tariffs

Section 5 – Complaints and investigations

Section 7 – Authorization of construction and abandonment

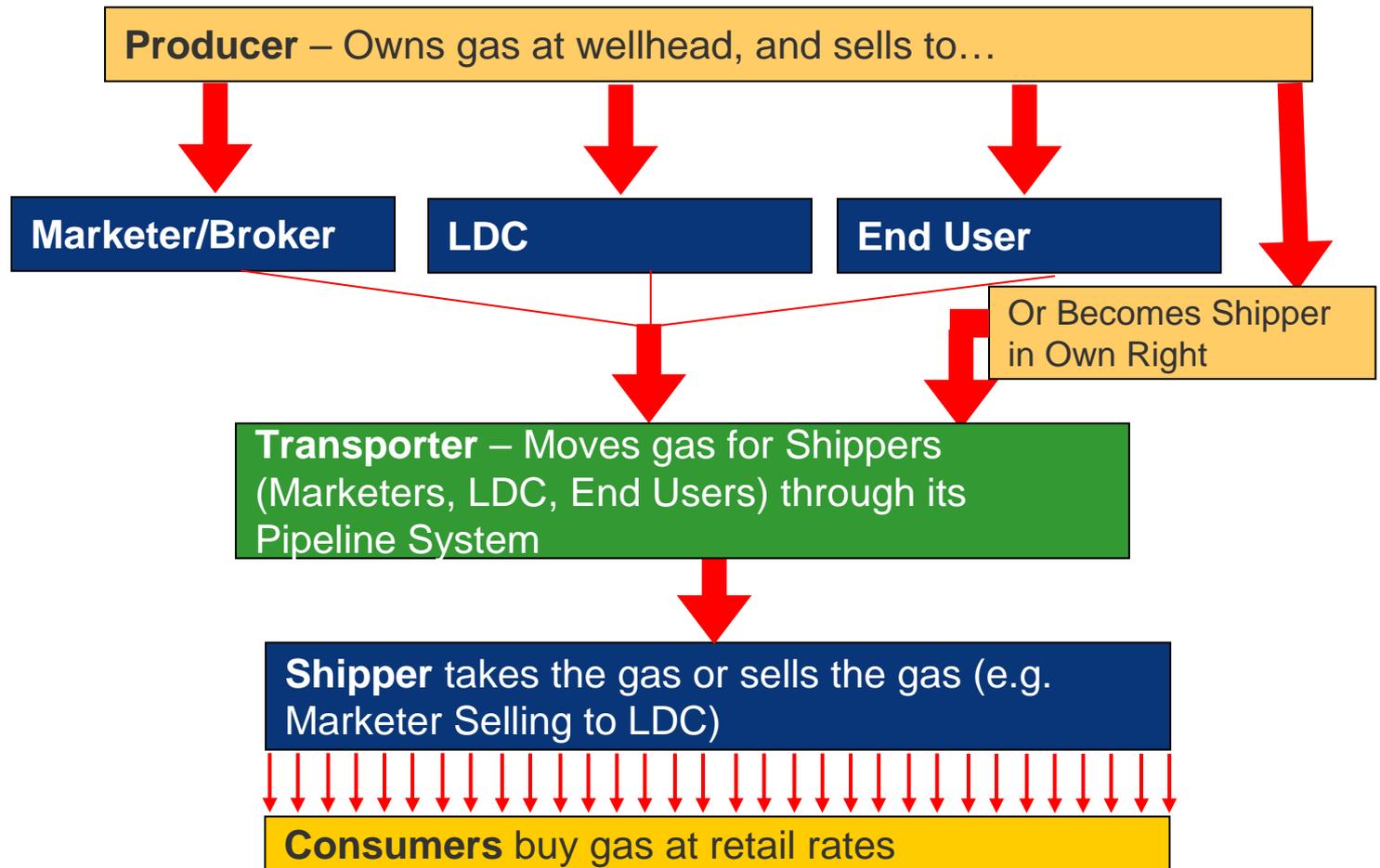
Getting Natural Gas to Market

Structure of Industry Prior to Deregulation and Pipeline Unbundling



Getting Natural Gas to Market (Post 1993)

Simplified Structure of Industry After Pipeline Unbundling



SETTING RATES FOR INTERSTATE PIPELINES

How are FERC Rates Set?

- Cost of Service—Accounting-based, with allowed rate of return
- Negotiated Rates—Buyer and Seller agree, with tariff alternative
- New-Project Incremental Rates—Cost-Based, New Facilities Only

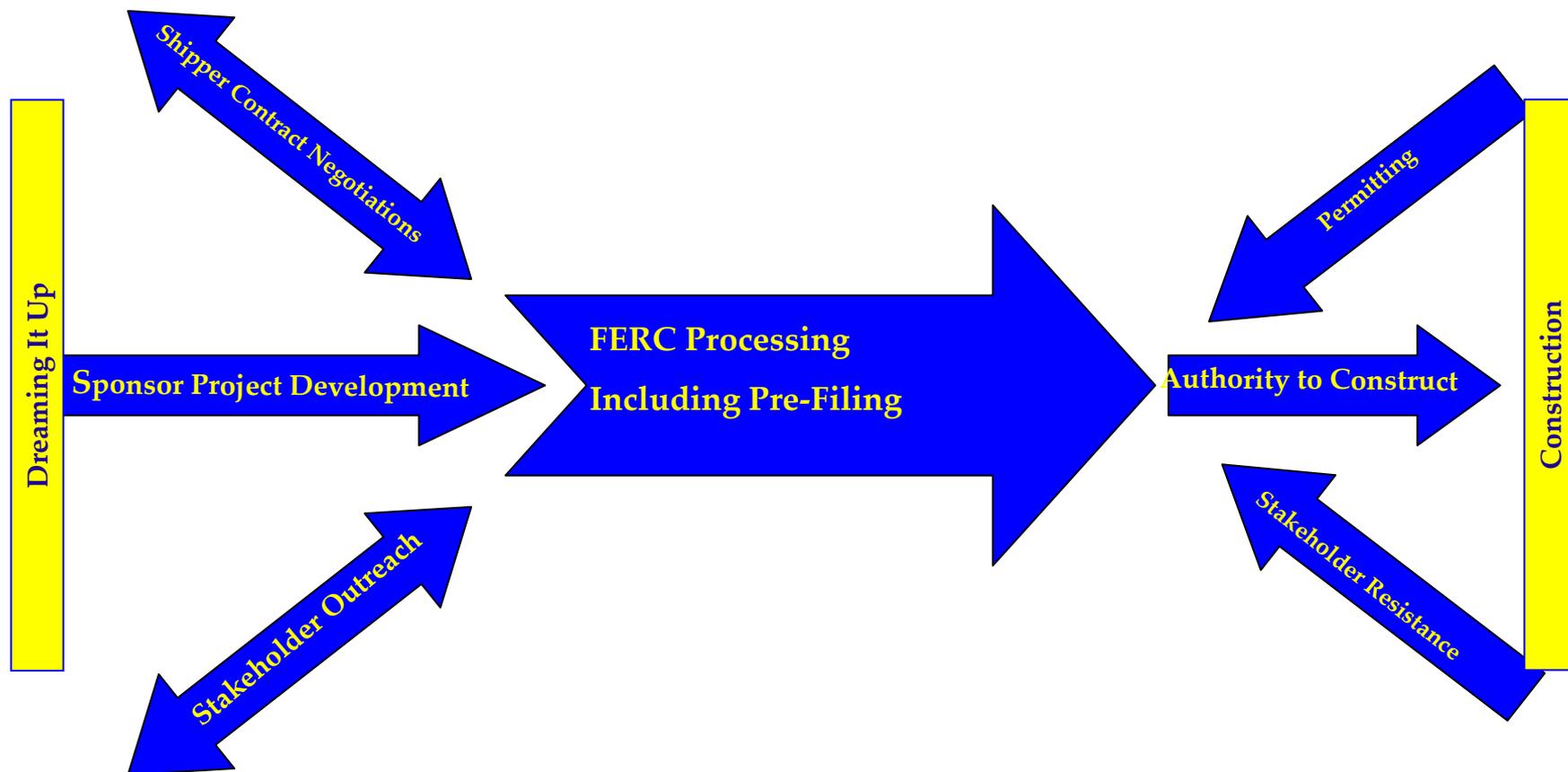
What Does a New-Facility Cost of Service Look Like?

- Say a new pipe will cost \$100 million, and will carry 600 MMCF/day
- Operation and Maintenance Expense: \$ 2.0 million
- Depreciation Expense (20 year life): \$ 3.3 million
- Property and other Taxes: \$ 1.5 million
- Return on Investment and Income Taxes: \$13.0 million
- » Total Cost of Service: \$19.8 million

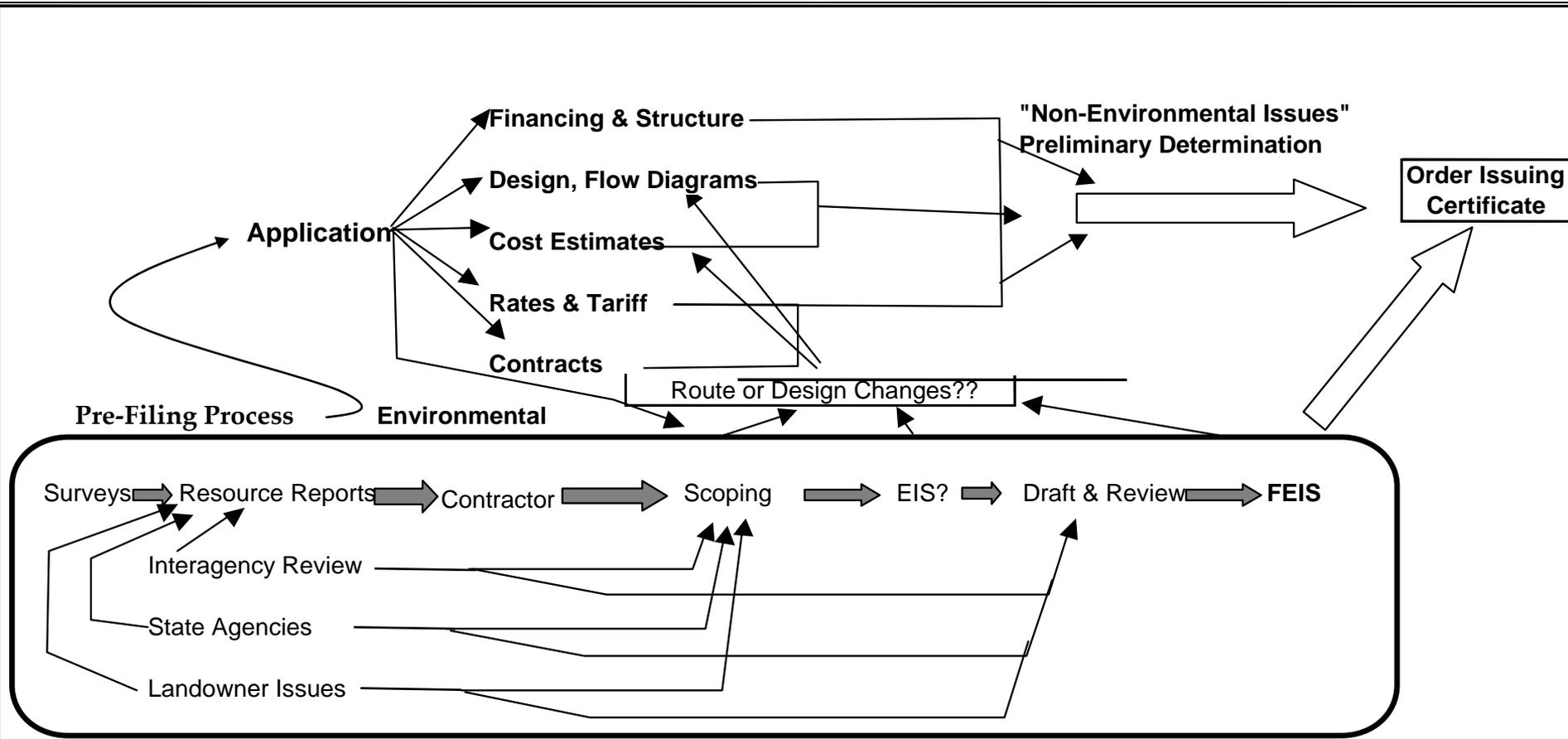
- Annual Throughput at full Capacity: $600,000 \times 365 = 219$ million Mcf
- Unit Cost of Service (rate) at full Capacity: $\$19.8 / 219 = 9.0$ ¢/Mcf
- Plus Fuel (retained), probably about 0.5%: $\$5.00 \times 0.5\% = \underline{2.5}$ ¢/Mcf
- » Total: 11.5 ¢/Mcf

BUILDING NEW PIPE – DEAL FORMULATION AND CERTIFICATES

Lots Has to Happen Before, During, and After The Certificate Proceeding



The Full FERC Certificate Process—Environmental Is the Critical Path



THE LAST AND GREATEST CHALLENGE—WHERE??

First there was ReX—Now Supply Could Appear in the Market Area—For Pipes that Go from Point A to Point B, Point A Might be

