PROJECT CHOICES, COMMITMENTS & MIDSTREAM OPTIONS

Prepared for Senate Resources Committee
Juneau, Alaska › February 3, 2014

Janak Mayer, Partner › janak.mayer@enalytica.info
Nikos Tsafos, Partner › nikos.tsafos@enalytica.info

http://enalytica.info

SB138/HOA/MOU: IMPORTANT STEP IN A LONG PROCESS

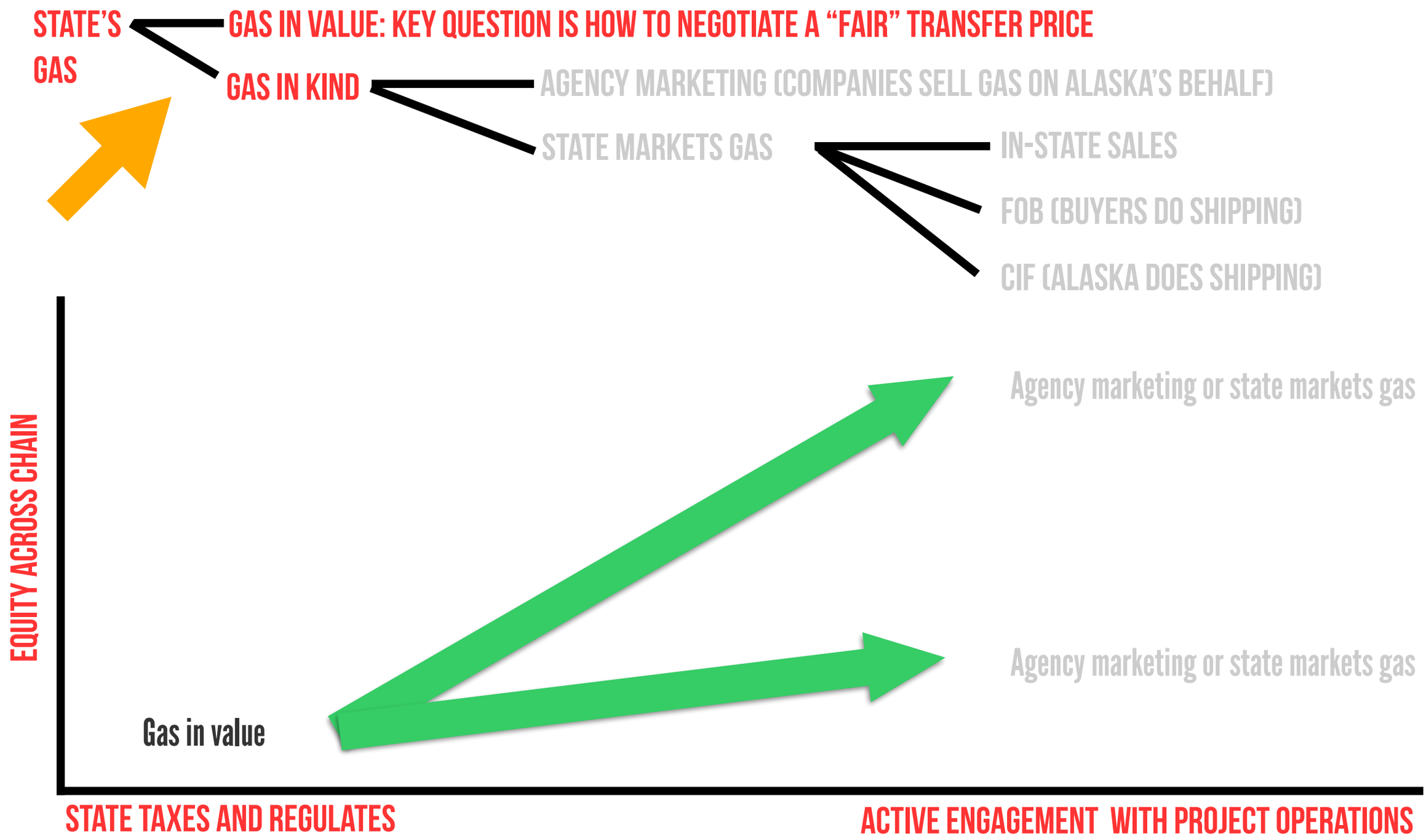
Upstream	Delineate resource base, certify reserves, define production plan
Midstream	Define pipeline path, secure right-of-way, environmental permits
Liquefaction	Define project size, processing / gas quality, project structure
Shipping	Decide whether to own, lease or outsource shipping to buyers
Marketing	Define commercialization plan, secure buyers, sign contracts
Financing	Define financing plan, secure in-house and third-party lending
Permitting	Secure permits to construct facility, export gas

Partners conduct front-end engineering and design studies (pre-FEED and FEED)

They then sign engineering, procurement and construction (EPC) contracts

Construction starts with final investment decision (FID); usually less than 10% of CAPEX spent before FID

SB138/HOA/MOU: DESIRED PATH BUT MUCH STILL OPEN



LNG PROJECTS EVOLVE: QC LNG (AUSTRALIA) CASE STUDY

	FEED (JULY 2008)	FID (OCTOBER 2010)	JANUARY 2014
Size	One train: 3-4 mmtpa Expandable to 12 mmtpa	Two trains 8.5 mmtpa	Two trains 8.5 mmtpa
Upstream	BG owned 9.9% of QGC and 20% of QGC's coal-bed methane in Surat Basin	All BG except CNOOC 5% and Tokyo Gas 1.25% in parts of Surat Basin	Gas from AP LNG; Same as FID plus CNOOC 25% in Surat and Bowen Basin
Liquefaction	T1: BG 70%, QGC 30%	T1: BG 90%, CNOOC 10% T2: BG 97.5%, Tokyo Gas 2.5%	T1: BG 50%, CNOOC 50% T2: BG 97.5%, Tokyo Gas 2.5% T3: CNOOC option for 25%
Off-take*	BG Group: 100%	CNOOC: 3.6 mmtpa* Tokyo Gas: 1.2 mmtpa* BG Group: balance	CNOOC: 8.6 mmtpa* Tokyo Gas: 1.2 mmtpa* Chubu Electric: ~0.6 mmtpa*
External Financing			JBIC: 175 mn to Tokyo Gas US EX-IM: $1.8 billion

** Off-take is supplemented by BG's global portfolio—not all LNG will come from Australia*

SOURCE: BG GROUP DATABOOK 2008—2013 EDITIONS, INDUSTRY PRESS

HOW COULD ALASKA STRUCTURE THE MIDSTREAM?

PATH OF THE MEMORANDUM OF UNDERSTANDING (MOU)

PRODUCER-SOA ALIGNMENT	Minimize disputes over where value is allocated Tariffs reflect value maximization across the entire chain
THIRD-PARTY EXPANSION	Midstream becomes an enabler for further exploration and development Expansion principles favor development of additional transportation capacity
IN-STATE DELIVERIES	Alaskan consumers receive cost at the lowest cost possible (given adequate returns on investment)
EXECUTION	Pipeline is delivered on time and at the lowest possible cost
CONTINUITY & MOMENTUM	Project maintains and accelerates current investment interest; Project leverages work to date and is not delayed by possible litigation

PRODUCER ONLY: ALIGNMENT / EXPANSION WEAK POINTS

✗	PRODUCER-SOA ALIGNMENT	Significant potential for disputes over allocation of value, and optimal level for midstream tariff
✗	THIRD-PARTY EXPANSION	Focus on commercializing producers' resources over gas belonging to third parties
✗	IN-STATE DELIVERIES	Uncertain tariff for in-state deliveries (of SOA's gas)
✓	EXECUTION	Strong and proven ability to execute, but midstream becoming less of a core focus for majors
?	CONTINUITY & MOMENTUM	Uncertainty about possibility of litigation and loss of work done to date

SOA EQUITY: MORE EXPANSION BIAS BUT BURDEN ON SOA

✓	PRODUCER-SOA ALIGNMENT	Strong alignment between producers and SOA
?	THIRD-PARTY EXPANSION	Relies on SOA to drive expansions, seeking new entrants and / or new partners; SOA may not be best placed to fill this role
✓	IN-STATE DELIVERIES	SOA can use its equity-entitled capacity to carry gas to local markets at lower cost
✓/?	EXECUTION	Strong and proven ability to execute for initial investment; expansion will depend on securing capabilities and/or another party
?	CONTINUITY & MOMENTUM	Uncertainty about possibility of litigation and loss of work done to date

MOU: EXPANSION BIAS & MOMENTUM; BUT BEST DEAL?

✓	PRODUCER-SOA ALIGNMENT	Strong alignment between producers and SOA; capital structure for rate-setting purposes appears within norm, but unclear if new bidding could have produced lower tariff
✓✓	THIRD-PARTY EXPANSION	TransCanada will be advocate for a project structure that encourages expansion and will have incentive to drive expansion of the infrastructure based on market interest
✓✓	IN-STATE DELIVERIES	SOA can use its equity-entitled capacity to carry gas to local markets at lower cost; pro-expansion bias further incentivizes possible in-state deliveries
✓	EXECUTION	TransCanada brings execution knowhow and expertise, while producers reinforce cost discipline (to ensure lowest possible tariff)
✓	CONTINUITY & MOMENTUM	Project maintains and accelerates investment interest and leverages work done to date

BID: WILL REWARD COMPENSATE FOR COST IN TIME AND $?

✓/?	PRODUCER-SOA ALIGNMENT	Strong alignment between producers and SOA; new bid could lead to a lower tariff, but it could also lead to a higher one; low investor interest could also slow down entire process
✓	THIRD-PARTY EXPANSION	Third party will have incentive to drive expansion of the infrastructure based on market interest, but would likely have less influence over current negotiations
✓✓	IN-STATE DELIVERIES	SOA can use its equity-entitled capacity to carry gas to local markets at lower cost; pro-expansion bias further incentivizes possible in-state deliveries
✓	EXECUTION	Third party would presumably bring execution knowhow and expertise, while producers would reinforce cost discipline (to ensure lowest possible tariff)
✗	CONTINUITY & MOMENTUM	Uncertainty about possibility of litigation and loss of work done to date; HOA negotiations could slow down in anticipation of new bidding process and license award

SOA NEEDS TO CAREFULLY WEIGH KEY QUESTIONS

What compensation might the SOA have to pay and what intellectual property will Alaska LNG retain?

Will the HOA process slow down if the midstream is tied in litigation?

What are the odds that a new selection process will deliver better terms than those available today?

To what extent was the AGIA process representative of the industry's interest in an Alaskan pipeline?

Would a new tariff offset absence from negotiating table; reduced momentum; cost to dissolve AGIA?

	PRODUCERS	PRODUCERS + STATE OF ALASKA	PRODUCERS + STATE OF ALASKA + TRANSCANADA	PRODUCERS + STATE OF ALASKA + 3RD PARTY
PRODUCER-SOA ALIGNMENT	✗	✓	✓	✓/?
THIRD-PARTY EXPANSION	✗	?	✓✓	✓
IN-STATE DELIVERIES	✗	✓	✓✓	✓✓
EXECUTION	✓	✓/?	✓	✓
CONTINUITY & MOMENTUM	?	?	✓	✗

APPENDIX

JANAK MAYER
PARTNER

enalytica

JANAK.MAYER@ENALYTICA.INFO

Before co-founding enalytica, Janak led the Upstream Analytics team at PFC Energy, focusing on fiscal terms analysis and project economic and financial evaluation, data management and data visualization.

Janak has modeled upstream fiscal terms in all of the world's major hydrocarbon regions, and has built economic and financial models to value prospective acquisition targets and develop strategic portfolio options for a wide range of international and national oil company clients. He has advised Alaska State Legislature for multiple years on reform of oil and gas taxation, providing many hours of expert testimony to Alaska's Senate and House Finance and Resources Committees.

Prior to his work as an energy consultant, Janak advised major minerals industry clients on a range of controversial environmental and social risk issues, from uranium mining through to human rights and climate change. He has advised bankers at Citigroup and policy-makers at the US Treasury Department on the management and mitigation of environmental and social impacts in major projects around the world, and has undertaken macroeconomic research with senior development economists at the World Bank and the Peterson Institute for International Economics.

Janak holds an MA with distinction in international relations and economics from from the Johns Hopkins School of Advanced International Studies (SAIS), and a BA with first-class honors from the University of Adelaide, Australia.

NIKOS TSAFOS
PARTNER

enalytica

NIKOS.TSAFOS@ENALYTICA.INFO

Nikos Tsafos has a diverse background in the private, public and non-profit sectors. He is currently a founding partner at enalytica. In his 7 ½ years with PFC Energy, Nikos advised the world's largest oil and gas companies on some of their most complex and challenging projects; he also played a pivotal role in turning the firm into one of the top natural gas consultancies in the world, with responsibilities that included product design, business development, consulting oversight and research direction.

Prior to PFC Energy, Nikos was at the Center for Strategic and International Studies (CSIS) in Washington, DC where he covered political, economic, and military issues in the Gulf, focused on oil wealth, regime stability and foreign affairs. Before CSIS, he was in the Greek Air Force, and prior to his military service, Nikos worked on channeling investment from Greek ship-owners to Chinese shipyards.

Nikos has also written extensively on the domestic and international dimensions of the Greek debt crisis. His blog (Greek Default Watch) was listed as one of "Europe's Top Economic Blogs" by the Social Europe Journal, and his book "Beyond Debt: The Greek Crisis in Context" was published in March 2013.

Nikos holds a BA with distinction in international relations and economics from Boston University and an MA with distinction in international relations from the Johns Hopkins School of Advanced International Studies (SAIS).

http://enalytica.info