

COMPETITIVENESS, PROJECT PATHWAY & ALIGNMENT

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Before co-founding **en**alytica, 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 the Johns Hopkins School of Advanced International Studies (SAIS), and a BA with first-class honors from the University of Adelaide, Australia.



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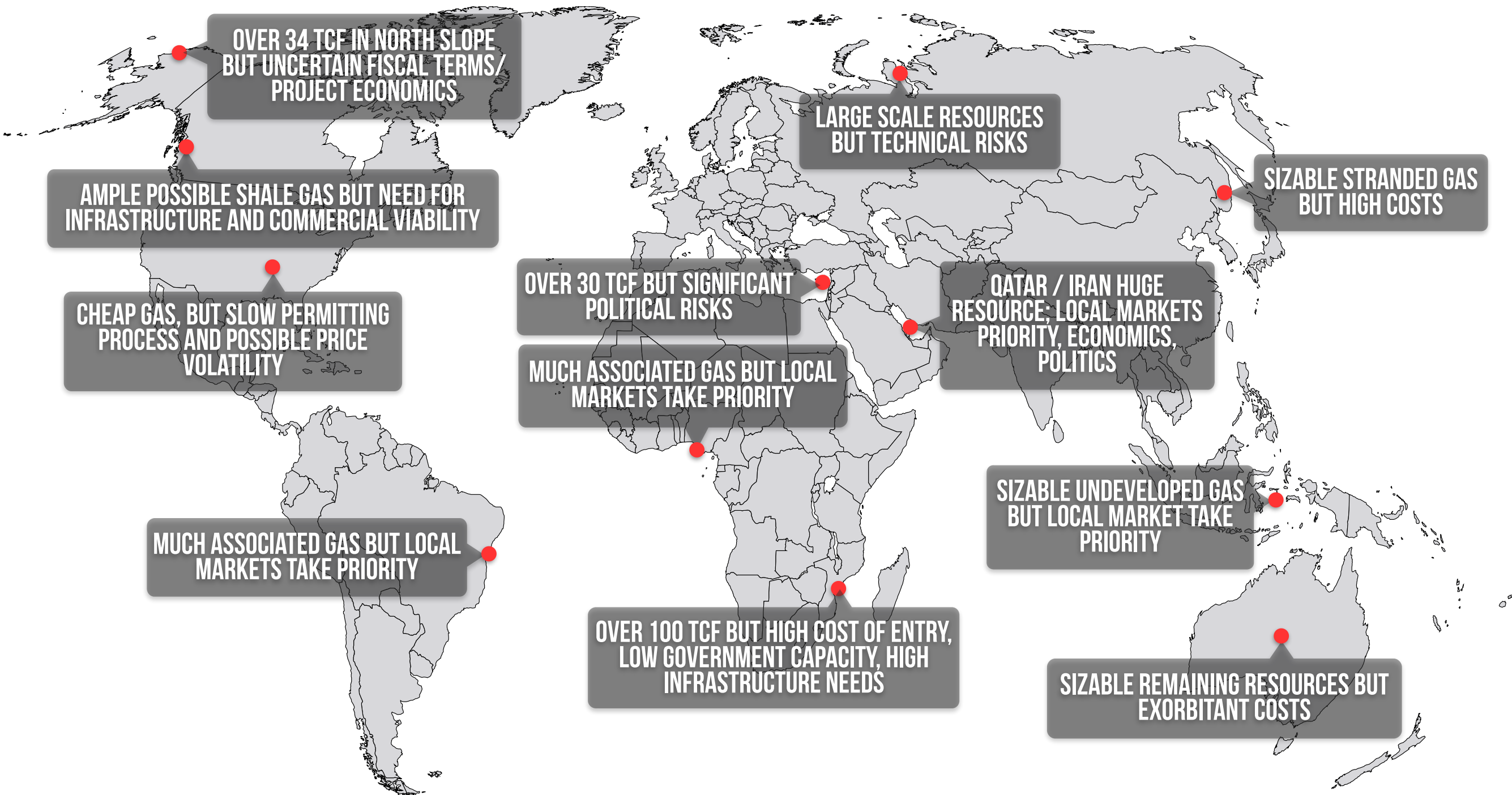
Nikos Tsafos has a diverse background in the private, public and non-profit sectors. He is currently a founding partner at **en**alytica. In his 7 ½ years with PFC Energy, Nikos advised the world's largest oil and gas companies on some of their most complex and challenging projects; he also played a 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.

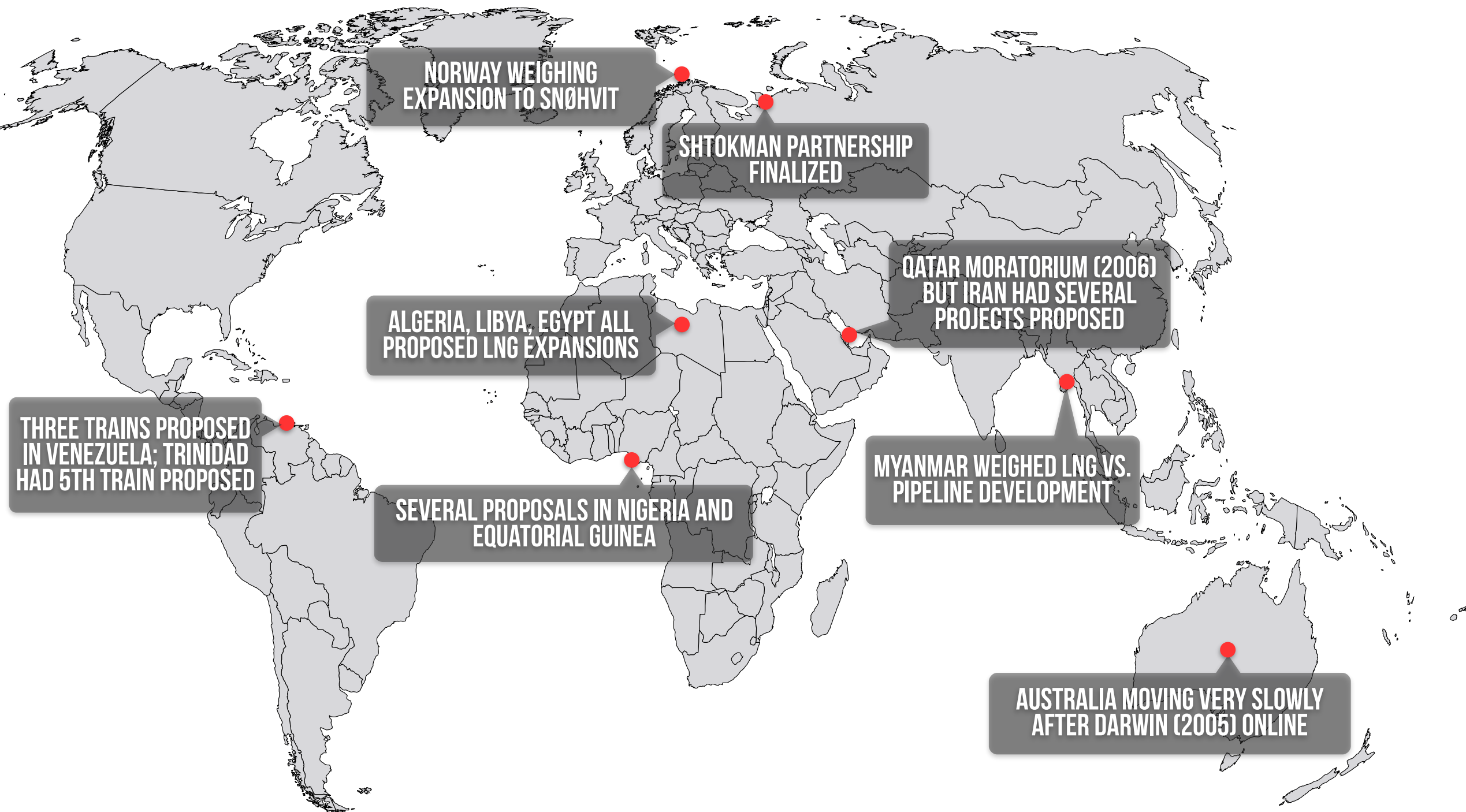
Nikos has also written extensively on the domestic and international dimensions of the Greek debt crisis. His blog (Greek Default Watch) was listed as one of "Europe's Top Economic Blogs" by the Social Europe Journal, and his book "Beyond Debt: The Greek Crisis in Context" was published in March 2013.

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).

AK LNG IS COMPETING IN A WORLD WITH MANY CHOICES



BUT WE'VE BEEN HERE BEFORE IN THE MID/LATE 2000S



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 CN00C 5% and Tokyo Gas 1.25% in parts of Surat Basin	Gas from AP LNG; Same as FID plus CN00C 25% in Surat and Bowen Basin
Liquefaction	T1: BG 70%, QGC 30%	T1: BG 90%, CN00C 10% T2: BG 97.5%, Tokyo Gas 2.5%	T1: BG 50%, CN00C 50% T2: BG 97.5%, Tokyo Gas 2.5% T3: CN00C option for 25%
Off-take*	BG Group: 100%	CN00C: 3.6 mmtpa* Tokyo Gas: 1.2 mmtpa* BG Group: balance	CN00C: 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

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
Project Stage	Pre-FEED		FEED		Construction				Online				
Project Milestones	Move to FEED		FID						Debottleneck / expansion				
Marketing	MOU/HOA SOA Plan		HOA/SPAs SOA Plan		SPAs for any unsold LNG								
Financing	Initial talks		Defining terms / singing loans		Possible additional financing				Refinance				
Project Structure & Ownership	Define initial structure		New partners / redefine ownership		New partners / redefine ownership				New partners possible				
Investment (Project)	\$400–\$500 mm		\$1,500–\$2,000 mm (Equity)		\$45–65 billion (Debt and equity)				O&M Met from cash flow				
Investment (SOA)	\$50–\$125 mm		\$200–\$500 mm (Equity)		\$6–\$15 billion (Debt and equity)				O&M Met from cash flow				

System SOA ownership percent SOA share of CAPEX & OPEX SOA cash commitments

	Value / Kind	Upstream	GTP & Pipe	LNG	Upstream	GTP & Pipe	LNG	Debt	Tariffs
Status Quo	in value	0%	0%	0%	Indirect (taxes)	0%	0%	No debt	Tariff matters for valuation
HOA	in kind	0%	25%	25%	Indirect (taxes)	25%	25%	Principal and interest	Tariff only notional
MOU Option 1	in kind	0%	10% (40% x 25%)	25%	Indirect (taxes)	10% (40% x 25%)	25%	Principal and interest	Tariff payable to T/C
MOU Option 2	in kind	0%	0%	25%	Indirect (taxes)	0%	25%	Principal and interest	Tariff payable to T/C



FY 2015 PRODUCTION TAX ESTIMATE USING INCOME STATEMENT FORMAT

	Price	Barrels (Thousands)	Value (\$ million)
Avg ANS Oil Price (\$/bbl) & Daily Production	\$105.06	498	\$52.4
Annual Production			
Total		181,912	\$19,111.7
Royalty, Federal & other barrels		(23,301)	(\$2,448.0)
Taxable bbls from companies w/ tax liability		158,611	\$16,663.7
Downstream (Transportation) Costs (\$/bbl)			
ANS Marine Transporation	(\$3.46)		
TAPS Tariff	(\$6.18)		
Other	(\$0.40)		
Total Transportation Costs	(\$10.03)	158,611	(\$1,591.0)
Deductable Lease Expenditures			
Deductible Operating Expenditures	(\$17.91)		(\$2,840.3)
Deductible Capital Expenditures	(\$28.08)		(\$4,453.4)
Total Lease Expenditures	(\$45.99)	158,611	(\$7,293.7)
Production Tax			
Gross Value Reduction			(\$63.8)
Production Tax Value (PTV)	\$48.64		\$7,715.2
Base Tax (35%*PTV)			\$2,700.3
Total Tax before credits			\$2,700.3

OIL VALUE CHAIN



Oil ~\$105/bbl

Midstream costs ~\$10/bbl



Lease expenditures \$46/bbl



Production tax on ~\$49/bbl netback



SOURCE: DEPARTMENT OF REVENUE, REVENUE SOURCES BOOK, FALL 2013, P. 106

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PRICE FOR ALASKAN GAS WILL BE:



Less transparent

no readily available published price like ANS WC

Less consistent by destination

contract-by-contract differences can be large

Likely link to Japan Crude Oil Cocktail, JCC

in 2004-2013, JCC traded at \$0.22/bbl discount to ANS

Lower value vs. oil (thermal equivalency)

e.g. \$100/bbl ≠ \$100/boe of LNG

\$100/bbl = \$78–\$90/boe (13%–15% “slope”)

SOURCE: DEPARTMENT OF REVENUE, REVENUE SOURCES BOOK, FALL 2013, P. 106

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Base Tax (35%*PTV)			\$2,700.3
Total Tax before credits			\$2,700.3

MIDSTREAM COSTS WILL BE:



Order of magnitude higher

Gas is significantly more expensive to transport

Tariff not regulated by FERC

FERC will regulate permitting, not rate-setting

Tariff highly sensitive to capital structure

return on equity and /or assumed debt/equity ratio

SOURCE: DEPARTMENT OF REVENUE, REVENUE SOURCES BOOK, FALL 2013, P. 106

INDICATIVE TAX BEFORE CREDITS FOR ALASKA LNG PROJECT @ ANS

	Price	Barrels (Thousands)	Value (\$ million)
Avg LNG Price (\$/boe) & Daily Production	\$81.00	384	\$31.1
Annual Production			
Total		140,306	\$11,364.8
Royalty, Federal & other barrels		(19,643)	(\$1,591.1)
Taxable bbls from companies w/ tax liability		120,664	\$9,773.8
Downstream (Transportation) Costs (\$/boe)			
Marine Transporation	(\$6.00)		(\$724.0)
Pipeline & GTP Tariff	(\$24.18)		(\$2,917.6)
Liquefaction Tariff	(\$36.00)		(\$4,343.9)
Total Transportation Costs	(\$66.18)	120,664	(\$7,985.5)
Deductable Lease Expenditures			
Deductible Operating Expenditures	(\$3.00)		(\$362.0)
Deductible Capital Expenditures	(\$3.00)		(\$362.0)
Total Lease Expenditures	(\$6.00)	120,664	(\$724.0)
Production Tax			
Gross Value Reduction			\$0.0
Production Tax Value (PTV)	\$8.82		\$1,064.3
Base Tax (35%*PTV)			\$372.5
Total Tax before credits			\$372.5

INDICATIVE LNG CHAIN: \$100/BBL

At \$100/bbl, LNG price ~\$81/boe (13.5%)

Midstream ~\$66/boe

Upstream ~\$6/boe

Limited netback to tax (less than \$9/boe)

SOURCE: ENALYTICA ANAL OF REVENUE, REVENUE SOURCES BOOK, FALL 2013, P. 106

COMPETITIVENESS › PROJECT PATHWAY › ALIGNMENT

oil netback › oil vs. gas prices › oil vs. gas midstream › LNG netback › LNG with lower oil price › LNG with higher costs › conclusion

INDICATIVE TAX BEFORE CREDITS FOR ALASKA LNG PROJECT @ ANS

	Price	Barrels (Thousands)	Value (\$ million)
Avg LNG Price (\$/boe) & Daily Production	\$72.18	384	\$27.7
Annual Production			
Total		140,306	\$10,127.3
Royalty, Federal & other barrels		(19,643)	(\$1,417.8)
Taxable bbls from companies w/ tax liability		120,664	\$8,709.5
Downstream (Transportation) Costs (\$/boe)			
Marine Transporation	(\$6.00)		(\$724.0)
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Production Tax			
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Production Tax Value (PTV)	\$0.00		\$0.0
Base Tax (35%*PTV)			\$0.0
Total Tax before credits			\$0.0

INDICATIVE LNG CHAIN: \$89/BBL ANS

A drop to \$89/bbl ANS ...



... wipes out any production tax value



INDICATIVE TAX BEFORE CREDITS FOR ALASKA LNG PROJECT @ ANS

	Price	Barrels (Thousands)	Value (\$ million)
Avg LNG Price (\$/boe) & Daily Production	\$81.00	384	\$31.1
Annual Production			
Total		140,306	\$11,364.8
Royalty, Federal & other barrels		(19,643)	(\$1,591.1)
Taxable bbls from companies w/ tax liability		120,664	\$9,773.8
Downstream (Transportation) Costs (\$/boe)			
Marine Transporation	(\$6.73)		(\$812.4)
Pipeline & GTP Tariff	(\$27.13)		(\$3,274.2)
Liquefaction Tariff	(\$40.40)		(\$4,874.7)
Total Transportation Costs	(\$74.27)	120,664	(\$8,961.3)
Deductable Lease Expenditures			
Deductible Operating Expenditures	(\$3.37)		(\$406.2)
Deductible Capital Expenditures	(\$3.37)		(\$406.2)
Total Lease Expenditures	(\$6.73)	120,664	(\$812.4)
Production Tax			
Gross Value Reduction			\$0.0
Production Tax Value (PTV)	\$0.00		\$0.0
Base Tax (35%*PTV)			\$0.0
Total Tax before credits			\$0.0

INDICATIVE LNG CHAIN: HIGHER COSTS

A 12.2% hike in costs / tariffs

... wipes out any production tax value

INDICATIVE TAX BEFORE CREDITS FOR ALASKA LNG PROJECT @ ANS

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IMPLICATIONS FOR STATE OF ALASKA



Fair market price critical for top line

Midstream, midstream, midstream



Upstream secondary to midstream



Wellhead insufficient to drive state take



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