Techno-Economic Analysis of location ELAI

A & AA BASIN

Prospect level parameters

Prospect	Objective/ Level	Area			Net pay		
		Min	M. Likely	Max	Min	M. Likely	Max
BG-GD-A	Sylhet (P)	0.40	0.58	0.84	4	**4**	4
	Kopili (P)	0.20	0.30	0.47	9	**11**	13
	Basement (S)	1.4	1.7	2.0	25	25	25

Play level Reservoir parameters

Prospect	Objective/ Level	Porosity			Oil saturation		
		Min	M. Likely	Max	Min	M. Likely	Max
BG-GD-A	Sylhet (P)	18	18	18	53	53	53
	Kopili (P)	18	20	**24**	40	50	**56**
	Basement (S)	2.5	2.5	2.5	95	95	95

Play level yield parameters

Prospect	Objective/ Level	FVF			Oil Sp. Gr	RF		
		Min	M. Likely	Max		Min	M. Likely	Max
BG-GD-A	Sylhet (P)	1.14	1.14	1.14	0.9366	20	22	27
	Kopili (P)	1.14	1.14	1.14	0.9366	20	22	25
	Basement (S)	1.14	1.15	1.17	0.8316	23	36	40

*Not estimated at Kopili (S) level.

VOLUMETRICS							
PROSPECT	**PLAY**	**PROBABILITY**	**AREA (Sq. Km)**	**IOIP**	**ULTIMATE**	**TOTAL**	**POS (%)**
BG-GD-A	BASEMENT	P-90	1.5	0.67	0.20	**1.2/ 0.36 MMt**	**24.5**
		Mean	**1.7**	**0.74**	**0.25**		
		P-10	1.8	0.82	0.29		
	SYLHET	P-90	0.48	0.15	0.04		**24.5**
		Mean	**0.60**	**0.19**	**0.05**		
		P-10	0.73	0.23	0.06		
	KOPILI	P-90	0.25	0.20	0.04		**24.5**
		Mean	**0.32**	**0.27**	**0.06**		
		P-10	0.40	0.34	0.08		

BLOCK	UAS	PEL/PML	East Lakhibari Extn. (7Yrs)	
PROSPECT	BG-GD-A	PLAY	Sylhet (P), Kopili (P) & Basement (S)	
HC TYPE	OIL	PRODUCTION PROFILE		
AREA (mean cumulative)	2.62 sq. km	PEAK WELL FLOW (MBBL/d)	0.566	
PLAY TOP (MSL m)	2350	PLATEAU RATE (FIELD) (MBBL/d)	0.57	
PROPOSED TD (MD m)	2500	YEARS TO PLATEAU	2	
INPLACE VOLUMES (MMBBL)	8.78	PLATEAU DURATION (Years)	6	
RESERVES (MMBBL)	2.57	FIELD PRODUCING LIFE (Years)	20	
EXPLRN. / APPRAISAL / ENGINEERING				
NO. OF EXPL+APP WELLS	1	EXPORT OPTION (PL / TANKER)	PL	
TOTAL NO. OF PRODUCERS	1	PIPELINE LENGTH (km)	0 (WHI)	
COST ASSUMPTIONS	WELL COST: Rs. 100000 per metre (EXPL) & Rs. 80000 per metre (DEVP); Pipe Line cost: Rs. 35Lakhs per KM			
DEVELOPMENT CONCEPT	WELLPAD GROUP TO EXISTING MAIN PRODUCTION FACILITY	EXCHANGE RATE	Rs. 64.5 / USD	

CASE-I (considering both primary and secondary objectives)

Estimated Expenditures						
Operating Expenses	$MM	8.73	**Unit Operating Expenses**	$/BBL	3.42	
Exploration Capital	$MM	3.80	**Unit Exploration Capital**	$/BBL	1.49	
Development Capital	$MM	9.50	**Unit Development Capital**	$/BBL	3.73	
Life cycle cost	$MM	22.03	**Unit Life cycle cost**	$/BBL	8.64	
Producing Life	Years	20	**Project Life**	Years	21	
ECONOMIC INDICATORS						
IRR: 32.9%						
NPV	**@ 0%**	**@ 5%**	**@ 8%**	**@ 10%**	**@ 12%**	**@ 14%**
$MM	41.57	22.93	16.26	12.95	10.32	8.19
Risk Analysis						
Risk Money	$MM	3.8	**EMV @ 0%**	$MM	0.72	
Discovery Probability	%	24.5	**EMV @5%**	$MM	-0.64	
The prospect BG-GD-A is techno-economically viable considering an average price $53/bbl.						

SENSITIVITY ANALYSIS								
BG-GD-A								
PLAY:	Sylhet, Kopili (P) & Basement (S)							
SENSITIVITY ON OIL PRICE								
VARIATION		-30%	-20%	-10%	0	10%	20%	30%
OIL PRICE	$/BBL	37.1	42.4	47.7	53	58.3	63.6	68.9
NPV @ 12%	MM$	4.41	6.38	8.35	10.32	12.28	14.22	16.17
NPV @ 14%	MM$	3.07	4.78	6.48	8.19	9.9	11.58	13.27
IRR	%	21.45	25.33	29.16	32.9	36.63	40.21	43.7
SENSITIVITY ON CAPEX								
VARIATION		-30%	-20%	-10%	0	10%	20%	30%
NPV @ 12%	MM$	12.56	11.82	11.08	10.32	9.55	8.79	8.03
NPV @ 14%	MM$	10.36	9.65	8.93	8.19	7.45	6.71	5.97
IRR	%	46.89	41.21	36.68	32.9	29.81	27.17	24.92
SENSITIVITY ON OPEX								
VARIATION		-30%	-20%	-10%	0	10%	20%	30%
NPV @ 12%	MM$	10.83	10.66	10.49	10.32	10.14	9.97	9.8
NPV @ 14%	MM$	8.64	8.49	8.34	8.19	8.04	7.9	7.75
IRR	%	33.88	33.55	33.23	32.9	32.62	32.29	31.96

CASE-II (considering only Kopili & Sylhet in BG-GD-A)

BLOCK	**UAS**	**PEL/PML**	**East Lakhibari Extn. (7Yrs)**
PROSPECT	**BG-GD-A**	**PLAY**	Sylhet (P), Kopili (P)
HC TYPE	**OIL**	**PRODUCTION PROFILE**	
AREA (mean cumulative)	0.92 sq. km	**PEAK WELL FLOW (MBBL/d)**	0.252
PLAY TOP (MSL m)	1800m	**PLATEAU RATE (FIELD) (MBBL/d)**	0.4
PROPOSED TD (MD m)	2500m	**YEARS TO PLATEAU**	1
INPLACE VOLUMES (MMBBL)	3.2844	**PLATEAU DURATION (Years)**	3
RESERVES (MMBBL)	0.7854	**FIELD PRODUCING LIFE (Years)**	7
EXPLRN. / APPRAISAL / ENGINEERING			
NO. OF EXPL+APP WELLS	1	**EXPORT OPTION (PL / TANKER)**	PL
TOTAL NO. OF PRODUCERS	0	**PIPELINE LENGTH (km)**	0 (WHI)
COST ASSUMPTIONS	WELL COST: Rs. 100000 per metre (EXPL) & Rs. 80000 per metre (DEVP); Pipe Line cost: Rs. 35Lakhs per KM		
DEVELOPMENT CONCEPT	WELLPAD GROUP TO EXISTING MAIN PRODUCTION FACILITY	**EXCHANGE RATE**	Rs. 64.5 / USD

SENSITIVITY ANALYSIS								
BG-GD-A								
PLAY:	Sylhet & Kopili (P)							
SENSITIVITY ON OIL PRICE								
VARIATION		-30%	-20%	-10%	0	10%	20%	30%
OIL PRICE	$/BBL	45.5	52	58.5	65	71.5	78	84.5
NPV @ 12%	MM$	-2.36	-1.08	0.17	1.41	2.63	3.85	5.06
NPV @ 14%	MM$	-2.89	-1.7	-0.54	0.61	1.74	2.86	3.99
IRR	%	5.43	9.06	12.46	15.74	18.86	21.88	24.85
SENSITIVITY ON CAPEX								
VARIATION		-30%	-20%	-10%	0	10%	20%	30%
NPV @ 12%	MM$	4.08	3.19	2.3	1.41	0.5	-0.42	-1.34
NPV @ 14%	MM$	3.3	2.4	1.51	0.61	-0.31	-1.23	-2.15
IRR	%	26.81	22.31	18.7	15.74	13.22	11.08	9.23
SENSITIVITY ON OPEX								
VARIATION		-30%	-20%	-10%	0	10%	20%	30%
NPV @ 12%	MM$	1.97	1.78	1.6	1.41	1.22	1.03	0.85
NPV @ 14%	MM$	1.12	0.95	0.78	0.61	0.44	0.27	0.1
IRR	%	17.13	16.67	16.21	15.74	15.27	14.79	14.3

Estimated Expenditures					
Operating Expenses	$MM	5.41	Unit Operating Expenses	$/BBL	6.85
Exploration Capital	$MM	3.80	Unit Exploration Capital	$/BBL	4.81
Development Capital	$MM	8.45	Unit Development Capital	$/BBL	10.70
Life cycle cost	$MM	17.66	Unit Life cycle cost	$/BBL	22.35
Producing Life	Years	7	Project Life	Years	8

ECONOMIC INDICATORS

IRR: 15.74%

NPV	@ 0%	@ 5%	@ 8%	@ 10%	@ 12%	@ 14%
$MM	9.46	5.24	3.37	2.32	1.41	0.61

Risk Analysis

Risk Money	$MM	3.8	EMV @ 0%	$MM	0.21
Discovery Probability	%	24.5	EMV @5%	$MM	-0.31

The prospect BG-GD-A is techno-economically viable considering an average price $65/bbl.

As per the Proposal of ELAI (BG-GD-A)

23/2/2021

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