NOVEMBER 2019

B.’ Energy Notes BEN. **28**

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NOVEMBER
2019

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Abstract

Aphrodite is a natural gas field where its production rights are given to a consortium by the Greek Administration of Southern Cyprus (GASC) with a Production Sharing Agreement. This chapter examines how the economic viability measures of the endeavor will change for both the consortium and the GASC as the initial set of assumptions changes. With the initial set of assumptions, the endeavor seems to be beneficial for both parties. However, with new and more realistic assumptions this endeavor is still profitable for the GASC but not for the consortium. Thus, it is likely that consortium will present these challenges and ask more compromises from the GASC. The latest developments show that some of these issues are already brought by the consortium and requested a set of compromises from the GASC. More of these compromises should be asked by the consortium in the future for the success of Aphrodite expedition, if Aphrodite field will be operational.

Key Words: Natural gas, Cyprus Island, Aphrodite Natural Gas Filed, Greek Administration Southern Cyprus.

1. Introduction

The natural gas companies discovered several major offshore gas fields in the Eastern Mediterranean region at the beginning of the 21st century. First, the Israelis began natural gas exploration and production in the early 2000s and later Egyptians, and Greek Cypriots initiated their explorations. The Greek Administration of Southern Cyprus (GASC) claimed several gas exploration fields and provided exploration opportunities for the companies. In October 2008, Noble Energy received the concession to explore Block 12 and signed a Production Sharing Contract (PSC), which is also used as Production Sharing Agreement (PSA) in different sources, with the GASC government. According to the agreement, the contractor became responsible for providing all necessary capital, technology, and staff that is necessary for the operations. Moreover, the burden of the risks accounted for the companies as well.[1] The agreement states that if there is no commercial discovery in the Contract Area during the term of this Contract, or if the production achieved from this Contract is not enough to recover all the Hydrocarbons Costs incurred by the Contractor, the Contractor shall bear its losses.[2]

The explorations began in mid-September of 2007, and after three months later, Noble Energy announced that they had discovered a gas field in Block 12 later named as Aphrodite.[3] The purpose of this paper is to study how the economic viability of Aphrodite natural gas field extraction under various economic and structural parameters for both GASC and the consortium that signed the contract. In this study, we investigated the financial feasibility of the Aphrodite by constructing production and fiscal models for the field. To test our hypotheses, we study several specifications to compare the base model that is introduced by the operating gas companies and the GASC government. The second section gives an overview of the Aphrodite gas field. In section three, we presented our model, and in section four, we report the results of the simulations. Finally, in the last section, we conclude the paper.

[1] "Model Production Sharing Contract" Ministry of Commerce, Industry and Tourism https://www.pwc.com.cy/en/energy-utilities-mining/assets/energy-model-production-sharing-contract.pdf
[2] Ibid.
[3] Margarita Hadjitofi, "Gas in Cyprus: Opportunities for Dutch Business & Knowledge Institutions" 2017. Report commissioned by the Embassy of the Kingdom of the Netherlands in Nicosia, Cyprus.

2. Aphrodite Gas Field

Aphrodite is an offshore gas field on the southern coast of GASC located in the Block 12 of the country's maritime Exclusive Economic Zone (EEZ).[4] It lies approximately 160 km south of LimassolSea. The Egyptian Idku Liquefaction Natural Gas (LNG) facility is 400 km away from the field while the Egyptian Damietta LNG facility is much closer to Aphrodite, at a distance of 200 km.[5] The area is also 35 kilometers away from Israel's Leviathan gas field.[6]

The attention given to the Aphrodite field by energy companies demonstrates that the area has a high returns potential.[7] Noble Energy received the concession to explore Block 12 in October 2008.[8] In August 2011, they entered into a PSA with the GASC government to develop the block commercially with the shares of 60% the government and, 40% the firm.[9] After the discovery, in December 2013, the Israeli based company, Delek Drilling and Avner Oil Exploration reports showed lower amounts than the estimated number, 4.1 trillion cubic feet (tcf), equal to 0.063% of global conventional reserves. In the following year, the value of the probable and recoverable reserves had been lowered again to 3.1 tcf by Nobel Energy.

In April 2019, the expense share of Block 12 is owned by the following companies: BG Cyprus (35%), Noble Energy (35%), Avner Oil (15%), and Delek Drilling (15%) while Aphrodite field is owned by Delek Drilling (30%), Noble Energy (35%), and British Gas (35%). We should note that in February 2016, Royal Dutch Shell completed its acquisition of British Gas (the BG Group).[10] Thus, Shell has a 35% share now.[11]

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[4] Aphrodite gas field, Accessed April 26, 2019.https://www.offshore-technology.com/projects/aphrodite-gas-field/
[5] Theodoros Tsakiris, Ulgen. S., Han., A.K."Gas Developments in the Eastern Mediterranean : Trigger or Obstacle for EU – Turkey Cooperation?" *The Future of EU – Turkey Relations (FEUTURE)* May, 2018.
[6] "The offshore helicopter industry: Treading water" Vertical April 11, 2019 Accessed April 26, 2019. https://www.verticalmag.com/features/treading-water-the-future-of-offshore/
[7]" Cnooc In Aphrodite: Boosting Cypriot Hopes" Natural Gas World July 1, 2014, Accessed April 2019. https://www.naturalgasworld.com/cnooc-aphrodite-gas-field-charles-ellinas See : "Cyprus-Egypt Aphrodite Gas Field Lures Investors" The National Herald, February 11, 2019. Accessed April 26, 2019. https://www.thenationalherald.com/230318/cyprus-egypt-aphrodite-gas-field-lures-investors/
[8] Noble energy announces significant natural gas discovery offshore Republic of Cyprus". nobleenergyinc.com. 2011. Accessed April 26, 2019.
[9] "Hasty new gas deal could cost billions" Cyprus Mail August 26, 2018. Accessed April 26, 2019. https://cyprus-mail.com/2018/08/26/hasty-new-gas-deal-could-cost-billions/
[10] "Aphrodite Gas Field" Delek Drilling. Accessed April 26, 2019. https://www.delekdrilling.co.il/en/project/aphrodite-gas-field
[11] Aphrodite Gas Field - Offshore Technology | Oil and Gas. Accessed April 26, 2019. https://www.offshore-technology.com/projects/aphrodite-gas-field/

The development of the Aphrodite gas field is expected to enable GASC to achieve energy independence and help the country to minimize air pollution while strengthening the businesses and employment opportunities, and contributing to the overall economy of the country.[12] The companies expect first gas to be commercialized after 2020; however, identifying a suitable export option remains ambiguous due to the political constraints in the region. Since the natural gas production in the GASC side will be higher than its demand, it is planned to be exported, and currently, GASC plans to export natural gas from the Aphrodite field by 2020. The GASC government is considering various economically viable options that the current study will not elaborate. A technical study was conducted by the Egyptian Natural Gas Holding Company and the Cyprus Hydrocarbons Company in 2015 to design a possible gas connecting route from the Aphrodite gas field to Egypt.[13]

The consortium has not finalized the field development plan for the Aphrodite; however, the proposed project comprises of two phases. The first phase is drilling of up to five production wells in water depths of 1,700m.[14] These wells will be drilled at different depths within the reservoir layers with the maximum drilling depth is 5,000m.[15] A wellhead located on the seabed, approximately 3,000m above the reservoir, and a subsea pipeline will connect the production wells to Floating Production Storage and Offloading unit (FPSO). The maximum production capacity in the first phase is expected to be around 800 million cubic feet per day (mmcfd).[16] The FPSO will transport the processed gas through pipelines to a proposed onshore natural gas liquefaction plant.[17] The proposed onshore plant will include three liquified natural gas (LNG) production units with a capacity of five million tonnes per annum (MTPA) each.[18] It will also include a power plant, supporting and auxiliary services, an operation and control center, as well as two LNG storage containers with a capacity of 180,000m³ each.[19] The facility is also set to

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[12] Aphrodite Gas Field - Offshore Technology | Oil and Gas .... https://www.offshore-technology.com/projects/aphrodite-gas-field/

[13] K. Faoud. "Eastern Mediterranean Gas: Taking an Unpaved Road" Egyptian Institute for Studies, January 7, 2019. Accessed April 26, 2019. https://en.eipss-eg.org/eastern-mediterranean-gas-taking-an-unpaved-road/

[14] "Project Aphrodite to Export Natural Gas" February 28, 2019. Accessed April 26, 2019. http://www.eghtesadban.com/events/6841921/project-aphrodite-to-export-natural-gas

[15] Aphrodite Gas Field - Offshore Technology | Oil and Gas . Accessed April 26, 2019. https://www.offshore-technology.com/projects/aphrodite-gas-field/

[16] Ibid.

[17] Ibid.

[18] Ibid.

[19] Ibid.

feature jetties for LNG carriers, in addition to loading and unloading equipment. According to LNG World News, the GASC government has extended the deadline for the tender it launched initially in October 2018 for the construction of a LNG terminal in Vasilikos Bay, near Limassol.[20]

Noble Corporation provided the Homer Ferrington drilling rig to drill the GASC A-1 discovery well, while Ensco PLC provided the Ensco 5006 drilling rig for the drilling of the GASC A-2 appraisal well in 2013.[21] The Block 12 partners and the GASC government are considering options on how the natural gas may be supplied to the local market in GASC and exported through pipelines to other markets, including the Egyptian market. As part of these efforts, the GASC government signed an energy cooperation agreement with the Egyptian government that will examine the option of exporting gas from Aphrodite to both the Egyptian domestic market and to the liquefaction facilities of private companies on Egyptian soil including Shell which owns the Idku Natural Gas Liquefaction Company in Egypt.[22]

Before proceeding with the explanation of our model, it is important to note that we developed this paper on a set of assumptions. However, our findings demonstrate that as the parameters of the model changes, the measures of economic viability also change. The development of these economic viability measures is the main argument of the paper rather than the magnitudes of these economic viability measures themselves. Thus, one must pay attention to turn of the economic viability parameters changes rather than these metrics themselves. This study does not explore export destinations for the natural gas production of Aphrodite filed. Our findings show that wellhead cost changes with different assumptions of our model so that the business endeavor is not profitable for the consortium that makes the field not operational. This requires that the PSA should be re-negotiated in the future. The new set of developments suggests that the GASC will start the re-negotiations with a weaker hand.

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[20] "Cyprus extends tender deadline for LNG import facility" LNG World News, January 25, 2019. Accessed April 26, 2019. https://www.lngworldnews.com/cyprus-extends-tender-deadline-for-lng-import-facility/

[21] Aphrodite Gas Field - Offshore Technology | Oil and Gas. Accessed April 26, 2019. https://www.offshore-technology.com/projects/aphrodite-gas-field/

[22] As of September 30, 2018 - ir.delek-group.com. Accessed April 26, 2019. https://ir.delek-group.com/static-files/4bffd42a-d68a-4dee-98d9-1033e858bc44

3. Model

Production models are tied to a fiscal model to generate a cash flow structure for an oil or gas asset within its economic life. They are bounded by the limitations and taxation of a financial system that is tied to the asset. This type of models are using production data, the sales price of the produced commodity, exploration and appraisal (E&A) expenditures, capital expenditures (CAPEX) for the development of the asset and the operational expenditures (OPEX) incurred during the financial life of an asset. In some cases, abandonment cost of the asset is also added as an input to determine all the income and expenses applied to the asset. The output of this type of models is generally financial data for the asset such as net present value (NPV), internal rate of return (IRR), total recoverable reserves for the asset and the total revenue that asset could generate.

For many cases, the specific input elements for such models are unknown for the modeler. A Modeler aims to create a model that could make accurate calculations, as well as, having estimates and assumptions to generate all the necessary inputs for the model to work effectively. For the calculations and assumptions, some pre-accepted industry norms are widely used within the industry. Even for an oil and gas operator exact CAPEX, OPEX and abandonment costs could be unknown, and the operator needs to make assumptions to generate a working model before making any investment decision. These assumptions and calculation methods have been developed over the learning curve of the industry that is heavily supported by academic work that is related to the industry's core subject.

Our models here have been designed to work as GASC's fiscal regime which applies on oil and gas exploration and production activities within the country. GASC does not have any specific fiscal regime other than income tax law concerning oil and gas revenues. Therefore, we have used the existing corporate income tax regime for the operators of the Aphrodite gas field. The main difference for the operator's fiscal obligations from all other foreign entities in the country is that the field's operations have been contracted under a Revenue Sharing Agreement (RSA) which is a revision of PSA. PSAs are generally chosen where the State would like to have direct control on some proportion of the natural gas produced from the field while the State is not included in the cost-sharing structure of the development of the field. In our model, the expected life of a project will be 18 years. The production will start in its fourth year. The consortium will generate net profit after its 8th year.

Based on the Aphrodite RSC, state take would be 45% of the gross production before any cost or tax would be incurred on the revenues. However, the same RSC suggests that the state take could be higher if oil prices would exceed $60/bbl. We have designed our model to use 45% state take as a default level as we do not make any oil price forecast for the course of this study.[23]

For setting a production profile for the asset, we have used a set of assumptions. Our model suggests that the peak production level could be reached during the third year of the production with a plateau period of five years. The first year production rate would be 20% of the peak production, and the second-year production rate would be 60% of peak production level. The field is estimated to have a terminal decline rate of 15% starting from the end of the plateau period until the end of its economic life for eight years. We used a solver function within the model the applies the estimations mentioned above to set a peak production level so that the cumulative production for 15 years of the asset's financial life would be equal to the commercially recoverable reserves. Our default recovery rate (that is multiplied by the original gas in place (OGIP) announced by the operator) is 80%; however, we used different scenarios of reserves, so that solver function created different production profiles for each recovery rate scenario.

We assumed the wellhead price of $3.35 per mmBtu. According to Annual Energy Outlook 2019, the reference case for the Henry Hub prices will remain below $4 through 2035 and, $5 through 2050.[24] Therefore, the projections are consistent with our assumption.

E&A costs have been added based on different sources giving information on the exploration and appraisal activity of the field. The operator had 469 km of 3D seismic in 2009, drilled one exploration well and had 4,000 km 2D seismic activity in 2011 and drilled one appraisal well in 2013. Costs for all these E&A activities were derived from analogous fields in other parts of the world where the operating conditions are very similar to Aphrodite so that the expenditure structure would be similar to Aphrodite's. For some cases, the sourcing expense was incurred in a different year than the Aphrodite's. In these cases, a specific inflation rate is applied to the analogous fee.

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[23] Delek Drilling, Update Report on the Assessment of Contingent and Prospective Resources Following Appraisal Drilling of the Aphrodite A-2 Well in Cyprus, 2013.

[24] US Energy Information Administration, ed. *Annual Energy Outlook 2019: With Projections to 2050*. Government Printing Office, 2019, pp. 68.

CAPEX model consists of development costs, repayment of the investment used as development cost and the annual payments of abandonment cost. The development cost of the field is calculated by using development cost per barrel oil equivalent (boe) approach that is widely used in the industry. The reason for using this approach is irrespective from being oil or gas asset. The main development costs of any oil and gas field are purely determined by the cost structure of the oil industry. Most of the development costs in a gas field such as installing a production platform, drilling new wells, installing pipelines are all common with all developments, so the cost calculation is also following oil industry norms. We used a base development cost of $1.75/boe as of 2019, and we applied 1.7% inflation on the price to come up with future per boe cost estimations. We estimated the development to be completed within the 2021-2023 period, and the costs are shared as 20%, 40% and 40% for 2021, 2022 and 2023, respectively parallel to the average speed of completion of offshore gas development.

We estimate that a borrowing rate of 4.5% that the capital and the interest applied would be repaid in five years in 2024-2028 period after the field starts production. We also estimated a total abandonment cost of $309.6 million that will incur two years after the economic life of the field. This cost is calculated by analogous field's offshore field's abandonment cost of $160 million that will incur in 2025. We applied an annual discount rate of 4.5% to calculate the abandonment costs in 2040 for Aphrodite. This cost is estimated to incur in annual installments for the 15 years of the economic life of the field. Although abandonment cost bears at the end of the field's commercial viability, operators are expected to save a certain amount of money annually to guarantee the existence of the abandonment investment at the end of the economic life.

OPEX for an oil or gas field is divided into two categories; fixed OPEX and variable OPEX. Fixed OPEX refers to any operational expense in the field irrespective from the production rate. These are, but not limited to, salaries for the staff, rent for some operational tools or security costs. As an industry norm, we assumed that annual fixed OPEX is calculated by getting 5% of total development cost divided by the economic life of the field in terms of years. We split the amount to 15 parallel to our assumptions for this field. We also applied a 2% inflation on the annual costs.

Variable OPEX calculation is generally calculated in per unit of production level as the variable OPEX is directly related to the total production rate for the field. It is usually an

assumed value multiplied with the annual production amount of the field. In our model, we used another industry assumption to determine variable OPEX as a function of fixed OPEX as calculation variable OPEX for this field is very hard. The area of Aphrodite is very new to gas production activities, so the method of using fixed OPEX to determine variable OPEX is a much reasonable approach. As an industry rule of thumb, at the peak production level, the ratio of fixed OPEX to variable OPEX is estimated to be 30%/70% for an offshore gas field as this is the only period when variable OPEX could reach its peak. Due to their natures, offshore fields tend to approach peak production as soon as possible and as maximum as possible as fixed OPEX for off-shore operations are much higher compared to onshore fields. It was ensuring that the operator could minimize the total OPEX for the field's entire commercial life. We used the same assumptions to calculate per unit variable OPEX that later we multiplied with total annual production.

Our model is designed based on the RSA signed between GASC and the operators of the field that is expected to be under corporate income tax regime in GASC. Based on RSA we have taken 45% of the gross production out of tax and cost calculations. Hence, profit gas in our model is estimated to be 55% of the total output. All the costs have been discounted from the profit gas. Based on the current fiscal system, losses are allowed to be carried forward for five years from the end of the year of assessment in which the tax losses are incurred, so we applied the same principle in our model. Taxable income is taken only annual pre-tax cash flow is positive with the losses carried forward.

We have applied 12.5% of corporate income tax (CIT) to the annual pre-tax cash flow to determine the total taxable income for the state. We assumed that capital gain tax (CGT) and branch tax rate (BTR) do not apply to an oil and gas production activity so we have taken the prices of these two taxes as zero. Post-tax cash flow is calculated as subtracting all the taxes incurred from annual pre-tax cash flow for the field.

We have applied NPV and IRR analysis on post-tax cash flow to determine the financial health of the asset. For NPV calculations, a discount rate of 4.5% has been used in line with our borrowing rate expectation for the operators. However, we have applied different scenarios for the discount rate to analyze different risk cases for the field that will be operating in a heavily disputed area.

4. Simulation Results

Table 1 reports the profitability measures of the consortium and GASC. The benchmark model assumes that reserves of the field are 4.5 trillion cubic of feet (tcf) parallel with the mean of the initial estimates of Noble Energy; the recoverable rate of the gas field is 80%; the government share of the production is 45% from the PSA; wellhead price is $3.35; gas price inflation is 0%; inflation that affects OPEX is 2%, and the discount rate that is also the borrowing rate is 4.5%. If this is the case, then the net present value (NPV) of the Project for the consortium will be $602.95 million, the internal rate of return for the consortium (IRR) is 6.23%, the tax revenue will be $458.19 million and total government take will be $5,885 million.[25] These figures are reasonable for any successful endeavor. For a further understanding of the benchmark model, we report several figures for this endeavor. Figure 1 is for how the total production will be realized over time, Figure 2 is for how the government revenue total state to take that also includes tax revenue will be shaped, and finally, Figure 3 explains the post-tax revenue for the consortium. We also study the model under different reserves, government's share of production, wellhead price, gas price inflation, and discount rates. The measures for the project profitability for both the consortium and GASC are gathered and reported in the Appendix section of the chapter on Tables A1 to A24.

Table 1: Economic Viability Measures of the Aphrodite Field Under Different Assumptions

	Benchmark	Optimistic Scenario	Realistic Scenario	Pessimistic Scenario
	Pane A: Assumptions			
Resources (tcf)	4.5			3,1
Gov.share (%)	45	50		
Well head price($)	3.35			
Gas price change (%)	-		-1	
Inflation (%)	2			
Discount Rate (%)	4.5			
	Panel B: Simulations			
NPV($) (Consortium)	602.95	272.27	-200	-1,026.00
IRR (%)	6.23	4.46	0.02	-5.00
Tax Revenue ($)	458.19	407.12	324.32	94.34
Tot. Gov. Intake ($)	5,885.19	6,437.12	5,457.09	3,630.25

[25] "Hasty new gas deal could cost billions" Cyprus Mail August 26, 2018. Accessed April 26, 2019. https://cyprus-mail.com/2018/08/26/hasty-new-gas-deal-could-cost-billions/

Figure 1: Gas Production Profile (Thousand Cubic Feet/d)

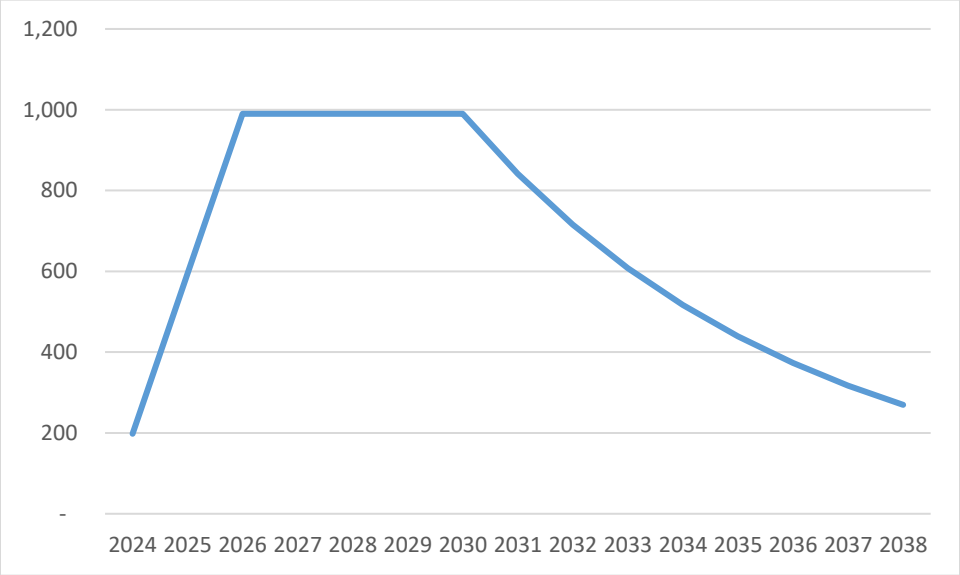

Figure 2: Government Take and Government Total State Take (Million USD)

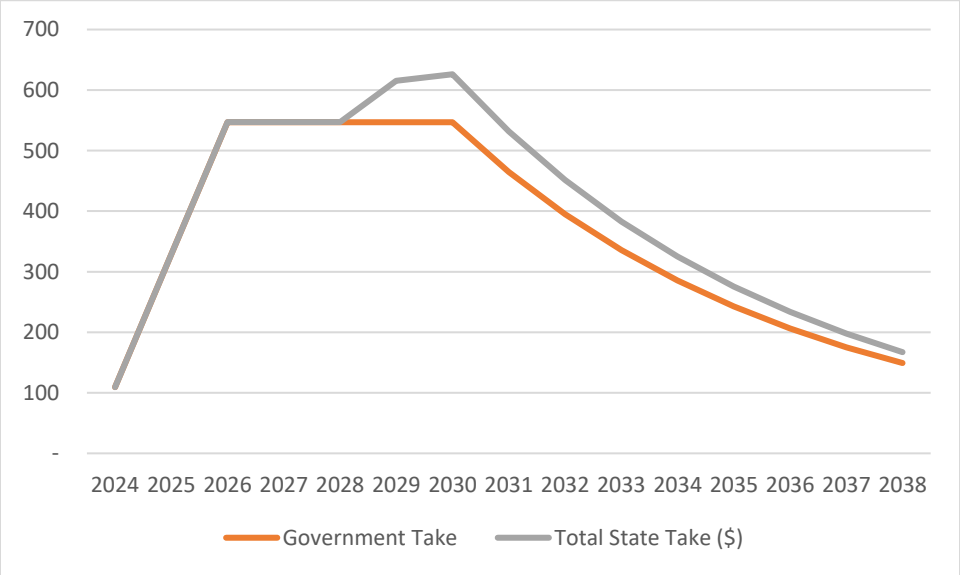

Figure 3: Post Tax Revenue for the Consortium (Million USD)

One of the amendments to the contract is that as the oil prices increase above $60, then the store of the government will increase to 50%. That also changes corporate profitability. The next scenario that we call as the optimistic scenario is reported in the second column of Table 1. Here we assume that the wellhead price will be intact. Note that this is not an unrealistic assumption if the relationship between crude oil prices and natural gas prices break down due to excess supply of natural gas.[26] In this case, it decreases NPV to $272 million, IRR to 4.46% for the consortium, and the government's tax revenue to $407.12 million but increases the government's total intake to $6,437.12 million.

Due to excess supply, natural prices (relative to crude oil prices) may have a decreasing trend. If the underlying assumption of the models on gas field development projects that there is a stable relationship between natural gas prices and oil prices breaks down, then this brings another challenge to the existing models. Furthermore, note that this relationship breaks down after 2008, ever since the price of oil has an increasing trend while natural gas has a decreasing

[26] Frank Asche., A.Ogland and P. Osmandsen, 2012, "Gas Verses Oil Prices – The Impact of Shale Gas." *Energy Policy*, 47, 112 – 124.

trend.[27] The third scenario which we call as the realistic scenario is studied in the next column: we assume the gas price inflation is -1%. Here the NPV is $-200 million, and IRR is 0.002% for the consortium but, tax revenue is $324.32 million, and total government intake is $5,457.09 million. This exercise clearly shows that this business endeavor is not viable for the consortium. The last column labeled as the pessimistic scenario that reduces reserves to 3.1 Tcf from 4.5 Tcf parallel with the Nobel's last estimate as the recoverable rate is still 80%. Under the pessimistic scenario, NPV is $-1,026 million and IRR -5%. The total government intake is $3,360.25 million. The project is still infeasible for the consortium.

All these exercises suggest that the project requires external factors to be economically viable. The consortium is likely to put pressure on the GASC to decrease GASC revenues. Besides, we noticed that the firm's demand has been accumulating on the GASC. For example, Delek Drilling demands 5% higher return in Aphrodite filed due to the closeness of the Aphrodite filed to the Leviathan field; they argue that a higher extraction rate in Aphrodite lead to depleting Leviathan field.[28] Moreover, there is another set of demands on the modification of Product Sharing Agreement to Revenue Sharing Agreement which is also likely to decrease the return of GASC government.[29] Gas to be sent to Idku (also Shell is one of the shareholders) to produce LNG and re-export to GASC may force GASC not to explore more profitable options.

5. Conclusion

This paper argues that even if the Aphrodite production plan seems economically feasible for both GASC and the consortium with the initial set of assumptions; however, the return will be lower for the consortium with more realistic assumptions. It requires that at one point the contract might need to be re-negotiated as it is evident in the latest GASC actions and currently hesitant consortium partners. To get an understanding of how PSC would look like, according to Cyprus Mail, the companies who are operating in Aphrodite filed has already demanded a reversal of the distribution of profits previously about 60% to the state-40% in the companies

[27] Ibid, pp. 115-124.
[28] "Cyprus-Israel discuss deal for Aphrodite Gas Field" Kathimerini Cyprus March 21, 2019. Accessed April 26, 2019. https://knews.kathimerini.com.cy/en/news/cyprus-israel-discuss-deal-for-aphrodite-gas-fieldc
[29] "Hasty new gas deal could cost billions" Cyprus Mail August 26, 2018. Accessed April 26, 2019. https://cyprus-mail.com/2018/08/26/hasty-new-gas-deal-could-cost-billions/.

now, to 40% to the state-60% in the companies.[30] Therefore, the economic viability of the operation should have been raising further questions for the GASC government. If any agreement cannot be reached between the parties, then the consortium may also increase the production but decrease expected life of the project and decrease total revenue of GASC.

The project itself faces various challenges which we did not address. Finding buyers for the produced Aphrodite gas needs is an important challenge. If these buyers have been found with the added costs, then current low oil prices due to excess supply of oil will bring additional challenges. Consequently, this may create pressure on the GASC from the consortiums not to explore possibilities to more practical and profitable options.

[30] "Hasty new gas deal could cost billions" Cyprus Mail August 26, 2018. Accessed April 26, 2019. https://cyprus-mail.com/2018/08/26/hasty-new-gas-deal-could-cost-billions/

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Appendices

Table A1, Economic Viability Assessments Across Natural Gas Price and Reserves When the Inflation Rate is 0%. Government Share is 40, and the Discount Rate is 3.5%

Inflation	0	Reserves						
Gov, Share	40%							
Dis, Rate	3.5	3.1	3.5	4	4.5	5	5.5	6
Natural Gas Price	NPV							
	IRR							
	Tax Revenue							
	Tot.Gov.In							
3.15	NPV	(233.40)	136.78	599.51	1,062.24	1,524.82	1,983.36	2,441.91
	IRR	0.56%	2.79%	5.23%	7.37%	9.26%	10.92%	12.41%
	Tax Revenue	300.11	351.33	415.36	479.38	543.60	613.34	683.08
	Tot.Gov.In	3,424.91	3,879.33	4,447.36	5,015.38	5,583.60	6,157.34	6,731.08
3.35	NPV	(51.25)	342.44	834.55	1,326.66	1,815.96	2,303.62	2,791.27
	IRR	1.69%	3.92%	6.35%	8.48%	10.33%	11.98%	13.45%
	Tax Revenue	325.32	379.79	447.88	515.97	587.88	662.05	736.21
	Tot.Gov.In	3,648.52	4,131.79	4,735.88	5,339.97	5,947.88	6,558.05	7,168.21
3.55	NPV	130.90	548.10	1,069.59	1,590.33	2,107.10	2,623.87	3,140.64
	IRR	2.75%	4.98%	7.40%	9.51%	11.34%	12.96%	14.42%
	Tax Revenue	350.52	408.24	480.40	553.57	632.16	710.75	789.35
	Tot.Gov.In	3,872.12	4,384.24	5,024.40	5,665.57	6,312.16	6,958.75	7,605.35
3.75	NPV	313.06	753.75	1,304.62	1,852.35	2,398.24	2,944.12	3,490.00
	IRR	3.76%	5.98%	8.39%	10.46%	12.28%	13.88%	15.32%
	Tax Revenue	375.72	436.70	512.92	593.42	676.44	759.46	842.48
	Tot.Gov.In	4,095.72	4,636.70	5,312.92	5,993.42	6,676.44	7,359.46	8,042.48
4.75	NPV	1,223.83	1,779.57	2,471.02	3,162.47	3,853.93	4,542.96	5,221.77
	IRR	8.05%	10.20%	12.50%	14.48%	16.20%	17.71%	19.03%
	Tax Revenue	501.74	582.35	687.51	792.67	897.83	1,006.29	1,128.68
	Tot.Gov.In	5,213.74	5,902.35	6,767.51	7,632.67	8,497.83	9,366.29	10,248.68
5.75	NPV	2,128.93	2,798.55	3,635.57	4,471.50	5,293.22	6,114.93	6,936.65
	IRR	11.41%	13.47%	15.68%	17.56%	19.16%	20.58%	21.84%
	Tax Revenue	635.48	737.32	864.62	993.40	1,141.57	1,289.73	1,437.89
	Tot.Gov.In	6,339.48	7,177.32	8,224.62	9,273.40	10,341.57	11,409.73	12,477.89
6.75	NPV	3,031.46	3,817.53	4,793.05	5,757.67	6,722.29	7,677.96	8,623.98
	IRR	14.12%	16.11%	18.21%	19.98%	21.52%	22.87%	24.05%
	Tax Revenue	772.74	892.29	1,051.38	1,225.31	1,399.24	1,584.95	1,783.37
	Tot.Gov.In	7,468.74	8,452.29	9,691.38	10,945.31	12,199.24	13,464.95	14,743.37

Table A2, Economic Viability Assessments Across Natural Gas Price and Reserves When the Inflation Rate is 0%. Government Share is 45%, and the Discount Rate is 3.5%

Inflation	0	Reserves						
Gov, Share	45%							
Dis, Rate	3.5	3.1	3.5	4	4.5	5	5.5	6
Natural Gas Price	NPV							
	IRR							
	Tax Revenue							
	Tot.Gov.In							
3.15	NPV	(452.39)	(133.15)	291.02	715.19	1,139.36	1,563.03	1,983.36
	IRR	-0.89%	1.19%	3.64%	5.79%	7.70%	9.40%	10.92%
	Tax Revenue	236.56	313.99	372.67	431.36	490.05	549.41	613.34
	Tot.Gov.In	3,751.96	4,282.99	4,908.67	5,534.36	6,160.05	6,786.41	7,417.34
3.35	NPV	(305.48)	55.37	506.47	957.58	1,408.68	1,856.60	2,303.62
	IRR	0.09%	2.32%	4.77%	6.91%	8.80%	10.48%	11.98%
	Tax Revenue	290.10	340.07	402.48	464.90	527.31	594.06	662.05
	Tot.Gov.In	4,028.70	4,561.07	5,226.48	5,891.90	6,557.31	7,227.06	7,898.05
3.55	NPV	(138.53)	243.89	721.93	1,199.96	1,676.46	2,150.16	2,623.87
	IRR	1.16%	3.38%	5.82%	7.96%	9.83%	11.48%	12.96%
	Tax Revenue	313.24	366.15	432.29	498.44	566.66	638.71	710.75
	Tot.Gov.In	4,275.04	4,839.15	5,544.29	6,249.44	6,956.66	7,667.71	8,378.75
3.75	NPV	28.44	432.41	937.38	1,442.34	1,943.33	2,443.73	2,944.12
	IRR	2.16%	4.39%	6.82%	8.94%	10.78%	12.42%	13.88%
	Tax Revenue	336.34	392.24	462.10	531.97	607.25	683.36	759.46
	Tot.Gov.In	4,521.34	5,117.24	5,862.10	6,606.97	7,357.25	8,108.36	8,859.46
4.75	NPV	863.32	1,375.01	2,010.05	2,643.88	3,277.71	3,911.55	4,542.96
	IRR	6.48%	8.67%	11.01%	13.02%	14.78%	16.33%	17.71%
	Tax Revenue	451.86	522.66	617.40	713.80	810.19	906.59	1,006.29
	Tot.Gov.In	5,752.86	6,507.66	7,457.40	8,408.80	9,360.19	10,311.59	11,266.29
5.75	NPV	1,696.47	2,310.29	3,077.56	3,844.83	4,608.46	5,361.70	6,114.93
	IRR	9.90%	12.00%	14.25%	16.18%	17.84%	19.29%	20.58%
	Tax Revenue	569.71	663.06	779.75	896.44	1,018.10	1,153.91	1,289.73
	Tot.Gov.In	6,986.71	7,908.06	9,059.75	10,211.44	11,368.10	12,538.91	13,709.73
6.75	NPV	2,523.79	3,244.36	4,145.06	5,034.20	5,918.44	6,802.67	7,677.96
	IRR	12.66%	14.69%	16.86%	18.68%	20.25%	21.64%	22.87%
	Tax Revenue	695.53	805.12	942.11	1,094.86	1,254.30	1,413.73	1,584.95
	Tot.Gov.In	8,228.53	9,310.12	10,662.11	12,029.86	13,404.30	14,778.73	16,164.95

Table A3, Economic Viability Assessments Across Natural Gas Price and Reserves When the Inflation Rate is 0%. Government Share is 50, and the Discount Rate is 3.5%

Inflation	0	Reserves						
Gov, Share	50%							
Dis, Rate	3.5	3.1	3.5	4	4.5	5	5.5	6
Natural Gas Price	NPV							
	IRR							
	Tax Revenue							
	Tot.Gov.In							
3.15	NPV	(667.08)	(391.46)	(17.46)	368.14	753.75	1,139.36	1,524.82
	IRR	-2.43%	-0.48%	1.89%	4.05%	5.98%	7.70%	9.26%
	Tax Revenue	166.25	259.02	329.99	383.34	436.70	490.05	543.60
	Tot.Gov.In	4,072.25	4,669.02	5,369.99	6,053.34	6,736.70	7,420.05	8,103.60
3.35	NPV	(529.00)	(231.69)	178.40	588.49	998.58	1,408.68	1,815.96
	IRR	-1.43%	0.57%	3.02%	5.18%	7.09%	8.80%	10.33%
	Tax Revenue	208.32	300.35	357.09	413.83	470.57	527.31	587.88
	Tot.Gov.In	4,362.32	4,990.35	5,717.09	6,443.83	7,170.57	7,897.31	8,627.88
3.55	NPV	(395.76)	(60.31)	374.27	808.84	1,243.42	1,676.46	2,107.10
	IRR	-0.51%	1.63%	4.08%	6.23%	8.14%	9.83%	11.34%
	Tax Revenue	257.44	324.06	384.19	444.32	504.45	566.66	632.16
	Tot.Gov.In	4,659.44	5,294.06	6,064.19	6,834.32	7,604.45	8,376.66	9,152.16
3.75	NPV	(256.17)	111.07	570.13	1,029.19	1,488.25	1,943.33	2,398.24
	IRR	0.41%	2.64%	5.09%	7.23%	9.12%	10.78%	12.28%
	Tax Revenue	296.96	347.78	411.29	474.81	538.32	607.25	676.44
	Tot.Gov.In	4,946.96	5,597.78	6,411.29	7,224.81	8,038.32	8,857.25	9,676.44
4.75	NPV	502.80	967.98	1,549.08	2,125.29	2,701.50	3,277.71	3,853.93
	IRR	4.75%	6.96%	9.35%	11.40%	13.19%	14.78%	16.20%
	Tax Revenue	401.98	466.34	547.29	634.93	722.56	810.19	897.83
	Tot.Gov.In	6,291.98	7,116.34	8,147.29	9,184.93	10,222.56	11,260.19	12,297.83
5.75	NPV	1,261.78	1,822.02	2,519.54	3,217.06	3,914.58	4,608.46	5,293.22
	IRR	8.21%	10.36%	12.65%	14.62%	16.34%	17.84%	19.16%
	Tax Revenue	506.99	588.80	694.89	800.97	907.05	1,018.10	1,141.57
	Tot.Gov.In	7,636.99	8,638.80	9,894.89	11,150.97	12,407.05	13,668.10	14,941.57
6.75	NPV	2,016.12	2,671.18	3,490.00	4,308.83	5,114.59	5,918.44	6,722.29
	IRR	11.03%	13.10%	15.32%	17.21%	18.83%	20.25%	21.52%
	Tax Revenue	618.32	717.95	842.48	967.01	1,109.36	1,254.30	1,399.24
	Tot.Gov.In	8,988.32	10,167.95	11,642.48	13,117.01	14,609.36	16,104.30	17,599.24

Table A4, Economic Viability Assessments Across Natural Gas Price and Reserves When the Inflation Rate is 0%. Government Share is 55%, and the Discount Rate is 3.5%

Inflation	0	Reserves						
Gov, Share	55%							
Dis, Rate	3.5	3.1	3.5	4	4.5	5	5.5	6
Natural Gas Price	NPV							
	IRR							
	Tax Revenue							
	Tot.Gov.In							
3.15	NPV	(892.45)	(630.73)	(323.76)	21.10	368.14	715.19	1,062.24
	IRR	-4.18%	-2.16%	-0.03%	2.12%	4.05%	5.79%	7.37%
	Tax Revenue	111.52	175.08	283.98	335.33	383.34	431.36	479.38
	Tot.Gov.In	4,408.12	5,026.08	5,827.98	6,572.33	7,313.34	8,054.36	8,795.38
3.35	NPV	(763.67)	(493.00)	(149.67)	219.41	588.49	957.58	1,326.66
	IRR	-3.16%	-1.17%	1.09%	3.25%	5.18%	6.91%	8.48%
	Tax Revenue	142.80	221.59	311.70	362.77	413.83	464.90	515.97
	Tot.Gov.In	4,712.20	5,380.59	6,207.70	6,995.77	7,783.83	8,571.90	9,359.97
3.55	NPV	(634.89)	(357.61)	26.61	417.72	808.84	1,199.96	1,590.33
	IRR	-2.19%	-0.25%	2.15%	4.31%	6.23%	7.96%	9.51%
	Tax Revenue	174.07	271.50	336.09	390.20	444.32	498.44	553.57
	Tot.Gov.In	5,016.27	5,738.50	6,584.09	7,419.20	8,254.32	9,089.44	9,925.57
3.75	NPV	(512.35)	(210.27)	202.88	616.04	1,029.19	1,442.34	1,852.35
	IRR	-1.31%	0.71%	3.16%	5.31%	7.23%	8.94%	10.46%
	Tax Revenue	214.46	303.31	360.48	417.64	474.81	531.97	593.42
	Tot.Gov.In	5,329.46	6,078.31	6,960.48	7,842.64	8,724.81	9,606.97	10,493.42
4.75	NPV	142.29	560.95	1,084.28	1,606.70	2,125.29	2,643.88	3,162.47
	IRR	2.82%	5.04%	7.47%	9.57%	11.40%	13.02%	14.48%
	Tax Revenue	352.09	410.02	482.43	556.06	634.93	713.80	792.67
	Tot.Gov.In	6,831.09	7,725.02	8,842.43	9,961.06	11,084.93	12,208.80	13,332.67
5.75	NPV	825.37	1,332.17	1,961.53	2,589.29	3,217.06	3,844.83	4,471.50
	IRR	6.31%	8.50%	10.85%	12.86%	14.62%	16.18%	17.56%
	Tax Revenue	446.61	516.73	610.02	705.49	800.97	896.44	993.40
	Tot.Gov.In	8,289.61	9,371.73	10,730.02	12,090.49	13,450.97	14,811.44	16,173.40
6.75	NPV	1,508.45	2,098.00	2,834.94	3,571.89	4,308.83	5,034.20	5,757.67
	IRR	9.19%	11.31%	13.58%	15.52%	17.21%	18.68%	19.98%
	Tax Revenue	541.11	630.78	742.85	854.93	967.01	1,094.86	1,225.31
	Tot.Gov.In	9,748.11	11,025.78	12,622.85	14,219.93	15,817.01	17,429.86	19,045.31

Table A5, Economic Viability Assessments Across Natural Gas Price and Reserves When the Inflation Rate is -1%. Government Share is 40%, and the Discount Rate is 3.5%

Inflation	-1	Reserves						
Gov, Share	40%							
Dis, Rate	3.5	3.1	3.5	4	4.5	5	5.5	6
Natural Gas Price	NPV							
	IRR							
	Tax Revenue							
	Tot.Gov.In							
3.15	NPV	(611.73)	(329.28)	66.87	463.02	859.18	1,255.33	1,650.22
	IRR	-2.15%	-0.15%	2.36%	4.57%	6.53%	8.28%	9.85%
	Tax Revenue	183.45	278.67	332.31	385.96	439.60	493.24	548.50
	Tot.Gov.In	2,843.30	3,281.72	3,764.37	4,247.02	4,729.67	5,212.32	5,696.59
3.35	NPV	(475.28)	(153.21)	268.09	689.40	1,110.70	1,531.83	1,949.32
	IRR	-1.16%	1.01%	3.52%	5.71%	7.66%	9.39%	10.94%
	Tax Revenue	234.11	302.51	359.56	416.61	473.66	530.85	593.09
	Tot.Gov.In	3,062.84	3,496.23	4,009.53	4,522.82	5,036.12	5,549.56	6,068.04
3.55	NPV	(334.31)	22.86	469.31	915.77	1,362.82	1,806.00	2,248.42
	IRR	-0.18%	2.10%	4.60%	6.79%	8.72%	10.43%	11.95%
	Tax Revenue	277.99	326.35	386.81	447.26	506.85	571.73	637.68
	Tot.Gov.In	3,275.59	3,710.74	4,254.68	4,798.62	5,341.69	5,890.06	6,439.50
3.75	NPV	(178.36)	198.92	670.53	1,142.14	1,612.83	2,080.18	2,547.52
	IRR	0.85%	3.13%	5.62%	7.80%	9.71%	11.39%	12.90%
	Tax Revenue	299.10	350.19	414.06	477.92	542.93	612.60	682.27
	Tot.Gov.In	3,465.59	3,925.26	4,499.84	5,074.42	5,650.16	6,230.56	6,810.95
4.75	NPV	601.36	1,079.26	1,675.14	2,267.11	2,859.08	3,451.05	4,043.02
	IRR	5.28%	7.52%	9.94%	12.01%	13.82%	15.41%	16.83%
	Tax Revenue	404.69	469.40	552.22	640.47	728.72	816.97	905.22
	Tot.Gov.In	4,415.57	4,997.81	5,727.55	6,462.71	7,197.88	7,933.04	8,668.21
5.75	NPV	1,381.85	1,955.55	2,672.14	3,388.74	4,105.33	4,810.09	5,513.18
	IRR	8.80%	10.96%	13.27%	15.25%	16.98%	18.46%	19.78%
	Tax Revenue	509.16	594.02	700.85	807.68	914.51	1,037.47	1,162.70
	Tot.Gov.In	5,364.43	6,075.78	6,965.72	7,855.66	8,745.60	9,651.66	10,560.00
6.75	NPV	2,154.95	2,827.93	3,669.14	4,504.40	5,329.77	6,155.14	6,977.64
	IRR	11.64%	13.73%	15.96%	17.84%	19.45%	20.87%	22.14%
	Tax Revenue	623.75	724.08	849.48	983.02	1,130.03	1,277.03	1,427.81
	Tot.Gov.In	6,323.42	7,159.19	8,203.90	9,256.73	10,323.04	11,389.35	12,459.43

Table A6, Economic Viability Assessments Across Natural Gas Price and Reserves When the Inflation Rate is -1%. Government Share is 45%, and the Discount Rate is 3.5%

Inflation	-1	Reserves						
Gov, Share	45%							
Dis, Rate	3.5	3.1	3.5	4	4.5	5	5.5	6
Natural Gas Price	NPV							
	IRR							
	Tax Revenue							
	Tot.Gov.In							
3.15	NPV	(801.30)	(536.63)	(197.23)	165.91	529.05	892.19	1,255.33
	IRR	-3.62%	-1.60%	0.73%	2.94%	4.91%	6.68%	8.28%
	Tax Revenue	132.24	211.34	296.55	345.72	394.90	444.07	493.24
	Tot.Gov.In	3,124.57	3,589.77	4,157.62	4,689.42	5,221.23	5,753.04	6,284.84
3.35	NPV	(666.73)	(395.15)	(12.78)	373.42	759.61	1,145.81	1,531.83
	IRR	-2.57%	-0.60%	1.88%	4.09%	6.06%	7.81%	9.39%
	Tax Revenue	164.83	263.39	321.53	373.82	426.12	478.41	530.85
	Tot.Gov.In	3,347.15	3,856.33	4,427.74	4,993.31	5,558.88	6,124.46	6,690.17
3.55	NPV	(540.66)	(237.58)	171.68	580.93	990.18	1,400.35	1,806.00
	IRR	-1.63%	0.47%	2.97%	5.17%	7.13%	8.87%	10.43%
	Tax Revenue	209.84	291.09	346.50	401.92	457.34	511.40	571.73
	Tot.Gov.In	3,582.14	4,098.53	4,697.86	5,297.20	5,896.54	6,494.52	7,098.77
3.75	NPV	(415.58)	(76.18)	356.13	788.43	1,220.74	1,651.78	2,080.18
	IRR	-0.74%	1.49%	4.00%	6.19%	8.13%	9.85%	11.39%
	Tax Revenue	256.28	312.94	371.48	430.02	488.56	548.74	612.60
	Tot.Gov.In	3,818.57	4,334.89	4,967.99	5,601.09	6,234.19	6,868.93	7,507.36
4.75	NPV	292.72	730.79	1,278.38	1,823.14	2,365.77	2,908.41	3,451.05
	IRR	3.65%	5.92%	8.37%	10.49%	12.33%	13.96%	15.41%
	Tax Revenue	362.90	422.22	496.37	574.28	655.18	736.07	816.97
	Tot.Gov.In	4,875.13	5,516.68	6,318.61	7,124.31	7,932.98	8,741.66	9,550.33
5.75	NPV	1,007.47	1,537.54	2,194.42	2,851.29	3,508.17	4,165.05	4,810.09
	IRR	7.20%	9.42%	11.77%	13.80%	15.56%	17.11%	18.46%
	Tax Revenue	459.68	531.71	629.63	727.56	825.49	923.41	1,037.47
	Tot.Gov.In	5,921.86	6,698.69	7,677.61	8,656.53	9,635.46	10,614.38	11,609.43
6.75	NPV	1,720.32	2,337.21	3,108.33	3,879.45	4,641.96	5,398.55	6,155.14
	IRR	10.11%	12.24%	14.51%	16.46%	18.12%	19.58%	20.87%
	Tax Revenue	558.95	650.92	765.88	880.84	1,007.52	1,142.28	1,277.03
	Tot.Gov.In	6,971.08	7,890.42	9,039.59	10,188.76	11,349.66	12,518.63	13,687.60

Table A7, Economic Viability Assessments Across Natural Gas Price and Reserves When the Inflation Rate is -1%. Government Share is 50%, and the Discount Rate is 3.5%

Inflation	-1	Reserves						
Gov, Share	50%							
Dis, Rate	3.5	3.1	3.5	4	4.5	5	5.5	6
Natural Gas Price	NPV							
	IRR							
	Tax Revenue							
	Tot.Gov.In							
3.15	NPV	(997.46)	(745.36)	(449.97)	(131.20)	198.92	529.05	859.18
	IRR	-5.26%	-3.17%	-0.98%	1.15%	3.13%	4.91%	6.53%
	Tax Revenue	90.84	145.79	243.51	305.49	350.19	394.90	439.60
	Tot.Gov.In	3,415.65	3,899.60	4,533.58	5,131.82	5,712.79	6,293.75	6,874.71
3.35	NPV	(871.64)	(610.45)	(293.64)	57.44	408.53	759.61	1,110.70
	IRR	-4.19%	-2.14%	0.09%	2.31%	4.28%	6.06%	7.66%
	Tax Revenue	115.21	183.93	283.49	331.04	378.58	426.12	473.66
	Tot.Gov.In	3,651.11	4,176.08	4,845.95	5,463.80	6,081.65	6,699.50	7,317.35
3.55	NPV	(749.30)	(482.07)	(125.96)	246.09	618.13	990.18	1,362.82
	IRR	-3.20%	-1.21%	1.18%	3.39%	5.36%	7.13%	8.72%
	Tax Revenue	144.83	231.59	306.20	356.58	406.96	457.34	506.85
	Tot.Gov.In	3,891.84	4,462.08	5,141.05	5,795.78	6,450.52	7,105.25	7,759.11
3.75	NPV	(628.79)	(350.98)	41.72	434.73	827.73	1,220.74	1,612.83
	IRR	-2.28%	-0.29%	2.21%	4.42%	6.38%	8.13%	9.71%
	Tax Revenue	177.12	275.22	328.91	382.12	435.34	488.56	542.93
	Tot.Gov.In	4,135.22	4,744.05	5,436.14	6,127.76	6,819.38	7,511.00	8,203.78
4.75	NPV	(15.92)	382.33	880.14	1,378.68	1,872.47	2,365.77	2,859.08
	IRR	1.86%	4.14%	6.62%	8.79%	10.67%	12.33%	13.82%
	Tax Revenue	321.10	375.03	442.44	508.77	581.64	655.18	728.72
	Tot.Gov.In	5,334.70	6,035.54	6,911.60	7,786.58	8,668.08	9,550.27	10,432.46
5.75	NPV	633.85	1,115.94	1,716.69	2,313.85	2,911.01	3,508.17	4,105.33
	IRR	5.44%	7.68%	10.10%	12.16%	13.97%	15.56%	16.98%
	Tax Revenue	409.09	474.37	558.41	647.44	736.46	825.49	914.51
	Tot.Gov.In	6,478.18	7,326.57	8,389.50	9,457.41	10,525.32	11,593.23	12,661.14
6.75	NPV	1,283.62	1,846.50	2,547.52	3,248.53	3,949.55	4,641.96	5,329.77
	IRR	8.40%	10.57%	12.90%	14.89%	16.62%	18.12%	19.45%
	Tax Revenue	497.07	577.77	682.27	786.78	891.29	1,007.52	1,130.03
	Tot.Gov.In	7,621.66	8,621.65	9,875.29	11,128.92	12,382.55	13,647.92	14,919.55

Table A8, Economic Viability Assessments Across Natural Gas Price and Reserves When the Inflation Rate is -1%. Government Share is 55%, and the Discount Rate is 3.5%

Inflation	-1	Reserves						
Gov, Share	55%							
Dis, Rate	3.5	3.1	3.5	4	4.5	5	5.5	6
Natural Gas Price	NPV							
	IRR							
	Tax Revenue							
	Tot.Gov.In							
3.15	NPV	(1,207.94)	(964.55)	(683.20)	(421.08)	(131.20)	165.91	463.02
	IRR	-7.19%	-4.97%	-2.69%	-0.78%	1.15%	2.94%	4.57%
	Tax Revenue	71.42	95.60	160.84	254.23	305.49	345.72	385.96
	Tot.Gov.In	3,728.71	4,224.80	4,879.92	5,563.20	6,204.34	6,834.46	7,464.58
3.35	NPV	(1,086.93)	(838.59)	(549.01)	(258.54)	57.44	373.42	689.40
	IRR	-6.05%	-3.92%	-1.69%	0.33%	2.31%	4.09%	5.71%
	Tax Revenue	81.36	123.21	206.74	288.25	331.04	373.82	416.61
	Tot.Gov.In	3,970.86	4,514.58	5,225.45	5,934.29	6,604.42	7,274.54	7,944.67
3.55	NPV	(968.31)	(714.28)	(416.96)	(88.76)	246.09	580.93	915.77
	IRR	-5.00%	-2.93%	-0.75%	1.42%	3.39%	5.17%	6.79%
	Tax Revenue	95.06	153.31	255.77	311.24	356.58	401.92	447.26
	Tot.Gov.In	4,216.76	4,806.85	5,574.10	6,294.36	7,004.49	7,714.62	8,424.76
3.75	NPV	(856.35)	(594.40)	(272.68)	81.02	434.73	788.43	1,142.14
	IRR	-4.06%	-2.02%	0.23%	2.45%	4.42%	6.19%	7.80%
	Tax Revenue	118.91	189.89	286.33	334.23	382.12	430.02	477.92
	Tot.Gov.In	4,472.82	5,105.60	5,904.29	6,654.43	7,404.57	8,154.71	8,904.85
4.75	NPV	(324.56)	33.86	481.89	929.92	1,378.68	1,823.14	2,267.11
	IRR	-0.11%	2.17%	4.67%	6.85%	8.79%	10.49%	12.01%
	Tax Revenue	279.31	327.84	388.51	449.18	508.77	574.28	640.47
	Tot.Gov.In	5,794.27	6,554.41	7,504.59	8,454.76	9,403.87	10,358.88	11,314.58
5.75	NPV	260.23	694.11	1,236.46	1,776.40	2,313.85	2,851.29	3,388.74
	IRR	3.47%	5.74%	8.20%	10.32%	12.16%	13.80%	15.25%
	Tax Revenue	358.50	417.25	490.69	567.32	647.44	727.56	807.68
	Tot.Gov.In	7,034.50	7,954.67	9,104.88	10,258.29	11,415.18	12,572.08	13,728.97
6.75	NPV	845.03	1,354.89	1,986.71	2,617.62	3,248.53	3,879.45	4,504.40
	IRR	6.46%	8.69%	11.07%	13.11%	14.89%	16.46%	17.84%
	Tax Revenue	437.68	505.88	598.67	692.72	786.78	880.84	983.02
	Tot.Gov.In	8,274.73	9,354.16	10,710.98	12,069.08	13,427.17	14,785.27	16,151.49

Table A9, Economic Viability Assessments Across Natural Gas Price and Reserves When the Inflation Rate is 0%. Government Share is 40%, and the Discount Rate is 4.5%

Inflation	0	Reserves						
Gov, Share	40%							
Dis, Rate	4.5	3.1	3.5	4	4.5	5	5.5	6
Natural Gas Price	NPV							
	IRR							
	Tax Revenue							
	Tot.Gov.In							
3.15	NPV	(449.29)	(132.45)	282.14	696.73	1,111.31	1,524.84	1,935.59
	IRR	-0.13%	2.02%	4.52%	6.70%	8.64%	10.35%	11.88%
	Tax Revenue	268.14	344.62	408.64	472.67	536.69	602.29	672.03
	Tot.Gov.In	3,392.94	3,872.62	4,440.64	5,008.67	5,576.69	6,146.29	6,720.03
3.35	NPV	(300.92)	51.81	492.72	933.63	1,374.55	1,811.72	2,248.55
	IRR	0.91%	3.17%	5.66%	7.84%	9.75%	11.44%	12.95%
	Tax Revenue	318.60	373.08	441.16	509.25	577.34	650.99	725.16
	Tot.Gov.In	3,641.80	4,125.08	4,729.16	5,333.25	5,937.34	6,546.99	7,157.16
3.55	NPV	(137.72)	236.07	703.31	1,170.54	1,635.68	2,098.59	2,561.50
	IRR	1.99%	4.26%	6.74%	8.89%	10.78%	12.45%	13.94%
	Tax Revenue	343.81	401.53	473.68	545.84	621.11	699.70	778.29
	Tot.Gov.In	3,865.41	4,377.53	5,017.68	5,657.84	6,301.11	6,947.70	7,594.29
3.75	NPV	25.49	420.33	913.89	1,407.48	1,896.47	2,385.46	2,874.45
	IRR	3.01%	5.28%	7.74%	9.89%	11.74%	13.39%	14.86%
	Tax Revenue	369.01	429.99	506.20	582.36	665.38	748.41	831.43
	Tot.Gov.In	4,089.01	4,629.99	5,306.20	5,982.36	6,665.38	7,348.41	8,031.43
4.75	NPV	841.50	1,341.64	1,961.67	2,581.06	3,200.44	3,819.83	4,431.20
	IRR	7.40%	9.62%	11.98%	14.00%	15.76%	17.32%	18.68%
	Tax Revenue	495.03	572.26	676.45	781.61	886.78	991.94	1,109.01
	Tot.Gov.In	5,207.03	5,892.26	6,756.45	7,621.61	8,486.78	9,351.94	10,229.01
5.75	NPV	1,655.24	2,255.07	3,004.85	3,754.63	4,495.18	5,230.92	5,966.67
	IRR	10.86%	12.97%	15.23%	17.16%	18.81%	20.26%	21.55%
	Tax Revenue	624.43	726.27	853.57	980.87	1,121.90	1,270.06	1,418.22
	Tot.Gov.In	6,328.43	7,166.27	8,213.57	9,260.87	10,321.90	11,390.06	12,458.22
6.75	NPV	2,463.70	3,167.84	4,047.33	4,911.03	5,774.73	6,636.19	7,482.67
	IRR	13.64%	15.68%	17.84%	19.65%	21.22%	22.61%	23.81%
	Tax Revenue	761.69	881.24	1,031.71	1,205.64	1,379.57	1,556.69	1,755.11
	Tot.Gov.In	7,457.69	8,441.24	9,671.71	10,925.64	12,179.57	13,436.69	14,715.11

Table A10, Economic Viability Assessments Across Natural Gas Price and Reserves When the Inflation Rate is 0%. Government Share is 45, and the Discount Rate is 4.5%

Inflation	0	Reserves						
Gov, Share	45%							
Dis, Rate	4.5	3.1	3.5	4	4.5	5	5.5	6
Natural Gas Price	NPV							
	IRR							
	Tax Revenue							
	Tot.Gov.In							
3.15	NPV	(638.61)	(370.37)	5.74	385.78	765.82	1,145.86	1,524.84
	IRR	-1.54%	0.43%	2.89%	5.09%	7.04%	8.79%	10.35%
	Tax Revenue	192.61	300.58	365.96	424.65	483.34	542.03	602.29
	Tot.Gov.In	3,708.01	4,269.58	4,901.96	5,527.65	6,153.34	6,779.03	7,406.29
3.35	NPV	(506.05)	(205.39)	198.78	602.95	1,007.12	1,411.29	1,811.72
	IRR	-0.55%	1.55%	4.04%	6.23%	8.17%	9.90%	11.44%
	Tax Revenue	244.81	333.36	395.77	458.19	520.60	583.01	650.99
	Tot.Gov.In	3,983.41	4,554.36	5,219.77	5,885.19	6,550.60	7,216.01	7,886.99
3.55	NPV	(374.61)	(36.48)	391.82	820.12	1,248.41	1,674.26	2,098.59
	IRR	0.40%	2.63%	5.12%	7.30%	9.23%	10.93%	12.45%
	Tax Revenue	298.84	359.44	425.58	491.72	557.86	627.66	699.70
	Tot.Gov.In	4,260.64	4,832.44	5,537.58	6,242.72	6,947.86	7,656.66	8,367.70
3.75	NPV	(229.52)	132.42	584.85	1,037.28	1,488.98	1,937.22	2,385.46
	IRR	1.39%	3.66%	6.14%	8.31%	10.21%	11.89%	13.39%
	Tax Revenue	329.63	385.52	455.39	525.26	596.20	672.30	748.41
	Tot.Gov.In	4,514.63	5,110.52	5,855.39	6,600.26	7,346.20	8,097.30	8,848.41
4.75	NPV	518.50	976.96	1,548.75	2,116.52	2,684.29	3,252.06	3,819.83
	IRR	5.80%	8.03%	10.45%	12.51%	14.31%	15.90%	17.32%
	Tax Revenue	445.14	515.94	606.35	702.74	799.14	895.54	991.94
	Tot.Gov.In	5,746.14	6,500.94	7,446.35	8,397.74	9,349.14	10,300.54	11,251.94
5.75	NPV	1,266.51	1,817.69	2,504.99	3,192.29	3,879.60	4,556.49	5,230.92
	IRR	9.30%	11.46%	13.77%	15.74%	17.46%	18.94%	20.26%
	Tax Revenue	560.66	652.01	768.70	885.39	1,002.08	1,134.24	1,270.06
	Tot.Gov.In	6,977.66	7,897.01	9,048.70	10,200.39	11,352.08	12,519.24	13,690.06
6.75	NPV	2,008.94	2,654.41	3,461.24	4,263.26	5,054.98	5,846.71	6,636.19
	IRR	12.14%	14.22%	16.44%	18.32%	19.93%	21.35%	22.61%
	Tax Revenue	684.48	794.07	931.05	1,075.19	1,234.63	1,394.06	1,556.69
	Tot.Gov.In	8,217.48	9,299.07	10,651.05	12,010.19	13,384.63	14,759.06	16,136.69

Table A11, Economic Viability Assessments Across Natural Gas Price and Reserves When the Inflation Rate is 0%. Government Share is 50%, and the Discount Rate is 4.5%

Inflation	0	Reserves						
Gov, Share	50%							
Dis, Rate	4.5	3.1	3.5	4	4.5	5	5.5	6
Natural Gas Price	NPV							
	IRR							
	Tax Revenue							
	Tot.Gov.In							
3.15	NPV	(840.76)	(582.85)	(270.65)	74.84	420.33	765.82	1,111.31
	IRR	-3.17%	-1.12%	1.11%	3.31%	5.28%	7.04%	8.64%
	Tax Revenue	137.88	213.24	323.28	376.63	429.99	483.34	536.69
	Tot.Gov.In	4,043.88	4,623.24	5,363.28	6,046.63	6,729.99	7,413.34	8,096.69
3.35	NPV	(712.41)	(447.94)	(95.16)	272.27	639.69	1,007.12	1,374.55
	IRR	-2.12%	-0.12%	2.26%	4.46%	6.42%	8.17%	9.75%
	Tax Revenue	172.63	268.69	350.38	407.12	463.86	520.60	577.34
	Tot.Gov.In	4,326.63	4,958.69	5,710.38	6,437.12	7,163.86	7,890.60	8,617.34
3.55	NPV	(586.70)	(309.04)	80.33	469.69	859.05	1,248.41	1,635.68
	IRR	-1.15%	0.85%	3.35%	5.54%	7.49%	9.23%	10.78%
	Tax Revenue	211.65	317.35	377.48	437.61	497.74	557.86	621.11
	Tot.Gov.In	4,613.65	5,287.35	6,057.48	6,827.61	7,597.74	8,367.86	9,141.11
3.75	NPV	(467.22)	(155.48)	255.81	667.11	1,078.41	1,488.98	1,896.47
	IRR	-0.26%	1.87%	4.37%	6.56%	8.49%	10.21%	11.74%
	Tax Revenue	260.77	341.06	404.58	468.09	531.61	596.20	665.38
	Tot.Gov.In	4,910.77	5,591.06	6,404.58	7,218.09	8,031.61	8,846.20	9,665.38
4.75	NPV	195.49	612.27	1,133.25	1,651.98	2,168.13	2,684.29	3,200.44
	IRR	4.02%	6.28%	8.73%	10.84%	12.68%	14.31%	15.76%
	Tax Revenue	395.26	459.63	540.08	623.87	711.51	799.14	886.78
	Tot.Gov.In	6,285.26	7,109.63	8,140.08	9,173.87	10,211.51	11,249.14	12,286.78
5.75	NPV	875.50	1,380.03	2,005.14	2,629.96	3,254.78	3,879.60	4,495.18
	IRR	7.56%	9.77%	12.13%	14.15%	15.91%	17.46%	18.81%
	Tax Revenue	500.28	578.19	683.83	789.92	896.00	1,002.08	1,121.90
	Tot.Gov.In	7,630.28	8,628.19	9,883.83	11,139.92	12,396.00	13,652.08	14,921.90
6.75	NPV	1,554.18	2,140.97	2,874.45	3,607.93	4,335.23	5,054.98	5,774.73
	IRR	10.47%	12.59%	14.86%	16.81%	18.47%	19.93%	21.22%
	Tax Revenue	607.27	706.89	831.43	955.96	1,089.69	1,234.63	1,379.57
	Tot.Gov.In	8,977.27	10,156.89	11,631.43	13,105.96	14,589.69	16,084.63	17,579.57

Table A12, Economic Viability Assessments Across Natural Gas Price and Reserves When the Inflation Rate is 0%. Government Share is 55%, and the Discount Rate is 4.5%

Inflation	0	Reserves						
Gov, Share	55%							
Dis, Rate	4.5	3.1	3.5	4	4.5	5	5.5	6
Natural Gas Price	NPV							
	IRR							
	Tax Revenue							
	Tot.Gov.In							
3.15	NPV	(1,051.40)	(808.15)	(522.14)	(236.10)	74.84	385.78	696.73
	IRR	-5.01%	-2.89%	-0.66%	1.34%	3.31%	5.09%	6.70%
	Tax Revenue	97.64	146.71	238.19	328.61	376.63	424.65	472.67
	Tot.Gov.In	4,394.24	4,997.71	5,782.19	6,565.61	7,306.63	8,047.65	8,788.67
3.35	NPV	(928.24)	(677.74)	(383.38)	(58.42)	272.27	602.95	933.63
	IRR	-3.91%	-1.85%	0.33%	2.49%	4.46%	6.23%	7.84%
	Tax Revenue	115.87	182.01	295.23	356.05	407.12	458.19	509.25
	Tot.Gov.In	4,685.27	5,341.01	6,191.23	6,989.05	7,777.12	8,565.19	9,353.25
3.55	NPV	(811.88)	(552.50)	(231.16)	119.26	469.69	820.12	1,170.54
	IRR	-2.93%	-0.89%	1.38%	3.58%	5.54%	7.30%	8.89%
	Tax Revenue	145.70	225.71	329.38	383.49	437.61	491.72	545.84
	Tot.Gov.In	4,987.90	5,692.71	6,577.38	7,412.49	8,247.61	9,082.72	9,917.84
3.75	NPV	(696.37)	(431.08)	(73.22)	296.94	667.11	1,037.28	1,407.48
	IRR	-1.99%	0.00%	2.40%	4.60%	6.56%	8.31%	9.89%
	Tax Revenue	176.97	275.63	353.77	410.93	468.09	525.26	582.36
	Tot.Gov.In	5,291.97	6,050.63	6,953.77	7,835.93	8,718.09	9,600.26	10,482.36
4.75	NPV	(127.52)	247.59	716.47	1,185.35	1,651.98	2,116.52	2,581.06
	IRR	2.06%	4.32%	6.80%	8.96%	10.84%	12.51%	14.00%
	Tax Revenue	345.38	403.31	475.72	548.12	623.87	702.74	781.61
	Tot.Gov.In	6,824.38	7,718.31	8,835.72	9,953.12	11,073.87	12,197.74	13,321.61
5.75	NPV	484.50	938.57	1,505.28	2,067.62	2,629.96	3,192.29	3,754.63
	IRR	5.62%	7.86%	10.28%	12.34%	14.15%	15.74%	17.16%
	Tax Revenue	439.89	510.02	598.97	694.44	789.92	885.39	980.87
	Tot.Gov.In	8,282.89	9,365.02	10,718.97	12,079.44	13,439.92	14,800.39	16,160.87
6.75	NPV	1,096.51	1,627.53	2,287.66	2,947.80	3,607.93	4,263.26	4,911.03
	IRR	8.57%	10.75%	13.08%	15.07%	16.81%	18.32%	19.65%
	Tax Revenue	534.41	619.72	731.80	843.88	955.96	1,075.19	1,205.64
	Tot.Gov.In	9,741.41	11,014.72	12,611.80	14,208.88	15,805.96	17,410.19	19,025.64

Table A13, Economic Viability Assessments Across Natural Gas Price and Reserves When the Inflation Rate is -1%. Government Share is 40%, and the Discount Rate is 4.5%

Inflation	-1	Reserves						
Gov, Share	40%							
Dis, Rate	4.5	3.1	3.5	4	4.5	5	5.5	6
Natural Gas Price	NPV							
	IRR							
	Tax Revenue							
	Tot.Gov.In							
3.15	NPV	(785.73)	(528.80)	(191.81)	163.53	518.88	874.22	1,229.76
	IRR	-2.88%	-0.84%	1.57%	3.82%	5.83%	7.62%	9.24%
	Tax Revenue	150.53	240.62	325.60	379.24	432.89	486.53	539.86
	Tot.Gov.In	2,810.37	3,243.67	3,757.66	4,240.31	4,722.96	5,205.61	5,687.95
3.35	NPV	(655.28)	(388.45)	(11.32)	366.58	744.49	1,122.40	1,499.55
	IRR	-1.82%	0.20%	2.75%	5.00%	6.99%	8.77%	10.36%
	Tax Revenue	188.33	294.45	352.85	409.90	466.95	524.00	582.04
	Tot.Gov.In	3,017.05	3,488.17	4,002.82	4,516.11	5,029.41	5,542.70	6,056.99
3.55	NPV	(532.76)	(231.30)	169.17	569.64	970.11	1,371.02	1,767.78
	IRR	-0.87%	1.30%	3.86%	6.09%	8.07%	9.84%	11.40%
	Tax Revenue	238.99	319.64	380.10	440.55	501.01	560.67	626.63
	Tot.Gov.In	3,236.59	3,704.03	4,247.97	4,791.91	5,335.85	5,879.00	6,428.44
3.75	NPV	(409.54)	(73.37)	349.66	772.69	1,195.72	1,616.90	2,036.02
	IRR	0.05%	2.35%	4.90%	7.13%	9.09%	10.83%	12.37%
	Tax Revenue	288.50	343.48	407.34	471.20	535.07	601.55	671.22
	Tot.Gov.In	3,454.98	3,918.54	4,493.13	5,067.71	5,642.30	6,219.50	6,799.90
4.75	NPV	287.62	716.29	1,252.52	1,784.55	2,315.43	2,846.32	3,377.20
	IRR	4.55%	6.85%	9.34%	11.46%	13.32%	14.95%	16.41%
	Tax Revenue	397.98	462.69	542.95	629.42	717.67	805.92	894.17
	Tot.Gov.In	4,408.85	4,991.10	5,718.27	6,451.66	7,186.83	7,921.99	8,657.16
5.75	NPV	987.03	1,505.13	2,147.78	2,790.43	3,433.08	4,070.68	4,700.95
	IRR	8.15%	10.38%	12.76%	14.79%	16.55%	18.09%	19.44%
	Tax Revenue	503.56	582.97	689.80	796.63	903.46	1,017.80	1,143.03
	Tot.Gov.In	5,358.83	6,064.73	6,954.67	7,844.61	8,734.54	9,631.99	10,540.33
6.75	NPV	1,683.96	2,287.49	3,041.91	3,796.32	4,536.53	5,276.41	6,016.29
	IRR	11.08%	13.23%	15.51%	17.46%	19.11%	20.56%	21.85%
	Tax Revenue	612.70	713.02	838.43	963.84	1,110.36	1,257.37	1,404.37
	Tot.Gov.In	6,312.36	7,148.13	8,192.84	9,237.55	10,303.37	11,369.68	12,435.99

Table A14, Economic Viability Assessments Across Natural Gas Price and Reserves When the Inflation Rate is -1%. Government Share is 45%, and the Discount Rate is 4.5%

Inflation	-1	Reserves						
Gov, Share	45%							
Dis, Rate	4.5	3.1	3.5	4	4.5	5	5.5	6
Natural Gas Price	NPV							
	IRR							
	Tax Revenue							
	Tot.Gov.In							
3.15	NPV	(959.51)	(713.17)	(424.84)	(102.98)	222.75	548.49	874.22
	IRR	-4.39%	-2.28%	-0.06%	2.16%	4.17%	5.98%	7.62%
	Tax Revenue	105.12	170.09	283.18	339.01	388.18	437.36	486.53
	Tot.Gov.In	3,097.45	3,548.53	4,144.24	4,682.71	5,214.52	5,746.32	6,278.13
3.35	NPV	(837.92)	(583.56)	(263.26)	83.15	429.57	775.98	1,122.40
	IRR	-3.32%	-1.26%	1.09%	3.34%	5.34%	7.14%	8.77%
	Tax Revenue	136.45	217.98	314.81	367.11	419.41	471.70	524.00
	Tot.Gov.In	3,318.77	3,810.92	4,421.03	4,986.60	5,552.17	6,117.74	6,683.32
3.55	NPV	(717.07)	(456.75)	(97.81)	269.29	636.38	1,003.48	1,371.02
	IRR	-2.32%	-0.30%	2.19%	4.44%	6.44%	8.23%	9.84%
	Tax Revenue	169.04	270.41	339.79	395.21	450.63	506.04	560.67
	Tot.Gov.In	3,541.35	4,077.85	4,691.15	5,290.49	5,889.83	6,489.16	7,087.72
3.75	NPV	(601.68)	(320.13)	67.64	455.42	843.20	1,231.18	1,616.90
	IRR	-1.40%	0.69%	3.24%	5.49%	7.47%	9.24%	10.83%
	Tax Revenue	210.49	306.23	364.77	423.31	481.85	540.06	601.55
	Tot.Gov.In	3,772.78	4,328.17	4,961.28	5,594.38	6,227.48	6,860.25	7,496.31
4.75	NPV	10.77	403.72	894.90	1,386.38	1,873.03	2,359.67	2,846.32
	IRR	2.89%	5.20%	7.72%	9.90%	11.79%	13.46%	14.95%
	Tax Revenue	356.18	415.50	489.65	563.23	644.13	725.02	805.92
	Tot.Gov.In	4,868.42	5,509.97	6,311.90	7,113.25	7,921.93	8,730.60	9,539.28
5.75	NPV	651.89	1,127.57	1,719.35	2,308.45	2,897.54	3,486.64	4,070.68
	IRR	6.52%	8.79%	11.22%	13.30%	15.10%	16.69%	18.09%
	Tax Revenue	452.97	524.78	618.58	716.51	814.43	912.36	1,017.80
	Tot.Gov.In	5,915.15	6,691.76	7,666.56	8,645.48	9,624.40	10,603.33	11,589.76
6.75	NPV	1,293.77	1,847.42	2,538.96	3,230.51	3,919.96	4,598.19	5,276.41
	IRR	9.51%	11.70%	14.03%	16.02%	17.75%	19.23%	20.56%
	Tax Revenue	548.53	639.87	754.82	869.78	987.85	1,122.61	1,257.37
	Tot.Gov.In	6,960.66	7,879.37	9,028.54	10,177.71	11,329.99	12,498.96	13,667.94

Table A15, Economic Viability Assessments Across Natural Gas Price and Reserves When the Inflation Rate is -1%. Government Share is 50%, and the Discount Rate is 4.5%

Inflation	-1	Reserves						
Gov, Share	50%							
Dis, Rate	4.5	3.1	3.5	4	4.5	5	5.5	6
Natural Gas Price	NPV							
	IRR							
	Tax Revenue							
	Tot.Gov.In							
3.15	NPV	(1,146.51)	(908.53)	(632.56)	(369.49)	(73.37)	222.75	518.88
	IRR	-6.15%	-3.94%	-1.64%	0.34%	2.35%	4.17%	5.83%
	Tax Revenue	82.43	117.41	197.72	298.78	343.48	388.18	432.89
	Tot.Gov.In	3,407.24	3,871.23	4,487.80	5,125.11	5,706.07	6,287.04	6,868.00
3.35	NPV	(1,026.37)	(784.49)	(500.81)	(200.27)	114.65	429.57	744.49
	IRR	-5.00%	-2.87%	-0.62%	1.52%	3.53%	5.34%	6.99%
	Tax Revenue	94.34	150.86	252.20	324.32	371.86	419.41	466.95
	Tot.Gov.In	3,630.25	4,143.01	4,814.66	5,457.09	6,074.94	6,692.79	7,310.64
3.55	NPV	(912.08)	(661.38)	(364.79)	(31.06)	302.66	636.38	518.88
	IRR	-3.97%	-1.87%	0.37%	2.62%	4.63%	6.44%	5.83%
	Tax Revenue	116.46	185.81	299.49	349.87	400.25	450.63	432.89
	Tot.Gov.In	3,863.46	4,416.30	5,134.33	5,789.07	6,443.80	7,098.54	6,868.00
3.75	NPV	(802.21)	(546.09)	(214.38)	138.15	490.67	843.20	1,195.72
	IRR	-3.02%	-0.97%	1.42%	3.67%	5.68%	7.47%	9.09%
	Tax Revenue	146.08	233.47	322.19	375.41	428.63	481.85	535.07
	Tot.Gov.In	4,104.19	4,702.30	5,429.42	6,121.05	6,812.67	7,504.29	8,195.91
4.75	NPV	(266.08)	91.15	537.68	984.21	1,430.62	1,873.03	2,315.43
	IRR	1.07%	3.39%	5.93%	8.14%	10.08%	11.79%	13.32%
	Tax Revenue	314.39	368.32	435.73	503.13	570.58	644.13	717.67
	Tot.Gov.In	5,327.99	6,028.83	6,904.88	7,780.94	8,657.03	9,539.22	10,421.40
5.75	NPV	316.76	749.19	1,290.45	1,826.46	2,362.00	2,897.54	3,433.08
	IRR	4.72%	7.01%	9.50%	11.62%	13.47%	15.10%	16.55%
	Tax Revenue	402.38	467.66	548.08	636.38	725.41	814.43	903.46
	Tot.Gov.In	6,471.47	7,319.86	8,379.17	9,446.36	10,514.27	11,582.18	12,650.09
6.75	NPV	899.60	1,407.34	2,036.02	2,664.70	3,293.38	3,919.96	4,536.53
	IRR	7.74%	9.99%	12.37%	14.42%	16.19%	17.75%	19.11%
	Tax Revenue	490.36	566.71	671.22	775.73	880.23	987.85	1,110.36
	Tot.Gov.In	7,614.95	8,610.60	9,864.23	11,117.87	12,371.50	13,628.25	14,899.88

Table A16, Economic Viability Assessments Across Natural Gas Price and Reserves When the Inflation Rate is -1%. Government Share is 55%, and the Discount Rate is 4.5%

Inflation	-1	Reserves						
Gov, Share	55%							
Dis, Rate	4.5	3.1	3.5	4	4.5	5	5.5	6
Natural Gas Price	NPV							
	IRR							
	Tax Revenue							
	Tot.Gov.In							
3.15	NPV	(1,337.00)	(1,115.87)	(852.72)	(606.62)	(369.49)	(102.98)	163.53
	IRR	-8.13%	-5.85%	-3.45%	-1.43%	0.34%	2.16%	3.82%
	Tax Revenue	65.98	85.24	132.46	208.45	298.78	339.01	379.24
	Tot.Gov.In	3,723.27	4,214.43	4,851.54	5,517.41	6,197.63	6,827.75	7,457.87
3.35	NPV	(1,227.93)	(994.96)	(725.13)	(473.22)	(200.27)	83.15	366.58
	IRR	-6.98%	-4.71%	-2.38%	-0.42%	1.52%	3.34%	5.00%
	Tax Revenue	74.97	99.41	166.87	263.60	324.32	367.11	409.90
	Tot.Gov.In	3,964.47	4,490.78	5,185.57	5,909.65	6,597.70	7,267.83	7,937.95
3.55	NPV	(1,119.37)	(880.62)	(602.91)	(331.41)	(31.06)	269.29	569.64
	IRR	-5.89%	-3.69%	-1.41%	0.61%	2.62%	4.44%	6.09%
	Tax Revenue	84.92	124.94	209.98	304.53	349.87	395.21	440.55
	Tot.Gov.In	4,206.62	4,778.48	5,528.31	6,287.65	6,997.78	7,707.91	8,418.04
3.75	NPV	(1,011.84)	(768.99)	(484.34)	(179.12)	138.15	455.42	772.69
	IRR	-4.87%	-2.74%	-0.50%	1.66%	3.67%	5.49%	7.13%
	Tax Revenue	96.69	155.04	259.01	327.52	375.41	423.31	471.20
	Tot.Gov.In	4,450.60	5,070.75	5,876.96	6,647.71	7,397.85	8,147.99	8,898.13
4.75	NPV	(525.10)	(221.43)	180.45	582.33	984.21	1,386.38	1,784.55
	IRR	-0.81%	1.37%	3.92%	6.16%	8.14%	9.90%	11.46%
	Tax Revenue	242.15	321.13	381.80	442.47	503.13	563.23	629.42
	Tot.Gov.In	5,757.11	6,547.70	7,497.87	8,448.05	9,398.23	10,347.83	11,303.53
5.75	NPV	(18.37)	370.81	857.30	1,344.47	1,826.46	2,308.45	2,790.43
	IRR	2.71%	5.02%	7.54%	9.73%	11.62%	13.30%	14.79%
	Tax Revenue	351.78	410.54	483.98	556.26	636.38	716.51	796.63
	Tot.Gov.In	7,027.78	7,947.96	9,098.17	10,247.23	11,404.13	12,561.02	13,717.92
6.75	NPV	506.18	963.06	1,533.08	2,098.89	2,664.70	3,230.51	3,796.32
	IRR	5.76%	8.04%	10.50%	12.59%	14.42%	16.02%	17.46%
	Tax Revenue	430.97	499.94	587.61	681.67	775.73	869.78	963.84
	Tot.Gov.In	8,268.02	9,348.22	10,699.93	12,058.03	13,416.12	14,774.22	16,132.31

Table A17, Economic Viability Assessments Across Natural Gas Price and Reserves When the Inflation Rate is 0%. Government Share is 40%, and the Discount Rate is 6.5%

Inflation	0	Reserves						
Gov, Share	40%							
Dis, Rate	6.5	3.1	3.5	4	4.5	5	5.5	6
Natural Gas Price	NPV							
	IRR							
	Tax Revenue							
	Tot.Gov.In							
3.15	NPV	(793.19)	(548.46)	(233.64)	101.29	436.21	771.13	1,106.05
	IRR	-1.58%	0.52%	2.94%	5.22%	7.24%	9.05%	10.68%
	Tax Revenue	184.40	286.52	393.59	457.61	521.63	585.66	649.68
	Tot.Gov.In	3,309.20	3,814.52	4,425.59	4,993.61	5,561.63	6,129.66	6,697.68
3.35	NPV	(668.49)	(417.41)	(63.52)	292.67	648.86	1,005.04	1,360.07
	IRR	-0.48%	1.56%	4.13%	6.40%	8.42%	10.21%	11.81%
	Tax Revenue	226.10	353.07	426.11	494.20	562.28	630.37	700.51
	Tot.Gov.In	3,549.30	4,105.07	4,714.11	5,318.20	5,922.28	6,526.37	7,132.51
3.55	NPV	(552.20)	(270.85)	106.60	484.05	861.51	1,238.97	1,612.79
	IRR	0.49%	2.66%	5.25%	7.51%	9.51%	11.29%	12.86%
	Tax Revenue	284.62	386.47	458.63	530.78	602.93	675.05	753.64
	Tot.Gov.In	3,806.22	4,362.47	5,002.63	5,642.78	6,282.93	6,923.05	7,569.64
3.75	NPV	(436.13)	(122.00)	276.72	675.44	1,074.16	1,470.63	1,865.50
	IRR	1.41%	3.73%	6.31%	8.56%	10.54%	12.28%	13.83%
	Tax Revenue	343.56	414.93	491.15	567.37	643.58	723.75	806.77
	Tot.Gov.In	4,063.56	4,614.93	5,291.15	5,967.37	6,643.58	7,323.75	8,006.77
4.75	NPV	218.24	622.28	1,127.32	1,628.58	2,128.75	2,628.92	3,129.10
	IRR	5.95%	8.27%	10.78%	12.92%	14.78%	16.42%	17.87%
	Tax Revenue	479.97	557.20	653.75	756.96	862.12	967.28	1,072.44
	Tot.Gov.In	5,191.97	5,877.20	6,733.75	7,596.96	8,462.12	9,327.28	10,192.44
5.75	NPV	877.46	1,365.33	1,970.80	2,576.27	3,181.74	3,778.40	4,372.03
	IRR	9.59%	11.84%	14.22%	16.25%	18.02%	19.54%	20.89%
	Tax Revenue	605.98	701.61	828.91	956.21	1,083.51	1,226.36	1,374.52
	Tot.Gov.In	6,309.98	7,141.61	8,188.91	9,236.21	10,283.51	11,346.36	12,414.52
6.75	NPV	1,533.81	2,102.43	2,813.20	3,520.30	4,217.17	4,914.05	5,605.68
	IRR	12.54%	14.69%	16.97%	18.90%	20.55%	22.00%	23.27%
	Tax Revenue	737.04	856.59	1,006.03	1,161.94	1,335.87	1,509.79	1,692.40
	Tot.Gov.In	7,433.04	8,416.59	9,646.03	10,881.94	12,135.87	13,389.79	14,652.40

Table A18, Economic Viability Assessments Across Natural Gas Price and Reserves When the Inflation Rate is 0%. Government Share is 45%, and the Discount Rate is 6.5%

Inflation	0	Reserves						
Gov, Share	45%							
Dis, Rate	6.5	3.1	3.5	4	4.5	5	5.5	6
Natural Gas Price	NPV							
	IRR							
	Tax Revenue							
	Tot.Gov.In							
3.15	NPV	(957.97)	(724.55)	(450.17)	(149.91)	157.11	464.12	771.13
	IRR	-3.11%	-0.97%	1.30%	3.53%	5.57%	7.40%	9.05%
	Tax Revenue	132.03	207.35	336.43	409.59	468.28	526.97	585.66
	Tot.Gov.In	3,647.43	4,176.35	4,872.43	5,512.59	6,138.28	6,763.97	7,389.66
3.35	NPV	(842.55)	(600.33)	(300.98)	25.53	352.03	678.54	1,005.04
	IRR	-2.02%	0.09%	2.44%	4.73%	6.76%	8.57%	10.21%
	Tax Revenue	167.89	260.18	380.71	443.13	505.54	567.96	630.37
	Tot.Gov.In	3,906.49	4,481.18	5,204.71	5,870.13	6,535.54	7,200.96	7,866.37
3.55	NPV	(728.24)	(480.20)	(145.03)	200.96	546.96	892.96	1,238.97
	IRR	-1.00%	1.07%	3.57%	5.85%	7.86%	9.67%	11.29%
	Tax Revenue	206.12	321.18	410.52	476.67	542.81	608.95	675.05
	Tot.Gov.In	4,167.92	4,794.18	5,522.52	6,227.67	6,932.81	7,637.95	8,343.05
3.75	NPV	(617.49)	(354.58)	10.91	376.40	741.89	1,107.38	1,470.63
	IRR	-0.05%	2.04%	4.63%	6.90%	8.90%	10.69%	12.28%
	Tax Revenue	251.46	370.47	440.33	510.20	580.07	649.94	723.75
	Tot.Gov.In	4,436.46	5,095.47	5,840.33	6,585.20	7,330.07	8,074.94	8,823.75
4.75	NPV	(42.70)	327.67	790.62	1,253.45	1,711.94	2,170.43	2,628.92
	IRR	4.27%	6.61%	9.15%	11.35%	13.25%	14.92%	16.42%
	Tax Revenue	430.09	500.89	589.38	678.09	774.49	870.89	967.28
	Tot.Gov.In	5,731.09	6,485.89	7,429.38	8,373.09	9,324.49	10,275.89	11,227.28
5.75	NPV	561.58	1,009.92	1,567.16	2,122.17	2,677.19	3,232.20	3,778.40
	IRR	7.94%	10.23%	12.67%	14.76%	16.56%	18.15%	19.54%
	Tax Revenue	545.60	631.30	744.05	860.74	977.43	1,094.12	1,226.36
	Tot.Gov.In	6,962.60	7,876.30	9,024.05	10,175.74	11,327.43	12,479.12	13,646.36
6.75	NPV	1,165.86	1,687.81	2,339.35	2,990.89	3,636.44	4,275.24	4,914.05
	IRR	10.96%	13.15%	15.49%	17.49%	19.19%	20.68%	22.00%
	Tax Revenue	661.12	769.41	906.40	1,043.39	1,190.93	1,350.36	1,509.79
	Tot.Gov.In	8,194.12	9,274.41	10,626.40	11,978.39	13,340.93	14,715.36	16,089.79

Table A19, Economic Viability Assessments Across Natural Gas Price and Reserves When the Inflation Rate is 0%. Government Share is 50%, and the Discount Rate is 6.5%

Inflation	0	Reserves						
Gov, Share	50%							
Dis, Rate	6.5	3.1	3.5	4	4.5	5	5.5	6
Natural Gas Price	NPV							
	IRR							
	Tax Revenue							
	Tot.Gov.In							
3.15	NPV	(1,134.12)	(909.34)	(646.75)	(400.85)	(122.00)	157.11	436.21
	IRR	-4.90%	-2.65%	-0.30%	1.69%	3.73%	5.57%	7.24%
	Tax Revenue	104.31	145.56	236.61	361.04	414.93	468.28	521.63
	Tot.Gov.In	4,010.31	4,555.56	5,276.61	6,031.04	6,714.93	7,398.28	8,081.63
3.35	NPV	(1,021.10)	(792.02)	(521.94)	(241.61)	55.21	352.03	648.86
	IRR	-3.73%	-1.57%	0.73%	2.88%	4.92%	6.76%	8.42%
	Tax Revenue	119.24	184.79	299.99	392.06	448.80	505.54	562.28
	Tot.Gov.In	4,273.24	4,874.79	5,659.99	6,422.06	7,148.80	7,875.54	8,602.28
3.55	NPV	(912.70)	(674.69)	(396.65)	(82.12)	232.42	546.96	861.51
	IRR	-2.68%	-0.54%	1.72%	4.00%	6.04%	7.86%	9.51%
	Tax Revenue	144.44	224.03	362.39	422.55	482.68	542.81	602.93
	Tot.Gov.In	4,546.44	5,194.03	6,042.39	6,812.55	7,582.68	8,352.81	9,122.93
3.75	NPV	(808.78)	(564.84)	(254.90)	77.36	409.63	741.89	1,074.16
	IRR	-1.72%	0.38%	2.78%	5.06%	7.09%	8.90%	10.54%
	Tax Revenue	179.19	278.20	389.52	453.04	516.55	580.07	643.58
	Tot.Gov.In	4,829.19	5,528.20	6,389.52	7,203.04	8,016.55	8,830.07	9,643.58
4.75	NPV	(303.63)	33.06	453.93	874.80	1,295.13	1,711.94	2,128.75
	IRR	2.42%	4.77%	7.34%	9.58%	11.53%	13.25%	14.78%
	Tax Revenue	380.21	444.57	525.02	605.48	686.85	774.49	862.12
	Tot.Gov.In	6,270.21	7,094.57	8,125.02	9,155.48	10,186.85	11,224.49	12,262.12
5.75	NPV	245.71	653.29	1,162.76	1,668.07	2,172.63	2,677.19	3,181.74
	IRR	6.12%	8.44%	10.94%	13.08%	14.93%	16.56%	18.02%
	Tax Revenue	485.22	563.13	660.52	765.26	871.35	977.43	1,083.51
	Tot.Gov.In	7,615.22	8,613.13	9,860.52	11,115.26	12,371.35	13,627.43	14,883.51
6.75	NPV	795.05	1,273.20	1,865.50	2,457.81	3,050.12	3,636.44	4,217.17
	IRR	9.18%	11.44%	13.83%	15.88%	17.65%	19.19%	20.55%
	Tax Revenue	590.23	682.24	806.77	931.31	1,055.84	1,190.93	1,335.87
	Tot.Gov.In	8,960.23	10,132.24	11,606.77	13,081.31	14,555.84	16,040.93	17,535.87

Table A20, Economic Viability Assessments Across Natural Gas Price and Reserves When the Inflation Rate is 0%. Government Share is 55%, and the Discount Rate is 6.5%

Inflation	0	Reserves						
Gov, Share	55%							
Dis, Rate	6.5	3.1	3.5	4	4.5	5	5.5	6
Natural Gas Price	NPV							
	IRR							
	Tax Revenue							
	Tot.Gov.In							
3.15	NPV	(1,313.21)	(1,105.23)	(856.55)	(622.17)	(400.85)	(149.91)	101.29
	IRR	-6.89%	-4.59%	-2.15%	-0.09%	1.69%	3.53%	5.22%
	Tax Revenue	83.29	107.70	163.21	249.09	361.04	409.59	457.61
	Tot.Gov.In	4,379.89	4,958.70	5,707.21	6,486.09	7,291.04	8,032.59	8,773.61
3.35	NPV	(1,210.87)	(991.44)	(735.87)	(495.80)	(241.61)	25.53	292.67
	IRR	-5.73%	-3.44%	-1.07%	0.94%	2.88%	4.73%	6.40%
	Tax Revenue	95.30	125.25	203.57	313.26	392.06	443.13	494.20
	Tot.Gov.In	4,664.70	5,284.25	6,099.57	6,946.26	7,762.06	8,550.13	9,338.20
3.55	NPV	(1,108.53)	(882.94)	(618.66)	(365.21)	(82.12)	200.96	484.05
	IRR	-4.63%	-2.40%	-0.06%	1.96%	4.00%	5.85%	7.51%
	Tax Revenue	107.31	154.39	250.87	368.43	422.55	476.67	530.78
	Tot.Gov.In	4,949.51	5,621.39	6,498.87	7,397.43	8,232.55	9,067.67	9,902.78
3.75	NPV	(1,007.37)	(777.35)	(506.33)	(221.68)	77.36	376.40	675.44
	IRR	-3.60%	-1.43%	0.86%	3.02%	5.06%	6.90%	8.56%
	Tax Revenue	122.02	189.70	307.91	395.87	453.04	510.20	567.37
	Tot.Gov.In	5,237.02	5,964.70	6,907.91	7,820.87	8,703.04	9,585.20	10,467.37
4.75	NPV	(544.95)	(261.55)	117.23	496.02	874.80	1,253.45	1,628.58
	IRR	0.55%	2.73%	5.32%	7.58%	9.58%	11.35%	12.92%
	Tax Revenue	288.30	388.25	460.66	533.07	605.48	678.09	756.96
	Tot.Gov.In	6,767.30	7,703.25	8,820.66	9,938.07	11,055.48	12,173.09	13,296.96
5.75	NPV	(70.16)	296.66	755.18	1,213.71	1,668.07	2,122.17	2,576.27
	IRR	4.08%	6.43%	8.97%	11.17%	13.08%	14.76%	16.25%
	Tax Revenue	424.84	494.96	582.61	670.26	765.26	860.74	956.21
	Tot.Gov.In	8,267.84	9,349.96	10,702.61	12,055.26	13,415.26	14,775.74	16,136.21
6.75	NPV	424.25	854.86	1,391.66	1,924.73	2,457.81	2,990.89	3,520.30
	IRR	7.18%	9.48%	11.95%	14.05%	15.88%	17.49%	18.90%
	Tax Revenue	519.35	601.66	707.15	819.23	931.31	1,043.39	1,161.94
	Tot.Gov.In	9,726.35	10,996.66	12,587.15	14,184.23	15,781.31	17,378.39	18,981.94

Table A21, Economic Viability Assessments Across Natural Gas Price and Reserves When the Inflation Rate is -1%. Government Share is 40%, and the Discount Rate is 6.5%

Inflation	-1	Reserves						
Gov, Share	40%							
Dis, Rate	6.5	3.1	3.5	4	4.5	5	5.5	6
Natural Gas Price	NPV							
	IRR							
	Tax Revenue							
	Tot.Gov.In							
3.15	NPV	(1,079.10)	(854.53)	(591.60)	(323.76)	(36.07)	251.62	539.32
	IRR	-4.58%	-2.34%	0.02%	2.18%	4.27%	6.15%	7.85%
	Tax Revenue	102.87	159.84	267.91	364.19	417.83	471.47	525.12
	Tot.Gov.In	2,762.72	3,162.89	3,699.97	4,225.25	4,707.90	5,190.55	5,673.20
3.35	NPV	(965.02)	(733.73)	(462.76)	(159.37)	146.59	452.55	758.52
	IRR	-3.41%	-1.23%	1.08%	3.40%	5.48%	7.35%	9.04%
	Tax Revenue	123.22	199.98	332.18	394.84	451.89	508.94	565.99
	Tot.Gov.In	2,951.94	3,393.70	3,982.15	4,501.05	5,014.35	5,527.64	6,040.94
3.55	NPV	(857.99)	(619.67)	(319.20)	5.03	329.26	653.48	977.71
	IRR	-2.37%	-0.22%	2.21%	4.55%	6.62%	8.48%	10.15%
	Tax Revenue	158.69	253.61	365.04	425.49	485.95	546.40	606.86
	Tot.Gov.In	3,156.30	3,638.00	4,232.91	4,776.85	5,320.79	5,864.73	6,408.67
3.75	NPV	(750.99)	(507.39)	(173.07)	169.43	511.92	854.41	1,197.45
	IRR	-1.38%	0.72%	3.30%	5.63%	7.69%	9.53%	11.19%
	Tax Revenue	194.25	310.80	392.29	456.15	520.01	583.87	646.57
	Tot.Gov.In	3,360.73	3,885.87	4,478.07	5,052.65	5,627.24	6,201.82	6,775.24
4.75	NPV	(223.30)	123.76	557.59	991.41	1,423.58	1,853.24	2,282.89
	IRR	2.93%	5.34%	7.95%	10.21%	12.18%	13.91%	15.45%
	Tax Revenue	382.92	447.63	528.52	609.41	693.01	781.26	869.51
	Tot.Gov.In	4,393.80	4,976.04	5,703.85	6,431.66	7,162.17	7,897.34	8,632.50
5.75	NPV	342.96	763.08	1,287.90	1,808.01	2,328.12	2,848.22	3,364.44
	IRR	6.71%	9.06%	11.59%	13.74%	15.60%	17.24%	18.68%
	Tax Revenue	488.50	566.84	665.15	771.97	878.80	985.63	1,099.32
	Tot.Gov.In	5,343.78	6,048.60	6,930.01	7,819.95	8,709.89	9,599.83	10,496.63
6.75	NPV	909.21	1,400.97	2,011.53	2,622.09	3,231.48	3,829.79	4,428.10
	IRR	9.81%	12.09%	14.50%	16.55%	18.32%	19.85%	21.20%
	Tax Revenue	594.09	688.37	813.78	939.18	1,066.66	1,213.66	1,360.67
	Tot.Gov.In	6,293.76	7,123.48	8,168.19	9,212.90	10,259.67	11,325.98	12,392.29

Table A22, Economic Viability Assessments Across Natural Gas Price and Reserves When the Inflation Rate is -1%. Government Share is 45%, and the Discount Rate is 6.5%

Inflation	-1	Reserves						
Gov, Share	45%							
Dis, Rate	6.5	3.1	3.5	4	4.5	5	5.5	6
Natural Gas Price	NPV							
	IRR							
	Tax Revenue							
	Tot.Gov.In							
3.15	NPV	(1,232.94)	(1,015.89)	(763.93)	(528.45)	(275.82)	(12.10)	251.62
	IRR	-6.28%	-3.92%	-1.50%	0.55%	2.54%	4.43%	6.15%
	Tax Revenue	85.47	113.11	189.94	300.08	373.13	422.30	471.47
	Tot.Gov.In	3,077.80	3,491.54	4,051.01	4,643.78	5,199.46	5,731.27	6,263.07
3.35	NPV	(1,125.50)	(902.35)	(642.39)	(388.84)	(108.37)	172.09	452.55
	IRR	-5.08%	-2.80%	-0.42%	1.67%	3.76%	5.65%	7.35%
	Tax Revenue	97.63	143.95	242.03	352.05	404.35	456.64	508.94
	Tot.Gov.In	3,279.94	3,736.89	4,348.24	4,971.54	5,537.11	6,102.69	6,668.26
3.55	NPV	(1,019.23)	(791.61)	(524.77)	(238.14)	59.07	356.28	653.48
	IRR	-3.96%	-1.75%	0.58%	2.82%	4.91%	6.79%	8.48%
	Tax Revenue	112.44	180.75	301.95	380.15	435.57	490.99	546.40
	Tot.Gov.In	3,484.75	3,988.19	4,653.31	5,275.43	5,874.77	6,474.11	7,073.44
3.75	NPV	(918.17)	(682.82)	(401.40)	376.40	226.51	540.46	854.41
	IRR	-2.95%	-0.77%	1.57%	6.90%	5.99%	7.86%	9.53%
	Tax Revenue	138.70	221.43	349.71	510.20	466.79	525.33	583.87
	Tot.Gov.In	3,700.99	4,243.38	4,946.22	6,585.20	6,212.42	6,845.53	7,478.63
4.75	NPV	(446.25)	(129.30)	268.37	666.04	1,063.78	1,459.39	1,853.24
	IRR	1.21%	3.61%	6.25%	8.55%	10.56%	12.34%	13.91%
	Tax Revenue	338.50	400.45	474.60	548.75	622.76	700.37	781.26
	Tot.Gov.In	4,850.74	5,494.91	6,296.84	7,098.77	7,900.56	8,705.95	9,514.63
5.75	NPV	71.63	456.74	938.13	1,417.93	1,894.69	2,371.46	2,848.22
	IRR	4.99%	7.38%	9.95%	12.16%	14.07%	15.75%	17.24%
	Tax Revenue	437.91	509.72	599.48	691.85	789.78	887.71	985.63
	Tot.Gov.In	5,900.09	6,676.70	7,647.46	8,620.83	9,599.75	10,578.68	11,557.60
6.75	NPV	590.69	1,042.79	1,604.49	2,164.17	2,723.85	3,281.34	3,829.79
	IRR	8.14%	10.46%	12.94%	15.04%	16.86%	18.46%	19.85%
	Tax Revenue	534.70	618.99	730.17	845.13	960.09	1,078.91	1,213.66
	Tot.Gov.In	6,946.82	7,858.49	9,003.88	10,153.06	11,302.23	12,455.26	13,624.23

Table A23, Economic Viability Assessments Across Natural Gas Price and Reserves When the Inflation Rate is -1%. Government Share is 50%, and the Discount Rate is 6.5%

Inflation	-1	Reserves						
Gov, Share	50%							
Dis, Rate	6.5	3.1	3.5	4	4.5	5	5.5	6
Natural Gas Price	NPV							
	IRR							
	Tax Revenue							
	Tot.Gov.In							
3.15	NPV	(1,388.32)	(1,188.28)	(945.14)	(718.63)	(507.39)	(275.82)	(36.07)
	IRR	-8.15%	-5.77%	-3.21%	-1.09%	0.72%	2.54%	4.27%
	Tax Revenue	71.82	90.53	129.74	205.00	310.80	373.13	417.83
	Tot.Gov.In	3,396.62	3,844.34	4,419.81	5,031.33	5,673.40	6,271.98	6,852.94
3.35	NPV	(1,289.10)	(1,078.00)	(830.09)	(597.61)	(363.34)	(108.37)	146.59
	IRR	-6.93%	-4.57%	-2.11%	-0.03%	1.87%	3.76%	5.48%
	Tax Revenue	79.12	103.00	167.96	264.84	356.81	404.35	451.89
	Tot.Gov.In	3,615.03	4,095.15	4,730.42	5,397.61	6,059.88	6,677.73	7,295.58
3.55	NPV	(1,191.43)	(970.65)	(715.03)	(477.25)	(211.12)	59.07	329.26
	IRR	-5.81%	-3.47%	-1.06%	0.96%	3.02%	4.91%	6.62%
	Tax Revenue	90.17	122.10	206.19	325.97	385.19	435.57	485.95
	Tot.Gov.In	3,837.17	4,352.59	5,041.04	5,765.17	6,428.75	7,083.48	7,738.22
3.75	NPV	(1,093.75)	(869.64)	(607.64)	(344.31)	(58.90)	226.51	511.92
	IRR	-4.74%	-2.48%	-0.12%	2.02%	4.11%	5.99%	7.69%
	Tax Revenue	101.22	154.82	259.74	360.35	413.57	466.79	520.01
	Tot.Gov.In	4,059.32	4,623.65	5,366.97	6,105.99	6,797.61	7,489.23	8,180.85
4.75	NPV	(644.40)	(382.37)	(20.85)	340.67	702.19	1,063.78	1,423.58
	IRR	-0.44%	1.72%	4.37%	6.69%	8.74%	10.56%	12.18%
	Tax Revenue	241.01	353.26	420.67	488.08	555.49	622.76	693.01
	Tot.Gov.In	5,254.61	6,013.77	6,889.83	7,765.88	8,641.93	9,517.85	10,396.75
5.75	NPV	(199.71)	150.40	588.03	1,025.66	1,461.27	1,894.69	2,328.12
	IRR	3.11%	5.51%	8.12%	10.38%	12.34%	14.07%	15.60%
	Tax Revenue	387.32	452.60	534.20	615.80	700.75	789.78	878.80
	Tot.Gov.In	6,456.41	7,304.80	8,365.29	9,425.77	10,489.61	11,557.52	12,625.43
6.75	NPV	272.17	683.17	1,197.45	1,706.25	2,215.05	2,723.85	3,231.48
	IRR	6.28%	8.64%	11.19%	13.34%	15.22%	16.86%	18.32%
	Tax Revenue	475.30	551.94	646.57	751.07	855.58	960.09	1,066.66
	Tot.Gov.In	7,599.89	8,595.83	9,839.58	11,093.21	12,346.85	13,600.48	14,856.18

Table A24, Economic Viability Assessments Across Natural Gas Price and Reserves When the Inflation Rate is -1%. Government Share is 55%, and the Discount Rate is 6.5%

Inflation	-1	Reserves						
Gov, Share	55%							
Dis, Rate	6.5	3.1	3.5	4	4.5	5	5.5	6
Natural Gas Price	NPV							
	IRR							
	Tax Revenue							
	Tot.Gov.In							
3.15	NPV	(1,545.15)	(1,363.03)	(1,138.65)	(922.49)	(718.63)	(528.45)	(323.76)
	IRR	-10.25%	-7.84%	-5.22%	-2.99%	-1.09%	0.55%	2.18%
	Tax Revenue	61.66	73.46	96.14	137.26	205.00	300.08	364.19
	Tot.Gov.In	3,718.95	4,202.65	4,815.22	5,446.23	6,103.85	6,788.82	7,442.81
3.35	NPV	(1,455.54)	(1,262.71)	(1,026.15)	(806.00)	(597.61)	(388.84)	(159.37)
	IRR	-9.03%	-6.62%	-4.03%	-1.88%	-0.03%	1.67%	3.40%
	Tax Revenue	67.46	82.11	111.07	175.97	264.84	352.05	394.84
	Tot.Gov.In	3,956.96	4,473.47	5,129.77	5,822.01	6,538.22	7,252.77	7,922.90
3.55	NPV	(1,365.92)	(1,163.46)	(919.25)	(690.84)	(477.25)	(238.14)	5.03
	IRR	-7.87%	-5.50%	-2.96%	-0.84%	0.96%	2.82%	4.55%
	Tax Revenue	73.27	93.33	138.34	217.35	325.97	380.15	425.49
	Tot.Gov.In	4,194.97	4,746.87	5,456.67	6,200.47	6,973.88	7,692.85	8,402.99
3.75	NPV	(1,276.89)	(1,064.22)	(815.70)	(582.58)	(344.31)	(87.44)	169.43
	IRR	-6.79%	-4.42%	-1.98%	0.09%	2.02%	3.91%	5.63%
	Tax Revenue	80.50	104.56	172.74	272.50	360.35	408.25	456.15
	Tot.Gov.In	4,434.42	5,020.27	5,790.70	6,592.70	7,382.80	8,132.94	8,883.08
4.75	NPV	(851.30)	(612.65)	(310.07)	15.30	340.67	666.04	991.41
	IRR	-2.31%	-0.16%	2.28%	4.62%	6.69%	8.55%	10.21%
	Tax Revenue	160.92	257.18	366.74	427.41	488.08	548.75	609.41
	Tot.Gov.In	5,675.87	6,483.75	7,482.82	8,432.99	9,383.17	10,333.35	11,283.53
5.75	NPV	(467.93)	(155.94)	237.93	631.79	1,025.66	1,417.93	1,808.01
	IRR	1.04%	3.42%	6.06%	8.36%	10.38%	12.16%	13.74%
	Tax Revenue	329.96	395.48	468.92	542.36	615.80	691.85	771.97
	Tot.Gov.In	7,005.96	7,932.90	9,083.11	10,233.33	11,383.54	12,536.37	13,693.27
6.75	NPV	(46.34)	323.55	785.92	1,248.33	1,706.25	2,164.17	2,622.09
	IRR	4.20%	6.59%	9.18%	11.42%	13.34%	15.04%	16.55%
	Tax Revenue	415.91	484.88	571.10	657.02	751.07	845.13	939.18
	Tot.Gov.In	8,252.96	9,333.16	10,683.41	12,033.37	13,391.47	14,749.56	16,107.66