A Policy for the Export of Natural Gas from Israel

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A Policy for the Export of Natural Gas from Israel

This paper analyzes the policy for the export of natural gas that maximizes the economic worth of the resource for the State of Israel. The result calls for a significantly higher level of exports and at a significantly faster rate than the recommendations of the Tzemach Committee and the subsequent decision of the government.

- Up to this point, natural gas reservoirs containing about 1000 BCM (billion cubic meters) have been discovered in Israel's economic waters. They are sufficient to satisfy domestic needs for about 40 years. The value of the reservoirs, i.e. the cost of importing the amount of gas in the reservoirs, is over $100 billion in present discounted value (over $400 billion in nominal terms).
- The export of natural gas will bring in income earlier but on the other hand will empty out the reservoirs sooner and will therefore bring closer the day when Israel will have to start importing gas.
- The Tzemach Committee (which formulated its recommendations in 2012 under the assumption that the reservoirs contain 950 BCM) recommended exporting 500 BCM with 450 BCM kept in reserve to assure 25 years of domestic consumption. The government of Israel adopted the Committee's recommendations but increased the amount of the reserve to 540 BCM, such that they will be sufficient for 29 years of domestic consumption. Among other things, the government adopted the Committee's recommendation to limit the rate of exports so that exports would continue over a period of 20 years.
- The economic analysis presented in the Tzemach Committee report is wrong. The correct conclusion, according to the Committee's method of analysis and the parameters it assumed, is that it is not economically worthwhile to export any gas at all.
- However, the discount rate assumed by the Tzemach Committee is incorrect. In this paper, we analyze the optimal policy using a discount rate that is appropriate for energy assets. Under the same assumption that the reservoirs contain 950 BCM, the policy that maximizes welfare is to export 620 BCM at a rate of 80 BCM per year and a shift to imports after 18 years. The discounted value under this policy is higher than that of the present government policy by $19 billion.

- This optimal policy requires a large investment in infrastructure (production and an underwater pipeline) and is dependent on the ability of the target markets in the region to absorb about 80 BCM per year. Nonetheless, even a more moderate policy — to export 550 BCM at a rate of 50 BCM per year—will result in a much higher value (by $15 billion) than the government policy.
- Even removing the current policy restriction on the rate of gas exports, while maintaining the ceiling on the total amount to be exported, is sufficient to raise the net present value of the gas reserves by $11 billion.
- All of the aforementioned calculations were carried out under the assumption that Israel will be forced to import expensive LNG (liquefied natural gas, which is cooled and liquefied and can be transported in tankers), and under the conservative assumption that its price will be high ($15 per energy unit). Since the price of LNG is expected to fall in the long-run equilibrium, and since there is a significant probability that Israel will eventually have cheaper alternatives (such as importing gas from nearby states by means of a pipeline or the use of renewable energy, if it becomes cheaper), the economic value of accelerated gas exports is even higher.
- As long as there is a policy of limiting exports, <u>it is necessary to control the price of gas in Israel such that it will reflect the prices in the target export markets less the costs of transport</u>. This is because "free competition" under export limitation will lead to a domestic gas price that is much lower than the alternative cost to the economy (the value of the gas when exported). Such a low price will lead to wasteful usage, which will work against the goal of the export limit, i.e. the preservation of gas reserves for many years. An artificially low price of gas will also bypass the Sheshinski tax and will work against the goal of ensuring the shares of the state and of generations to come.
- The policy for the export of gas should maximize the value of the gas reserves; the question of distribution (how much the "tycoons" will make) is secondary. This is because the government and the public are the main beneficiaries (80%) of the gas profits: According to the Sheshinski mechanism, 70% of profits (after the reimbursement of infrastructure costs) belong to the state, and the public owns about one-third of the remaining 30% which belong to the gas companies.
- Discussion of these policy questions is important but should be conducted while the export project continues, since <u>every year of delayed export leads to a loss of over $3 billion</u>!

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