

Haaretz (20th March 2018 – By Gina Cohen & Miki Korner) – What should be done with the gas and why is important in the energy mix

The government of Israel's policy to curb coal use to a minimum and use more gas and renewables is optimal for the Israeli market ?However, in order for this to occur, the regulators need to pass supportive legislation that also take into consideration all the market benefits

The current policies of the government to reduce the use of coal to a minimum and increase the consumption of natural gas and renewable energy is optimal for the Israeli market and is in line with OECD trends. In order to realize this however the regulators and the statutory bodies must encourage the establishment of infrastructure and take supportive decisions that take into consideration the whole gamma of market benefits and not only of those bodies that are regulated.

It takes millions of years for natural gas to form, and although its existence has been known since ancient times, the history of its commercial use in the world dates back to after the Second World War. The turning point occurred because of two events: technological advances in pipeline construction after WW2 - welding, metallurgy, pipe rolling – which made it possible to move from gas being regarded as bad news (gas had to be disposed of) to an ideal source of energy, and the discovery of fields that were so huge such as the Dutch Groningen field in 1959, the biggest European field ever, the size of which was simply too huge not to reap the benefits of.

In Israel, gas was first discovered at the turn of this century, and it was lucky that it was discovered then. If we had found it earlier, before our economy and democracy was so well established, it might have made us complacent, like so many failed countries that rely on resource rent. Large infusions of oil and gas revenues can lead to an increase in local currency values which can produce the so-called Dutch disease in which one sector destroys the terms of trade for all the rest. Israel of today, however is well-immune to these possible ills and able to benefit from the vast advantages that locally produced natural gas can bring with it: local natural gas production amounts to 0.5% of Israel's GDP, and with future growing consumption and exports this level can attain 1.5-2%, thus a handsome benefit but not one to dominate the country's economy.

However, we are also lucky that we didn't discover the gas 30 years in the future, because although this is the golden age of gas, the world and Israel, are moving inexorably towards renewable energies and energy storage. If in the past, the concept of inter-generational equality required to preserve some energy fossils for the next generations, it is now widely understood that our grandchildren will be heating their homes, propelling their cars and generating the electricity they consume with different resources.

Thus, instead of preserving and potentially wasting the gas in the ground and continuing to import coal for power generation and oil distillates for industrial and transportation, we should instead base our economy mainly on natural gas and renewables. The money that will be gained from the sale of gas will be invested in a Sovereign Wealth Fund, and it is

this fund that we will be leaving to our future generations, together with a cleaner environment and a stronger economy.

Thus, Minister of Energy Yuval Steinitz is correct in the policy of cutting down on coal in power generation and replacing it with gas.

In 2015, Israel still generated 45% of its electricity from coal but in December 2015, the Minister took the decision to reduce coal by 15% in 2016 and by 20% in 2017 (in practice it was reduced by 17% and 24% respectively). In 2016, the minister announced that units 1-4 at the Hadera coal station will be shut down by 2022, and that electricity generation from gas will reach 85% by 2022.

However, it is now necessary to translate Minister Steinitz' policies into reality by those responsible for the implementation and it is here that matters are less straightforward:

The electricity regulator (PUA) – The regulator is responsible for setting electricity tariffs and rightly strives to ensure the cheapest price is paid by consumers. However, in its calculations, it only looks at the pure cost of generation of electricity from the different fuels. Since in 2016, the cost of generation with natural gas was 12.1 agorot/KWH for IPPs and 15.2 agorot/KWH for IEC compared to 11.2 agorot/KWH with coal, the PUA concluded that in 2022, only 67% of the electricity should be generated from gas and 23% should still come from coal (the remainder from renewables). This however, fails to take into account the full environmental costs of coal and the tax benefits received from locally produced gas. The generation of electricity from gas has half as much CO₂ as coal, 120 times less SO₂ emissions (33 times less after the installation of scrubbers at the coal stations), 8.3 times less NO₂ emissions and 7 times less emissions of particulates. All these have economic implications.

In 2017, the figures are in favor of gas on a pure cost basis since the price of the imported coal worldwide increased from \$50 to \$90 a ton.

The government/PUA need to take into consideration the full costs of power generation on the market, and not only the fuel costs to the power producers.

The natural gas regulator (NGA) – The high-pressure transmission line has a network of 650 km, but this is insufficient.

At this stage, it is not possible to use more gas, because of the lack of gas production from the fields. This problem will however be solved by 2019 once Leviathan comes online doubling the capacity, followed by Karish in 2021.

In 2016, the country's gas operated power generation capacity was 11,231 MW, and thus able to supply 99% of the electricity needs. New CCGTs are currently in various stages of construction so that by 2020, as demand for energy increases, the country's natural gas power generation capacity will be 13,000 MWs, again able to supply all of the country's electricity needs 99% of the time.

Once Leviathan comes onstream, it would be technically possible to have almost all of the country's power generation produced from gas and renewables. The problem is the lack of gas transmission infrastructure capacity:

South of Kiryat Gat, the existing line will not be able to supply new CCGTs and/or new industrial plants and it would take 3-4 years to complete from approval. Lines to transmit gas to the existing coal stations so that they can use gas instead of coal have not been approved. Until new 60% efficient gas operated power stations are constructed on these sites, it is worthwhile to put gas into the coal turbines, even though they only have an efficiency of 38%, as this will immediately reduce air pollution at no extra costs. Maintaining the turbines in operational mode means that in the event of any mishap in gas supply, these stations can return to operate on coal within 3-4 hours.

On the 6th February, the EU 28 voted in favor of legislation to reduce funding for non-coal-fired projects. The UK, which has indigenous coal but needs to import 50% of its gas, has decided to completely phase out coal by 2025.

Reducing the use of coal in Israel (all of which is imported) and increasing that of natural gas (all of which is indigenous) will contribute to the environment, to health, to state revenues from taxes on production and to the GDP, it will reduce imports, improve security of energy supply and enhance competitiveness in the gas market (by promoting exploration and development) and in the electricity market.

The Adiri Committee that is being set up to revise former Israeli gas policies by June 2018, would do well to address both the rightful policies set by the Minister but also the means to implement them.