

## Supply Chain of Energy Resources and Its Alternatives Due to the Arab Spring: The Case of Egyptian Natural Gas Flow to Jordan

**Authors :** Moh'd Anwer Al-Shboul

**Abstract :** The year 2011 was a challenging year for Jordanian economy, which felt a variety of effects from the Arab Spring which took place in neighboring countries. Since February, 5th 2012, the Arab Gas Supply Pipeline, which carries natural gas from Egypt through the Sinai Peninsula and to Jordan and Israel, has been attacked more than 39 times. Jordan imported about 80 percent of its necessity of natural gas (about 250 million cubic feet of natural gas per day) from Egypt to generate particularly electricity, with the remainder of being produced locally. Jordan has utilized multiple alternatives to address the interruption of available natural gas supply from Egypt. The Jordanian distributed power plants now rely on the use of heavy fuel oil and diesel for electricity generation, in this case, it costs Jordan about four times than natural gas. The substitution of Egyptian natural gas supplies by fuel oil and diesel, coupled with the 32 percent rise in global fuel prices, has increased Jordan's energy import bill by over 50 percent in 2011, reaching more than 16 percent of the 2011 GDP. The increase in the cost of electricity generation pushed the Jordanian economy to borrow from multiple internal and external resource channels, thus increasing the public debt. The Jordanian government's short-term solution to the reduced natural gas supply from Egypt was alternatively purchasing the necessary quantities from some Gulf countries such as Qatar and/or Saudi Arabia, which can be imported with two possible methods. The first method is to rent a ship equipped with a liquefied natural gas (LNG) terminal, which is currently operating. The second method requires equipping the Aqaba port with an LNG terminal, which also currently is operating. In the long-term, a viable solution to depending on importing expensive and often unreliable natural gas supplies from surrounding countries is to depend more heavily on renewable supply energy, including solar, wind, and water energy.

**Keywords :** energy supply resources, Arab spring, liquefied natural gas, pipeline, Jordan

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