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Japan-Qatar Cooperation in the Water Industry: Recent Developments, Challenges and Possible Solutions

Social Science

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ABSTRACT

Qatar is facing a unique set of challenges with respect to water scarcity due to shortage of reliable ground and fresh water sources. Water consumption is about 675 litres of water per capita per day. The population is expected to increase nearly eightfold by 2050. Qatar is water-stressed due to population and economic growth. Using energy efficient solar powered desalination plants can be a one of the solution that is considered in the paper.This paper makes an attempt to study Japan's equations with Qatar with special reference to water. The paper can be grounded into following categories: What are the strategic interests of Japan in Qatar? How Japanese investments in Qatar are gearing up? Accordingly, the key research questions of the paper are: How Japanese technology can address challenges of water shortage in Qatar? Can Japanese technology make a difference in a timely enough manner by that the path for sustainable growth requires blue solutions?

Introduction

Qatar shares land borders with only one Gulf Cooperation Council (GCC) country, Saudi Arabia. Bahrain, Iran and United Arab Emirates shares maritime boundaries with Qatar. Currently, Qatar is believed to only have a 48-hour supply of water and the demand for water is likely to increase significantly in Qatar. Hence, production interruption could quickly cause hardships for the country's residents and businesses. With negligible surface and groundwater supplies, Qatar largely depends on desalination plants to produce water. Water sector has seen fast transformation in the last few years in Qatar. The question now is how Qatar's water sector can make the best use of the Japanese cutting-edge technology. The same question applies in the case of Japan on how it can increase its investments in the GCC region in general and Qatar in particular. Qatar possesses educated workforce, scientific potential, engineers, ample capital, water and electricity corporations, huge reserves of natural gas and oil as well as investment security that have all created a good opportunity for foreign investors. Transparency and integrity are enough to describe about Japanese investors. Qatari companies are familiar with business environment within the country and can successfully undertake domestic projects in joint collaboration with Japanese firms.

Japan's Equations with Qatar with Special Reference to Water

Japan is the world's largest donor in the water and sanitation sector. Japan hosted the Third World Water Forum in March 2003, helped ensure the adoption of the resolution on the "International Year of Sanitation 2008" at the United Nations General Assembly in December 2007 and supports multilateral cooperation in this area. Japan provides assistance to the countries facing

water shortage, scarcity and related issues based on its technology. In February 2013 Qatar hosted the second WaterWorld Middle East Conference and Exhibition with the focus on topics such as wastewater reuse and smart water management. Japan is actively assisting cooperation programs in the field of desalination of seawater in Qatar which is the country with abundant water resource.

In August 27, 2013 the Japanese Prime Minister Shinzo Abe officially visited Qatar. He met his counterpart Prime Minister Sheikh Abdullah bin Nasser bin Khalifa al-Thani and discussed bilateral relations and means of bolstering them in fields such as energy, water, agriculture, science, health etc. Government of Qatar encouraged Japanese companies to participate in projects with regard to the Qatar National Vision 2030, a program with four pillars of development; economic, social, human and environmental.

During the second session of Japan Electronic Technology Forum for Sustainable Development in Doha on March 21, 2016, Japan had announced to offer Qatar cutting edge Information and Communication Technology in the field of security and environment to help in the preparation of 2022 FIFA World Cup including the construction of dams, Doha Metro, desalination and waste water treatment projects and others. The forum gathered a number of well-known Japanese companies including Fujitsu, Horiba, JRC, Toshiba, Nagase and NEC. It was attended by Qatar Chamber (QC) Vice-Chairman Mohammed bin Ahmed bin Towar al Kuwari, Director at Japan's Ministry of Economy, Trade and Industry Masafumi Ohki and Ambassador of Japan to Qatar Shingo Tsuda. [1]

Japan-Qatar Water Cooperation: Implications on GCC States and Iran

The paper aims to provide the answer to the research question which is stated at the outset of the paper i.e. Can Japanese technology make a difference in a timely enough manner by that the path for sustainable growth requires blue solutions? The answer is indeed because Japan is able to spread its influence in Qatar's neighboring states. In 2016, the Second Iran-Japan Joint Conference on Water and Wastewater Industry was held in Tehran on May 14 and 15. Both the public as well as the private sectors from both the countries were involved. Japanese ambassador Hiroyasu Kobayashi paid high level visit to Tehran and met with Iranian Deputy Minister of Energy Sattar Mahmoudi. Hiroyasu Kobayashi accompanied with nine representatives of Japanese companies such as such as Swing Corporation, Yokogawa Electric Corporation, Kubota Corporation, Mitsubishi, Hitachi, Mitsubishi Rayon, Asahi and Toei.

The conference was also attended by entrepreneurs and representatives from Iranian private sector companies. [2] Iran's National Water and Wastewater Engineering Company Hamidreza Janbaz underlined the need for closer interaction between the private sectors of the two countries in the water industry. Both the countries had decided to welcome joint ventures for promotion of bilateral cooperation on various projects including establishment of sewage systems in 500 cities, construction of hydropower dams to supply water to 100 towns as well as management of non-revenue water in Iran's distribution network and conveyor lines. [3]

Findings:

- Iran seems willing to sign joint ventures with Japan on water related projects and willingly offered $9.89 billion worth of possible joint projects in water and wastewater sector to the Japanese companies. [4]
- Japan is also interested in funding mega water projects in Iran.
- Japan is exploring investment projects in the GCC States and working closely with Iran on involvement of the Persian Gulf region.
- Both Japan and Qatar have devised plans to desalinate the Persian Gulf water and transfer it to south of Iran and finally to its central desert areas.
- Both Japan and Qatar are working together to counter the violent extremism in Iran and Syria.
- Both Japan and Qatar are closely working together on United Nations Council reform.

Urban population is increasing at a fast pace in UAE. Growing urbanization leads to expansion of water parks, amusement sites, hotels, restaurants, beautiful green landscaping etc. which in turn draining surface water reserves. This year in the month of January the United Arab Emirates (UAE), one of the GCC States' most water-stressed country started finding solutions to secure water supply for the betterment of the people. For this purpose, UAE launched an international research prize to the researchers to work on different techniques to secure water resources. Researchers from different parts of the world including Japan had been given first tranche of $5 million award to pursue research on weather modification.

From Japan, Masataka Murakami of Nagoya University's Institute for Space-Earth Environmental Research was given the opportunity to lead of the research team. Murakami's project is not about cloud seeding but finding solutions in the way that nature works. He with his team will be able to deploy sensors and algorithms to identify the most promising clouds in the UAE by the end of 2019. According to Murakami the process is more advances, less expensive as compared to desalination plants. [5]

From November 8 to 10, 2015, Mr. Yosuke Takagi, Japan's State Minister of Economy, Trade and Industry, visited the United Arab Emirates (UAE) and Kuwait. During his stay, State Minister Takagi participated in the Abu Dhabi International Petroleum Exhibition and Conference (ADIPEC) and had meeting with dignitaries of Kuwait. Takagi expressed his expectations for Japanese companies' further participation in projects related to electricity and water in the meeting with Mr. Mohammad Haji Ali Bushehri, Undersecretary of the Ministry of Electricity and Water. [6] Both side agreed to hold a policy dialogue as a framework that allows the both countries to identify and discuss issues and measures to be addressed for developing specific cooperation between Japan and Kuwait in the fields of electricity and water.

How Japanese Investments in Qatar are Gearing Up?

In July 8, 2014, Mitsubishi Corporation (MC) and Mitsubishi Heavy Industries (MHI) together with the Japan Bank for International Cooperation (JBIC) formed strategic partnership with Metito**, the Leading Water Company, headquartered in Dubai.** The acquisition will allow MC and MHI to expand their presence in the water business in fast-growing Middle Eastern, African and Asian markets. The partnership comprised a share of purchase agreement with MC and MHI which acquired 38.4 percent stake in Metito. [7] Both Gulf Capital and the International Finance Corporation (IFC) continued holding 23.8 percent and 3 percent of Metito. JBIC invested up to US$92 million in classified shares to support Metito's growth opportunities.

In March 27, 2015 Japanese company, Hitachi Zosen Corporation (HZC) received an order for construction of a large-scale desalination plant for Qatar from a special purpose company, Umm Al Houl Power (IWPP Company) formed by Qatar Electricity and Water Company (QEWC), Qatar Petroleum(QP), Qatar Foundation(QF) and K1 Energy. This is the second time for HZC to be awarded the large-scale desalination plant in Qatar. It got the chance earlier in January 2013. Equity share of IWPP Company have been decided i.e. K1 Energy 30 percent, QEWC 60 percent, QP and QF will share 5 percent each. HZC's track record in desalination plants covers a total of 42 MSF installations (approximately 1,150,000 ton/day), 8 Multi-Effect Desalination (MED) installations in Japan (approx. 8,600 ton/day), and a total of 35 Reverse Osmosis (RO) installations, including six for overseas (approx. 8,200 ton/day). [8] K1 Energy which TEPCO with 1.5 percent share jointly established with Mitsubishi Corporation with 98.5 percent share and Incorporated (SPC) agreed with QEWC to conclude a 25 year power and water purchase agreement in May 2015. Since then K1 Energy has been participating and investing in a power generation and water desalination project in the vicinity of Qatar's capital, Doha. The project is expected to begin operations in 2017. QEWC has awarded a contract to a consortium led by Japan's Mitsubishi Corporation and the Toyo Thai Corporation Public Company Limited (TTCL) in 2015 to open the Ras Abu Fontas (RAF) A2 seawater desalination plant. The purpose was to supply the 36 MIGD (160,000 M^3/d) of desalinated water produced by the multi-stage flash plant to Kahramaa. This data clearly shows that indeed Japanese investments are gearing up in Qatar. This will not only enhance Japanese brand image in the mind of gulf region but also makes Japan as one of the leading desalination plant engineering contractor, both in technology and track record.

Japan's Strategic Interests in Qatar

1. Qatar has the world's highest per-capita income and the country enjoys extraordinary growth due to the abundance of natural gas and hydrocarbon resources. For instance: Qatar has 13 percent of world's proven gas reserves.
2. Qatar is investing $205 billion for infrastructure projects through to 2018 such as a rail and metro network, new roads, luxury hotels, as well as the new Hamad International Airport.
3. Already, two construction companies, Taisei and Takenaka, are constructing respectively the main and the Emiri Terminals of the New Doha International Airport.
4. Qatar National Bank (QNB) is world's strongest bank. Qatar Financial Centre (QFC) is number one in the GCC.
5. Qatar is preparing serious plans to invest $125bn in renewable energy development over the coming year's especially solar energy. Japan is superior in technology and its main requirement is energy. Similarly, Qatar needs technology and has enough energy reserves.
6. New projects in Qatar will no doubt provide Japan the potential for extra investments in a few years' time. This will increase Japan's goodwill and will allow it to offer new projects to neighbours such as Bahrain and Kuwait.
7. Qatar has deeper relations with Iran. Moreover, economic sanctions were lifted from Iran in 2015 and United Nations certified it. Japanese companies look to invest in Iran's energy sector.

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Some Valuable Suggestions

- Both the governments should encourage industry specialists, corporates, researchers and students to discuss water related issues in a question-answer session on what the future holds for Qatar's water shortage and the role of technology in addressing challenges.
- For Japan, efforts should be made to improve current conditions with respect to water scarcity in Qatar. Solutions will pave the way for further economic diversification and opportunity to engage with GCC region as a whole.
- For Qatar, "consider seriously" Japan as a pioneer in water security and innovation of which all countries in the GCC region can take advantage of. Japan's assistance builds on its experience, expertise and technology.
- Gains in efficiency and productivity in water management and utilization can reduce water scarcity risks and enable higher levels of sustainable growth in Qatar.
- Public-Private Partnership (PPP) needed for water risk reduction.
- Time to time workshops, seminars, lectures, and training courses should be arranged for the managers and experts to develop desalination systems and improvements in wastewater treatment plants.
- Policies and actions should be taken by the government of Qatar to make Japanese companies more localized in the country.
- Promotion of public awareness of sustainable use of energy. Check on water leakages and there should be proper meter readings.
- Time to time Japan should accept trainees in sectors such as water, mining, and manufacturing. Japan should send experts to Qatar and offer other forms of technological assistance.
- The Qatar Investment Authority (QIA) is investing in real estate (rental housing) in Japan through joint venture with The Ascott Limited. Qatar is keen to invest heavily in Japan.

Conclusion

According to World Resources Institute (WRI) report, nine of the countries are considered arguably the least water-secure in the world namely Bahrain, Kuwait, Palestine, Qatar, the United Arab Emirates, Israel, Saudi Arabia, Oman and Lebanon. World will face serious levels of water crisis through 2040.

Till now, desalinating seawater has been found, explored, researched and implemented as the solution to addressing water scarcity in Qatar but the technology is associated with risks like consumption of more energy resources that is both unsustainable and environmentally harmful.

Japanese government needs to establish a social structure for such business like solar panel business. Lot of government vision and support is required to get good market share in the world.

One way to achieve sustainability and water security in Qatar would be to fully embrace energy efficient solar powered desalination plants. That would allow cities to leverage solar energy, the region's most abundant renewable energy source.

Japanese makers develop the world's top-level technologies and its main requirement is energy. Hence, Japan can provide technical assistance to Qatar. Though Japan's relationship with Qatar is dominated by trade and predominately by former need for oil and gas, Qatar is interested in investing for a future when either oil stocks decline or the world shifts to other forms of energy. Undoubtedly investing in Qatar will serve to solidify further the economic interdependence between Japan and the Qatar. Japan has to work more in order to develop construction sector in Qatar which will lead to economic growth, greater trust and eventually peace in the GCC States.

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