

# Strategic Analysis Paper

9 October 2014

## Iran's Nuclear Programme: Benign or Sinister?

**Michael Petrut**

*Research Assistant*

*Indian Ocean Research Programme*

### Key Points

- Iran was revealed by the IAEA in 2002 to be enriching uranium to levels far in excess of that required for its energy generation requirements.
- The recent Joint Plan of Action talks have resulted in Iran diluting its stockpiles of uranium that had been enriched to 20 per cent to levels more in keeping with that required for fuel use in return for a suspension of sanctions.
- Iran's proven reserves of oil and natural gas raise questions as to why President Rouhani wishes to develop its nuclear infrastructure.
- Russia holds the intellectual property rights to Iran's only nuclear power plant in Bushehr.
- During the presidency of Mahmoud Ahmadinejad, Iran's nuclear reputation was damaged by its storage of 20 per cent uranium hexafluoride in excess of the requirements of its research reactors.

### Summary

Iran was shown to have stockpiled research-grade uranium under the previous leadership of President Mahmoud Ahmadinejad. It now claims the right to enrich uranium for its energy and research requirements, whilst stating it has no interest in developing nuclear weapons. If its nuclear programme was peaceful, however, Iran would have invested solely in nuclear power infrastructure, rather than creating large stockpiles of enriched uranium. If Iran develops nuclear weapons it will have severe implications for the countries of the Persian Gulf region and beyond.

The Iranian nuclear issue is complex and uncertain. There are broader geopolitical implications for the programme, including the growing economic ties Russia and China are developing in the region. Geographically, Iran is situated in an earthquake-prone region that does not provide the geological stability required for nuclear power-generating plants. Finally, Iran's nuclear targets do not appear to reflect domestic energy demand or resource necessity, given its large oil and natural gas reserves.

## Analysis

### The Programme

Iran declared itself a nuclear state in 2010, with a nuclear policy aimed at achieving domestic nuclear energy sufficiency. Tehran's stated intention is to enrich uranium, claiming that right as a signatory to the Non-Proliferation Treaty (NPT). The most controversial issue surrounding the Iranian nuclear programme, however, is the degree of enrichment that has been revealed at the Esfahan Uranium Conversion Facility and the Natanz Pilot Fuel Enrichment Plant. For a nuclear energy reactor, enrichment levels of between 3.5 to 5 per cent are required to be able to generate electricity; Iran, however, has enriched uranium hexafluoride (in the form of gas) up to 20 per cent, with former president Mahmoud Ahmadinejad claiming Iran had the capacity to enrich uranium to weapons-grade levels of over 80 per cent.

The 20 per cent enrichment programme began in 2010 under Ahmadinejad's leadership, and had reportedly produced more than 440 kilograms of enriched uranium enriched by May 2014. This enriched uranium is used in research reactors, which Iran claims to be the sole purpose of the Esfahan enrichment plant and the Tehran Research Reactor (TRR). Tehran's intention is to maintain

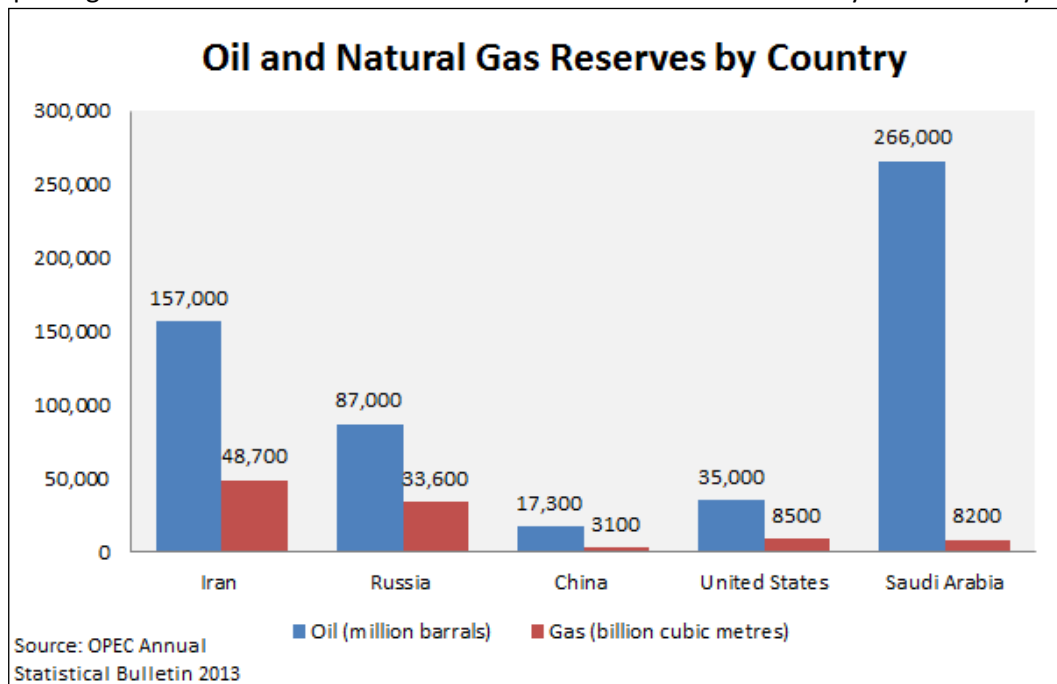


the current operation of its facilities, including the unrestricted operation of its research reactors and the enrichment process. The Bushehr plant, supplied and operated by Russia, is the only one in Iran currently able to produce domestic power, and guaranteed fuel supply

from Russia for eight more years. Due to an intellectual property rights agreement with Russia, Iran cannot copy or reproduce this reactor before 2022.

**Practical needs or steps towards proliferation?**

Iran holds the fourth-largest oil reserves in the world and the second-largest reserves of natural gas. It requires an estimated USD\$150 billion, however, to rebuild its energy infrastructure, which has deteriorated due to international sanctions, and to be able to extract those resources and convert them into a stable supply of domestic energy. The sanctions imposed on Iran include a ban on most countries importing Iranian energy and exporting metals to it. These strictures have debilitated the country economically and



denied Iran access to the resources and capital required to build and maintain its energy infrastructure.

The stockpiles of enriched uranium hexafluoride increased towards the end of the Ahmadinejad administration, reportedly reaching over 180kgs. Under the current President, Hassan Rouhani, this stockpile was reduced to under 40kgs by May 2014, in accordance with the terms of the November 2013 negotiations. Iranian officials claim that the research reactors currently operate to provide fuel to the Tehran Research Reactor. The enriched uranium, however, has, been stockpiled as uranium hexafluoride gas, which is easier to enrich further, rather than as fuel plates which are almost impossible to enrich to any further degree.

Tehran will continue to play up its requirements for a domestic supply of nuclear energy and for research grade uranium for medical purposes. Officials will continue to maintain that the enrichment of 20 per cent uranium is for the TRR which requires 1.5kgs per month (which raises concerns over the excessive 180kgs stockpiled at the end of the Ahmadinejad leadership). As part of the negotiation outcomes reached 20 July 2014, Iran has diluted the

remainder of its 20 per cent enriched stockpile down to 3.5 per cent, with the exception of five per cent of the total stockpile that is to be converted into fuel plates for the TRR.

No matter the current efforts to reduce the enrichment level, or convert the uranium hexafluoride gas into a solid form, the stockpile built up under the Ahmadinejad Government remains a sign of technological capability. Iran does not currently have the expertise or infrastructure to autonomously produce nuclear energy, which would appear to indicate that the enrichment efforts could well be part of a nuclear weapons programme. Iran, however, has repeatedly declared its nuclear programme to be peaceful, with a target of 20,000 MW of electricity to be generated by nuclear power set by Rouhani and denies claims of a nuclear weapons development programme.

Ahmadinejad's enrichment programme, however, goes beyond that which is required for the production of electricity. Iran is at an epistemic and technological deficit to develop a nuclear power industry. Additionally, the goal of producing twenty-thousand megawatts of electricity is arguably being used as an excuse to progress the programme as far as possible before 2022. Though the current course of Iran's programme appears to be geared towards peaceful ends, its operations under Ahmadinejad should not be ignored by future negotiations.

#### **Are US-Iran relations directing the discourse of the negotiations?**

Iran's relationship with the US has generally been very strained and at times hostile since the 1979 Iranian revolution, when the Ayatollah Khomeini came to power. Since Iran's enrichment practices were revealed by the IAEA in 2002, the American-Israeli Public Affairs Committee and the neo-conservative wing of the US congress have actively attempted to block any US compromise on negotiations with Iran. The dilution of Iran's stockpile is a promising start for the US's negotiation efforts, but on matters of infrastructure, Iran will continue to push towards its demand for nuclear-fuelled energy. Though Rouhani has declared Iran's intention is to build four new light water power reactors, which only enrich to 3.5 per cent, the US is reluctant to allow the development of any further infrastructure as part of the negotiations.

Iran's conservative Islamist identity and quasi-military state structure has caused the US concern since 1979, and has intensified with Iran's support of Hezbollah and the nuclear developments under Ahmadinejad. President Ahmadinejad strained US relations further with a collection of statements alluding to military strikes on Israel and claiming the September 11 attacks in New York were perpetrated by the Bush administration. Geopolitically, economic interest from China, Russia and Japan will have the US re-assessing how effective unilateral sanctions will be as the negotiations shift towards compromise.

#### **Russia's economic stake in a nuclear Iran**

Russia is the only member of the P5+1 that has had direct investment in Iran's nuclear programme since 1979. Moscow and Tehran signed an agreement in 1994 for Russian contractors to build a civilian nuclear power facility at Bushehr, continuing development abandoned by German company Siemens after the 1979 revolution. Speculation

surrounding two more plants to be built by Russia (Bushehr 2 and 3) has been a secondary aspect of the P5+1 talks. Russia has not given any official indication that it will further develop Iran's civilian nuclear infrastructure at this time. Current US-Russia relations are strained over recent events in the Ukraine, which may lead to deeper Russian engagement in Iran, with less incentive for Moscow to follow the US/EU agenda at the P5+1 talks.

Russia will not want to see a total end to Iran's nuclear programme, for financial and strategic reasons. First, Russia guaranteed fuel for Bushehr for the life of the reactor, and future Bushehr plants could be a major source of finance for the Russian nuclear industry. Second, Russia will not want to see the US dictate future terms, which could hinder its economic gains from a controlled civilian nuclear programme in Iran. Russia will want to maintain its investment in Iran's nuclear programme, while the US seeks non-proliferation for security purposes. Russia, arguably, is focussed on safeguarding its economic and technological pre-eminence in the region.

### **Iran as a node in China's resource security network**

China depends heavily on Iranian crude oil exports, and has been able to monopolise the development of Iran's oil fields since the US-EU sanctions. Though it has reduced its oil imports from Iran in recent years to avoid US sanctions against its own oil companies, China's foreign policy remains focused on securing resources through its regional partnerships. This demonstrates the US's ability to influence policy against Iran. Since China's rise is partly based upon the perception that it does not seek to change the international status quo, it will wish to conform to at least some international norms and not wish to be perceived as assisting a rogue state.

China, like Russia, will not want to abandon relations with Tehran for economic reasons. China's foreign policy is centred on trade and resource security, but Iran represents a greater geopolitical network that China seeks to establish in the region. China seeks a shift West in its economic partnerships, in which Iran will be a major node. There will be a transition if China maintains this agenda; if economic competition over developing states takes priority over security, the normative standard on nuclear proliferation may dissolve.

### **Saudi Arabia and the Nuclear Domino Effect**

If Iran is to attain nuclear weapons, there is speculation that it will create a domino effect, whereby other states in the region will also seek to acquire nuclear weapons. Saudi Arabia will not want to see a nuclear-armed Iran, which has led some analysts to speculate on the kingdom's growing security ties with Pakistan. If Iran obtains a nuclear weapon, it will potentially cause Saudi Arabia to acquire nuclear weapons itself and, in doing so, create a network of nuclear partnerships and further regional hostilities.

Saudi Arabia has benefited from the past two decades of US-led Western pressure on Iran. The US provided Saudi Arabia with a USD\$60 billion, ten-year military package in 2010, aimed at providing Saudi Arabia with a sufficient deterrent to Iranian-supported proxy conflicts in the region. Given that Riyadh has sided with the US on several international issues, concerns as to how Iran will try to coalesce and guide regional consensus against US

influence is central to King Abdullah's repeated rhetoric that he will immediately move to match Iran's nuclear capacity.

### **Is the 'Joint Plan of Action' sufficient?**

The extensions to the Joint Plan of Action talks until November saw concessions from both sides. For Iran, the agreement required the dilution of fissile, stockpiled uranium, greater IAEA oversight and the suspension of its reprocessing facilities. The P5+1, for their part, lifted some of the sanctions on Iranian oil and on its petrochemical and aviation industries. Iran, however, still lacks the ability to develop a nuclear power plant, as its agreement with Russia precludes it from replicating the Bushehr plant's technology. If Russia does not amend the Bushehr agreement, Iran could possibly turn to China for assistance in developing its nuclear energy infrastructure.

There is an indication that the Rouhani Government is taking a more co-operative approach to its nuclear programme. Despite the 20,000MW target, there is little indication that Rouhani plans to replicate Ahmadinejad's enrichment levels in the near future. The next step of the talks will be to address the necessity of Iran's nuclear target while maintaining the strict provisions on enrichment levels, which will be a diplomatic challenge for the P5+1. Iran will not want to see the issue of nuclear autonomy taken off the table, but given its track record, it is unlikely that the P5+1 will accord Iran the same treatment as other NPT signatories.

### **A new approach to Iran's Nuclear Programme?**

Iran's NPT status has been tarnished by Ahmadinejad's reckless enrichment practices. A feasible solution will be one where Iran's nuclear plants are firmly restricted to electricity generation. This would require all domestically-mined uranium to be exported for external enrichment, and then imported back into Iran in the form of fuel plates. As research grade fuel plates enriched to 20 per cent cannot easily be weaponised, a small quantity could be supplied to meet the needs of the TRR and TRC, with the remainder being of fuel grade. Domestically, Iran would be able to build infrastructure that facilitates the production and distribution of nuclear-generated electricity.

From the standpoint of the West, Iran's nuclear programme can only assuredly be for peaceful purposes if the enrichment process is done outside Iran and under the supervision of the IAEA. This will in effect require a concession on Iran's sovereignty, but will allow it to produce nuclear power for domestic use. These issues aside, Iran's geological situation does not favour further nuclear development, as was confirmed by the 2013 earthquakes in Bushehr that compromised the security of the nuclear facility. Furthermore, geopolitical instability in the region underlines Western concerns over an Iranian nuclear power industry.

### **Conclusion**

Hardliners in Iran and the pro-Israel, neo-conservative Right in the US will keep a firm check on any negotiation concessions moving into the next round of P5+1 talks. Since Iran cannot

develop a nuclear industry by itself and the US cannot dismantle Iran's entire nuclear programme, concessions will have to be made by both. China and Russia will continue to play important economic and strategic roles in Iran's development and will not, for the foreseeable future, challenge its nuclear development. Saudi Arabia will want to keep a close check on Iran's nuclear development and match any nuclear weapons capability Iran attains.

Iran is not content with the level of US influence in the region, but the hard-line reputation that it has built up since 2002 has vindicated US efforts to prevent it from developing an advanced nuclear industry. The current concessions, which have seen Iran's fissile materials diluted and research enrichment facilities more or less suspended, are a positive development towards redirecting Iran's nuclear programme. While Chinese and Russian economic stakes in Iran's nuclear infrastructure remain a concern to the West, security and non-proliferation remain paramount in further efforts to resolve the Iranian nuclear crisis.

\*\*\*\*\*

## References

- Davenport, K., Kimball, D. G., & Thielmann, G. (2014). Solving the Iranian Nuclear Puzzle: Toward a Realistic and Effective Comprehensive Nuclear Agreement. Washington: Arms Control Association.
- Hibbs, M. (2014, March 14). Iran's Centrifuges and Bushehr. Retrieved August 18, 2014, from Carnegie Endowment for International Peace: <http://carnegieendowment.org/2014/03/14/iran-s-centrifuges-and-bushehr>
- Ladha, R. (2012). A Regional Arms Race? Testing the Nuclear Domino Theory in the Middle East. *Online Journal on Southwest Asia and Islamic Civilization*, 1-9.
- Slavin, B. (2008). Mullahs, Money, and Militias: How Iran Exerts Its Influence in the Middle East. Washington: United States Institute of Peace.
- Organization of the Petroleum Exporting Countries. (2013). OPEC Annual Statistical Bulletin 2013. Vienna: OPEC. p21-40.

\*\*\*\*\*

*Any opinions or views expressed in this paper are those of the individual author, unless stated to be those of Future Directions International.*

Published by Future Directions International Pty Ltd.  
80 Birdwood Parade, Dalkeith WA 6009, Australia.  
Tel: +61 8 9389 9831 Fax: +61 8 9389 8803

E-mail: [lluke@futuresdirections.org.au](mailto:lluke@futuresdirections.org.au) Web: [www.futuresdirections.org.au](http://www.futuresdirections.org.au)