



P5+1/Iran Framework: Needs Strengthening

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April 11, 2015

The recent nuclear framework between the P5+1 and Iran was neither written nor published as a collective document. Instead, France, Iran, and the United States have each written “Fact Sheets” describing the various agreed provisions in the framework. The French one has not been made public. However, the U.S. and Iranian versions differ significantly in key elements such as sanctions relief or include different provisions. The U.S. Fact Sheet is the most detailed of the two public ones. In briefings by U.S. officials involved in the negotiations, they have stated that during the negotiations Iran agreed to every provision listed in the U.S. Fact Sheet. Therefore, in this analysis, we base our comments on the U.S. Fact Sheet and assume that these provisions are accurate. From here on we refer to it simply as “Fact Sheet.”

We delayed our analysis in order to learn more about provisions not included in the U.S. Fact Sheet and to obtain important details pertaining to existing provisions that were initially unclear. This allowed us to assess the framework more thoroughly. During this time, we received two briefings by negotiators and discussed the Fact Sheet with other experts and members of the media, who likewise had briefings. Despite the additional amount of information gained, we know that details about the provisions in the framework remain inaccessible to the public. Nonetheless, our overall assessment is that this complicated framework has some excellent provisions (such as those relating to the Arak reactor), several that are inadequate as currently described (enrichment and centrifuge research and development limitations), and several that cannot be judged at this time because they remain to be further negotiated.

We at ISIS have invested a considerable amount of time over the last 18 months focusing on the P5+1/Iran negotiations. We have generated many studies, undertaken rigorous breakout calculations, and conducted technical workshops attended by technical experts and negotiators aimed at solving particular challenges in the negotiations. We have also met with negotiators

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and technical advisors from several of the countries involved. We think it is fair to say that no outside group has worked as much as ours on generating recommended provisions for this deal, identifying missing pieces, and assessing the strengths and weaknesses of proposed provisions. We have benefited from many technical briefings from negotiators and have had ample opportunities to provide our input directly into the negotiations of the Joint Plan of Action and this Framework. Consistently we have been met with gratitude and positive feedback from negotiators in several countries about our contributions.

We certainly understand the difficulty of obtaining an agreement with the Iranians, who have resisted concessions at every turn. For example, it took over a year of hard bargaining to convince Iran to accept the 12-month breakout criteria as a necessary condition for a deal. Without that acceptance, the U.S. negotiators made clear that no deal was possible. We fully support that view and applaud this US accomplishment.

We appreciate the tremendous achievement embodied in this framework and see many valuable provisions. We are also gratified that we can recognize in the framework several provisions that we supported early, recommended, and in at least one case pioneered. However, the negotiations are not over; many difficult challenges must be overcome in order to arrive at a final deal. Our goal remains obtaining an adequate deal. To do so, a key goal of the negotiations remains a final deal which provides confidence of the exclusively peaceful nature of Iran's nuclear program and ensures sufficient reaction time, namely, enough time to respond diplomatically and internationally to stop Iran if it does decide to renege on its commitments and build nuclear weapons. According to Undersecretary of State Wendy Sherman, "We must be confident that any effort by Tehran to break out of its obligations will be so visible and time-consuming that the attempt would have no chance of success." That goal must be at the core of any agreement. Overall, however, we do not assess that this essential goal has yet been achieved.

This assessment discusses our evaluation of where strengthening or more detailing of provisions is necessary within the confines of the current framework. We believe strengthening is necessary and achievable during the next three months.

The Arak Heavy Water Reactor: Model for the Entire Agreement

The Arak reactor provisions are adequate and serve as a model for this agreement and future arms control efforts. If a deal is implemented, the reactor will not produce weapon-grade plutonium. It will produce plutonium, but in smaller quantities and of a lower quality from a nuclear weapons production perspective than if the reactor core could hold natural uranium.

The original core, or calandria, will be removed from the country or destroyed, ensuring that the reactor's conversion is not reversible. The new calandria would hold enriched uranium fuel and would be too small to hold sufficient natural uranium fuel to operate the reactor.

Iran would commit indefinitely not to separate any plutonium or conduct research and development on separating plutonium. It would bolster confidence by shipping all of its spent fuel from the reactor out of the country for the reactor's lifetime.

It will also not accumulate heavy water in excess of its needs for the modified Arak reactor. It pledges to sell any remaining heavy water on the international market for 15 years.

The only weakness that can be pointed out is that Iran has agreed not to build additional heavy water reactors for a defined period of time (15 years). A stronger condition would be for Iran to not build such a reactor ever again, since such reactors are far less proliferation-resistant compared to light water reactors. The most modern of these research reactors utilize heavy water to increase medical isotope production but do not use the heavy water for the basic moderation or cooling of the reactor, preserving their proliferation resistance.

Recommendation: Obtain a commitment from Iran lasting indefinitely not to build any more heavy water reactors.

Enrichment: In Need of Strengthening and Clarification

Many of the enrichment-related provisions are sound and contribute to an adequate agreement. Unlike the limitations on the Arak reactor, however, the limitations on Iran's enrichment program need considerable strengthening and clarification over the next three months.

An important limitation is that Iran would retain at Natanz and Fordow for ten years only 6,104 IR-1 centrifuges, with the rest of the IR-1 centrifuges and the IR-2m centrifuges removed and placed in monitored storage. This limitation is supplemented by Iran reducing its current stockpile of about 10,000 kilograms of low enriched uranium (LEU) to 300 kilograms of about 3.5 percent LEU hexafluoride equivalent, assuming that some of the LEU could possibly be in oxide form.

Other important provisions contained in the Fact Sheet include:

- No new enrichment facilities for 15 years;
- The removal and monitored storage of excess centrifuges and associated equipment and not their disablement in place, as was discussed in the past as a preferred possibility by the U.S. negotiators;
- The removal from Iran or blending down of most of Iran's stock of ten tonnes of about 3.5 percent LEU; a clear recognition that LEU whether in hexafluoride or oxide form results in similar breakout estimates. The key variable in breakout estimates is the amount of 3.5 percent LEU, not its chemical form.
- Excess centrifuges and associated equipment can be used only as replacements for operating centrifuges and equipment, removing any need for further operation of IR-1 and IR-2m centrifuge manufacturing operations and procurements;
- Containment and surveillance of centrifuge component manufacturing plants; and

- A procurement channel for goods needed in authorized nuclear programs.

There are also other provisions, both included and not included, in the Fact Sheet that contribute to an adequate deal. However, there are several key enrichment provisions that need strengthening or clarification.

Breakout Timelines

With about 6,000 IR-1 centrifuges and a stock of 300 kilograms of 3.5 percent LEU hexafluoride and no available near 20 percent LEU hexafluoride, our breakout estimate would have a mean of about 15 months, where the minimum breakout time would be 12 months. We have used the mean as the best indicator of breakout time and interpret the minimum time as a worst case. Thus, our estimate of breakout would confirm the United States' assessment that these limitations satisfy a 12 month breakout criterion.

However, breakout estimates depend critically on Iran's usable stock of near 20 percent LEU. For example, if Iran also has an inventory of about 50 kilograms of near 20 percent LEU hexafluoride that it can start inserting into the cascades within the first six months of breaking out, and we assume the same conditions as above, the mean breakout time becomes somewhat more than ten months, with a minimal time of nine months. As a result, minimizing or ensuring that the near 20 percent LEU stock is unusable in a breakout is a high priority. How these goals would be achieved in a deal is not explained in the Fact Sheet, nor was it discussed in detail in the briefings.

In fact, it appears from the Fact Sheets and briefings that Iran's stock of near 20 percent LEU is not included in the 300 kilogram limit on LEU mentioned above. This limit appears to be applied only to the 3.67 percent LEU. Given the size of Iran's stock of near 20 percent LEU, the lack of discussion about the fate of the near 20 percent LEU is problematic in determining breakout estimates. The near 20 percent LEU stock, unless largely eliminated or rendered unusable in a breakout, could be an important reserve in reducing the time to produce the first significant quantity of weapon-grade uranium (WGU) and rapidly producing a second significant quantity of WGU.

Despite the fact that Iran no longer has a stock of near 20 percent LEU in hexafluoride form (UF_6), it continues to retain a significant portion of this material in the form of oxide (U_3O_8) and in scrap and waste. In total, Iran has a stock of about 228 kilograms (uranium mass) of near 20 percent LEU in various forms. If all of this material were converted back to hexafluoride form, it would possess the equivalent of about 337 kilograms of near 20 percent LEU hexafluoride. All of this LEU has been fed into the conversion lines to produce oxide. Of this original amount, about 162 kilograms (uranium mass) ended up as pure LEU oxide powder. The rest, or about 65 kilograms (uranium mass) of this LEU, ended up in scrap and waste.

As of February 2015, of the 162 kilograms of near 20 percent LEU oxide (uranium mass), only 42 kilograms of this enriched material were actually present in Tehran Research Reactor (TRR) fuel

plates. About 72 kilograms near 20 percent LEU (uranium mass) were still in oxide form and slated for production of TRR fuel elements.

The amount in scrap, waste, and in-process was in total as of February 2015 about 113 kilograms of near 20 percent LEU. Much of this material is in forms where the LEU could be recovered in a straightforward manner. .

One point is clear, if left in Iran, these near 20 percent LEU stocks could significantly affect breakout times, lowering them substantially below 12 months. To help understand its importance, a rule of thumb is that 50 kilograms of near 20 percent LEU hexafluoride (or about 33 kilograms uranium mass) is equivalent in terms of shortening breakout time to 500 kilograms of 3.5 percent LEU hexafluoride. So, instead of having just 300 kilograms of 3.5 percent LEU, the additional 50 kilograms of near 20 percent would be equivalent to having a total of 800 kilograms of 3.5 percent LEU hexafluoride.

Based on the briefings, the United States removes the near 20 percent LEU from its breakout estimates once this material is mixed with aluminum and put into TRR fuel elements. Its assessment is apparently that recovery of the near 20 percent LEU at that point and its subsequent conversion to uranium hexafluoride would take so long that this LEU could not contribute significantly to a breakout, or at least not to the first significant quantity of weapon-grade uranium. However, recovery of near 20 percent LEU from fresh fuel can be straightforward and the U.S. evaluation requires greater scrutiny.

In Iraq's crash program to a nuclear weapon in 1990-1991, it put in place a capability to recover about 33 kilograms (uranium mass) of safeguarded unirradiated and slightly irradiated highly enriched uranium (HEU) from research reactor fuel. Based on Iraqi declarations and IAEA Action Team evaluations, which we possess, Iraq covertly installed the necessary equipment at the Tuwaitha nuclear site in four months. It would have needed about a month to test the equipment with dummy fuel and another five months to recover the HEU from the fuel. This effort was stopped at the point of testing dummy fuel elements by the Gulf War bombing campaign which started in January 1991.

Because of its far greater experience with uranium conversion, Iran is likely able to recover unirradiated near 20 percent LEU at a similar or faster rate from TRR fuel elements than Iraq. If Iran were to break out, it would undoubtedly secretly install and test the recovery equipment prior to breakout. Thus, the Iraqi experience suggests that Iran could be recovering near 20 percent LEU from fresh TRR fuel soon after starting its breakout and recover tens of kilograms within several months. This recovered LEU could be converted quickly into hexafluoride form in facilities also prepared in secret prior to breakout.

Another consideration is that Iran may accumulate additional 3.5 percent LEU over the limit of 300 kilograms. After the deal is implemented, Iran will produce 3.5 percent LEU each month. How will this material be disposed of so that the limit is not exceeded? Based on past performance, with about 5,000 IR-1 centrifuges enriching at Natanz, Iran will produce about 100 kg of 3.5 percent LEU hexafluoride each month. In order to avoid potential monthly

violations of the 300 kg provision, the P5+1 and Iran must agree on what to do with the monthly product, e.g. whether to ship out or dilute to natural uranium the newly produced LEU every month.

The accumulation of a few hundred kilograms of 3.5 percent LEU over the limit should still result in a 12 month breakout estimate, assuming no availability of near 20 percent LEU. However, accumulations of more than 500 kilograms of 3.5 percent LEU above the 300 kilogram limit would lower breakout times significantly below 12 months, according to our estimates.

The impact of large excess stocks of 3.5 percent LEU and the availability of residual stocks of near 20 percent LEU should also be considered. If Iran accumulates stocks of 3.5 percent LEU hexafluoride above 1,000 kilograms and can access quickly only 50 kilograms of near 20 percent LEU hexafluoride, it could reduce breakout times to less than six months.

➤ **Recommendations:**

- Several issues over Iran's stock of near 20 percent LEU need further clarification. What will happen to Iran's relatively large and growing stock of near 20 percent LEU in scrap and waste, where it is assumed that in-process quantities are reduced to near zero? We believe it should all be sent out of Iran or when possible blended down to natural uranium. We assume that any near 20 percent LEU oxide powder will be fed into the TRR fuel fabrication process, generating fuel elements and additional scrap and waste. Is near 20 percent LEU in fresh TRR fuel assemblies essentially unavailable for breakout? Our preliminary analysis suggests that it would be available. If the near 20 percent LEU is irradiated in the TRR, it becomes increasingly more difficult and time consuming to recover it. How irradiated does the fuel need to be to render it unusable in breakout?
- A determination should be made of the amount of near 20 percent LEU needed to fuel the TRR for the rest of its expected lifetime. The reactor was built in the 1960s and cannot be expected to last that much longer. If Iran finishes the Arak reactor, the TRR may be redundant. Near 20 percent LEU in excess of that TRR requirement should be shipped out of Iran or blended down to natural uranium. The near 20 percent LEU fuel elements should be irradiated in the TRR, even if temporarily, to make it more difficult to recover the LEU. If not, breakout calculations should include a portion of the near 20 percent LEU in fresh fuel elements, since Iran is capable of extracting this LEU, perhaps faster than currently expected by the United States. In any case, the total amount of unirradiated near 20 percent LEU in Iran should be severely limited in any deal.
- An International Atomic Energy Agency (IAEA) monitored process should be established for the removal or dilution of newly produced 3.5 percent LEU. The IAEA should be mandated to report monthly to the United Nations Security Council (UNSC) on the inventory of all LEU in Iran.

Breakout Timeline: "Soft Landing" with Review Needed

A major shortcoming is that the 12-month breakout criteria only remains in place for ten years. This is considerably shorter than the 20-30 years sought by U.S. negotiators a year ago, or the 15-20 years less diligently sought by them a few months ago. The achieved time limit is in line with Iran's goal of no more than ten years' duration of a deal, as told to senior U.S. officials prior to the Joint Plan of Action. Although this limit is unlikely to be renegotiated, it should be seen as a serious shortcoming of the framework unless other provisions (detailed below) are strengthened or added.

➤ **Recommendations:**

- From year ten through year fifteen, in order to provide a slow return to a shorter breakout time, Iran's enrichment capacity should be augmented at a rate that would decrease breakout time no faster than one month per year, resulting in a breakout time of 7 months at year 15. During this five year period, no IR-2m, IR-4, or more advanced model centrifuges could be deployed.
- At the end of year 15, the members of the P5+1, collectively or individually, using IAEA findings and other, nationally developed information, would determine if Iran's nuclear program is consistent with a peaceful program, exclusively for peaceful purposes, and expected to remain so. If not, the United States alone or with its partners should determine an appropriate course of action, including the re-imposition of unilateral and multilateral sanctions to ensure that Iran does not build nuclear weapons or conduct activities inconsistent with a peaceful nuclear program. This review condition and the authorities to re-apply sanctions should be included in a new United Nations Security Council resolution. U.S. laws should be passed that contain these review conditions and contain the authority to re-impose a wide range of financial and economic sanctions.

Enrichment Level: Needs Capping for Indefinite Duration

In the Fact Sheet, the enrichment level of the low enriched uranium is limited to 3.67 percent for fifteen years. The specific number 3.67 was proposed by Iran instead of about 3.5 percent which is typically the enrichment level achieved in Iran's cascades. Although this limitation is important, it applies only to the first 15 years. After such time and without further binding conditions, Iran could resume producing near 20 percent LEU and perhaps even highly enriched uranium which would significantly increase proliferation concerns.

- **Recommendation:** The agreement should explicitly commit Iran to producing LEU with enrichment levels not exceeding five percent uranium 235 for an indefinite duration.

Limits on Centrifuge R&D: In Need of Strengthening

The Framework allows a considerable amount of centrifuge research and development during the first ten year period, far more than should be allowed in our view. As in the interim deal,

after uranium is enriched in the advanced centrifuges and its enrichment level measured by Iran, the product and waste will be remixed to produce natural uranium. While preventing the production of enriched uranium, this method also prevents the IAEA and its member states from monitoring the successes and failures of these key centrifuges. Therefore, it would be hard to monitor the pace at which these centrifuges advance.

Most troubling, however, is the fact that Iran will be allowed to continue the development of the IR-6 and IR-8 centrifuges, its most advanced centrifuges. This framework provision would allow for the IR-8 centrifuge to be fed with uranium gas for the first time once the deal is implemented. This is worrisome because the IR-8 centrifuge has an estimated enrichment output of up to 16 times that of the IR-1 centrifuge.²

Although Iran agreed to conduct the R&D work on a schedule slower than it had planned, the framework allows for significant centrifuge R&D. This lack of a limit is particularly glaring when it is considered that Iran likely could not meet its planned targets in any case for the IR-6 and IR-8 centrifuges. During the negotiations, it stated that it would need four years to develop the IR-6 centrifuge and six years to develop the IR-8 centrifuge. Iran has often underestimated the time needed to achieve its nuclear goals. Ten years would likely be a more realistic time schedule for the development of these centrifuges. Therefore, in all likelihood, Iran's development of these two centrifuges is not significantly limited by the framework.

- **Principle recommendation:** Currently planned limitations on centrifuge R&D should be recognized as inadequate; they need to be strengthened in a final deal. Otherwise, the risk is to undermine significantly the ability of this agreement to limit breakout times after year ten and the agreement's verifiability with regard to detecting quickly covert centrifuge plants. If these conditions cannot be amended to ban research and development of the IR-6 and IR-8 centrifuges, then the following steps should be obtained to mitigate the risks:
 - All testing, whether with or without hexafluoride gas, should be restricted to the Natanz site;
 - R&D should be limited to the IR-6 and IR-8 advanced centrifuges;
 - R&D on the IR-6 should be limited to centrifuge cascades of less than ten centrifuges;
 - R&D on the IR-8 centrifuges should be limited to mechanical testing only without any introduction of uranium hexafluoride during the first ten year period. If the testing with uranium hexafluoride is conceded, meaning Iran can feed the IR-8 centrifuge with uranium hexafluoride for testing, it should be done in single test stands (not in cascades);
 - The deal should require Iran to provide data on a quarterly basis to the IAEA on the progress of its advanced centrifuges.

² See David Albright, "Technical Note: Making Sense out of the IR-8 Centrifuge," ISIS Report, September 23, 2014, <http://isis-online.org/isis-reports/detail/technical-note-making-sense-out-of-the-ir-8-centrifuge/8> Iran has claimed that the IR-8 centrifuge would have a capacity 16 times greater than the IR-1 centrifuge; we have estimated that this centrifuge's capacity will likely be roughly ten times greater than the IR-1.

Fordow: More Constraints Needed

A surprise in the Framework is the proposed continuation of the Fordow enrichment plant. This deeply buried centrifuge plant will remain in operation, although the number of centrifuges will be reduced by two-thirds and uranium will not be enriched there for fifteen years. Instead, other isotopes can be enriched (or depleted) during this period. Some of these isotopes, such as molybdenum, would contaminate the cascades and feed and withdrawal equipment, making subsequent use to enrich uranium impractical. However, other, more common isotopes that Iran apparently would be allowed to enrich (or deplete) would not contaminate the centrifuges and cascades. In these cases, uranium enrichment could be rapidly re-established. Moreover, the plant would remain a centrifuge plant and contaminated centrifuges and related equipment can be replaced easily.

Based on evaluating the Fact Sheet, in the period from year 10 to 15, Iran could deploy IR-2m and perhaps IR-4 centrifuges at the Fordow site as long as they are limited to non-uranium isotopes. This interpretation depends on assuming that these machines are no longer considered as under research and development. This makes sense since about 1,000 IR-2m centrifuges have been deployed at the Natanz Fuel Enrichment Plant and both the IR-2m and IR-4 production-scale cascades have been tested at the Natanz pilot plant with uranium hexafluoride for some time.

After year 15, Iran could deploy any of its centrifuges at Fordow to enrich uranium, allowing it to reestablish Fordow as a centrifuge plant with a capacity far in excess of its current capacity. Unless additional limits are included in the agreement, Fordow could be expected to re-emerge as a substantial uranium enrichment plant after year 15, housing advanced centrifuges 10 to 16 times more capable than the IR-1 centrifuge. So, instead of a plant with a current capacity of about 2,500 separative work units (swu) each year, the plant would have a capacity of 25,000-40,000 swu per year. If bans on producing near 20 percent LEU also sunset at year 15 (see above), this heavily fortified plant would be capable of producing enough weapon-grade uranium for a nuclear weapon within a few weeks, or enough WGU for two weapons in less than a month.

➤ Recommendations:

- Iran would agree not to ever use the Fordow facility to enrich uranium.
- Iran would agree to enrich or deplete isotopes that contaminate the cascades against subsequent use of enriched uranium.
- Iran would agree not to introduce advanced centrifuges into the Fordow facility and agree indefinitely to limit the total number of centrifuges to a few cascades of IR-1 centrifuges.

Verification: Judgment Impossible without Progress in Negotiations

The Framework contains many provisions related to the verification of an agreement. However, the conditions are such that their adequacy cannot be assessed comprehensively without progress on some key provisions in the negotiations. As a result, it is difficult to make

specific recommendations. However, the general areas that we believe are priorities for resolution or clarification include:

Broader Centrifuge-Related Declarations

A broader centrifuge-related declaration is critical in a determination that Iran does not have covert nuclear facilities and activities, including secret stocks of centrifuges and components. However, the Framework, for example, does not make clear if Iran will declare sufficient information to ensure that the IAEA can determine the number of centrifuges Iran has made to date. A declaration needs to include both the number of centrifuges produced (any type) and an accounting of all the key raw materials and equipment acquired domestically and internationally to manufacture these centrifuges. It is unclear in the Fact Sheet whether the provision of the latter information will be forthcoming.

This declaration should include information about Iran's past plans to build additional enrichment plants. Several years ago it announced plans to build ten enrichment plants and announced that several had been sited. This declaration should also include any raw materials and equipment procured and manufactured for these planned facilities.

The IAEA must also be able to determine the size of Iran's uranium stock and fully monitor these stocks and Iran's uranium mines and mills. This condition appears to be included in the Fact Sheet.

Access Anywhere, Anytime

A clearly stated commitment is needed in the agreement that will allow the IAEA to have access to suspicious sites anywhere in Iran, including military sites. The Fact Sheet is confusing on this point. The relevant bullet is:

“Iran will be required to grant access to the IAEA to investigate suspicious sites or allegations of a covert enrichment facility, conversion facility, centrifuge production facility, or yellowcake production facility *anywhere in the country.*” (emphasis added)

The key phrase “anywhere in the country” does not appear to be applied to the suspicious sites in the first clause. These suspicious sites could include military sites where nuclear weapons research, development, or production could have taken place or would take place. Doubt about whether the P5+1 obtained Iran's commitment to allow inspections anywhere is evident in recent public statements. Supreme Leader Khamenei said on April 9 that military sites would be off limits to inspections.³ A day earlier, Hossein Dehqan, Iran's Minister of Defense and Armed Forces Logistics, said that Iran has not agreed to open its military facilities to inspections: “Such an agreement has not taken place, and fundamentally inspections of military

³ Thomas Erdbrink, “Iran's Supreme Leader Says Sanctions Must Lift When Nuclear Deal is Signed,” *New York Times*, April 9, 2015, <http://www.nytimes.com/2015/04/10/world/middleeast/iran-khamenei-rouhani-nuclear-agreement.html>

sites are among the red lines, and no inspections of these sites will be allowed.”⁴ Thus, there is no doubt Iran is denying that it will allow critical access to military sites.

Inspectors must have access to sites where evidence indicates suspicious nuclear-related activities are taking place in a manner that is close to immediate or “anytime.” The United States has recognized that the Additional Protocol alone is not sufficient to obtain access quickly enough and supports more timely access conditions in an agreement. The exact nature of that proposal is not in the Fact Sheet but Iran has apparently not yet agreed to this proposal.

An Additional Protocol “Plus” is needed to ensure anywhere, anytime inspections and ensure that the IAEA can take environmental samples and other measurements at sites of concern and interview key personnel related to those suspect activities. These measures should be permanent, or at least in place for at least twenty years.

Suspension of Sanctions Related to Meeting Verification Conditions

A particular concern related to the timing and lifting of sanctions has to do with the IAEA’s concerns about past and possibly on-going nuclear weapons-related work in Iran. A condition must be added that U.S. and European Union nuclear-related sanctions will be suspended only after Iran addresses in a significant and concrete manner the IAEA’s concerns about its past and possibly ongoing work on nuclear weapons, or the possible military dimensions (PMD), including:

- Allowing visits to Parchin and related military sites where nuclear activities are alleged to have taken place;
- Access to key individuals identified by the IAEA as related to its PMD concerns;
- The IAEA issuing a provisional determination about whether Iran had a nuclear weapons program prior to 2004, parts of which may have continued after 2004. After the deal is implemented, including Iran’s ratification of the Additional Protocol, the IAEA would be guaranteed that it could conduct a more rigorous investigation of PMD issues.

With regards to the eventual lifting of UNSC sanctions, as discussed in the Fact Sheet, a condition must be added that UNSC resolutions will be lifted upon completion by Iran of its commitments and actions addressing all key concerns (enrichment, Fordow, Arak, PMD, and transparency) and completion, by the IAEA, of a determination under the Additional Protocol that Iran’s nuclear program is peaceful, often called a broader conclusion.

Negotiators must not agree to lift UNSC sanctions before the IAEA has reached its broader conclusion about the peaceful nature of Iran’s program, including determining the extent of past progress on Iran’s military nuclear program and dismantling any remaining efforts. Precedents for accomplishing this process are available from the case of South Africa’s nuclear dismantlement. It will be vital to the ultimate success of an agreement that Iran not retain any

⁴ Fars News Agency, “Agreement regarding the inspection of national military centers has not been reached/No inspections of these centers will be accepted,” April 8, 2015, in Farsi, translated by Daniel Schnur.

<http://farsnews.com/newstext.php?nn=13940119001292>

residual military nuclear capability after sanctions leverage is removed. It is unlikely that UNSC sanctions can be re-enacted quickly. Combined with shorter breakout times and greater enrichment capacities after the duration of an agreement, leaving this capability in Iran would only create a heightened version of the current security situation. Unless this facet of Iran's nuclear program is dealt with, no agreement should be made. It is a deal component that negotiators would ignore at the peril of regional security and peace.

Proliferation Sensitive Goods

A goal of negotiators has been to create a final agreement which maintains international sanctions and controls on imports by Iran of proliferation-sensitive goods while creating a verifiable procurement channel for Iran's legitimate nuclear program. In this sense, the Fact Sheet succeeds in its provisions that seem to address both issues. On one side, the Fact Sheet contains a provision that "core provisions in the UN Security Council resolutions – those that deal with transfers of sensitive technologies and activities – will be re-established by a new UN Security Council resolution that will endorse the JCPOA and urge its full implementation." On the other, one of the strongest provisions relates to the establishment of a procurement channel that will monitor and approve the supply, sale, or transfer of certain nuclear-related and dual-use materials and technology. As important, but not discussed in the Fact Sheet, procurements of sanctioned goods outside this channel would be banned and considered illicit nuclear trade.⁵

One key aspect that accompanies this provision in a final deal is the creation of a comprehensive list of goods subject to control and monitoring via the procurement channel. This list needs to be extensive and include the major goods needed by Iran's nuclear programs.

The Framework does not mention the body that will oversee Iran's procurement channel or how import activities will be coordinated. It also does not deal with how UN sanctions compliance will be monitored. The UN Iran Sanctions Committee and its Iran Panel of Experts is an already established body that could provide monitoring of exports via the channel. A new, more independent body could be preferable if the UN body is unable to fully report on violations. The IAEA should have a key role with an expanded authority in verifying that Iran is complying with these provisions.

Missing in the Fact Sheet is any indication that Iran will commit not to conduct illicit trade in the goods subject to this agreement. This is a major point given the extent of Iranian illicit nuclear and nuclear-related procurements in the past and its on-going efforts to acquire nuclear-related goods illegally.

The adequacy of verification and ensuring Iran's compliance with the deal will depend on strong enforcement of national and regional export control laws and on-going sanctions on proliferation-sensitive goods throughout the world. A risk is the undermining of national

⁵ For a more detailed discussion of this issue, see David Albright and Olli Heinonen, "Provisions to Limit Future Iranian Illicit Procurements for its Nuclear Programs," ISIS Report, November 20, 2014, <http://isis-online.org/isis-reports/detail/provisions-to-limit-future-iranian-illicitprocurements-for-its-nuclear-pro/8>

enforcement efforts against Iran's illegal purchase of proliferation sensitive goods. U.S. and other nations' prosecutors and investigators should be encouraged to aggressively pursue enforcement efforts against Iranian illicit procurements. Iran has continued to procure key goods illegally for its nuclear, missile, and military programs even throughout the time that the interim deal has been in place. Although an agreement would create a procurement channel for authorized nuclear programs, Iran would still be banned from buying a range of goods outside of this channel. All nations should commit to detecting and enforcing any violations of this part of the agreement.

President Obama, or a designated senior representative, should make a statement on the importance of enforcing sanctions on proliferation-sensitive goods now and under any agreement. The administration should send out guidance to U.S. enforcement agencies that their efforts should not cease to collect evidence and prosecute crimes by Iranian illicit procurement agents. To that end, the United States should allocate more financial and logistical resources to their on-going enforcement. The European Union countries should undertake similar actions.

If a deal is signed, the P5+1 will need to conduct an aggressive international outreach effort about the need for countries to continue enforcing export controls and sanctions against Iran and provide a mechanism for reporting violations to the assigned body overseeing sanctions compliance.

Non-Proliferation Conditions Absent in Fact Sheet

The deal should include specific clauses specifying commitments by Iran not to engage in nuclear proliferation-relevant assistance between itself and a foreign country or entity. The deal should include the following:

- Iran will not import or otherwise use or benefit from nuclear materials, reactors, centrifuges, reprocessing equipment, other nuclear facilities or equipment, or the means to make such equipment or facilities from any state, company, or other entity, unless authorized by the body overseeing licit procurements (ISIS has suggested the UN Security Council or its representative the Iran Sanctions Committee).
- Iran will not export or otherwise transfer nuclear materials, reactors, centrifuges, reprocessing equipment, other nuclear facilities or equipment, or the means to make such equipment or facilities to any state, company, or other entity.

Conclusion

Our initial assessment of the Fact Sheet suggests not surprisingly that the on-going negotiations with Iran will be very difficult. However, the United States and its partners remain in a strong position to obtain an adequate nuclear deal that will provide confidence that Iran will not seek nuclear weapons. To that end, these negotiations need to ensure that key provisions are clarified and strengthened.