



Compendium of ISIS's Reports and Recommendations on the P5+1/Iran Long-Term Deal Negotiations

Institute for Science and International Security (ISIS)

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Introduction

On November 24, 2013, the P5+1 and Iran reached an agreement, the Joint Plan of Action (JPA), which outlines a series of interim measures to be taken by both sides as they negotiate a long-term, comprehensive solution. The final goal, according to the JPA, is to achieve "mutually-agreed long-term comprehensive solution that would ensure Iran's nuclear programme will be exclusively peaceful." These negotiations were given an initial deadline of July 20, 2014 - a deadline by which a comprehensive solution was not reached. Instead, the provisions of JPA with some additional interim measures were extended through November 24, 2014.

This compendium of ISIS findings provides information and insight into the on-going negotiations aimed at achieving a comprehensive solution between Iran and the P5+1, or the Six (United States, Britain, France, Germany, Russia, and China). It includes links to a range of ISIS studies about the negotiations and recommendations regarding the nature and scope of an adequate long-term agreement. The ultimate goal of a comprehensive solution should be to ensure that Iran's nuclear program is indeed peaceful, against a background of two decades of Iran deceiving the International Atomic Energy Agency (IAEA) about its nuclear programs, including military nuclear programs. This long history of deception and violations places additional burdens on achieving a verifiable, long term agreement. To achieve a verifiable agreement, Iran will need to limit existing nuclear capabilities and address allegations of past and possibly on-going work on nuclear weapons. The agreement will need to lay the foundation for establishing a baseline for IAEA verification of the program and ensure that any further military nuclear related work would be detected on short order. Without these limitations on Iran's nuclear programs and expanded verification conditions, ISIS deems an agreement likely to fail or exacerbate the threat from Iran. However, this compendium shows that such an agreement is possible and discusses the types of conditions necessary for an agreement.

For background information on Iran's nuclear facilities and activities and the interim steps in the JPA, the reader is referred to our web sites, www.isis-online.org and www.isisnucleariran.org. The hundreds of reports on these web sites cover more than a decade of Iranian and IAEA activities. They have tracked illicit Iranian nuclear activities and estimated its technical potential for creating nuclear weapons, discovered and made public secret nuclear sites and activities via commercial satellite imagery, assessed

and catalogued Iranian procurements of goods for its nuclear program, and developed policy recommendations to mitigate the crisis, among other activities. The web page *From the Sky* provides information about all the major nuclear sites in Iran through commercial satellite imagery, a map, and data about the sites.

Model Comprehensive Solution or Long-Term Agreement

In January 2014, based on a series of workshops and discussions, ISIS created a model comprehensive solution which would ensure that Iran's nuclear program is exclusively peaceful. In particular, this model agreement sought to identify limitations in Iran's enrichment and heavy water reactor programs, stocks of low enriched uranium, and the duration of long-term provisions.

Read the full text here: [Defining Iranian Nuclear Programs in a Comprehensive Solution under the Joint Plan of Action.](#)¹ See also: [Testimony of David Albright Before the Committee on Foreign Relations on the Negotiations On Iran's Nuclear Program.](#)²

As the negotiations progressed, ISIS identified [Five Compromises to Avoid in a Comprehensive Agreement with Iran.](#)³

On July 20, 2014 the interim period under the Joint Plan of Action came to an end; a comprehensive deal had not yet been reached. Based on several discussions with senior members of the Six, ISIS determined that the principles underpinning a future deal must include: 1) sufficient response time in case of violations; 2) a nuclear program meeting Iran's practical needs; 3) adequate irreversibility of constraints; 4) stable provisions; and 5) adequate verification.

Read the full text here: [The Six's Guiding Principles in Negotiating with Iran](#)⁴

Breakout Estimates

A key concept in understanding the negotiations is the idea of adequate warning time, namely, how much time is needed to respond 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."⁵

¹ *Defining Iranian Nuclear Programs in a Comprehensive Solution under the Joint Plan of Action*, Drawn from Institute for Science and International Security (ISIS) Sponsored Workshops and Discussions, January 15, 2014. http://isis-online.org/uploads/isis-reports/documents/Elements_of_a_Comprehensive_Solution_20Jan2014_1.pdf

² Testimony of David Albright before the Committee on Foreign Relations on the Negotiations On Iran's Nuclear Program, February 4, 2014, http://isis-online.org/uploads/conferences/documents/Albright_Senate_Foreign_Relations_Testimony_Feb_4_2014-final.pdf

³ David Albright, Olli Heinonen, and Andrea Stricker, *Five Compromises to Avoid in a Comprehensive Agreement with Iran*, June 3, 2014, <http://isis-online.org/isis-reports/detail/five-compromises-to-avoid-in-a-comprehensive-agreement-with-iran/>

⁴ David Albright, Olli Heinonen, and Andrea Stricker, *"The Six's" Guiding Principles in Negotiating with Iran*, July 22, 2014, <http://isis-online.org/isis-reports/detail/the-sixs-guiding-principles-in-negotiating-with-iran/>

⁵ "Iran's Current Enrichment Level Not Acceptable: US," Agence France Presse. September 17, 2014.

One verifiable way to quantify the concept of adequate warning time when talking about uranium enrichment limitations is to link timely warning to breakout time. Breakout time is the amount of time Iran would need to create enough weapon-grade uranium for a single nuclear weapon, if it reneged or cheated on the agreement. Additional time would be needed to create a nuclear weapon but the creation of enough fissile material (weapon-grade uranium or separated plutonium) is widely accepted as the “long pole in the tent” of making a nuclear weapon and the only part of this process susceptible to reliable discovery and subsequent pressure. Other nuclear weaponization activities, such as producing high explosive components, electronic components, or uranium metal parts, are notoriously difficult to detect and stop. By focusing on breakout time—as defined above—the agreement would allow for a guaranteed period of time for action to be taken that has assurance of preventing Iran’s success.

Thus, warning time of this action must be sufficient to allow the international community to prepare and implement a response able to stop Iran from succeeding. Typically, the P5+1 negotiators have sought limitations in Iran’s nuclear programs that lead to breakout times of six to twelve months. ISIS has prepared a range of breakout calculations under a wide variety of current and posited centrifuge capabilities that in essence convert the warning time, i.e. breakout time, into an equivalent number of centrifuges and stocks of low enriched uranium.

In September 2013, centrifuge experts from ISIS and the School of Engineering and Applied Science at the University of Virginia (UVA), examined in detail the various ranges of breakout scenarios based on the-then enriching IR-1 centrifuges at the Natanz and Fordow facilities and low enriched uranium (LEU) stockpiles, total installed IR-1 centrifuges, and a possible covert facility containing IR-2m centrifuges. One of the calculations considers an important case, namely the current, frozen centrifuge program under the JPA where Iran retains its existing, installed IR-1 centrifuges and no stocks of near 20 percent LEU hexafluoride. In this case, the breakout time is about two months, which is the same as public U.S. government estimates. If the number of IR-1 centrifuges were reduced to about 10,000, breakout time would grow to about three months, according to the ISIS estimates.

Read the full analysis here: [Iranian Breakout Estimates, Updated September 2013 \(released in October 2013\)](#)⁶

Or the summary: [Iranian Breakout Estimates, Updated September 2013: Summary](#)⁷

In all, ISIS in collaboration with UVA engineers have since that September 2013 study evaluated hundreds of specific cases and developed an elaborate computer code able to rapidly perform different breakout calculations based on posited Iranian capabilities or limitations to the nuclear program, some of which involved hundreds of thousands of subcases. These breakout estimates have proven to be a very useful tool in understanding the benefits and disadvantages of specific negotiating positions, and have been an important decision-making tool for policy makers. Because each country treats its own

⁶ Patrick Migliorini, David Albright, Houston Wood, and Christina Walrond, *Iranian Breakout Estimates, Updated September 2013*, October 24, 2013, http://isis-online.org/uploads/isis-reports/documents/Breakout_Study_24October2013.pdf

⁷ Patrick Migliorini, David Albright, Houston Wood, and Christina Walrond, *Iranian Breakout Estimates, Updated September 2013*, October 24, 2013, http://isis-online.org/uploads/isis-reports/documents/Breakout_Study_Summary_24October2013.pdf

breakout estimates as sensitive, the ISIS estimates also served as a way to facilitate a deeper level of communication among allies. Government officials in Europe and the United States have told ISIS they compared their own breakout estimates with ISIS's and several informed ISIS that their estimates were similar when comparable. Some were somewhat longer than ISIS's and some were shorter, but despite the differences in methodologies, the various estimates have converged over the last two years.

Many of ISIS's breakout calculations are expressed in graphs. It should be noted that in the cases considered in these more recent breakout calculations, the main goal has been to establish relative comparisons in order to evaluate possible negotiating positions rather than describe the existing cases (the reader is referred to the earlier September study for that analysis). Several cases involving IR-1 centrifuges and various amounts of near 20 percent LEU (and adequate 3.5 percent LEU stocks; thus allowing a three-step breakout process⁸) can be seen in figure 1, in our February 17, 2014 study: [Maintaining at Least a Six-Month Breakout Timeline: Further Reducing Iran's near 20 percent Stock of LEU](#).⁹ In the case where stocks of 3.5 percent LEU are limited to quantities less than sufficient to produce 25 kilograms of weapon-grade uranium (and thus requiring a more lengthy four-step breakout process) can be seen in figures 1 and 2 in [Five Compromises to Avoid in a Comprehensive Agreement with Iran](#).

In June, an Iranian website, www.nuclearenergy.ir, posted what appeared to be a quasi-official government, albeit flawed, study, *How long would an Iranian 'breakout' really take?*

Read ISIS' analysis of this study: [Iranian Breakout Study Drastically Overestimates Time to Nuclear Weapon](#).¹⁰

Stocks of Near 20 Percent LEU

Another major issue has been Iran's stock of near 20 percent LEU hexafluoride. Although Iran's commitment to undertake the conversion of near 20 percent LEU hexafluoride into oxide form is important in the short-run, in the long run, the size of the converted total stock matters just as much. In the future, Iran could reconvert its LEU stock back into hexafluoride form and further enrich it in a breakout to nuclear weapons. Thus, limiting the total size of the near 20 percent LEU stock is also important in negotiating a final nuclear arrangement with Iran.

⁸ The calculations employ a standard model where achieving 90 percent enriched uranium, namely weapon-grade uranium, is achieved in four steps, where the first enriched natural uranium to 3.5 percent enriched uranium, the next takes the 3.5 percent material to 20 percent, the third raises the enrichment of this material to 60 percent, and the last or fourth step takes the 60 percent material to weapon-grade, or 90 percent. This methodology is described more completely in the October 2013 report mentioned in the text.

⁹ David Albright, Patrick Migliorini, Christina Walrond, and Houston Wood, *Maintaining at Least a Six-Month Breakout Timeline: Further Reducing Iran's near 20 percent Stock of LEU*, February 17, 2014, http://isis-online.org/uploads/isis-reports/documents/20_pct_stock_cap_17Feb2014-final.pdf

¹⁰ David Albright and Andrea Stricker, *Iranian Breakout Study Drastically Overestimates Time to Nuclear Weapon*, June 17, 2014 (Revised June 20, 2014), http://isis-online.org/uploads/isis-reports/documents/critique_of_Iran_breakout_estimates_17June2014-final.pdf

Read detailed analyses here:

[Maintaining at Least a Six-Month Breakout Timeline: Further Reducing Iran’s near 20 percent Stock of LEU¹¹](#)

[Update on Iran’s Total Near 20 Percent Enriched Uranium Stock: Nearly Enough for a Bomb, if Further Enriched¹²](#)

July 31, 2014 update: [Iran’s Near 20 Percent Stock: Status and Need to Reduce Size¹³](#)

Centrifuge Research and Development (R&D)

Another issue concerns limitations on Iran’s centrifuge research and development activities. The following discusses Iran’s centrifuge R&D program and proposes limits on that program in a long-term agreement:

[Centrifuge Research and Development Limitations in Iran¹⁴](#)

Basic information about Iran’s centrifuge R&D is available here:

[Iran’s Centrifuge Research and Development Program¹⁵](#)

Arak Heavy Water Reactor

Under the JPA, Iran has pledged that for the duration of the interim period it will not commission the IR-40, or Arak, reactor or transfer fuel or heavy water, and that it will, in essence, halt its work on the reactor which has been under construction since June 2004. The IR-40 reactor is designed to produce 40 megawatts thermal (MWth) of power and use natural uranium oxide fuel that Iran was producing at the Esfahan conversion and fuel fabrication facilities prior to the implementation of the JPA. United Nations Security Council resolutions, the first of which dates to 2006, have called for Iran to halt construction of this reactor. The reactor poses a notable proliferation threat because it can produce significant amounts of weapons-grade plutonium—about 9 kilograms annually or enough for about two nuclear weapons each year.

For a detailed analysis, see: [Update on the Arak Reactor¹⁶](#)

¹¹ Albright, Migliorini, Walrond, and Wood, *Maintaining at Least a Six-Month Breakout Timeline*, op. cit.

¹² David Albright, Patrick Migliorini, Christina Walrond, and Houston Wood, *Update on Iran’s Total Near 20 Percent Enriched Uranium Stock: Nearly Enough for a Bomb, if Further Enriched*, March 11, 2014, http://isis-online.org/uploads/isis-reports/documents/twenty_percent_stock_march_11_2014-final.pdf

¹³ David Albright and Paulina Izewicz, *Iran’s Near 20 Percent Stock: Status and Need to Reduce Size*, July 31, 2014, <http://isis-online.org/isis-reports/detail/irans-near-20-percent-stock-status-and-need-to-reduce-size/>

¹⁴ *Centrifuge Research and Development Limitations in Iran*, August 29, 2014, <http://isis-online.org/isis-reports/detail/centrifuge-research-and-development-limitations-in-iran/>

¹⁵ David Albright and Paulina Izewicz, *Iran’s Centrifuge Research and Development Program*, January 27, 2014 (revised February 21, 2014), http://isis-online.org/uploads/isis-reports/documents/Centrifuge_Research_and_Development_Program- revision_24Feb2014-final.pdf

¹⁶ David Albright and Christina Walrond, *Update on the Arak Reactor*, July 15, 2013, http://isis-online.org/uploads/isis-reports/documents/Arak_complex_15July2013.pdf

Numerous proposals with respect to addressing the issue in the negotiations have been presented, in particular using low enriched uranium instead of natural uranium, lowering the reactor's power, or replacing the core with one that uses both light water and heavy water in the manner of modern research reactors.¹⁷ Some of the proposals are easily reversible and thus unacceptable. For an analysis of one of these reversible proposals, see section "Bad compromise 2: allowing Iran to maintain in the Arak reactor a core, or callandria, holding significantly more fuel channels than required for fueling the reactor with low enriched uranium fuel" in Five Compromises to Avoid in a Comprehensive Agreement with Iran.

Alleged Military Dimensions of Iran's Nuclear Programs

Another critical area of the negotiations concerns the allegations by the IAEA that Iran pursued nuclear weapons in the past and possibly some activities could be on-going. This issue is sometimes called the possible military dimensions (PMD) of Iran's nuclear program. The IAEA and Iran agreed in November 2013 to settle this issue. For a description of their agreement, see: "IAEA, Iran Sign Joint Statement on Framework for Cooperation."¹⁸

Any long-term agreement hinges upon Iran addressing these PMD issues. Without that, the IAEA and the P5+1 cannot construct an adequate verification regime capable of detecting clandestine nuclear facilities and activities. As of early August 2014, there had been little progress on settling this issue.

Read the full analysis here: Time is Short for Iran to Address IAEA's Nuclear Weapon Concerns¹⁹

See also the section: "Bad Compromise 4: Leaving the resolution of Iran's past and possibly ongoing nuclear weaponization and military fuel cycle efforts until after a deal is concluded and economic and financial sanctions are loosened, if not removed," in ISIS' June 2014 report, Five Compromises to Avoid in a Comprehensive Agreement with Iran.

In May 2014, Iran provided the IAEA with information regarding one of the PMD areas of concern, the development of Exploding Bridge Wire (EBW) detonators. These detonators, in addition to a series of civilian applications, are also an essential part of setting off the high explosives in a nuclear explosive device. The IAEA is still reviewing the documents.

For more information, read: Background Information on the Exploding Bridge Wire Issue: A Crack in the Door?²⁰

¹⁷In these approaches, the core is placed in light water but heavy water is used as a way to provide extra moderation of the fast neutrons escaping the core, resulting in additional thermal neutrons able for example to produce additional isotopes. Thus, these newer design allow for an increase in isotope production compared to a traditional light water or heavy water design.

¹⁸ "IAEA, Iran Sign Joint Statement on Framework for Cooperation," 11 November 2013, <http://www.iaea.org/newscenter/pressreleases/2013/prn201321.html>

¹⁹ *Time is Short for Iran to Address IAEA's Nuclear Weapon Concerns*, August 1, 2014, <http://isis-online.org/isis-reports/detail/time-is-short-for-iran-to-address-iaeas-nuclear-weapon-concerns/>

²⁰ David Albright, *Background Information on the Exploding Bridge Wire Issue: A Crack in the Door?* February 12, 2014, http://isis-online.org/uploads/isis-reports/documents/EBW_issue_12Feb2014_final_1.pdf

Also, see an ISIS assessment on overstated media coverage of Iran addressing the EBW issue to the full satisfaction of the IAEA: [Spin, Spin, Spin.](#)²¹

Prospects of a comprehensive solution dim if Iran remains intransigent on allowing the IAEA access to a military site called Parchin. The IAEA asked to visit this military site because it has evidence that at least one building was the location of high explosive tests related to the development of nuclear weapons undertaken prior to 2004. However, after receiving the IAEA's request in early 2012, Iran has undertaken substantial reconstruction and site modifications. Satellite imagery shows that since early 2012, Iran has sanitized, demolished portions of, and reconstructed the site, in an apparent effort to hide past activities and undermine the IAEA's ability to conduct verification activities.

Read a recent analysis here: [Parchin: Resolution Urgent](#)²² and [Update on Parchin: A Necessary Piece of a Comprehensive Nuclear Deal.](#)²³

Other reports showing the earlier changes at Parchin are available on the ISIS web sites.

Maintaining Adequate Controls over Proliferation Sensitive Goods

Iran has a long history of illicitly procuring goods for its nuclear program in violation of UN Security Council sanctions and national controls on such goods. ISIS has for many years tracked and evaluated the ramifications of these procurements in augmenting Iran's nuclear capabilities. In a comprehensive solution, Iran must pledge not to continue these procurements and declare its major past acquisitions for its sanctioned nuclear programs.

A comprehensive agreement will also need to maintain sanctions and controls on proliferation-sensitive goods, while at the appropriate time creating a verifiable procurement channel for Iran's legitimate nuclear programs. Proliferation-sensitive goods are those needed in Iran's nuclear programs and nuclear weapon delivery systems, the latter typically interpreted as covering ballistic missiles. The most effective means available of accomplishing this goal is to maintain United Nations Security Council (UNSC) resolutions and mandates, and the associated national implementing legislation that controls such goods, during the duration of the comprehensive deal. This approach would leave intact the UNSC and multilateral infrastructure created to implement these sanctions, including domestic and UN sanction designations of entities violating these resolutions and aggressive efforts to detect and disrupt Iran's illicit procurement efforts. At the same time, however, a legitimate procurement channel may need to be created to funnel required goods to Iran's remaining nuclear programs. A challenge will be creating and maintaining a verifiable architecture of exceptions for imports of goods to Iran's legitimate nuclear programs while preventing imports to a banned or a covert military nuclear program. Intelligence gathering and detection of Iranian violations in the area of illicit procurement will play a key role for years to come in ensuring compliance with the deal.

²¹ David Albright and Andrea Stricker, *Spin, Spin, Spin*, May 27, 2014, http://isis-online.org/uploads/isis-reports/documents/Spin_EBW_may_may_27_2014-final.pdf

²² David Albright and Serena Kelleher-Vergantini, *Parchin: Resolution Urgent*, May 12, 2014, <http://isis-online.org/isis-reports/detail/parchin-resolution-urgent/>

²³ David Albright, Serena Kelleher-Vergantini, Andrea Stricker, and Daniel Schnur, *Update on Parchin: A Necessary Piece of a Comprehensive Nuclear Deal*, September 3, 2014, <http://isis-online.org/isis-reports/detail/update-on-parchin-a-necessary-piece-of-a-comprehensive-nuclear-deal/>

See the section: “Bad Compromise 5: Lack of constraints banning in a verifiable manner future Iranian illicit nuclear procurement efforts” in ISIS’ June 2014 report, [Five Compromises to Avoid in a Comprehensive Agreement with Iran](#).

ISIS has developed several case studies of Iran’s illegal procurements efforts. A sampling follows:

On June 26, 2013, a United States District Court in the Northern District of Illinois indicted Nicholas Kaiga, 36, of Brussels and London, on charges of attempting to transship specialized metals usable in gas centrifuges and transshipping other U.S. metals and materials to Iran. Kaiga was indicted and arrested as the result of a U.S. sting operation which involved an agent posing as an employee of a targeted Illinois company.

For this case, see [U.S. Busts Iranian Smuggling Scheme Involving a Nuclear-Related Good](#)²⁴

In late 2011, an Iranian trading company, linked to the attempted acquisition of high quality carbon fiber used in centrifuges, sought via a Chinese commercial web site enough ring magnets for 50,000 IR-1 centrifuges. This case highlights the importance of China as a Smuggling platform for Iran’s gas centrifuge programs.

See: [Ring Magnets for IR-1 Centrifuges](#)²⁵

Also, see: [Preventing the Suppression of Uncomfortable Truths on Iran’s Nuclear Program](#)²⁶ and [Advisory: United States Enforces Existing Sanctions against Key Iranian Company](#)²⁷

On April 15, 2014, Lee Specialties Ltd. of Alberta, Canada pled guilty to charges and was fined \$90,000 for unlawful exports of Viton O-rings to Iran. In January 2012, the medium-sized firm failed to adhere to national export control laws and arranged an export of 50 of the Viton O-rings to a company in Iran.

For this case, see: [Canada Prosecutes Company for Possible Nuclear Related Export to Iran](#)²⁸

On April 4, 2014, the United States District Court in the District of Massachusetts unsealed ten-charges against Sihai Cheng, a resident of Shanghai, for allegedly operating as a middleman seeking U.S. made pressure transducers on behalf of Iran’s nuclear program. Cheng allegedly carried out this activity from 2009 to 2012, using his trading company Sohi Technology Co. Ltd and its locations in Shanghai and Hong Kong.

²⁴ David Albright and Andrea Stricker, *U.S. Busts Iranian Smuggling Scheme Involving a Nuclear-Related Good*, January 31, 2014, http://isis-online.org/uploads/isis-reports/documents/Kaiga_case_study_31Jan2014-Final.pdf

²⁵ David Albright, *Ring Magnets for IR-1 Centrifuges*, February 13, 2013, http://isis-online.org/uploads/isis-reports/documents/iran_ring_magnet_13Feb2013.pdf

²⁶ David Albright, *Preventing the Suppression of Uncomfortable Truths on Iran’s Nuclear Program*, March 7, 2013, <http://isis-online.org/isis-reports/detail/preventing-the-suppression-of-uncomfortable-truths-on-irans-nuclear-program/>

²⁷ David Albright and Andrea Stricker, *Advisory: United States Enforces Existing Sanctions against Key Iranian Company*, September 9, 2014, <http://isis-online.org/isis-reports/detail/advisory-united-states-enforces-existing-sanctions-against-key-iranian-comp/>

²⁸ David Albright and Andrea Stricker, *Case Study - Canada Prosecutes Company for Possible Nuclear Related Export to Iran*, April 24, 2014, <http://isis-online.org/isis-reports/detail/case-study-canada-prosecutes-company-for-possible-nuclear-related-export-to/>

For this case, see: [Chinese Citizen's Involvement in the Supply of MKS Pressure Transducers to Iran: Preventing a Reoccurrence.](#)²⁹

A major unsettled issue between the IAEA and Iran is the alleged undeclared nuclear activities, materials, and facilities of the Iranian defense organization called the Physics Research Center (PHRC). The PHRC, which operated from the late 1980s to at least 1998, is alleged to have been a key organization in the creation of a parallel military fuel cycle and nuclear weaponization programs. Despite some progress on this issue, it remains an outstanding concern of the IAEA in the PMD allegations. See [The Physics Research Center and Iran's Parallel Military Nuclear Program.](#)³⁰ Other studies can be found under Physics Research Center on featured materials on the home page of the [ISIS web site.](#)³¹

Recently, Iranian officials trumpeted the nuclear programs' illicit procurements while falsely trying to present Iran as a victim of sabotage of some goods. For a detailed accounting, see: [Iran Admits Illegally Acquiring Goods for its Nuclear Programs.](#)³²

Clarification about a Third Centrifuge Plant

Also a matter of some importance is the already agreed upon clarification by Iran of its announcement regarding additional enrichment facilities, in particular the possible construction of a third gas centrifuge plant.

For background information, read: [Additional Centrifuge Plants: Update](#)³³

Laser Enrichment of Uranium

A less often mentioned, but also important area is Iran's laser enrichment program. Iran agreed to provide the IAEA relevant information and arranged for a technical visit to Lashkar Ab'ad Laser Centre, the former location of Iran's past undeclared uranium laser enrichment work. The IAEA has not released publicly the result of this visit.

For background information, read: [Update on Lashkar Ab'ad: Iran's Laser Enrichment Capabilities.](#)³⁴

²⁹ Ian J. Stewart, Andrea Stricker and David Albright, *Chinese Citizen's Involvement in the Supply of MKS Pressure Transducers to Iran: Preventing a Reoccurrence*, http://isis-online.org/uploads/isis-reports/documents/MKS_China_30Apr2014-final.pdf

³⁰ David Albright, Paul Brannan, and Andrea Stricker, *The Physics Research Center and Iran's Parallel Military Nuclear Program*, February 23, 2012, http://isis-online.org/uploads/isis-reports/documents/PHRC_report_23February2012.pdf

³¹ PHRC Reports, <http://isis-online.org/phrc>

³² David Albright, Daniel Schnur, and Andrea Stricker, *Iran Admits Illegally Acquiring Goods for its Nuclear Programs*, September 10, 2014, <http://isis-online.org/isis-reports/detail/iran-admits-illegally-acquiring-goods-for-its-nuclear-programs/>

³³ David Albright and Andrea Stricker, *Additional Centrifuge Plants: Update*, February 24, 2014, <http://isis-online.org/isis-reports/detail/additional-centrifuge-plants-update/>

³⁴ David Albright and Serena Kelleher-Vergantini, *Update on Lashkar Ab'ad: Iran's Laser Enrichment Capabilities*, February 24, 2014, <http://isis-online.org/isis-reports/detail/update-on-lashkar-abad-irans-laser-enrichment-capabilities/>

Additional Background Information

IAEA periodically issues reports on the implementation of the JPA and on the safeguarding of Iran's nuclear program, which can be found [here](#).³⁵ The last four quarterly IAEA safeguards reports on Iran and ISIS's evaluation of them can be found here:

- 1) [Implementation of the NPT Safeguards Agreement and relevant provisions of Security Council resolutions in the Islamic Republic of Iran, November 14, 2013](#)

[ISIS Analysis of November 2013 safeguards report](#)³⁶

- 2) [Implementation of the NPT Safeguards Agreement and relevant provisions of Security Council resolutions in the Islamic Republic of Iran, February 20, 2014](#)

[ISIS Analysis of February 2014 safeguards report](#)³⁷

- 3) [Implementation of the NPT Safeguards Agreement and relevant provisions of Security Council resolutions in the Islamic Republic of Iran, May 23, 2014](#)

[ISIS Analysis of May 2014 safeguards report](#)³⁸

- 4) [Implementation of the NPT Safeguards Agreement and relevant provisions of Security Council resolutions in the Islamic Republic of Iran, September 5, 2014](#)

[ISIS Analysis of September 2014 safeguards report](#)³⁹

³⁵ IAEA Reports, <http://www.isisnucleariran.org/documents/iaea/>

³⁶ David Albright, Christina Walrond, and Andrea Stricker, *ISIS Analysis of IAEA Iran Safeguards Report*, November 14, 2013, http://isis-online.org/uploads/isis-reports/documents/ISIS_Analysis_IAEA_Safeguards_Report_14November2013-final.pdf

³⁷ David Albright, Christina Walrond, and Andrea Stricker, *ISIS Analysis of IAEA Iran Safeguards Report*, February 20, 2014, http://isis-online.org/uploads/isis-reports/documents/ISIS_Analysis_IAEA_Safeguards_Report_20February2014-Final.pdf

³⁸ David Albright, Paulina Izewicz, Andrea Stricker, and Serena Kelleher-Vergantini, *ISIS Analysis of IAEA Iran Safeguards Report*, May 23, 2014, http://isis-online.org/uploads/isis-reports/documents/ISIS_Analysis_IAEA_Safeguards_Report_23May2014-finaldoc.pdf

³⁹ David Albright, Paulina Izewicz, Andrea Stricker, and Serena Kelleher-Vergantini, *ISIS Analysis of IAEA Iran Safeguards Report*, September 5, 2014, http://isis-online.org/uploads/isis-reports/documents/ISIS_Analysis_IAEA_Safeguards_Report_September_2014_FINAL_1.pdf