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# Iran and the P5+1: Getting to "Yes"

## I. Overview

That nuclear negotiations between Iran and the P5+1 (China, France, Russia, the UK, U.S. and Germany) were extended beyond the 20 July 2014 deadline was neither unexpected nor unwelcome. The parties had made enough headway to justify the extension, which was envisioned in the Joint Plan of Action (JPOA) that was signed in November 2013 and came into force in January, but given the political and technical complexity, they remain far apart on fundamental issues. Unless they learn the lessons of the last six months and change their approach for the next four, they will lose the opportunity for a resolution not just by the new 24 November deadline but for the foreseeable future. Both sides need to retreat from maximalist positions, particularly on Iran's enrichment program. Tehran should postpone plans for industrial-scale enrichment and accept greater constraints on the number of its centrifuges in return for P5+1 flexibility on the qualitative growth of its enrichment capacity through research and development.

Crisis Group proposed in May a comprehensive 40-point plan, comprised of three stages lasting over fourteen to nineteen years, for a nuclear accord. It was guided by four objectives: building a firewall between Iran's civilian and potential military nuclear capabilities by constraining the most proliferation-prone aspects of its nuclear program; enhancing transparency by establishing rigorous monitoring and verification mechanisms; ensuring implementation and deterring non-compliance by establishing objective and compulsory monitoring and arbitration mechanisms, as well as by devising, in advance, potential responses to breaches by either party; and bolstering the parties' incentives to remain faithful to the agreement by introducing positive inducements rather than purely negative ones. That plan remains a solid basis for progress, but since it was published, the parties have forgotten the lessons that enabled them to arrive at the JPOA and made maximalist demands that have changed the negotiating landscape.

As a result, the 40-point plan now needs slight adjustment. Likewise, uranium enrichment, which has emerged as the most contentious and complex issue of these talks, requires more detailed treatment. This briefing updates the previous plan in light of these new realities.

As in 2005, when now President Hassan Rouhani and Foreign Minister Mohammad Javad Zarif were last in charge of the nuclear portfolio, negotiators are bogged down in a worn-out debate over exactly why Iran insists on uranium enrichment; its economic logic or lack thereof; whether Iran should be subject to restrictions beyond

those imposed on other members of the Non-Proliferation Treaty (NPT); and how to calculate the time Iran would need to enrich enough uranium for one weapon – which, assuming other abilities are present, measures its "breakout capacity".

Neither side's technical arguments bear scrutiny in this debate because its roots are fundamentally political. Negotiators are both driven and constrained by their respective domestic politics, especially the U.S. and Iran, where powerful constituencies remain sceptical of the negotiations. The struggle over the number of centrifuges is a surrogate for a more basic one: the Iranian revolution was predicated on rejecting outside powers' dictates after a century of Western intervention in Iranian affairs; for the West, its concerns are founded on Iran's behaviour as an anti-status quo, revolutionary power.

While this power struggle cannot and will not be resolved within the framework of the nuclear talks, a workable and wise compromise is still possible. It can be achieved, however, neither by a contest of wills over maximalist positions nor by mechanically splitting differences. Instead, the parties should reverse engineer their underlying political concerns and legitimate interests to find common technical ground: for Iran this means a meaningful enrichment program, continued scientific advancement and tangible sanctions relief; and for the P5+1, a firewall between Iran's civilian and potential military nuclear capabilities, ironclad monitoring mechanisms and sufficient time and Iranian cooperation to establish trust in the exclusively peaceful nature of the country's nuclear program. If they resolve the key issue of enrichment, other pieces of the puzzle stand a better chance of falling into place. To achieve this goal:

- Iran should accept more quantitative constraints on the number of its centrifuges; in return, the P5+1 should accept the continuation of nuclear research and development in Iran that would enable Tehran to make greater qualitative progress;
- Iran should commit to using Russian-supplied nuclear fuel for that plant's lifetime in return for further Russian guarantees of that supply and P5+1 civil nuclear cooperation, especially on nuclear fuel fabrication, that gradually prepares it to assume such responsibility for a possible additional plant or plants by the end of the agreement, in eleven to sixteen years;
- Instead of subjective timelines dictated by the political calendar, both sides should agree to use objective measures, such as the time the International Atomic Energy Agency (IAEA) needs to investigate Iran's past nuclear activities, to determine the duration of the final agreement's several phases.

Despite the extra negotiating time, there is no guarantee the parties will be able to reach a compromise that permanently protects everyone's core interests. Iran's indigenous know-how could enable it to modify its program after international attention shifts away; the U.S. Congress could prevent the president from delivering on promised sanctions relief. But the alternatives – return to the sanctions versus centrifuges race or recourse to military force – are even less attractive.

A focus on irreducible core interests rather than maximalist stances would represent not a fatal compromise but, perhaps, the key to unlocking these talks. With the costs of failure and the benefits of success so high, there is no room for error and no time to waste.

## II. Lessons Not Learned

The six rounds of negotiations over the comprehensive nuclear accord that occurred in Vienna between January and July 2014 suffered from serious flaws, both substantive and procedural. The real bargaining that began in mid-May after three months of perfunctory exchanges was informed by neither those meetings nor the experience of the past dozen years.[1] Instead, it seemed as if the clock had been rewound to a more contentious era, before the successful interim agreement of November 2013: both the P5+1 and Iran put forward maximalist positions; seemed shocked by the other side's obstinacy;[2] and, instead of exploring realistic solutions, accused one another of making unrealistic demands.[3]

When multilateral talks stalled, the negotiators turned to the formula that had paved the way for the interim agreement: bilateral talks between the U.S. and Iran, the most important of which was a two-day meeting between high-level officials in Geneva in June.[4] But with positions already entrenched, the effort failed. Adjusting the format or atmospherics could not help when the substantive gaps between the parties, particularly regarding the enrichment capacity that Iran could maintain under a final agreement, were so wide.

Next came a phase of public brinkmanship during which the parties doubled down, warning of the dire consequences should the current opportunity be squandered.[5] Senior U.S. officials openly called for Iran's uranium enrichment program to be reduced to "a fraction" of its current capacity;[6] Supreme Leader Ayatollah Ali Khamenei retorted, in surprisingly technical terms, that his country's "absolute

[1] For background, see Crisis Group Middle East Reports N°18, *Dealing with Iran's Nuclear Program*, 27 October 2003; and N°51, *Iran: Is There a Way Out of the Nuclear Impasse?*, 23 February 2006; Middle East and Europe Report N°116, *In Heavy Waters: Iran's Nuclear Program, the Risk of War and Lessons from Turkey*, 23 February 2012; Middle East Briefing N°34, *The P5+1, Iran and the Perils of Nuclear Brinkmanship*, 15 June 2012; and Middle East Reports N°138, *Spider Web: The Making and Unmaking of Iran Sanctions*, 25 February 2013; and N°152, *Iran and the P5+1: Solving the Nuclear Rubik's Cube*, 9 May 2014.

[2] An Iranian official noted: "The American position suddenly stiffened. We wonder whether it stems from internal fissures within the U.S. negotiating team or pressure from U.S. allies". Crisis Group interview, Tehran, 25 June 2014. Similarly, a U.S. official said, "I hope the Iranians are putting their opening gambits, not their bottom lines, on the table. Otherwise, we should pack our bags and go home". Crisis Group interview, Washington, 30 June 2014. Both sides started to question the conciliatory approach that led to the JPOA. A senior U.S. official wondered: "Maybe it was wrong to even implicitly recognise Iran's 'right to enrichment', because now having won that key concession, they want to exercise the right fully and immediately". Crisis Group interview, Washington, 12 May 2014. A former U.S. nuclear negotiator called Iran's approach "rights creep". See Robert Einhorn, "A Justified Extension for Iran Nuclear Talks, But Hard Choices Ahead", Brookings Institution, 19 July 2014. In mirror image, a senior Iranian official noted: "When Rouhani became president, it was suggested to him to operationalise thousands of centrifuges that had been installed, but remained idle, to strengthen Iran's bargaining position. He declined as he refused to bargain like a carpet merchant. In hindsight, maybe he should have turned those machines on". Crisis Group interview, Vienna, 15 July 2014.

[3] Julian Borger, "Iran nuclear talks hit a wall in Vienna", *The Guardian*, 17 May 2014.

[4] Oren Dorell, "U.S. and Iran meet in Geneva to talk nukes", *USA Today*, 9 June 2014.

[5] See, for example, Mohammad Javad Zarif, "Iran is committed to a peaceful nuclear program". *The Washington Post*, 13 June 2014; John Kerry, "Iranian nuclear deal still is possible, but time is running out", *The Washington Post*, 30 June 2014.

[6] Laurence Norman, "Iran nuclear talks grow 'a fraction' strained", *The Wall Street Journal*, 4 July 2014.

needs" for uranium enrichment required before long a ten-fold increase in capacity.[7] Both sides dug in, hoping to compel their rival to concede at the last minute.[8]

This gambit stood little chance of succeeding. Both Iran and the P5+1 overestimated their rival's weakness and hoped to force it into a deal, even at high cost; at the same time, each underestimated the strength of its rival's national narrative, irreducibility of its core interests, and domestic political pressures. Neither side felt its back to be against the wall, particularly when the timeline seemed arbitrary and mutable.[9] This led both to abandon the approach that had enabled them to conclude the interim agreement. Then, bilateral negotiations helped set the stage for the multilateral talks;[10] this time, U.S.-Iran sessions occurred only after the parties had fixed their negotiating positions. In 2013, negotiators were fairly disciplined about

[7] He said, "[on] the issue of enrichment, the [P5+1's] goal is to make the Islamic Republic accept 10,000 SWUs [Separative Work Units are a measure of centrifuge performance]. But they began from 500 and 1000 SWU …. Yet our officials say we need about 190,000 SWUs. It is possible that we will not need this capacity this year, or in two, or five years, but this is the country's absolute need and should be met". "Supreme Leader's Speech in Meeting with Government Officials", Khamenei.ir, 7 July 2014. The Leader's motives for this statement are a matter of conjecture. Some former Iranian officials contend he meant to strengthen his negotiators by backing their positions and giving them justification not to compromise; others argue he weakened them by boxing them in. Crisis Group telephone interviews, Tehran, July 2014. A likelier explanation is that the initial P5+1 proposals led him to believe the group was treating Iran as if it were in a weak position, and he sought to alter that calculus. "The P5+1's excessive demands are counterproductive and could incite a backlash here", said a senior Iranian official a week before the speech. Crisis Group interview, Tehran, 26 June 2014. Also see Mehdi Mohammadi, "مدیریت محاسبات در وین" ["Managing calculations in Vienna"], *Vatan Emruz*, 12 July 2014. Regardless of motivation, the hardliners in Tehran took the 190,000 number as a redline. See "همایش خط قرمز با عنوان نه به صنعت هسته‌ای دکوری" ["The 'Redline Gathering' Says No to A Decorative Nuclear Industry"], Alef.ir, 14 July 2014; "Parliament: Final Deal Should Recognize 190,000-SWU Enrichment Power for Iran", Fars News Agency, 16 July 2014.

[8] There was wide belief in the West President Rouhani had raised such domestic expectations for economic relief that he had to deliver, even by ceding ground in talks. Crisis Group interviews, U.S. and EU officials, Vienna, Washington, April-July 2014. Iranians across the political spectrum said the Obama administration was so keen for a foreign policy victory after a series of setbacks and to cooperate with Iran against the rise of Islamic extremists that it would back off its initial demands at the eleventh hour. Crisis Group interviews, current and former Iranian officials, Vienna, Tehran, March-July 2014. Also see, Mohammad Imani, "مختصات نبرد محاسبات در وین" ["Collision of Calculations in Vienna"], *Kayhan*, 15 July 2014; Hamid Reza Asefi, "برگ برنده دموکرات‌ها در انتخابات" ["Democrats' Trump Card in Mid-Term Elections"], *Shargh*, 17 July 2014; "سیروس ناصری: آمریکا ناچار از توافق با ماست" ["Former Negotiator Cyrus Nasseri: The U.S. has no choice other than dealing with us"], *Arman*, 12 August 2014.

[9] In an interview, Zarif said that if he rejected a deal, he would receive a "hero's welcome" back home. See Gareth Porter, "Zarif Reveals Iran's Proposal for Ensuring Against 'Breakout'", 13 June 2014. A U.S. official replied, "Obama will receive the same treatment, especially from the Republicans". Crisis Group interview, Washington, 1 July 2014. Iranian officials believe that the high watermark of sanctions has already passed, because Iran will no longer be seen as the party at fault, thus weakening their enforcement. Crisis Group interviews, Tehran, June 2014; Ali Akbar Dareini, "Rouhani declares sanctions regime broken, says nuclear deal still possible", Associated Press, 14 June 2014; Patrick Clawson, "Iran Can Afford to Say No to a Nuclear Deal", The Washington Institute for Near East Policy, 17 July 2014. However, a European official argued: "There is more than a decade of evidence of Iranian misbehaviour and six UN Security Council resolutions against Tehran. If the talks fail, especially because of Iran's excessive demands, the Iranians will lose the blame game on the international stage and the chilling effect of the sanctions will endure". Crisis Group interview, Vienna, July 2014.

[10] Laura Rozen, "Burns led secret US back channel to Iran", Al-Monitor, 24 November 2013.

confidentiality; in Vienna, they publicly postured.[11] Most importantly, unlike 2013, when they tackled the most important issue first and agreed Iran's "right to enrichment" should be (albeit implicitly) recognised, the key question of defining the scale and scope of the enrichment program was left to last.[12] When no one blinked, extension was the only alternative to breakdown.[13]

The failures of the current process should not be overstated. There was progress on some important issues, including narrowing options for converting the bunkered facility in Fordow to a research and development centre; transforming the heavy water reactor in Arak to a more proliferation resistant one that produces less plutonium; and enhancing safeguards and monitoring mechanisms for Iran's nuclear activities.[14] All parties have demonstrated the desire to resolve this crisis by fulfilling their JPOA commitments; quarantining the talks from extraneous events (eg, crises in Syria, Crimea, Iraq and Gaza); making headway in the comprehensive talks; and successfully negotiating an extension.[15]

But progress alone is not enough. Unless the parties revise their approaches in line with those that produced the JPOA and broaden the range of acceptable options, past achievements could turn out to be for naught.

## III. The Enrichment Conundrum

So long as the scale and scope of Iran's enrichment capacity remain unresolved, so too will other issues.[16] This is for two main reasons: first, enrichment is the most politically sensitive issue, against which many will measure the talks' success or failure; and secondly, given the interlinking nature of the accord's elements, determining the extent and sequence of sanctions relief and transparency measures is impossible without precision regarding this key element.

[11] Thus, a senior U.S. official said, "this is not a negotiation between two equal parties. It's certainly a negotiation among sovereign nations and we respect the sovereignty of every country. This is not, however, a mediation. This is the international community assessing whether Iran can come in line with its numerous nonproliferation obligations, to which it has been in violation for years". "Background Briefing: Senior U.S. Administration Officials on P5+1 Negotiations", State Department, 12 July 2014. Zarif took his proposal on the enrichment issue public, prompting U.S. complaints. Crisis Group interview, Iranian official, Vienna, 15 July 2014; David Sanger, "Iran Outlines Nuclear Deal; Accepts Limit", *The New York Times*, 14 July 2014.

[12] A European diplomat said, "I don't expect us to agree on how many centrifuges Iran can retain before midnight on the last day of the negotiations". Crisis Group interview, Vienna, 14 May 2014.

[13] Both sides pledged to uphold JPOA commitments until 24 November. Moreover, Iran agreed to convert 25kg of its 20 per cent enriched uranium oxide into fuel plates for the Tehran research reactor (rendering it less readily available for enrichment to weapons grade) and blend down its approximately three-tonne stock of uranium waste enriched to less than 2 per cent. In return, the P5+1 will enable Iran to access $2.8 billion of its frozen oil revenues. "Summary of Understandings Related to the Implementation and Extension of the Joint Plan of Action", State Department, 22 July 2014.

[14] Crisis Group interviews, Iranian and European officials, Vienna, July 2014. According to Abbas Araghchi, Iran's chief nuclear negotiator: "Almost 60 per cent of the comprehensive agreement has been drafted, but the remaining 40 per cent comprises key issues". Quoted in Ameneh Mousavi, "وعده آذر" ["The promise of November"], *Tejarat Farda*, 9 August 2014.

[15] Kelsey Davenport, "Implementation of the Joint Plan of Action at A Glance", Arms Control Association, July 2014.

[16] Per the JPOA, "nothing is agreed, until everything is agreed". See "Joint Plan of Action", IAEA, 24 November 2013. www.iaea.org/Publications/Documents/Infcircs/2013/infcirc856. pdf.

Before talks on the comprehensive agreement began, Crisis Group warned that the attempt to delineate an acceptable enrichment program on the basis of either Iran's "practical needs" or "breakout time" would doom them, since these concepts are subjective and plastic.[17] This indeed is what came to pass. Iran contends that it will need an enrichment capacity of 190,000 SWU in order to take over fuelling its sole power plant, in Bushehr, by 2021 when the reactor's fuel supply agreement with Russia expires.[18] Tehran's general approach is to trade transparency for capacity: accepting more intrusive inspections in return for a higher enrichment capability and continuation of research and development (R&D).[19] Iranian negotiators, however, also have signalled readiness to freeze the current operational capacity of 9,400 SWU, perhaps for three to seven years.[20]

For the P5+1, the formula of freezing the current number of operating centrifuges and trading "transparency for capacity" does not represent a concession; rather, it would enshrine the status quo by extending the limits imposed by the JPOA.[21] The P5+1 also rejects Iran's demands for industrial-scale enrichment, because it would enable a rapid dash toward nuclear weapons;[22] moreover, the group says that Iran

[17] "Negotiators will not get far, however, by trying to define Iran's 'practical needs' for enriched uranium (an approach endorsed in Geneva), since needs are a matter of interpretation about which Iran and the P5+1 differ. Focusing on 'breakout time' will not stand them in better stead, as it is based on theoretical, unpredictable and plastic calculations". Crisis Group Report, *Solving the Nuclear Rubik's Cube*, op. cit. According to a European diplomat, "Iran and the P5+1 even differ on what the SWU capacity of each IR-1 machine (Iran's first generation centrifuges) is, which leads to discrepancy in our calculations". Crisis Group email correspondence, 27 July 2014. For other analyses challenging the breakout concept, see Jeffry Lewis, "The Problem with Stopwatches and Centrifuges", *Foreign Policy* (online), 5 June 2014; Greg Thielmann and Robert Wright, "The Trouble with 'Breakout Capacity'", Slate.com, 18 June 2014.

[18] Crisis Group interview, senior Iranian official, Vienna, 14 May 2014. Sources close to the Iranian nuclear negotiating team have justified the number by publishing their detailed SWU calculations. See "What Are Iran's 'Practical Needs' And Why Does Iran Want to Fuel Reactors on Its Own?", NuclearEnergy.ir, July 2014.

[19] Crisis Group had predicted that this would be Rouhani's preferred approach, given that his domestic rivals' criticism of his 2003-2005 negotiating record was focused on his concessions on capacity, not transparency. Middle East Briefing N°36, *Great Expectations: Iran's New President and the Nuclear Talks*, 13 August 2013. An Israeli official said, "transparency is not worth much. If Iran retains an unacceptable level of latent capability, at some point it can dismantle the transparency measures and break out before it can be stopped". Crisis Group interview, August 2014.

[20] The time frame seems to be related to Iran's presidential election calendar. Crisis Group interview, Iranian official, Vienna, July 2014; Laurence Norman, "Iran Diplomats Suggest Flexibility on Nuclear Deal", *The Wall Street Journal*, 14 July 2014. A former Iranian official, however, noted that Iran's proposal to freeze its operating capacity was not tantamount to dismantling any of its currently installed capacity of 22,000-24,000 SWU, but rather continuing to install new centrifuges without bringing them into operation. Crisis Group email correspondence, 4 August 2014. Iran also has proposed a joint venture with the P5+1 or regional countries to create a multilateral enrichment plant. The idea, however, seems unacceptable to the P5+1 as an economically viable consortium would entail a radical increase in the depth and breadth of Iran's enrichment program. Crisis Group interviews, Iranian and European officials, Vienna, May-July 2014.

[21] A European diplomat noted: "If Iran wants sanctions to be rolled back, it needs to roll back its centrifuge capacity". Crisis Group interview, 27 July 2014. An Israeli official said, "it is totally unacceptable that Iran wants to keep what it already has, but expects the other side to repeal its sanctions". Crisis Group interview, August 2014.

[22] U.S. Secretary of State John Kerry estimated Iran's breakout time at around two months. See Patricia Zengerle, "Kerry says Iran nuclear 'breakout' window now seen as two months", Reuters, 8 April 2014. Iranian officials privately protested these assessments to their U.S. counterparts and eventually commissioned a study that put Iran's current breakout time at three years. Crisis Group

has no compelling need to produce such amounts of fuel, both since Russia is prepared to supply the Bushehr reactor for its lifetime[23] and since Iran lacks the technical know-how and intellectual property licenses to safely and legally produce it.[24] Tehran, however, recalling its unpleasant memories of fuel denial, rejects reliance on the international nuclear fuel market.[25]

The West – mistrustful of Iran's intentions because of its record of concealment – seeks significant constraints on its capabilities.[26] It demands that Iran scale back its enrichment capacity to around 1,500 SWU, which it asserts would be sufficient to meet the country's modest short-term needs – ie, to fuel the converted Arak reactor. The P5+1 also seeks to limit Iran's R&D activities, which could enhance centrifuge efficiency and raise the risk of concealment in a covert facility, as a small number of more efficient centrifuges would be easier to hide.[27] These restrictions, the P5+1

interview, Iranian officials, Tehran, 26 June 2014; "How long would an Iranian 'breakout' really take?" NuclearEnergy.ir, June 2014; and for rebuttal, see David Albright and Andrea Stricker, "Iranian Breakout Study Drastically Overestimates Time to Nuclear Weapon", Institute for Science and International Security, 17 June 2014.

[23] Although Iran's initial contract with the TVEL nuclear fuel company (a subsidiary of Russia's Rosatom) was for ten years, according to Article 5 of the Russian-Iranian inter-governmental agreement signed on 25 August 1992, the Bushehr plant is to solely use Russian-made fuel for the entire duration of its operation. Iran's use of indigenously designed fuel would void the reactor's warranty and annul the arrangement to repatriate spent fuel – containing plutonium – to Russia. TVEL currently supplies fuel for 35 similar nuclear power reactors to ten countries. In all these cases, Russia supplies ready-made fuel assemblies – although the Czech Republic and Ukraine provide their own natural uranium. Crisis Group email correspondence, Anton Khlopkov, director, Moscow's Centre for Energy and Security Studies, 8 August 2014.

[24] Crisis Group interviews, U.S. and British officials, Vienna, April-July 2014. "The sources of Iranian mistrust, given Russia's long delays in constructing the Bushehr reactor and failure to deliver the S-300 air defence systems, are understandable. But manufacturing specialized fuel rods for Russian reactors is no trivial affair. The Czech Republic turned to Westinghouse [a top supplier of nuclear fuel] to fuel its Soviet-built Temelin reactor, but had to eventually remove the fuel because of leaks. Hungary even had an accident with substandard fuel in 2003. Iranian scientists are capable, but it will take years and years to overcome these obstacles. Crisis Group email correspondence, Anton Khlopkov, director, Moscow's Centre for Energy and Security Studies, 8 August 2014; Mark Hibbs, "Iran's Russia Problem", Iran Fact File Blog, 7 July 2014. Use of substandard fuel would likely exacerbate safety fears of Iran's neighbours. Crisis Group interview, Kuwaiti official, August 2014.

[25] In a letter to the IAEA, Iran substantiated its lack of trust in foreign nuclear fuel suppliers by detailing unfulfilled contracts with Western companies since the 1979 revolution. See INFCIRC/785, IAEA, 2 March 2010. A senior Iranian official said, "we have developed an entire nuclear fuel cycle to ensure our autonomy in nuclear energy. It has come at a great price. Reduce the enrichment part to irrelevance, and the entire enterprise will be devoid of meaning". Crisis Group interview, Vienna, 15 July 2014. Another noted: "It is quite ironic that the West distrusts Russia, but expects Iran to trust Moscow". Crisis Group interview, Tehran 26 June 2014. Iranian officials, however, noted that they have been in discussions with Russia in order to gain limited rights to fabricate fuel for the Bushehr reactor, in return for purchasing several additional Russian nuclear power plants. Crisis Group interviews, Vienna, July 2014.

[26] For background on the P5+1's mistrust, see Robert Einhorn, "Preventing a nuclear-armed Iran: Requirements for a Comprehensive Nuclear Agreement", Brookings Institution, March 2014. For an Iranian response, see "Former IAEA envoy Soltanieh responds to Einhorn", NuclearEnergy.ir, 11 May 2014.

[27] Explaining P5+1 concerns, a European diplomat noted: "The ability to breakout, and to do so quickly and covertly, is significantly increased through using more advanced machines – even small numbers of them". Crisis Group interview, Vienna, 16 July 2014. While Iran's first generation IR-1 machines have an average SWU/year of 0.9, the more sophisticated IR-2ms are estimated to be three to five times more powerful, and Iran contends that its latest model of IR-8 has a SWU capac-

holds, should remain in place for at least two decades under intrusive inspections and monitoring, which themselves should outlast the constraints for an additional decade.[28] In Iran's view, these restrictions and timeframes are not only excessive but also unfair, since they would impose arbitrary long-term limits that have never been imposed on any other NPT member state.[29]

In the enrichment debate, neither side is on particularly strong ground. Iran does not need to retain all its operating centrifuges, much less increase their number, as currently it has no use for their output.[30] Likewise, the P5+1 has no need to exaggerate the breakout risks of Iran's current inventory of a few thousand obsolete IR-1 centrifuges, which are under the most stringent IAEA inspection regime.[31] By the same token, both sides' justifications for their preferred duration of the agreement seem at best unrealistic, at worst insincere. Tehran ought not expect a crisis that has been building for nearly two decades to be completely resolved in three years, before President Rouhani's first term concludes; nor should it expect sanctions to be repealed before Iran has established its bona fides. Likewise the P5+1's insistence on constraining Iran's enrichment for so long is misguided.[32] Any mechanism that could establish trust over twenty years could likely do so just as well over ten or fifteen.

The enrichment debate, often conducted in highly technical language centring on the number of centrifuges Iran would be permitted to operate, is in fact a deeply political issue that is largely a function of the parties' domestic political constraints. The Iranian negotiating team would have as much difficulty defending an agreement that does not preserve the currently operating centrifuges as Western representa-

ity of 24 per machine. See Arash Karami, Chief of Iran's Atomic Energy Organization clarifies nuclear needs", Al-Monitor, 9 July 2014.

[28] Crisis Group interviews, EU and Iranian officials, Vienna, July 2014.

[29] A senior Iranian official said, "the 1,500 SWU number makes no sense. The West thinks it is throwing us a bone, but for us this is no different than zero enrichment. First of all, we have no need for such capacity as we already have nearly eight tons of below 5 per cent enriched uranium that we can use for fueling the converted Arak reactor for years to come; second if one's intent is to make a nuclear weapon, it can be achieved even with 1,500 SWU". Crisis Group interview, Vienna, 16 July 2014. A former British ambassador to the IAEA called a program of such proportions "a Mickey Mouse" enrichment plant. See Peter Jenkins, "All is lost – Unless the US and EU Start Thinking Straighter", Lobelog.com, 28 July 2014. An Iran analyst opined: "The West is seeking to prolong the timeframes in the hope that in twenty years a different regime will be in place in Tehran, not taking into account that it is the current Iranian leadership who has invested political capital into this program and needs to save face". Crisis Group interview, Tehran, 25 June 2014.

[30] Foreign Minister Zarif acknowledged in a recent interview: "Since our reactor doesn't need fuel for another seven years we don't have to kill ourselves for it. We have time". Quoted in Sanger, "Iran Outlines Nuclear Deal; Accepts Limit", op. cit.

[31] A senior Iranian official said, "our installed capacity is 22,000 to 24,000 SWU. So accepting a cap of 9,400 SWU is already accepting a roll back of more than half. Also we are offering to cap our enrichment level to 5 per cent and keep our enriched material stockpile to a minimum for the duration of the agreement. But the P5+1 acts as if it takes Iran's concessions under the JPOA for granted". Crisis Group interview, Vienna, 16 July 2014. According to the IAEA, Iran has installed 18,458 IR-1 machines and 1,008 more advanced IR-2ms, of which, respectively, 9,862 and zero are operational. Iran has developed other more sophisticated iterations of these centrifuges, namely 177 IR-4s, one IR-5, nine IR-6s, and one IR-8. "Implementation of the NPT Safeguards Agreement and relevant provisions of Security Council resolutions in the Islamic Republic of Iran", report by director general, IAEA, GOV/2014/28, 23 May 2014.

[32] A U.S. official asked: "Why does Iran need to insist on gradually increasing its enrichment capacity when it can enrich to its heart's content after it obtains the 'out of jail free card' at the end of the agreement?" Crisis Group interview, Vienna, 15 May 2014.

tives would have dismantling sanctions without reciprocal Iranian actions.[33] For Tehran, any agreement that deprives it of a meaningful enrichment program, particularly given its astronomical costs – in terms of sunk investment, opportunity cost of the sanctions[34] and commitment of national pride – would be unsellable. Likewise, none of the Western members of the P5+1 could hope to gather support at home and alleviate the concerns of regional allies for a deal leaving Iran with a latent capacity that could be harnessed rapidly for military purposes.

In this sense, centrifuges have become a proxy for more fundamental grievances. The Islamic revolution, which occurred after more than a century of Western intervention in Iranian affairs, was an expression of resistance to dictates from outside powers. The guardians of that revolution are loath to allow Western states to usurp their autonomy by defining their practical enrichment needs.[35] By the same token, the West, which views Iran as a revolutionary state that aims to undermine the norms of the international order, fears legitimising its behaviour, particularly the use of dual-use technology.[36]

While each side seems to feel that the other has broken with the conciliatory approach that enabled the interim deal, the JPOA was the exception to the norm. Iran's current proposal – to accept an initial ceiling on the number of centrifuges, to be followed by a rapid, significant increase after the confidence-building period – mirrors the proposal that the same Iranian negotiators put forward in 2005.[37] Similarly, the approach the West has pursued for the better part of the past decade ago is unaltered: curbing Iran's enrichment for a period long enough to convince Iran to give it up.[38] These were dead-ends at the time and remain so today.

In 2013, the parties escaped the impasse by focusing on each other's irreducible political requirements and devising a technical solution that enabled them to sell the deal in their respective capitals. They should, and can, do the same today.

[33] Crisis Group interviews, U.S. officials, Washington, May-July 2014; Iranian officials, Tehran, July 2014.

[34] Scott Peterson, "How much is a nuclear program worth? For Iran, well over $100 billion", *Christian Science Monitor*, 3 April 2013.

[35] Zarif said, "nuclear talks are not about nuclear capability. They are about Iranian integrity and dignity. If the other side … grasps the fact that various Iranians – who may never have seen [facilities at] Natanz or Arak or Fordow – believe that dignity[,] their technology and development is not up for sale … then they will be able to reach an understanding with us". Quoted in Robin Wright, "Javad Zarif on Iran's Nuclear Negotiations", *The New Yorker*, 21 May 2014.

[36] A prominent non-proliferation expert commented: "Iran wants to be treated like a normal country. But, Iran's definition of 'normality' includes having an independent industrial-scale enrichment program, which only a few countries have: Brazil, China, Japan, and Russia. Other countries, including Saudi Arabia, Egypt and Turkey in the Middle East could demand the same and we would have a proliferation of nuclear threshold states in the region". Crisis Group email correspondence, Frank von Hippel, Princeton University professor of international affairs, 9 August 2014. Another scholar wrote: "The U.S. may assert a general interest in non-proliferation as an international norm, but, in practice, it focuses on adversarial proliferators – states that combine capabilities with hostile intent. Hence, with reason, Washington focuses on Iran more than on Israel". See Robert Litwak, "Iran's Nuclear Chess: Calculating America's Moves", Woodrow Wilson Centre for Scholars, July 2014.

[37] "Proposal by Iran in the meeting of steering committee", Paris, 23 March 2005, available at www.armscontrol.org/pdf/20050323_Iran_Proposal_Steering_Cmte.pdf.

[38] Crisis Group Report, *Is There a Way Out of the Nuclear Impasse?*, op. cit.

## IV. Squaring the Circle

Negotiators first should address the crucial issue of defining Iran's enrichment capacity. Removing that obstacle would constitute real progress and, in so doing, increase the costs of ultimate failure; further, it could give the negotiators an incentive to compromise on other issues of more recent vintage, such as concerns about Iran's ballistic missile program.[39]

The minimum requirements for solving the enrichment conundrum would be:

- for Iran, to demonstrate that the immense investment in its enrichment program has not gone to waste, to ensure respect for what it sees as its rights and to establish a program that could grow and evolve over time to meet its peaceful needs, particularly by guarding against any fuel supply interruption; and
- for the P5+1, to ensure that the enrichment program is geared only toward civilian purposes and that Iran has been deterred from pursuing nuclear weapons in the foreseeable future.

These objectives are not incompatible but require both sides to demonstrate flexibility and find creative trade-offs between different components of the agreement. In fact, they agree on the need for an initial ceiling on the number and sophistication of Iran's centrifuges and that these restrictions would be relaxed after a period of confidence building.

To reconcile remaining differences, the parties should trade off the height of the ceiling against the length of the confidence building. Iran should accept a lower initial ceiling on its enrichment capacity than it desires, given that it has limited needs and that even in the best of circumstances it will not be able to take over fuelling Bushehr as early as 2021;[40] in return, the P5+1 should agree to a shorter time frame and gradual increase in the technological sophistication of Iran's enrichment program.[41] This could be achieved by balancing three components of the deal:

**R&D.** Iran should accept more quantitative constraints on its centrifuges than it would prefer, in return for the P5+1 countenancing more qualitative advances in the enrichment program through research and development.

**Practical guarantees.** Iran and Russia should amend and renew their binding agreement for Moscow to supply the Bushehr reactor's fuel for its entire lifespan. To allay Iran's fuel security concerns, Russia should agree to provide Iran with a five-year stockpile of fuel as a backup that could be used in the event of supply disruption.[42] This assurance, coupled with the contingency enrichment program Iran would retain and its ongoing R&D activity, would allow it to dial up its enrichment capacity in case of disruption of the nuclear-fuel supply. The program, however, would be constrained in such a manner that any breakout push could be promptly

[39] Chief U.S. nuclear negotiator Wendy Sherman said, "if we are successful in assuring ourselves and the world community that Iran cannot obtain a nuclear weapon, then them not having a nuclear weapon makes delivery systems almost – not entirely, but almost – irrelevant". "Negotiations on Iran's nuclear Program", hearing, U.S. Senate Committee on Foreign Relations, 4 February 2014.
[40] See fns 23 and 24 on why it is unrealistic to take over fuelling Bushehr in 2021, as Tehran seeks.
[41] A similar approach has been proposed by a former U.S. nuclear negotiator. Robert Einhorn, "An Open Letter to the Iranian Negotiating Team", IRDiplomacy.ir, 16 August 2014.
[42] For a similar proposal, see George Perkovich, "Ensuring nuclear fuel for Iran could put the country in a box", *The Washington Post*, 10 July 2014.

detected and reacted to decisively. Also, to eliminate any sneak-out risk – that is, breaking out in a clandestine enrichment facility instead of a declared one – Iran should allow the IAEA to monitor all key nodes of centrifuge production and testing.[43]

**Objective Milestones.** The duration of the final agreement as well as each of its component steps, by the end of which Iran's nuclear program would be normalised,[44] should not be based on selective criteria such Iran's electoral calendar[45] or arbitrary deadlines.[46] As Crisis Group previously recommended:

> The final step should be broken down into phases of different durations that would be conducive to the multi-layered nature of both the nuclear program and the sanctions regime; their rollback would need to happen in stages, with significant preparation time followed by a series of measures in rapid success.[47]

The balanced, measured nature of this approach also would serve a political need: it would enable front-loading the agreement to rally support in the relevant capitals by quickly demonstrating tangible achievements while Presidents Obama and Rouhani are in office; signal regular progress throughout the duration of the final step; and postpone some difficult concessions until both sides have become accustomed to a new relationship.

Two objective milestones could flow from the IAEA's work: the resolution of outstanding possible military dimension (PMD) questions and the IAEA drawing "broader conclusions" that all nuclear material and activities in Iran are purely civilian.[48] To facilitate resolving these issues, Iran should pledge to respond satisfactorily to all the agency's questions and provide all the necessary access;[49] the IAEA should pledge

[43] Iran's main enrichment facilities in Arak and Fordow, initially undeclared, were exposed by Western intelligence agencies. The U.S. intelligence community also considers sneak-out as a greater risk than break out. See "Iran Nuclear Intentions and Capabilities", National Intelligence Council, November 2007, p. 8. So do Israeli officials. Crisis Group interview, former senior Netanyahu adviser, 21 November 2013.

[44] Per the JPOA, "following successful implementation of the final step of the comprehensive solution for its full duration, the Iranian nuclear programme will be treated in the same manner as that of any non-nuclear weapon state party to the NPT".

[45] A senior Iranian official noted: "President Rouhani is committed to diplomacy and has delivered on his commitments. The P5+1 should capitalise on his political will and try to fully resolve the key issues at best by the end of his first term in office (2017), or at worst by the end of his second term (2021), if he is indeed re-elected". Crisis Group interview, Vienna, 15 July 2014. President Obama is in office until 20 January 2017.

[46] A senior U.S. official said, "for Congress, given its marrow-deep mistrust of Iran's intentions, an unrestrained Iranian nuclear program in the foreseeable future is a non-starter. Thus the need to kick the can down the road for twenty years or more". Crisis Group interview, Washington, 12 May 2014. U.S. officials have publicly announced that the duration should be in "double digits" of years. See Louis Charbonneau and Fredrik Dahl, "Iran sticks to 'unworkable, inadequate' stances in nuclear talks: U.S.", Reuters, 12 July 2014.

[47] Crisis Group Report, *Solving the Nuclear Rubik's Cube*, op. cit.

[48] "Broader Conclusions" in the agency's jargon means the "correctness" (ie, non-diversion of nuclear material from declared activities) and completeness (ie, absence of undeclared nuclear activities) of Iran's declarations to the agency. See paragraph 2 of INFCIRC/153 (Corr.) and Article 2 of Iran's Safeguards Agreement.

[49] The IAEA's Additional Protocol (INFCIRC/540) expands the agency's reach to all parts of a state's nuclear fuel cycle, including uranium mines, fuel fabrication, enrichment plants, and nuclear waste sites; and provides greater access rights. Under the managed-access provision, inspectors can request access within two hours to a facility at a site they are presently inspecting and within 24 hours to a new site. Given the Additional Protocol's shortcomings (eg, no requirement to allow speaking

to limit this investigation to the twelve specific areas listed in its November 2011 report;[50] and the P5+1 should vow to maintain the confidentiality of any information relating to these issues and that it will not use them to pressure Iran in the nuclear or any other arena.[51]

Similarly, Tehran's development of indigenous fuelling capacity for the country's reactors could be linked to the time needed to construct a new light water power plant and develop cutting-edge fuel manufacturing technology through civilian nuclear cooperation between the parties. The advantage of such an approach is that it typically takes around fifteen years to construct a power plant, which would defer Iran's need for industrial-scale enrichment; at the same time, it would allow Tehran to justify its investment in centrifuge technology and eventually meet its goals.[52]

In May 2014, Crisis Group proposed a calibrated 40-step approach for reaching a comprehensive nuclear agreement.[53] It remains substantially relevant, though intervening events (particularly public posturing by both sides) necessitate some fine-tuning, particularly to resolve the enrichment issue.[54]

The three-phase proposal specified that during the first phase of one to two years, the IAEA would resolve the outstanding past and present issues with regard to Iran's nuclear activities. The implementation record of both the JPOA and Iran's agreement with the IAEA to address the PMD issues shows that a single year might be too short; therefore the duration of the first phase should be two to three years.[55] During

with scientists and provide original documents), Iran might need to grant even more access than required. A U.S. official said, "if we are ever going to move on and countenance more overt enrichment, we would need air-tight assurances that there is not going to be a covert program. That means more access than the IAEA's Additional Protocol, especially to most sensitive areas". Crisis Group interview, Washington, 3 July 2014. But to heed Iran's security concerns, this requirement should be temporary.

[50] "Implementation of the NPT Safeguards Agreement and relevant provisions of Security Council resolutions in the Islamic Republic of Iran", IAEA, GOV/2011/65, 8 November 2011. An Iranian official stressed that "we are afraid the P5+1 will never put the PMD issues to rest. Should it turn out that Iran's nuclear program is and has been civilian, the primary basis for putting pressures on Iran evaporates. Hence our concern that some countries continue to feed fabricated intelligence to the IAEA to prevent the probe from concluding. Recent experience also bodes ill. Although we completely convinced the IAEA in the past two months that our experiments with Exploding Bridge Wire [that could be used in nuclear implosions] were aimed at our oil and gas industry, they refused to close the case". Crisis Group interview, Tehran, 16 June 2014.

[51] Iran should be granted a grace period during which it would not be penalised should it voluntarily disclose information that could be considered self-incriminating. The disclosures would be reported to the UN Security Council and the IAEA Board of Governors for informational purposes only. See Pierre Goldschmidt, "The Iranian Nuclear Issue: Achieving a Win-Win Diplomatic Solution", Carnegie Endowment for Peace, 4 February 2012.

[52] The director of Iran's Atomic Energy Organisation said constructing the 360 megawatt power reactor Iran plans at Darkhovin could "take ten to fifteen years, if all goes well". See "صالحی خبر داد نصب 1000 ماشین سانتریفیوژ نسل دوم" ["Salehi announced: Installation of 1,000 second generation centrifuges"], Iranian Students News Agency, 29 December 2013.

[53] Crisis Group Report, *Solving the Nuclear Rubik's Cube*, op. cit.

[54] The solution presented here for bridging the gap on the issue of enrichment was developed in cooperation with the Arms Control Association, an organisation dedicated to promoting public understanding of and support for effective arms control policies, with feedback from a group of prominent non-proliferation experts. Kelsey Davenport and Daryl G. Kimball, "A Win-Win Formula for Defining Iran's Uranium-Enrichment Capacity", Iran Nuclear Brief, Arms Control Association, August 2014.

[55] Fredrik Dahl, "Iran cuts sensitive nuclear stockpile, key plant delayed: IAEA", Reuters, 17 April 2014; "U.N. nuclear inquiry on Iran seen making slow headway", 22 August 2014.

this phase (2015 to 2017 or 2018) Iran should cap enrichment levels (immediately and for the entire duration of the agreement) at less than 5 per cent; consolidate all production of uranium enriched to less than 5 per cent at the Fuel Enrichment Plant at Natanz for the entire duration of the agreement; and halt all production-scale work at the Fordow enrichment plant and convert it to a fully monitored, research-only facility for testing enrichment with single centrifuges and/or preferably for other research.[56]

As for the initial enrichment ceiling, Crisis Group's original proposal suggested capping it at 6,400 SWU to satisfy the P5+1's declared goal of lengthening Iran's break-out time,[57] but the P5+1's margin of manoeuvre has further diminished in the past few months, rendering lowering that threshold to 4,500 to 5,400 SWU for the duration of Phase I a political imperative.[58] All additional IR-1, IR-2m and other more advanced models should be relocated to monitored storage within six months, preferably at Hall B in Natanz. Some single machines might be relocated to Fordow and Natanz for R&D purposes with a maximum SWU threshold of five.[59]

To further alleviate P5+1 concerns, Iran should reduce its stockpile of enriched material (more than 7.5 tonnes of less than 5 per cent enriched uranium hexafluoride and nearly 80kg of 20 per cent enriched uranium oxide) to near zero for the duration of the agreement.[60] For this purpose, it should cap its working stockpile of 5 per cent enriched uranium at less than 200kg and within six months oxidise any material above this threshold to make it less amenable to further enrichment (and refrain from building a reconversion line to convert uranium oxide powder back into urani-

[56] The head of Iran's Atomic Energy Organisation has even talked of using Fordow for research on cosmic rays. "Salehi: Iran's three proposals on Fordow for trust building", Islamic Republic News Agency, 9 July 2014.

[57] Crisis Group noted: "Despite the difficulty of using breakout capacity as a meaningful measure of Iran's nuclear program and the lack of consensus on Iran's practical needs, both concepts have wide backing among significant segments of mainstream expert opinion. In concert, they form the building blocks of what could be called a contingency enrichment program". See *Solving the Nuclear Rubik's Cube*, op. cit.

[58] Crisis Group interviews, U.S. and EU officials, Vienna, July 2014. With 4,500 to 5,400 SWU (corresponding to 5,000 to 6,000 IR-1s) and a working stockpile of less than 200kg of uranium hexafluoride gas, it would take between nine and ten months for Iran to produce enough weapons-grade enriched uranium for one nuclear weapon (approximately 25kg). Although this is still shorter than the notional breakout time the P5+1 would prefer (one that is measured "in years, not months"), it is nearly three times what it would currently take and longer than the six-month breakout time that most non-proliferation experts believe is the minimum requirement. Crisis Group interviews, Washington, London, April-August 2014; 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", Institute for Science and International Security (ISIS), 17 February 2014. Despite the difficulty of using breakout capacity as a meaningful measure, an ex-Obama administration official warned: "The concept can be taken too far, but so can dismissing it. A short notional breakout time could create a very unstable post-deal environment. With sanctions lifted and little perceived time for non-military options, if Iran cheats, the Israelis (and likely the U.S. military) will remain on a hair-trigger and any alleged Iranian violation could easily create a militarized crisis prone to inadvertent escalation. This is hardly the enduring peaceful outcome". Crisis Group email correspondence, Colin Kahl, former U.S. assistant secretary of defence and senior fellow, Centre for a New American Security, 16 August 2014.

[59] This corresponds to the estimated efficiency of Iran's IR-2m machines. Although the Iranians might find this restriction uncomfortable, it is politically difficult for the P5+1 to justify Iran's mastery of more powerful centrifuges before Tehran has taken other steps to build trust.

[60] "Status of Iran's Nuclear Programme in relation to the Joint Plan of Action", report by director general, GOV/INF/2014/16, 20 July 2014.

um hexafluoride gas); and either ship the oxidised stockpile to a third country (possibly Kazakhstan)[61] for temporary storage until such time as Iran develops a proven fuel fabrication capability for a new light water power plant; or convert it into fuel rods for the modified Arak reactor as a joint venture with the P5+1. The entire stockpile of oxidised 20 per cent enriched uranium should be converted to fuel rods for the Tehran Research Reactor during Phase I, in return for the P5+1's guarantee to supply its fuel beyond that.[62]

To ensure transparency, Iran should implement all elements of the IAEA's Additional Protocol, modified Subsidiary Arrangement Code 3.1,[63] and all the additional enhanced safeguards and transparency measures outlined in the JPOA signed with the P5+1; and grant the access necessary for resolving the PMD issues and starting the process that will eventually lead to drawing the broader conclusions by the end of Phase II. It should also manufacture, assemble and test centrifuges and their parts only in locations open to IAEA inspections; allow the agency to tag the produced centrifuges for accountancy purposes; and declare stocks of raw material to the IAEA.[64] In addition to sanctions relief that Crisis Group previously outlined,[65] the P5+1, acting through Russia, should provide Iran with five years-worth of backup fuel for Bushehr.

This proposal would be a win-win for both sides. Iran could contend, justifiably, that it accepted enrichment restrictions because it currently has limited need for fuel and wants to remove any doubt about its purely peaceful enrichment program; requires more time to improve its technological know-how and perfect a new generation of its centrifuges; retains enough enrichment capacity and back-up fuel to guard against potential P5+1 or Russian reneging on commitments; will obtain modern fuel manufacturing technology for a transformed and more efficient Arak reactor and/or become the first country that contributes to a future IAEA fuel bank; has set a new non-proliferation standard by accepting enhanced safeguards and taken a pioneering step toward a zone free of weapons of mass destruction in the Middle East; and achieves sanctions relief.

The P5+1 could argue reasonably that it is rolling back Iran's enrichment capacity of 22,000-24.000 SWU by nearly three-quarters; eliminating Iran's stockpile of enriched material and thus lengthening breakout time; capping the level of enrichment; blocking the plutonium path to a bomb; and securing the conversion of Fordow to an R&D facility.

These initial achievements would strengthen the ability of the Rouhani and Obama administrations to marshal enough domestic support for more permanent concessions before the end of this phase. These would include ratification of the Compre-

[61] Kazakhstan, Iran's Caspian neighbour, is likely to host the IAEA's first nuclear fuel bank. See Sam Nunn, "Open a Nuclear Fuel Bank", *The New York Times*, 11 July 2014; "Assurance of Supply for Nuclear Fuel", IAEA official website.

[62] An Iranian official explained: "We only have enough 20 per cent fuel to run the reactor for five to six years at full power. This is because the prototypes we initially produced were defective, and we can no longer recover that material". Crisis Group interview, New York, 9 May 2014.

[63] This would require Iran to inform the agency of any new nuclear facility when a decision to build is taken, as opposed to 180 days prior to introduction of nuclear material into it.

[64] These measures go even beyond the IAEA's Additional Protocol but are necessary to ensure that no centrifuges are destined toward for a clandestine facility.

[65] See Appendix A and Crisis Group Report, *Solving the Nuclear Rubik's Cube*, op. cit.

hensive Test Ban Treaty (CTBT)[66] by the Iranian parliament – and ideally also by China and the U.S. – and action by President Obama to acquire more authority from Congress to repeal or at least waive sanctions in an open-ended fashion, contingent on Iran fulfilling its part of the bargain.[67]

Phase II, in which Iran would be able to moderately increase both its enrichment capacity and R&D threshold, would be contingent on the IAEA's ability to resolve the PMD-related issues in Phase I. Initially, Crisis Group had suggested that this phase last five to seven years, however, as the IAEA would start the process that will lead to drawing of the broader conclusions in Phase I, it should be able to finish it by the end of a shorter Phase II.[68] Also, Iran has an incentive to conclude the second phase before the end of a putative Rouhani second term in 2021. Thus we have adjusted the timeframe for Phase II to between three to four years.

During this phase (starting in 2017 or 2018 and ending in 2021), Iran could resume testing its more advanced centrifuges as single or double machines at the Pilot Fuel Enrichment Plant at Natanz or Fordow with a SWU threshold of ten per machine; and gradually phase out its IR-1s and replace them with IR-2ms, such that by the end of this period its total installed and operational capacity returns to its current capacity of 9,400 SWU.[69]

Here again, Iran and the P5+1 would both meet their core interests. This arrangement would allow Iran to win agreement to its initial proposal to cap enrichment at 9,400 SWU by 2021; continue R&D, demonstrating progress by upgrading its centrifuges; and benefit from the continued roll-back of sanctions. By the end of President Rouhani's putative second term, Iran would be in a better position to eventually fuel its own reactors by efficient centrifuges and would have invaluable experience in fuel manufacturing for nuclear power plants.

The P5+1 could claim a success no less significant: transforming a formerly unconstrained Iranian enrichment program into one growing in a controlled and phased manner, based on objective milestones, as well as having pushed Iran to reveal its past nuclear activities. In the crucial realm of enrichment, Iran's program in 2021 would have the same operational SWU as in 2014 – which translates into a six-month notional breakout time. Although some in the U.S. Congress, Israel and Saudi Arabia might feel uncomfortable with such a threshold, most experts believe this is

[66] Iran was an original signatory of the CTBT in 1996 but has not ratified it. Three seismic stations have been installed in Iran but are disconnected from the CTBT network due to concerns of the Iranian military that they could be used to gather intelligence on Iran's missile tests. Crisis Group interview, Iranian official, Tehran, July 2014. The CTBT text is at www.ctbto.org/fileadmin/content/treaty/treatytext.tt.html.

[67] For more details, see Crisis Group Report, *Solving the Nuclear Rubik's Cube*, op. cit.

[68] "The IAEA has a lot of experience in this area, and we believe that in the case of Iran and given full cooperation, we should be able draw the broader conclusions in five to seven years". Crisis Group interview, Vienna, April 2014.

[69] With 9,400 SWU and a working stockpile of less than 200kg of uranium hexafluoride gas, it would still take more than six months for Iran to produce enough weapons-grade enriched uranium for one nuclear weapon. Importantly, Iran has had this theoretical breakout capacity since 2009, and thus a return to it after significant cooperation with the IAEA and implementation of enhanced safeguards in the first phase should be tolerable to the P5+1. A similar proposal to phase out the inefficient IR-1 machines and substitute them with IR-2ms were put forth by a group of experts at Princeton University. See Alexander Glaser, Zia Mian, Hossein Mousavian and Frank von Hippel, "Agreeing on Limits for Iran's Centrifuge Program: A Two-Stage Strategy", *Arms Control Today*, July 2014; for a critical view, see "Comments on the Princeton Group's Proposal on Iran", ISIS, 12 June 2014.

sufficiently long to allow detection and/or deterrence of any breakout or sneak-out effort. Ultimately, such a realistic and achievable timeframe should not be compared with a longer but unachievable one, but with no deal at all, which would be tantamount to an unconstrained enrichment program.

Phase III, in which restrictions on Iran's R&D would be removed, is contingent on the IAEA drawing "broader conclusions" that all nuclear materials and activities in Iran are accounted for; it should last between five and ten years, depending on the completion and commissioning of the nuclear power plant that Iran and the P5+1 will jointly construct. Crisis Group's initial proposal was based on a gradual increase in Iran's enrichment capacity during this phase, but as explained above, sharp political opposition in some P5+1 capitals has complicated this option.

According to the revised proposal, during this phase (starting in 2021 and ending sometime between 2026 and 2031), Iran still could transition its centrifuge fleet to more advanced models. However, it should maintain the 9,400 installed SWU cap by decommissioning the corresponding number of older generation models, until the end of this phase of the agreement; continue R&D and test advanced centrifuges in single cascades (164 or 174 interconnected machines) at the Pilot Fuel Enrichment Plant at Natanz; and produce but not install more advanced centrifuges with a theoretical combined capacity of no more than 9,000 SWU per year (storing rotors separately as an extra precaution).

This proposal would enable Iran to ramp up its R&D and centrifuge production to prepare for fuelling its future reactors and to see the remaining sanctions removed. The P5+1 would have only agreed to a managed increase in Iran's enrichment capacity, and this only after the IAEA had given Iran a clean slate; the timeline of Iran's enrichment program also would have been extended, since by at shortest 2026 and perhaps 2031, Iran would have approximately the same breakout capacity it had in 2014, only under more robust monitoring and after resolution of all past and present issues with the IAEA.

## V. Conclusion

For hardliners, any realistically achievable nuclear deal, no matter its specifics, is likely to be unacceptable. In the West, some will oppose Iran increasing its enrichment know-how and capabilities over time, even though it likely would do so also in the absence of a deal – and in an unimpeded and more perilous manner.[70] For those in Iran who want to pursue an unconstrained nuclear program, the phased and transparent nature of enrichment capacity will grate – though even were the program not to face such limitations, Iran likely would still lack the technology necessary to safely manufacture fuel for power reactors, while continuing to suffer from sanctions. While these hardline views should not dictate the terms of a wise agreement, sceptics' leverage will not disappear with the signing of a deal: Congress could erase the U.S. president's authority to waive sanctions;[71] domestic opposition in Tehran could scuttle an accord as it did with a limited measure in 2009.[72]

[70] The popular mantra for this group is "no deal is better than a bad deal". James F. Jeffrey, "No Iran Deal Is Better Than Any (Feasible) Deal", The Washington Institute for Near East Policy, 13 August 2014.

[71] In July, three bills were introduced in the U.S. Senate to curtail the president's authority to waive sanctions: the "Iran Nuclear Negotiations Act of 2014" would require any deal to be presented to

In the absence of an agreed political framework, extending the talks once again, beyond the 24 November deadline, appears untenable. If there is not an agreement by then, influential U.S. representatives have declared they will push for new sanctions, which are likely to achieve little more than Iran withdrawing its negotiators.[73] A breakdown could also complicate diplomatic engagement on any other issue where the U.S. and Iran might ultimately wish to coordinate, such as Iraq with regard particularly to the Islamic State.[74] Already, Iranian officials have suggested that deadlock in the nuclear talks can permeate to other areas.[75]

Avoiding this scenario begins with a deal on enrichment, which has emerged as the key stumbling block in the nuclear talks. Centrifuges, even when discussed in dry scientific language, remain a deeply political aspect of that issue. The parties would be better served by directly addressing their domestic constraints and core interests, rather than hiding behind technical-sounding but inherently plastic and manipulable measures such as break-out time or practical needs, as they have done since negotiations began on a comprehensive agreement. Were parties to aim instead at a narrow, realistic agreement, they likely could find enough common ground to reach a deal they could sell at home.

Such an agreement would be imperfect. Iran would retain a breakout or sneak-out capability; sanctions relief would be slower than Iranian citizens might expect and not as irreversible as many would wish; implementation of a complex agreement over a long period of time comes with attendant risk, and fulfilment of commitments could be affected by vagaries of electoral politics.

But the consequences of failure are even less attractive. A return to the status quo ante, with each side ratcheting up its leverage in the hope of forcing the other to capitulate, could possibly lead to a worst case in which Iran attains a nuclear bomb even as sanctions cause it grievous harm. At least as dangerously, Iran could face a military strike that might set back its nuclear program temporarily, but at the cost of spurring it toward achieving the ultimate deterrent while retaliating in a variety of asymmetric

Congress for approval and Congress to reimpose sanctions in case of no agreement; "S. 2667: Iranian Sanctions Relief Certification Act of 2014" would ban the president from renewing his waivers unless he certifies that Iran has stopped supporting terrorism and violating human rights; and "S. 2672: Sanction Iran, Secure America", would eliminate the president's authority to suspend sanctions. "342 House Members Join Chairman Royce, Ranking Member Engel in Calling on President Obama to Consult Congress on Iran Nuclear Negotiations", press release, House Committee on Foreign Affairs, 10 July 2014.

[72] For more information, see Crisis Group Report, *In Heavy Waters*, op. cit.

[73] "Senators Seek Congressional Review of Any Nuclear Deal with Iran", Iran Primer, U.S. Institute of Peace, 24 July 2014. White House leverage with Congress would further diminish after the November mid-term elections if the Democrats lose their majority in the Senate. Iran's Supreme Leader has consistently expressed his pessimism about the utility of nuclear negotiations. See, for example, Ramin Mostaghim, "Iran's supreme leader Khamenei: Nuclear talks with U.S. are 'useless'", *The Los Angeles Times*, 13 August 2014.

[74] In June 2014, Iranian and U.S. officials informed each other of their view of Iraq on the sidelines of nuclear talks in Vienna, though they did not plan cooperation. Crisis Group interviews, U.S. and Iranian officials, Vienna, July 2014. Nour Malas and Joe Parkinson, "Iraq Crisis: Effort to Aid Kurdish Forces Puts Iran, U.S. on Same Side", *The Wall Street Journal*, 15 August 2014.

[75] A former Iranian official noted: "In the aftermath of the extension, we have been told not to even engage in track II discussion on regional developments with our Americans counterparts". Crisis Group interview, August 2014. Also see "لاریجانی: 5+1 بداند بن بست در مذاکرات شاید به حوزه های دیگر نیز تسری یابد" ["Larijani: The P5+1 should know that deadlock in the nuclear talks can spread to other fields"], Fars News Agency, 12 August 2014.

or non-conventional ways, with unpredictable but certainly tragic and at least regional ramifications.

The moment of truth for Iran and the P5+1 has arrived. Almost all agree that there is now a rare confluence of political calendars and leaders who want to forge an agreement. Should this moment be lost, it is unlikely to soon reappear. The parties could allow the perfect to be the enemy of the good and watch the best opportunity to resolve this crisis devolve into a mutually harmful spiral of escalation with no end in sight.[76] Or they could choose wisely.

**Istanbul/Tehran/Washington/Brussels, 27 August 2014**

[76] In a sign of what might come, a prospective front runner in the 2016 U.S. presidential election expressed her belief that Iran should have "so little enrichment or no enrichment at least for a long period of time". See Amy Harder, "[Hillary] Clinton: Any Enrichment by Iran Could Trigger Arms Race", *Wall Street Journal*, 27 July 2014. Iran and Russia – both under Western sanctions – have neared conclusion of an oil-for-goods agreement that could weaken both P5+1 unity and the sanctions regime. See "U.S. warns about possible oil-for-goods deal between Iran, Russia", *Tehran Times*, 8 August 2014.

## Appendix A: Updated Proposal for a Comprehensive Joint Plan of Action between Iran and the P5+1

*Upon signing the Comprehensive Joint Plan of Action*

**To the government of Iran:**

1. Reaffirm that in accordance with the Supreme Leader's *fatwa*, it will never seek or develop nuclear weapons and will apply facility-specific safeguards, based on Information Circular 66 (INFCIR/66) of the International Atomic Energy Agency (IAEA), to all its current and future enrichment and nuclear fuel fabrication facilities.[77]
2. Declare a policy of maintaining an Open Fuel Cycle; ie, refrain from reprocessing spent fuel.[78]
3. Accept to maintain a near "zero-stockpile" of enriched uranium, by converting any stockpile of enriched material greater than 200kg in the form of uranium hexafluoride or uranium oxide powder to nuclear fuel rods in a predetermined short period of time; and pledge not to build any reconversion lines.

**To the P5+1 (China, France, Russia, the UK, U.S. plus Germany):**

4. Endorse the comprehensive agreement via a new UN Security Council resolution within 30 days from adopting the Comprehensive Joint Plan of Action.[79]
5. Provide legally-binding guarantees to supply fuel for Iran's nuclear power and research reactors.[80]
6. Refrain from imposing any additional nuclear-related sanctions.

[77] Article X.1 of the NPT allows a state to cite supreme national interests and depart the treaty on three-months' notice. Because Comprehensive Safeguards Agreements under IAEA INFCIR/153 are linked to the NPT, withdrawal would automatically stop their application. As long as Iran remains a party to the NPT, facility specific safeguards as defined in INFCIR/66 will be subsumed by INFCIRC/153. See Pierre Goldschmidt, "The Urgent Need to Strengthen the Nuclear Non-Proliferation Regime", Carnegie Endowment for International Peace, January 2006.

[78] This would alleviate concerns over a possible plutonium path to a bomb. Iranian nuclear negotiators offered such a commitment to their European counterparts twice in 2005. "Proposal by Iran in the meeting of steering committee", Paris, 23 March 2005; London, 29 April 2005, available at www.armscontrol.org/pdf/20050323_Iran_Proposal_Steering_Cmte.pdf.

[79] As Crisis Group previously recommended, "The Security Council should concurrently delist Iranian official organisations involved in the nuclear program (eg, the Atomic Energy Organisation of Iran) as well as the blacklisted Iranian banks. The IAEA's determination that Iran has no undeclared nuclear material and activities and those that it has declared are geared exclusively toward civilian use ought to satisfy the Council's requirement of establishing "international confidence in the exclusively peaceful nature of Iran's nuclear program" – even as Iran continues to enrich. Thus, the third phase of the final step (starting in 2021) should begin with the Security Council adopting a resolution lifting the remaining UN sanctions, with the exception of measures on the procurement and export by Tehran of dual-use technologies, which would be lifted at the end of the third phase, after Iran has built sufficient trust and honed its export controls for sensitive dual-use technologies.

[80] One option would be to give Iran access to the IAEA's reserve of low enriched uranium.

***Phase I**: For a period of two to three years following the signing of a comprehensive agreement (2015 to 2017 or 2018)*

**To the government of Iran:**

7. Limit its uranium enrichment capacity to a contingency program capped at 5,400 to 4,500 SWU in one facility (Natanz). Relocate any excess centrifuges from Fordow and Natanz's Hall A to Natanz's Hall B for storage under the IAEA's seal and video surveillance.
8. Cap at less than 200kg the working stockpile of uranium hexafluoride gas enriched to less than 5 percent for the duration of the agreement; oxidise the stockpile above this cap within six months; and either remove it to a third country (possibly Kazakhstan) for temporary storage until such time as Iran develops a proven fuel fabrication capability for a new research or power reactor, or convert it into fuel rods for the modified Arak reactor as a joint venture with the P5+1.
9. Convert Fordow into a research and development facility at which only individual machines could be tested. The net enrichment output should be zero, as products and tails are recombined at the end of the process. Other research also could take place at the facility. More advanced machines could be tested as single machines in Natanz and Fordow, with the IAEA allowed to evaluate their enrichment capacity. Also, limit enrichment capacity per centrifuge in the R&D sector at all facilities to 5 SWU/year.
10. Modify the Arak heavy-water reactor, in cooperation with the P5+1, so that it operates, at a lower power level, on 5 per cent enriched uranium;[81] allow either in-house inspectors or remote surveillance to monitor the facility upon introduction of nuclear material; agree to ship out its spent fuel as soon as it can be transported safely; and halt the production of natural uranium oxide fuel.
11. Implement all elements of the IAEA's Additional Protocol, modified Subsidiary Arrangement Code 3.1 and all the additional enhanced safeguards and transparency measures outlined in the 24 November 2013 Joint Plan of Action signed with the P5+1.
12. Manufacture, assemble and test centrifuges and their parts only in locations open to IAEA inspections; allow the agency to tag the produced centrifuges for accountancy purposes; and declare the stocks of raw material to the IAEA.
13. Limit mining, milling and conversion of uranium to levels commensurate with enrichment activities, and allow the IAEA to conduct regular material accountancy measurements at the uranium conversion plant in Isfahan.
14. Resolve satisfactorily with the IAEA all past and present issues related to the "possible military dimensions" of the nuclear program and take all necessary corrective measures.
15. Ratify the 1994 IAEA Convention on Nuclear Safety, consistent with the respective prerogatives of the executive and legislative branches of the Iranian government.

[81] Ali Ahmad, Frank von Hippel, Alexander Glaser, and Zia Mian, "A solution for Iran's Arak reactor", *Arms Control Today*, April 2014.

**To the P5+1:**

16. State that they reject categorically any armed attack or threat against nuclear facilities devoted exclusively to peaceful purposes and deem any such coercive action a violation of the principles of international law and specifically of the UN Charter and IAEA Statute.[82]
17. Extend and expand the suspension of all sanctions outlined in the Joint Plan of Action;[83] and delist Iranian banks and nuclear organisations blacklisted by the UN Security Council resolutions.
18. Release half of Iran's frozen oil proceeds in monthly instalments, allow repatriation of future oil revenue and release Iran's impounded assets under U.S. Executive Order 13599.[84]
19. Resume gradually European imports of Iranian petroleum and lift the EU transaction threshold on permissible trade with Iran.[85]
20. Lift the ban on providing financial messaging services to Iranian banks and permit trading in Iranian currency (the Rial); rescind designation of Iran as a jurisdiction of primary money laundering concern; permit U-turn transactions in U.S. dollars;[86] and further facilitate humanitarian trade with Iran.
21. Cooperate with Iran to modify the Arak reactor, provide it fuel manufacturing technology or fuel upon completion, commit to ship out its spent fuel for storage and facilitate Iran's access to medical isotopes at market prices.
22. Confirm that any report by the IAEA regarding Iran's past nuclear activities will be reported to the agency's Board of Governors and the Security Council for information purposes only.

[82] See "Prohibition of all armed attacks against nuclear installations devoted to peaceful purposes whether under construction or in operation", IAEA, GC (XXXIV)/RES/533, 21 September 1990; and GC (53)/DEC/13, 18 September 2009.

[83] These include halting pressure on Iran's existing oil clients; and permitting trade in petrochemicals and precious metals and related to the automotive industry and aviation safety.

[84] Iran is estimated to have more than $100 billion of assets frozen in accounts abroad. Crisis Group interviews, Tehran, March 2014. This measure requires use of the waiver provisions of Section 1245 of the 2012 National Defense Authorization Act or Section 104(c) of the Comprehensive Iran Sanctions, Accountability, and Divestment Act. Delisting some Iranian banks from the list of sanctioned entities and coordination with European and Asian banks for facilitating the transfer of these assets is likely to be necessary. Allowing repatriation of revenue from Iranian crude oil sales requires waiver under Section 504 of the Iran Threat Reduction and Syria Human Rights Act. Releasing the impounded assets of the Iranian government would require rescinding Executive Order 13599. For more, see Crisis Group Report, *Spider Web*, op. cit.

[85] The EU mandates notification for transfers over €10,000 and authorisation for those in excess of €40,000 in trade categories not prohibited by any sanctions legislation. The JPOA increased both thresholds ten-fold. Rescinding the restriction requires amending EU Council Regulation 267/2012.

[86] Implementing this measure for the EU would require amending Council Regulation 267/2012, concerning restrictive measures against Iran, 23 March 2012. For the U.S., although Section 220 of the Iran Threat Reduction and Syria Human Rights Act requires reports on electronic payments systems such as the Society of Worldwide Interbank Financial Telecommunications (SWIFT), it does not mandate sanctions against such systems. Nevertheless, the necessary reassurances should be provided by the Treasury Department. To allow Iran to trade in its national currency, the Rial, the president should issue a waiver under Executive Order 13645. The U.S. Treasury Department can unilaterally withdraw the designation of money laundering jurisdiction under the USA Patriot Act (31 U.S.C. 5318A) and revoke the ban on conducting dollar transactions with Iran.

23. Collaborate with Iran on issues of safety for nuclear power plants and research reactors, including assessment of risks, promotion of safety-oriented solutions and research on nuclear applications in medicine and agriculture.
24. Provide Iran, through Russia, with a five-year stockpile of fuel for the Bushehr reactor as a back-up in the event of disruption of the contractual supply; and negotiate and conclude contracts for additional light-water research reactors and/or nuclear power plants; and pledge to provide the fuel for these reactors and to repatriate their spent fuel during their entire lifespans.

***Phase II**: Between successful completion of Phase I and 2021 (2017 or 2018 to 2021)*

**To the government of Iran:**

25. Ratify the 1996 Comprehensive Nuclear Test-Ban Treaty (CTBT) in accordance with the Supreme Leader's *fatwa* against nuclear weapons.[87]
26. Increase its uranium enrichment capacity to a contingency program capped at 9,400 SWU; gradually transition IR-1s to IR-2ms and dismantle the equivalent IR-1 machines' SWU capacity to remain below the threshold; and continue testing advanced centrifuges as single or double machines at the Pilot Fuel Enrichment Plant at Natanz with a SWU threshold of 10 per machine.
27. Limit mining, milling, and conversion of uranium to enrichment needs.
28. Sign the 2002 Hague Code of Conduct (HCOC) against Ballistic Missile Proliferation.[88]
29. Adhere to the Nuclear Suppliers Group guidelines, and collaborate with the P5+1 to establish export control programs.[89]

**To the P5+1:**

30. Obtain the authority for lifting, suspending with open-ended waivers or otherwise relaxing nuclear related sanctions based on an agreed schedule, contingent in all cases on Iran's compliance with its commitments.[90]

[87] Ideally, other P5+1 members who have not already done so, namely the U.S. and China, should also vow to ratify the CTBT.

[88] By signing the HCOC, Iran would join the treaty's other 137 signatories. HCOC provisions include commitments to provide pre-launch notifications of ballistic missile and space-launch vehicles and submission of an annual declaration of the country's related policies. The text of the treaty is at www.hcoc.at/documents/Hague-Code-of-Conduct-A_57_724-English.pdf.

[89] These measures are critical for Iran, as a state with significant nuclear know-how and infrastructure, to demonstrate its commitment to prevent proliferation of sensitive dual use technologies. P5+1 nuclear cooperation should be conditioned on Iran adhering to these standards. A complete list of NSG guidelines is at www.nuclearsuppliersgroup.org/Leng/02-guide.htm.

[90] When it comes to U.S. sanctions, given Congressional resistance to lifting and the burden of continuously renewing short-term waivers – themselves subject to Congressional action – open-ended waivers could be a practical solution. In like manner, they would positively impact the risk assessment of companies reluctant to re-engage Iran because of uncertainty associated with short-term measures and reassure Iran of the West's intention to fulfil its commitments. A list of nuclear-related sanctions is in Appendix B of Crisis Group Report, *Solving the Nuclear Rubik's Cube* Report, op. cit.

31. Release incrementally the second half of Iran's frozen oil proceeds and relax sanctions on investment and provision of goods and services to Iran's petro-chemical sector.[91]
32. Provide firm guarantees for Iran's access to advanced civilian nuclear research and power reactor technology in conformity with Articles I, II and IV of the NPT; and give Iran access to the IAEA's reserve of low-enriched uranium.
33. Transfer cutting-edge technologies related to renewable energies to Iran.[92]

***Phase III**: For a period of five to ten years after successful completion of Phase II (2021 to between 2026 and 2031)*

**To the government of Iran:**

34. Ratify the IAEA's Additional Protocol.
35. Stop implementing transparency measures beyond its Comprehensive Safeguards Agreement, the Additional Protocol and modified Subsidiary Arrangement Code 3.1 gradually, upon the IAEA's drawing "broader conclusions" that there are no undeclared nuclear activities and materials in Iran.
36. Transition the remaining IR1s to IR-2ms, but maintain the 9,400 installed SWU cap until the end of this phase of the agreement; and continue R&D and test advanced centrifuges in single cascades (~164-174 machines) at the Pilot Fuel Enrichment Plant at Natanz;
37. Produce but not install more advanced centrifuges with a theoretical combined capacity of no more than 9,000 SWU machines per year and rotors stored separately.

**To the P5+1:**

38. Upon the IAEA drawing its "broader conclusions", lift the remaining UN Security Council sanctions, with the exception of restrictions on procurement and export of dual-use material and technologies that will be lifted at the end of this phase.
39. Lift sanctions incrementally on investment in and provision of goods/services to Iran's natural gas sector,[93] followed by similar measures related to Iran's oil sector.[94]

[91] Section 201 of the Iran Threat Reduction and Syria Human Rights Act modified Section 5(a) of the Iran Sanctions Act, banning provision of more than $250,000 (or $1 million in a one-year period) worth of goods or services for maintaining or expanding Iran's petrochemical industry. The U.S. president can waive these sanctions for a renewable one-year period. To allow export of Iran's petrochemical products, the U.S. president would have to waive Executive Order 13622, as well as related provisions (in Sections 1244, 1246 and 1247) under the Iran Freedom and Counter-Proliferation Act of 2012 for a renewable period of 180 days. The EU Council would need to modify provisions under Council Decision 2012/35/CFSP and the related Council Regulations.

[92] Such an incentive would simultaneously address Iran's energy demands and its claims that the West denies it access to modern technology. It would also set a useful precedent for other nuclear energy-aspiring states.

[93] Under the Iran Sanctions Act, as amended by the Comprehensive Iran Sanctions, Accountability, and Divestment Act of 2010, investment of $20 million or more in Iran's energy sector is banned. The president could waive these measures for a year. Related measures in The Iran Freedom and Counter-Proliferation Act of 2013 should also be suspended. A renewable 180-day waiver based on U.S. national security considerations exists, but a more sustainable solution, as mentioned above, would be to obtain an open-ended Congressional waiver.

40. The EU and other willing partners will develop a strategic energy partnership through a Trade and Cooperation Agreement and declare Iran a long-term supplier of fossil energy.[95]

[94] Sanctions on investment in Iran's oil sector could be relaxed after their natural gas equivalents, in order to reassure the P5+1 that it retains enough leverage to guard against any potential problem until the final stages of the last step.

[95] Similar measures were proposed to Iran by its European interlocutors in 2005. See "Communication dated 8 August 2005 received from the Resident Representatives of France, Germany and the United Kingdom to the Agency", IAEA, INFCIRC/651, 8 August 2005.

## Appendix A: About the International Crisis Group

The International Crisis Group (Crisis Group) is an independent, non-profit, non-governmental organisation, with some 125 staff members on five continents, working through field-based analysis and high-level advocacy to prevent and resolve deadly conflict.

Crisis Group's approach is grounded in field research. Teams of political analysts are located within or close by countries at risk of outbreak, escalation or recurrence of violent conflict. Based on information and assessments from the field, it produces analytical reports containing practical recommendations targeted at key international decision-takers. Crisis Group also publishes *CrisisWatch*, a twelve-page monthly bulletin, providing a succinct regular update on the state of play in all the most significant situations of conflict or potential conflict around the world.

Crisis Group's reports and briefing papers are distributed widely by email and made available simultaneously on the website, www.crisisgroup.org. Crisis Group works closely with governments and those who influence them, including the media, to highlight its crisis analyses and to generate support for its policy prescriptions.

The Crisis Group Board of Trustees – which includes prominent figures from the fields of politics, diplomacy, business and the media – is directly involved in helping to bring the reports and recommendations to the attention of senior policy-makers around the world. Crisis Group is co-chaired by former UN Deputy Secretary-General and Administrator of the United Nations Development Programme (UNDP), Lord Mark Malloch-Brown, and Dean of Paris School of International Affairs (Sciences Po), Ghassan Salamé. Mr Salamé also serves as the organisation's Acting President from 1 July-31 August 2014.

Crisis Group's incoming President & CEO, Jean-Marie Guéhenno, assumes his role from 1 September. Mr. Guéhenno served as the United Nations Under-Secretary-General for Peacekeeping Operations from 2000-2008, and in 2012, as Deputy Joint Special Envoy of the United Nations and the League of Arab States on Syria. He left his post as Deputy Joint Special Envoy to chair the commission that prepared the white paper on French defence and national security in 2013. He is currently a professor and Director of the Center for International Conflict Resolution at Columbia University.

Crisis Group's international headquarters is in Brussels, and the organisation has offices or representation in 26 locations: Baghdad/Suleimaniya, Bangkok, Beijing, Beirut, Bishkek, Bogotá, Cairo, Dakar, Dubai, Gaza City, Islamabad, Istanbul, Jerusalem, Johannesburg, Kabul, London, Mexico City, Moscow, Nairobi, New York, Seoul, Toronto, Tripoli, Tunis, Washington DC. Crisis Group currently covers some 70 areas of actual or potential conflict across four continents. In Africa, this includes, Burkina Faso, Burundi, Cameroon, Central African Republic, Chad, Côte d'Ivoire, Democratic Republic of the Congo, Eritrea, Ethiopia, Guinea, Guinea-Bissau, Kenya, Liberia, Madagascar, Nigeria, Sierra Leone, Somalia, South Sudan, Sudan, Uganda and Zimbabwe; in Asia, Afghanistan, Indonesia, Kashmir, Kazakhstan, Kyrgyzstan, Malaysia, Myanmar, Nepal, North Korea, Pakistan, Philippines, Sri Lanka, Taiwan Strait, Tajikistan, Thailand, Timor-Leste, Turkmenistan and Uzbekistan; in Europe, Armenia, Azerbaijan, Bosnia and Herzegovina, Cyprus, Georgia, Kosovo, Macedonia, North Caucasus, Serbia and Turkey; in the Middle East and North Africa, Algeria, Bahrain, Egypt, Iran, Iraq, Israel-Palestine, Jordan, Lebanon, Libya, Morocco, Syria, Tunisia, Western Sahara and Yemen; and in Latin America and the Caribbean, Colombia, Guatemala, Mexico and Venezuela.

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**August 2014**

## Appendix B: : Reports and Briefings on the Middle East and North Africa since 2011

### Israel/Palestine

*Gaza: The Next Israeli-Palestinian War?,* Middle East Briefing N°30, 24 March 2011 (also available in Hebrew and Arabic).

*Radical Islam in Gaza,* Middle East/North Africa Report N°104, 29 March 2011 (also available in Arabic and Hebrew).

*Palestinian Reconciliation: Plus Ça Change …,* Middle East Report N°110, 20 July 2011 (also available in Arabic and Hebrew).

*Curb Your Enthusiasm: Israel and Palestine after the UN*, Middle East Report N°112, 12 September 2011 (also available in Arabic and Hebrew).

*Back to Basics: Israel's Arab Minority and the Israeli-Palestinian Conflict*, Middle East Report N°119, 14 March 2012 (also available in Arabic).

*The Emperor Has No Clothes: Palestinians and the End of the Peace Process*, Middle East Report N°122, 7 May 2012 (also available in Arabic).

*Light at the End of their Tunnels? Hamas & the Arab Uprisings*, Middle East Report N°129, 14 August 2012 (also available in Arabic).

*Israel and Hamas: Fire and Ceasefire in a New Middle East*, Middle East Report N°133, 22 November 2012 (also available in Arabic).

*Extreme Makeover? (I): Israel's Politics of Land and Faith in East Jerusalem*, Middle East Report N°134, 20 December 2012 (also available in Arabic and Hebrew).

*Extreme Makeover? (II): The Withering of Arab Jerusalem*, Middle East Report N°135, 20 December 2012 (also available in Arabic and Hebrew).

*Buying Time? Money, Guns and Politics in the West Bank*, Middle East Report N°142, 29 May 2013 (also available in Arabic).

*Leap of Faith: Israel's National Religious and the Israeli-Palestinian Conflict*, Middle East Report N°147, 21 November 2013 (also available in Arabic and Hebrew).

*The Next Round in Gaza,* Middle East Report N°149, 25 March 2014 (also available in Arabic).

*Gaza and Israel: New Obstacles, New Solutions,* Middle East Briefing N°39, 14 July 2014.

### Egypt/Syria/Lebanon

*Popular Protest in North Africa and the Middle East (I): Egypt Victorious?*, Middle East/North Africa Report N°101, 24 February 2011 (also available in Arabic).

*Uncharted Waters: Thinking Through Syria's Dynamics*, Middle East Briefing N°31, 24 November 2011 (also available in Arabic).

*Popular Protest in North Africa and the Middle East (VI): The Syrian People's Slow-motion Revolution*, Middle East Report N°108, 6 July 2011 (also available in Arabic).

*Popular Protest in North Africa and the Middle East (VII): The Syrian Regime's Slow-motion Suicide*, Middle East Report N°109, 13 July 2011 (also available in Arabic).

*Lebanon's Palestinian Dilemma: The Struggle Over Nahr al-Bared*, Middle East Report N°117, 1 March 2012 (also available in Arabic).

*Now or Never: A Negotiated Transition for Syria*, Middle East Briefing N°32, 5 March 2012 (also available in Arabic and Russian).

*Syria's Phase of Radicalisation*, Middle East Briefing N°33, 10 April 2012 (also available in Arabic).

*Lost in Transition: The World According to Egypt's SCAF*, Middle East/North Africa Report N°121, 24 April 2012 (also available in Arabic).

*Syria's Mutating Conflict*, Middle East Report N°128, 1 August 2012 (also available in Arabic).

*Tentative Jihad: Syria's Fundamentalist Opposition,* Middle East Report N°131, 12 October 2012 (also available in Arabic).

*A Precarious Balancing Act: Lebanon and the Syrian conflict,* Middle East Report N°132, 22 November 2012 (also available in Arabic).

*Syria's Kurds: A Struggle Within a Struggle*, Middle East Report N°136, 22 January 2013 (also available in Arabic and Kurdish).

*Too Close For Comfort: Syrians in Lebanon*, Middle East Report N°141, 13 May 2013 (also available in Arabic).

*Syria's Metastasising Conflicts,* Middle East Report N°143, 27 June 2013 (also available in Arabic).

*Marching in Circles: Egypt's Dangerous Second Transition*, Middle East/North Africa Briefing N°35, 7 August 2013 (also available in Arabic).

*Anything But Politics: The State of Syria's Political Opposition*, Middle East Report N°146, 17 October 2013 (also available in Arabic).

*Flight of Icarus? The PYD's Precarious Rise in Syria,* Middle East Report N°151, 8 May 2014 (also available in Arabic).

*Lebanon's Hizbollah Turns Eastward to Syria*, Middle East Report N°153, 27 May 2014 (also available in Arabic).

### North Africa

*Popular Protests in North Africa and the Middle East (IV): Tunisia's Way,* Middle East/North Africa Report N°106, 28 April 2011 (also available in French).

*Popular Protest in North Africa and the Middle East (V): Making Sense of Libya,* Middle East/North Africa Report N°107, 6 June 2011 (also available in Arabic).
*Holding Libya Together: Security Challenges after Qadhafi*, Middle East/North Africa Report N°115, 14 December 2011 (also available in Arabic).
*Tunisia: Combatting Impunity, Restoring Security*, Middle East/North Africa Report N°123, 9 May 2012 (only available in French).
*Tunisia: Confronting Social and Economic Challenges*, Middle East/North Africa Report N°124, 6 June 2012 (only available in French).
*Divided We Stand: Libya's Enduring Conflicts*, Middle East/North Africa Report N°130, 14 September 2012 (also available in Arabic).
*Tunisia: Violence and the Salafi Challenge*, Middle East/North Africa Report N°137, 13 February 2013 (also available in French and Arabic).
*Trial by Error: Justice in Post-Qadhafi Libya,* Middle East/North Africa Report N°140, 17 April 2013 (also available in Arabic).
*Tunisia's Borders: Jihadism and Contraband*, Middle East/North Africa Report N°148, 28 November 2013 (also available in Arabic and French).
*The Tunisian Exception: Success and Limits of Consensus*, Middle East/North Africa Briefing N°37, 5 June 2014 (only available in French and Arabic).

**Iraq/Iran/Gulf**

*Popular Protest in North Africa and the Middle East (II): Yemen between Reform and Revolution*, Middle East Report N°102, 10 March 2011(also available in Arabic).
*Iraq and the Kurds: Confronting Withdrawal Fears,* Middle East Report N°103, 28 March 2011 (also available in Arabic and Kurdish).
*Popular Protests in North Africa and the Middle East (III): The Bahrain Revolt,* Middle East Report N°105, 4 April 2011(also available in Arabic).
*Popular Protest in North Africa and the Middle East (VIII): Bahrain's Rocky Road to Reform,* Middle East Report N°111, 28 July 2011 (also available in Arabic).
*Failing Oversight: Iraq's Unchecked Government*, Middle East Report N°113, 26 September 2011 (also available in Arabic).
*Breaking Point? Yemen's Southern Question*, Middle East Report N°114, 20 October 2011 (also available in Arabic).
*In Heavy Waters: Iran's Nuclear Program, the Risk of War and Lessons from Turkey*, Middle East Report N°116, 23 February 2012 (also available in Arabic and Turkish).
*Popular Protest in North Africa and the Middle East (IX): Dallying with Reform in a Divided Jordan*, Middle East Report N°118, 12 March 2012 (also available in Arabic).
*Iraq and the Kurds: The High-Stakes Hydrocarbons Gambit,* Middle East Report N°120, 19 April 2012 (also available in Arabic).
*The P5+1, Iran and the Perils of Nuclear Brinkmanship*, Middle East Briefing N°34, 15 June 2012 (also available in Arabic).
*Yemen: Enduring Conflicts, Threatened Transition*, Middle East Report N°125, 3 July 2012 (also available in Arabic).
*Déjà Vu All Over Again: Iraq's Escalating Political Crisis*, Middle East Report N°126, 30 July 2012 (also available in Arabic).
*Iraq's Secular Opposition: The Rise and Decline of Al-Iraqiya,* Middle East Report N°127, 31 July 2012 (also available in Arabic).
*Spider Web: The Making and Unmaking of Iran Sanctions,* Middle East Report N°138, 25 February 2013 (also available in Farsi).
*Yemen's Military-Security Reform: Seeds of New Conflict?*, Middle East Report N°139, 4 April 2013 (also available in Arabic).
*Great Expectations: Iran's New President and the Nuclear Talks*, Middle East Briefing N°36, 13 August 2013 (also available in Farsi).
*Make or Break: Iraq's Sunnis and the State*, Middle East Report N°144, 14 August 2013 (also available in Arabic).
*Yemen's Southern Question: Avoiding a Breakdown*, Middle East Report N°145, 25 September 2013 (also available in Arabic).
*Iraq: Falluja's Faustian Bargain*, Middle East Report N°150, 28 April 2014 (also available in Arabic).
*Iran and the P5+1: Solving the Nuclear Rubik's Cube*, Middle East Report N°152, 9 May 2014 (also available in Farsi).
*The Huthis: From Saada to Sanaa*, Middle East Report N°154, 10 June 2014 (also available in Arabic).
*Iraq's Jihadi Jack-in-the-Box*, Middle East Briefing N°38, 20 June 2014.

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