



The Secretary of Energy
Washington, DC 20585

August 20, 2015

The Honorable Anna G. Eshoo
U. S. House of Representatives
Washington, DC 20515

Dear Representative Eshoo:

National leaders and experts in numerous fields – scientific, diplomatic, arms control, military – are increasingly advocating support for the Joint Comprehensive Plan of Action (JCPOA) negotiated between the P5+1 and Iran. They have concluded that support for the JCPOA is in our national interest after carefully evaluating both the specifics of the JCPOA's effectiveness in stopping nuclear weapons development by Iran and the viability of alternative approaches.

In February, I joined Secretary Kerry at the negotiating table as lead technical negotiator for the United States. To help clarify the technical features and safeguards of the JCPOA agreed to and supported by the P5+1, and place these in the context of the choice between approval or disapproval of implementation of the JCPOA that will be before Congress next month, I have compiled and attached to this note a streamlined side-by-side comparison of key elements.

I believe this comparison clearly underscores the conclusions of the U.S. negotiators, the P5+1, and an impressive body of experts: the JCPOA provides significant technical safeguards and disincentives that effectively block Iran's path to a nuclear weapon. It also explicitly enables strong detection and verification measures and timely responses should Iran choose to violate nuclear provisions of the JCPOA. The President, the Congress, and our allies and friends remain united in the determination that Iran will not develop or acquire nuclear weapons. The JCPOA is the best option available.

If you have questions that I can help answer, I would be pleased to do so.

Sincerely,

A handwritten signature in black ink, appearing to read "Ernest J. Moniz".

Ernest J. Moniz

Enclosure

ADDRESSING CONCERNS REGARDING THE IRANIAN NUCLEAR PROGRAM

TOP LINE	
With P5+1 JCPOA	Without P5+1 JCPOA
<ul style="list-style-type: none"> ✓ There will be an extensive and extended roll back (15 years) of Iranian nuclear activities, including reduced uranium enrichment and enriched uranium stockpile, resulting in a considerably extended breakout time. ✓ Iran has committed to permanently adhere to the Additional Protocol, which provides the basis for access to suspicious sites and enables the IAEA to have a fuller picture of a wide range of nuclear activities in Iran, including activities that don't involve uranium or plutonium. ✓ The JCPOA provides for unique and very strong verification of centrifuge manufacturing for 20 years and uranium production for 25 years, effectively blocking a covert enrichment program for a quarter century. In addition, permanent provisions bar Iranian weaponization. ✓ The JCPOA underscores international unity, which was crucial for both sanctions effectiveness and for negotiating a very strong JCPOA. This unity serves as a deterrent to Iranian non-compliance. 	<p>There is a growing Iranian nuclear program now with limited detection and verification capability.</p> <p>The likely unraveling of international sanctions will bring economic relief for Iran without the JCPOA benefits of restricted nuclear activity and strong verification. This loss of JCPOA benefits would be a negative outcome for the U.S. and our allies.</p> <p>There will be a loss of international unity in confronting Iran, thereby diminishing our effectiveness and our authority for a strong response to Iranian non-compliance.</p>

IRAN'S COMMITMENT ON NUCLEAR WEAPONS	
With P5+1 JCPOA	Without P5+1 JCPOA
<ul style="list-style-type: none"> ✓ The JCPOA includes a direct commitment by Iran to the U.S. as a member of the P5+1 to <i>never</i> develop or acquire a nuclear weapon. <ul style="list-style-type: none"> ○ Establishes strong case for robust unilateral or multilateral response to any serious violation. ✓ There is a permanent ban on Iranian development of key nuclear weaponization capabilities. ✓ There is a long-term ban (15 years) on Iranian acquisition of, and research and development (R&D) on, plutonium and uranium (or alloy) metal, a key weaponization activity. ✓ A dedicated procurement channel is established to monitor procurements in order to identify any evidence of possible covert activities associated with certain nuclear-related and dual use items. ✓ Iran cannot engage in reprocessing, which results in separation of plutonium, closing off a pathway to a bomb. 	<p>There will be no commitment from Iran to the P5+1 to refrain from developing or acquiring weapons-relevant technologies.</p> <p>There will be much less insight into possible covert Iranian weaponization activities and no new constraints on development of weaponization capabilities.</p> <p>Iran could develop weapons-relevant capability through uranium metal R&D.</p> <p>Absent the establishment of a dedicated procurement channel with Iran, illumination by inspectors of possible covert activity will be more difficult.</p> <p>Post-irradiation examination of nuclear fuel by Iran could proceed, enabling an avenue for development of plutonium separation capability relevant to weapons development.</p>

SCOPE/SCALE OF NUCLEAR PROGRAM

With P5+1 JCPOA	Without P5+1 JCPOA
<ul style="list-style-type: none"> ✓ Nearly 75% of Iran's existing centrifuges will be removed and not allowed to operate for a period of 10 years, and only the least effective design will be permitted to enrich uranium at far below weapons-usable levels. Excess centrifuge infrastructure is removed. ✓ Development of next generation centrifuges by Iran (roughly 5 times more powerful than the current model) is severely limited and subject to monitoring for 10 years. Deployment of advanced centrifuges is prevented for at least 10 years. ✓ A combination of constraints results in a "breakout time" (that is the time to produce enough nuclear material for a first bomb if Iran were to race to a bomb) of at least a year, for a period of 10 years. Together with enhanced monitoring, this affords ample time for a response. ✓ Iran's stockpile of low-enriched uranium will be reduced by 98%, leaving an amount that is much less than is needed for even a single nuclear weapon (limited to 3.67% enrichment and 300 kg of UF6). ✓ Iran's material with the highest enrichment (near 20%) will be entirely eliminated as a threat for potential weapons development. ✓ Fordow, Iran's underground enrichment facility, will have most of its centrifuges and infrastructure removed and will be used exclusively for stable/medical isotope activity and other physics activities with international collaboration (15 years). ✓ The Arak reactor in Iran, now capable of becoming a "weapons-grade plutonium factory" that could produce material for 1-2 weapons per year, will be replaced by a research reactor that does not produce weapons-grade plutonium in normal use. Iran will not build any more heavy water reactors for at least 15 years. <ul style="list-style-type: none"> ○ Misuse of the reactor to produce weapons-grade plutonium can be detected quickly, allowing ample time for response. ○ The irradiated fuel, which contains plutonium, will be sent out of the country for the reactor's lifetime. ○ Iran will not reprocess any irradiated fuel, which could lead to the extraction of plutonium for a weapon, for at least 15 years. ✓ Iran will not accumulate heavy water, which is often associated with plutonium production, excess to the needs of the new Arak design. 	<p>Iran has already produced around 20,000 centrifuges and could expand significantly for the next 10 years.</p> <p>Iran has already deployed and will soon start operating next generation centrifuges (5 times more powerful) and advance an array of even more powerful centrifuges in the next 10 years.</p> <p>Iran's current breakout time is about 2-3 months, and will shorten further with more centrifuges, more advanced centrifuges, and a growing stockpile of enriched uranium.</p> <p>Iran's current low-enriched uranium stockpile (over 10,000 kg), enough for about 10 weapons if further enriched, can continue to grow without constraint.</p> <p>Iran could resume enrichment to near 20% or greater, further shortening an already short break-out time.</p> <p>Fordow will continue to enrich uranium, likely including near 20% enrichment, well on the way to weapons-grade uranium.</p> <p>The current Iranian Arak reactor design will be implemented, producing significant amounts of plutonium.</p> <p>Plutonium-bearing irradiated fuel will remain in Iran and could be reprocessed to extract plutonium for weapons.</p> <p>Iran could initiate construction of more heavy water reactors, similar to the Arak reactor's original plutonium production design.</p>

VERIFICATION

With P5+1 JCPOA	Without P5+1 JCPOA
<p>✓ Significant verification measures are put in place, including daily access to Iran’s major nuclear facilities. Iran could, after 15 years, continue to develop its peaceful nuclear program, but strong verification measures would be ongoing and there would be an enduring commitment to not pursue nuclear weapons or weaponization activities.</p> <p>✓ Iran has committed to adhere to the Additional Protocol indefinitely, which enables the IAEA to have a fuller picture of a wide range of nuclear activities in Iran, including activities that don’t involve uranium or plutonium. It also allows IAEA inspectors to request access with 24 hours’ notice to any location for which it has reason to suspect undeclared nuclear activity.</p> <p>✓ Iran will permanently implement an IAEA provision that requires early reporting of new nuclear facilities or design changes to existing facilities, so that Iran has no excuses for hiding any covert facilities or renovations from the IAEA.</p> <p>✓ Iran will be subject to unique and important verification measures beyond the Additional Protocol.</p> <ul style="list-style-type: none"> ○ The IAEA will have uranium supply chain surveillance for 25 years, greatly increasing the risk of Iran getting caught if it diverts nuclear material for weapons development. ○ The IAEA will be able to track centrifuge manufacturing for 20 years, eliminating the risk of diverting centrifuges to a covert enrichment facility. ○ The IAEA will, for the first time, have an assured time period for access to suspicious sites (within as little as 24 hours or a maximum of 24 days if there is a dispute), a period that is short enough to provide high confidence in detecting covert activity, especially the needed work with nuclear materials to develop a weapon. <p>✓ The IAEA will be able to use advanced safeguards technologies.</p> <p>✓ Iran is required to take steps to engage with the IAEA with respect to completing its investigation of possible military dimensions (PMD) of nuclear activity before 2004, so that the IAEA can complete its assessment of Iran’s previous activities related to nuclear weapons.</p>	<p>Iran’s current nuclear program will grow immediately and will do so without the enhanced JCPOA verification measures in place to warn the global community about any non-peaceful activities.</p> <p>Iran likely will not implement the Additional Protocol, eliminating a substantial protection in the JCPOA that affords the IAEA clear authority to access to any suspicious location. Iran is likely to continue past instances of denying or significantly delaying IAEA access to suspect sites.</p> <p>Iran is likely to continue to refuse to provide the IAEA with early notice of new facilities, which denies the IAEA the ability to develop inspection strategies as a facility is being built.</p> <p>Iran’s uranium supply chain will be less transparent and therefore more susceptible to diversion of uranium.</p> <p>IAEA has no insight into the number of centrifuges Iran manufactures. This could lead to Iran diverting centrifuges to a covert facility without detection.</p> <p>Iran can stall the IAEA indefinitely.</p> <p>Iran is likely to continue to deny IAEA use of advanced technologies resulting in additional time and resources to detect diversion of nuclear materials.</p> <p>Iran is likely to continue not to cooperate with the IAEA on PMD.</p>

<p>✓ The ability to detect any possible efforts by Iran to develop a nuclear weapon will be greatly elevated, thereby providing a strong deterrent.</p> <ul style="list-style-type: none"> ○ DNI Clapper stated that while the US can never have 100% certitude, the intelligence community will gain much greater visibility into the Iranian nuclear program with the JCPOA. 	<p>Iran could carry out nuclear weapons related work with much less risk of detection.</p>
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INTERNATIONAL UNITY IN ADDRESSING IRANIAN NUCLEAR WEAPONS DEVELOPMENT	
With P5+1 JCPOA	Without P5+1 JCPOA
<p>✓ The hard-won international unity exhibited in the negotiations by the P5+1 and EU, and in applying sanctions by a large community of nations, will not be disrupted, providing confidence in a strong unified response should Iran contravene these agreements.</p> <ul style="list-style-type: none"> ○ The P5+1 and the EU invested an enormous effort in a difficult negotiation aimed at concerns regarding the Iranian nuclear program, reflecting united and substantial P5+1 interest in a strong nuclear non-proliferation treaty (NPT) regime. ○ The sanctions regime successfully weakened Iran's economy, an outcome that was achieved only through international unity and cooperation on sanctions enforcement. <p>✓ The JCPOA focuses on verifiably cutting off all pathways to an Iranian nuclear weapons program. The President has emphasized enhanced security collaboration with friends and allies, including Israel and Gulf states, to confront Iranian support for terrorism (e.g., Hezbollah) and regional instability (e.g., Yemen) with confidence that Iran does not have a nuclear weapon.</p>	<p>The loss of international unity will weaken U.S. moral authority and collective backing for any response to potential Iranian actions, whether diplomatically, financially, or militarily.</p> <p>It is exceedingly unlikely that our partners or Iran will renegotiate what is already a very strong deal, with no serious prospects for improvement. Iran's nuclear program will continue, unencumbered by the significant restrictions in the JCPOA. There is no credible Plan B.</p> <p>U.S. credibility to address other regional issues, including with a coalition of major powers, will be severely compromised.</p> <p>The international sanctions regime will likely unravel, since other parties viewed sanctions as a successful part of a strategy for getting Iran to the negotiating table. Without robust international sanctions implementation, it is likely that more resources will flow to Iran but will do so without the nuclear constraints and verification requirements imposed by the JCPOA – the worst of all worlds.</p>