

## ***Joint Comprehensive Plan of Action***

***Vienna, 14 July 2015***

### ***PREFACE***

The E3/EU+3 (China, France, Germany, the Russian Federation, the United Kingdom and the United States, with the High Representative of the European Union for Foreign Affairs and Security Policy) and the Islamic Republic of Iran welcome this historic Joint Comprehensive Plan of Action (JCPOA), which will ensure that Iran's nuclear programme will be exclusively peaceful, and mark a fundamental shift in their approach to this issue. They anticipate that full implementation of this JCPOA will positively contribute to regional and international peace and security. Iran reaffirms that under no circumstances will Iran ever seek, develop or acquire any nuclear weapons.

Iran envisions that this JCPOA will allow it to move forward with an exclusively peaceful, indigenous nuclear programme, in line with scientific and economic considerations, in accordance with the JCPOA, and with a view to building confidence and encouraging international cooperation. In this context, the initial mutually determined limitations described in this JCPOA will be followed by a gradual evolution, at a reasonable pace, of Iran's peaceful nuclear programme, including its enrichment activities, to a commercial programme for

exclusively peaceful purposes, consistent with international non-proliferation norms.

The E3/EU+3 envision that the implementation of this JCPOA will progressively allow them to gain confidence in the exclusively peaceful nature of Iran's programme. The JCPOA reflects mutually determined parameters, consistent with practical needs, with agreed limits on the scope of Iran's nuclear programme, including enrichment activities and R&D. The JCPOA addresses the E3/EU+3's concerns, including through comprehensive measures providing for transparency and verification.

The JCPOA will produce the comprehensive lifting of all UN Security Council sanctions as well as multilateral and national sanctions related to Iran's nuclear programme, including steps on access in areas of trade, technology, finance, and energy.

#### ***PREAMBLE AND GENERAL PROVISIONS***

- i. The Islamic Republic of Iran and the E3/EU+3 (China, France, Germany, the Russian Federation, the United Kingdom and the United States, with the High Representative of the European Union for Foreign Affairs and Security Policy) have decided upon this long-term Joint Comprehensive Plan of Action (JCPOA). This JCPOA, reflecting a step-by-step approach, includes the reciprocal commitments as laid down in this document and the annexes hereto and is to be endorsed by the United Nations (UN) Security Council.
- ii. The full implementation of this JCPOA will ensure the exclusively peaceful nature of Iran's nuclear programme.

- iii. Iran reaffirms that under no circumstances will Iran ever seek, develop or acquire any nuclear weapons.
- iv. Successful implementation of this JCPOA will enable Iran to fully enjoy its right to nuclear energy for peaceful purposes under the relevant articles of the nuclear Non-Proliferation Treaty (NPT) in line with its obligations therein, and the Iranian nuclear programme will be treated in the same manner as that of any other non-nuclear-weapon state party to the NPT.
- v. This JCPOA will produce the comprehensive lifting of all UN Security Council sanctions as well as multilateral and national sanctions related to Iran's nuclear programme, including steps on access in areas of trade, technology, finance and energy.
- vi. The E3/EU+3 and Iran reaffirm their commitment to the purposes and principles of the United Nations as set out in the UN Charter.
- vii. The E3/EU+3 and Iran acknowledge that the NPT remains the cornerstone of the nuclear non-proliferation regime and the essential foundation for the pursuit of nuclear disarmament and for the peaceful uses of nuclear energy.
- viii. The E3/EU+3 and Iran commit to implement this JCPOA in good faith and in a constructive atmosphere, based on mutual respect, and to refrain from any action inconsistent with the letter, spirit and intent of this JCPOA that would undermine its successful implementation. The E3/EU+3 will refrain from imposing discriminatory regulatory and procedural requirements in lieu of the sanctions and restrictive measures covered by this JCPOA. This JCPOA builds on

the implementation of the Joint Plan of Action (JPOA) agreed in Geneva on 24 November 2013.

- ix. A Joint Commission consisting of the E3/EU+3 and Iran will be established to monitor the implementation of this JCPOA and will carry out the functions provided for in this JCPOA. This Joint Commission will address issues arising from the implementation of this JCPOA and will operate in accordance with the provisions as detailed in the relevant annex.
- x. The International Atomic Energy Agency (IAEA) will be requested to monitor and verify the voluntary nuclear-related measures as detailed in this JCPOA. The IAEA will be requested to provide regular updates to the Board of Governors, and as provided for in this JCPOA, to the UN Security Council. All relevant rules and regulations of the IAEA with regard to the protection of information will be fully observed by all parties involved.
- xi. All provisions and measures contained in this JCPOA are only for the purpose of its implementation between E3/EU+3 and Iran and should not be considered as setting precedents for any other state or for fundamental principles of international law and the rights and obligations under the NPT and other relevant instruments, as well as for internationally recognised principles and practices.
- xii. Technical details of the implementation of this JCPOA are dealt with in the annexes to this document.

- xiii. The EU and E3+3 countries and Iran, in the framework of the JCPOA, will cooperate, as appropriate, in the field of peaceful uses of nuclear energy and engage in mutually determined civil nuclear cooperation projects as detailed in Annex III, including through IAEA involvement.
  
- xiv. The E3+3 will submit a draft resolution to the UN Security Council endorsing this JCPOA affirming that conclusion of this JCPOA marks a fundamental shift in its consideration of this issue and expressing its desire to build a new relationship with Iran. This UN Security Council resolution will also provide for the termination on Implementation Day of provisions imposed under previous resolutions; establishment of specific restrictions; and conclusion of consideration of the Iran nuclear issue by the UN Security Council 10 years after the Adoption Day.
  
- xv. The provisions stipulated in this JCPOA will be implemented for their respective durations as set forth below and detailed in the annexes.
  
- xvi. The E3/EU+3 and Iran will meet at the ministerial level every 2 years, or earlier if needed, in order to review and assess progress and to adopt appropriate decisions by consensus.

***Iran and E3/EU+3 will take the following voluntary measures within the timeframe as detailed in this JCPOA and its Annexes***

## **NUCLEAR**

### **A. ENRICHMENT, ENRICHMENT R&D, STOCKPILES**

1. Iran's long term plan includes certain agreed limitations on all uranium enrichment and uranium enrichment-related activities including certain limitations on specific research and development (R&D) activities for the first 8 years, to be followed by gradual evolution, at a reasonable pace, to the next stage of its enrichment activities for exclusively peaceful purposes, as described in Annex I. Iran will abide by its voluntary commitments, as expressed in its own long-term enrichment and enrichment R&D plan to be submitted as part of the initial declaration for the Additional Protocol to Iran's Safeguards Agreement.
2. Iran will begin phasing out its IR-1 centrifuges in 10 years. During this period, Iran will keep its enrichment capacity at Natanz at up to a total installed uranium enrichment capacity of 5060 IR-1 centrifuges. Excess centrifuges and enrichment-related infrastructure at Natanz will be stored under IAEA continuous monitoring, as specified in Annex I.
3. Iran will continue to conduct enrichment R&D in a manner that does not accumulate enriched uranium. Iran's enrichment R&D with uranium for 10 years will only include IR-4, IR-5, IR-6 and IR-8 centrifuges as laid out in Annex I, and Iran will not engage in other isotope separation technologies for enrichment of uranium as specified in Annex I. Iran will continue testing IR-6 and IR-8

centrifuges, and will commence testing of up to 30 IR-6 and IR-8 centrifuges after eight and a half years, as detailed in Annex I.

4. As Iran will be phasing out its IR-1 centrifuges, it will not manufacture or assemble other centrifuges, except as provided for in Annex I, and will replace failed centrifuges with centrifuges of the same type. Iran will manufacture advanced centrifuge machines only for the purposes specified in this JCPOA. From the end of the eighth year, and as described in Annex I, Iran will start to manufacture agreed numbers of IR-6 and IR-8 centrifuge machines without rotors and will store all of the manufactured machines at Natanz, under IAEA continuous monitoring until they are needed under Iran's long-term enrichment and enrichment R&D plan.
5. Based on its long-term plan, for 15 years, Iran will carry out its uranium enrichment-related activities, including safeguarded R&D exclusively in the Natanz Enrichment facility, keep its level of uranium enrichment at up to 3.67%, and, at Fordow, refrain from any uranium enrichment and uranium enrichment R&D and from keeping any nuclear material.
6. Iran will convert the Fordow facility into a nuclear, physics and technology centre. International collaboration including in the form of scientific joint partnerships will be established in agreed areas of research. 1044 IR-1 centrifuges in six cascades will remain in one wing at Fordow. Two of these cascades will spin without uranium and will be transitioned, including through appropriate infrastructure modification, for stable isotope production. The other four cascades with all associated infrastructure will remain idle. All other centrifuges and enrichment-related infrastructure will be removed and stored under IAEA continuous monitoring as specified in Annex I.

7. During the 15 year period, and as Iran gradually moves to meet international qualification standards for nuclear fuel produced in Iran, it will keep its uranium stockpile under 300 kg of up to 3.67% enriched uranium hexafluoride (UF<sub>6</sub>) or the equivalent in other chemical forms. The excess quantities are to be sold based on international prices and delivered to the international buyer in return for natural uranium delivered to Iran, or are to be down-blended to natural uranium level. Enriched uranium in fabricated fuel assemblies from Russia or other sources for use in Iran's nuclear reactors will not be counted against the above stated 300 kg UF<sub>6</sub> stockpile, if the criteria set out in Annex I are met with regard to other sources. The Joint Commission will support assistance to Iran, including through IAEA technical cooperation as appropriate, in meeting international qualification standards for nuclear fuel produced in Iran. All remaining uranium oxide enriched to between 5% and 20% will be fabricated into fuel for the Tehran Research Reactor (TRR). Any additional fuel needed for the TRR will be made available to Iran at international market prices.

## **B. ARAK, HEAVY WATER, REPROCESSING**

8. Iran will redesign and rebuild a modernised heavy water research reactor in Arak, based on an agreed conceptual design, using fuel enriched up to 3.67 %, in a form of an international partnership which will certify the final design. The reactor will support peaceful nuclear research and radioisotope production for medical and industrial purposes. The redesigned and rebuilt Arak reactor will not produce weapons grade plutonium. Except for the first core load, all of the activities for redesigning and manufacturing of the fuel assemblies for the redesigned reactor will be carried out in Iran. All spent fuel from Arak will be shipped out of Iran for the lifetime of the reactor. This international partnership will include participating E3/EU+3 parties, Iran and such other countries as may be mutually determined. Iran will take the leadership role as the owner and as the project manager and the E3/EU+3 and Iran will, before Implementation Day,



conclude an official document which would define the responsibilities assumed by the E3/EU+3 participants.

9. Iran plans to keep pace with the trend of international technological advancement in relying on light water for its future power and research reactors with enhanced international cooperation, including assurance of supply of necessary fuel.
10. There will be no additional heavy water reactors or accumulation of heavy water in Iran for 15 years. All excess heavy water will be made available for export to the international market.
11. Iran intends to ship out all spent fuel for all future and present power and research nuclear reactors, for further treatment or disposition as provided for in relevant contracts to be duly concluded with the recipient party.
12. For 15 years Iran will not, and does not intend to thereafter, engage in any spent fuel reprocessing or construction of a facility capable of spent fuel reprocessing, or reprocessing R&D activities leading to a spent fuel reprocessing capability, with the sole exception of separation activities aimed exclusively at the production of medical and industrial radio-isotopes from irradiated enriched uranium targets.

### **C. TRANSPARENCY AND CONFIDENCE BUILDING MEASURES**

13. Consistent with the respective roles of the President and Majlis (Parliament), Iran will provisionally apply the Additional Protocol to its Comprehensive Safeguards Agreement in accordance with Article 17(b) of the Additional Protocol, proceed with its ratification within the timeframe as detailed in Annex V and fully implement the modified Code 3.1 of the Subsidiary Arrangements to its Safeguards Agreement.

14. Iran will fully implement the "Roadmap for Clarification of Past and Present Outstanding Issues" agreed with the IAEA, containing arrangements to address past and present issues of concern relating to its nuclear programme as raised in the annex to the IAEA report of 8 November 2011 (GOV/2011/65). Full implementation of activities undertaken under the Roadmap by Iran will be completed by 15 October 2015, and subsequently the Director General will provide by 15 December 2015 the final assessment on the resolution of all past and present outstanding issues to the Board of Governors, and the E3+3, in their capacity as members of the Board of Governors, will submit a resolution to the Board of Governors for taking necessary action, with a view to closing the issue, without prejudice to the competence of the Board of Governors.
15. Iran will allow the IAEA to monitor the implementation of the voluntary measures for their respective durations, as well as to implement transparency measures, as set out in this JCPOA and its Annexes. These measures include: a long-term IAEA presence in Iran; IAEA monitoring of uranium ore concentrate produced by Iran from all uranium ore concentrate plants for 25 years; containment and surveillance of centrifuge rotors and bellows for 20 years; use of IAEA approved and certified modern technologies including on-line enrichment measurement and electronic seals; and a reliable mechanism to ensure speedy resolution of IAEA access concerns for 15 years, as defined in Annex I.
16. Iran will not engage in activities, including at the R&D level, that could contribute to the development of a nuclear explosive device, including uranium or plutonium metallurgy activities, as specified in Annex I.
17. Iran will cooperate and act in accordance with the procurement channel in this JCPOA, as detailed in Annex IV, endorsed by the UN Security Council resolution.

## ***SANCTIONS***

18. The UN Security Council resolution endorsing this JCPOA will terminate all provisions of previous UN Security Council resolutions on the Iranian nuclear issue - 1696 (2006), 1737 (2006), 1747 (2007), 1803 (2008), 1835 (2008), 1929 (2010) and 2224 (2015) – simultaneously with the IAEA-verified implementation of agreed nuclear-related measures by Iran and will establish specific restrictions, as specified in Annex V.[\[1\]](#)
  
19. The EU will terminate all provisions of the EU Regulation, as subsequently amended, implementing all nuclear-related economic and financial sanctions, including related designations, simultaneously with the IAEA-verified implementation of agreed nuclear-related measures by Iran as specified in Annex V, which cover all sanctions and restrictive measures in the following areas, as described in Annex II:
  - i. Transfers of funds between EU persons and entities, including financial institutions, and Iranian persons and entities, including financial institutions;
  - ii. Banking activities, including the establishment of new correspondent banking relationships and the opening of new branches and subsidiaries of Iranian banks in the territories of EU Member States;
  - iii. Provision of insurance and reinsurance;
  - iv. Supply of specialised financial messaging services, including SWIFT, for persons and entities set out in Attachment 1 to Annex II, including the Central Bank of Iran and Iranian financial institutions;
  - v. Financial support for trade with Iran (export credit, guarantees or insurance);

- vi. Commitments for grants, financial assistance and concessional loans to the Government of Iran;
- vii. Transactions in public or public-guaranteed bonds;
- viii. Import and transport of Iranian oil, petroleum products, gas and petrochemical products;
- ix. Export of key equipment or technology for the oil, gas and petrochemical sectors;
- x. Investment in the oil, gas and petrochemical sectors;
- xi. Export of key naval equipment and technology;
- xii. Design and construction of cargo vessels and oil tankers;
- xiii. Provision of flagging and classification services;
- xiv. Access to EU airports of Iranian cargo flights;
- xv. Export of gold, precious metals and diamonds;
- xvi. Delivery of Iranian banknotes and coinage;
- xvii. Export of graphite, raw or semi-finished metals such as aluminum and steel, and export or software for integrating industrial processes;
- xviii. Designation of persons, entities and bodies (asset freeze and visa ban) set out in Attachment 1 to Annex II; and
- xix. Associated services for each of the categories above.

20. The EU will terminate all provisions of the EU Regulation implementing all EU proliferation-related sanctions, including related designations, 8 years after Adoption Day or when the IAEA has reached the Broader Conclusion that all nuclear material in Iran remains in peaceful activities, whichever is earlier.

21. The United States will cease the application, and will continue to do so, in accordance with this JCPOA of the sanctions specified in Annex II to take effect simultaneously with the IAEA-verified implementation of the agreed nuclear-

related measures by Iran as specified in Annex V. Such sanctions cover the following areas as described in Annex II:

- i. Financial and banking transactions with Iranian banks and financial institutions as specified in Annex II, including the Central Bank of Iran and specified individuals and entities identified as Government of Iran by the Office of Foreign Assets Control on the Specially Designated Nationals and Blocked Persons List (SDN List), as set out in Attachment 3 to Annex II (including the opening and maintenance of correspondent and payable through-accounts at non-U.S. financial institutions, investments, foreign exchange transactions and letters of credit);
- ii. Transactions in Iranian Rial;
- iii. Provision of U.S. banknotes to the Government of Iran;
- iv. Bilateral trade limitations on Iranian revenues abroad, including limitations on their transfer;
- v. Purchase, subscription to, or facilitation of the issuance of Iranian sovereign debt, including governmental bonds;
- vi. Financial messaging services to the Central Bank of Iran and Iranian financial institutions set out in Attachment 3 to Annex II;
- vii. Underwriting services, insurance, or reinsurance;
- viii. Efforts to reduce Iran's crude oil sales;
- ix. Investment, including participation in joint ventures, goods, services, information, technology and technical expertise and support for Iran's oil, gas and petrochemical sectors;
- x. Purchase, acquisition, sale, transportation or marketing of petroleum, petrochemical products and natural gas from Iran;
- xi. Export, sale or provision of refined petroleum products and petrochemical products to Iran;
- xii. Transactions with Iran's energy sector;

- xiii. Transactions with Iran's shipping and shipbuilding sectors and port operators;
- xiv. Trade in gold and other precious metals;
- xv. Trade with Iran in graphite, raw or semi-finished metals such as aluminum and steel, coal, and software for integrating industrial processes;
- xvi. Sale, supply or transfer of goods and services used in connection with Iran's automotive sector;
- xvii. Sanctions on associated services for each of the categories above;
- xviii. Remove individuals and entities set out in Attachment 3 to Annex II from the SDN List, the Foreign Sanctions Evaders List, and/or the Non-SDN Iran Sanctions Act List; and
- xix. Terminate Executive Orders 13574, 13590, 13622, and 13645, and Sections 5 – 7 and 15 of Executive Order 13628.

22. The United States will, as specified in Annex II and in accordance with Annex V, allow for the sale of commercial passenger aircraft and related parts and services to Iran; license non-U.S. persons that are owned or controlled by a U.S. person to engage in activities with Iran consistent with this JCPOA; and license the importation into the United States of Iranian-origin carpets and foodstuffs.

23. Eight years after Adoption Day or when the IAEA has reached the Broader Conclusion that all nuclear material in Iran remains in peaceful activities, whichever is earlier, the United States will seek such legislative action as may be appropriate to terminate, or modify to effectuate the termination of, the sanctions specified in Annex II on the acquisition of nuclear-related commodities and services for nuclear activities contemplated in this JCPOA, to be consistent with the U.S. approach to other non-nuclear-weapon states under the NPT.

24. The E3/EU and the United States specify in Annex II a full and complete list of all nuclear-related sanctions or restrictive measures and will lift them in accordance with Annex V. Annex II also specifies the effects of the lifting of

sanctions beginning on "Implementation Day". If at any time following the Implementation Day, Iran believes that any other nuclear-related sanction or restrictive measure of the E3/EU+3 is preventing the full implementation of the sanctions lifting as specified in this JCPOA, the JCPOA participant in question will consult with Iran with a view to resolving the issue and, if they concur that lifting of this sanction or restrictive measure is appropriate, the JCPOA participant in question will take appropriate action. If they are not able to resolve the issue, Iran or any member of the E3/EU+3 may refer the issue to the Joint Commission.

25. If a law at the state or local level in the United States is preventing the implementation of the sanctions lifting as specified in this JCPOA, the United States will take appropriate steps, taking into account all available authorities, with a view to achieving such implementation. The United States will actively encourage officials at the state or local level to take into account the changes in the U.S. policy reflected in the lifting of sanctions under this JCPOA and to refrain from actions inconsistent with this change in policy.
26. The EU will refrain from re-introducing or re-imposing the sanctions that it has terminated implementing under this JCPOA, without prejudice to the dispute resolution process provided for under this JCPOA. There will be no new nuclear-related UN Security Council sanctions and no new EU nuclear-related sanctions or restrictive measures. The United States will make best efforts in good faith to sustain this JCPOA and to prevent interference with the realisation of the full benefit by Iran of the sanctions lifting specified in Annex II. The U.S. Administration, acting consistent with the respective roles of the President and the Congress, will refrain from re-introducing or re-imposing the sanctions specified in Annex II that it has ceased applying under this JCPOA, without prejudice to the dispute resolution process provided for under this JCPOA. The U.S. Administration, acting consistent with the respective roles of the President and the Congress, will refrain from imposing new nuclear-related sanctions. Iran has stated that it will treat such a re-introduction or re-imposition of the

sanctions specified in Annex II, or such an imposition of new nuclear-related sanctions, as grounds to cease performing its commitments under this JCPOA in whole or in part.

27. The E3/EU+3 will take adequate administrative and regulatory measures to ensure clarity and effectiveness with respect to the lifting of sanctions under this JCPOA. The EU and its Member States as well as the United States will issue relevant guidelines and make publicly accessible statements on the details of sanctions or restrictive measures which have been lifted under this JCPOA. The EU and its Member States and the United States commit to consult with Iran regarding the content of such guidelines and statements, on a regular basis and whenever appropriate.
28. The E3/EU+3 and Iran commit to implement this JCPOA in good faith and in a constructive atmosphere, based on mutual respect, and to refrain from any action inconsistent with the letter, spirit and intent of this JCPOA that would undermine its successful implementation. Senior Government officials of the E3/EU+3 and Iran will make every effort to support the successful implementation of this JCPOA including in their public statements<sup>[2]</sup>. The E3/EU+3 will take all measures required to lift sanctions and will refrain from imposing exceptional or discriminatory regulatory and procedural requirements in lieu of the sanctions and restrictive measures covered by the JCPOA.
29. The EU and its Member States and the United States, consistent with their respective laws, will refrain from any policy specifically intended to directly and adversely affect the normalisation of trade and economic relations with Iran inconsistent with their commitments not to undermine the successful implementation of this JCPOA.
30. The E3/EU+3 will not apply sanctions or restrictive measures to persons or entities for engaging in activities covered by the lifting of sanctions provided for in this JCPOA, provided that such activities are otherwise consistent with E3/EU+3 laws and regulations in effect. Following the lifting of sanctions under



this JCPOA as specified in Annex II, ongoing investigations on possible infringements of such sanctions may be reviewed in accordance with applicable national laws.

31. Consistent with the timing specified in Annex V, the EU and its Member States will terminate the implementation of the measures applicable to designated entities and individuals, including the Central Bank of Iran and other Iranian banks and financial institutions, as detailed in Annex II and the attachments thereto. Consistent with the timing specified in Annex V, the United States will remove designation of certain entities and individuals on the Specially Designated Nationals and Blocked Persons List, and entities and individuals listed on the Foreign Sanctions Evaders List, as detailed in Annex II and the attachments thereto.
32. EU and E3+3 countries and international participants will engage in joint projects with Iran, including through IAEA technical cooperation projects, in the field of peaceful nuclear technology, including nuclear power plants, research reactors, fuel fabrication, agreed joint advanced R&D such as fusion, establishment of a state-of-the-art regional nuclear medical centre, personnel training, nuclear safety and security, and environmental protection, as detailed in Annex III. They will take necessary measures, as appropriate, for the implementation of these projects.
33. The E3/EU+3 and Iran will agree on steps to ensure Iran's access in areas of trade, technology, finance and energy. The EU will further explore possible areas for cooperation between the EU, its Member States and Iran, and in this context consider the use of available instruments such as export credits to facilitate trade, project financing and investment in Iran.

## ***IMPLEMENTATION PLAN***

34. Iran and the E3/EU+3 will implement their JCPOA commitments according to the sequence specified in Annex V. The milestones for implementation are as follows:
- i. Finalisation Day is the date on which negotiations of this JCPOA are concluded among the E3/EU+3 and Iran, to be followed promptly by submission of the resolution endorsing this JCPOA to the UN Security Council for adoption without delay.
  - ii. Adoption Day is the date 90 days after the endorsement of this JCPOA by the UN Security Council, or such earlier date as may be determined by mutual consent of the JCPOA participants, at which time this JCPOA and the commitments in this JCPOA come into effect. Beginning on that date, JCPOA participants will make necessary arrangements and preparations for the implementation of their JCPOA commitments.
  - iii. Implementation Day is the date on which, simultaneously with the IAEA report verifying implementation by Iran of the nuclear-related measures described in Sections 15.1. to 15.11 of Annex V, the EU and the United States take the actions described in Sections 16 and 17 of Annex V respectively and in accordance with the UN Security Council resolution, the actions described in Section 18 of Annex V occur at the UN level.
  - iv. Transition Day is the date 8 years after Adoption Day or the date on which the Director General of the IAEA submits a report stating that the IAEA has reached the Broader Conclusion that all nuclear material in Iran remains in peaceful activities, whichever is earlier. On that date, the EU and the United States will take the actions described in Sections 20 and 21 of Annex V respectively and

Iran will seek, consistent with the Constitutional roles of the President and Parliament, ratification of the Additional Protocol.

- v. UN Security Council resolution Termination Day is the date on which the UN Security Council resolution endorsing this JCPOA terminates according to its terms, which is to be 10 years from Adoption Day, provided that the provisions of previous resolutions have not been reinstated. On that date, the EU will take the actions described in Section 25 of Annex V.

35. The sequence and milestones set forth above and in Annex V are without prejudice to the duration of JCPOA commitments stated in this JCPOA.

#### ***DISPUTE RESOLUTION MECHANISM***

36. If Iran believed that any or all of the E3/EU+3 were not meeting their commitments under this JCPOA, Iran could refer the issue to the Joint Commission for resolution; similarly, if any of the E3/EU+3 believed that Iran was not meeting its commitments under this JCPOA, any of the E3/EU+3 could do the same. The Joint Commission would have 15 days to resolve the issue, unless the time period was extended by consensus. After Joint Commission consideration, any participant could refer the issue to Ministers of Foreign Affairs, if it believed the compliance issue had not been resolved. Ministers would have 15 days to resolve the issue, unless the time period was extended by consensus. After Joint Commission consideration – in parallel with (or in lieu of) review at the Ministerial level - either the complaining participant or the participant whose performance is in question could request that the issue be considered by an Advisory Board, which would consist of three members (one each appointed by the participants in the dispute and a third independent

member). The Advisory Board should provide a non-binding opinion on the compliance issue within 15 days. If, after this 30-day process the issue is not resolved, the Joint Commission would consider the opinion of the Advisory Board for no more than 5 days in order to resolve the issue. If the issue still has not been resolved to the satisfaction of the complaining participant, and if the complaining participant deems the issue to constitute significant non-performance, then that participant could treat the unresolved issue as grounds to cease performing its commitments under this JCPOA in whole or in part and/or notify the UN Security Council that it believes the issue constitutes significant non-performance.

37. Upon receipt of the notification from the complaining participant, as described above, including a description of the good-faith efforts the participant made to exhaust the dispute resolution process specified in this JCPOA, the UN Security Council, in accordance with its procedures, shall vote on a resolution to continue the sanctions lifting. If the resolution described above has not been adopted within 30 days of the notification, then the provisions of the old UN Security Council resolutions would be re-imposed, unless the UN Security Council decides otherwise. In such event, these provisions would not apply with retroactive effect to contracts signed between any party and Iran or Iranian individuals and entities prior to the date of application, provided that the activities contemplated under and execution of such contracts are consistent with this JCPOA and the previous and current UN Security Council resolutions. The UN Security Council, expressing its intention to prevent the reapplication of the provisions if the issue giving rise to the notification is resolved within this period, intends to take into account the views of the States involved in the issue and any opinion on the issue of the Advisory Board. Iran has stated that if sanctions are reinstated in whole or in part, Iran will treat that as grounds to cease performing its commitments under this JCPOA in whole or in part.
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[1] The provisions of this Resolution do not constitute provisions of this JCPOA.

[2] 'Government officials' for the U.S. means senior officials of the U.S. Administration.

## **Annex I – Nuclear-related measures**

### **A. GENERAL**

1. The sequence of implementation of the commitments detailed in this Annex is specified in Annex V to the Joint Comprehensive Plan of Action (JCPOA). Unless otherwise specified, the durations of the commitments in this Annex are from Implementation Day.

### **B. ARAK HEAVY WATER RESEARCH REACTOR**

2. Iran will modernise the Arak heavy water research reactor to support peaceful nuclear research and radioisotopes production for medical and industrial purposes. Iran will redesign and rebuild the reactor, based on the agreed conceptual design (as attached to this Annex) to support its peaceful nuclear research and production needs and purposes, including testing of fuel pins and assembly prototypes and structural materials. The design will be such as to minimise the production of plutonium and not to produce weapon-grade plutonium in normal operation. The power of the redesigned reactor will not exceed 20 MWth. The E3/EU+3 and Iran share the understanding that the parameters in the conceptual design are subject to possible and necessary adjustments in developing the final design while fully preserving the above-mentioned purposes and principles of modernisation.
3. Iran will not pursue construction at the existing unfinished reactor based on its original design and will remove the existing calandria and retain it in Iran. The calandria will be made inoperable by filling any openings in the calandria with concrete such that the IAEA can verify that it will not be usable for a future nuclear application. In redesigning and reconstructing of the modernized Arak heavy water research reactor, Iran will

maximise the use of existing infrastructure already installed at the current Arak research reactor.

4. Iran will take the leadership role as the owner and as the project manager, and have responsibility for overall implementation of the Arak modernisation project, with E3/EU+3 participants assuming responsibilities regarding the modernisation of the Arak reactor as described in this Annex. A Working Group composed of E3/EU+3 participants will be established to facilitate the redesigning and rebuilding of the reactor. An international partnership composed of Iran and the Working Group would implement the Arak modernisation project. The Working Group could be enlarged to include other countries by consensus of the participants of the Working Group and Iran. E3/EU+3 participants and Iran will conclude an official document expressing their strong commitments to the Arak modernisation project in advance of Implementation Day which would provide an assured path forward to modernise the reactor and would define the responsibilities assumed by the E3/EU+3 participants, and subsequently contracts would be concluded. The participants of the Working Group will provide assistance needed by Iran for redesigning and rebuilding the reactor, consistent with their respective national laws, in such a manner as to enable the safe and timely construction and commissioning of the modernised reactor.
5. Iran and the Working Group will cooperate to develop the final design of the modernised reactor and the design of the subsidiary laboratories to be carried out by Iran, and review conformity with international safety standards, such that the reactor can be licensed by the relevant Iranian regulatory authority for commissioning and operation. The final design of the modernised reactor and the design of the subsidiary laboratories will be submitted to the Joint Commission. The Joint Commission will aim to complete its review and endorsement within three months after the submission of the final design. If the Joint Commission does not complete its review and endorsement within three months, Iran could raise the issue through the dispute resolution mechanism envisaged by this JCPOA.
6. The IAEA will monitor the construction and report to the Working Group for confirmation that the construction of the modernised reactor is consistent with the approved final design.

7. As the project manager, Iran will take responsibility for the construction efforts.  
E3/EU+3 parties will, consistent with their national laws, take appropriate administrative, legal, technical, and regulatory measures to support co-operation.  

E3/EU+3 parties will support the purchase by Iran, the transfer and supply of necessary materials, equipment, instrumentation and control systems and technologies required for the construction of the redesigned reactor, through the mechanism established by this JCPOA, as well as through exploration of relevant funding contributions.
8. E3/EU+3 parties will also support and facilitate the timely and safe construction of the modernized Arak reactor and its subsidiary laboratories, upon request by Iran, through IAEA technical cooperation if appropriate, including but not limited to technical and financial assistance, supply of required materials and equipment, state-of-the-art instrumentation and control systems and equipment and support for licensing and authorization.
9. The redesigned reactor will use up to 3.67 percent enriched uranium in the form of UO<sub>2</sub> with a mass of approximately 350 kg of UO<sub>2</sub> in a full core load, with a fuel design to be reviewed and approved by the Joint Commission. The international partnership with the participation of Iran will fabricate the initial fuel core load for the reactor outside Iran. The international partnership will cooperate with Iran, including through technical assistance, to fabricate, test and license fuel fabrication capabilities in Iran for subsequent fuel core reloads for future use with this reactor. Destructive and non-destructive testing of this fuel including Post-Irradiation-Examination (PIE) will take place in one of the participating countries outside of Iran and that country will work with Iran to license the subsequent fuel fabricated in Iran for the use in the redesigned reactor under IAEA monitoring.
10. Iran will not produce or test natural uranium pellets, fuel pins or fuel assemblies, which are specifically designed for the support of the originally designed Arak reactor, designated by the IAEA as IR-40. Iran will store under IAEA continuous monitoring all existing natural uranium pellets and IR-40 fuel assemblies until the modernised Arak reactor becomes operational, at which point these natural uranium pellets and IR-40 fuel assemblies will be converted to UNH, or exchanged with an equivalent quantity of

natural uranium. Iran will make the necessary technical modifications to the natural uranium fuel production process line that was intended to supply fuel for the IR-40 reactor design, such that it can be used for the fabrication of the fuel reloads for the modernised Arak reactor.

11. All spent fuel from the redesigned Arak reactor, regardless of its origin, for the lifetime of the reactor, will be shipped out of Iran to a mutually determined location in E3/EU+3 countries or third countries, for further treatment or disposition as provided for in relevant contracts to be concluded, consistent with national laws, with the recipient party, within one year from the unloading from the reactor or whenever deemed to be safe for transfer by the recipient country.
12. Iran will submit the DIQ of the redesigned reactor to the IAEA which will include information on the planned radio-isotope production and reactor operation programme. The reactor will be operated under IAEA monitoring.
13. Iran will operate the Fuel Manufacturing Plant only to produce fuel assemblies for light water reactors and reloads for the modernized Arak reactor.

### **C. HEAVY WATER PRODUCTION PLANT**

14. All excess heavy water which is beyond Iran's needs for the modernised Arak research reactor, the Zero power heavy water reactor, quantities needed for medical research and production of deuterate solutions and chemical compounds including, where appropriate, contingency stocks, will be made available for export to the international market based on international prices and delivered to the international buyer for 15 years. Iran's needs, consistent with the parameters above, are estimated to be 130 metric tonnes of nuclear grade heavy water or its equivalent in different enrichments prior to commissioning of the modernised Arak research reactor, and 90 metric tonnes after the commissioning, including the amount contained in the reactor.
15. Iran will inform the IAEA about the inventory and the production of the HWPP and will allow the IAEA to monitor the quantities of the heavy water stocks and the amount of heavy water produced, including through IAEA visits, as requested, to the HWPP.



#### **D. OTHER REACTORS**

16. Consistent with its plan, Iran will keep pace with the trend of international technological advancement in relying only on light water for its future nuclear power and research reactors with enhanced international cooperation including assurances of supply of necessary fuel.
17. Iran intends to ship out all spent fuel for all future and present nuclear power and research reactors, for further treatment or disposition as provided for in relevant contracts to be concluded consistent with national laws with the recipient party.

#### **E. SPENT FUEL REPROCESSING ACTIVITIES**

18. For 15 years Iran will not, and does not intend to thereafter, engage in any spent fuel reprocessing or spent fuel reprocessing R&D activities. For the purpose of this annex, spent fuel includes all types of irradiated fuel.
19. For 15 years Iran will not, and does not intend to thereafter, reprocess spent fuel except for irradiated enriched uranium targets for production of radio-isotopes for medical and peaceful industrial purposes.
20. For 15 years Iran will not, and does not intend to thereafter, develop, acquire or build facilities capable of separation of plutonium, uranium or neptunium from spent fuel or from fertile targets, other than for production of radio-isotopes for medical and peaceful industrial purposes.
21. For 15 years, Iran will only develop, acquire, build, or operate hot cells (containing a cell or interconnected cells), shielded cells or shielded glove boxes with dimensions less than 6 cubic meters in volume compatible with the specifications set out in Annex I of the Additional Protocol. These will be co-located with the modernised Arak research reactor, the Tehran Research Reactor, and radio-medicine production complexes, and only capable of the separation and processing of industrial or medical isotopes and non-destructive PIE. The needed equipment will be acquired through the procurement mechanism established by this JCPOA. For 15 years, Iran will develop, acquire, build, or operate hot cells (containing a cell or interconnected cells), shielded cells or shielded

glove boxes with dimensions beyond 6 cubic meters in volume and specifications set out in Annex I of the Additional Protocol, only after approval by the Joint Commission.

22. The E3/EU+3 are ready to facilitate all of the destructive and non-destructive examinations on fuel elements and/or fuel assembly prototypes including PIE for all fuel fabricated in or outside Iran and irradiated in Iran, using their existing facilities outside Iran. Except for the Arak research reactor complex, Iran will not develop, build, acquire or operate hot cells capable of performing PIE or seek to acquire equipment to build/develop such a capability, for 15 years.
23. For 15 years, in addition to continuing current fuel testing activities at the TRR, Iran will undertake non-destructive post irradiation examination (PIE) of fuel pins, fuel assembly prototypes and structural materials. These examinations will be exclusively at the Arak research reactor complex. However, the E3/EU+3 will make available their facilities to conduct destructive testing with Iranian specialists, as agreed. The hot cells at the Arak research reactor in which non-destructive PIE are performed will not be physically interconnected to cells that process or handle materials for the production of medical or industrial radioisotopes.
24. For 15 years, Iran will not engage in producing or acquiring plutonium or uranium metals or their alloys, or conducting R&D on plutonium or uranium (or their alloys) metallurgy, or casting, forming, or machining plutonium or uranium metal.
25. Iran will not produce, seek, or acquire separated plutonium, highly enriched uranium (defined as 20% or greater uranium-235), or uranium-233, or neptunium-237 (except for use as laboratory standards or in instruments using neptunium-237) for 15 years.
26. If Iran seeks to initiate R&D on uranium metal based TRR fuel in small agreed quantities after 10 years and before 15 years, Iran will present its plan to, and seek approval by, the Joint Commission.

## F. ENRICHMENT CAPACITY

27. Iran will keep its enrichment capacity at no more than 5060 IR-1 centrifuge machines in no more than 30 cascades in their current configurations in currently operating units at the Natanz Fuel Enrichment Plant (FEP) for 10 years.
28. Iran will keep its level of uranium enrichment at up to 3.67 percent for 15 years.
29. Iran will remove the following excess centrifuges and infrastructure not associated with 5060 IR-1 centrifuges in FEP, which will be stored at Natanz in Hall B of FEP under IAEA continuous monitoring:
  29. All excess centrifuge machines, including IR-2m centrifuges. Excess IR-1 centrifuges will be used for the replacement of failed or damaged centrifuges of the same type on a one-for-one basis.
  29. UF6 pipework including sub headers, valves and pressure transducers at cascade level, and frequency inverters, and UF6 withdrawal equipment from one of the withdrawal stations, which is currently not in service, including its vacuum pumps and chemical traps.
30. For the purpose of this Annex, the IAEA will confirm through the established practice the failed or damaged status of centrifuge machines before removal.
31. For 15 years, Iran will install gas centrifuge machines, or enrichment-related infrastructure, whether suitable for uranium enrichment, research and development, or

stable isotope enrichment, exclusively at the locations and for the activities specified under this JCPOA.

## **G. CENTRIFUGES RESEARCH AND DEVELOPMENT**

32. Iran will continue to conduct enrichment R&D in a manner that does not accumulate enriched uranium. For 10 years and consistent with its enrichment R&D plan, Iran's enrichment R&D with uranium will only include IR-4, IR-5, IR-6 and IR-8 centrifuges. Mechanical testing on up to two single centrifuges for each type will be carried out only on the IR-2m, IR-4, IR-5, IR-6, IR-6s, IR-7 and IR-8. Iran will build or test, with or without uranium, only those gas centrifuges specified in this JCPOA.
33. Consistent with its plan, Iran will continue working with the 164-machine IR-2m cascade at PFEP in order to complete the necessary tests until 30 November 2015 or the day of implementation of this JCPOA, whichever comes later, and after that it will take these machines out of the PFEP and store them under IAEA continuous monitoring at Natanz in Hall B of FEP.
34. Consistent with its plan, Iran will continue working with the 164-machine IR-4 cascade at PFEP in order to complete the necessary tests until 30 November 2015 or the day of implementation of this JCPOA, whichever comes later, and after that it will take these machines out of the PFEP and store them under IAEA continuous monitoring at Natanz in Hall B of FEP.
35. Iran will continue the testing of a single IR-4 centrifuge machine and IR-4 centrifuge cascade of up to 10 centrifuge machines for 10 years.

36. Iran will test a single IR-5 centrifuge machine for 10 years.
37. Iran will continue testing of the IR-6 on single centrifuge machines and its intermediate cascades and will commence testing of up to 30 centrifuge machines from one and a half years before the end of year 10. Iran will proceed from single centrifuge machines and small cascades to intermediate cascades in a logical sequence.
38. Iran will commence, upon start of implementation of the JCPOA, testing of the IR-8 on single centrifuge machines and its intermediate cascades and will commence the testing of up to 30 centrifuges machines from one and a half years before the end of year 10. Iran will proceed from single centrifuges to small cascades to intermediate cascades in a logical sequence.
39. For 10 years, Iran, consistent with the established practice, will recombine the enriched and depleted streams from the IR-6 and IR-8 cascades through the use of welded pipework on withdrawal main headers in a manner that precludes the withdrawal of enriched and depleted uranium materials and verified by the IAEA.
40. For 15 years, Iran will conduct all testing of centrifuges with uranium only at the PFEP. Iran will conduct all mechanical testing of centrifuges only at the PFEP and the Tehran Research Centre.
41. For the purpose of adapting PFEP to the R&D activities in the enrichment and enrichment R&D plan, Iran will remove all centrifuges except those needed for testing as described in the relevant paragraphs above, except for the IR-1 cascade (No. 1) as described below. For the full IR-1 cascade (No. 6), Iran will modify associated infrastructure by removing UF<sub>6</sub> pipework, including sub-headers, valves and pressure transducers at cascade level, and frequency inverters. The IR-1 cascade (No. 1)

centrifuges will be kept but made inoperable, as verified by the IAEA, through the removal of centrifuge rotors and the injection of epoxy resin into the sub headers, feeding, product, and tails pipework, and the removal of controls and electrical systems for vacuum, power and cooling. Excess centrifuges and infrastructure will be stored at Natanz in Hall B of FEP under IAEA continuous monitoring. The R&D space in line No. 6 will be left empty until Iran needs to use it for its R&D programme.

42. Consistent with the activities in the enrichment and enrichment R&D plan, Iran will maintain the cascade infrastructure for testing of single centrifuges and small and intermediate cascades in two R&D lines (No. 2 and No. 3) and will adapt two other lines (No. 4 and No. 5) with infrastructure similar to that for lines No. 2 and No. 3 in order to enable future R&D activities as specified in this JCPoA. Adaptation will include modification of all UF6 pipework (including removal of all sub headers except as agreed as needed for the R&D programme) and associated instrumentation to be compatible with single centrifuges and small and intermediate cascade testing instead of full scale testing.

43. Consistent with its plan and internationally established practices, Iran intends to continue R&D on new types of centrifuges through computer modelling and simulations, including at universities. For any such project to proceed to a prototype stage for mechanical testing within 10 years, a full presentation to, and approval by, the Joint Commission is needed.

## **H. FORDOW FUEL ENRICHMENT PLANT**

44. The Fordow Fuel Enrichment Plant (FFEP) will be converted into a nuclear, physics, and technology centre and international collaboration will be encouraged in agreed areas of research. The Joint Commission will be informed in advance of the specific projects that will be undertaken at Fordow.

45. Iran will not conduct any uranium enrichment or any uranium enrichment related R&D and will have no nuclear material at the Fordow Fuel Enrichment Plant (FFEP) for 15 years.

46. For 15 years, Iran will maintain no more than 1044 IR-1 centrifuge machines at one wing of the FFEP of which:

46. Two cascades that have not experienced UF<sub>6</sub> before will be modified for the production of stable isotopes. The transition to stable isotope production of these cascades at FFEP will be conducted in joint partnership between the Russian Federation and Iran on the basis of arrangements to be mutually agreed upon. To prepare these two cascades for installation of a new cascade architecture appropriate for stable isotope production by the joint partnership, Iran will remove the connection to the UF<sub>6</sub> feed main header, and move cascade UF<sub>6</sub> pipework (except for the dump line in order to maintain vacuum) to storage in Fordow under IAEA continuous monitoring. The Joint Commission will be informed about the conceptual framework of stable isotope production at FFEP.

46. For four cascades with all associated infrastructure remaining except for pipework that enables crossover tandem connections, two will be placed in an idle state, not spinning. The other two cascades will continue to spin until the transition to stable isotope production described in the previous subparagraph has been completed. Upon completion of the transition to stable isotope production described in the previous

subparagraph, these two spinning cascades will be placed in an idle state, not spinning.

47. Iran will:

47. remove the other 2 cascades of IR-1 centrifuges from this wing, by removing all centrifuges and cascade UF6 pipework, including sub headers, valves and pressure transducers at cascade level, and frequency inverters.

47. also subsequently remove cascade electrical cabling, individual cascade control cabinets and vacuum pumps. All these excess centrifuges and infrastructure will be stored at Natanz in Hall B of FEP under IAEA continuous monitoring.

48. Iran will:

48. remove all excess centrifuges and uranium enrichment related infrastructure from the other wing of the FFEP. This will include removal of all centrifuges and UF6 pipework, including sub headers, valves and pressure gauges and transducers, and frequency inverters and converters, and UF6 feed and withdrawal stations.

48. also subsequently remove cascade electrical cabling, individual cascade control cabinets, vacuum pumps and centrifuge mounting blocks. All these excess centrifuges and infrastructure will be stored at Natanz in Hall B of FEP under IAEA continuous monitoring.

49. Centrifuges from the four idle cascades may be used for the replacement of failed or damaged centrifuges in stable isotope production at Fordow.



50. Iran will limit its stable isotope production activities with gas centrifuges to the FFEP for 15 years and will use no more than 348 IR-1 centrifuges for these activities at the FFEP. The associated R&D activities in Iran will occur at the FFEP and at Iran's declared and monitored centrifuge manufacturing facilities for testing, modification and balancing these IR-1 centrifuges.

51. The IAEA will establish a baseline for the amount of uranium legacy from past enrichment operations that will remain in Fordow. Iran will permit the IAEA regular access, including daily as requested by the IAEA, access to the FFEP in order to monitor Iran's production of stable isotopes and the absence of undeclared nuclear material and activities at the FFEP for 15 years.

## **I. OTHER ASPECTS OF ENRICHMENT**

52. Iran will abide by its voluntary commitments as expressed in its own long term enrichment and enrichment R&D plan to be submitted as part of the initial declaration described in Article 2 of the Additional Protocol.<sup>[1]</sup> The IAEA will confirm on an annual basis, for the duration of the plan that the nature and scope and scale of Iran's enrichment and enrichment R&D activities are in line with this plan.

53. Iran will start to install necessary infrastructure for the IR-8 at Natanz in Hall B of FEP after year 10.

54. An agreed template for describing different centrifuge types (IR-1, IR-2m, IR-4, IR-5, IR-6, IR-6s, IR-7, IR-8) and the associated definitions need to be accomplished by implementation day.

55. An agreed procedure for measuring IR-1, IR-2m and IR-4 centrifuge performance data needs to be accomplished by implementation day.

## **J. URANIUM STOCKS AND FUELS**

56. Iran will maintain a total enriched uranium stockpile of no more than 300 kg of up to 3.67% enriched uranium hexafluoride (or the equivalent in different chemical forms) for 15 years.

57. All enriched uranium hexafluoride in excess of 300 kg of up to 3.67% enriched UF<sub>6</sub> (or the equivalent in different chemical forms) will be down blended to natural uranium level or be sold on the international market and delivered to the international buyer in return for natural uranium delivered to Iran. Iran will enter into a commercial contract with an entity outside Iran for the purchase and transfer of its enriched uranium stockpile in excess of 300 kg UF<sub>6</sub> in return for natural uranium delivered to Iran. The E3/EU+3 will facilitate, where applicable, the conclusion and implementation of this contract. Iran may choose to seek to sell excess enriched uranium to the IAEA fuel bank in Kazakhstan when the fuel bank becomes operational.

58. All uranium oxide enriched to between 5% and 20% will be fabricated into fuel plates for the Tehran Research Reactor or transferred, based on a commercial transaction, outside of Iran or diluted to an enrichment level of 3.67% or less. Scrap oxide and other forms not in plates that cannot be fabricated into TRR fuel plates will be transferred, based on a commercial transaction, outside of Iran or diluted to an enrichment level of 3.67% or less. In case of future supply of 19.75% enriched uranium oxide (U<sub>3</sub>O<sub>8</sub>) for TRR fuel plates fabrication, all scrap oxide and other forms not in plates that cannot be fabricated into TRR fuel plates, containing uranium enriched to between 5% and 20%, will be transferred, based on a commercial transaction, outside of Iran or diluted to an enrichment level of 3.67% or less within 6 months of its production. Scrap plates will be transferred, based on a commercial transaction, outside Iran. The commercial transactions should be structured to return an equivalent amount of natural uranium to Iran. For 15 years, Iran will not build or operate facilities for converting fuel plates or scrap back to UF<sub>6</sub>.

59. Russian designed, fabricated and licensed fuel assemblies for use in Russian-supplied reactors in Iran do not count against the 300 kg UF<sub>6</sub> stockpile limit. Enriched uranium in fabricated fuel assemblies from other sources outside of Iran for use in Iran's nuclear research and power reactors, including those which will be fabricated outside of Iran for the initial fuel load of the modernised Arak research reactor, which are certified by the

fuel supplier and the appropriate Iranian authority to meet international standards, will not count against the 300 kg UF6 stockpile limit. The Joint Commission will establish a Technical Working Group with the goal of enabling fuel to be fabricated in Iran while adhering to the agreed stockpile parameters (300 kg of up to 3.67 % enriched UF6 or the equivalent in different chemical forms). This Technical Working Group will also, within one year, work to develop objective technical criteria for assessing whether fabricated fuel and its intermediate products can be readily converted to UF6. Enriched uranium in fabricated fuel assemblies and its intermediate products manufactured in Iran and certified to meet international standards, including those for the modernised Arak research reactor, will not count against the 300 kg UF6 stockpile limit provided the Technical Working Group of the Joint Commission approves that such fuel assemblies and their intermediate products cannot be readily reconverted into UF6. This could for instance be achieved through impurities (e.g. burnable poisons or otherwise) contained in fuels or through the fuel being in a chemical form such that direct conversion back to UF6 would be technically difficult without dissolution and purification. The objective technical criteria will guide the approval process of the Technical Working Group. The IAEA will monitor the fuel fabrication process for any fuel produced in Iran to verify that the fuel and intermediate products comport with the fuel fabrication process that was approved by the Technical Working Group. The Joint Commission will also support assistance to Iran including through IAEA technical cooperation as appropriate, in meeting international qualification standards for nuclear fuel produced by Iran.

60. Iran will seek to enter into a commercial contract with entities outside Iran for the purchase of fuel for the TRR and enriched uranium targets. The E3/EU+3 will facilitate, as needed, the conclusion and implementation of this contract. In the case of lack of conclusion of a contract with a fuel supplier, E3/EU+3 will supply a quantity of 19.75% enriched uranium oxide (U3O8) and deliver to Iran, exclusively for the purpose of fabrication in Iran of fuel for the TRR and enriched uranium targets for the lifetime of the reactor. This 19.75% enriched uranium oxide (U3O8) will be supplied in increments no greater than approximately 5 kg and each new increment will be provided only when the previous increment of this material has been verified by the IAEA to have been mixed

with aluminum to make fuel for the TRR or fabricated into enriched uranium targets. Iran will notify the E3/EU+3 within 2 year before the contingency of TRR fuel will be exhausted in order to have the uranium oxide available 6 months before the end of the 2 year period.

## **K. CENTRIFUGE MANUFACTURING**

61. Consistent with its enrichment and enrichment R&D plan, Iran will only engage in production of centrifuges, including centrifuge rotors suitable for isotope separation or any other centrifuge components, to meet the enrichment and enrichment R&D requirements of this Annex.
  
62. Consistent with its plan, Iran will use the stock of IR-1 centrifuge machines in storage, which are in excess of the remaining 5060 IR-1 centrifuges in Natanz and the IR-1 centrifuges installed at Fordow, for the replacement of failed or damaged machines. Whenever during the 10 year period from the start of the implementation of the JCPOA, the level of stock of IR-1 machines falls to 500 or below, Iran may maintain this level of stock by resuming production of IR-1 machines at a rate up to the average monthly crash rate without exceeding the stock of 500.
  
63. Consistent with its plan, at the end of year 8, Iran will commence manufacturing of IR-6 and IR-8 centrifuges without rotors through year 10 at a rate of up to 200 centrifuges per year for each type. After year 10, Iran will produce complete centrifuges with the same rate to meet its enrichment and enrichment R&D needs. Iran will store them at Natanz in an above ground location, under IAEA continuous monitoring, until they are needed for final assembly according to the enrichment and enrichment R&D plan.

#### **L. ADDITIONAL PROTOCOL AND MODIFIED CODE 3.1**

64. Iran will notify the IAEA of provisional application of the Additional Protocol to its Safeguards Agreement in accordance with Article 17(b) of the Additional Protocol pending its entry into force, and subsequently seek ratification and entry into force, consistent with the respective roles of the President and the Majlis (Parliament).

65. Iran will notify the IAEA that it will fully implement the Modified Code 3.1 of the Subsidiary Arrangement to Iran's Safeguards Agreement as long as the Safeguards Agreement remains in force.

#### **M. PAST AND PRESENT ISSUES OF CONCERN**

66. Iran will complete all activities as set out in paragraphs 2, 4, 5, and 6 of the "Roadmap for Clarification of Past and Present Outstanding Issues", as verified by the IAEA in its

regular updates by the Director General of the IAEA on the implementation of this Roadmap.

#### **N. MODERN TECHNOLOGIES AND LONG TERM PRESENCE OF IAEA**

67. For the purpose of increasing the efficiency of monitoring for this JCPOA, for 15 years or longer, for the specified verification measures:

67. Iran will permit the IAEA the use of on-line enrichment measurement and electronic seals which communicate their status within nuclear sites to IAEA inspectors, as well as other IAEA approved and certified modern technologies in line with internationally accepted IAEA practice. Iran will facilitate automated collection of IAEA measurement recordings registered by installed measurement devices and sending to IAEA working space in individual nuclear sites.

67. Iran will make the necessary arrangements to allow for a long-term IAEA presence, including issuing long-term visas, as well as providing proper working space at nuclear sites and, with best efforts, at locations near nuclear sites in Iran for the designated IAEA inspectors for working and keeping necessary equipment.

67. Iran will increase the number of designated IAEA inspectors to the range of 130-150 within 9 months from the date of the implementation of the JCPOA, and will generally

allow the designation of inspectors from nations that have diplomatic relations with Iran, consistent with its laws and regulations.

#### **O. TRANSPARENCY RELATED TO URANIUM ORE CONCENTRATE (UOC)**

68. Iran will permit the IAEA to monitor, through agreed measures that will include containment and surveillance measures, for 25 years, that all uranium ore concentrate produced in Iran or obtained from any other source, is transferred to the uranium conversion facility (UCF) in Esfahan or to any other future uranium conversion facility which Iran might decide to build in Iran within this period.
  
69. Iran will provide the IAEA with all necessary information such that the IAEA will be able to verify the production of the uranium ore concentrate and the inventory of uranium ore concentrate produced in Iran or obtained from any other source for 25 years.



## **P. TRANSPARENCY RELATED TO ENRICHMENT**

70. For 15 years, Iran will permit the IAEA to implement continuous monitoring, including through containment and surveillance measures, as necessary, to verify that stored centrifuges and infrastructure remain in storage, and are only used to replace failed or damaged centrifuges, as specified in this Annex.
71. Iran will permit the IAEA regular access, including daily access as requested by the IAEA, to relevant buildings at Natanz, including all parts of the FEP and PFEP, for 15 years.
72. For 15 years, the Natanz enrichment site will be the sole location for all of Iran's uranium enrichment related activities including safeguarded R&D.
73. Iran intends to apply nuclear export policies and practices in line with the internationally established standards for the export of nuclear material, equipment and technology. For 15 years, Iran will only engage, including through export of any enrichment or enrichment related equipment and technology, with any other country, or with any foreign entity in enrichment or enrichment related activities, including related research and development activities, following approval by the Joint Commission.

## **Q. ACCESS**

74. Requests for access pursuant to provisions of this JCPOA will be made in good faith, with due observance of the sovereign rights of Iran, and kept to the minimum necessary to effectively implement the verification responsibilities under this JCPOA. In line with normal international safeguards practice, such requests will not be aimed at interfering with Iranian military or other national security activities, but will be exclusively for resolving concerns regarding fulfilment of the JCPOA commitments and Iran's other non-proliferation and safeguards obligations. The following procedures are for the purpose of JCPOA implementation between the E3/EU+3 and Iran and are without prejudice to the safeguards agreement and the Additional Protocol thereto. In implementing this procedure as well as other transparency measures, the IAEA will be requested to take every precaution to protect commercial, technological and industrial secrets as well as other confidential information coming to its knowledge.

75. In furtherance of implementation of the JCPOA, if the IAEA has concerns regarding undeclared nuclear materials or activities, or activities inconsistent with the JCPOA, at locations that have not been declared under the comprehensive safeguards agreement or Additional Protocol, the IAEA will provide Iran the basis for such concerns and request clarification.

76. If Iran's explanations do not resolve the IAEA's concerns, the Agency may request access to such locations for the sole reason to verify the absence of undeclared nuclear materials and activities or activities inconsistent with the JCPOA at such locations. The IAEA will provide Iran the reasons for access in writing and will make available relevant information.

77. Iran may propose to the IAEA alternative means of resolving the IAEA's concerns that enable the IAEA to verify the absence of undeclared nuclear materials and activities or activities inconsistent with the JCPOA at the location in question, which should be given due and prompt consideration.

78. If the absence of undeclared nuclear materials and activities or activities inconsistent with the JCPOA cannot be verified after the implementation of the alternative arrangements agreed by Iran and the IAEA, or if the two sides are unable to reach satisfactory arrangements to verify the absence of undeclared nuclear materials and activities or activities inconsistent with the JCPOA at the specified locations within 14 days of the IAEA's original request for access, Iran, in consultation with the members of the Joint Commission, would resolve the IAEA's concerns through necessary means agreed between Iran and the IAEA. In the absence of an agreement, the members of the Joint Commission, by consensus or by a vote of 5 or more of its 8 members, would advise on the necessary means to resolve the IAEA's concerns. The process of consultation with, and any action by, the members of the Joint Commission would not exceed 7 days, and Iran would implement the necessary means within 3 additional days.

## **R. CENTRIFUGE COMPONENT MANUFACTURING TRANSPARENCY**

79. Iran and the IAEA will take the necessary steps for containment and surveillance on centrifuge rotor tubes and bellows for 20 years.

80. In this context:

80. Iran will provide the IAEA with an initial inventory of all existing centrifuge rotor tubes and bellows and subsequent reports on changes in such inventory and will permit the IAEA to verify the inventory by item counting and numbering, and through containment and surveillance, of all rotor tubes and bellows, including in all existing and newly produced centrifuges.

80. Iran will declare all locations and equipment, namely flow-forming machines, filament-winding machines and mandrels that are used for production of centrifuge rotor tubes or bellows, and will permit the IAEA to implement continuous monitoring, including through containment and surveillance on this equipment, to verify that this equipment is being used to manufacture centrifuges only for the activities specified in this JCPOA.

## **S. OTHER URANIUM ISOTOPE SEPARATION ACTIVITIES**

81. For 10 years, Iran's uranium isotope separation-related research and development or production activities will be exclusively based on gaseous centrifuge technology.<sup>[2]</sup> Iran

will permit IAEA access to verify that uranium isotope separation production and R&D activities are consistent with this Annex.

#### **T. ACTIVITIES WHICH COULD CONTRIBUTE TO THE DESIGN AND DEVELOPMENT OF A NUCLEAR EXPLOSIVE DEVICE**

82. Iran will not engage in the following activities which could contribute to the development of a nuclear explosive device:

82. Designing, developing, acquiring, or using computer models to simulate nuclear explosive devices.

82. Designing, developing, fabricating, acquiring, or using multi-point explosive detonation systems suitable for a nuclear explosive device, unless approved by the Joint Commission for non-nuclear purposes and subject to monitoring.

82. Designing, developing, fabricating, acquiring, or using explosive diagnostic systems (streak cameras, framing cameras and flash x-ray cameras) suitable for the development of a nuclear explosive device, unless approved by the Joint Commission for non-nuclear purposes and subject to monitoring.

82. Designing, developing, fabricating, acquiring, or using explosively driven neutron sources or specialized materials for explosively driven neutron sources.

Attachment: Arak conceptual design

**Fundamental Principles:**

- Maximize use of the current infrastructure of original design of Arak research reactor, designated by the IAEA as IR-40, according to their respective ratings.
- Modernizing of the original design in order to be a multi-purpose research reactor comprising radio-isotope production, structural materials and fuel (pins and assembly prototypes) testing and able to conduct other neutronic experiments which demand high neutron fluxes (more than  $10^{14}$ ).

- Using heavy water as coolant, moderator and reflector. Light water would be utilized as an annular ring around the compact new core for safety reasons if necessary.
- Around 78 fuel assemblies in a tight hexagonal grid spacing with the following preliminary characteristics will be loaded.
- Up to 3.67 percent enriched UO<sub>2</sub>, in the improved assembly design, will be used as fuel.
- Power will not exceed to 20 MWth.
- Adding different types of beam tubes to the existing beam tubes which being extended to the edge of the new compact core.
- Having one central channel in the center of the new core with passive cooling system for the purpose of structural materials and fuel pins and assembly prototypes testing with neutron flux beyond  $2 \cdot 10^{14}$ , twelve in-core irradiation channels (IIC) inside the core and twelve lateral irradiation chennals (LIC) just next to the outer ring of fuel assemblies.
- The location of the in-core and lateral irradiation channels should be designed and fixed to meet the best anticipated performances.
- Consistent with relevant section of Annex 1, subsidiary laboratories are part of the modernization project of the Arak Research Reactor. In Addition, Annex III reinforce design and construction of subsidiary laboratoties.
- The highest tolerable pressure for the first and second loop is 0.33 Mpa (at the interance of the reactor pit).
- The highest possible flow rate for coolant is 610 kg/s at the pressure of 0.33 MPa in the main piping system and 42 Kg/sec for Moderator with the same conditions.

**Preliminary Characteristics:**

Core Parameters	Values
Power (MW)	20

Number of fuel assemblies	~ 78
Active length (cm)	~ 110
Lattice configuration	Hexagonal
Fuel pellets Material	UO <sub>2</sub>
Fuel enrichment level	Up to 3.67 %
Clad material	Zr Alloys
Burnable poison	Yes, if necessary
Lattice pitch (cm)	~ 11
Coolant medium	D <sub>2</sub> O
Moderator medium	D <sub>2</sub> O
Reflector medium	D <sub>2</sub> O
Reflector thickness (cm)	~ 50
Purity of D <sub>2</sub> O	~ 99.8%
Mass of D <sub>2</sub> O (mtons)	~ 60-70
Yearly makeup	Yes
K <sub>eff</sub>	< 1.25



Core Excess reactivity (pcm)	< 20000
Cycle length (days) approximatly	~ 250
<sup>239</sup> Pu at EoC (g)	~ 850
<sup>239</sup> Pu purity at EoC	~ 78%
<sup>235</sup> U consumption	~ 60%
Maximum Thermal Flux , E<0.625ev	~ 3•10 <sup>14</sup>
Maximum Fast Flux, E>0.625ev	~ 1•10 <sup>14</sup>
Minimum Thermal Flux , E<0.625ev	~ 1•10 <sup>14</sup>
Minimum Fast Flux, E>0.625ev	~ 1•10 <sup>14</sup>
Fluid velocity in channels (m/s)	~ 3.8
Channel mass flow rate (kg/s)	~ 2.4
Working pressure (MPa)	0.33
Fluid inlet temperature (oC)	~ 47
Fluid outlet temperature (oC)	~ 78
Core material	Mainly S.S. 304
Core wall Thickness (mm)	~ 30

Fuel Pellet Diameter (cm)	~ 0.65
Inner Clad Diameter (cm)	~ 0.67
Outer Clad Diameter (cm)	~ 0.8
Number of pins per assembly	12
Mass of UO <sub>2</sub> in full core load (Kg)	~ 350
Core diameter (cm)	~ 240

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[1] Iran will permit the IAEA to share the content of the enrichment and enrichment R&D plan, as submitted as part of the initial declaration, with the Joint Commission participants.

[2] For the purpose of this Annex, non-gaseous centrifuge uranium isotope separation-related research and development or production will include laser isotope separation systems, electromagnetic isotope separation systems, chemical exchange systems, gaseous diffusion systems, vortex and aerodynamic systems, and other such processes that separate uranium isotopes.

## **Annex II – Sanctions-related commitments**

The sequence of implementation of the commitments detailed in this Annex is specified in Annex V (Implementation Plan) to this Joint Comprehensive Plan of Action (JCPOA).

A. **European Union**<sup>[1]</sup>

1. The EU and EU Member States commit to terminate all provisions of Council Regulation (EU) No 267/2012 (as subsequently amended) implementing all nuclear-related sanctions or restrictive measures as specified in Sections 1.1-1.10 below, to terminate all provisions of Council Decision 2010/413/CFSP (as subsequently amended), as specified in Sections 1.1-1.10 below, and to terminate or amend national implementing legislation as required, in accordance with Annex V:

1. **Financial, banking and insurance measures**<sup>[2]</sup>

1. Prohibition and authorisation regimes on financial transfers to and from Iran (Article 10 of Council Decision 2010/413/CFSP; Articles 30, 30a, 30b and 31 of Council Regulation (EU) No 267/2012);
1. Sanctions on banking activities (Article 11 of Council Decision 2010/413/CFSP; Article 33 of Council Regulation (EU) No 267/2012);
1. Sanctions on insurance (Article 12 of Council Decision 2010/413/CFSP; Article 35 of Council Regulation (EU) No 267/2012);
1. Sanctions on financial messaging services (Article 20(12) of Council Decision 2010/413/CFSP; Article 23(4) of Council Regulation (EU) No 267/2012);

1. Sanctions on financial support for trade with Iran (Article 8 of Council Decision 2010/413/CFSP);
  
1. Sanctions on grants, financial assistance and concessional loans (Article 9 of Council Decision 2010/413/CFSP);
  
1. Sanctions on Government of Iran public-guaranteed bonds (Article 13 of Council Decision 2010/413/CFSP; Article 34 of Council Regulation (EU) No 267/2012); and
  
1. Sanctions on associated services<sup>[3]</sup> for each of the categories above (see the references above).
  
1. **Oil, gas and petrochemical sectors**
  1. Sanctions on the import of oil and gas from Iran (Articles 3a, 3c and 3e of Council Decision 2010/413/CFSP; Articles 11, 12 and 14a, and Annexes IV and IVA of Council Regulation (EU) No 267/2012);
  
  1. Sanctions on the import of Iranian petrochemical products (Articles 3b and 3d of Council Decision 2010/413/CFSP; Articles 13 and 14, and Annex V of Council Regulation (EU) No 267/2012);

1. Sanctions on the export of key equipment for the oil, gas and petrochemical sectors (Articles 4, 4a and 4b of Council Decision 2010/413/CFSP; Articles 8, 9 and 10, and Annexes VI and VIIA of Council Regulation (EU) No 267/2012);
  
1. Sanctions on investment in the oil, gas and petrochemical sectors (Articles 6, 6a and 7 of Council Decision 2010/413/CFSP; Articles 17(1), 17(2)(b) and (c), 17(3), 17(4), 17(5), 20 and 21 of Council Regulation (EU) No 267/2012); and
  
1. Sanctions on associated services for each of the categories above (see the references above).
  
1. **Shipping, shipbuilding and transport sectors**
  
1. Sanctions related to shipping and shipbuilding (Articles 4g, 4h, 8a, 18a and 18b of Council Decision 2010/413/CFSP; Articles 10a, 10b, 10c, 37a, and 37b, and Annex VIIB of Council Regulation (EU) No 267/2012);
  
1. Sanctions related to the transport sector (Articles 15, 16, 17 and 18 of Council Decision 2010/413/CFSP; Articles 36 and 37 of Council Regulation (EU) No 267/2012); and
  
1. Sanctions on associated services for each of the categories above (see the references above).
  
1. **Gold, other precious metals, banknotes and coinage**

1. Sanctions on gold, precious metals and diamonds, banknotes and coinage (Articles 4c and 4d of Council Decision 2010/413/CFSP; Articles 15 and 16, and Annex VII of Council Regulation (EU) No 267/2012); and

1. Sanctions on associated services for each of the categories above (see the references above).

1. **Nuclear proliferation-related measures**

1. Sanctions related to proliferation-sensitive nuclear activities (goods and technology, investment and specialised training) (Articles 1(1) (a), (b), (d), (e), (2), (3) and (4), 2, 3, 5, 14 and 21 of Council Decision 2010/413/CFSP; Articles 2, 3, 4, 5, 6,7, 17(1) and (2)(a), 18, 19 and 22, and Annexes I, II and III of Council Regulation (EU) No 267/2012); and

1. Sanctions on associated services for the category above (see the references above).

1. **Metals**

1. Sanctions on metals (Articles 4e and 4f of Council Decision 2010/413/CFSP; Articles 15a, 15b and 15c, and Annex VIIB of Council Regulation (EU) No 267/2012); and

1. Sanctions on associated services for the category above (see the references above).

1. **Software**

1. Sanctions on software (Articles 4i and 4j of Council Decision 2010/413/CFSP; Articles 10d, 10e and 10f, and Annex VIIA of Council Regulation (EU) No 267/2012); and

1. Sanctions on associated services for the category above (see the references above).

1. **Arms**

1. Sanctions on arms (Articles 1(1)(c), (3) and (4), and 3 of Council Decision 2010/413/CFSP; Articles 5(1)(a) and (c), 17(1) and (2)(a), and 19 of Council Regulation (EU) No 267/2012); and

1. Sanctions on associated services for the category above (see the references above).

1. **Listing of persons, entities and bodies (asset freeze and visa ban)**

1. Asset freeze and visa ban measures applicable to:

1. listed Iranian banks and financial institutions, including the Central Bank of Iran;
2. listed persons, entities and bodies related to the oil, gas and petrochemical sectors;
3. listed persons, entities and bodies related to shipping, shipbuilding and transport;
4. other listed persons, entities and bodies not related to proliferation-sensitive nuclear-, arms- and ballistic missile- related activities;

5. listed persons, entities and bodies related to proliferation-sensitive nuclear-, arms- and ballistic missile-related activities; and
6. entities and individuals listed by the UN Security Council,

as set out in Attachment 1, part I to this Annex for categories 1.9.1.1-1.9.1.4, Attachment 2, part I to this Annex for category 1.9.1.5, and Parts II of Attachments 1 and 2 to this Annex for category 1.9.1.6 (Articles 19 and 20, and Annexes I and II to Council Decision 2010/413/CFSP; Articles 23, 24, 25, 26, 27, 28, 28a, 28b and 29, and Annexes VIII and IX to Council Regulation (EU) No 267/2012).

### **1. Other provisions**

1. The commitment in Section 1 covers all remaining provisions of Council Decision 2010/413/CFSP and Council Regulation (EU) No 267/2012 not specified above.
1. Definitions (Article 1 of Council Regulation (EU) No 267/2012); and
1. General and final provisions (Articles 22, 23, 24, 25, 26, 26a, 27 and 28 of Council Decision 2010/413/CFSP; Articles 38, 39, 40, 41, 42, 43, 43a, 44, 45, 46, 47, 48, 49, 50 and 51, and Annex X of Council Regulation (EU) No 267/2012).
2. The EU represents that the provisions listed in Section 1 above constitute the full and complete list of all EU nuclear-related sanctions or restrictive measures. These sanctions or restrictive measures will be lifted in accordance with Annex V.

### **3. Effects of the lifting of EU economic and financial sanctions**



3. As a result of the lifting of sanctions specified in Section 1 above, the following activities, including associated services, will be allowed, beginning on implementation day, in accordance with this JCPOA and provided that such activities are otherwise consistent with EU and EU Member States' laws and regulations in effect:[\[4\]](#)

**3. Financial, banking and insurance measures (See Sections 1.1.1 to 1.1.8)**

1. Transfers of funds between EU persons, entities or bodies, including EU financial and credit institutions, and Iranian persons, entities or bodies, including Iranian financial and credit institutions, without the requirement for authorisation or notification;
1. Opening of new branches, subsidiaries or representative offices of Iranian banks in the territories of EU Member States; and the establishment of new joint ventures, or the taking of an ownership interest or the establishment of new correspondent banking relationships by Iranian banks with EU banks; and opening by EU persons, including EU financial and credit institutions, of representative offices, subsidiaries, joint ventures or bank accounts in Iran;
1. Provision of insurance or reinsurance to Iran or the Government of Iran, an Iranian legal person, entity or body, or a natural person or a legal person, entity or body acting on their behalf or at their direction;
1. Supply of specialised financial messaging services to any Iranian natural or legal persons, entities or bodies, including those listed in Attachment 1 to this Annex;

1. Entering into commitments by EU Member States to provide financial support for trade with Iran, including the granting of export credits, guarantees or insurance; and into commitments for grants, financial assistance and concessional loans to the Government of Iran; and

1. Sale or purchase of public or public-guaranteed bonds to and from Iran, the Government of Iran, the Central Bank of Iran, or Iranian banks and financial institutions or persons acting on their behalf.

3. **Oil, gas and petrochemical sectors (See Sections 1.2.1 to 1.2.5)**

1. Import, purchase, swap or transport of Iranian crude oil and petroleum products, natural gas or petrochemical products and related financing;

1. Sale, supply, transfer or export of equipment or technology, technical assistance, including training, used in the sectors of the oil, gas and petrochemical industries in Iran covering exploration, production and refining of oil and natural gas, including liquefaction of natural gas, to any Iranian person, in or outside Iran, or for use in Iran; and

1. Granting of any financial loan or credit to, the acquisition or extension of a participation in, and the creation of any joint venture with, any Iranian person that is engaged in the oil, gas and petrochemical sectors in Iran or outside Iran.

3. **Shipping, shipbuilding and transport sectors (See Sections 1.3.1 to 1.3.3)**

1. Sale, supply, transfer or export of naval equipment and technology for ship building, maintenance or refit, to Iran or to any Iranian persons engaged in this sector; the design, construction or the participation in the design or construction of cargo vessels and oil tankers for Iran or for Iranian persons; the provision of vessels designed or used for the transport or storage of oil and petrochemical products to Iranian persons, entities or bodies; and the provision of flagging and classification services, including those pertaining to technical specification, registration and identification numbers of any kind, to Iranian oil tankers and cargo vessels;

1. Access to the airports under the jurisdiction of EU Member States of all cargo flights operated by Iranian carriers or originating from Iran;

1. Cessation of inspection, seizure and disposal by EU Member States of cargoes to and from Iran in their territories with regard to items which are no longer prohibited; and

1. Provision of bunkering or ship supply services, or any other servicing of vessels, to Iranian-owned or Iranian-contracted vessels not carrying prohibited items; and the provision of fuel, engineering and maintenance services to Iranian cargo aircraft not carrying prohibited items.

3. **Gold, other precious metals, banknotes and coinage (See Sections 1.4.1 to 1.4.2)**

1. Sale, supply, purchase, export, transfer or transport of gold and precious metals as well as diamonds, and provision of related brokering, financing and security services, to, from or for the Government of Iran, its public bodies, corporations and agencies, or the Central Bank of Iran; and

1. Delivery of newly printed or minted or unissued Iranian denominated banknotes and coinage to, or for the benefit of the Central Bank of Iran.

**3. Metals (See Sections 1.6.1 to 1.6.2)**

1. Sale, supply, transfer or export of graphite and raw or semi-finished metals, such as aluminum and steel to any Iranian person, entity or body or for use in Iran, in connection with activities consistent with this JCPOA.

**3. Software (See Sections 1.7.1 to 1.7.2)**

1. Sale, supply, transfer or export of software for integrating industrial processes, including updates, to any Iranian person, entity or body, or for use in Iran, in connection with activities consistent with this JCPOA,

**3. Listing of persons, entities and bodies (asset freeze and visa ban) (See Section 1.9.1)**

1. As a result of delisting as specified in this Annex, releasing of all funds and economic resources which belong to, and making available funds or economic resources to, the persons, entities and bodies, including Iranian banks and financial institutions, the Central Bank of Iran, listed in Attachment 1 to this Annex; and

3.8.2. As a result of delisting as specified in this Annex, entry into, or transit through the territories of EU Member States of individuals listed in Attachment 1 to this Annex.

## B. United States<sup>[5]</sup>

4. The United States commits to cease the application of, and to seek such legislative action as may be appropriate to terminate, or modify to effectuate the termination of, all nuclear-related sanctions<sup>[6]</sup> as specified in Sections 4.1-4.9 below, and to terminate Executive Orders 13574, 13590, 13622 and 13645, and Sections 5-7 and 15 of Executive Order 13628, in accordance with Annex V.<sup>[7]</sup>

### 4.1. Financial and banking measures

4.1.1. Sanctions on transactions with individuals and entities set out in Attachment 3 to this Annex, including: the Central Bank of Iran (CBI) and other specified Iranian financial institutions; the National Iranian Oil Company (NIOC),<sup>[8]</sup> Naftiran Intertrade Company (NICO), National Iranian Tanker Company (NITC) and other specified individuals and entities identified as Government of Iran by the Office of Foreign Assets Control; and certain designated individuals and entities on the Specially Designated Nationals and Blocked Persons List (SDN List) (Comprehensive Iran Sanctions, Accountability, and Divestment Act of 2010 (CISADA) Section 104(c)(2)(E)(ii)(I); National Defense Authorization Act for Fiscal Year 2012 (NDAA) Sections 1245(d)(1) and (3); Iran Freedom and Counter-Proliferation Act of 2012 (IFCA) Sections 1244(c)(1) and (d), 1245(a)(1)(A), (a)(1)(C)(i)(II) and (c), 1246(a) and 1247(a); Sections 1(a)(i) and 5(a) of Executive Order (E.O.) 13622 and Sections 2(a)(i) and 3(a)(i) of E.O. 13645);

4.1.2. Sanctions on the Iranian Rial (NDAA Sections 1245(d)(1) and (3); IFCA Sections 1244(c)(1), 1246(a) and 1247(a); Section 5(a) of E.O. 13622 and Sections 1(a), 2(a)(i) and 3(a)(i) of E.O. 13645);

4.1.3. Sanctions on the provision of U.S. banknotes to the Government of Iran (NDAA Sections 1245(d)(1) and (3); IFCA Sections 1244(c)(1) and (d), 1246(a)

and 1247(a); Section 5(a) of E.O. 13622 and Sections 2(a)(i) and 3(a)(i) of E.O. 13645);

4.1.4. Bilateral trade limitations on Iranian revenues held abroad, including limitations on their transfer (NDAA Sections 1245(d)(1) and (3); IFCA Sections 1244(c)(1), (d) and (h)(2), 1246(a) and 1247(a); Sections 1(a)(i)-(ii), 2(a)(i) and 5(a) of E.O. 13622 and Sections 2(a)(i) and 3(a)(i) of E.O. 13645);

4.1.5. Sanctions on the purchase, subscription to, or facilitation of the issuance of Iranian sovereign debt, including governmental bonds (NDAA Sections 1245(d)(1) and (3); Iran Threat Reduction and Syria Human Rights Act of 2012 (TRA) Section 213(a); IFCA Sections 1244(c)(1) and (d), 1246(a) and 1247(a); Sections 1(a)(i) and 5(a) of E.O. 13622 and Sections 2(a)(i) and 3(a)(i) of E.O. 13645);

4.1.6. Sanctions on financial messaging services to the CBI and Iranian financial institutions set out in Attachment 3 to this Annex (NDAA Sections 1245(d)(1) and (3); TRA Section 220; IFCA Sections 1244(c)(1) and (d), 1246(a) and 1247(a); Section 5(a) of E.O. 13622 and Sections 2(a)(i) and 3(a)(i) of E.O. 13645); and

4.1.7. Sanctions on associated services<sup>[9]</sup> for each of the categories above (see individual citation references above).

## **4.2. Insurance measures**

4.2.1. Sanctions on the provision of underwriting services, insurance, or re-insurance in connection with activities consistent with this JCPOA, including activities with individuals and entities set forth in Attachment 3 to this Annex (Iran Sanctions Act of 1996 (ISA) Section 5(a)(7); NDAA Sections 1245(d)(1) and (3); TRA Sections 211(a) and 212(a); IFCA Sections 1244(c)(1) and (d), 1246(a) and 1247(a); Section 5(a) of E.O. 13622 and Sections 2(a)(i) and 3(a)(i) of E.O. 13645).

### **4.3. Energy and petrochemical sectors**

4.3.1. Efforts to reduce Iran's crude oil sales, including limitations on the quantities of Iranian crude oil sold and the nations that can purchase Iranian crude oil (ISA Section 5(a)(7); NDAA Sections 1245(d)(1) and (3); TRA Section 212(a); IFCA Sections 1244(c)(1) and (d), 1246(a) and 1247(a); Section 1 of E.O. 13574, Sections 1(a)(i)-(ii), 2(a)(i) and 5(a) of E.O. 13622, Section 5 of E.O. 13628, and Sections 2(a)(i) and 3(a)(i) of E.O. 13645);

4.3.2. Sanctions on investment, including participation in joint ventures, goods, services, information, technology and technical expertise and support for Iran's oil, gas, and petrochemical sectors (ISA Sections 5(a)(1)-(2) and (4)-(8); TRA Section 212(a); IFCA Sections 1244(c)(1), (d) and (h)(2), 1245(a)(1)(B), (a)(1)(C)(i)(I)-(II), (a)(1)(C)(ii)(I)-(II) and (c), 1246(a) and 1247(a); Section 1 of E.O. 13574, Section 1 of E.O. 13590, Sections 1(a)(i)-(ii), 2(a)(i)-(iii) and 5(a) of E.O. 13622, and Sections 2(a)(i) and 3(a)(i) of E.O. 13645);

4.3.3. Sanctions on the purchase, acquisition, sale, transportation, or marketing of petroleum, petrochemical products and natural gas from Iran (NDAA Sections 1245(d)(1) and (3); TRA Section 212(a); IFCA Sections 1244(c)(1), (d) and (h)(2), 1246(a) and 1247(a); Sections 1(a)(i)-(iii), 2(a)(i)-(ii) and 5(a) of E.O. 13622, and Sections 2(a)(i) and 3(a)(i) of E.O. 13645);

4.3.4. Sanctions on the export, sale or provision of refined petroleum products and petrochemical products to Iran (ISA Section 5(a)(3); NDAA Sections 1245(d)(1) and (3); TRA Section 212(a); IFCA Sections 1244(c)(1) and (d), 1246(a) and 1247(a); Section 1 of E.O. 13574, Sections 1(a)(i) and 5(a) of E.O. 13622, Section 5 of E.O. 13628, and Sections 2(a)(i) and 3(a)(i) of E.O. 13645);

4.3.5. Sanctions on transactions with Iran's energy sector including with NIOC, NICO and NITC (NDAA Sections 1245(d)(1) and (3); IFCA Sections 1244(c)(1), (d) and (h)(2), 1246(a) and 1247(a); TRA Section 212(a); Sections 1(a)(i)-(iii), 2(a)(i)-(ii) and 5(a) of E.O. 13622, and Sections 2(a)(i) and 3(a)(i) of E.O. 13645); and

4.3.6. Sanctions on associated services for each of the categories above (see individual citation references above).

#### **4.4. Shipping, shipbuilding and port sectors**

4.4.1. Sanctions on transactions with Iran's shipping and shipbuilding sectors and port operators including IRISL, South Shipping Line, and NITC, and the port operator(s) of Bandar Abbas<sup>[10]</sup> (TRA Sections 211(a) and 212(a); IFCA Sections 1244(c)(1) and (d); 1245(a)(1)(B), (a)(1)(C)(i)(I)-(II), (a)(1)(C)(ii)(I)-(II) and (c), 1246(a) and 1247(a); Section 5(a) of E.O. 13622 and Sections 2(a)(i) and 3(a)(i) of E.O. 13645); and

4.4.2. Sanctions on associated services for each of the categories above (see individual citation references above).

#### **4.5. Gold and other precious metals**

4.5.1. Sanctions on Iran's trade in gold and other precious metals (NDAA Sections 1245(d)(1) and (3); IFCA Sections 1244(c)(1), 1245(a)(1)(A) and (c), 1246(a) and 1247(a); Section 5(a) of E.O. 13622 and Sections 2(a)(i) and 3(a)(i) of E.O. 13645); and

4.5.2. Sanctions on associated services for each of the categories above (see individual citation references above).



#### **4.6. Software and metals**

4.6.1. Sanctions on trade with Iran in graphite, raw or semi-finished metals such as aluminum and steel, coal, and software for integrating industrial processes, in connection with activities consistent with this JCPOA, including trade with individuals and entities set forth in Attachments 3 and 4 to this Annex (NDAA Sections 1245(d)(1) and (3); IFCA Sections 1244(c)(1), 1245(a)(1)(B)-(C) and (c), 1246(a) and 1247(a); Section 5(a) of E.O. 13622 and Sections 2(a)(i) and 3(a)(i) of E.O. 13645); and

4.6.2. Sanctions on associated services for each of the categories above (see individual citation references above).

#### **4.7. Automotive sector**

4.7.1. Sanctions on the sale, supply or transfer of goods and services used in connection with Iran's automotive sector (NDAA Sections 1245(d)(1) and (3); IFCA Sections 1244(c)(1), 1245(a)(1)(B), (a)(1)(C)(i)(II), (a)(1)(C)(ii)(II) and (c), 1246(a) and 1247(a); Section 5(a) of E.O. 13622 and Sections 2(a)(i), 3(a)(i)-(ii), 5 and 6 of E.O. 13645); and

4.7.2. Sanctions on associated services for each of the categories above (see individual citation references above).

#### **4.8. Designations and other sanctions listings**

4.8.1. Removal of individuals and entities set out in Attachments 3 and 4 to this Annex from the Specially Designated Nationals and Blocked Persons List

(SDN List), the Foreign Sanctions Evaders List, and/or the Non-SDN Iran Sanctions Act List (Removal of designations and/or sanctions imposed under ISA Section 5(a), IFCA Section 1244(d)(1) and TRA Section 212; and removals pursuant to the International Emergency Economic Powers Act of certain persons listed pursuant to E.O. 13382, E.O. 13608, E.O. 13622, and E.O. 13645).

#### **4.9. Nuclear proliferation-related measures**

4.9.1. Sanctions under the Iran, North Korea and Syria Nonproliferation Act on the acquisition of nuclear-related commodities and services for nuclear activities contemplated in the JCPOA, to be consistent with the U.S. approach to other non-nuclear-weapon states under the NPT;

1. Sanctions on joint ventures relating to the mining, production, or transportation of uranium (ISA Section 5(b)(2)); and

1. Exclusion of Iranian citizens from higher education coursework related to careers in nuclear science, nuclear engineering or the energy sector (TRA Section 501).

#### **5. Other trade measures**

**5.1.** The United States commits to: [\[11\]](#)

5.1.1. Allow for the sale of commercial passenger aircraft and related parts and services to Iran by licensing the (i) export, re-export, sale, lease or transfer to Iran of commercial passenger aircraft for exclusively civil aviation end-use, (ii) export, re-export, sale, lease or transfer to Iran of spare parts and components for commercial passenger aircraft, and (iii) provision of associated serviced, including warranty, maintenance, and repair services and safety-related inspections, for all

the foregoing, provided that licensed items and services are used exclusively for commercial passenger aviation;<sup>[12]</sup>

5.1.2. License non-U.S. entities that are owned or controlled by a U.S. person<sup>[13]</sup> to engage in activities with Iran that are consistent with this JCPOA; and

5.1.3. License the importation into the United States of Iranian-origin carpets and foodstuffs, including pistachios and caviar.

**6.** The United States represents that the provisions listed in Section 4 above constitute the full and complete list of all U.S. nuclear-related sanctions. These sanctions will be lifted in accordance with Annex V.

**7. Effects of the lifting of U.S. economic and financial sanctions:**

7. As a result of the lifting of sanctions specified in Section 4 above, beginning on implementation day such sanctions, including associated services, would not apply to non-U.S. persons who carry out the following or that:<sup>[14]</sup>

**7. Financial and banking measures<sup>[15]</sup> (See Sections 4.1.1 to 4.1.7)**

Engage in activities, including financial and banking transactions, with the Government of Iran, the Central Bank of Iran, Iranian financial institutions and other Iranian persons specified in Attachment 3 to this Annex, including the provision of loans, transfers, accounts (including the opening and maintenance of correspondent and payable through accounts at non-U.S. financial institutions), investments, securities, guarantees, foreign exchange (including Rial related

transactions), letters of credit and commodity futures or options, the provision of specialised financial messaging services and facilitation of direct or indirect access thereto, the purchase or acquisition by the Government of Iran of U.S. bank notes, and the purchase, subscription to, or facilitation of the issuance of Iranian sovereign debt.[\[16\]](#)

#### **7. Insurance measures (See Section 4.2.1)**

Provide underwriting services, insurance, or re-insurance in connection with activities consistent with this JCPOA, including activities with individuals and entities set forth in Attachment 3 to this Annex, including underwriting services, insurance, or re-insurance in connection with activities in the energy, shipping, and shipbuilding sectors of Iran, for the National Iranian Oil Company (NIOC) or the National Iranian Tanker Company (NITC), or for vessels that transport crude oil, natural gas, liquefied natural gas, petroleum and petrochemical products to or from Iran.

#### **7. Energy and petrochemical sectors (See Sections 4.3.1 to 4.3.6)**

Are part of the energy sector of Iran; purchase, acquire, sell, transport or market petroleum, petroleum products (including refined petroleum products), petrochemical products or natural gas (including liquefied natural gas) to or from Iran; provide to Iran support, investment (including through joint ventures), goods, services (including financial services) and technology that can be used in connection with Iran's energy sector, the development of its petroleum resources, its domestic production of refined petroleum products and petrochemical products; or engage in activities with Iran's energy sector, including NIOC, NITC, and NICO).

#### **7. Shipping, shipbuilding and port sectors (See Sections 4.4.1 to 4.4.2)**

Are part of the shipping or shipbuilding sectors of Iran; own, operate, control or insure a vessel used to transport crude oil, petroleum products (including refined petroleum products), petrochemical products or natural gas (including liquefied natural gas) to or from Iran; operate a port in Iran, engage in activities with, or provide financial services and other goods and services used in connection with, the shipping and shipbuilding sectors of Iran or a port operator in Iran (including the port operator(s) of Bandar Abbas<sup>[17]</sup>), including port services, such as bunkering and inspection, classification, and financing, and the sale, leasing, and provision of vessels to Iran, including to the Islamic Republic of Iran Shipping Lines (IRISL), NITC, and South Shipping Line Iran or their affiliates.

**7. Gold and other precious metals (See Sections 4.5.1 to 4.5.2)**

Sell, supply, export or transfer, directly or indirectly, to or from Iran, gold and other precious metals, or conduct or facilitate a financial transaction or provide services for the foregoing including security, insurance and transportation.

**7. Software and metals (See Sections 4.6.1 to 4.6.2)**

Sell, supply, or transfer, directly or indirectly, graphite, raw or semi-finished metals such as aluminum and steel, coal, and software for integrating industrial processes, to or from Iran in connection with activities consistent with this JCPOA, including trade with individuals and entities set forth in Attachment 3 to this Annex, and the sale, supply, or transfer of such materials to the energy, petrochemical, shipping and shipbuilding sectors of Iran, and Iranian ports, or conduct or facilitate a financial transaction or provide services for the foregoing, including insurance and transportation.

## 7. Automotive sector (See Sections 4.7.1 to 4.7.2)

Conduct or facilitate financial or other transactions for the sale, supply or transfer to Iran of goods and services used in connection with the automotive sector of Iran.

## 7. Designations and other sanctions listings (See Section 4.8.1)

The removal of designations and/or sanctions as described in Section 4.8.1, ceasing the application of secondary sanctions for transactions with individuals and entities set out in Attachment 3 to this Annex; and unblocking of property and interests in property within U.S. jurisdiction for individuals and entities set out in Attachment 3 to this Annex.

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[1] For the purposes of EU legislation, “Iranian person, entity or body” means:

- i. the State of Iran or any public authority thereof;
- ii. any natural person in, or resident in, Iran;
- iii. any legal person, entity or body having its registered office in Iran;
- iv. any legal person, entity or body, inside or outside Iran, owned or controlled directly or indirectly by one or more of the above mentioned persons or bodies.

[2] The headings and subheadings in this Annex are for descriptive purposes only.

[3] For the purposes of this Annex, the term "associated services" means any service – including technical assistance, training, insurance, re-insurance, brokering, transportation or

financial service – necessary and ordinarily incident to the underlying activity for which sanctions have been lifted pursuant to this JCPOA.

[4] Unless specifically provided otherwise, the sanctions lifting described in this Section does not apply to transactions that involve persons still subject to restrictive measures and is without prejudice to sanctions that may apply under legal provisions other than those referred to in Section 1. Nothing in this JCPOA reflects a change in Iran's position on EU sanctions.

[5] For the purposes of U.S. legislation, “Iranian person” means (A) an individual who is a citizen or national of Iran; and (B) an entity organised under the laws of Iran or otherwise subject to the jurisdiction of the Government of Iran.

[6] The sanctions that the United States will cease to apply, and subsequently terminate, or modify to effectuate the termination of, pursuant to its commitment under Section 4 are those directed towards non-U.S. persons. For the purposes of Sections 4 and 6-7 of this JCPOA, the term “non-U.S. person” means any individual or entity, excluding (i) any United States citizen, permanent resident alien, entity organised under the laws of the United States or any jurisdiction within the United States (including foreign branches), or any person in the United States, and (ii) any entity owned or controlled by a U.S. person. For the purposes of (ii) of the preceding sentence, an entity is “owned or controlled” by a U.S. person if the U.S. person: (i) holds a 50 percent or greater equity interest by vote or value in the entity; (ii) holds a majority of seats on the board of directors of the entity; or (iii) otherwise controls the actions, policies, or personnel decisions of the entity. U.S. persons and U.S.-owned or -controlled foreign entities will continue to be generally prohibited from conducting transactions of the type permitted pursuant to this JCPOA, unless authorised to do so by the U.S. Department of the Treasury’s Office of Foreign Assets Control (OFAC).

[7] All citations to statutes and Executive orders included in this JCPOA refer to the statute or Executive order as amended as of the conclusion date of this JCPOA, including: the Iran Sanctions Act of 1996 (ISA), as amended by Section 102 of the Comprehensive Iran Sanctions, Accountability, and Divestment Act of 2010 (CISADA) and Sections 201-207 and 311 of the Iran Threat Reduction and Syria Human Rights Act of 2012 (TRA); CISADA, as amended by Sections 214-216, 222, 224, 311-312, 402-403 and 605 of TRA and Section 1249 of the Iran Freedom and Counter-Proliferation Act of 2012 (IFCA); the National Defense Authorization Act for Fiscal Year 2012 (NDAA), as amended by Sections 503-504 of TRA and Section 1250 of IFCA; Executive Order (E.O.) 13622, as amended by Section 15 of E.O. 13628 and Section 16 of E.O. 13645. The citations listed in Section 4 include

authorities under which secondary sanctions will no longer apply as a result of actions described in Section 4.8.1.

[8] Removal of NIOC from the SDN List, as provided for in Section 4.8.1, will include resolution of related designations and determinations.

[9] See footnote 3 for the meaning of "associated services".

[10] This commitment in Section 4.4.1 is based on the port operator(s) of Bandar Abbas no longer being controlled by a person on the SDN List.

[11] To give effect to the measures described in this Section 5.1, the United States will license activities that do not involve any person on the SDN List and are otherwise consistent with applicable U.S. laws and regulations, including but not limited to the Export Administration Act, the Federal Food, Drug and Cosmetic Act and the Iran-Iraq Arms Nonproliferation Act.

[12] Licenses issued in furtherance of Section 5.1.1 will include appropriate conditions to ensure that licensed activities do not involve, and no licensed aircraft, goods, or services are re-sold or re-transferred to, any person on the SDN list. Should the United States determine that licensed aircraft, goods, or services have been used for purposes other than exclusively civil aviation end-use, or have been re-sold or re-transferred to persons on the SDN List, the United States would view this as grounds to cease performing its commitments under Section 5.1.1 in whole or in part.

[13] For the purposes of Section 5.1.2 of this JCPOA, a non-U.S. entity is owned or controlled by a U.S. person if the U.S. person: (i) holds a 50 per cent or greater equity interest by vote or value in the entity; (ii) holds a majority of seats on the board of directors of the entity; or (iii) otherwise controls the actions, policies, or personnel decisions of the entity.

[14] Unless specifically provided otherwise, the sanctions lifting described in this Section does not apply to transactions that involve persons on the SDN List and is without prejudice to sanctions that may apply under legal provisions other than those cited in Section 4. Nothing in this JCPOA reflects a change in Iran's position on U.S. sanctions.

[15] For the purposes of the cessation of application of the provisions set out in Sections 4.1.1-4.1.7, the effects described for non-U.S. financial institutions extend to the activities outside of U.S. jurisdiction of international financial institutions.



[16] Non-U.S., non-Iranian financial institutions engaging in transactions with Iranian financial institutions (including the Central Bank of Iran) not appearing on the SDN List will not be exposed to sanctions as a result of those Iranian financial institutions engaging in transactions or banking relationships involving Iranian individuals and entities, including financial institutions, on the SDN List, provided that the non-U.S., non-Iranian financial institution does not conduct or facilitate, and is not otherwise involved in, those specific transactions or banking relationships with the Iranian individuals and entities, including financial institutions, on the SDN List.

[17] The effects described in Section 7.5 with respect to the port operator(s) of Bandar Abbas are based on the port operator(s) of Bandar Abbas no longer being controlled by a person on the SDN List.

ACENA SHIPPING COMPANY LIMITED

ADVANCE NOVEL

AGHAJARI OIL & GAS PRODUCTION COMPANY

AGHAZADEH, Reza

AHMADIAN, Mohammad

AKHAVAN-FARD, Massoud

ALPHA EFFORT LTD

ALPHA KARA NAVIGATION LIMITED

ALPHA NARI NAVIGATION LIMITED

ARIAN BANK

ARVANDAN OIL & GAS COMPANY

ASHTHAD SHIPPING COMPANY LTD

ASPASIS MARINE CORPORATION

ASSA CORPORATION

ASSA CORPORATION LTD

ATLANTIC INTERMODAL

AVRASYA CONTAINER SHIPPING LINES

AZARAB INDUSTRIES

AZORES SHIPPING COMPANY ALIAS AZORES SHIPPING FZE LLC

BANCO INTERNACIONAL DE DESARROLLO CA

BANK KARGOSHAE

BANK MELLAT

BANK MELLI IRAN INVESTMENT COMPANY

BANK MELLI IRAN ZAO

BANK MELLI PRINTING AND PUBLISHING COMPANY

BANK MELLI,

BANK OF INDUSTRY AND MINE

BANK REFAH KARGARAN

BANK TEJARAT

BATENI, Naser

BEST PRECISE LTD

BETA KARA NAVIGATION LTD

BIIS MARITIME LIMITED

BIS MARITIME LIMITED

BONAB RESEARCH CENTER

BRAIT HOLDING SA

BRIGHT JYOTI SHIPPING

BRIGHT SHIP FZC

BUSHEHR SHIPPING COMPANY LIMITED

BYFLEET SHIPPING COMPANY LTD

CEMENT INVESTMENT AND DEVELOPMENT COMPANY

CENTRAL BANK OF IRAN

CHAPLET SHIPPING LIMITED

COBHAM SHIPPING COMPANY LTD

CONCEPT GIANT LTD

COOPERATIVE DEVELOPMENT BANK

CRYSTAL SHIPPING FZE

DAJMAR, Mohammad Hossein

DAMALIS MARINE CORPORATION

DARYA CAPITAL ADMINISTRATION GMBH

DARYA DELALAN SEFID KHAZAR SHIPPING COMPANY

DELTA KARA NAVIGATION LTD

DELTA NARI NAVIGATION LTD

DIAMOND SHIPPING SERVICES

DORKING SHIPPING COMPANY LTD

EAST OIL & GAS PRODUCTION COMPANY

EDBI EXCHANGE COMPANY

EDBI STOCK BROKERAGE COMPANY

EFFINGHAM SHIPPING COMPANY LTD

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EIGHTH OCEAN GMBH & CO. KG

ELBRUS LTD

ELCHO HOLDING LTD

ELEGANT TARGET DEVELOPMENT LIMITED

ELEVENTH OCEAN ADMINISTRATION GMBH

ELEVENTH OCEAN GMBH & CO. KG

EMKA COMPANY

EPSILON NARI NAVIGATION LTD

E-SAIL A.K.A.E-SAIL SHIPPING COMPANY

ETA NARI NAVIGATION LTD

ETERNAL EXPERT LTD.

EUROPÄISCH-IRANISCHE HANDELSBANK

EXPORT DEVELOPMENT BANK OF IRAN

FAIRWAY SHIPPING

FAQIHAN, Dr Hoseyn

FARNHAM SHIPPING COMPANY LTD

FASIRUS MARINE CORPORATION

FATSA

FIFTEENTH OCEAN ADMINISTRATION GMBH

FIFTEENTH OCEAN GMBH & CO. KG

FIFTH OCEAN ADMINISTRATION GMBH

FIFTH OCEAN GMBH & CO. KG

FIRST ISLAMIC INVESTMENT BANK

FIRST OCEAN ADMINISTRATION GMBH

FIRST OCEAN GMBH & CO. KG

FIRST PERSIAN EQUITY FUND

FOURTEENTH OCEAN ADMINISTRATION GMBH

FOURTEENTH OCEAN GMBH & CO. KG

FOURTH OCEAN ADMINISTRATION GMBH

FOURTH OCEAN GMBH & CO. KG

FUTURE BANK BSC

GACHSARAN OIL & GAS COMPANY

GALLIOT MARITIME INCORPORATION

GAMMA KARA NAVIGATION LTD

GIANT KING LIMITED

GOLDEN CHARTER DEVELOPMENT LTD.

GOLDEN SUMMIT INVESTMENTS LTD.

GOLDEN WAGON DEVELOPMENT LTD.

GOLPARVAR, Gholam Hossein

GOMSHALL SHIPPING COMPANY LTD

GOOD LUCK SHIPPING COMPANY LLC

GRAND TRINITY LTD.

GREAT EQUITY INVESTMENTS LTD.

GREAT METHOD LTD

GREAT PROSPECT INTERNATIONAL LTD.

HAFIZ DARYA SHIPPING LINES

HANSEATIC TRADE TRUST & SHIPPING GMBH

HARVEST SUPREME LTD.

HARZARU SHIPPING

HELIOTROPE SHIPPING LIMITED

HELIX SHIPPING LIMITED

HK INTERTRADE COMPANY LTD

HONG TU LOGISTICS PRIVATE LIMITED

HORSHAM SHIPPING COMPANY LTD

IFOLD SHIPPING COMPANY LIMITED

INDUS MARITIME INCORPORATION

INDUSTRIAL DEVELOPMENT & RENOVATION ORGANIZATION

INSIGHT WORLD LTD

INTERNATIONAL SAFE OIL

IOTA NARI NAVIGATION LIMITED

IRAN ALUMINIUM COMPANY

IRAN FUEL CONSERVATION ORGANIZATION

IRAN INSURANCE COMPANY

IRAN LIQUEFIED NATURAL GAS CO.

IRANIAN OFFSHORE ENGINEERING & CONSTRUCTION CO

IRANIAN OIL COMPANY LIMITED

IRANIAN OIL PIPELINES AND TELECOMMUNICATIONS COMPANY (IOPTC)

IRANIAN OIL TERMINALS COMPANY

IRANO MISR SHIPPING COMPANY

IRINVESTSHIP LTD

IRISL (MALTA) LTD

IRISL EUROPE GMBH

IRISL MARINE SERVICES AND ENGINEERING COMPANY

IRISL MARITIME TRAINING INSTITUTE

IRITAL SHIPPING SRL

ISI MARITIME LIMITED

ISIM AMIN LIMITED

ISIM ATR LIMITED

ISIM OLIVE LIMITED

ISIM SAT LIMITED

ISIM SEA CHARIOT LTD

ISIM SEA CRESCENT LTD

ISIM SININ LIMITED

ISIM TAJ MAHAL LTD

ISIM TOUR COMPANY LIMITED

ISLAMIC REPUBLIC OF IRAN SHIPPING LINES

JACKMAN SHIPPING COMPANY

KALA NAFT

KALAN KISH SHIPPING COMPANY LTD

KAPPA NARI NAVIGATION LTD

KARA SHIPPING AND CHARTERING GMBH

KAROON OIL & GAS PRODUCTION COMPANY

KAVERI MARITIME INCORPORATION

KAVERI SHIPPING LLC

KEY CHARTER DEVELOPMENT LTD.

KHALILIPOUR, Said Esmail

KHANCHI, Ali Reza

KHAZAR EXPL & PROD CO

KHAZAR SHIPPING LINES

KHEIBAR COMPANY

KING PROSPER INVESTMENTS LTD.

KINGDOM NEW LTD

KINGSWOOD SHIPPING COMPANY LIMITED

KISH SHIPPING LINE MANNING COMPANY

LAMBDA NARI NAVIGATION LIMITED

LANCING SHIPPING COMPANY LIMITED

LOGISTIC SMART LTD

LOWESWATER LTD

MACHINE SAZI ARAK

MAGNA CARTA LIMITED

MALSHIP SHIPPING AGENCY

MARBLE SHIPPING LIMITED

MAROUN OIL & GAS COMPANY

MASJED-SOLEYMAN OIL & GAS COMPANY

MASTER SUPREME INTERNATIONAL LTD.

MAZANDARAN CEMENT COMPANY

MEHR CAYMAN LTD.

MELLAT BANK SB CJSC

MELLI AGROCHEMICAL COMPANY PJS

MELLI BANK PLC

MELLI INVESTMENT HOLDING INTERNATIONAL

MELODIOUS MARITIME INCORPORATION

METRO SUPREME INTERNATIONAL LTD.

MIDHURST SHIPPING COMPANY LIMITED (MALTA)

MILL DENE LTD

MINISTRY OF ENERGY

MINISTRY OF PETROLEUM

MODALITY LTD

MODERN ELEGANT DEVELOPMENT LTD.

MOUNT EVEREST MARITIME INCORPORATION



NAFTIRAN INTERTRADE COMPANY

NAFTIRAN INTERTRADE COMPANY SRL

NAMJOO, Majid

NARI SHIPPING AND CHARTERING GMBH & CO. KG

NARMADA SHIPPING

NATIONAL IRANIAN DRILLING COMPANY

NATIONAL IRANIAN GAS COMPANY

NATIONAL IRANIAN OIL COMPANY

NATIONAL IRANIAN OIL COMPANY NEDERLAND (A.K.A.: NIOC NETHERLANDS REPRESENTATION OFFICE)

NATIONAL IRANIAN OIL COMPANY PTE LTD

NATIONAL IRANIAN OIL COMPANY, INTERNATIONAL AFFAIRS LIMITED

NATIONAL IRANIAN OIL ENGINEERING AND CONSTRUCTION COMPANY (NIOEC)

NATIONAL IRANIAN OIL PRODUCTS DISTRIBUTION COMPANY (NIOPDC)

NATIONAL IRANIAN OIL REFINING AND DISTRIBUTION COMPANY

NATIONAL IRANIAN TANKER COMPANY

NEUMAN LTD

NEW DESIRE LTD

NEW SYNERGY

NEWHAVEN SHIPPING COMPANY LIMITED

NINTH OCEAN ADMINISTRATION GMBH

NINTH OCEAN GMBH & CO. KG

NOOR AFZA GOSTAR

NORTH DRILLING COMPANY

NUCLEAR FUEL PRODUCTION AND PROCUREMENT COMPANY

OCEAN CAPITAL ADMINISTRATION GMBH

OCEAN EXPRESS AGENCIES PRIVATE LIMITED

ONERBANK ZAO

OXTED SHIPPING COMPANY LIMITED

PACIFIC SHIPPING

PARS SPECIAL ECONOMIC ENERGY ZONE

PARTNER CENTURY LTD

PEARL ENERGY COMPANY LTD

PEARL ENERGY SERVICES, SA

PERSIA INTERNATIONAL BANK PLC

PETRO SUISSE

PETROIRAN DEVELOPMENT COMPANY LTD

PETROLEUM ENGINEERING & DEVELOPMENT COMPANY

PETROPARS INTERNATIONAL FZE

PETROPARS IRAN COMPANY

PETROPARS LTD.

PETROPARS OILFIELD SERVICES COMPANY

PETROPARS OPERATION & MANAGEMENT COMPANY

PETROPARS RESOURCES ENGINEERING LTD

PETROPARS UK LIMITED

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POST BANK OF IRAN

POWER PLANTS' EQUIPMENT MANUFACTURING COMPANY (SAAKHTE TAJHIZATE NIROOGAHI)

PROSPER METRO INVESTMENTS LTD.

RASTKHAH, Engineer Naser

REIGATE SHIPPING COMPANY LIMITED

RESEARCH INSTITUTE OF NUCLEAR SCIENCE & TECHNOLOGY

REZVANIANZADEH, Mohammad Reza

RISHI MARITIME INCORPORATION

SACKVILLE HOLDINGS LTD

SAFIRAN PAYAM DARYA SHIPPING COMPANY

SALEHI, Ali Akbar

SANFORD GROUP

SANTEXLINES

SECOND OCEAN ADMINISTRATION GMBH

SECOND OCEAN GMBH & CO. KG

SEIBOW LOGISTICS LIMITED

SEVENTH OCEAN ADMINISTRATION GMBH

SEVENTH OCEAN GMBH & CO. KG

SHALLON LTD

SHEMAL CEMENT COMPANY

SHINE STAR LIMITED

SHIPPING COMPUTER SERVICES COMPANY

SILVER UNIVERSE INTERNATIONAL LTD.

SINA BANK

SINO ACCESS HOLDINGS

SINOSE MARITIME

SISCO SHIPPING COMPANY LTD

SIXTEENTH OCEAN ADMINISTRATION GMBH

SIXTEENTH OCEAN GMBH & CO. KG

SIXTH OCEAN ADMINISTRATION GMBH

SIXTH OCEAN GMBH & CO. KG  
SMART DAY HOLDINGS LTD  
SOLTANI, Behzad  
SORINET COMMERCIAL TRUST (SCT)  
SOROUSH SARAMIN ASATIR  
SOUTH WAY SHIPPING AGENCY CO. LTD  
SOUTH ZAGROS OIL & GAS PRODUCTION COMPANY  
SPARKLE BRILLIANT DEVELOPMENT LIMITED  
SPRINGTHORPE LIMITED  
STATIRA MARITIME INCORPORATION  
SUREH (NUCLEAR REACTORS FUEL COMPANY)  
SYSTEM WISE LTD  
TAMALARIS CONSOLIDATED LTD  
TENTH OCEAN ADMINISTRATION GMBH  
TENTH OCEAN GMBH & CO. KG  
TEU FEEDER LIMITED  
THETA NARI NAVIGATION  
THIRD OCEAN ADMINISTRATION GMBH  
THIRD OCEAN GMBH & CO. KG  
THIRTEENTH OCEAN ADMINISTRATION GMBH  
THIRTEENTH OCEAN GMBH & CO. KG  
TOP GLACIER COMPANY LIMITED  
TOP PRESTIGE TRADING LIMITED  
TRADE CAPITAL BANK  
TRADE TREASURE

TRUE HONOUR HOLDINGS LTD

TULIP SHIPPING INC

TWELFTH OCEAN ADMINISTRATION GMBH

TWELFTH OCEAN GMBH & CO. KG

UNIVERSAL TRANSPORTATION LIMITATION UTL

VALFAJR 8TH SHIPPING LINE

WEST OIL & GAS PRODUCTION COMPANY

WESTERN SURGE SHIPPING COMPANY LIMITED

WISE LING SHIPPING COMPANY LIMITED

ZANJANI, Babak

ZETA NERI NAVIGATION

AGHA-JANI, Dawood

ALAI, Amir Moayyed

ASGARPOUR, Behman

ASHIANI, Mohammad Fedai

ASHTIANI, Abbas Rezaee

ATOMIC ENERGY ORGANISATION OF IRAN (AEOI)

BAKHTIAR, Haleh

BEHZAD, Morteza

ESFAHAN NUCLEAR FUEL RESEARCH AND PRODUCTION CENTRE (NFRPC) AND  
ESFAHAN NUCLEAR TECHNOLOGY CENTRE (ENTC)

FIRST EAST EXPORT BANK, P.L.C.:

HOSSEINI, Seyyed Hussein

IRANO HIND SHIPPING COMPANY

IRISL BENELUX NV

JABBER IBN HAYAN

KARAJ NUCLEAR RESEARCH CENTRE

KAVOSHYAR COMPANY

LEILABADI, Ali Hajinia

MESBAH ENERGY COMPANY

MODERN INDUSTRIES TECHNIQUE COMPANY

MOHAJERANI, Hamid-Reza

MOHAMMADI, Jafar

MONAJEMI, Ehsan

NOBARI, Houshang

NOVIN ENERGY COMPANY

NUCLEAR RESEARCH CENTER FOR AGRICULTURE AND MEDICINE

PARS TRASH COMPANY

PISHGAM (PIONEER) ENERGY INDUSTRIES

QANNADI, Mohammad

RAHIMI, Amir

RAHIQI, Javad

RASHIDI, Abbas

SABET, M. Javad Karimi

SAFDARI, Seyed Jaber

SOLEYMANI, Ghasem

SOUTH SHIPPING LINE IRAN (SSL)

TAMAS COMPANY

AEROSPACE INDUSTRIES ORGANISATION, AIO

AL YASIN, Javad

ALUMINAT

ANSAR BANK

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ARAS FARAYANDE

ARFA PAINT COMPANY

ARFEH COMPANY

ARIA NIKAN,

ARMED FORCES GEOGRAPHICAL ORGANISATION

ASHTIAN TABLO

BABAEI, Davoud

BALS ALMAN

BANK SADERAT IRAN

BANK SADERAT PLC

BARGH AZARAKSH

BEHNAM SAHRIYARI TRADING COMPANY

BONYAD TAAVON SEPAH

BORBORUDI, Sayed Shamsuddin

DANESHJOO, Kamran

DARVISH-VAND, IRGC Brigadier-General Javad

ELECTRONIC COMPONENTS INDUSTRIES

ESNICO (EQUIPMENT SUPPLIER FOR NUCLEAR INDUSTRIES CORPORATION)

ETEMAD AMIN INVEST CO MOBIN

EYVAZ TECHNIC

FADAVI, Rear Admiral Ali

FAJR AVIATION COMPOSITE INDUSTRIES

FARAHI, IRGC Brigadier-General Seyyed Mahdi

FARASEPEHR ENGINEERING COMPANY

FATAH, Parviz

GHANI SAZI URANIUM COMPANY

HAERI, Engineer Mojtaba

HIRBOD CO

HOSEYNITASH, IRGC Brigadier-General Ali

HOSSEINI NEJAD TRADING CO.

INSTITUTE OF APPLIED PHYSICS

IRAN AIRCRAFT INDUSTRIES

IRAN AIRCRAFT MANUFACTURING COMPANY

IRAN CENTRIFUGE TECHNOLOGY COMPANY

IRAN COMMUNICATIONS INDUSTRIES

IRAN COMPOSITES INSTITUTE

IRAN ELECTRONICS INDUSTRIES

IRAN MARINE INDUSTRIAL COMPANY

IRAN POOYA

IRAN SAFFRON COMPANY OR IRANSAFFRON CO.

IRANIAN AVIATION INDUSTRIES ORGANIZATION

IRGC AIR FORCE

IRGC QODS FORCE

IRGC-AIR FORCE AL-GHADIR MISSILE COMMAND



ISFAHAN OPTICS

ISLAMIC REVOLUTIONARY GUARD CORPS

JAFARI, Milad

JAVEDAN MEHR TOOS

JELVESAZAN COMPANY

KARANIR

KARIMIAN, Ali

KHALA AFARIN PARS

KHANSARI, Majid

MAAA SYNERGY

MACPAR MAKINA SAN VE TIC

MAHMUDZADEH, Ebrahim

MARINE INDUSTRIES

MAROU SANAT

MATSA (MOHANDESI TOSEH SOKHT ATOMI COMPANY)

MECHANIC INDUSTRIES GROUP

MEHR BANK

MINISTRY OF DEFENSE AND SUPPORT FOR ARMED FORCES LOGISTICS

MOBIN SANJESH

MODERN TECHNOLOGIES FZC

MOHAMMADI, Mohammad

MOHAMMADLU, Brigadier-General Beik

MOVASAGHNIA, Mohammad Reza

MULTIMAT LC VE DIS TICARET PAZARLAMA LIMITED SIRKETI

NACCACHE, Anis

NADERI, Brigadier-General Mohammad

NAJJAR, IRGC Brigadier-General Mostafa Mohammad

NAQDI, BrigGen Mohammad Reza

NASERI, Mohammad Sadegh

NASERIN VAHID

NEDA INDUSTRIAL GROUP

NEKA NOVIN

NOAVARAN POOYAMOJ

NOURI, Ali Ashraf

OIL INDUSTRY PENSION FUND INVESTMENT COMPANY

ORGANISATION OF DEFENSIVE INNOVATION AND RESEARCH

PAKPUR, BrigGen Mohammad

PARCHIN CHEMICAL INDUSTRIES

PARTO SANAT CO

PASSIVE DEFENSE ORGANIZATION

PAYA PARTO

QASEMI, Rostam (a.k.a. Rostam GHASEMI)

RAAD IRAN

RAKA

RESEARCH CENTRE FOR EXPLOSION AND IMPACT

ROSMACHIN

SAIDI, Hojatoleslam Ali

SALAMI, BrigGen Hossein

SAMAN NASB ZAYENDEH ROOD; SAMAN NASBZAINDE ROOD

SAMAN TOSE'E ASIA

SAMEN INDUSTRIES

SCHILLER NOVIN

SEPANIR OIL AND GAS ENERGY ENGINEERING COMPANY

SHAFI'I RUDSARI, Rear Admiral Mohammad

SHAHID AHMAD KAZEMI INDUSTRIAL GROUP

SHAHID BEHESHTI UNIVERSITY

SHAKHESE BEHBUD SANAT

SHAMS, Abolghassem Mozaffari

SHAMSHIRI, IRGC Brigadier-General Ali

SHARIF UNIVERSITY OF TECHNOLOGY

SHETAB G.

SHETAB GAMAN

SHETAB TRADING

SHIRAZ ELECTRONICS INDUSTRIES

SIMATEC DEVELOPMENT COMPANY

SOLAT SANA, Abdollah

SOLTANI, Hamid

STATE PURCHASING ORGANISATION

STEP STANDART TEKNIK PARCA SAN VE TIC A.S.

SUN MIDDLE EAST FZ COMPANY

SURENA (A.K.A. SAKHD VA RAH-AN- DA-ZI)

TABA (IRAN CUTTING TOOLS MANUFACTURING COMPANY - TABA TOWLID ABZAR  
BORESHI IRAN)

TAGHTIRAN

TAJHIZ SANAT SHAYAN

TECHNOLOGY COOPERATION OFFICE OF THE IRANIAN PRESIDENT'S OFFICE

TEST TAFSIR

TIDEWATER

TOSSE SILOOHA

TURBINE ENGINEERING MANUFACTURING

VAHIDI, IRGC Brigadier-General Ahmad

WEST SUN TRADE GMBH

Y.A.S. CO. LTD

YARSANAT

YASA PART

ZADEH, Amir Ali Haji

7TH OF TIR.

ABBASI-DAVANI, Fereidoun

ABZAR BORESH KAVEH CO.

AGHAJANI, Azim

AHMADIAN, Ali Akbar

AMIN INDUSTRIAL COMPLEX

AMMUNITION AND METALLURGY INDUSTRIES GROUP

ARMAMENT INDUSTRIES GROUP

BAHMANYAR, Bahmanyar Morteza

BANK SEPAH

BANK SEPAH INTERNATIONAL

BARZAGANI TEJARAT TAVANMAD SACCAL COMPANIES

BEHINEH TRADING CO.

CRUISE MISSILE INDUSTRY GROUP

DASTJERDI, Ahmad Vahid

DEFENCE INDUSTRIES ORGANISATION (DIO)

DEFENSE TECHNOLOGY AND SCIENCE RESEARCH CENTER

DERAKHSHANDEH, Ahmad

DOOSTAN INTERNATIONAL COMPANY

ELECTRO SANAM COMPANY

ESLAMI, Mohammad

ESMAELI, Reza-Gholi

ETTEHAD TECHNICAL GROUP

FAJR INDUSTRIAL GROUP

FAKHRIZADEH-MAHABADI, Mohsen

FARASAKHT INDUSTRIES

FARAYAND TECHNIQUE

FATER (OR FAATER) INSTITUTE

GHARAGAHE SAZANDEGI GHAEM

GHORB KARBALA

GHORB NOOH

HARA COMPANY

HEJAZI, Mohammad

HOJATI, Mohsen

IMENSAZAN CONSULTANT ENGINEERS INSTITUTE

INDUSTRIAL FACTORIES OF PRECISION (IFP) MACHINERY

JOZA INDUSTRIAL CO.

KALA-ELECTRIC

KAVEH CUTTING TOOLS COMPANY

KETABACHI, Mehردادا Akhlaghi

KHATAM AL-ANBIYA CONSTRUCTION HEADQUARTERS

KHORASAN METALLURGY INDUSTRIES

M. BABAIE INDUSTRIES

MAKIN

MALEK ASHTAR UNIVERSITY

MALEKI, Naser

MINISTRY OF DEFENSE LOGISTICS EXPORT

MIZAN MACHINERY MANUFACTURING A.K.A.: 3MG

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NEJAD NOURI, Mohammad Mehdi

NIRU BATTERY MANUFACTURING COMPANY

OMRAN SAHEL

ORIENTAL OIL KISH

PARCHIN CHEMICAL INDUSTRIES

PARS AVIATION SERVICES COMPANY

PEJMAN INDUSTRIAL SERVICES CORPORATION

QODS AERONAUTICS INDUSTRIES

RAH SAHEL

RAHAB ENGINEERING INSTITUTE

REZAIE, Morteza

SABALAN COMPANY

SAD IMPORT EXPORT COMPANY

SAFARI, Morteza

SAFAVI, Yahya Rahim

SAFETY EQUIPMENT PROCUREMENT (SEP)

SAHAND ALUMINUM PARTS INDUSTRIAL COMPANY

SAHEL CONSULTANT ENGINEERS

SALIMI, Hosein

SANAM INDUSTRIAL GROUP

SEPANIR

SEPASAD ENGINEERING COMPANY

SHAHID BAGHERI INDUSTRIAL GROUP (SBIG)

SHAHID HEMMAT INDUSTRIAL GROUP (SHIG)

SHAHID KARRAZI INDUSTRIES

SHAHID SATARRI INDUSTRIES

SHAHID SAYYADE SHIRAZI INDUSTRIES

SHO'A' AVIATION.

SOLEIMANI, Qasem

SPECIAL INDUSTRIES GROUP

TABATABAEI, Ali Akbar

TIZ PARS

YA MAHDI INDUSTRIES GROUP

YAS AIR

YAZD METALLURGY INDUSTRIES

ZAHEDI, Mohammad Reza

ZOLQADR, General

AA ENERGY FZCO[\*]

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ADVANCE NOVEL LIMITED

AFZALI, Ali

AGHA-JANI, Dawood

AL AQILI GROUP LLC

AL AQILI, Mohamed Saeed

AL FIDA INTERNATIONAL GENERAL TRADING

AL HILAL EXCHANGE

ALPHA EFFORT LIMITED

AMERI, Teymour

AMIN INVESTMENT BANK\*

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ASIA BANK

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ATOMIC ENERGY ORGANIZATION OF IRAN

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BANDAR IMAM PETROCHEMICAL COMPANY\*

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BANK MELLI IRAN INVESTMENT COMPANY

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BANK TORGOVOY KAPITAL ZAO\*

BANK-E SHAHR\*

BATENI, Naser

BAZARGAN, Farzad\*

BEHSAZ KASHANE TEHRAN CONSTRUCTION CO.\*

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DAVAR SHIPPING CO LTD\*

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DETTIN SPA

DEY BANK\*

DFS WORLDWIDE

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EDBI STOCK BROKERAGE COMPANY

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EIGHTH OCEAN GMBH & CO. KG

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KADDOURI, Abdelhak

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PARS TRASH COMPANY

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POURANSARI, Hashem\*

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QANNADI, Mohammad

QULANDARY, Azizullah Asadullah

RAHIQI, Javad

RASOOL, Seyed Alaeddin Sadat

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SAMAN SHIPPING COMPANY LIMITED\*

SAMBOUK SHIPPING FZC\*

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SANTEX LINES LIMITED

SARKANDI, Ahmad

SARMAYEH BANK\*

SARV SHIPPING COMPANY LIMITED\*

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SECOND OCEAN GMBH & CO. KG

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SEIBOW LOGISTICS LIMITED

SEIFI, Asadollah

SEPID SHIPPING COMPANY LIMITED\*

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SEVENTH OCEAN GMBH & CO. KG

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SEYYEDI, Seyedeh Hanieh Seyed Nasser Mohammad

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SHAZAND PETROCHEMICAL COMPANY\*

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SINOSE MARITIME PTE. LTD.

SIQIRIYA MARITIME CORP.

SIXTH OCEAN ADMINISTRATION GMBH

SIXTH OCEAN GMBH & CO. KG

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SOKOLENKO, Vitaly

SORINET COMMERCIAL TRUST (SCT) BANKERS

SOROUGH SARZAMIN ASATIR SHIP MANAGEMENT COMPANY

SOUTH SHIPPING LINE IRAN

SPEEDY SHIP FZC

SPRINGTHORPE LIMITED

STARRY SHINE INTERNATIONAL LIMITED

SWISS MANAGEMENT SERVICES SARL\*

SYNERGY GENERAL TRADING FZE\*

SYSTEM WISE LIMITED

TABATABAEI, Seyyed Mohammad Ali Khatibi\*

TABRIZ PETROCHEMICAL COMPANY\*

TADBIR BROKERAGE COMPANY\*

TADBIR CONSTRUCTION DEVELOPMENT COMPANY\*

TADBIR ECONOMIC DEVELOPMENT GROUP\*

TADBIR ENERGY DEVELOPMENT GROUP CO.\*

TADBIR INVESTMENT COMPANY\*

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TALAI, Mohamad

TAMAS COMPANY

TAT BANK\*

TC SHIPPING COMPANY LIMITED\*

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THE EXPLORATION AND NUCLEAR RAW MATERIALS PRODUCTION COMPANY

THE NUCLEAR REACTORS FUEL COMPANY

THIRD OCEAN ADMINISTRATION GMBH

THIRD OCEAN GMBH & CO. KG

THIRTEENTH OCEAN GMBH & CO. KG

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TWELFTH OCEAN ADMINISTRATION GMBH

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WOKING SHIPPING INVESTMENTS LIMITED

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YAZDI, Bahareh Mirza Hossein

ZADEH, Hassan Jalil

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ZEIDI, Hossein

ZHUHAI ZHENRONG COMPANY

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EP-CFD	IRAN AIR	Aircraft	
EP-CFE	IRAN AIR	Aircraft	
EP-CFH	IRAN AIR	Aircraft	
EP-CFI	IRAN AIR	Aircraft	
EP-CFJ	IRAN AIR	Aircraft	
EP-CFK	IRAN AIR	Aircraft	
EP-CFL	IRAN AIR	Aircraft	
EP-CFM	IRAN AIR	Aircraft	
EP-CFO	IRAN AIR	Aircraft	
EP-CFP	IRAN AIR	Aircraft	
EP-CFQ	IRAN AIR	Aircraft	
EP-CFR	IRAN AIR	Aircraft	
EP-IAA	IRAN AIR	Aircraft	
EP-IAB	IRAN AIR	Aircraft	

EP-IAC	IRAN AIR	Aircraft	
EP-IAD	IRAN AIR	Aircraft	
EP-IAG	IRAN AIR	Aircraft	
EP-IAH	IRAN AIR	Aircraft	
EP-IAI	IRAN AIR	Aircraft	
EP-IAM	IRAN AIR	Aircraft	
EP-IBA	IRAN AIR	Aircraft	
EP-IBB	IRAN AIR	Aircraft	
EP-IBC	IRAN AIR	Aircraft	
EP-IBD	IRAN AIR	Aircraft	
EP-IBG	IRAN AIR	Aircraft	
EP-IBH	IRAN AIR	Aircraft	
EP-IBI	IRAN AIR	Aircraft	
EP-IBJ	IRAN AIR	Aircraft	
EP-IBK	IRAN AIR	Aircraft	
EP-IBL	IRAN AIR	Aircraft	

EP-IBM	IRAN AIR	Aircraft	
EP-IBN	IRAN AIR	Aircraft	
EP-IBP	IRAN AIR	Aircraft	
EP-IBQ	IRAN AIR	Aircraft	
EP-IBS	IRAN AIR	Aircraft	
EP-IBT	IRAN AIR	Aircraft	
EP-IBV	IRAN AIR	Aircraft	
EP-IBZ	IRAN AIR	Aircraft	
EP-ICD	IRAN AIR	Aircraft	
EP-ICE	IRAN AIR	Aircraft	
EP-ICF	IRAN AIR	Aircraft	
EP-IDA	IRAN AIR	Aircraft	
EP-IDD	IRAN AIR	Aircraft	
EP-IDF	IRAN AIR	Aircraft	
EP-IDG	IRAN AIR	Aircraft	
EP-IEB	IRAN AIR	Aircraft	

EP-IEC	IRAN AIR	Aircraft	
EP-IED	IRAN AIR	Aircraft	
EP-IEE	IRAN AIR	Aircraft	
EP-IEF	IRAN AIR	Aircraft	
EP-IEG	IRAN AIR	Aircraft	
EP-IRK	IRAN AIR	Aircraft	
EP-IRL	IRAN AIR	Aircraft	
EP-IRM	IRAN AIR	Aircraft	
EP-IRN	IRAN AIR	Aircraft	
EP-IRR	IRAN AIR	Aircraft	
EP-IRS	IRAN AIR	Aircraft	
EP-IRT	IRAN AIR	Aircraft	
EP-MDD	IRAN AIR	Aircraft	
EP-MDE	IRAN AIR	Aircraft	
UR-BXI	IRAN AIR	Aircraft	
UR-BXL	IRAN AIR	Aircraft	

UR-BXM	IRAN AIR	Aircraft	
UR-CGS	IRAN AIR	Aircraft	
UR-CGT	IRAN AIR	Aircraft	
UR-CHW	IRAN AIR	Aircraft	
UR-CHX	IRAN AIR	Aircraft	
UR-CHY	IRAN AIR	Aircraft	
UR-CHZ	IRAN AIR	Aircraft	
UR-CJQ	IRAN AIR	Aircraft	
UR-BHJ	PRYVATNE AKTSIONERNE TOVARYSTVO AVIAKOMPANIYA	Aircraft	
UR-BXN	PRYVATNE AKTSIONERNE TOVARYSTVO AVIAKOMPANIYA	Aircraft	
UR-CIX	PRYVATNE AKTSIONERNE TOVARYSTVO AVIAKOMPANIYA	Aircraft	
UR-CIY	PRYVATNE AKTSIONERNE TOVARYSTVO AVIAKOMPANIYA	Aircraft	
UR-CJA	PRYVATNE AKTSIONERNE TOVARYSTVO AVIAKOMPANIYA	Aircraft	
UR-CJK	PRYVATNE AKTSIONERNE TOVARYSTVO AVIAKOMPANIYA	Aircraft	

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HORMUZ 2	ISLAMIC REPUBLIC OF IRAN SHIPPING LINES	Vessel	7904580
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BARSAM	ISLAMIC REPUBLIC OF IRAN SHIPPING LINES	Vessel	8107581
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IRAN AKHAVAN	ISLAMIC REPUBLIC OF IRAN SHIPPING LINES	Vessel	8113009
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ANGEL	ISLAMIC REPUBLIC OF IRAN SHIPPING LINES	Vessel	8309646
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AMPLIFY	ISLAMIC REPUBLIC OF IRAN SHIPPING LINES	Vessel	8309701
IRAN HORMUZ 21	ISLAMIC REPUBLIC OF IRAN SHIPPING LINES	Vessel	8314263
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IRAN YOUSHTAT	ISLAMIC REPUBLIC OF IRAN SHIPPING LINES	Vessel	8319952
AEROLITE	ISLAMIC REPUBLIC OF IRAN SHIPPING LINES	Vessel	8320121
ADRIAN	ISLAMIC REPUBLIC OF IRAN SHIPPING LINES	Vessel	8320133
NAGHMEH	ISLAMIC REPUBLIC OF IRAN SHIPPING LINES	Vessel	8320145
RONAK	ISLAMIC REPUBLIC OF IRAN SHIPPING LINES	Vessel	8320157
ACCURATE	ISLAMIC REPUBLIC OF IRAN SHIPPING LINES	Vessel	8320169



TABANDEH	ISLAMIC REPUBLIC OF IRAN SHIPPING LINES	Vessel	8320171
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IRAN CHARAK	ISLAMIC REPUBLIC OF IRAN SHIPPING LINES	Vessel	8322076
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IRAN HORMUZ 26	ISLAMIC REPUBLIC OF IRAN SHIPPING LINES	Vessel	8422084
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VISTA	ISLAMIC REPUBLIC OF IRAN SHIPPING LINES	Vessel	9010711
VIANA	ISLAMIC REPUBLIC OF IRAN SHIPPING LINES	Vessel	9010723
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HAMD	ISLAMIC REPUBLIC OF IRAN SHIPPING LINES	Vessel	9036052

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KADOS	ISLAMIC REPUBLIC OF IRAN SHIPPING LINES	Vessel	9137258
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BRELYAN	ISLAMIC REPUBLIC OF IRAN SHIPPING LINES	Vessel	9138056
NILDA	ISLAMIC REPUBLIC OF IRAN SHIPPING LINES	Vessel	9165786
JOVITA	ISLAMIC REPUBLIC OF IRAN SHIPPING LINES	Vessel	9165798
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SARITA	ISLAMIC REPUBLIC OF IRAN SHIPPING LINES	Vessel	9209348
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PARMIS	ISLAMIC REPUBLIC OF IRAN SHIPPING LINES	Vessel	9245316
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SHAMIM	ISLAMIC REPUBLIC OF IRAN SHIPPING LINES	Vessel	9270658
IRAN SHAHR-E-KORD	ISLAMIC REPUBLIC OF IRAN SHIPPING LINES	Vessel	9270684

IRAN KASHAN	ISLAMIC REPUBLIC OF IRAN SHIPPING LINES	Vessel	9270696
SININ	ISLAMIC REPUBLIC OF IRAN SHIPPING LINES	Vessel	9274941
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SARIR	ISLAMIC REPUBLIC OF IRAN SHIPPING LINES	Vessel	9368003
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AVANG	ISLAMIC REPUBLIC OF IRAN SHIPPING LINES	Vessel	9465746
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ARDAVAN	ISLAMIC REPUBLIC OF IRAN SHIPPING LINES	Vessel	9465863

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TESS	LISSOME MARINE SERVICES LLC	Vessel	8913564
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YOUSEF ×	NATIONAL IRANIAN TANKER COMPANY	Vessel	8316106
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BRIGHT ×	NATIONAL IRANIAN TANKER COMPANY	Vessel	9005235



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DAYLAM ×	NATIONAL IRANIAN TANKER COMPANY	Vessel	9218466
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INFINITY ×	NATIONAL IRANIAN TANKER COMPANY	Vessel	9569671
DEMOS ×	NATIONAL IRANIAN TANKER COMPANY	Vessel	9569683
YANGZHOU DAYANG DY905 ×	NATIONAL IRANIAN TANKER COMPANY	Vessel	9575424
SUNRISE ×	NATIONAL IRANIAN TANKER COMPANY	Vessel	9615092

ANTHEM	SIQIRIYA MARITIME CORP	Vessel	8310669
JAFFNA	SIQIRIYA MARITIME CORP	Vessel	8609515
OLYSA	SIQIRIYA MARITIME CORP	Vessel	9001605

ABBASI-DAVANI,

Fereidoun

ADVANCE ELECTRICAL AND INDUSTRIAL TECHNOLOGIES SL

ALUMINAT

ANDISHEH ZOLAL

ARIA NIKAN MARINE INDUSTRY

BUJAR, Farhad

DAYENI, Mahmoud Mohammadi

EYVAZ TECHNIC MANUFACTURING COMPANY

FAKHRIZADEH-MAHABADI, Mohsen

FARATECH

FARAYAND TECHNIQUE

FULMEN GROUP

IMANIRAD, Arman

IMANIRAD, Mohammad Javad

IRAN CENTRIFUGE TECHNOLOGY COMPANY

IRAN POOYA

JAHAN TECH ROOYAN PARS

JAVEDAN MEHR TOOS

KAHVARIN, Iradj Mohammadi

KALAYE ELECTRIC COMPANY

KHAKI, Parviz

MANDEGAR BASPAR KIMIYA COMPANY

MARO SANAT COMPANY

MODERN INDUSTRIES TECHNIQUE COMPANY

NEDA INDUSTRIAL GROUP

NEKA NOVIN

PARTO SANAT CO.

PAYA PARTOV CO.

PENTANE CHEMISTRY INDUSTRIES

PETRO GREEN

PISHRO SYSTEMS RESEARCH COMPANY

POUYA CONTROL

PUNTI, Pere

RAHIMYAR, Amir Hossein

SIMATIC DEVELOPMENT CO.

TAGHTIRAN KASHAN COMPANY

TANIDEH, Hossein

TARH O PALAYESH

THE ORGANIZATION OF DEFENSIVE INNOVATION AND RESEARCH

TOWLID ABZAR BORESHI IRAN

WISSER, Gerhard

YASA PART

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### **Annex III - Civil Nuclear Cooperation**

#### **A. General**

1. Iran and E3/EU+3 decided to co-operate, among others, including through IAEA technical cooperation, where appropriate, and without prejudice to the existing bilateral agreements, in different areas of civil nuclear co-operation to be developed within the framework of this JCPOA, as detailed in this Annex. In this context, the Joint Commission will also support assistance to Iran, including through IAEA technical cooperation projects, as appropriate.
2. All civil nuclear cooperation projects under this JCPOA will be mutually determined by the participating states and will be consistent with the JCPOA and the national laws and regulations of the participating parties.
3. The civil nuclear and scientific cooperation projects envisioned between Iran and the E3/EU+3 as part of this JCPOA may be undertaken in a variety of formats, with a variety of potential participants. A given project undertaken by the E3/EU+3 will not necessarily include participation by all E3/EU+3 parties:

3. bilateral or multilateral cooperation arrangements with Iran. Such arrangements would be mutually determined by the participating states.

3. projects under the auspices of the IAEA, either through IAEA technical co-operation projects including through Project and Supply Agreements.

3. through International Science and Technology Centres.

1.

2.

2.

Specifically, E3/EU+3 parties will undertake, to develop nuclear co-operation with Iran, in particular within the following areas:

#### **B. Reactors, Fuels and Associated Technologies, Facilities and Processes**

##### **4. Modern light water power and research reactors and associated equipment, technologies and facilities**

E3/EU+3 parties, as appropriate, will facilitate Iran's acquisition of light-water research and power reactors, for research, development and testing, and for the supply of electricity and desalination, with arrangements for the assured supply of nuclear fuel and the removal of spent fuel as provided for in relevant contracts, for each reactor provided.

This may include the following areas for co-operation:

4. Construction as well as effective and safe operation of new light water power reactors and associated equipment, according to Generation III+ requirements, including small and medium sized nuclear reactors, including joint design and manufacturing, as appropriate.



4. Construction of state of the art light water moderated multipurpose research reactors capable of testing fuel pins, assembly prototypes and structural materials with associated related facilities, including joint design and manufacturing, as appropriate.
4. Supply of state-of-the-art instrumentation and control systems for the above research and power reactors, including joint design and manufacturing, as appropriate;
4. Supply of nuclear simulation and calculation codes and software solutions with regard to the above areas, including joint development, as appropriate;
4. Supply of first and second loop main equipment as well as core of the above research and power reactors, including joint design and manufacturing, as appropriate;
4. On-the-job training on fuel management scenarios and reshuffling for the above research and power nuclear reactors;
4. Joint technical review of Iran's current nuclear reactors, upon the request by Iran, in order to upgrade current equipment and systems, including concerning nuclear safety;

**5. Arak Modernisation Project**

5. As described in Section B of Annex I, an international partnership composed of E3/EU+3 parties and Iran, which may subsequently be enlarged to include mutually determined third countries will be established, to support and facilitate the redesign and rebuilding of the IR-40 reactor at Arak into a modernised, not exceeding 20MWth, heavy-water moderated and cooled research reactor, based on the agreed conceptual design (as attached to Annex I).
5. Iran will take the leadership role as the owner and as the project manager, and have responsibility for overall implementation of the Arak modernisation project. A Working Group composed of E3/EU+3 participants will be established to support and facilitate the redesigning and rebuilding of the reactor. An international partnership composed of Iran and the Working Group would implement the Arak modernisation project, with E3/EU+3 participants assuming responsibilities as described in Annex I. The Working Group could be enlarged to include other

countries by consensus of the participants of the Working Group and Iran. E3/EU+3 participants and Iran will conclude an official document expressing their strong commitments to the Arak modernisation project in advance of Implementation Day which would provide an assured path forward to modernise the reactor and would define the responsibilities assumed by the E3/EU+3 participants, especially in the key areas such as redesign, design review and certification, reactor core manufacturing, fuel design, fabrication and supply, safety and security, spent fuel treatment or disposition, as well as concerning the supply of materials, equipment, instrumentation and control systems, and subsequently contracts would be concluded. The participants of the Working Group will provide assistance needed by Iran for redesigning and rebuilding the reactor, consistent with their respective national laws, in such a manner as to enable the safe and timely construction and commissioning of the modernised reactor.

5. Iran and the Working Group will cooperate to develop the final design of the modernised reactor and the design of the subsidiary laboratories to be carried out by Iran, and review conformity with international safety standards, such that the reactor can be licensed by the relevant Iranian regulatory authority for commissioning and operation.
5. Iran will continue to assume the primary responsibility for financing the modernisation project. Additional funding arrangements for the project, including for IAEA projects supporting the Arak modernisation project, will be determined based on the official document and contracts to be subsequently concluded.

## 6. **Nuclear Fuel**

6. E3/EU+3 parties, as appropriate, will support assistance to Iran, including through the IAEA, as appropriate, in meeting international qualification standards for nuclear fuel fabricated by Iran.
6. E3/EU+3 parties will seek to cooperate regarding the supply of modern fuels, including, as appropriate, joint design and fabrication, the relevant licenses and fabrication technologies and equipment and related infrastructure, for current and future nuclear research and power reactors, including technical assistance on

purification processes, forming and metallurgical activities for different types of nuclear fuel clads and cladding for the modernised Arak heavy water research reactor.

### **C. Research and Development (R&D) Practices**

7. To implement other aspects of this JCPOA and in support of a broader opening of scientific engagements between the E3/EU+3 and Iran, the E3/EU+3 and Iran will seek cooperation and scientific exchange in the field of nuclear science and technology:

7. Accelerator-based nuclear physics and nuclear astrophysics research, and stable isotope production in international collaboration at the nuclear, physics, and technology centre at the Fordow facility. Iran will request from the E3/EU+3 and other interested parties specific proposals for cooperative international nuclear, physics, and technology projects and will host an international workshop to review these proposals. The goal is to realise international collaborative projects within a few years. The transitioning to stable isotope production of two cascades will be conducted in a joint partnership between the Russian Federation and Iran on the basis of arrangements to be mutually agreed upon.

7. Plasma physics and nuclear fusion;

7. Research reactor applications at the TRR, modernized Arak reactor, or at other future research reactors in Iran, such as:

1. Training
2. Radio-isotope production and utilization
3. Nuclear desalination
4. Neutron transmutation doping
5. Neutron activation analysis
6. Neutron capture therapy
7. Neutron imaging and materials characterization studies using neutron beams

7. E3/EU+3 parties and Iran could also explore co-operation in the following additional areas:
1. Design, manufacture and/or assembly of in-core measuring instrumentation and technologies;
  2. Nuclear instrumentation and control, systems and electronics design, manufacture and/or assembly;
  3. Fusion technology and plasma physics and related infrastructure and facilitating contribution of Iran to the International Thermonuclear Experimental Reactor (ITER) Project and/or similar projects, including relevant IAEA technical cooperation projects;
  4. Neutrino astronomy;
  5. Design and manufacturing, and supply, of different types of accelerators and supply of related equipment including through relevant IAEA technical cooperation projects;
  6. Data acquisition and processing software and interface equipment;

#### **D. Nuclear Safety, Safeguards and Security**

##### **8. Nuclear safety**

E3/EU+3 parties, and possibly other states, as appropriate, are prepared to cooperate with Iran to establish a Nuclear Safety Centre in Iran, engage in workshops and training events in Iran to support interactions between Iranian nuclear regulatory authorities and those from the E3/EU+3 and elsewhere to, among other things, share lessons learned on establishing and maintaining regulatory independence and effectiveness, and training on implementing nuclear safety culture and best practices; facilitate exchanges and visits to nuclear regulatory authorities and nuclear power plants outside of Iran focusing on best practices for safe operation; and enhance and strengthen domestic emergency preparedness and severe accident management capability.

Provide support and assistance to enable Iran to join relevant conventions on nuclear safety and security, e.g. through workshops or seminars furthering accession to such

commitments. Such workshops or seminars could also take place under the auspices of the IAEA.

E3/EU+3 parties, and possibly other states, as appropriate, will co-operate with Iran in the following areas of nuclear safety, as well as in other areas to be mutually agreed:

8. Conclusion of bilateral/multilateral agreements with related organisations and research centres;
8. Supply of valid codes, instruments and equipment related to nuclear safety;
8. Facilitate exchange of knowledge and experience in the area of nuclear safety;
8. Enhance and strengthen domestic emergency preparedness and severe accident management capability;
8. Arrange on-the-job training and apprenticeship courses for reactor and facility operators, regulatory authority personnel and related supportive organizations in the area of nuclear safety inside and outside of Iran;
8. Establish a Nuclear Safety Centre in Iran, which shall be equipped with necessary tools, techniques and equipment, in order to support and facilitate technical and professional training and exchange of lessons-learned for reactor and facility operators, regulatory authority personnel and related supportive organizations;

9. **Nuclear Safeguards**

E3/EU+3 parties, and possibly other states, as appropriate, are prepared to cooperate with Iran on the effective and efficient implementation of IAEA safeguards and transparency measures in Iran. Co-operation in the following areas can be envisaged:

9. Cooperation in the form of on-the-job trainings and workshops to strengthen nuclear material accounting and control process, human resource development, and quality assurance/quality control processes;
9. E3/EU+3 parties, and other states, as appropriate, are prepared to cooperate with Iran for the effective and efficient implementation of IAEA safeguards and transparency measures in Iran.
9. This cooperation could take the form of training and workshops to strengthen Iran's safeguards regulatory authority, nuclear material accounting and control processes, human resource development, and quality assurance/quality control processes.

#### **10. Nuclear Security**

E3/EU+3 parties, and possibly other states, as appropriate, are prepared to cooperate with Iran on the implementation of nuclear security guidelines and best practices. Co-operation in the following areas can be envisaged:

10. Co-operation in the form of training courses and workshops to strengthen Iran's ability to prevent, protect and respond to nuclear security threats to nuclear facilities and systems as well as to enable effective and sustainable nuclear security and physical protection systems;
10. Co-operation through training and workshops to strengthen Iran's ability to protect against, and respond to nuclear security threats, including sabotage, as well as to enable effective and sustainable nuclear security and physical protection systems.

#### **E. Nuclear Medicine and Radioisotopes, Associated Technologies, Facilities and Processes**

11. E3/EU+3 parties, as appropriate, are prepared to cooperate with Iran to improve the utilization of nuclear medicine in Iran in order to enhance Iran's expertise in diagnostic

imaging and radiotherapy, increase the availability of medical radioisotopes for diagnosis and treatment of Iranian citizens, and facilitate Iran's participation in the broader international scientific and nuclear medicine community. Such cooperation may include:

11. Upgrades to the infrastructure associated with existing cyclotron facilities, including for medical radioisotopes production.
11. Facilitating Iranian acquisition of a new cyclotron, and associated radio-pharmacy equipment, for medical radioisotopes production.
11. Acquisition of state-of-the-art diagnostic imaging and radiotherapy equipment for existing or new nuclear medicine centers, including co-operation between hospitals for the treatment of individual patients.
11. Cooperation on occupational and patient dosimetry procedures.
11. Improved target utilization to increase radioisotope production.
11. Acquisition of radioisotope sources for brachytherapy, and radiotherapy instrument calibration, and other medical and industrial applications.
11. Supply of state-of-the-art radio-medicine center and necessary laboratories.

#### **F. Waste Management and Facility Decommissioning**

12. E3/EU+3 parties, as appropriate, are prepared to cooperate with Iran in the safe, effective, and efficient management and disposition of nuclear and radiological wastes derived from Iran's nuclear fuel cycle activities and nuclear medicine, radioisotope production and/or consumption activities.
13. E3/EU+3 parties, as appropriate, are prepared to cooperate with Iran in areas of safe, effective, and environmentally friendly best practices for facility decontamination and decommissioning, including co-operation on long term storage facilities for the repository of low and medium level waste.

14. E3/EU+3 parties, as appropriate, are prepared to facilitate exchanges and visits to relevant sites and locations outside of Iran related to effective waste management and best practices.
15. E3/EU+3 parties, as appropriate, will facilitate the supply of appropriate equipment and systems for waste management and depository facilities in Iran.

#### **G. Other projects**

16. Other projects may be implemented between the relevant E3/EU+3 parties and Iran, as mutually determined by the participants in the JCPOA, including in the following areas:
  16. Construction of nuclear desalination and associated infrastructure in Iran;
  16. Development of laser technology for medical applications (e.g. for eye surgery);

#### **Annex IV – Joint Commission**

##### **1. Establishment, Composition, and Coordinator**

1. The Joint Commission is established to carry out the functions assigned to it in the JCPOA, including its Annexes.
1. The Joint Commission is comprised of representatives of Iran and the E3/EU+3 (China, France, Germany, the Russian Federation, the United Kingdom, and the United States, with the High Representative of the Union for Foreign Affairs and Security Policy), together, the JCPOA participants.
1. The Joint Commission may establish Working Groups in particular areas, as appropriate.



1. The High Representative of the Union for Foreign Affairs and Security Policy ('High Representative'), or his/her designated representative will serve as the Coordinator of the Joint Commission.

## 2. **Functions**

2. The Joint Commission will perform the following functions:
  1. Review and approve the final design for the modernized heavy water research reactor and the design of the subsidiary laboratories prior to the commencement of construction, and review and approve the fuel design for the modernized heavy water research reactor as provided for in Section B of Annex I;
  2. Review and approve, upon request by Iran, development, acquisition, construction or operation of hot cells (containing a cell or interconnected cells), shielded cells or shielded glove boxes with dimensions beyond 6 cubic meters in volume and specifications set out in Annex I of the Additional Protocol, as provided for in paragraph 21 of Annex I;
  3. Review and approve plans submitted by Iran to initiate R&D on uranium metal based TRR fuel, as provided for in paragraph 26 of Annex I;
  4. Review and approve, upon request by Iran, projects on new types of centrifuges to proceed to a prototype stage for mechanical testing, as provided for in paragraph 43 of Annex I;
  5. Receive information in advance about the specific projects that will be undertaken at Fordow, as provided for in paragraph 44 of Annex I;
  6. Receive information about the conceptual framework of stable isotope production at Fordow, as provided for in paragraph 46.1 of Annex I;
1. Assess and then approve, upon request by Iran, that fuel assemblies manufactured in Iran and their intermediate products cannot be readily reconverted into UF<sub>6</sub>, based on

the objective technical criteria, with the goal of enabling fuel to be fabricated in Iran, as provided in paragraph 59 of Annex I;

2. Support assistance to Iran, including through IAEA technical cooperation as appropriate, in meeting international qualification standards for nuclear fuel produced by Iran, as provided for in paragraph 59 of Annex I;
3. Review and approve in advance, upon request by Iran, engagement by Iran, including through export of any enrichment or enrichment related equipment and technology, with any other country, or with any foreign entity in enrichment and enrichment related activities, including related research and development, as provided for in paragraph 73 in Annex I;
4. Provide consultation, and advise on the necessary means in the context of access as specified in paragraph 78 of Annex I;
5. Review and approve in advance, upon request by Iran, the design, development, fabrication, acquisition, or use for non-nuclear purposes of multi-point explosive detonation systems suitable for a nuclear explosive device and explosive diagnostic systems (streak cameras, framing cameras and flash x-ray cameras) suitable for the development of a nuclear explosive device, as provided for in paragraphs 82.2 and 82.3 of Annex I;
6. Review and consult to address issues arising from the implementation of sanctions lifting as specified in this JCPOA and its Annex II;
7. Review and decide on proposals for nuclear-related transfers to or activities with, Iran, in accordance with Section 6 of this Annex and the United Nations Security Council resolution endorsing this JCPOA;
8. Review, with a view to resolving, any issue that a JCPOA participant believes constitutes nonperformance by another JCPOA participant of its commitments under the JCPOA, according to the process outlined in the JCPOA;
9. Adopt or modify, as necessary, procedures to govern its activities;
10. Consult and provide guidance on other implementation matters that may arise under the JCPOA.

### 3. **Procedures**

3. The Joint Commission will meet on a quarterly basis and at any time upon request of a JCPOA participant to the Coordinator. The Coordinator will convene a meeting of the Joint Commission to be held no later than one week following receipt of such a request, except for consultations in accordance with Section Q of Annex I and any other matter that the Coordinator and/or a JCPOA participant deem urgent, in which case the meeting will be convened as soon as possible and not later than three calendar days from receipt of the request.
3. Meetings of the Joint Commission will be held in New York, Vienna, or Geneva as appropriate. The host country should facilitate entry formalities for those attending such meetings.
3. The Joint Commission may decide by consensus to invite observers to attend its meetings.
3. Except as provided in Section 6 of this Annex which will be subject to the confidentiality procedure of the UN, the work of the Joint Commission is confidential and may be shared only among JCPOA participants and observers as appropriate, unless the Joint Commission decides otherwise.

### 4. **Decisions**

4. Except as stated otherwise in this Annex, decisions by the Joint Commission are to be made by consensus.
4. Each JCPOA participant will have one vote. Decisions of the Joint Commission are to be taken by the Representative or the Deputy Representative or other such alternate as the JCPOA participant may designate.

4. The vote of each JCPOA participant will be made known to all other JCPOA participants if any JCPOA participant requests a recorded vote.
4. Matters before the Joint Commission pursuant to Section Q of Annex I are to be decided by consensus or by affirmative vote of five JCPOA participants. There is no quorum requirement.
4. The Coordinator will not take part in decision-making on nuclear-related transfers and activities as set out in Section 6 of this Annex.

**5. Other**

5. Each JCPOA participant will be responsible for its own costs of participating in the Joint Commission, unless the Joint Commission decides otherwise.
5. JCPOA participants may request that the Coordinator circulates a notification to the other JCPOA participants at any time. Upon such a request, the Coordinator will circulate such notification without delay to all JCPOA participants.

**6. Procurement Working Group**

6. With the purpose of establishing a procurement channel, the Joint Commission will, except as otherwise provided by the United Nations Security Council resolution endorsing this JCPOA, review and decide on proposals by states seeking to engage in:
  7. the supply, sale or transfer directly or indirectly from their territories, or by their nationals or using their flag vessels or aircraft to, or for the use in or benefit of, Iran, and whether or not originating in their territories, of all items, materials, equipment, goods and technology set out in INFCIRC/254/Rev.12/Part 1, and, if the end-use will be for Iran's nuclear programme set out in this JCPOA or other non-nuclear civilian end-use, all items, materials, equipment, goods and technology set out in INFCIRC/254/Rev.9/Part 2 (or the most recent version of these documents as

updated by the Security Council), as well as any further items if the relevant State determines that they could contribute to activities inconsistent with the JCPOA; and,

8. the provision to Iran of any technical assistance or training, financial assistance, investment, brokering or other services related to the supply, sale, transfer, manufacture, or use of the items, materials, equipment, goods and technology described in subparagraph (a) above;
  9. acquisition by Iran of an interest in a commercial activity in another State involving uranium mining, production or use of nuclear materials and technologies as listed in INFCIRC/254/Rev.12/Part 1, and such investments in territories under their jurisdiction by Iran, its nationals, and entities incorporated in Iran or subject to its jurisdiction, or by individuals or entities acting on their behalf or direction, or by entities owned or controlled by them.
6. The Joint Commission will discharge its responsibility for reviewing and making recommendations on proposals for nuclear-related transfers to or activities with Iran through a Procurement Working Group.
  6. Each E3+3 State and Iran will participate in the Procurement Working Group. The High Representative will serve as the Coordinator of the Procurement Working Group.
  6. Except as otherwise provided by the Joint Commission or the United Nations Security Council resolution endorsing this JCPOA, the Procurement Working Group will consider proposals according to the following process:
    1. Upon receipt of a proposal, including all necessary supporting information, by a State seeking to engage in transfers and activities referenced in Section 6.1, the Coordinator will forward the proposal, through appropriate means, without delay to the Procurement Working Group and, when the proposal relates to items, material, equipment, goods and technology intended to be used in nuclear activities authorized by the JCPOA, to the IAEA. The Procurement Working Group will have up to 30 working days to consider and decide on the proposal.

2. "Necessary supporting information" for purposes of Section 6.4.1 means: (a) a description of the item; (b) the name, address, telephone number, and email address of the exporting entity; (c) the name, address, telephone number, and email address of the importing entity; (d) a statement of the proposed end-use and end use location, along with an end-use certification signed by the AEOI or the appropriate authority of Iran attesting the stated end-use; (e) export license number if available; (f) contract date, if available; and (g) details on transportation, if available; provided that if any of the export license number, contract date, or details on transportation are not available as of the time of submittal of the proposal, such information will be provided as soon as possible and in any event as condition of approval prior to shipment of the item.
3. Each participant in the Procurement Working Group will have to communicate to the Coordinator, within 20 working days, whether it approves or rejects the proposal. The timeline for consideration may be extended for an additional period of 10 working days at the request of a participant of the Procurement Working Group.
4. The proposal will be recommended for approval as soon as the Coordinator receives formal approvals from all the Procurement Working Group Participants or if, at the end of the 30 working day period, the Coordinator has received no disapprovals from any of the Procurement Working Group Participants. If at the end of the 30 working day period, the proposal has not been recommended for approval, the proposal may, at the request of at least two Working Group Participants within 5 working days, be referred to the Joint Commission, which would decide on approval of the proposal by consensus within 10 working days. Otherwise the proposal will be recommended for disapproval. The disapproving JCPOA participant(s) should provide relevant information regarding the disapproval to the Joint Commission as appropriate, taking into account the need to protect confidential information.
5. The Coordinator will communicate the recommendation of the Joint Commission to the United Nations Security Council no later than 35 working days, or in case of referral to the Joint Commission no later than 45 working days from the date the

Coordinator transmitted the proposal and all necessary supporting information to the Procurement Working Group.

6. Except as decided otherwise by consensus, the Procurement Working Group will meet every three weeks for reviewing the proposals. When some of the proposals to be reviewed relate to items, material, equipment, goods and technology intended to be used in nuclear activities authorized by the JCPOA, the IAEA may be invited to attend the meeting as an observer.
  
6. All JCPOA participants will act in accordance with the procurement channel and will only engage in transfers and activities referenced in Section 6.1 following approval by the Joint Commission and the United Nations Security Council. Iran will not use, acquire, or seek to procure the items, materials, equipment, goods, and technology referred to in Section 6.1 of this Annex for nuclear activities which are inconsistent with this JCPOA.
  
6. Any JCPOA participant may refer a procurement-related activity to the Joint Commission under the dispute settlement mechanism if it is concerned that such activity is inconsistent with this JCPOA.
  
6. Iran will provide to the IAEA access to the locations of intended use of all items, materials, equipment, goods and technology set out in INFCIRC/254/Rev.12/Part 1 (or the most recent version of these documents as updated by the Security Council) imported following the procedure under Section 6 of this Annex.
  
6. Iran will permit the exporting state to verify the end-use of all items, materials, equipment, goods and technology set out in INFCIRC/254/Rev.9/Part 2 (or the most recent version of these documents as updated by the Security Council) imported following the procedure under Section 6 of this Annex. Upon request of the exporting state, or if the Joint Commission deems necessary when approving a proposal for transfer, the Joint Commission will provide expertise to the exporting state, including experts, as needed, to participate in the end-use verification.

6. The Procurement Working Group will respond to requests for guidance on procurement activities from third parties, as communicated by the Coordinator. The Procurement Working Group will endeavor to respond to such requests for guidance within 9 working days from the date the Coordinator submits it to the Procurement Working Group.
6. The Joint Commission will report to the United Nations Security Council at least every 6 months on the status of the Procurement Working Group's decisions and on any implementation issues.
7. **Working Group on Implementation of Sanctions Lifting**
  7. The Joint Commission will discharge its responsibilities for reviewing and consulting on issues related to the implementation of sanctions lifting as specified in this JCPOA assisted by a working group on the implementation of sanctions lifting.
  7. The Joint Commission participants will participate in this working group. The High Representative will serve as coordinator of this working group.
  7. If at any time following the implementation day Iran believes that any other nuclear-related sanction or restrictive measure including related designations of the E3/EU+3 is preventing the full implementation of the sanctions lifting as specified in this JCPOA, the JCPOA participant in question will consult with Iran with a view to resolving the issue. If they are not able to resolve the issue, Iran or any member of the E3/EU+3 may refer the issue to the working group.
  7. The participants of the working group will review and consult, with a view to resolving the issue within 30 working days.
  7. If after involvement of the working group, the issue remains unresolved, any participant of the JCPOA may refer it to the Joint Commission.

## **Annex V - Implementation Plan<sup>[1]</sup>**



1. This Annex describes the sequence of the actions specified in Annexes I and II to this JCPOA.

#### **A. Finalisation Day**

2. Upon conclusion of the negotiations of this JCPOA, the E3/EU+3 (China, France, Germany, the Russian Federation, the United Kingdom and the United States, with the High Representative of the European Union for Foreign Affairs and Security Policy) and Iran will endorse this JCPOA.
3. Promptly after the conclusion of the negotiations of this JCPOA, the proposed UN Security Council resolution referred to in Section 18 of this Annex will be submitted to the UN Security Council for adoption without delay.
4. The EU will promptly endorse the UN Security Council resolution referred to above through Council Conclusions.
5. Iran and the IAEA will start developing necessary arrangements to implement all transparency measures provided for in this JCPOA so that such arrangements are completed, in place, and ready for implementation on Implementation Day.

#### **B. Adoption Day**

6. Adoption Day will occur 90 days after the endorsement of this JCPOA by the UN Security Council through the resolution referred to above, or at an earlier date by mutual consent of all JCPOA participants, at which point this JCPOA comes into effect.
7. Beginning on Adoption Day, JCPOA participants will make necessary arrangements and preparations, including legal and administrative preparations, for the implementation of their JCPOA commitments.
8. Iran will officially inform the IAEA that, effective on Implementation Day, Iran will provisionally apply the Additional Protocol, pending its ratification by the Majlis (Parliament), and will fully implement the modified code 3.1.

9. Iran will implement paragraph 66 from Section M on "Past and Present Issues of Concern" of Annex I.
10. The EU and its Member States will adopt an EU Regulation, taking effect as of Implementation Day, terminating all provisions of the EU Regulation implementing all nuclear-related economic and financial EU sanctions as specified in Section 16.1 of this Annex, simultaneously with the IAEA-verified implementation by Iran of agreed nuclear-related measures.
11. The United States, acting pursuant to Presidential authorities, will issue waivers, to take effect upon Implementation Day, ceasing the application of the statutory nuclear-related sanctions as specified in Sections 17.1 to 17.2 of this Annex. The President will also take action to direct that all appropriate additional measures be taken to implement the cessation of application of sanctions as specified in Sections 17.1 to 17.4 of this Annex, including the termination of Executive orders as specified in Section 17.4, and the licensing of activities as specified in Section 17.5.
12. E3/EU+3 participants and Iran will begin discussions on an official document to be concluded in advance of Implementation Day which will express strong commitments of the E3/EU+3 participants to the Arak Heavy Water Reactor modernisation project and define the responsibilities assumed by the E3/EU+3 participants.
13. The EU, its Member States and the United States will begin consultation as appropriate with Iran regarding relevant guidelines and publicly accessible statements on the details of sanctions or restrictive measures to be lifted under this JCPOA.

### **C. Implementation Day**

14. Implementation Day will occur upon the IAEA-verified implementation by Iran of the nuclear-related measures described in paragraph 15 below, and, simultaneously, the E3/EU+3 taking the actions described in paragraphs 16 and 17 below, and with the actions described in paragraph 18 below taking place at the UN level in accordance with the UN Security Council resolution.

**15. Iran will implement the nuclear-related measures as specified in Annex I:**

- 15. Paragraphs 3 and 10 from Section B on "Arak Heavy Water Research Reactor";
- 15. Paragraphs 14 and 15 from Section C on "Heavy Water Production Plant";
- 15. Paragraphs 27, 28, 29, 29.1 and 29.2 from Section F on "Enrichment Capacity";
- 15. Paragraphs 32, 33, 34, 35, 36, 37, 38, 39, 40, 41 and 42 from Section G on "Centrifuges Research and Development";
- 15. Paragraphs 45, 46, 46.1, 46.2, 47.1, 48.1 from Section H on "Fordow Fuel Enrichment Plant";
- 15. Paragraphs 52, 54 and 55 from Section I on "Other Aspects of Enrichment";
- 15. Paragraphs 57 and 58 from Section J on "Uranium Stocks and Fuels";
- 15. Paragraph 62 from Section K on "Centrifuge Manufacturing";
- 15. Complete the modalities and facilities-specific arrangements to allow the IAEA to implement all transparency measures provided for in Annex I;
- 15. Paragraphs 64 and 65 from Section L on "Additional Protocol and Modified Code 3.1";
- 15. Paragraphs 80.1 and 80.2 from Section R on "Centrifuge Component Manufacturing Transparency"; and
- 15. Within one year from Implementation Day, Iran will have completed the measures specified in paragraphs 47.2 and 48.2 of Section H on "Fordow Fuel Enrichment Plant".

**16. The European Union will:**

- 16. Terminate the provisions of Council Regulation (EU) No 267/2012 and suspend the corresponding provisions of Council Decision 2010/413/CFSP specified in Sections 1.1.1- 1.1.3; 1.1.5 - 1.1.8; 1.2.1 - 1.2.5; 1.3.1, 1.3.2 (in so far as it concerns Articles 16 and 17 of Council Decision 2010/413/CFSP) and 1.3.3; 1.4.1 and 1.4.2; 1.10.1.2 (in so far as it concerns Articles 39, 43, 43a of Council Regulation (EU) No 267/2012)

of Annex II. EU Member States will terminate or amend national implementing legislation as required.

16. Amend the provisions of Council Regulation (EU) No 267/2012 and the corresponding provisions of Council Decision 2010/413/CFSP specified in Sections 1.6.1 - 1.7.2 of Annex II, in connection with activities consistent with this JCPOA.
16. Remove individuals and entities set forth in Attachment 1 to Annex II of this JCPOA from Annexes VIII and IX to Council Regulation (EU) 267/2012. Suspend the provisions of Council Decision 2010/413/CFSP specified in Section 1.9.1 of Annex II in relation to individuals and entities set forth in Attachment 1 to Annex II.
16. Amend the provisions of Council Regulation (EU) No 267/2012 and Council Decision 2010/413/CFSP specified in Sections 1.5.1 and 1.5.2 of Annex II to implement the relevant provisions of the UN Security Council resolution referred to above.

**17. The United States will:**[\[2\]](#)

17. Cease the application of the sanctions set forth in Sections 4.1 - 4.5 and 4.7 of Annex II, with the exception of Section 211(a) of the Iran Threat Reduction and Syria Human Rights Act of 2012 (TRA);
17. Cease the application of the sanctions set forth in Section 4.6 of Annex II, in connection with activities consistent with this JCPOA, including trade with individuals and entities set forth in Attachment 3 to Annex II;
17. Remove individuals and entities set forth in Attachment 3 to Annex II from the Specially Designated Nationals and Blocked Persons List (SDN List), the Foreign Sanctions Evaders List (FSE List), and/or the Non-SDN Iran Sanctions Act List as set forth in Section 4.8.1 of Annex II;
17. Terminate Executive Orders 13574, 13590, 13622, 13645 and Sections 5-7 and 15 of Executive Order 13628 as set forth in Section 4 of Annex II; and
17. License activities as set forth in Section 5 of Annex II.

## **18. UN Security Council**

18. In accordance with the UN Security Council resolution endorsing this JCPOA, the provisions imposed in UN Security Council resolutions 1696 (2006), 1737 (2006), 1747 (2007), 1803 (2008), 1835 (2008), 1929 (2010) and 2224 (2015) will be terminated subject to re-imposition in the event of significant non-performance by Iran of JCPOA commitments, and specific restrictions, including restrictions regarding the transfer of proliferation sensitive goods will apply.<sup>[3]</sup>
18. The E3/EU+3 will take appropriate measures to implement the new UNSC resolution.

## **D. Transition Day**

19. Transition Day will occur 8 years from Adoption Day or upon a report from the Director General of the IAEA to the IAEA Board of Governors and in parallel to the UN Security Council stating that the IAEA has reached the Broader Conclusion that all nuclear material in Iran remains in peaceful activities, whichever is earlier.

## **20. The European Union will:**

20. Terminate the provisions of Council Regulation (EU) No 267/2012 and suspend the corresponding provisions of Council Decision 2010/413/CFSP specified in Sections 1.1.4, 1.3.2 (in so far as it concerns Articles 15 and 18 of Council Decision and Articles 36 and 37 of Council Regulation); 1.5.1 and 1.5.2 (in so far as it concerns Ballistic Missiles restrictions); 1.6.1 - 1.9.1 of Annex II.
20. Remove individuals and entities set forth in Attachment 2 to Annex II from Annexes VIII and IX to Council Regulation (EU) 267/2012.
20. Remove individuals and entities set forth in Attachment 1 to Annex II from Annexes I and II to Council Decision 2010/413/CFSP.

20. Terminate all provisions in Council Decision 2010/413/CFSP suspended on Implementation Day.

**21. The United States will:**

21. Seek such legislative action as may be appropriate to terminate, or modify to effectuate the termination of, the statutory sanctions set forth in Sections 4.1-4.5, 4.7 and 4.9 of Annex II;

21. Seek such legislative action as may be appropriate to terminate, or modify to effectuate the termination of, the statutory sanctions described in Section 4.6 of Annex II, in connection with activities consistent with this JCPOA, including trade with individuals and entities set forth in Attachments 3 and 4 to Annex II; and

21. Remove individuals and entities set out in Attachment 4 to Annex II from the SDN List and/or the FSE List as set forth in Section 4.8.1 of Annex II.

**22. Iran will:**

22. Seek, consistent with the Constitutional roles of the President and Parliament, ratification of the Additional Protocol.

**E. UNSCR Termination Day**

23. UNSCR (UN Security Council resolution) Termination Day will occur in accordance with the terms of the UN Security Council resolution endorsing the JCPOA, which is 10 years from Adoption Day, provided that the provisions of previous resolutions have not been reinstated.

24. On UNSCR Termination Day, the provisions and measures imposed in that resolution would terminate and the UN Security Council would no longer be seized of the Iran nuclear issue.

**25. The European Union will:**

25. Terminate all remaining provisions of Council Regulation (EU) No 267/2012 and Council Decision 2010/413/CFSP.

**F. Other**

26. The terminations described in this Annex V are without prejudice to other JCPOA commitments that would continue beyond such termination dates.

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[1] This Annex is only for the purpose of determining the sequence of implementation of the commitments described in this JCPOA and annexes thereto and does not restrict or expand the scope of these commitments.

[2] The sanctions that the United States will cease to apply are those directed towards non-U.S. persons, as described in Section 4 of Annex II.

[3] The provisions of this Resolution do not constitute provisions of this JCPOA.