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Strengthening the Agency's activities related to nuclear science, technology and applications

Resolution adopted on 22 September 2011 during the seventh plenary meeting

A.

Non-power nuclear applications

1.
General

The General Conference,

(a) Noting that the Agency's objectives as outlined in Article II of the Statute include "to accelerate and enlarge the contribution of atomic energy to peace, health and prosperity throughout the world",

(b) Noting also that the statutory functions of the Agency as outlined in Article III of the Statute, paragraphs A.I to A.4, include encouraging research and development and fostering the exchange of scientific and technical information and the training of scientists and experts in the field of peaceful uses of atomic energy, with due consideration for the needs of developing countries,

(c) Noting the Medium Term Strategy 2012-2017 as guidance and input in this respect,

(d) Stressing that nuclear science, technology and applications address and contribute to a wide variety of basic socio-economic human development needs of Member States, in such areas as energy, materials, industry, environment, food, nutrition and agriculture, human health and water resources, noting that many Member States are obtaining benefits from the application of nuclear techniques in food and agriculture through the Joint FAO/IAEA Programme, and welcoming the decision of the FAO to continue collaborating with the IAEA through this joint programme, including exploring ways of improving such collaboration,

(e) Noting that the United Nations General Assembly, in resolution 64/292, called upon States and international organizations to provide financial resources, capacity-building and

technology transfer, through international assistance and cooperation, in particular to developing countries, in order to scale up efforts to provide safe, clean, accessible and affordable drinking water and sanitation for all,

(f) Recognizing the success of the sterile insect technique (SIT) in the suppression or eradication of the screw-worm, the tsetse fly, and various fruit flies and moths that can cause large economic impacts,

(g) Noting the perpetual serious problem of locusts in Africa, especially in areas highly prone to environmental degradation and desertification, and that it has been responsible for severe famine in certain countries,

(h) Confirming the important role of science, technology and engineering in enhancing nuclear and radiation safety and security,

(i) Acknowledging the need to resolve the issues of managing radioactive waste in a sustainable manner,

(j) Acknowledging that the peaceful use of fusion energy can be advanced through increased international efforts and with the active collaboration of interested Member States and organizations in fusion-related projects, and aware of the next biennial IAEA Fusion Energy Conference, to be held in the United States of America in October 2012,

(k) Taking note of the "Nuclear Technology Review 2011" (GC(55) /INF/5),

(l) Aware of the problems of pollutants arising from urban and industrial activities and the potential of radiation treatment to address some of them, including industrial waste waters, and noting the initiative taken by the Agency to enable exploration of this radiation technology for waste water treatment in Member States through a co-ordinated research project,

(m) Recognizing the increasing use of radioisotopes and radiation technology in healthcare practices, crop improvement, food preservation, industrial process management, new materials development, analytical sciences, sanitization and sterilization, and in measuring the effects of climate change on the environment,

(n) Aware that strengthening support to capacity-building in developing Member States in emerging areas of nuclear technologies is important for accrual of benefits from nuclear applications,

(o) Taking note of the plan of the World Nuclear University (WNU) to hold a Second School on Radioisotopes, in cooperation with the Republic of Korea, and aware that the Agency's cooperation and support would be beneficial for the participation of applicants from developing countries,

(p) Noting the expanding use of positron emission tomography (PET), PET/computed tomography (PET/CT) and hospital-prepared radiopharmaceuticals,

(q) Noting with appreciation the efforts made by the Agency, in coordination with other international organizations, Member States and relevant stakeholders, to facilitate a reliable supply of molybdenum-99 by supporting the development of Member States' abilities to generate, for their indigenous needs and for export, the non-HEU-based production of molybdenum-99 and technetium-99m,

(r) Aware of the new cooperative initiatives that have emerged to provide reactor irradiation services in Europe, and of the significant advances reported in commissioning new molybdenum-99 production facilities,

(s) Recognizing the continued emerging interest of many countries in establishing non-HEU based molybdenum-99 production facilities to meet domestic needs and/or serve as a partial reserve capacity,

(t) Acknowledging the multiple uses of research reactors, including TRIGA reactors, as valuable tools for, inter alia, training, research, radioisotope production and materials testing as well as a learning tool for Member States that are considering the introduction of nuclear power,

(u) Aware that greater regional and international cooperation will be needed to ensure broad access to research reactors, owing to the fact that older research reactors are being replaced by fewer multi-purpose reactors, resulting in a drop in the number of operational reactors,

(v) Noting with concern that the 35 TRIGA reactors worldwide would be adversely affected by the decision of the sole supplier of TRIGA fuel to cease the production of this fuel,

(w) Acknowledging the need for increasing the capacity of Member States for using advanced nuclear techniques in disease – including cancer – management, and aware of the need to develop performance indicators for measuring such capacity,

(x) Noting that the Agency has compiled and disseminated isotope data on aquifers and rivers worldwide and is addressing links between climate change, rising food and energy costs and the global economic crisis, with the aim of assisting decision-makers in adopting better practices for integrated water resources management and planning, and

(y) Noting with appreciation the fellowships and training sponsored by the IAEA Nobel Peace Prize Cancer and Nutrition Fund to improve cancer control and child nutrition in the developing world,

1. Requests the Agency, in conformity with the Statute, to continue to pursue activities in the areas of nuclear science, technology and applications for meeting sustainable growth and development needs of Member States;

2. Encourages the Agency to fully utilize the capacities of Member State institutions through appropriate mechanisms in order to expand the extent that nuclear sciences and applications are utilized to achieve socio-economic benefits and the achievement of the Millennium Development Goals;

3. Underlines the importance of facilitating effective programmes in the areas of nuclear science, technology and applications aimed at pooling and further improving the scientific and technological capabilities of Member States through coordinated research projects (CRPs) within the Agency and between the Agency and Member States and through direct assistance, and urges the Secretariat to further strengthen capacity-building for Member States, particularly through interregional and regional training courses and fellowship training in the areas of nuclear science, technology and applications;

4. Recognizes the importance of and endorses Agency activities that meet the objective of fostering sustainable development and protecting the environment;

5. Urges the Secretariat to continue implementing efforts that contribute to greater understanding and a well-balanced perspective of the role of nuclear science and technology in sustainable global development, including the Kyoto commitments, and future efforts to address climate change;

6. Requests the Director General to continue to pursue, in consultation with Member States, the Agency's activities in the areas of nuclear science, technology and applications, with special emphasis on supporting the development of nuclear applications in Member States with a view to strengthening infrastructures and fostering science, technology and engineering, taking into account nuclear safety and nuclear security;

7. Welcomes all contributions announced by Member States, including the IAEA Peaceful Uses Initiative, which is designed to raise US$ 100 million as extrabudgetary contributions to IAEA activities by 2015, and encourages all States in a position to do so to make additional contributions;

8. Calls upon the Secretariat to continue to address identified priority needs and requirements of Member States in the areas of nuclear science, technology and applications, including the use of the SIT to establish tsetse-free zones and for combating malaria-transmitting mosquitoes and the Mediterranean fruit fly, the unique applications of isotopes to track the global uptake by the oceans of carbon dioxide and the resulting acidification effects on marine ecosystems, the use of isotopes and radiation in groundwater management and applications relating to agriculture such as crop improvement and management in light of climate change, human health, including drug development and additional concrete efforts through PACT and in the use of cyclotrons, research reactors and accelerators for the production of radiopharmaceuticals, the development of novel materials, including value-added products from natural polymers, industry and the protection of the environment, including the treatment of greenhouse gases (GHGs) and flue gases resulting from fossil fuel burning;

9. Calls upon the Secretariat to make efforts, together with Member States, so that there are sufficient resources to modernize the Agency’s nuclear applications laboratories at Seibersdorf with state-of-the-art facilities and equipment and ensure that maximum benefits in terms of capacity-building and technology enhancement are made available to Member States, particularly developing countries;

10. Urges the Secretariat to continue its cooperative work with other international initiatives, including the high-level group on the security of supply of medical radioisotopes established by the NEA, and to continue to implement activities that will contribute to securing and supplementing the molybdenum-99 production capacity, including in developing countries, in an effort to ensure the security of supplies of molybdenum-99 to users worldwide;

11. Requests the Secretariat to provide technical support to emerging national and regional efforts to establish non-HEU based molybdenum-99 production capabilities in interested Member States;

12. Requests the Secretariat to foster regional and international efforts in ensuring wide access to existing multi-purpose research reactors in order to increase research reactor operations and utilization;

13. Encourages the Secretariat to continue cooperating with the World Nuclear University (WNU) Annual School on Radioisotopes and to enhance its support for the participation of applicants from developing countries;

14. Urges the Secretariat to continue to engage with stakeholders and to encourage the international fuel supply industry to ensure uninterrupted and adequate supplies of TRIGA reactor fuel if necessary;

15. Calls for the support of the Agency in setting guidelines for the adoption of advanced techniques and equipment in radiation medicine in developing Member States;

16. Requests the Secretariat to continue providing assistance with capacity-building for quality assurance in radiopharmaceutical development and disseminating radiation technology guidelines based on international quality assurance standards;

17. Welcomes FAO's renewed commitment to the Arrangements for the Joint FAO/IAEA Division and FAO's Strategic Framework for 2010-2019, which provides a solid foundation for the strengthening and broadening of collaboration with, inter alia, the IAEA;

18. Requests the Secretariat to initiate, in collaboration with FAO and Member States, R&D on the possible use of nuclear techniques as a component of an integrated approach for combating locusts and to provide appropriate assistance to this end;

19. Requests also that the actions of the Secretariat called for in this resolution be undertaken subject to the availability of resources; and

20. Recommends that the Secretariat report to the Board of Governors and to the General Conference at its fifty-sixth (2012) regular session on the progress made in the areas of nuclear science, technology and applications.

2.
Programme of Action for Cancer Therapy

The General Conference,

(a) Recalling its resolution GC(53)/RES/13.A.2 on the Programme of Action for Cancer Therapy (PACT),

(b) Concerned about the suffering of cancer patients and their families, the extent to which cancer threatens development, particularly in developing countries, and the alarming growth in cancer incidents, particularly in low- and middle-income (LMI) countries, as reported by the International Agency for Research on Cancer (IARC), which estimates that by 2030 cancer will cause one in six deaths, with seventy-five per cent of these deaths occurring in developing countries,

(c) Welcoming the special priority assigned to the Agency's work on cancer control by the Director General in 2010, including through the organization of the 2010 Scientific Forum on "Cancer in Developing Countries: Facing the Challenge", and taking note of its discussions and conclusions,

(d) Recalling its resolution GC(54)/RES/10.A.5 on "Cancer", in which it, inter alia, requested the Secretariat to continue to undertake activities aimed at enhancing the capacities of developing countries in cancer control,

(e) Recalling resolution 64/265 on "Prevention and control of non-communicable diseases (NCDs)", adopted on 13 May 2010, in which the General Assembly, inter alia, requested the Secretary-General to submit a report to the General Assembly at its sixty-fifth session, in September 2011, on the global status of NCDs and the challenges faced by LMI countries, and welcoming the convening on 19-20 September 2011 of a high-level meeting of the General Assembly on the prevention and control of NCDs with a view to the production of an outcome document intended to generate commitment to implementing an action plan for the prevention and control of NCDs as well as its inclusion in the global development agenda,

(f) Aware that PACT embodies in a clear way the peaceful use of nuclear technology for civilian and humanitarian purposes, and that the timely implementation of PACT, enabling Member States to develop capacities to fight cancer in a comprehensive way, will impact the health and development of all regions, and promote the other statutory activities of the Agency,

(g) Welcoming the Secretariat's policy of continuing to develop an Agency-wide strategy for

the implementation of PACT, and taking note of the Director General's report on PACT in Annex 1 to document GC(55)17,

(h) Noting the continued work of the PACT Programme Office (PPO), as part of the Department of Nuclear Sciences and Applications, in coordinating a single unified programme for fundraising and the delivery of projects to Member States for cancer-related activities, making use of — inter alia — available Agency information, identified resources, and synergies and interactions across all relevant departments, as well as raising funds from extrabudgetary sources,

(i) Recognizing the delivery of activities under the auspices of PACT, in close coordination with the technical cooperation programme, and the increasing number of requests from Member States for assistance in projects related to cancer control, including capacity-building and radiotherapy infrastructure improvements,

(j) Recognizing that regional efforts can assist Member States in developing comprehensive national cancer control programmes suited to their requirements through knowledge sharing,

(k) Recognizing the value of integrated missions of PACT (imPACT) as a tool of comprehensive assessment and their usefulness for the planning of integrated cancer control programmes, and noting the increasing number of requests for imPACT missions made by Member States, and

(l) Noting with concern the increasing difficulty of retaining qualified medical professionals in LMI countries, and recognizing the need for these trained professionals, along with facilities and equipment, for sustaining adequate cancer care capacity,

1. Welcomes the provision included under Major Programme 2 in the Regular Budget to cover a portion of PACT's funding requirement, with core funding provided for resources to implement projects using extrabudgetary funds;

2. Commends the Secretariat for the continued progress made in the establishment of partnerships with Member States, other international organizations and private entities, taking into consideration UNGA resolutions 58/129 (2003), 59/250 (2004) and 60/215 (2006), and urges the PPO to foster the development and deployment of cost-effective, reliable systems for the radiation treatment of cancer patients through such partnerships;

3. Calls on the PPO to harness the benefits that may be derived from the WHO-IAEA Joint Programme on Cancer Control, particularly in terms of accelerated programmatic delivery to Member States, strengthening public health approaches to cancer control, and increased resource mobilization potential;

4. Calls on the Secretariat to follow up on the outcome and recommendations of the high-level meeting on the prevention and control of NCDs, particularly cancer, including by assisting developing countries to adopt and implement a comprehensive approach to cancer control;

5. Requests the Director General to continue advocating and building support for the Agency's work on cancer control, including by allocating and mobilizing resources for the implementation of PACT, as one of the priorities of the Agency;

6. Welcomes the progress in the work done by the PPO, through the technical cooperation programme, in collaboration with international partners and donors, to strengthen Member State capabilities to fight cancer, and requests the Secretariat to continue, in an integrated manner, planning and implementing PACT's cancer-related activities and projects in Member States;

7. Recommends that the PPO, in consultation with the Department of Technical Cooperation, other relevant Agency departments and the World Health Organization, as appropriate, continue working to assist developing Member States in establishing integrated and comprehensive national cancer control plans, involving the full participation of other international organizations and agencies;

8. Notes the need for sufficient human resources in the PPO for the implementation of projects using extrabudgetary funds, welcomes the significant extrabudgetary and in-kind resources provided to date, and encourages Member States to continue providing support and funding to adequately fulfil the needs of the PPO;

9. Welcomes the increase in the number of PACT Model Demonstration Sites (PMDS) to eight with the establishment of two new PMDS in Ghana and Mongolia, and calls on the PPO to continue working on their enhancement as well as the development of additional PMDS;

10. Notes with appreciation that in the past two years PPO coordinated 20 imPACT missions through voluntary contributions and developed the Country Cancer Profile as reference for information on cancer-related activities and statistics for Member States visited, welcomes the significant extrabudgetary and in-kind resources provided to date, notes that eighty-four Member States have requested imPACT missions, and encourages Member States to continue providing funding to enable PACT to respond to these requests;

11. Recommends the continuous development, in consultation with Member States, of imPACT missions as an Agency service available for Member States that may be included as part of a country's technical cooperation programme and/or, upon request, as a footnote-a/ project;

12. Welcomes the development of TC regional projects in Africa on "Supporting the Development of Comprehensive National Cancer Control Programmes" and in Asia and the Pacific on "Supporting National Cancer Control" in the 2009-2011 cycle, and urges the Secretariat to develop similar projects in other regions;

13. Takes note of the establishment in 2010 of the Advisory Group on Increasing Access to Radiotherapy Technology in Low- and Middle-Income countries (AGaRT), and encourages the Advisory Group to develop sustainable solutions to increase access to safe and affordable radiotherapy technologies;

14. Welcomes the continued support provided by PACT for the participation of health professionals working in cancer control in LMI countries in training courses on cancer prevention and control, and calls on the PPO to continue facilitating such training;

15. Welcomes the implementation of the Regional Cancer Training Network concept and the launch in May 2010 of the first pilot project in Africa of the Virtual University for Cancer Control (VUCCnet Africa), which can facilitate the training of cancer care professionals in their home countries, and looks forward to the establishment of similar Regional Cancer Training Centres in other regions;

16. Urges the Director General to continue seeking, strengthening and facilitating the Agency's involvement in international partnerships with non-traditional donors to further pursue, develop and implement PACT and, in this regard, requests the Director General to continue formalizing, where feasible and appropriate, PACT's collaboration with partners already identified for the more effective development and implementation of country-level PACT projects;

17. Commends the ongoing work of the PPO in using non-traditional funding mechanisms to support its activities, notes that between 2009 and 2011 PACT's resource mobilization efforts have secured or facilitated the mobilization of voluntary contributions, pledges, grants, long-term loans and donations of cash, equipment and in-kind expertise and training valued at US$ 21.6 million, and

encourages the continued implementation of PACT's fundraising and resource mobilization strategy;

18. Expresses appreciation for the financial and other contributions and pledges made by Member States and others in support of PACT;

19. Invites Member States, organizations, private foundations and other donors to provide adequate financial support for the implementation of PACT, and requests the Secretariat to keep Member States informed about its efforts in this regard;

20. Recommends that the PPO continue to raise awareness about the global cancer burden in LMI countries and that, in this regard, the PPO use all tools at its disposal, including partnerships with local, national and international media, to meet this objective;

21. Requests the Director General to report on the implementation of this resolution at its fifty-seventh (2013) regular session.

3.
Support to the African Union's Pan African Tsetse and Trypanosomosis Eradication Campaign (AU-PATTEC)

The General Conference,

(a) Recalling its previous resolutions on support to the African Union's Pan African Tsetse and Trypanosomosis Eradication Campaign (AU-PATTEC),

(b) Recognizing that the tsetse flies and the trypanosomosis disease problem which they cause are spreading and constitute one of the greatest constraints on the African continent's socio-economic development, affecting the health of humans and livestock, limiting land use and thus causing increased poverty and food insecurity,

(c) Recognizing that this disease continues to claim tens of thousands of human lives and millions of livestock every year and threatens over 60 million people in rural communities in 36 African countries, most of which are Agency Member States,

(d) Recalling decisions AHG/Dec.156 (XXXVI) and AHG/Dec. 169 (XXXVII) of the Heads of State and Government of the then Organization for Africa Unity (now African Union) to free Africa of tsetse flies and on a plan of action for implementing PATTEC,

(e) Recognizing the upstream work of the Agency under its Joint FAO/IAEA Programme in developing the sterile insect technique (SIT) against tsetse flies and providing assistance through field projects, supported from the Agency's Technical Cooperation Fund, on integrating tsetse SIT into Member States' efforts to address the tsetse fly and trypanosomosis problem in a sustainable manner,

(f) Cognizant that the SIT is a proven technique for the creation of tsetse-free zones when integrated with other control techniques and when applied within an area-wide integrated pest management (AW-IPM) approach, and

(g) Acknowledging the continued support given to AU-PATTEC by the Agency as outlined in the report submitted by the Director General in document GC(55)17, Annex 2,

1. Appreciates the importance of livestock development in rural communities affected by tsetse flies and trypanosomosis as a pathway out of poverty and hunger and a basis for food security and socio-economic development;

2. Calls upon Member States to strengthen the provision of technical, financial and material support to African States in their efforts to create tsetse-free zones;

3. Appreciates the continued high priority assigned by the Agency to agricultural development in Member States, including efforts to build capacity and further develop the techniques for integrating the SIT with other control techniques in creating tsetse-free zones in sub-Saharan Africa, and also appreciates the contributions provided by some Member States and United Nations specialized agencies in support of these efforts;

4. Appreciates the efforts made by the Secretariat, in close cooperation with PATTEC and other mandated specialized UN organizations, in creating awareness regarding the tsetse fly and trypanosomosis problem, developing maps, manuals and technical guidelines, and providing, through the Technical Cooperation Programme and the Regular Budget Programme, operational assistance to field project activities as well as advice regarding project management and policy and strategy development in support of national and subregional AU-PATTEC projects, to enable a standardized, phased and conditional project planning and implementation approach;

5. Takes note of the request of AU-PATTEC to the Agency to continue providing support in further developing and applying the SIT against tsetse flies as part of an area-wide integrated pest management (AW-IPM) effort, and specifically in tsetse mass rearing, relevant operational research, project management, baseline data collection and feasibility assessment in field projects;

6. Acknowledges the reported benefits already generated for affected communities in the Ethiopian Southern Rift Valley and the technical progress in Senegal and encourages the concerned Member States, in close collaboration with the Agency and other partners, to address remaining shortcomings and generate further progress in their respective efforts in integrating tsetse SIT for creating sustainable tsetse and trypanosomosis-free zones;

7. Welcomes the continuing close collaboration between the Agency and PATTEC in the agreed areas of collaboration as specified in the Memorandum of Understanding between the African Union Commission and the Agency, signed in November 2009;

8. Stresses the need for continued harmonized, synergetic efforts by the Agency and other international partners, particularly FAO and WHO, with the aim of supporting the African Union Commission and Member States through the provision of guidance and quality assurance in planning and implementing sound and viable national and subregional AU-PATTEC projects;

9. Urges the Secretariat to strengthen capacity building and to support the establishment of regional centres of excellence in the affected Member States so as to promote the development of the human resources necessary for implementing the operational national and regional PATTEC projects in the context of developing and applying field projects against the tsetse and trypanosomosis problem, involving tsetse SIT, and welcomes in this regard the designation of the Centre International de Recherche-Développement sur l'Elevage en Zone Sub-Humide (CIRDES) in Bobo-Dioulasso, Burkina Faso, as an IAEA Collaborating Centre in "The Use of the Sterile Insect Technique for Area-Wide Integrated Management of Tsetse Fly Populations";

10. Welcomes the efforts of the Secretariat, with the involvement of PATTEC, counterparts in Member States and FAO and WHO, in the identification of regional needs for capacity development and organizing regional training courses;

11. Appreciates the special efforts made by the Joint FAO/IAEA Division and the FAO Animal Health Service to recruit – through the Programme Against African Trypanosomosis (PAAT) – consultants, one based in Accra, Ghana, and one in Addis Ababa, Ethiopia, to support the PATTEC projects in West and East Africa, respectively;

12. Requests the Secretariat, in cooperation with Member States and international organizations, to maintain funding through the Regular Budget and the Technical Cooperation Fund and through partnerships and to strengthen its support for R&D in and technology transfer to African Member States in order to complement their efforts to create and subsequently expand tsetse-free zones; and

13. Requests the Director General to report on the progress made in the implementation of this resolution to the Board of Governors and to the General Conference at its fifty-sixth (2012) regular session.

4.
Plan for producing potable water economically using small and medium-sized nuclear reactors

The General Conference,

(a) Recalling its resolutions GC(43)/RES/15, GC(44)/RES/22, GC(45)/RES/12.A, GC(47)/RES/10.E, (49) RES/12.E, GC(51)/RES/14.A.5, GC(52)RES/12.A.4 and GC(53)RES/13.A.4,

(b) Recognizing that sufficient and clean potable water supplies for all mankind are of vital importance, as emphasized in Agenda 21 of the Rio Summit on Development and Environment and subsequently recalled at the 19th special session of the United Nations General Assembly,

(c) Taking note with great concern of the fact that a great portion of the world's population will, over the next years, face the ever-growing problems of potable water shortages,

(d) Noting that seawater desalination using nuclear energy is technically feasible and generally cost-effective,

(e) Noting also that a number of Member States have expressed their interest in activities relating to seawater desalination using nuclear energy,

(f) Noting in addition that nuclear desalination has been successfully demonstrated through various projects in some States,

(g) Underlining the urgent need for regional and international cooperation in helping to solve the serious problem of potable water shortages, particularly through the desalination of seawater,

(h) Taking note with appreciation of the different activities carried out by the Secretariat in cooperation with interested Member States and international organizations, as outlined in the report of the Director General contained in document GC(53)/3,

(i) Taking note of the recommendations of the meeting of the Technical Working Group on Nuclear Desalination (TWD-ND) held in April 2011,

(j) Noting that the "tool kit on nuclear desalination" released by the Agency in 2009 in the form of a web page on nuclear desalination was improved in 2010 with updated and expanded information and that in September 2010 the Agency published the second issue of the Nuclear Desalination Newsletter, the successor to the INDAG Newsletter,

(k) Noting that the Coordinated Research Project (CRP) on New Technologies for Seawater Desalination Using Nuclear Energy held its second Research Coordination Meeting in October 2010 and began to assemble results from participating Member States for the CRP's final report,

(l) Recalling that the Agency has initiated a programme to assist developing countries

interested in small and medium-sized reactors (SMRs) to address economics, safety, reliability and technical measures for proliferation resistance,

(m) Acknowledging that innovative SMRs are of particular interest also for non-electrical energy, particularly in the desalination of seawater,

(n) Noting IAEA-TECDOC-1642, "Environmental Impact Assessment of Nuclear Desalination", published in February 2010,

(o) Noting the results of the Technical Meeting on Technology and Economic Assessment of Nuclear Desalination, held in Vienna in March 2011 as a forum for information exchange among Member States, in particular its recommendation to strengthen national and regional infrastructures for nuclear desalination in interested Member States,

(p) Noting with appreciation the activities on nuclear desalination carried out by the Agency in a number of countries,

(q) Commending the efforts of the Secretariat in coordinating the development of nuclear reactor simulators for use on personal computers,

(r) Expressing appreciation of the Director General's initiative in selecting water as a key focus area in 2011, and aware of the role of TC projects in strengthening national capacities in water resource management, particularly in the developing world, and

(s) Taking note of the efforts of the Director General in soliciting additional funds for nuclear desalination,

1. Requests the Director General to continue consultations and interactions with interested Member States, the competent organizations of the United Nations system, regional development bodies and other relevant intergovernmental and non-governmental organizations in activities relating to seawater desalination using nuclear energy;

2. Encourages the TWG-ND to continue its functions as a forum for advice and review on nuclear desalination activities, and recommends the enhancement of the scope of the TWG-ND to address the challenges related to integrated water resources management in the efficient use of water in nuclear facilities, which may involve the use of seawater desalination;

3. Stresses the need for international co-operation in the planning and implementation of nuclear desalination demonstration programmes through national and regional projects open for the participation of any interested country;

4. Requests the Director General, subject to the availability of resources, to:

(a) develop a report that defines all the aspects for a technical and economic feasibility study on using nuclear energy both exclusively for seawater desalination, as well as for cogeneration options (e.g. electricity, seawater desalination, hydrogen production, etc.), and

(b) hold a workshop to discuss nuclear desalination and water management in nuclear power plants;

5. Invites the Director General to raise seed funds and other appropriate funding from extrabudgetary resources in order to catalyze and contribute to the implementation of all Agency activities relating to nuclear desalination and the development of innovative SMRs;

6. Requests the Director General to note the high priority given by interested Member States to the nuclear desalination of seawater in the process of preparing the Agency's Programme and Budget; and

7. Further requests the Director General to report on the progress made in the implementation of this resolution to the Board of Governors and to the General Conference at its fifty-seventh (2013) regular session under an appropriate agenda item.

5.
Use of isotope hydrology for water resources management

The General Conference,

(a) Appreciating the work of the Agency in the area of isotope hydrology in response to resolution GC(53)/RES/13.A.5,

(b) Taking note of national, regional and international efforts to implement the International Decade for Action, "Water for Life", 2005–2015, proclaimed by the United Nations to bring about a greater focus on the critical linkage between water and human development at all levels and to improve the sustainable management of freshwater resources,

(c) Aware that the United Nations continue to recognize the need for greater and concerted action in the area of water by proclaiming 2012 as the International Year of Water Diplomacy and 2013 as the International Year of Water Cooperation,

(d) Conscious of the central role of access to water and water resource management in achieving the United Nations' Millennium Development Goals,

(e) Aware that the United Nations have convened a high-level Conference in 2012 (Rio+20) to secure renewed political commitment for sustainable development, assess the progress to date and the remaining gaps in the implementation of the outcomes of the major summits on sustainable development, and address new and emerging challenges,

(f) Aware that a lack of comprehensive mapping of water resources and related human capacity adversely impacts on the ability of Member States to increase water availability and use,

(g) Recognizing that the Agency has continuously demonstrated the importance of isotope techniques for water resources development and management, particularly for groundwater management in arid and semi-arid regions and for improved understanding of the water cycle,

(h) Noting that the initiatives of the Agency, as mentioned in document GC(55)/17, Annex 3, are addressing national priorities and have resulted in a wider use of isotope techniques for water resources and environmental management,

(i) Appreciating the fact that the initiatives taken by the Agency, particularly in conjunction with the Commission on Sustainable Development and the World Water Forum, have significantly raised awareness of the Agency's work on water resources,

(j) Appreciating the initiative of the Agency in increasing the access of Member State to laser-based stable isotope analysers, training of personnel, and providing supplementary information for their utilisation in a sustainable manner and in disseminating isotope data through a series of Isotope Hydrology Atlases,

(k) Appreciating the Agency's initiative in launching the IWAVE (IAEA Water Availability Enhancement) project, aimed at assisting Member States with the comprehensive mapping of water resources, and in taking measures to expand Member State access to noble gas isotope analysis for groundwater assessment and management, and

(l) Commending the Director General's efforts to place special focus on water, including through the organization of the 2011 Scientific Forum on "Water Matters - Making a Difference with Nuclear Techniques", and taking note of its discussions and conclusions,

1 Requests the Director General, subject to the availability of resources:

(a) to continue to further strengthen the efforts directed towards the fuller utilization of isotope and nuclear techniques for water resources development and management in the interested countries through appropriate programmes, by increased collaboration with national and other international organizations dealing directly with water resources management,

(b) to continue to help Member States obtain easy access to isotopic analysis by upgrading selected laboratories and by assisting Member States in adopting new and less expensive analytical techniques based on recent advances in relevant technologies, including laser-based ones,

(c) to expand its work on the IWAVE project and on groundwater management, particularly the assessment and management of fossil groundwater resources, including in arid and semi-arid areas, as well as on the safety and sustainability of these resources, in collaboration with other international and regional organizations, and to develop tools and methodologies for improved mapping of water resources, and

(d) to strengthen activities which contribute to the understanding of climate and its impact on the water cycle and which are aimed at better prediction and mitigation of water-related natural calamities, and to contribute to the success of the International Decade on Freshwater;

2 Requests the Agency to continue, along with other relevant United Nations agencies and with relevant regional agencies, to develop human resources in isotope hydrology through appropriate courses, at universities and institutes in Member States, through the use of advanced communication techniques and educational tools and at regional training centres, designed to provide practicing hydrologists with the ability to use isotope techniques; and

3 Further requests the Director General to report on achievements in implementing this resolution to the Board of Governors and to the General Conference at its fifty-seventh (2013) session under an appropriate agenda item.

B.

Nuclear power applications

1.
General

The General Conference,

(a) Recalling resolution GC(54)/RES/10 and previous General Conference resolutions on strengthening the Agency's activities related to nuclear science, technology and applications,

(b) Noting that the Agency's objectives as outlined in Article II of the Statute include "to accelerate and enlarge the contribution of atomic energy to peace, health and prosperity throughout the world",

(c) Noting also that the Agency's statutory functions include "to encourage and assist research on, and practical application of, atomic energy for peaceful uses", "to foster the

exchange of scientific and technical information", and "to encourage the exchange and training of scientists and experts in the field of peaceful uses of atomic energy", including the production of electric power, with due consideration for the needs of developing countries,

(d) Acknowledging that each State has a right to decide its national energy policy in accordance with its national requirements and taking into account its relevant international obligations, and that diverse portfolios of energy sources are needed to allow access to sustainable energy and electricity resources in all regions of the world,

(e) Stressing that the availability of energy and access to it are vital to human development, while noting that the health of the planet's environment is a serious concern that must be regarded as a priority by all governments, including taking actions to reduce pollution and to address the risk of global climate change, and recognizing that Member States pursue different ways to achieve energy security and climate protection goals,

(f) Taking note that nuclear power provides around 14% of current electricity supply, worldwide, and does not produce either air pollution or greenhouse gas emissions during normal operation, and that for the seventh year in a row the number of nuclear power plant construction starts (16 in 2010, the largest number since 1985) has increased and that the number under construction at the end of 2010 (67) is the largest since 1990,

(g) Recognizing that the accident that occurred on 11 March 2011 at TEPCO's Fukushima Daiichi nuclear power station, triggered by an extraordinary natural event, has shown the need for further improvements in nuclear safety, in particular for addressing extreme natural events,

(h) Noting, however, that most States already engaged in nuclear energy prior to the Fukushima accident will continue to pursue it, as they consider nuclear energy a viable option in meeting their energy needs and addressing climate change, while a few of those States have decided and others continue, based on their own national assessments of nuclear energy benefits and risks, not to use it or to phase out their nuclear programmes,

(i) Recalling that the use of nuclear power must be accompanied by commitments to and ongoing implementation of the highest standards of safety and security throughout the life of the power plants, and effective safeguards, consistent with States' national legislation and respective international obligations, as well as the need to resolve the issues of managing radioactive waste in a safe and sustainable manner, and confirming the important role of science and technology in continuously addressing these challenges, particularly, through innovations,

(j) Recognizing the essential role that the Agency plays, as the principal international forum, for the exchange of information and experience on nuclear power plant operation and for the continual improvement of this exchange among interested Member States, and also recognizing the role of international organizations such as OECD/NEA, of NGOs and of multinational networks among operators such as WANO, and the strengthening of cooperation between the IAEA and those organizations,

(k) Recognizing also the experience and the capabilities of the Agency and the unique role it plays in assisting Member States to build their national capacities in nuclear power and its application, inter alia through its technical cooperation programme and the International Project on Innovative Nuclear Reactors and Fuel Cycles (INPRO), by bringing together interested Member States, including both technology users and holders, to consider jointly innovations in nuclear reactors, fuel cycles and institutional approaches,

(l) Acknowledging the right of Member States planning to launch or expand their respective nuclear power programmes to establish their national policies, priorities and technology

requirements, including as regards nuclear reactor technology, in accordance with their relevant international obligations,

(m) Recalling that launching a nuclear power programme requires the development and implementation of an appropriate infrastructure to ensure the safe, secure and efficient use of nuclear power in a sustained manner, and the assurance of the highest standards of nuclear safety taking into account relevant IAEA standards and guidance and relevant international instruments, as well as a strong and long-term commitment of the country and its national authorities to creating and maintaining this framework,

(n) Noting the number of Member States that have expressed their interest in nuclear power and are actively preparing their nuclear power programme with the assistance of the Agency, and acknowledging the Agency's role in facilitating the safe, secure and efficient use of nuclear power and the importance of the assistance it provides,

(o) Noting also the increasing number of technical cooperation projects, including provisions of assistance to Member States planning to introduce nuclear power generation in conducting energy studies to evaluate future energy options and in establishing appropriate technical, human, legal, regulatory and administrative infrastructure,

(p) Recognizing the difficulties in obtaining financing arising from the high capital costs of a nuclear plant and the obstacles they create in making nuclear power a viable option in meeting the energy needs, in particular for developing countries,

(q) Noting the increasing number of requests from Member States for advice on the exploration of uranium resources and on mining and milling for safe and effective uranium production while minimizing the environmental impact, and acknowledging the importance of Agency assistance in this field,

(r) Noting the approval by the Board of Governors, in December 2010, of an IAEA low enriched uranium (LEU) bank that will be owned and managed by the Agency, as a supply of last resort for nuclear power generation,

(s) Noting the commissioning, in December 2010, of the LEU reserve of Angarsk (Russian Federation), comprising 120 tons of LEU under the aegis of the Agency,

(t) Noting also the approval by the Board of Governors, in March 2011, of the level 2 type of Nuclear Fuel Assurance ("bonding" concept) for the supply of enrichment services and LEU for fuel fabrication,

(u) Aware of the recent announcement by the United States of the availability of the American Assured Fuel Supply, a bank of approximately 230 tons of LEU, for supply disruptions in countries pursuing peaceful civilian nuclear programmes,

(v) Recalling the importance of human resource development, education and training and knowledge management and acknowledging, in that context, the important contribution of Agency programmes and guidance and the need to continue these activities,

(w) Taking note of the "*Nuclear Technology Review 2011*" (GC(55)/INF/5) and of the report "*Strengthening the Agency's Activities related to Nuclear Science, Technology and Applications*" (GC(55)/17) prepared by the Secretariat, and

(x) Taking note of other bilateral and multilateral cooperations intended to complement and supplement Agency programmes,

1. Affirms the importance of the role of the Agency in facilitating, through international cooperation among interested Member States, the development and use of nuclear energy for peaceful purposes, including the specific application of the generation of electric power, in assisting these States in that regard, in fostering international cooperation and in disseminating to the public well-balanced information on nuclear energy;

2. Underlines the importance of facilitating effective programmes in the areas of nuclear science, technology and applications related to nuclear power, aimed at pooling and further improving the scientific and technological capabilities of interested Member States through cooperation and coordinated research and development;

3. Recommends that the Secretariat continue to implement efforts that contribute to a greater understanding and a well-balanced picture of the role of nuclear science and technology in a global, sustainable development perspective, and in that context acknowledges its contributions to relevant international discussions, including those addressing global climate change;

4. Stresses the importance, when deploying nuclear energy, including nuclear power and related fuel cycle activities, of ensuring the highest standards of safety and emergency preparedness and response, including incorporating the lessons learned from the Fukushima accident, security, non-proliferation, and environmental protection;

5. Requests the Secretariat to continue to pursue, in consultation with interested Member States, the Agency's activities in the areas of nuclear science and technology for nuclear power applications in Member States, with a view to strengthening infrastructures and fostering science, technology and engineering;

6. Requests in particular the Secretariat to continue and strengthen its efforts relating to nuclear power, fuel cycle and waste technology, focusing particularly on technical areas where the needs for improvement, advances and enhanced international collaboration are greatest;

7. Stresses in this connection that the safe management of spent fuel, which for some countries includes reprocessing and recycling, as well as the safe management and/or disposal of radioactive waste are of great importance, inter alia for the sustainable, safe and secure development of nuclear power and to avoid imposing undue burdens on future generations, and, while noting that each State remains responsible for the management of its spent fuel and radioactive waste, encourages international cooperation in the safe management of spent fuel and radioactive waste;

8. Welcomes the Agency's assistance and review services provided to countries embarking on new nuclear power programmes through, inter alia, the Planning and Economic Studies Section (PESS), the Nuclear Power Support Group (NPSG), the Integrated Nuclear Infrastructure Group (INIG) and INPRO, and encourages these countries to use these services when planning their energy programmes, developing their national infrastructure for nuclear power and defining their long-term strategy for sustainable nuclear energy;

9. Notes with satisfaction the organization of workshops on vital topics related to nuclear power, such as technologies and economics, the competitiveness of nuclear power and other energy technologies, the development of the required infrastructure for the safe, secure and efficient use of nuclear power, desalination, partitioning and transmutation, as well as the training of many professionals from Member States through various regional and national courses, and encourages the Agency to continue such activities, while ensuring the widest possible participation of experts from all interested Member States;

10. Welcomes the activities of the Agency in human resource development and knowledge management, the initiatives in creating an IAEA e-learning platform, schools and institutes for

education and training in the field of nuclear energy, as well as networks for promoting exchanges among these institutions;

11. Acknowledges the importance of Agency technical cooperation projects for assisting Member States in energy analysis and planning, and in establishing the infrastructures required for the safe, secure and efficient introduction and use of nuclear power, and encourages interested Member States to consider how they can further contribute in this field in developing countries through enhanced Agency technical cooperation;

12. Welcomes all contributions announced by Member States, including the IAEA Peaceful Uses Initiative, which is designed to raise US$ 100 million as extrabudgetary contributions to IAEA activities by 2015, and encourages all States in a position to do so to make additional contributions;

13. Notes the comment made by the Director General, at the Beijing Conference on "Nuclear Energy in the 21st Century", in April 2009, that the entry into force of the Kyoto Protocol and the European carbon trading scheme means there is now a real financial benefit to avoiding greenhouse gases, and that this increases the attractiveness of low-carbon electricity generation such as nuclear power and renewables;

14. Takes note of the Secretariat's continuing examination of various aspects of the financing of nuclear power, and also encourages interested Member States to work with the relevant financial institutions towards addressing financial issues related to the introduction of enhanced safety design and technologies of nuclear power;

15. Encourages discussions, in a non-discriminatory, inclusive and transparent manner, on the development of multilateral approaches to the nuclear fuel cycle, including the possibilities of creating mechanisms for assurance of nuclear fuel supply, as well as possible schemes dealing with the back-end of the fuel cycle;

16. Requests the Agency to cooperate with the OECD/NEA for the publication in 2012 of the Red Book on uranium resources, production and demand;

17. Calls on the Secretariat to organize a high-level international conference in 2013 on the global nuclear energy status and future developments, with particular focus on nuclear power, including safety aspects, to follow on similar successful conferences (Paris in 2005 and Beijing in 2009), and encourages interested Member States to participate in this important event;

18. Requests the Secretariat to update in 2012 its report on the International Status and Prospects of Nuclear Power (document GC(54)/INF/5, issued in 2010), which provides a comprehensive overview of the international status and prospects of nuclear power for the benefit of Member States and policy-makers worldwide, and to continue to issue it every two years;

19. Requests that the actions of the Secretariat called for in this resolution be undertaken as a priority subject to the availability of resources; and

20. Requests the Secretariat to report to the Board of Governors as appropriate and to the General Conference at its fifty-sixth (2012) session on developments relevant to this resolution.

2.
Small and medium-sized nuclear reactors – Development and deployment

The General Conference,

(a) Recalling its previous resolutions on small and medium-sized nuclear reactors – development and deployment,

(b) Noting that the Agency has in place a programme which includes the preparation of reports and coordinated research projects covering several relevant topics, to assist developing countries interested in small and medium-sized reactors (SMRs) to address economics, environmental protection, safety and security, reliability, proliferation resistance and waste management,

(c) Recognizing that smaller reactors could be better suited to the small electrical grids of many developing countries with less developed infrastructure, but acknowledging that the size of nuclear reactors is a national decision that each Member State takes on the basis of its own needs and the size of its electrical grid,

(d) Noting that SMRs could play a significant role in desalination and hydrogen production systems in future,

(e) Welcoming the publication of a report on "*Small Reactors without On-site Refuelling: Neutronic Characteristics, Emergency Planning and Development Scenarios*", and looking forward to the imminent publication of "*Design Features to Achieve Defense in Depth in Small and Medium Reactors*", as well as the finalization of reports on "*Approaches to Assess Competitiveness of SMRs*" and "*Framework for the Application of Assessment Methodologies for Proliferation Resistance of Innovative Small and Medium Sized Reactors*",

(f) Recognizing the role that innovative technologies can play in improving nuclear safety, and

(g) Noting with appreciation the Director General's report entitled "Small and Medium-Sized Reactors (SMRs) - Development and Deployment" contained in document GC(55)/17,

1. Commends the Director General and the Secretariat for their work in response to previous relevant General Conference resolutions;

2. Encourages the Secretariat to continue taking appropriate measures to assist Member States, particularly developing countries, engaged in the process of preparatory actions with regard to demonstration projects, and encouraging the development of safe, secure, economically viable and proliferation-resistant SMRs;

3. Calls upon the Secretariat to continue to promote effective international exchange of information on options as regards SMRs available internationally for deployment and on topics such as roadmap for technology development, requirements for countries embarking on new nuclear power programmes, regulatory infrastructure, operational performance, maintainability, safety and security, waste management, constructability, economics, proliferation resistance and the state of development of innovative SMRs, by organizing technical meetings and workshops, as appropriate, and to produce relevant status and technical reports;

4. Invites the Secretariat and the Member States that are in a position to offer SMRs to foster international cooperation in undertaking studies of the social and economic impacts of SMR deployment in developing countries;

5. Encourages the Secretariat to continue consultations and interactions with interested Member States, the competent organizations of the United Nations system, financial institutions, regional development bodies and other relevant organizations regarding advice on the development and deployment of SMRs;

6. Encourages the Secretariat to continue the activities of the Regular Budget project "Common Technologies and Issues for SMRs" on both the development of key enabling technologies and the resolution of key infrastructure issues for innovative SMRs of various types, which is complementary to the International Project on Innovative Nuclear Reactors and Fuel Cycles (INPRO);

7. Invites the Director General to raise seed funds and other appropriate funding from extrabudgetary

sources in order to contribute to the implementation of all Agency activities relating to the development of and facilitating the deployment of SMRs; and

8. Requests the Director General to continue to report on:

i. the status of the programme initiated to assist developing countries interested in SMRs,

ii. progress made in the research, development, demonstration and deployment of SMRs in interested Member States intending to introduce them, and

iii. progress made in the implementation of this resolution to the Board of Governors and to the General Conference at its fifty-seventh (2013) regular session under an appropriate agenda item.

3.
Agency activities in the development of innovative nuclear technology

The General Conference,

(a) Recalling its previous resolutions on the Agency's activities in the development of innovative nuclear technology,

(b) Conscious of the need for sustainable development and of the potential contribution of nuclear power to meeting the growing energy needs in the 21st century,

(c) Referring to the Declaration by the IAEA Ministerial Conference on Nuclear Safety in Vienna on 20 June 2011, which notes the role of innovative technologies in addressing improved nuclear safety,

(d) Noting the progress achieved in a number of Member States in the development of innovative nuclear energy systems technology and the high technical and economic potential of international collaboration in the development of such technology,

(e) Noting that the Agency's International Project on Innovative Nuclear Reactors and Fuel Cycles (INPRO), whose membership has reached 33 Member States and the European Commission, provides a forum for technology users and technology holders to study national, regional and global scenarios and corresponding architectures and explore the innovations in the development and deployment of sustainable nuclear energy systems,

(f) Noting also that the Agency fosters collaboration among interested Member States on selected innovative technologies and approaches to nuclear power through INPRO Collaborative Projects, Technical Working Groups (TWGs) working on facilitating innovations for advanced reactors and nuclear fuel cycle options, and Coordinated Research Projects, and acknowledging that the coordination of INPRO-related activities is achieved through the IAEA programme and budget and the INPRO Action Plan,

(g) Noting that the scope of INPRO now includes activities and collaborative projects in such areas as nuclear energy system assessments (NESAs), global vision and scenarios, innovations in nuclear technology and institutional arrangements, and the INPRO Dialogue Forum, which together provide an Agency programme of activities supporting interested Member States in long-range nuclear energy deployment strategic planning,

(h) Noting the progress of other national, bilateral and international activities and initiatives and their contribution to joint research and development work on innovative approaches to nuclear energy deployment and operation, and

(i) Noting with appreciation the Director General's report on Agency activities in the development of innovative nuclear technology contained in document GC (55)/17,

1. Commends the Director General and the Secretariat for their work in response to the relevant General Conference resolutions, in particular the results achieved to date within INPRO;

2. Emphasizes the important role that the Agency can play in assisting interested Member States in building national long-term nuclear energy strategies and in long-term sustainable nuclear energy deployment decision making through the INPRO methodology and other tools, including NESAs;

3. Encourages interested Member States and the Secretariat and, in particular, INPRO to develop and evaluate various global and regional nuclear energy scenarios, based on a comprehensive set of analytical tools, assumptions and considerations, including nuclear fuel cycle options, that lead to a global vision on sustainable nuclear energy development in the 21st century, highlight the role of international cooperation and help define collaborative pathways to such development;

4. Invites Member States and the Secretariat and, in particular, INPRO to bring into focus and examine the role that innovations can play in improving nuclear safety, security and non-proliferation;

5. Requests the Secretariat to promote the exchange of relevant technical information among interested Member States and to foster human resource training on innovative nuclear technologies;

6. Invites all interested Member States to join, under the aegis of the Agency, in the activities of INPRO in considering the issues of innovative nuclear energy systems, including institutional and infrastructure innovations, particularly by continuing assessment studies of such energy systems and their role in national, regional and global scenarios for the further use of nuclear energy, as well as by identifying common issues for possible collaborative projects;

7. Encourages the IAEA Secretariat and interested Member States to jointly consider innovations in developing sustainable nuclear energy systems, which could meet their energy needs and contribute to economic development, in a manner consistent with safety, security and non-proliferation commitments;

8. Encourages the IAEA Secretariat and interested Member States to review INPRO methodology in the light of the Fukushima accident and taking into account results of NESAs performed in Member States,

9. Calls upon the Secretariat and Member States in a position to do so to investigate, taking into account, inter alia, economic, safety and security factors, the availability of new, more proliferation resistant reactor and fuel cycle technologies, including those needed for the recycling of spent fuel and its use in advanced reactors under appropriate controls and for the long-term disposition of remaining waste materials;

10. Recommends that the Secretariat continue to explore opportunities for synergy between Agency's activities (including INPRO) and those pursued under other international initiatives in areas related to international cooperation in peaceful uses of nuclear energy, safety, proliferation resistance and other security issues;

11. Recommends in this regard that INPRO and appropriate TWGs support the initiatives developed during the fifth IAEA/INPRO/GIF interface meeting, held in March 2011, relating to innovative nuclear energy systems analysis, safety, proliferation resistance and economics by holding a series of joint workshops on advanced reactors;

12. Invites interested IAEA Member States that have not done so to consider joining INPRO and to contribute to innovative nuclear technology activities by providing scientific and technical

information, financial support, or technical and other relevant experts and by contributing to joint collaborative projects on innovative nuclear energy systems;

13. Recognizing that the funding of INPRO activities in the development of innovative nuclear technology comes partly from the Regular Budget and in large part from extrabudgetary resources, requests the Director General to strengthen the Agency's efforts related to the development of innovative nuclear technology by further enhancing the effective use of available resources in support of related activities of the TWGs and INPRO; and

14. Requests the Director General to report on the progress made in the implementation of this resolution to the Board of Governors and to the General Conference at its fifty-sixth (2012) regular session under an appropriate agenda item.

4.
Approaches to supporting nuclear power infrastructure development

The General Conference,

(a) Recognizing that the development and implementation of an appropriate infrastructure to support the successful introduction of nuclear power and its safe, secure and efficient use is an issue of great importance, especially for countries that are considering and planning for the introduction of nuclear power,

(b) Recalling its previous resolutions on approaches to supporting nuclear power infrastructure development,

(c) Acknowledging the Agency's significant role in assisting Member States that are considering and planning for the introduction of nuclear power with assessments of infrastructure needs, taking into account relevant economic, social and policy considerations, to support the safe, secure and efficient use of nuclear power, and noting the Agency's increasing activities in this area, in accordance with the requests of Member States,

(d) Welcoming the fact that one of the twelve main actions of the Agency's Nuclear Safety Action Plan is focused on Member States planning to embark on a nuclear power programme, and noting that, notwithstanding the accident at TEPCO's Fukushima Daiichi Nuclear Power Station, interest in nuclear power remains high,

(e) Recognizing the value of the Agency's Integrated Nuclear Infrastructure Review (INIR) missions, which provide expert and peer-based evaluations, in helping requesting Member States to determine their nuclear infrastructure development status,

(f) Welcoming the two INIR missions conducted in 2010-2011, to Thailand and the United Arab Emirates, the first Phase 2 INIR mission, and the fact that the Member States involved found them to be useful and supportive of national infrastructure efforts,

(g) Noting the joint efforts of the Integrated Nuclear Infrastructure Group (INIG) and the International Project on Innovative Nuclear Reactors and Fuel Cycles (INPRO) in developing innovative infrastructure approaches for future nuclear energy systems,

(h) Stressing the importance of adequate human resources for ensuring – inter alia – safe and secure operation, and effective regulation, of a nuclear power programme and noting the worldwide shortage of trained personnel in developed and, especially, developing countries, and

(i) Taking note of other international initiatives focusing on support for infrastructure development,

1. Commends the Director General and the Secretariat for their efforts in implementing resolution GC(54)/RES/10.B.2 as reported in document GC(55)/17 and requests the Secretariat to provide updates to important publications such as *Milestones in the Development of a National Infrastructure for Nuclear Power*, and in this effort to ensure enhanced consistency amongst related nuclear power infrastructure publications, including its new guidance document *Establishing the Safety Infrastructure for a Nuclear Power Programme* (Safety Standards Series No. SSG-16);

2. Welcomes the Director General's report on *Strengthening Agency Support to Member States Considering or Launching Nuclear Power Programmes*, GOV/INF/2009/11, and encourages the Secretariat to prepare a follow-up document providing more detailed analysis, including legal, financial and practical implications, in consultation with interested Member States;

3. Encourages Member States launching a nuclear power programme to invite an Agency INIR mission and relevant peer review missions, including site design safety reviews, prior to commissioning the first nuclear power plant, commends the United Arab Emirates for derestricting its INIR mission report and encourages Member States to make public their INIR mission reports in order to share best practices;

4. Commends the Secretariat's internal coordination and holistic approach to nuclear infrastructure development, and encourages Member States and the Secretariat to take into account the results of assessments of infrastructure requirements, such as INIR mission outcomes, to optimize ongoing Agency activities in this area;

5. Requests the Secretariat to further develop INIR for Phase 3 before commissioning;

6. Further requests the Secretariat to continue to learn lessons from INIR missions and to enhance the effectiveness of its activities;

7. Welcomes the establishment of the Technical Working Group on Nuclear Power Infrastructure (TWG-NPI), notes the first two meetings of the TWG-NPI in November 2010 and May 2011, and recommends that the Secretariat and the TWG-NPI continue to consider ways and means to enhance nuclear infrastructure development assistance options for Member States, including by identifying and addressing the needs of emerging owner-operators in countries embarking on a nuclear power programme;

8. Invites all Member States that are considering or planning for the introduction of nuclear power, to contribute, as appropriate, by providing information and/or resources to enable the Agency to apply its full spectrum of tools in support of nuclear infrastructure development;

9. Commends the Secretariat's cooperation with the International Framework for Nuclear Energy Cooperation on the development of a workforce planning modelling tool for countries launching nuclear power programmes;

10. Welcomes the imminent publication of the technical report entitled *Managing Siting Activities for Nuclear Power Plants* and looks forward to the forthcoming technical reports entitled *Industrial Infrastructure to Support a National Nuclear Power Programme*, *Invitation and Evaluation of Bids for Nuclear Power Plants*, *Nuclear Power General Objectives*, *Stakeholder Involvement in the Lifecycle of Nuclear Facilities*, and *Alternative Contracting and Ownership Practices for Nuclear Power Plants*;

11. Calls on the Secretariat to facilitate, as necessary, "soft coordination" among Member States for more efficient implementation of multilateral and bilateral assistance to countries considering or planning for the introduction of nuclear power;

12. Expresses appreciation for the successful annual workshops on Managing the Development of a National Infrastructure for Nuclear Power (most recently in February 2011) and for the Agency's other technical meetings and workshops related to nuclear power infrastructure development, and encourages the Secretariat to organize such workshops both regionally and topically, as they have proved a good opportunity for Member States to identify and share lessons learned, experience and other information in this field;

13. Welcomes the activities undertaken by Member States, both individually and collectively, to cooperate on a voluntary basis in nuclear infrastructure development and encourages this cooperation; and

14. Requests the Director General to report on the progress made in the implementation of this resolution to the Board of Governors and to the General Conference at its fifty-seventh (2013) session under an appropriate agenda item.