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EXECUTIVE SUMMARY

SUSTAINABILITY PLANNING and IMPLEMENTATION
An Interim Review

Introduction:

Sustainability Planning was developed to engage ISTC beneficiary institutes in a process that would strengthen their capabilities to develop alternative sources of revenue to generate long-term stability and sustainable outcomes for the institutes. Sustainability plans were originally intended to provide a guide for rationalized utilization of ISTC funding to promote institute sustainability.

It is difficult to make judgments of the impact of Sustainability Planning and implementation since only one Sustainability Plan in an advanced stage of implementation.

Sustainability Plans are constructed with a focus on eight key elements (See Annex 1):

Institutes:

Nine (9) institutes identified to participate in the first round of Sustainability Planning.
Seven (7) Sustainability Plans conducted and approved by Governing Board.
Five (5) Sustainability Plans approved with funding.
Two (2) Sustainability Plans currently being implemented:

- Khlopin Radium Institute; St. Petersburg, Russia
- Institute of Physics and Power Engineering; Obninsk, Russia.

Lessons Learned:

It is difficult to make judgments based on a significant sampling of implementation activities with only one Sustainability Plan in an advanced stage of implementation. However, significant experience has been gained that allows for insight into the state of Sustainability Planning.

- The approach of offering or implying possible financial levels of ISTC support for Sustainability Plan implementation limits the scope of plan preparation and limits overall plan effect.

- The focus of Sustainability Planning has been on the end point of implementation and not enough attention has been applied to the **process** of creating strategic plans that will provide the critical insights and options that will lead to sustainable outcomes for the institutes.

- Capacity building and "platform" activities such as the upgrading of facilities to GMP at the Khlopin Radium Institute (II-151) and the Institute of Physics and Power Engineering (II-152) have the potential to expand opportunities of the institutes, contributing to institute stability and development.

- Sustainability Plan implementation activities have the possibility to positively affect the performance of the institutes and to attract attention to and additional funding for institutes.

- Success of Sustainability Plan implementation will differ from institute to institute and the process is not far enough along at most institutes to draw definitive conclusions concerning implementation success.

- Without significant financial resources dedicated to Sustainability Planning and implementation the emphasis of the **Sustainability Program will have to evolve to focus more on planning and less on implementation.**

- Institute selection for participation in Sustainability Planning needs to focus on identifying institutes interested in creating credible strategic plans for long term development not institutes interested simply in securing ISTC project funding.

Recommendations:

- Focus the Sustainability Program more on institute "strategic plan" development not on plans focused on the application of ISTC programs. Develop a greater sense of partnership in the process and break down the perception of funder/beneficiary.

- Apply ISTC resources more to the creation of credible strategic plans and on limited implementation activities.

- Refine the selection process of institutes for participation in Sustainability Planning. Identify institutes of interest that are motivated to participate in the process of strategic plan creation with the ISTC.

Proposals

- To further continue the evaluation process of the current plans in order to obtain a more complete picture of their impact. A more complete evaluation will be provided to the Board during the second half of 2010;

- In the meantime, to prepare revised guidelines for the development of a "lighter" ISTC sustainability planning policy taking into account the:

  - results of this interim evaluation;
  - availability of other ISTC instruments such as in the field of innovation;
  - available budgets
  - approach developed by STCU.

- To further present the results of this work at the March CEC

SUSTAINABILITY PLANNING and IMPLEMENTATION

An Interim Review

Context:

Sustainability Planning was developed as a result of discussions held by the ISTC Funding Parties and Russia in Amsterdam, The Netherlands, January 2007. It was determined at that meeting that a program of Sustainability Planning would be developed to engage ISTC beneficiary institutes in a process that would strengthen their capabilities to develop alternative sources of revenue to generate long term stability and sustainable outcomes for the institutes. Sustainability plans were originally intended to provide a guide for rationalized utilization of ISTC funding to promote institute sustainability.

- Goal to get agreement among institute, host governments, Funding Parties and Partners on an institute's sustainability targets and ISTC programs/projects needed to achieve the targets.
- Plans intended to guide long-term engagement by Parties/Partners at these institutes, and help institutes evolve away from substantial reliance on regular projects.
- Plans were not intended to produce "graduation". Parties could continue working with institutes after the plans were completed

The methodology of creating Sustainability Plans was elaborated in consultation with the parties throughout 2007 and presented to the CC GB44 in December 2007 where it was adopted for implementation on a trial basis. In brief, Sustainability Plans are constructed with a focus on eight key elements (See Annex 1):

- Institute overview (unclassified and for civilian areas only) including main assets, key funding sources, organization structure, staff size, list of current partners/collaborators, IPR and ongoing commercial activities.
- Business model
- Strategic plan or business plan
- Core civilian capabilities assessment, areas of strength/competitive advantage
- Sustainability target (revenue level and mix of funding sources needed to achieve sustainability—less than 10% of revenue from ISTC.)
- Sustainability milestones and timeline
- Barriers to sustainability (inadequate infrastructure, staff training/certifications needed, IPR protection, weak/limited client base, etc.)
- Sustainability support request (key areas of ISTC support requested, using existing ISTC programs/activities—projects, CIs, workshops, etc.)

Sustainability Plans were to identify the core competencies and strengths of the institute in order to understand where they should focus their activities to generate non-state, non-assistance funding to the institute. The Sustainability Plan would identify specific needs and objectives of the institute such as; training, marketing assistance, facilities upgrades, registration or certification of products or processes, equipment, etc. Once these objectives and needs were identified ISTC programs, to the extent practicable, would be applied to assist the institutes in meeting their objectives. Sustainability Planning was to be a rationalization of the application of ISTC resources to truly effect progress of institutes toward stable, sustainable civilian revenue generation. In order to have an impact and effect real change the commitment of significant resources was considered a necessity.

Sustainability Plans were meant to provide enough information to understand an institute's target for sustainability and the general needs of the institute to hit this target. The ISTC programs that were intended to be used for implementation were to be existing programs and they were to be utilized according to each program's rules and approval processes. If a Regular Project was identified as part of the implementation the Regular Project would be applied for and follow all requirements, including project justification and approval process. The procedure would also apply for Innovation Initiatives (II), where, if an II was identified as part of the implementation of the Sustainability Plan the II would be applied for and follow all requirements, including project justification, the writing of a Prospectus and II approval process.

Institute Selection:

At CC GB44 the Parties identified nine institutes to be approached to participate in the first phase of Sustainability Planning and implementation. The institutes selected were:

- Boreskov Institute of Catalysis; Novosibirsk, Russia
- Institute of Immunological Engineering; Lyubachanniy, Russia
- Institute of Nuclear Physics in National Nuclear Center; Almaty, Kazakhstan
- Institute of Physics and Power Engineering; Obninsk, Russia
- Khlopin Radium Institute; St. Petersburg, Russia
- Former Pavlodar Chemical Plant, ("Caustik"); Pavlodar, Kazakhstan
- Research Institute of Pulse Technique (NIIIT); Moscow, Russia
- Siberian Chemical Combine; Seversk, Russia
- State Scientific Research Institute for Organic Chemistry and Technology (GosNIIOKhT) and its Shikhany branch (GITOS); Moscow, Russia

Of the nine institutes invited to participate in Sustainability Planning eight agreed to participate and one, the State Scientific Research Institute for Organic Chemistry and Technology (GosNIIOKhT) and its Shikhany branch (GITOS); Moscow, Russia, has never responded. Of the eight that agreed seven Sustainability Plans were completed and one, the Former Pavlodar Chemical Plant, ("Caustik"); Pavlodar, Kazakhstan has not been completed due to a lack of cooperation by Caustik. The plans that have been developed and approved by the Governing Board are:

- Institute of Physics and Power Engineering (IPPE); Obninsk, Russia **(GB47)**
- Institute of Nuclear Physics (INP) in the National Nuclear Center, Almaty, Kazakhstan **(GB47)**
- Boreskov Institute of Catalysis (BIC), Novosibirsk, Russia **(GB47)**

- Research Institute of Pulse Technique (NIIIT), Moscow, Russia **(GB47)**
- Institute of Immunological Engineering (IIE), Lyubachannyi, Russia **(GB47)**
- Khlopin Radium Institute (KRI), St. Petersburg, Russia **(GB46)**
- Siberian Chemical Combine (SCC), Seversk, Russia **(GB49)**

Funding:

Funding for implementation of five Sustainability Plans is being provided or has been identified at the Governing Board where each respective plan was approved. For example, a Letter of Intent for funding of three Sustainability Plans was signed by the Funding Parties at GB47 (See Annex 2). Two Sustainability Plans were approved without funding: Boreskov Institute of Catalysis, Novosibirsk, Russia and Institute of Immunological Engineering, Lyubachannyi, Russia. The five Sustainability Plans approved with funding are:

- Institute of Physics and Power Engineering (IPPE); Obninsk, Russia **(GB47)**
- Institute of Nuclear Physics (INP) in the National Nuclear Center, Almaty, Kazakhstan **(GB47)**
- Research Institute of Pulse Technique (NIIIT), Moscow, Russia **(GB47)**
- Khlopin Radium Institute (KRI), St. Petersburg, Russia **(GB46)**
- Siberian Chemical Combine (SCC), Seversk, Russia **(GB49)**

Current State of Implementation:

Khlopin Radium Institute (KRI); St. Petersburg, Russia

- S-Plan approved at GB46 with funding of $500,000 for **II-151 "Upgrade of Radiopharmaceuticals facility in Accordance with GMP Requirements"**
- GB47 allocated an additional $200,000 for implementation
- Implementation work under II-151 is nearing completion yet it is too early to determine results or evaluate the effectiveness of this II.

Institute of Physics and Power Engineering (IPPE); Obninsk, Russia

- $580,000 was allocated for Sustainability Plan implementation
- Innovation Initiative **II-152 "Organization of the GMP Certified Production of Radioisotope Products for Nuclear Medicine"** has been signed with the Initiative for the reconstruction of production premises of radioisotopes for medical applications to GMP certification standards has been launched and is in the very initial stages of implementation

Institute of Nuclear Physics (INP) in National Nuclear Center; Almaty, Kazakhstan

- Documentation for S-Plan implementation has been completed for:
  - Two IIs
  - One CSP
- Awaiting Host Government Concurrence

Research Institute of Pulse Technique (NIIIT); Moscow, Russia

- NIIIT has applied for an Innovation Initiative (II-153), "Upgrade of the Production Lines and Market Promotion of the Arc Protection Devices (APD)", **(HGC received)**
    - $ 346,641 is included on funding Sheet of GB50 for allocation of funds
- NIIIT has applied for a Regular Project, "Advanced High Reliable and Fast Acting Device for Protection of Electrical Engineering Equipment from Arc Short Sector"
    - $ 353,350 is included on funding Sheet of GB50 for allocation of funds

Siberian Chemical Combine; Seversk, Russia

- S-Plan approved GB49
- II under preparation, awaiting Host Government Concurrence

Boreskov Institute of Catalysis (BIC); Novosibirsk, Russia

- The institute has been notified of the approval of their S-Plan without funding

Institute of Immunological Engineering (IIE) in Lyubachannyi; Russia

- The institute has been notified of the approval of their S-Plan without funding

Former Pavlodar Chemical Plant ("Caustik"), Pavlodar, Kazakhstan

- The Secretariat has been in contact with Caustik who has indicated its desire to continue the Sustainability Plan process

State Scientific Research Institute for Organic Chemistry and Technology (GosNIIOKhT), Russia

- Their has been no progress in engaging the Institute in Sustainability Planning

Sustainability Planning:

Methodology:

Perhaps the most important lesson that has come from the creation of the first set of Sustainability Plans is that stating or intimating a possible level of assistance to be provided through a Sustainability Plan is not the most efficient or effective approach. The idea of providing a possible level of funding provides the institutes with a "target" whereby they focus their Plans in a way to achieve this "target". In general, this approach does not provide an accurate picture of the institutes' road to sustainability only the institute's road to the "targeted" figure. This does not produce a true Sustainability Plan nor does it reflect the real needs of the institute or the programs required to move the institute toward sustainability.

One possible alternative, that can accomplish the stated purpose of creating ISTC dedicated Plans, is to work with the institutes to provide the ISTC with strategic planning information that they create for their own internal planning. It can be assumed that all institutes do strategic planning for the future, whether it is general or specific and sophisticated, and therefore they already have a sustainability plan or the basis of one.

Together with the institute the ISTC could then work to determine which ISTC program or programs, within a limited budget, can be applied to maximize the benefits of ISTC assistance to the institute. In this way the Sustainability Program can be a more flexible, open "rolling" program. This approach has the advantage of evaluating the institutes overall strategy and not just seeing how they would target a specified funding level. This would allow a more comprehensive view of the institute and therefore

offer more effective analysis into which ISTC programs might have the greatest impact. This approach also does not specifically or implicitly promise ISTC support neither does it require the institute to generate an additional plan specifically tailored for the ISTC but is more holistic in its approach.

Content:

In general the content has been in line with what we have asked of the participating institutes and has been useful. However, as one might expect, there is considerable variation in the sophistication of plans when comparing one institute to another. Some institutes are more advanced in their thinking and experiences of how to generate additional sources of revenue from varying sources. In general the value of the content of plans could benefit from a more integrated approach to plan creation.

Scope:

The focus of the plans has in general been to narrow, in that the plans have been crafted with a targeted expectation of possible support rather than a broader assessment of needs to accomplish broader goals.

Initially it was recognized that the Center lacked the resources to effect dramatic changes at large institutes and the creation of the plans would focus on a designated part of large institutes. In this way the implementation of plans would be able to attain enough critical mass to effect real progress towards sustainability. The plans of small segments of large institutes such as, IPPE and Khlopin have been fairly tightly focused on a sustainable outcome for that institute sector and have provided real value. INP has a wider scope, targeting activities and ISTC support that affects a much larger part of the overall institute and it too has provided real value.

Program:

In reviewing the Sustainability Program it is essential to understand that it is difficult to make judgments based on a significant sampling of implementation activities. There is only one Sustainability Plan in an advanced stage of implementation, Khlopin Radium Institute, and one plan in the very initial stage of implementation, Institute of Physics and Power Engineering. No other Sustainability Plan has had its implementation activities approved and funded, resulting in a lack of hard data on which to make hard assessments. As a result, it is too early to draw definitive conclusions of the effectiveness of the program. However, sufficient experience has been gained in the process of developing and implementing Sustainability Plans to be able offer insights into the program.

The concept of Sustainability Planning, engaging institutes in a process that would strengthen their capabilities to develop alternative sources of revenue to generate long term stability and sustainable outcomes is inherently a good idea. A process of Sustainability Planning that engages institutes in a comprehensive, holistic strategic process can bring tangible benefits to the institutes. However, unless significant monetary resources are committed for implementation the program will not be able to achieve the level of success envisioned in its creation.

As originally conceived and executed the Sustainability Program indicated a specific level of ISTC support to be gained by successfully passing through the program. Initially that figure was US$1 million, later scaled back to a lesser figure. Regardless of the figure itself, $500k, $1m, or even $10m, the mere fact of stating any figure raised expectations and immediately set an arbitrary target that the institutes were determined to hit. With a figure in mind consciously or otherwise the institutes crafted their plans in such a way as to capture the available funding. In doing so the end product of the program, the Sustainability Plan was skewed and therefore flawed. It is not to say that the plans lack value, on the contrary the plans that have been created are of great value to the institutes and do promote progress towards stability and sustainability of the institutes. It is just that the targeted aspect of their creation has left them limited in their scope and by deduction limited in their overall effect.

Extremely good implementation activities are currently underway at Khlopin Radium Institute (KRI), Institute of Physics and Power Engineering (IPPE) and the proposed activities planned at the Institute of Nuclear Physics (INP) and the Research Institute of Pulse Technique (NIIIT) will have significant beneficial impact on the overall stability of the institutes. With implementation of Sustainability Plan in its early stages or not yet begun it is premature to offer solid judgments on the outcomes. It is possible to look at these activities in the specific institute's context and make preliminary assumptions that these activities have the strong potential to be real successes but that the level of success will vary from institute to institute. Institutes such as Institute of Nuclear Physics (INP) in Kazakhstan, Khlopin Radium Institute (KRI) and Institute of Physics and Power Engineering (IPPE) are carrying out "platform" implementation activities that support and strengthen their core capabilities which can have far reaching benefits. Whereas the Sustainability Plan for the Siberian Chemical Combine (SCC) is not a "platform" stregthening activity and the benefits of the Plan will not be so profoundly felt throughout SCC.

Sustainability Plan implementation activities have the possibility to affect the performance of the institutes and to attract attention and additional funding to the institutes. By necessity institute financial resources are focused and applied to Sustainability Plan implementation activities in ways they may not have been applied absent the Plan. Since ISTC funding alone is not sufficient to carry out Innovation Initiatives and other implementation activities institutes leverage ISTC implementation funding and apply their own resources to execute the Plan activities. Thus the Sustainability Plan provides focus for distribution of resources but whether it draws new administrative funding to the institute is a question that cannot yet be answered.

It appears, however that Sustainability Plan implementation can draw the attention of outside sources of funding. For example, The Japanese companya Japanese company has contacted the ISTC as a direct result of viewing the ISTC website and seeing the announcement of Innovation Initiative 152 (II-152), "Organization of the Certified Production of Radioisotope Products for Nuclear Medical Application", the implementation II for the Sustainability Plan of the Institute of Physics and Power Engineering (IPPE). The Japanese company is interested in the production of Mo-99 isotopes and was specifically attracted by the aspect of "certified production" which is the intended result of II-152.

The Japanese company is a tangible example of the benefits that can accrue to institutes as a result of participation in ISTC program activities, in this case Sustainability Planning and implementation. However, it is hard to determine if this was the result of the Sustainability Plan or simply a result of the Innovation Initiative at institute that very well could have been performed outside the confines of a Sustainability Plan. Regardless of the "cause and effect" stimulus in this specific case, overall success of Sustainability Plan implementation will differ from institute to institute and the process is not far enough along at most institutes to draw definitive conclusions concerning implementation success.

Even with the assumption that Sustainability Plan implementation will produce success it must be considered that the process that created this potential is still limiting in its scope.

Further, the cost of implementing Sustainability Plans, even in the limited form that they have taken, continues to be a challenge in the current tight budget environment that the ISTC faces. Questions of Sustainability Program cost/benefits are relevant but cannot as yet be answered due to the early stage of implementation. Even without full answers to the cost/benefit question a point to consider is that the limited aspect of the Sustainability Plans and the narrow focus of their implementation may promote success but success limited to narrow segments of the institutes. One conclusion that can be drawn is that without significant financial resources dedicated to Sustainability Planning and implementation the emphasis of the Sustainability Program will have to evolve to focus more on planning and less on implementation.

Rationalized Planning and Implementation:

Sustainability Planning can be broader in scope while more limited in its application of financial resources. A planning process that engages the institutes in a wider range of strategic planning issues has the potential to uncover additional opportunities for ISTC assistance while potentially lowering the cost for implementation.

Many ISTC beneficiary institutes are sophisticated in the strategic planning for the institute with clear visions on their direction and good understanding of what is necessary to carry out their strategic plans. These institutes can possibly benefit from the perspective, experience and insights of the ISTC in the review of their strategic plans and the options for implementation of their strategic plans. The Center should, to the extent possible, offer its assistance and that of its contractors to participate with the institute in strategic planning preparation and review. In this way the Center is part of a necessary process with the institute and not trying to attach the appendage of an ISTC specific "Sustainability Plan" onto the institute. It is a holistic approach that will better allow the Center to identify what types of ISTC assistance could be applied to institutes. The center could better define assistance that would offer maximum benefit to the institute in light of their strategic goals and better address strategic needs.

Not all institutes are sophisticated in their strategic planning processes and abilities. Acknowledging this the ISTC can offer greater assistance to institutes that lack sufficient resources and/or experience to create their own strategic plans. Through the utilization of ISTC's own assets and by contracting outside services the Center can work directly and closely with the institutes to create institute strategic plans. In this way the institute gains a credible strategic plan and the Center gains valuable insights into the institutes' needs that can further define ISTC assistance to the institute. The approach of working closely with and assisting the institutes in the creation of strategic plans rather than the narrower ISTC Sustainability Plans would be closer to the approach taken by the Science and Technology Center Ukraine (STCU).

As stated on the STCU website:

"STCU provides a means to measure an institute's "sustainability" ….to assist the institutes in developing their own systemic methods for identifying research funding opportunities. The STCU assists institutes in cooperative development and implementation of strategic plans for their future.

The STCU ……works directly with the institutes to identify personnel for targeted training and to put an institute on display to audiences of R&D customers in the institutes' core research competencies."[1]

In contrast to the STCU the development of the ISTC Sustainability Program has focused too much attention on the end result of delivering ISTC program services. It could be argued that, at the ISTC, the focus has been on the end point of implementation and not enough attention has been applied to the important **process** of creating strategic plans that will provide the critical insights and options that will lead to sustainable outcomes for the institutes.

Another model that could be considered for evaluation of the institutes can be found in the ISTC program of Intellectual Property Rights Analysis (IPRA). The IPRA program was carried out by sending a team of ISTC personnel and third party contractors to a beneficiary institute to spend at least one week at the institute gathering information about the institute intellectual property (IP) portfolio. The team worked directly with institute management and staff to compile and evaluate the intellectual property landscape at the institute. The rigorous review included the institute processes for managing intellectual property (IP) and a review of the IP itself. The results gained were actionable recommendations to the institutes on management processes to be considered and on further actions that could be taken with regard to specific IP objects. The insights gained and recommendations made were considered by the institutes to be very useful and indeed "actionable".

As has been illustrated, the process of providing more institute centric strategic plans can employ different models to achieve its ends. However, the key observation is that whatever model, or combinations of models, that are employed should be focused more on creating a strategic plan based on institute needs that drives the process rather than plans targeted on wants.

Institute Motivation and Selection:

The process of Sustainability Planning requires the willingness and full cooperation on the part of the institutes that are the subject of the Plan in order to be credible and effective. The question could be asked concerning what the motivation is for the institute to participate with the ISTC in the Sustainability Program? As the Sustainability Program has been constituted the primary motivation appears to be the perception of an implementation "payout", the funding of specific selected projects. This perception needs to be changed so that the Center is not seen as simply a "funding source" but as a partner in the process.

The Sustainability Program needs to be oriented so the motivation for institute participation is the creation of a "strategic plan" itself. A plan that will identify core competencies, strengths, weaknesses and needs and that provides a credible blueprint that will identify actions that the **institute** can take to become more stabile, secure and sustainable. It is the opportunity to define and identify strategies that encompass broad institute activities and identify specific actions that can assist institute in achieving more stability and security. The strategic plan can also be a tool to assist the institute in defining parameters of success.

The plan can identify ISTC cooperation with the institute in implementation that is a broader and a more flexible utilization of ISTC resources, not just applying program funding. Leveraging the ISTC

[1] STCU Website: www.stcu.int

network of partners and contacts may be a more effective application of resources to assist institutes in achieving their strategic goals.

The selection process for which institutes participate in Sustainability Planning requires additional consideration. The process needs to be rationalized to allow the ISTC to more efficiently administer the program. Since Sustainability Planning requires the willingness and full cooperation on the part of the institutes it is necessary to identify institutes motivated to participate in the process. It could be more effective to "advertise" the availability of the Sustainability/Strategic Planning activities and services of the ISTC to a broad targeted audience of institutes. This would open up the possibility of "working with the willing", the institutes truly interested in assistance in strategic planning and implementation, rather than having the motivating factor be the opportunity for extra ISTC projects and Innovation Initiatives. This approach could also serve as a reality check for the Center. If no institutes express a willingness to work with the ISTC on strategic planning and implementation without the specific carrot of a predetermined budget the basic assumptions of the program would need to be reviewed.

No generalizations should be made concerning institute participation in Sustainability Planning as motivations and goals vary from institute to institute. However, is should b noted that a number of beneficiary institutes that have approached the ISTC seeking to participate in Sustainability Planning where the expressed interest has been on the creation of the plan itself not with an expectation of specific ISTC implementation activities. This not only is encouraging but should be encouraged.

Lessons Learned:

In reviewing the Sustainability Program it is difficult to make judgments based on a significant sampling of implementation activities with only one Sustainability Plan in an advanced stage of implementation. However, significant experience has been gained in developing and implementing the program that allows for insight into the state of Sustainability Planning.

- The approach of offering or implying possible financial levels of ISTC support for Sustainability Plan implementation limits the scope of plan preparation. This leads to the situation of institutes 'targeting' their plans to capture the implied or offered funding. The targeted aspect of Sustainability Plan creation has left them limited in their scope and by deduction limited in their overall effect.

- The focus of Sustainability Planning has been on the end point of implementation and not enough attention has been applied to the **process** of creating strategic plans that will provide the critical insights and options that will lead to sustainable outcomes for the institutes.

- Although it is too early to fully evaluate results of specific implementation actions it appears that capacity building and "platform" activities such as the upgrading of facilities to GMP at the Khlopin Radium Institute (II-151) and the Institute of Physics and Power Engineering (II-152) anecdotal evidence suggests that these implementation activities have the potential to expand opportunities of the institutes, contributing to institute stability and development.

- Evidence suggests that Sustainability Plan implementation activities have the possibility to positively affect the performance of the institutes and to attract attention to and additional funding for institutes. The interest of The Japanese company in IPPE is such an example.

- Success of Sustainability Plan implementation will differ from institute to institute and the process is not far enough along at most institutes to draw definitive conclusions concerning implementation success.

- Without significant financial resources dedicated to Sustainability Planning and implementation the emphasis of the **Sustainability Program will have to evolve to focus more on planning and less on implementation.**

- Institute selection for participation in Sustainability Planning needs to focus on identifying institutes interested in creating credible strategic plans for long term development not institutes interested simply in securing ISTC project funding.

Recommendations:

- Focus the Sustainability Program more on institute "strategic plan" development not on plans focused on the application of ISTC programs. Develop a greater sense of partnership in the process and break down the perception of funder/beneficiary.

- Apply ISTC resources more to the creation of credible strategic plans and on limited implementation activities. Implementation activities should look to assist in strengthening the capabilities of the institute consistent with the larger strategic plan. Focus more ISTC assistance on "leveraged" support activities that can deliver significant benefits utilizing limited resources. ISTC networking on behalf of the institute is such an example.

- Refine the selection process of institutes for participation in Sustainability Planning. Identify institutes of interest that are motivated to participate in the process of strategic plan creation with the ISTC.

Proposals

- To further continue the evaluation process of the current plans in order to obtain a more complete picture of their impact. A more complete evaluation will be provided to the Board during the second half of 2010;

- In the meantime, to prepare revised guidelines for the development of a "lighter" ISTC sustainability planning policy taking into account:

- the results of this interim evaluation;
- the availability of other ISTC instruments such as in the field of innovation;
- the available budgets
- the approach developed by STCU.

- To further present the results of this work at the March CEC

Annex 1

Template, Guidelines, and Reference Framework for Institute-Specific Sustainability Plans

Agreed Elements of Sustainability:

The goal of this activity is to help ISTC beneficiary institutes (up to 10 institutes per year) achieve long-term sustainability and evolve away from heavy reliance on ISTC regular project funding. The following characteristics describe sustainability and metrics for measuring progress toward these goals.

As a general guideline, any institute receiving 10% or less of its revenue from ISTC may be considered sustainable. An institute in this position may demonstrate a majority (but not necessarily all) of these characteristics:

- Funded projects outside ISTC that apply R&D to national, regional, global programs or development priorities;
- Commercialization of R&D results;
- Beneficial technology transfer capability;
- Active connections to external peer groups;
- Strong, professional, collaborative relationships with foreign experts;
- Commercial strategic partnerships;
- Large mix of active R&D projects (Science Center regular, Partner and well as other national/international programs);
- Demonstrated system for applying national export control laws;
- Awareness of international standards on professional interactions with foreign entities (including R&D standards, science ethics, etc.);
- Strong, individual R&D-related income from state (with strong national-level champions, i.e. ministries) and non-state sources (domestic private sector, foreign investment, foreign grants);
- Competitive R&D capacity and modern infrastructure;
- Development of GXP policies, staff policies consistent with national labor laws, etc.;
- Integrated mix of active collaborative projects;
- Detailed, realistic strategic planning, including active implementation of such plans (e.g. business planning, long-term program planning & budgeting, project planning, etc.)
- Pro-active policies to increase number and frequency of contacts with foreign peers and other external entities.

Definition and Parameters of Sustainability Plans:

A sustainability plan is an informal blueprint which outlines briefly and clearly an institute's core capabilities in the civilian sphere, its progress toward sustainability to date, and a limited number of targeted measures which should be undertaken with ISTC financial support to enable the institute to achieve sustainability. While sustainability plans will be used to help institutes achieve overall sustainability, some sustainability plans will be used to map out a strategy for long-term engagement by Parties. Sustainability plans should contain key milestones and timelines for achieving those milestones, as well as the estimated budget for sustainability support activities.

Existing ISTC programs will be used to implement the sustainability plans. The plans should specify which of the following ISTC activities are needed to help the institute achieve sustainability:

- **Business training through ISTC'S Competency Building Program**. An element of business training is included as a "mandatory" element in all sustainability plans. The specific areas where business training is needed, and departments within the institute which should receive this training, should be included in the sustainability plan.
- **Innovation Initiatives (formerly called Commercialization Initiatives)** which focus on equipment, infrastructure and "soft support" (e.g. advertising, promotion or business services), with limited use of scientist grants.

- **Science Marketing Project support.** SMPs are funded as regular projects by Funding Parties, with a focus on business-related travel, marketing promotion, advertising, and other "soft" support which are used to support a specific product or service from the institute.

Participation in **call for proposals** initiated by the ISTC in the Programmatic Approach (PA) context and/or **Sustainability-focused regular projects or other "capstone" projects**, funded separately as part of ISTC's regular project funding process, and carefully tailored to focus on areas of an institute's greatest potential.

- **Patent Support** (for IP resulting from ISTC regular projects, government Partner projects, or other institute activities.)

Technology Promotion Program (to prioritize an institute's funded regular projects for commercialization or other sustainability follow-up based on the technology's potential.)

- **Workshops** carefully structured to attract new Partners, customers, and scientific collaborations for the institute. These workshops could be implemented by any of several ISTC programs that fund such activities.

IPR Asset Inventory and Analysis (IPRA). This ComSP-funded activity helps an institute prioritize its IP to identify a limited number of areas that are most likely to achieve sustainability, and prepares a plan to help the institute bring the most promising IP objects to its "customers" from both government and private sectors.

- **Advanced Matchmaking (AMM)**. This ComSP-funded activity provides targeted support to 1) help institutes identify investors, Partners or customers for their products and services, 2) clarify the institute's IPR situation prior to the meeting, 3) prepare business-attractive presentations, business plans, business models, market research, etc., 4) Secretariat and/or consultant support during meetings with the investor/Partner/investor until a deal is reached.

- **Support in meeting regulatory/certification requirements**. This support can be provided through approved Targeted Initiatives (e.g. Drug Design and Development), the Programmatic Approach budget, Innovation Initiatives, or the project-specific training budget.

- **Pre-commercialization support** using the ComSP budget. Components could include market analysis, business plans, advertising campaigns, commercialization-focused workshops and business travel.

- **Other areas** consistent with the currently approved program and project mechanisms in use at ISTC.

The average budget for implementation of one institute-specific sustainability plan is no greater than $1 million, or another figure as agreed by the Parties. Therefore, the total support request contained in a sustainability plan should not exceed this amount.

Template for Sustainability Plans:

The main elements of a sustainability plan include the following areas. Institutes should address each area and closely follow the suggested page length guidelines for each section:

- **Institute or any of its part involving in sustainability plan** (length: no more than **two pages**)**:** a brief, unclassified description of the institute's main civilian facilities, laboratories, assets and production capacity if any. Includes:
    - Highlights in the institute's development since 1991
    - An overview of key funding sources and budgets for civilian work
    - Size of staff and average staff salary
    - Organizational structure
    - A list of current partners/collaborators and their general areas of interest
    - A list of IPR (patents, copyrights, trademarks or critical "know-how/trade secrets") obtained since 1991 (Provided as an Annex)
    - Brief discussion of ongoing commercial activities.
    - A list of "top ten" papers published in leading international scientific and industry journals since 1991.
    - A list of international prizes or awards received since 1991.
- **Capabilities assessment for civilian work** (length: no more than **one page**)**:** a brief, unclassified description in layman's terms of the institute's core civilian capabilities, its areas of strength and competitive advantages as the institute sees them. **This assessment should exclude any portions of the institute which are engaged in defense-related work.**
- **Business model** (length: no more than **half a page**)**:** existing business models may be provided, or Secretariat and Party experts may assist in the development of a business model for the institute if needed.
- **Strategic and/or business plan** (length: no more than **one page**)**:** the highlights of existing plans may be provided, or modest pre-commercialization funding may be provided for the rapid development of a business plan if the institute does not have a current one.
- **Sustainability target** (length: no more than **half a page**)**:** with support from Secretariat staff and external experts as needed, the institute should identify the revenue level and mix of funding sources at which sustainability is assessed to be achieved.[2] The diversity and long-term stability of these funding sources should also be considered.
- **Sustainability milestones and timeline** (length: no more than **one page**)**:** 3-6 key milestones and a realistic but aggressive timeline to achieving these milestones within the next two years should be briefly presented.
    - During the implementation of sustainability plans, ISTC will report to Parties on the institute's progress toward meeting its sustainability targets on a quarterly basis

[2] As a general guideline, any institute receiving 10% or less of its revenue from ISTC may be considered sustainable.

(consistent with quarterly reporting already provided for SBs, regular/Partner projects and Commercialization Initiatives.)

- In a limited number of cases that are strongly justified by substantial change in the institute's circumstances, a sustainability plan under implementation may also be revised in coordination with institute management, Parties and the host government. Parties should understand that such revisions may have budgetary implications for the implementation of these sustainability plans.

- **Barriers to sustainability** (length: no more than **two pages**)**:** key hurdles should be identified as specifically as possible. Such hurdles can include:
  - regulatory and certification requirements
  - IPR protection and clarifications required
  - Staff training requirements
  - Aging/inadequate infrastructure
  - Limited production capacity
  - Legal obstacles or questions (for example, laws/regulations which prohibit or discourage commercial work)
  - Barriers to market penetration
  - Weak or limited client/customer base, etc.
- **Sustainability support request** (length: no more than **one page**)**:** this section should specify key areas of support requested by the Centers to overcome the barriers to sustainability, <u>along with an estimated budget of less than $1 million total.</u> Elements the sustainability support request can include are listed on pages 1-2 under "Definition and Parameters of Sustainability Plans.)

  - If during the sustainability plan development process an institute is found to be already fully sustainable, the final plan will contain that conclusion, and no significant sustainability report request will be provided.

<u>Organizations Involved in Development of Sustainability Plans:</u>

Key players involved in the development of sustainability plans will be as follows:

1. **ISTC Secretariat staff:** Both technical experts (SPMs/PPMs) and commercialization experts are anticipated to have a key role in advising and coordinating the development of sustainability plans. Secretariat staff will likely have to revise and strengthen any sustainability plans provided from the institutes.

Secretariat staff will also be involved in implementation of sustainability plans, consistent with their Governing Board-approved activities.

Due to staffing constraints, and a high volume of envisioned activity, Secretariat staff may need to be augmented by the use of external consultants. Secretariat efforts toward the development and implementation of sustainability plans should be coordinated by the Deputy Executive Director for Partnering & Sustainability, with support from the Executive Director and other senior management as needed.

2. **Host governments:** Host government authorities will be asked to provide input and feedback to sustainability plans prepared by their institutes. Since these plans are intended

to be informal blueprints rather than legal documents, no formal concurrence process is envisioned.

Host governments will continue to provide HGC for projects and IIs consistent with the approved Terms of Reference and procedures for these activities.

3. **CIS institutes:** Institutes will be asked to prepare sustainability plans in accordance with the template above. They may use existing capability assessments, business plans, market research and other materials (including those funded using pre-commercialization support from ISTC) as inputs to these sustainability plans. The information will likely be prepared by technical and business experts at the working level, with advice by Secretariat staff when needed.

   Institute directors are expected to approve all sustainability plans, and to play a lead role in coordinating the input with relevant government authorities. **Institute directors should also confirm that no classified or defense-related information is contained and no unprotected intellectual property is disclosed in any written materials provided to the Secretariat.**

4. **Funding Parties/Partners:** Funding Parties will use approved ISTC mechanisms (projects, programs, targeted initiatives, etc.) to fund the activities contained in sustainability plans. Funding Parties may also provide experts to assist in the development and revision of sustainability plans. Key Government Partners involved in specific institutes may also provide experts to participate in this process if desired.

5. **Foreign collaborators:** Foreign collaborators with significant relevant knowledge of a given institute may participate in the implementation of sustainability plans. Such collaborators would participate through the customary framework of regular and Partner projects, Science Marketing projects and Innovation Initiatives. Alternately, they may be appointed by interested Funding Parties and identified as such in the final sustainability plan, with the host government's approval. In the latter case, the appointing Party would be responsible for all travel and other expenses associated with the collaborator's involvement.

Annex 2

ISTC
11 December 2008

Letter of Intent on Future Funding of Sustainability Plans

GB-47-108h

Institute		Location	Allocated		FUNDS in US $				
			USD	Euro	EU (Euro)	JP	CA	US	SB153 2008
IC	Boreskov Institute of Catalysis	Novosibirsk, Russia	0	-	-	-	-	-	-
IIE	Institute of Immunological Engineering	Lyubachanniy, Russia	0	-	-	-	-	-	-
INP	Institute of Nuclear Physics in National Nuclear Center	Almaty, Kazakhstan	700,000	-	-	-	200,000	200,000	300,000
IPPE	Institute of Physics and Power Engineering	Obninsk, Russia	580,000	-	-	-	290,000	290,000	-
KRI	Khlopin Radium Institute	St.Petersburg, Russia	200,000	-		-	200,000	-	-
RIPT (NIIIT)	Research Institute of Pulse Technique (NIIIT)	Moscow, Russia	700,000	-	-	-	200,000	200,000	300,000

For the United States

For the European Union: EU CEC

EU Presidency

For Japan

For Canada

For the Russian Federation