Working Party on Innovation and Technology Policy

PROGRESS REPORT ON THE ACTIVITIES OF THE WORKING PARTY ON INNOVATION AND TECHNOLOGY POLICY

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This document provides an update on the activities of the TIP Working Party since October 2013. The document also includes updates on some of the activities of the RIHR in light of the merger of the two working parties effective from 2015. The CSTP is invited to note progress.

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WORKING PARTY ON INNOVATION AND TECHNOLOGY POLICY (TIP) –  
CSTP PROGRESS REPORT MARCH 2014

Introduction

1. This report covers the main activities of the CSTP’s Working Party on Technology and Innovation Policy (TIP) during the period October 2013 to March 2014. It also includes progress on some of the activities of the Working Party on Research Institutions and Human Resources (RIHR) of which elements will be merged with the TIP as from 2015.

2. The core mission of the TIP, as outlined in its mandate, is to provide “advice on innovation and technology policies that enhance productivity, facilitate the creation, diffusion and application of knowledge, and foster sustainable growth and employment” (See DSTI/STP(2014)4). In short, it aims to help member countries improve public policies to foster innovation for sustainable economic growth. To reach this goal, the TIP carries out analytical work in a broad range of areas consistent with its mandate in co-operation with other CSTP working parties. While the TIP Working Party is responsible to the CSTP, it also collaborates on relevant aspects of its work with the Committee on Industry, Innovation and Entrepreneurship (CIIE).

3. The Working Party has designated its new Bureau for the 2014 term as follows: Chair, Jerry Sheehan (United States) and Vice Chairs as follows: Armin Mahr (Austria); Jan Larosse (Belgium); Kai Husso (Finland); András Hlacs (Hungary) and Shinji Tokumasu (Japan); and Göran Marklund (Sweden). The Working Party will next meet on 18-20 June 2014.

Progress on TIP work since the last CSTP meeting

4. The major focus of work in the TIP in the past months has been to:
   - Make progress on the activities in the CSTP’s 2013-2014 PWB, including carrying out case studies, responding to policy questionnaires, collecting data and organising project meetings and workshops.
   - Defining and implementing the merger of TIP and elements of RIHR, including a proposal for a new mandate [DSTI/STP(2014)4] and input to the CSTP PWB 2015-2016.

II. Progress on activities underway in the 2013-2014 PWB of the CSTP

5. This section provides an update on the launch of TIP activities in 2013-2014 that fall under CSTP Output Area 1.3.2. (Science and Innovation Policies).

System Innovation. This project contributes to the CSTP strategic priorities, namely “STI Impact Assessment” as well as to “Societal Challenges”.

- Objectives and deliverables. This activity will explore the conceptual and analytical basis of systems innovation, defined as a policy approach that focuses on transitioning “large socio-technical systems” towards more sustainable paths. This is in contrast to mainstream innovation policies that focus on increasing the rate of innovation by removing barriers or addressing market
and systems failures. Examples include the shift of transport, energy, and agro-food systems towards sustainability. The activity will deliver: a) an analytical report on systems innovation that defines the concept and its relevance to policy making today; maps the critical networks, infrastructure and technology platforms that shape the ability of policy to transition technology and innovation systems towards new paths; and b) a policy report that identifies the good governance approaches that enable systems innovation. Case studies are also being developed by participating countries to identify and validate good practice policies.

- **Methodology:** The methodology consists of: a) conceptual work on defining system innovation, drawing on a review of the literature and empirical studies but also meetings with Delegates and experts; b) empirical work on mapping the critical infrastructure that is needed to transition large technological systems, metrics of the interrelations and links between infrastructure and technological systems; c) policy case studies of the governance models for fostering transitions in innovation systems as well as expert interviews with senior government officials and industry representatives. The case studies will be important to understand the barriers to systems innovation and transition processes and to stimulate learning from examples of governance models that enable transitions.

- **Collaboration inside and outside the OECD:** CIIE work on green growth and industrial policy, International Futures Programme, OECD’s Public Governance Committee Work on Regional Innovation, NESTI work on indicators in STI, ICCP work on critical information infrastructures and the Internet Economy.

- **Status:** in progress. The Secretariat has organised several expert workshops at the OECD, at Stockholm and most recently in Helsinki [for a complete summary see: DSTI/STP/TIP/RD(2013)4]. The meetings have covered concepts and definitions as well as the design and implementation of the governance case studies. Eleven countries are taking part in the case study module and exploring system innovation in practice by examining transitions around smart cities, e-mobility and the bio-economy to name a few. One emerging policy implication from the work of system innovation is the growing importance of cities and regions as innovation actors in the transition towards green growth and the need to develop new modes of governance and funding between national stakeholders, cities and the business sector.

- **Next steps.** Steering group members will present the findings of their case studies at a meeting in Berlin on 28-29 April 2014. The Secretariat will present work on the critical infrastructure and indicators modules. An interim report on the project will be presented at the June TIP meeting.

**Strategic Public-Private Partnerships in Science and Technology.** This project contributes to the CSTP strategic priorities, namely “STI Interactions” and, to some extent, “Societal Challenges”.

- **Objectives and deliverables.** While public-private partnerships are not new in the area of science and technology, they have continued to expand in OECD and non-member countries as reflected in budget allocations and data on collaboration between business and research. One reason for this expansion is the increased budgetary pressure in many governments and the need to focus and leverage public investments by working together with the business sector. Technology is also developing quickly from research to market so it is important to link up public and private research to accelerate technology development and diffusion. The aim of this activity is thus to take stock of the recent trends in large scale “strategic” P/PPs in STI around the key and enabling technologies, notably ICTs, nanotechnology and biotechnology, with a particular focus on new governance and financing arrangements that have emerged in recent years. The activity
will deliver a policy report on good policy practices for “Strategic Public-Private Partnerships in Science and Technology”,

- **Methodology.** A steering group has been created under TIP to guide and lead the project. It is comprised of delegates from the European Commission, Malaysia, Netherlands, Norway, Japan, Turkey, Spain, Russia and the United States. The methodology consists of: 1) desk research, reviews of the literature and empirical studies; 2) empirical analysis using OECD data to assess the incidence and impact of P/PPs on the rate or direction of innovation; 3) and policy case studies and expert interviews. Drawing on available indicators and ex-ante and ex-post PPP evaluations, the activity will also provide evidence of the potential social and economic benefits of the public-private partnerships for innovation (e.g. greater learning and interaction of innovation actors and leverage of public investments). Case studies on strategic P/PPs have been submitted by several steering group members as well as by Portugal, Korea, Spain and China.

- **Collaboration inside and outside the OECD.** The activity will draw on other substantive existing or on-going work inside the OECD, specifically associated with public-private partnerships for innovation and public sector innovation, such as WPB work on STI and Healthy Ageing and NESTI work on indicators of public-private partnerships and indicators of public sector innovation.

- **Progress:** The Steering Group has defined strategic P/PPs as “multilateral partnerships, that are large-scale and challenge –driven”. These strategic P/PPs take a value chain and systemic approach to technological and innovation development. Examples include Japan’s global nanotechnology complex the Tsukuba Innovation Arena (TIA); the Netherlands Eco-genomics Consortium or the United States’ National Additive Manufacturing Innovation Institute (NAMII). (See DSTI/STP/TIP (2013)7 for a fuller discussion of the definition and taxonomy of strategic P/PPs in STI). The group has also pilot-tested a policy questionnaire on strategic P/PPs and developed case studies on strategic P/PPs. Results of both strands of work have been presented and discussed at the June and December 2013 TIP meetings. In addition, Israel hosted a luncheon seminar on P/PPs at the June TIP with presentations from the Netherlands and Israel. A key message from the work thus far is that P/PPs are increasingly being used in OECD countries to promote innovation but the forms and channels as well as the meaning of what constitute “strategic” remains very country specific. For example, in Israel, a country that relies on start-ups to promote innovation, the technology incubator programme plays the role of a “strategic” public-private partnership.

- **Next steps.** The next Thematic TIP workshop (18 June 2014) will be devoted to Public/Private Partnerships in STI [DSTI/STP/TIP/AH/A(2014)3]. The workshop will be organised around thematic issues rather than country presentations and will include examples of P/PPs that relate to other TIP and CSTP projects, namely system innovation in the TIP and nanotechnology in WPN. Finally, the Secretariat is collaborating with the European Commission to draw lessons from various EU P/PPs programmes in science and technology, including the JI ts and Innovation Technology Platforms and provide input to the TIP project.

**Open Science.** This project contributes to the CSTP strategic priorities, namely “STI Interactions” and, to some extent, “Societal Challenges”.

- **Objectives and deliverables.** The aim of this activity is develop policy guidance on the issue of “open science”, a catch-all phrase that encompasses the changes affecting the access and use of public research results, especially scientific data. These changes have been brought about by ICTs and the emergence of new research and innovation models based on openness as well as by
on-line and open access scholarly journals. The project will result in one analytical report scoping the potential for a policy recommendation on open science and new forms of intellectual property management for fostering research and innovation, especially as regards green growth. The activity should also provide evidence of the potential social and economic benefits of openness in the research process (e.g. greater returns from public investments). The activity could also help co-ordinate a consultation at international level among OECD countries on developing common standards and interoperable systems among different research institutions. Should voluntary contribution (VC) funding be made available, a second output could be one policy recommendation on open science and new forms of intellectual property management for fostering innovation, especially innovation related to green growth.

- **Methodology.** The TIP has taken a modular approach to explore the following key areas: (1) Policies for open data, focusing on issues such as interoperability and infrastructure (2) Policies for open access to results from public research, focusing on analysis of the economic and research impacts of greater access to public research data. The methodology for the project consists of desk research, a review of the literature, development of statistical measures of the incidence and impact of open science in collaboration with NESTI; questions in the STI Outlook 2014 policy questionnaires to government ministries and/or funding agencies as well as country profiles open access.

- **Collaboration inside and outside the OECD:** The activity also draws on related work inside and outside the OECD specifically associated with open science, such as “big data” and open data initiatives, as follows: IEA Directorate for Energy Technology Policy Division; NESTI work on open access to research data; ICCP work on “Exploiting the data-driven internet economy” in particular, “Types of big data and potential economic benefits” in DSTI/ICCP(2012)4, and the Global Science Forum work on ‘Establishing International Distributed Research Infrastructures’ and ‘Changing Science: New Data for Understanding the Human Condition’. Outside OECD, Collaboration will also be sought with the European Commission, universities and research institutions, foundations, scientific societies (e.g. British Society) or NGOs working on open science, as well as scientific publishers (e.g. Elsevier).

- **Status:** A thematic workshop was organised at the December 2013 TIP meeting, following on the policy seminar at the June TIP meeting. The December workshop focused on impacts and new business models for open science publishing and open data. Discussion centred on concepts and definitions of open science/open data followed by discussion on the role of the different players: governments, research institutions and business (scientific publishers). While it emerged that there was consensus on the principles of open access and some elements of open data in line with international guidelines, the way countries implement and fund open access and open data policies is very heterogeneous and this could create hurdles for international scientific cooperation.

- **Next steps.** The Polish Ministry of Science and Higher Education will host the Second Thematic TIP Workshop on Open Science and Open Data [DSTI/STP/TIP/AH/A(2014)1] to discuss the impacts of open science initiatives and policy efforts to promote open science and open data in OECD countries and selected non-members. The Secretariat, with the help of a consultant is preparing an expert paper on “new copyright tools for open science” that will be presented to the TIP in June and contribute to the horizontal STI project on Knowledge-Based Capital: New Sources of Growth Phase II. The Steering Group members are also developing individual country notes that will be included in the final report and will describe the state of the art with regard to policies for open access and open data and their implementation. A draft interim report will be prepared for the June 2014 meeting.
**RIHR report: The role of impact assessment in policy formulation.** This project contributes to the CSTP strategic priority “STI Impact Assessment”.

- **Objectives and deliverables:** Developing evidence on the economic and social returns from science investment is part of a long-term desire to ensure accountability in science policy making and increase its effectiveness. The project will provide an analysis of the main impact assessment techniques and of the most important national impact assessment initiatives running across OECD countries. The advantages and shortcomings of different techniques will be scrutinised and discussed in a variety of contexts with the aim of providing an overview of the different options available to policy makers when measuring economic, social or technological impacts of STI policies. Impact Assessment national initiatives will also be analysed and compared across countries with the aim of providing insights on the different approaches followed by OECD countries to measure the impacts of STI policies. An additional module of the project will exploit the new OECD STIO policy database and analyse/estimate the impact of different STI policies on innovation and economic output indicators collected by the OECD (i.e. cross-country productivity levels, scientific production etc). The project will deliver a report and a workshop.

- **Methodology:** An initial literature review identified external reports in this field and helped define the specifics of where the OECD can add most value. A range of country initiatives that involve defining or measuring research impact have been identified from a range of contexts. Desk research has collected information on the selected initiatives, and is focusing on policy learning aspects. A draft final report is being prepared for discussion at a workshop prior to the delivery of the final report.

- **Collaboration inside and outside the OECD:** This RIHR proposal formally fits in the ‘role and impact of STI policies’ sub-theme of the overall CSTP impact theme, though it is also closely linked with the sub-theme ‘developing new tools and techniques to analyse the economic and social impacts of STI’. Other CSTP working party projects either within or linked to these strands include the ‘development of micro-infrastructure and evaluation tools for STI policies’, a ‘new generation of indicators and guidelines for measuring public support for R&D and innovation’ (both NESTI), and ‘impacts of large research infrastructures on economic innovation and on society: case studies of CERN and related facilities’ (Global Science Forum).

- **Status:** in progress. A project proposal was circulated to RIHR delegates for comments [DSTI/STP/RIHR(2013)1]. The literature review/scoping paper was discussed at the RIHR meeting on 14 October 2014 and at the TIP meeting on 12 and 13 December 2013 [DSTI/STP/RIHR(2013)4]. A workshop is being organised in Tallinn on 15-16 May 2014.

- **Next steps.** Delegates and experts will be invited to discuss the draft report at the Tallinn workshop on 15-16 May. It is envisaged that the report will be finalised by September 2014 so the results can be incorporated into the CSTP synthesis report.

**Innovation Policy Platform (formerly Handbook on Science, Technology and Innovation).** This project contributes to one of the CSTP strategic priorities, namely “Underpinning Elements”.

- **Objectives:** As innovation processes and the factors that shape them become better understood, the scope for policy intervention in support of innovation performance has widened considerably. But making sense of the policy options, as well as their appropriateness in particular settings remains a challenge. The Innovation Policy Platform (IPP) sets out to aid assessments in support of policy design and evaluation by providing a web-based infrastructure for diagnostic and policy design work in the area of science, technology and innovation policies.
• **Status:** Continuing. The IPP was formally launched at the Global Forum on the Knowledge-Economy in Istanbul on 22-23 October 2013. The IPP web site is accessible at: [www.innovationpolicyplatform.org](http://www.innovationpolicyplatform.org) The IPP Operational Group, comprised of TIP Delegates, meet in October to discuss features and content preferences. The IPP was also introduced at a World Bank conference in Washington, DC.

• **Next steps:** Following the public launch of the beta IPP site, TIP delegates from more than 20 countries will participate in user-testing sessions during February-March. The results of this user-testing will be written-up and discussed with the IPP Operational Group. Following this, work will begin on developing new / enhancing existing site functionalities. These include the development of collaborative workspaces on the IPP that will provide TIP projects with a place for sharing documents internally and for releasing emerging results, such as workshop papers and presentations, externally. On the content side, further IPP modules will be populated with content pages and more OECD publications will be tagged, including at the chapter level. It is expected that recent and ongoing projects of various committees and working parties, including the CSTP, will contribute to populating the IPP.

**STI Outlook 2014**

6. The tenth edition of the STI Outlook is under preparation and the questionnaire was distributed in October 2013 with 24 out of 44 country responses as mid February 2014.

**Country reviews of national innovation policies**

7. The CSTP carries out reviews of national innovation policies in Member and partner countries. The thematic work of the CSTP working parties contributes to the high quality of the reviews. The TIP also serves, on occasion, as a platform for “peer reviews” of countries.

8. At the December TIP meeting the Secretariat presented a new format for the peer review process that included not only a traditional review of the Netherlands by peers (Belgium and Denmark) but also a policy discussion of thematic issues common to different country undergoing a review, namely France and the Netherlands. These two countries were the focus of thematic discussions on industrial policy and the commercialisation of public research. The Secretariat also presented an update on reviews of Colombia, notably the presentation of the overall assessment and recommendations by the OECD Secretary General to the President of Colombia on 25 October 2013. As regards upcoming country reviews, Luxembourg will be examined in the spring of 2014 and Malaysia and Costa Rica have requested the OECD to carry out a review of innovation policy also in 2014.

**Action for CSTP**

9. CSTP Delegates are invited to:

• Note progress on the TIP’s and RIHR’s current activities;
• Note progress on the TIP and RIHR merger;
• Express their interest to the Secretariat in participating at upcoming events (Annex 1).
ANNEX: RECENT AND FORTHCOMING REPORTS AND EVENTS

Schedule of recent/forthcoming TIP/RIHR events

• **10 March 2014: 2nd TIP Open Science Workshop, Warsaw.** The Polish Ministry of Science and Higher Education will host the 1 day expert workshop for the TIP Steering Group on Open Science ahead of an international conference on Open Science sponsored by the Polish Centre for Open Science in Warsaw on 11 March.

• **28-29 April 2014, Berlin.** The German Federal Research Ministry will host the 4th meeting of the TIP Steering Group on System Innovation to discuss the findings of the case studies on example of system innovation from smart cities to e-mobility and sustainable transport, a progress report on indicators and the outline of the final report to be delivered to TIP at the end of the year.

• **15-16 May, Tallinn, Estonia. RIHR Workshop on Impact Assessment of STI Policies.** The aim of this workshop, hosted by the Estonian Ministry of Education and Research, is to bring together practitioners, academia and policy makers to discuss the latest developments, the advantages and the shortcoming of impact assessment techniques and practices. Experts will discuss some of the main national initiatives used to assess the impact of science and technology across OECD countries and provide insights on how to tackle future challenges in the measurement of economic and social impacts. Special attention will be also devoted to discuss how impact assessment exercises could help address societal challenges and provide inputs to policy makers to understand the ever-increasing complexity of relationships between economic actors, society and governments.

• **18-20 June 2014, OECD, Paris.** The 43rd Meeting of the TIP Working Party (and thematic workshop on Public/Private Partnerships in STI). Key issues on the agenda include progress on work on current thematic activities, notably work on systems innovation, open science, and public-private partnerships as well as on the innovation policy platform (IPP), country reviews of innovation and recent developments in national innovation policies.

Recent and forthcoming reports

• **OECD STI Outlook 2014 (forthcoming)**

This flagship publication presents the key trends in STI performance and policies over the past two years. In addition, the publication includes individual policy profiles and country profiles that highlight recent trends in performance and policy developments at the country level.

• **Promoting Research Excellence: New Approaches to Funding (2014)**

National research systems face an increasingly competitive environment for ideas, talent and funds, and governments have turned to more competitive forms of funding to promote efficiency.
and innovation. They have shifted funds from institutional core funding to project funding, often on a competitive basis, or reward success in raising third-party funds in performance-based funding schemes. In this evolving situation, the question of the adequacy of current public funding instruments arises. It is in this context that “research excellence initiatives” (REIs) have emerged. REIs are instruments designed to encourage outstanding research by providing large-scale, long-term funding to designated research units. They provide funds for research and research-related measures, such as the improvement or extension of physical infrastructure, the recruitment of outstanding researchers from abroad and researcher training. This RIHR publication presents new evidence on how governments steer and fund public research in higher education and public research institutions through REIs. The publication can help inform discussions on future government policy directions by providing information on how REIs work and on the functioning and characteristics of institutions that host centres of excellence. The findings show some of the benefits to be gained through REIs and note some pitfalls to be avoided.

- **Smart Specialisation for Innovation Driven Growth (2013)**

This publication provides a conceptual framework for smart specialisation in the context of the current economic policy debate and the search for new sources of growth including through the use of “new” or better targeted industrial and innovation policies. It will provide, through country and regional case studies, practical guidance and good practices for designing and monitoring smart specialisation strategies in OECD countries and regions.


Public research is the source of many of today’s technologies from the GPS and MRI to MP3 technology. This report describes recent trends in government and university level policies to enhance the transfer and exploitation of public research and to benchmark performance in tech transfer from universities in a number of OECD countries and regions, including the EU, Australia, Canada, and the US. Finally, it also showcases, based on case studies of leading institutions in Finland (Aalto Center for Entrepreneurship), Germany (Fraunhofer Institute), the Czech Republic (Technology Transfer Office of the Czech Technical University), Japan (open innovation in firms), United States (National Institutes of Health) a number of good practices for increasing the number of university invention disclosures, accelerating licensing contracts and promoting more open innovation practices between universities and firm.

- **“Green Technology and Innovation” in OECD Science, Technology and Industry Outlook, OECD, Paris (2012).**

OECD countries and emerging economies alike are seeking new ways to accelerate the transition to green growth through technology and innovation. This thematic chapter prepared by the TIP Steering Group on Green Innovation, argues that the transition to green innovation will require more than supply-side, technology-push approaches. It will also require demand-side measures and careful organisational and institutional changes. A key challenge is to align the goals of ministries, research funding agencies, higher education institutions and social and market-based institutions so that they focus on green growth in all its dimensions. Strategic policy intelligence can help to enhance policy learning and to avoid government failures.
Demand-side innovation policies have been receiving increasing interest from a number of OECD countries in recent years in the context of slow growth and lagging productivity performance. Pressures on fiscal budgets in the aftermath of the financial crisis have also motivated governments to seek ways to boost innovation without necessarily engaging in new programme spending, primarily to meet social demands in areas such as health, energy or the environment. This book examines dynamics between demand and innovation and provides insights into the rationale and scope for public policies to foster demand for innovation. It shows the potential – but also the limits – of using public procurement, regulations or standards to stimulate public and private demand for innovation, including among SMEs. Drawing on country experience and case studies, this report illustrates good practices for designing, implementing and evaluating demand-side innovation policies.