

TEC Work plan for cooperation on raw materials: Progress report April 3, 2012

Introduction

In its Joint Statement of November 29, 2011, the Transatlantic Economic Council agreed to launch a cooperation platform on raw materials covering a variety of topics, including common issues stemming from international trade, and to develop a detailed list of actions in all areas where cooperation should be strengthened.

I) Trade cooperation

- First, the EU and the United States reaffirmed their joint ambition to promote the principle of elimination of export duties in their respective bilateral trade agreements with third countries. To that end, the EU and the United States entered into a:
 - (i) review of disciplines developed by each party in its past trade agreements; and
 - (ii) prospective discussion of how to coordinate corresponding commitments in on-going trade negotiations with third countries.

- Second, the EU and the United States agreed to work together to raise awareness in third countries on the impact on global markets of the proliferation of trade barriers in the raw materials sector. WTO's Trade Policy Reviews (TPR), a regular process by which the WTO secretariat examines the trade policy and practices of WTO members, have proved a useful channel to engage in that exercise. Consequently, the WTO established a joint review of upcoming TPRs for this year. Before each meeting, the EU and the United States will exchange of notes on its respective goals/approaches on raw materials issues.

- Third, the EU and the United States are strengthening their cooperation at the OECD on export restrictions affecting raw materials in several ways.
 - (i) Thanks to coordinated input by the EU and the United States, the OECD was able to develop a database of export restrictions affecting industrial raw materials, which will be announced formally in mid-May. This is a key tool for further economic analysis and policy debate. This is also a major first step to overcome the lack of global transparency surrounding the use of export restrictions.
 - (ii) The EU and the United States coordinated their input on the OECD Programme for Work and Budget (PWB) for 2013-2014. This builds upon the OECD's past work, focusing on three objectives: demonstrating global interdependence in raw materials trade; ensuring outreach of OECD work beyond OECD members; and monitoring the use of certain trade-distortive measures on raw materials markets and work to secure future updates of the OECD export restrictions database.

- Fourth, the EU and the United States agreed to develop a common checklist of raw materials-related trade disciplines that can be discussed in the context of current and future WTO accession processes. Informal exchanges have already taken place, but this process is in the early stages.

II) Raw Materials Data, Flows and Information Sharing

The EU and the United States propose to hold a workshop tentatively entitled “Availability and Trade Flows of Primary and Secondary Raw Materials” in September 2012 in Brussels. The main aim of the workshop is to examine how the EU and the United States may share raw materials data in a way which supports policies promoting a sustainable supply of raw materials. In order to achieve this, the workshop could cover the following topics:

- Comparing what information both jurisdictions have in terms of primary and secondary industrial raw materials (i.e. metal and minerals);
- Presenting on how this information is made available and by whom;
- Exchanging information on the ongoing EU and U.S. studies on criticality;
- Examining areas where material flow information is insufficient;
- Sharing views on the consequences of this information deficit for policy development; and
- Agreeing on what information could be shared and how such an inventory would be formulated and maintained.

Other goals of this work could include:

- Improved inventory of identified resources;
- Improved modeling of critical mineral-bearing deposit types and assessment of undiscovered critical mineral resources;
- Improved data on mineral supply chains concentrating on the initial stages of production including mining, processing through the production of a salable product, and initial fabrication; and
- Improved mineral end use data in order to better understand mineral supply chains and potential sources of recycled materials.

The EU and the United States also collaborate in this area under the EU-U.S. Science and Technology Agreement. Opportunities for future collaboration that were identified and agreed upon during the November 2011 Joint Consultative Group (JCG) meeting on raw materials data collection include:

- improve inventories by standardizing materials classification scheme;
- link data analysis with future technologies; and
- leverage existing investments through networking activities.

The work of the JCG in this area represents an integral part of EU-U.S. collaboration on data flows in the TEC, Energy Council, and other fora.

III) Resource Efficiency and Recycling

- In February 2012, the European Commission and the United States worked together on items of mutual interest on recycling and resource efficiency while participating in the 2nd meeting of the **OECD Working Party on Resource Productivity and Waste**. This meeting, which addressed a range of topics, included in its discussions the sound management of nanowaste, transboundary movements of waste for recovery, sustainable materials management of critical metals in mobile devices, the sustainable management of construction materials from a life-cycle perspective, material flows and resource productivity, and other matters concerning trade, economic, technical, regulatory, non-regulatory, and other measures addressing resource efficiency and recovery of valuable resources contained in materials and wastes.

While the Working Party examined many substantive items of mutual interest to both sides, the EU and the United States collaborated specifically at this meeting to develop the Working Party's future work program, recognizing the limited resources available to advancing new work in resource efficiency and sustainable materials management (which inherently includes recycling). The EU and the United States believe that advancing work in Sustainable Materials Management (SMM) could help support member countries to adopt SMM-relevant policies and approaches, including on-going work of the Working Party on critical metals in mobile phones, and new work on SMM of construction materials.

- The **Basel Convention Partnership for Action on Computing Equipment (PACE)** is another area of cooperation between the EU and the United States focusing on improving the environmentally sound management (recycling, refurbishment, and disposal) of used and end-of-life computing equipment. The EU and the United States collaborate within this forum to develop guidance and recommendations on a wide range of important issues directly relevant to improving resource efficiency and recovery of used and end-of-life electronics, such as: guideline on environmentally sound testing; refurbishment, and repair of used computing equipment; guideline on environmentally sound material recovery and recycling of end-of-life computing equipment; guidance on transboundary movement of used and end-of-life computing equipment; glossary of terms; and report on ESM criteria recommendations.
- With regard to recycling, the EU and the United States both have strategies in place on both sides to foster efficient use and recycling of raw materials. The U.S. Government's "National Strategy for Electronics Stewardship," released in July 2011, provides recommendations about how the U.S. Government can promote a sustainable lifecycle approach to managing used electronics in a way that protects human health and the environment in the United States and abroad. The Waste

Electrical and Electronic Equipment (WEEE) Directive is the EU's mandate for addressing recycling of these materials and has been in force since 2003. It sets targets for collection by Member States while putting the responsibility on the producers or manufacturers.

Both sides confirm their intent as expressed in the November 29, 2011, TEC statement to participate a high level meeting with stake-holders with a view to share best practices in materials management through the full life cycle of electronic goods and support TABD's proposal to help organise an event on "Best Practices in Electronic Management/Stewardship" in the second half of 2012, to be held in the United States. Work on a joint agenda with stakeholders will start shortly.

- The United States will continue to cooperate with the **United Nations University – StEP (Solving the E-waste Problem) Initiative**, based in Bonn, Germany, which is a science-based platform for researchers, industry, NGOs, international organizations and academia to actively engage on finding approaches to the sustainable handling of e-waste. Many EU-based organizations are already StEP members and contribute regularly to the dialogue.

IV) Research and Development on Raw Material Substitution and Reduction

A Trilateral Conference on Critical Materials was held in Tokyo in March 28-29, 2012, to follow up on the Trilateral Conference on Critical Materials held in Washington in October 2011. The Tokyo event included a Workshop on New Approaches to Reduce Rare Earths for Permanent Magnets and Phosphors, building upon the Washington Workshop on Substitutes for and Efficient Use of Rare Earth Magnets which focused on ways to reduce requirements for rare earth materials in wind turbine generators and electric vehicle motors – key drivers of efficient, low-carbon growth in the power and transport sectors.

At these events, EU, United States and Japan explored opportunities for collaboration to reduce neodymium and dysprosium requirements in the permanent magnets that wind turbines and EV motors rely upon in the following ways:

- Fundamental studies of coercivity mechanisms (which give permanent magnets their resistance to being demagnetized);
- Improved characterization and measurement tools to substantiate the inferences that can be made from experimental observations about microstructure properties;
- Validated and improved models of magnetic behavior and mechanisms;
- Techniques to enhance the stability and texture of nanocomposite structures;
- Evaluation of the manufacturability of candidate materials for permanent magnets; and
- Technology roadmaps for the research and development of hard magnets for different applications (such as wind turbine generators and electric vehicle motors).

Participants also explored opportunities to collaborate on component and system substitutions for rare earths – helping to design motors and generators without permanent magnets:

Harmonization and standardization of testing methods for motors and generators.

Design and development of traction motors (using less rare earth materials).

Development of software to optimize the electromagnetic design of motors.

Tools to characterize properties of High-Temperature Super-Conducting materials.

The Trilateral Conference on Critical Materials also included a Workshop on Critical Material Resource Efficiency: Production, Reuse, Recovery, and Recycling. Part of the workshop focused on materials and processes for environmentally sound and cost-effective separation of rare earths from ore bodies and recycling streams. Another part of the workshop concentrated on recycling and reprocessing of rare earths from different sources using different techniques.

With respect to separation of rare earths from recycling streams, we explored the potential for collaborative projects in several areas:

Development of new types of solvents for extraction of rare earths.

Demonstration of electrolytic processes for rare earth separation.

Research on bioseparation of rare earths (e.g. indium, gallium, dysprosium).

Research on hydrothermal processing (e.g. for tungsten, cobalt, neodymium).

With regard to recycling, the following areas for cooperation were explored:

Improved understanding of how to reduce costs of collection, transportation, characterization and sorting, separation, purification, and other processing.

Characterization of, standards for, and labelling of recycling streams (e.g. labelling of magnet compositions contained within electronic scrap).

Development and demonstration of processes to separate and recover rare earths from magnets, lighting, manufacturing wastes and end-of-life products.

Analysis of material flows and life-cycle impacts on energy use and emissions.

V) Waste Shipment

- In response to the National Strategy for Electronics Stewardship, the U.S. Government (EPA) is partnering with EU-based United Nations StEP Initiative to develop methods for tracking the global flows of used electronics and e-waste. UNU-StEP is developing a publicly accessible centralized repository of information that would provide an estimate of volumes of e-waste in countries and on flows of these materials between countries. The current focus is on gaining better information from the United States on exports that would catalyze the gathering of this type of information from other countries in order to build a complete picture of the global flows.

- As mentioned above regarding the Basel Convention PACE working group, the EU and the United States are engaged within PACE to develop expert guidance on

the transboundary movement of used and end-of-life electronics to improve environmentally sound recycling, repair, and refurbishment.

- Finally, the EU **European Union Network for the Implementation and Enforcement of Environmental Law**, (IMPEL) and the United States cooperate directly through the Seaport Environmental Security Network, as an ongoing activity of the International Network for Environmental Compliance and Enforcement (INECE). Collaborative efforts have included capacity building, simultaneous inspection projects involving various ports worldwide, and training workshops for port customs and environmental inspectors of e-waste and hazardous waste. These events are designed to increase inspection capacity by forging cooperative enforcement relationships between customs and environmental inspectors on adopting improved targeting approaches and implementing effective strategies for waste takeback situations.

The EU and the United States joint support of the Seaport Network's mission produces more effective enforcement worldwide which will help level the playing field in trade and reduce the public health and environmental effects from the illegal transboundary movement of e-waste and hazardous waste. Furthermore, by increasing the success of detecting and intervening against illegal transboundary movements of waste intended for recovery/recycling, the EU and U.S. collaborative efforts increase the lawful, global free trade of raw materials and dramatically improve the ratio of recovered materials and their sound management and use worldwide.