

Update on the bilateral development of standards for biofuels

U.S.- Brazil Commercial Dialogue - Digital Video Conference Series
Bioethanol Standardization

Background

INMETRO & NIST agreed to explore cooperation in Metrology and Standards for Biofuels following on the agreements reached at the first US-Brazil Commercial Dialogue meeting between Secretary Gutierrez and Minister Furlan on June 6, 2006, and the US-Brazil Ministerial Joint Commission Meeting on July 21, 2006

THE U.S.–BRAZIL MINISTERIAL LEVEL JOINT COMMISSION MEETING ON SCIENTIFIC AND TECHNOLOGICAL COOPERATION

July 21, 2006

Washington, DC

U.S.–Brazil Joint Statement

Measurement Standards and Technology

The U.S.-Brazil JCM acknowledged the long history of cooperation between the United States and Brazil in the area of the measurement sciences. **The JCM confirmed the importance of cooperation in the fields of metrology and standards and welcomed the report on the activities agreed to by the National Institute for Standards and Technology (NIST) and the National Institute of Metrology, Standardization and Industrial Quality (INMETRO) under the Science and Technology Agreement between the Government of Brazil and the Government of the United States and under the U.S.-Brazil Commercial Dialogue in measurement standards.** It noted the mutually agreed desire for future collaboration in the areas of nanoscale science, postdoctoral exchanges, and measurement standards in high-priority areas such as biofuels and nano-materials.

The JCM recognized and encouraged expanded cooperation in standards and metrology activities that impact innovation and competitiveness and support economic growth and development, including in nanotechnology and **biofuels**.

Main objective

To provide a forum for government and private sector organizations from Brazil and the U.S. to share experiences and identify measurement and standards issues that pose barriers to this shift from petroleum to biofuels.

Official Group Leaders:

Prof. Dr. João Jornada

**President, National Institute of Metrology, Standardization and
Industrial Quality, *INMETRO***

Dr. Hratch Semerjian

Chief Scientist, National Institute of Standards and Technology, *NIST*

Actions (U.S.- Brazil Commercial Dialogue on Standards November 6-7, 2006):

Digital Video Conference (DVC) series to promote a better understanding of the standards, conformity assessment and technical regulation systems in place in each country

INMETRO and NIST will establish a collaborative program on Metrology and Standards for Biofuels

NIST will organize training workshops in chemical and materials metrology to help strengthen the INMETRO programs in these areas.

Actions (U.S.- Brazil Commercial Dialogue on Standards November 6-7, 2006):

A new INMETRO/NIST Metrology Post-Doctoral Fellowship Program will be established, starting in the second quarter of 2007. New Ph.D.s from Brazil will spend 1.5 years at NIST and then 1.5 years at INMETRO to promote sharing of experience in measurement science between the two institutions.

INMETRO and NIST will hold a bilateral workshop, to be held in early 2007 in the U.S., to identify and initiate collaborative activities in measurement standards technology in high-priority areas.

INMETRO and NIST will develop an exchange program to share best practices in management of S&T programs that impact innovation and competitiveness.

Partners involved

Governments:

INMETRO/MDIC, DOC/NIST, other Brazilian institutions and other U.S. agencies such as DOE, USDA and EPA.

Private Sector:

ANSI, ASTM, ABNT.

Expected results

to review inconsistencies between ABNT (Brazilian), EN (European), ASTM International and ISO documentary standards, both in terms of specifications and measurement conditions;

better definition of relevant measurands for determining fuel quality and their impact on materials performance;

development of new performance based measurement methods;

development of new Certified Reference Materials (CRMs) to assure the accuracy of measurements used to characterize biofuels



*Measurement and Standards
for Biofuels: Enabling a
Transition from Petroleum as
a Vehicular Energy Source*



Rio de Janeiro, Brazil

September 14-15, 2006

Types of Activities/Issues Recommended for Joint Effort:

Review of Specifications for Biofuels as a Commodity

Small group(s) to be convened to address topic and report back next meeting; the relevance of various measurands/analytes/properties are a very important part of this discussion.

Materials Research, Data and Testing Technology (NIST/INMETRO)

A small group of experts should be convened to identify relevant materials issues and present findings at the next meeting as a potential cooperative research target.

Reference Methods and CRMs (NIST/INMETRO)

Development and critical evaluation of higher order methods and CRMs to underpin measurements against specifications (NMIs)

Critical evaluation of field methods to be used to assess conformance with specifications.

Thermophysical Property Data (NIST/INMETRO)

Felix Silva of Copersucar summarized the industry view of the measurement issues.

Standardize the units and the temperature used in all pertinent specifications.

Work on the existing methods to see if they are applicable to both denatured and non-denatured ethanol.

Try to adopt a single method for each desired quantity. For example, ASTM has three methods for sulfur.

Look for simple methods that have wide applicability.

Have an understanding of the repeatability and accuracy of the various methods.

Evaluate the specifications that are being used by various countries, e.g. in the US, Europe, Japan, etc.

Action Items:

Form a smaller group to look at all the presentations from this workshop to see what CRMs are needed, and circulate the list to the entire group.

Plan a second meeting with the US as host - around an existing meeting to minimize travel costs.

Plan a Brazilian technology day at NIST – with a focus on biofuels.

Biofuels Workshop

“Measurements and Standards for Biofuels: Enabling a Transition from Petroleum as a Vehicular Energy Source”.

September 14-15, 2006 in Rio de Janeiro

4 US & Brazilians Governmental Participants

1 US, 13 Brazilians Governmental & 1 US, 3 Brazilians Private Institutions

Symposium on Biofuels

Measurements and Standards to Facilitate the Transition to a Global Commodity

Hosted by:
the US National Institute of Standards and Technology (NIST)
and
Brazil's National Institute of Metrology, Standardization and
Industrial Quality (INMETRO)



in conjunction with the
11th Annual Green Chemistry & Engineering Conference:
*From Small Steps to Giant Leaps – Breakthrough Innovations
for Sustainability*
Capital Hilton in Washington, DC
June 26-29, 2007



Welcome
Welcome

A Symposium on Biofuels hosted by the US National Institute of Standards and Technology (NIST) and Brazil's National Institute of Metrology, Standardization and Industrial Quality (INMETRO).

The Biofuels Symposium is held in conjunction with *The 11th Annual Green Chemistry & Engineering Conference*. This conference is an ideal venue for our symposium, since the entire conference focuses on environmentally sound, green alternatives to products and services provided by industries that use chemistry and chemical engineering. The sustainable use of biomass as an industrial feedstock for alternative fuel promises to be a breakthrough "green" technology.

This Symposium is a follow-up to the Workshop held in Rio de Janeiro in September 2006, where we discussed measurements and standards needed to facilitate the transition of biofuels to global commodities. The goal of this NIST-INMETRO hosted Symposium is to bring together key stakeholders from around the world, and provide a venue for open discussion and information exchange on issues of mutual interest as they relate to biofuels. The sessions are structured to present and discuss international perspectives with respect to both biofuels R&D, and associated reference standards and measurement needs.

As you know, research on biofuels is a high priority on the R&D agendas of many countries and regions around the world. Several bilateral and multilateral initiatives have been launched during the last few months, including the US-Brazil Agreement on Biofuels Cooperation, and the UN International Biofuels Forum, signed by the US, Brazil, China, EU, India and South Africa. These activities reflect the importance of biofuels for energy and economic security, and climate change, and the potential to create and open new markets. As these new markets for biofuels emerge, issues around fair trade with associated standards and underpinning measurements also emerge. The planned sessions will address research, measurements as well as standard issues for biofuels as an international commodity.

The success of these discussions depends on experts such as you, sharing your wisdom and insights into this important and pressing topic. Thank you for your participation in this important meeting.

Hratch G. Semerjian
Chief Scientist, NIST
Co-Chair

Humberto S. Brandi
Director of Metrology, INMETRO
Co-Chair

Ellyn S. Beary
Senior Scientific Advisor
Chemical Science and Technology Laboratory, NIST
Program Chair

US - Brazil Biofuels Partnership Action Plan

= To be announced for March 31 POTUS/LULA Visit

= Work in Progress

	MOU	Action	Status	Follow Up
Bilateral	<p>"The Participants intend to advance the research and development of next generation biofuels technology leveraging – wherever possible - work being done in the framework of the Brazil-U.S. Commercial Dialogue (2006); the Consultative Committee on Agriculture (2003), the Consultative Group on Energy (2003), the U.S./Brazil Common Agenda for the Environment (1995), and the Joint Commission on Cooperation in Science and Technology (1984) - amended and extended by the Protocol signed on March 21, 1994."</p>	<p>1 DOE invitation to Brazilian Scientists to visit NREL</p>	<p>Secretary Bodman invited Brazilian Scientists to NREL. GoB would like to visit Lawrence Berkley Labs as well. DOE checking that this will be possible</p>	<p>DOE and GoB fixing date for May</p>
		<p>2 High level DOE/State visit to Brazil</p>	<p>Andy Karsner, Assistant Secretary for Energy Efficiency and Renewable Energy will visit Brazil end of April/early May. GoB looking into availability of Brazilian Ministers for visit.</p>	<p>State/DOE/GoB fixing dates and ensuring appropriate meetings with the GoB.</p>
		<p>3 Announce Global Science Partnership</p>	<p>Student exchange program has been in development and could possibly be launched with Brazil as the first country targeting science exchange on biofuels</p>	<p>Announce science partnership with Brazil (scholars + innovation program)</p>
		<p>4 High level USDA visit to Brazil</p>	<p>Dr. Buchanan, Under Secretary of Agriculture for Research, Education, and Economics, scheduled to visit Brazil May 30-31 and June 11 and 12</p>	<p>State/Ag will want to ensure appropriate meetings with the GoB.</p>
Third Countries	<p>"The Participants intend to work jointly to bring the benefits of biofuels to select third countries through feasibility studies and technical assistance aimed at stimulating private sector investment in biofuels. The Participants intend to begin work in Central America and the Caribbean to encourage local production and consumption of biofuels, with a view to continue joint work in key regions across the globe."</p>	<p>1 Announce Country List</p>	<p>We will announce initial country list (Haiti, DR, Saint Kitts, El Salvador). USG, GoB, and IDB considering addition of Guatemala, Honduras, and Nicaragua.</p>	<p>Determine next tranche of countries and timing of next announcement</p>
		<p>2 Announce initial Feasibility and Technical Assistance</p>	<p>Announce the work that has begun in El Salvador and Honduras; detail on what exactly we are announcing - \$ for X use to produce Y benefits</p>	<p>IDB, GOB, and USTDA to define coordination of technical assistance/feasibility studies in target countries</p>
		<p>3 Private Sector Engagement</p>	<p>Developing private sector engagement strategy, ensuring a clear role and value to their participation. This will be critical to achieving our end goal of accelerating investment in biofuels in these countries</p>	<p>Will discuss follow-on plan at inter governmental meeting on March 29th</p>
Multilateral	<p>"The Participants desire to expand the biofuels marketplace through cooperation on the establishment of uniform standards and codes. To achieve this goal, the Participants intend to cooperate through the International Biofuels Forum (IBF), leveraging existing work being carried out between the U.S. National Institute of Standards and Technology (NIST) and the National Institute of Metrology, Standards and Industrial Quality of Brazil (INMETRO) and coordinating with existing and complementary international fora."</p>	<p>1 Standards and Codes</p>	<p>We've begun discussions with the Europeans and Brazilians to see if we can develop a joint - industry driven - strategy to arrive at 'compatible standards' by the end of the calendar year; initiative being prepared for possible unveiling at the U.S.-EU Summit.</p>	<p>Awaiting White Paper this week and timeline for next steps</p>
		<p>2 IBF Meeting*</p>	<p>We could announce an IBF meeting following the U.S.-EU Summit to broaden the discussion initiated by the USG, Brazil, and the EU to accelerate the harmonization of standards</p>	<p>We will know status of this initiative after USG (Commerce Lead) after receiving strategy paper from discussions with U.S. standards organizations</p>
Management	<p>"The Participants intend to establish a Steering Group to oversee the work being carried out under this MOU so that proper coordination is maintained across each of the three areas of cooperation."</p>	<p>1 Stand Up Steering Committee</p>	<p>First steering committee meeting will likely occur on March 29.</p>	<p>State/NSC determining steering group participants; reflecting equal USG/GoB numbers and general parity across agencies</p>
		<p>2 Announce Funding Commitments from Partners</p>	<p>TOTAL \$9.2M IDB - \$7M; USOAS - \$1M; GoB - \$1M; UN Foundation \$200,000</p>	<p>We have cleared language from all partners</p>

* The IBF will also be pursued outside of the MOU to align U.S. biofuels standards and codes with those of other member countries

Multilateral

"The Participants desire to expand the biofuels marketplace through cooperation on the establishment of uniform standards and codes. To achieve this goal, the Participants intend to cooperate through the International Biofuels Forum (IBF), leveraging existing work being carried out between the U.S. National Institute of Standards and Technology (NIST) and the National Institute of Metrology, Standards and Industrial Quality of Brazil (INMETRO) and coordinating with existing and complementary international fora."

Evaluation Plan

An evaluation will be performed by the Group Leaders during the 3rd quarter of 2007 after completion of the workshops.



Thank you for your attention
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