US-Brazil Commercial Dialogue

The Advanced Manufacturing and Innovation in Chemicals Management Initiative (AMICMI), with a specific concentration on Green Chemistry (GC)

Introduction.

Green Chemistry is the design of chemical products and processes that reduce or eliminate the use or generation of hazardous substances. Green chemistry applies across the life cycle of a chemical product, including its design, manufacture, use and ultimate disposal. Green chemistry is also known as sustainable chemistry (References: https://www.epa.gov/greenchemistry).

The field of GC emerged from the interaction of industry, government, and academia in the early 1990s. In the United States, one key milestone was the passage of the Pollution Prevention Act of 1990 which sought to broaden the focus of regulation from cleaning up pollution that had already been emitted to changing industry practices and processes to prevent or minimize the creation of pollution.

As an end-to-end process, GC includes the following elements:

1. Replacement of existing products with less toxic alternatives
2. A shift toward renewable (non-petroleum) feedstocks
3. Choices of chemical feedstocks and process design
4. Awareness and use of the information and tools that are available
5. Integration and firm anchoring in existing and proposed regulatory regimes

The worldwide chemical industry is valued at approximately $3 trillion, and growing. As a result, a small improvement in greener efficiency could have large absolute impacts. While one may decide that the greatest opportunity for short-term financial and environmental impact comes from waste minimizing improvements, a 2011 Pike Research Survey estimated that it is possible, with GC, to capture $40 billion in process savings while avoiding environmental and social liabilities, and contributing positively to the minimization of Climate Change.

A number of companies have overtly introduced greener brands (pharmaceuticals, cosmetics, cleaning products, formulators, or bio-based molecule providers) being driven by a combination of technical, economic, regulatory, and consumer preference criteria.

The US-Brazil Commercial Dialogue, and the Advanced Manufacturing and Innovation in Chemicals Management Initiative (AMICMI).

Upon the request from GC innovators, the recommendations of the varied stakeholders of the US-Brazil commercial dialogue, and the September 21-25, 2015 information exchange programme in Brasilia, both governments decided to support the introduction of the Advanced Manufacturing and Innovation in Chemicals Management Initiative (AMICMI).
The AMICMI program is under the aegis of Leonardo de Paula Luiz, *Secretaria de Desenvolvimento e Competitividade Industrial* and, Ken Hyatt, Acting Deputy Assistant Secretary, *Department of Commerce, International Trade Administration*. It is co-directed by Roberta Ludwig Romancini Silva, *Secretaria de Desenvolvimento e Competitividade Industrial, Ministério da Indústria, Comércio Exterior e Serviços (SDIC/MDIC-Brazil),* and Gary Stanley, *International Trade Administration, Office of Materials (ITA/OMI-U.S.).*

From a US-Department of Commerce (DOC) prospective, the collaboration supports the 2014-2018 strategic goals and objectives to expand the economy through exports (example given: acceleration of the adoption of greener products and processes) and to foster investment in a more innovative economic infrastructure which will better support the continuum invention->innovation->commercialization and market access. It also helps renew how to address prosperity within the 21st century, in an environment suffering from Climate Change, and with significant changes in manufacturing allocations and trade patterns.
From a Brazilian prospective, the collaboration provides opportunities for valorization of natural resources, as well as the advance of manufacturing and its intelligence to help catalyze innovation clusters. It enables business to adapt and deliver competitive and performing quality products and processes worldwide while being best prepared for international regulatory compliance.

In 2016, the AMICMI is being introduced via an information exchange Government to Government (G2G)/Business to Government (B2G). The exchange will be done via free webinars. It aims at bringing together government and industry representatives that 1) need to collaborate in order to foster full capacity, and accelerate the development of GC innovations; 2) improve mutual understanding of the needs of the private sector; and 3) explore practical engagement in collaborative activities while discerning how public sector resources may strengthen the proposed goals and improve the resiliency.

Plan of Action.

A. Fall/Winter 2015. Reach out to AMICMI stakeholders; seek feedback on proposal, and priority interests.
B. Summer/Fall 2016. Initiate the G2G/B2G collaboration with short and focused webinars (see page 3). Each country and partners will make recommendations.
C. December 2016. Prioritize B2B projects, and encourage the start of the activities.

Advanced Manufacturing and Innovation in Chemicals Management Initiative (AMICMI), especially Green Chemistry

U.S. International Trade Administration (ITA)
Brazil Secretariat of Production Development
(Chemicals)

----- Fall 2016 -----	
Public-Private Dialogue **Proposed Calendar and Presentations**	
Webinars will take place Mondays – 10:00 am/EST and 11h00/Brasilia; consisting of a presentation (30minutes) and Question-Answer period (10-15 minutes) To account for national holidays, we have a few gaps (Mon-Sep 5, Oct 10, and Nov 14).	Under the aegis of Leonardo de Paula Luiz, *Secretaria de Desenvolvimento e Competitividade Industrial* and, Ken Hyatt, *Department of Commerce, International Trade Administration, and in full recognition of the importance of innovation toward enhanced competitiveness and trade…..*
Web1 (US) Aug 22, 2016	**Introduction to Green Chemistry (GC) from a voluntary regulatory perspective** *David Widawsky, United States Environmental Protection Agency* *Clarifying Questions and Answers Segment/Next Steps*
Web 1 (BR) Aug 29, 2016	**The Brazilian Agenda for Chemicals Management** *Alberto da Rocha Neto, Manager of the Chemical Safety Unit, Ministry of Environment (MMA)* *Clarifying Questions and Answers Segment/Next Steps*
Web2 (US) Sep 12, 2016	**The American Chemicals Society-Green Chemistry Institute (ACS-GCI) and its activities supporting the adoption of Green Chemistry products and processes** *David Constable, ACS-Green Chemistry Institute* *Clarifying Questions and Answers Segment/Next Steps*

Web2 (BR) Sep 19, 2016	**Technology foresight in renewable chemicals** *Rodrigo Rodrigues, Brazilian Agency for Industrial Development (ABDI)* *Clarifying Questions and Answers Segment/Next Steps*
Web 3 (US) Sep 26, 2016	**The National Institute for Standards and Technologies, and Advanced Manufacturing** *Speaker To Be Determined, NIST International* *Clarifying Questions and Answers Segment/Next Steps*
Web 3 (BR) Oct 3, 2016	**Chemicals Industry in Brazil - Investment Opportunities and Innovation** *Martim Francisco de Oliveira e Silva, Brazilian National Economic and Social Development Bank (BNDES)* *Clarifying Questions and Answers Segment/Next Steps*
Web 4 (US) Oct 17, 2016	**Green Chemistry as a business proposition along the Supply Chain** *Joel Tickner, Green Chemistry Commerce and Council (GC3)* *Clarifying Question and Answer Segment/Next Steps*
Web 4 (BR) Oct 24, 2016	**Potential raw materials and chemical processes for the development of Green Chemistry in Brazil** *Professor Eduardo Falabella*, Universidade Federal do Rio de Janeiro, *ABIQUIM (Brazilian Association of Chemical Industry) guest* *Clarifying Questions and Answers Segment/Next Steps*
Web 5 (US) Oct 31, 2016	**Green Chemistry as a business proposition, attending to local needs.** *Lauren Heine, Northwest Green Chemistry (NGC)* *Clarifying Question and Answer Segment/Next Steps*
Web 5 (BR) Nov 7, 2016	**Disruption through industrial biotechnology: creating a framework and policies to support the development of the biochemical sector** *Professor Joao Furtado, Universidade de Sao Paulo, ABBI (Brazilian Industrial Biotech Association) guest* *Clarifying Questions and Answers Segment/Next Steps*
Web 6 (US) Nov 21, 2016	**Introduction to the Bio-Preferred Program from a voluntary regulatory perspective** *Marie Wheat, United States Department of Agriculture* *Clarifying Question and Answer Segment/Next Steps*
Web 7 (BR) Nov 28, 2016	**Green Chemistry in the context of biorefinery and bioeconomy** *Guy de Capdeville, Deputy Head of R&D, Brazilian Agricultural Research Corporation – Agroenergy* *Clarifying Questions and Answers Segment/Next Steps*