# Roundtable on Sustainable Biomaterials

## Sustainability Implemented
## The Birth of a Voluntary Sustainability Certification Program

Matt Rudolf
Director, North America
RSB Services Foundation

# RSB – A HISTORICAL REVIEW

# First Exploratory Meeting

- The first exploratory meeting of the RSB was held on November 28, 2006 (nearly 7 years ago!) at the Swiss Federal Institute of Technology (EPFL) in Lausanne to investigate the potential for developing internationally accepted and implementable standards for sustainable biofuels.
- Outcome was that there was sufficient interest to develop such a standard, so an initial Steering Board was established

# Year 1 – Birth of the RSB and the Secretariat

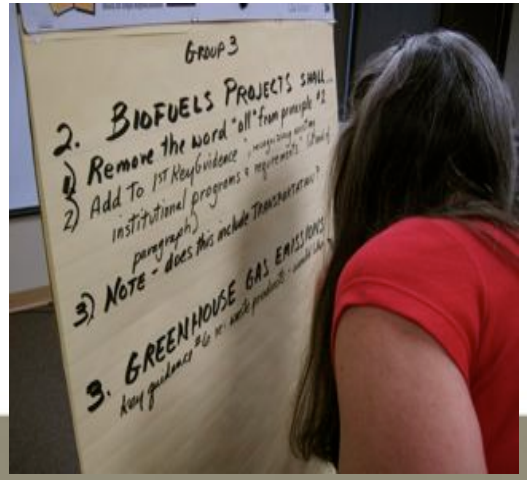
- RSB formed expert working groups around four subject matter topics:
  - Social Issues
  - Environmental Issues
  - GHG Accounting
  - Standards Implementation
- Secretariat office formed at the EPFL Energy Center
  - Charlotte Opal (RSB Coordinator)
  - Sebastien Haye (Env. WG Coordinator)
  - Annie Sugrue (Soc. WG Coordinator)
- First Steering Board Meeting: November 6-7, 2007
  - Reports from around the world, and the different WGs
  - Decision to establish a governance structure (at some point)

# Year 2 – Move towards certification

- Different options for running a certification organization begin
  - Integrated with EPFL
    - Independent Steering Board, but no legal entity outside of EPFL
  - Decoupled from EPFL
    - Fully independent non-profit, operating outside of the EPFL
- Governance committee was formed
- Beginning of the notion of the "meta-standard" approach – how does RSB interface with other developing standards, such as RSPO, BSI (Bonsucro), RTRS, etc.
- Version Zero of RSB Principles & Criteria released August 13, 2008

# Global Consultation and Governance Formation – Magic number eleven!

- October 2008 – April 2009: Eleven (11) global outreach events to solicit feedback on Version Zero of the RSB P&Cs!
  - Bamako, Mali (Nov 2008)
  - Raleigh, NC (28 Jan 2009)
  - Bogota, Colombia (17-18 Feb 2009)
  - Santo Domingo, DR (11-12 Mar 2009)
  - Brussels, Belgium (19 Mar 2009)
  - KL, Malaysia (26-27 Mar 2009)
  - Sao Paulo, Brazil (Nov 2008)
  - San Francisco, CA (4 Feb 2009)
  - Des Moines, IA (3-4 Mar 2009)
  - Bs. As., Argentina (18-20 Mar 2009
  - Nairobi, Kenya (23-24 Mar 2009)
- Feb 2009: Membership-based governance formed
  - Move forward with an EPFL-integrated approach
  - Eleven (11) Membership Chambers!



# List of Membership Chambers

1. Farmers and growers of biofuel feedstocks
2. Industrial biofuel producers
3. Retailers/blenders & the transportation industry
4. Banks/investors
5. Rights-based NGOs (including land, water, human, and labour rights)
6. Rural development and food security organisations
7. Environment and conservation organisations
8. Climate change and policy organisations
9. Trade unions
10. Smallholder farmer organizations and indigenous peoples' organisations/ community-based civil society organizations
11. Intergovernmental organizations (IGOs), governments, standard-setters, specialist advisory agencies, certification agencies, and consultant experts.

# Year 3: Towards Version 1

- Chamber consultations – Discuss standards, incorporate comments, redistribute the standards, and repeat
- Building the membership – Membership is flowing in, primarily populating chambers 1, 2, 3, 7, and 11
- Internal Standards Review – Version 0.1, 0.2, … … , 0.9 was distributed prior to the November 2009 Board Meeting
- Version 1 approved on November 12, 2009

# Year 4: Pilot Tests and Start of Standards Implementation

- Numerous pilot tests held throughout the world, in which the RSB standards were piloted through mock implementation in context of real-world projects
  - Australia, Mozambique, Brazil, Peru, Guatemala, Colombia
- IDB Implementation Workshop
- Initial engagement with the aviation sector
  - Plan de Vuelo
  - SAFN
- Hawaii Adaptation Needs Assessment
- Version 2 Approved in November 2010

# Year 5: Auditor Trainings Begin, Attempt at a Two-Tier System

- Auditor training courses held in collaboration with Leading Standards and AB Training
  - Lausanne, Switzerland (Matt & Heiko Leideker)
  - Mexico City (Matt & Liviu Amariei)
  - Kuala Lumpur (Matt & Michal Brink)
- AB Training takes over the auditor training program
- A lower "Tier One" version of the RSB P&Cs was approved in June 2011

# Year 6: Launch of RSB Services

- November 2011: Packard Foundation approves a PRI loan to launch RSB Services
- In January/February 2012, Matt and Peter launch RSB Services Foundation, a US-based 501c3 non-profit
- First certifications come in as carryover from the piloting phase: Manildra (Australia) and Maple (Peru)
- Tier One shelved at the June 2012 SB Meeting

# Years 6-7: Roll out of certification program, RSB leaves the EPFL nest

- During 2012 and 2013 RSB Services hired staff, set up offices, and developed tools and guidance documents to help companies through the certification process
- In January 2013 RSB formally left the EPFL, and incorporated in Geneva as a Swiss-based foundation (the decoupled approach finally materializes)
- Pivot to bioproducts: RSB rebrands itself

# Economic Operators: Feedstock Developers

**Global Clean Energy**

- Developing Jatropha Curcas as a feedstock for the aviation biojet sector in Mexico (Largest Jatropha plantation in the Americas)
- RSB Certified

**Paterson Grain / Agrisoma**

- Developing Carinata Brassica as a feedstock for the aviation biojet sector in Canada
- RSB certification currently in process

**Sustainable Oils**

- Developing Camelina Brassica as a feedstock for the aviation biojet sector in the USA
- RSB certification currently in process

GCE Jatropha Nursery

Sus Oils Camelina Production

# Economic Operators: Multi-national Integrated Companies

**Addax Bioenergy (Sierra Leone)**

- European Company in a high-risk developing country
- Public, international funding institutions (IDB, FMO, etc)
- Buy-in through the standards development process

**Maple Ethanol (Peru)**

- US Company in a moderate-risk developing country
- Public, international funding institutions (IDB, FMO, etc)
- Buy-in through the standards piloting phase

# Economic Operator: Piedmont Biofuels

- Company is branded on sustainability
- NGO Recognition was important
- Customer-facing fuel distribution aspect to the business

# Economic Operator: Dynamic Fuels

- Demand from a specific downstream customer
- KLM ran a series of flights between Amsterdam and JFK

# The Economic Operators: Next Gen Biochemical Producers

**Amyris**

- First commercial scale next-generation biofuel company in Brazil
- RSB Certification In-Process at Brotas Plant (Sao Paulo State, Brazil)

**Lanzatech**

- Leading advanced biofuel company globally
- RSB Certification In-Process at Shougang Plant (Beijing, China)

**Solazyme**

- Currently building commercial scale JV plant with Bunge in Brazil
- Co-Founder on RSB Board of Directors

Amyris Brotas Facility

# Shrinking markets for US ethanol

- 2012 was the first year that the US ethanol industry, contracted falling from 13.9 billion gallons in 2011 to 13.3 billion in 2012
- In early 2013 the EU imposed a $83.03 / metric ton tariff on US ethanol for 5 years
  - Result of anti-dumping investigation

**How will markets which value sustainability parameters such as carbon, water and air quality impact the ethanol industry?**

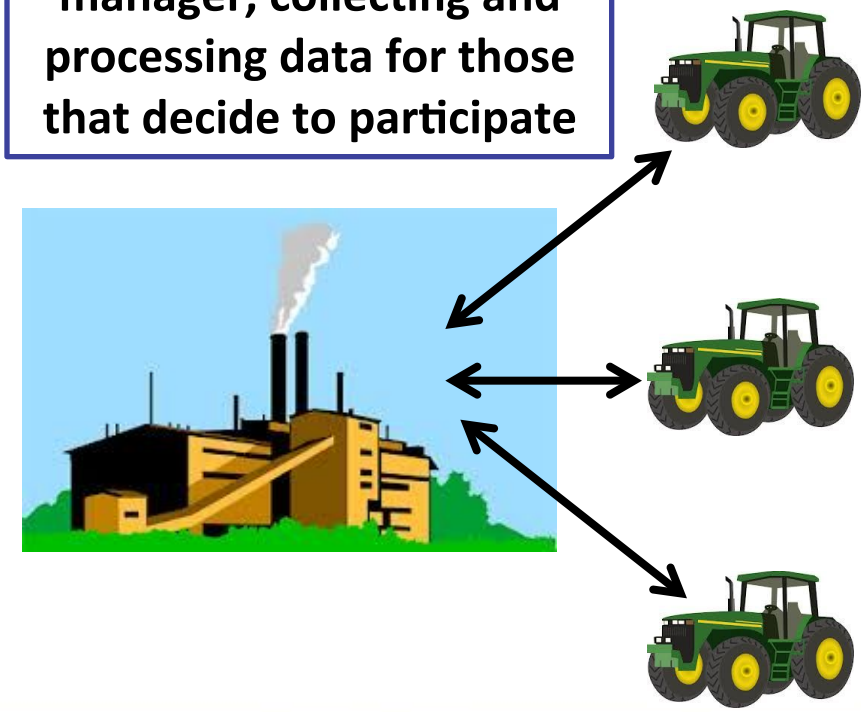
# Full Lifecycle GHG Accounting

- Based on attributional LCA modeling
- IPCC (Tier 1) direct land-use change emissions factors
- Ecoinvent database emissions factors for inputs
- Co-production allocation by economic value
- A global average fossil fuel baseline
- Operator input data audited by third parties, across the supply chain

# RSB Certification Process

- Environmental data must be collected for the producer group, typically by the mill
- Questionnaires to help the mill collect farm-level data
- Data verified periodically by an independent third party verifier

**The ethanol mill acts as the certification group manager, collecting and processing data for those that decide to participate**



# The RSB Goal:
# Access to Sustainable Markets

- European Union - Renewable Energy Directive (RED)
- United States - Renewable Fuels Standard (RFS2)
- The California Low Carbon Fuel Standard (LCFS)
- Harmonization with the Social Label in Brazil
- On-going discussions with municipalities to put RSB certification into their procurement policies
- Commitments from Fortune 500 companies to source RSB certified materials

# Advanced Biofuels and Bio-Materials

- Advanced Biofuels
  - Desire to differentiate from 1st generation on sustainability
  - Aviation Sector has few low-carbon alternatives to biofuels
  - Next Generation biofuels are still heavily dependent on public support
- Bio-Materials
  - Being used by brand owners as part of their CSR strategy
  - Generally more closely tied to consumer-facing products
  - Green Chemical Industry is maturing

**Advanced Biofuels are also Bio-Materials!**

# Offices in US, Brazil and Europe

**RSB Services Foundation**
Suite 600, 1420 Spring Hill Road
McLean VA 22102

Matthew Rudolf
Director, Business Development, Americas

Email: msrudolf@rsbservices.org
www.rsbservices.org / www.rsb.org