

Collaboration Enabling Sustainability

Jimmy Samartzis
Managing Director
*Global Environmental
Affairs and Sustainability*

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A STAR ALLIANCE MEMBER 

UNITED 

Eco-Skies in Action



Our Sustainability Track Record – Collaboration is Key

- **Eco-Aviation Airline of the Year**
- **32% improvement in fuel efficiency** since 1994 avoiding more than 13 million metric tons of CO2 emissions
- **828,750 metric tons of CO2 savings** planned in 2013 through fuel efficiency initiatives
- **290 new fuel-efficient aircraft** on order (up to ~20% improvement in fuel efficiency)
- Invested in **winglets on 330+ aircraft** (~3-5% improvement in fuel efficiency)
- **Global solution** - supports and involved in international approach to aviation emissions*
- Bringing cost-competitive, **commercial scale biofuel to regular service** as early as 2014
- **24%** electrically or alternatively fueled GSE
- **Green design & construction** in facilities and terminals
- **20 million pounds recycled** in last six years
- Launched **Sustainable Supply Chain** initiative



*Subject to government investment in technology, operations & infrastructure improvements

Our Recipe for Sustainability Success

Focus: Make Some Progress

AIRLINE
AIRPORT
MANUFACTURER
AIR TRAFFIC CONTROL
NGO
COMMUNITY
CUSTOMER
GOVERNMENT
REGULATOR
INNOVATOR
AGRICULTURE
INVESTOR

Overlapping Interests

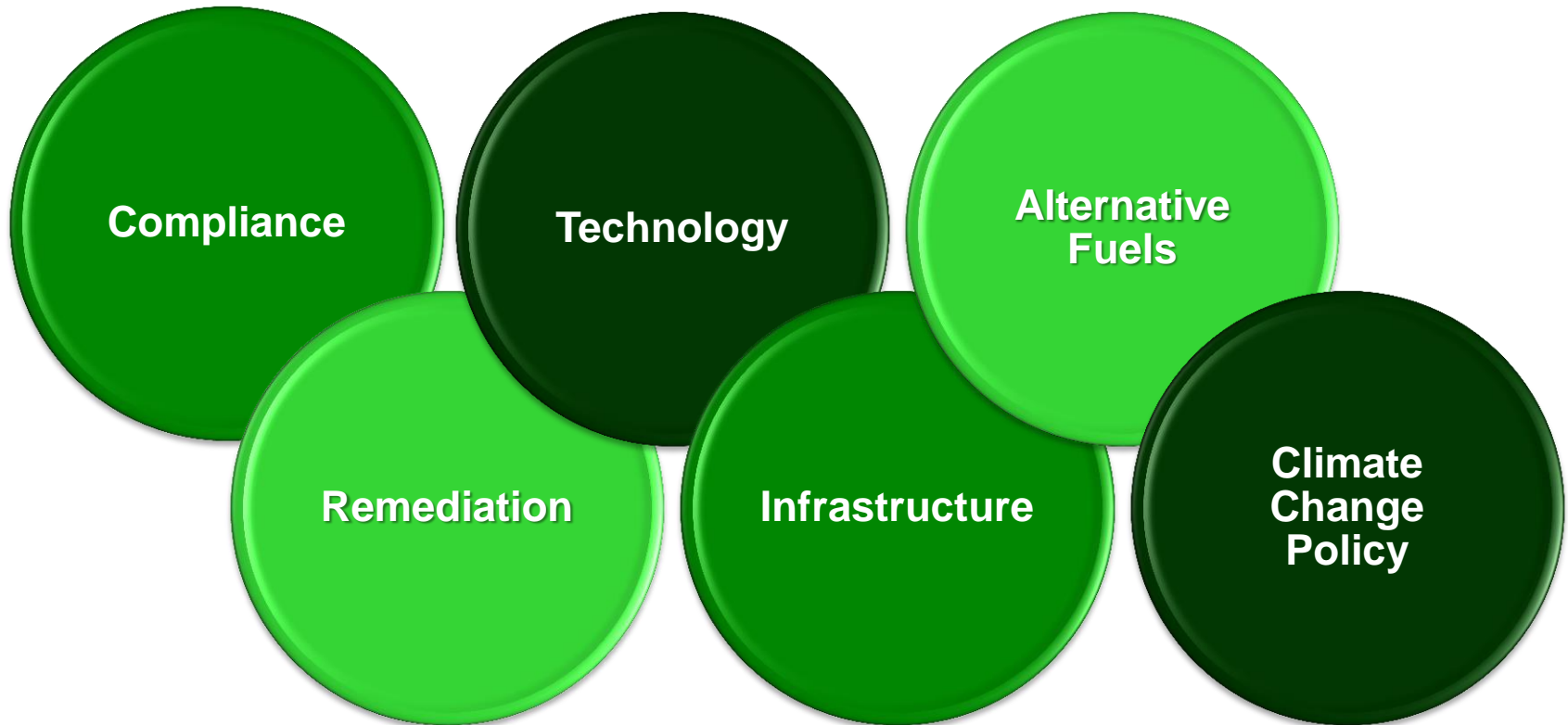


**Willingness to
Collaborate**

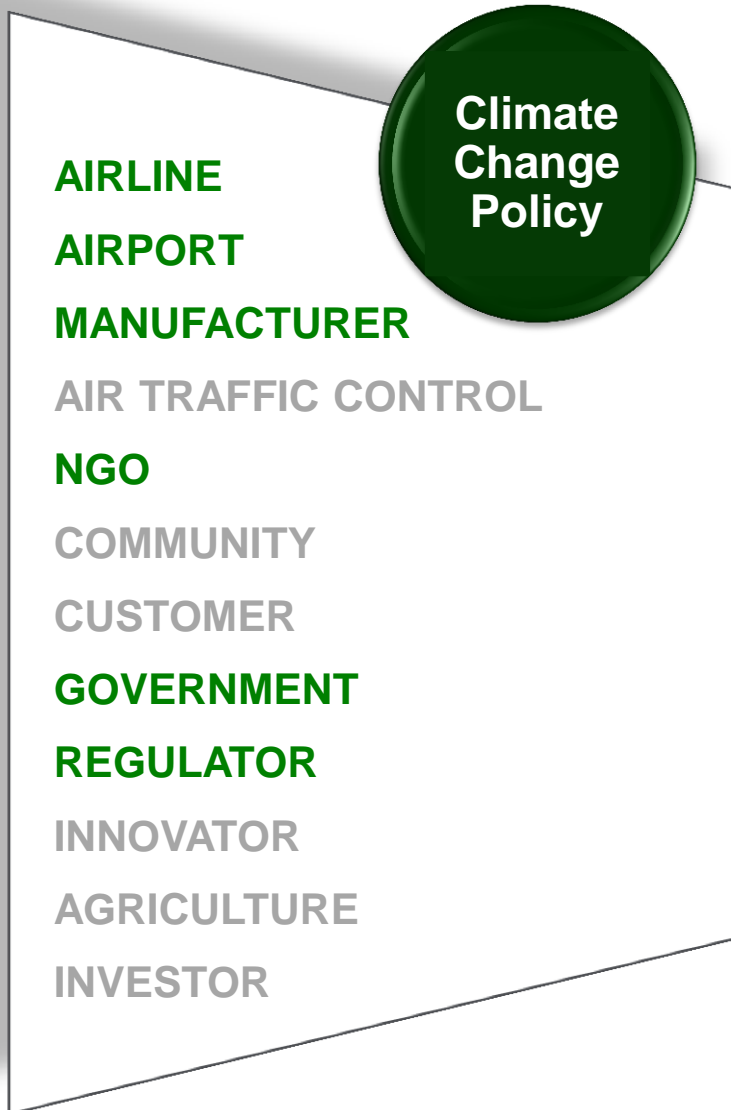


Risk/Reward Sharing

Collaboration – Value Across All Environmental Facets



Collaboration to Achieve Global Policy on Climate



- **Industry goals (2009)**
- **Historic industry (ATAG) agreement on Market Based Measure (Jun 2013)**
- **ICAO Resolution (Oct 2013)**

Collaboration to Advance Alternative Fuels



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- **CAAFI**
- **Farm to Fly**
- **Defense Production Act**
- **Renewable Fuel Standard**
- **SAFN**
- **MASBI**
- **UA and Alt Air Deal**

Midwest Aviation Sustainable Biofuels Initiative (MASBI)

40+ Global and Regional Leaders

Steering Committee



Program management provided by:



Stakeholders

Air BP
Airlines for America
Algal Biomass Organization
Argonne National Lab*
Buckeye Partners
CATF
Carbon War Room
Civic Consulting Alliance
Commercial Aviation Alternative Fuels Initiative
Consumer Energy Alliance
Elevance
Environmental Law and Policy Center
Federal Aviation Administration
Fredrickson & Byron P.A.
Gas Technology Institute
GE Aviation
Gevo
Global Clean Energy Holdings
Illinois Farm Bureau Federation
Iowa Farm Bureau Federation
Iowa State University
Kansas Alliance for Bioenergy
Kansas State University

LanzaTech
Magellan Pipeline
Metron Aviation
Metron Aviation
Midwestern Governors Association
Monsanto
National Wildlife Federation
Natural Resources Defense Council
Northwestern University
Ohio Aerospace Institute
Purdue University
SkyNRG
Solazyme
Sun Grant Initiative / SDSU
U.S. Department of Agriculture
U.S. Department of Navy
University of Illinois
University of Nebraska-Lincoln
Virent
Western Illinois University
World Wildlife Federation

Factors Influencing Commercial Development



MASBI Outcomes – Key Recommendations to Further Accelerate Commercialization

Key Recommendations from MASBI:

1. Agricultural innovation
2. Tailor agriculture products for jet-fuel production
3. Expedite approvals by the ASTM and the EPA
4. Allow producers to optimize product portfolios
5. Balanced risk and reward in deal structures
6. Create pool of capital to invest in biofuels
7. Longer-term policies needed to enable investment and production
8. Level the policy playing field for advanced biofuels
9. Fully fund the Defense Production Act Title III for the production of biofuels
10. Incorporate sustainability standards and advance certification



Program management provided by:
 **OLIVER WYMAN**



Our Recipe for Sustainability Success...

Better to Make Some Progress than None

Overlapping Interests

Find the Intersection

Willingness to
Collaborate

Share the Leadership

Risk/Reward Sharing

Achieve a Balance