



“Benchmarking of Biodiesel
Standardization in East Asia”
by Shinichi GOTO

REACTIONS
by

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INTRODUCTION

- As a background, during the 2nd EAS Energy Minister's meeting held in Bangkok, Thailand the Ministers lauded the continuous efforts of EAS Energy Cooperation Task Force (ECTF)
- To advance the implementation of the three identified energy cooperation work streams and one of these was the biofuels for transport .



INTRODUCTION

- The Ministers reaffirmed their strong interest on biofuels by endorsing the “Asia Biomass Energy Principles” for production and utilization of environmentally and socially sustainable biomass energy in the region.
- Realizing the important role of international cooperation, the Ministers welcomed the formal establishment of ERIA
- Hence the formation of several Working Groups and one of those is the “Working Group for the Standardization of Biofuel for Vehicles in East Asia”



OVERALL OBSERVATIONS

- Transport sector is one of the heaviest consumer of fossil fuel.
- There is a need to find an alternative fuel in this sector due to the depleting supply of fossil fuel, increasing prices of oil products and concern on the environment
- East Asian countries show growing interest on biofuels including biodiesel to address energy security, diversification of transport fuel and concern on climate change
- Hence, there is a need to develop biodiesel standard in East Asia.



OVERALL OBSERVATIONS

- Biofuels standard will ensure quality biofuels in the market for consumer protection
- Ensure engine performance by eliminating fuel impurities and the oxidation
- Better environmental protection
- Compliance with the market demand



OVERALL OBSERVATIONS

- The Benchmarking of Biodiesel Fuel Standardization of the WG has several strengths.
- The WG used the European Standard (EN142214) as a comprehensive specification for FAME.
- The WG considered the peculiarities of each member country in the effort of standardization particularly:
 - Country policy on biofuels
 - Feedstock for biodiesel production



OVERALL OBSERVATIONS

- Australia and New Zealand – Tallow and used cooking oil
- China – Jatropha
- Malaysia – Palm oil
- Philippines – Coconut and Jatropha
- Korea – Soybean oil and waste cooking oil



OVERALL OBSERVATIONS

- ❑ Regulations and incentives on biofuels utilization
- ❑ Current level and effort on standardization
 - Concept of BDF standards and regulations
 - Standards of BDF
 - Specification values
 - Test methods



OVERALL OBSERVATIONS

○ **Current level and effort on standardization**

- ✓ Fuel quality and standard based on Australian Law
- ✓ China's biofuel standard based on ASTM D6751-03a
- ✓ Indonesia's draft standard based on ASTM D6751-02 and EN14214-02
- ✓ Malaysia's based on European EN 14214 as basis
- ✓ New Zealand's voluntary biodiesel standard



OVERALL OBSERVATIONS

Items	US ASTM D6751	EU EN 14214	Japan JASO M360	EAS-ERIA BDF Standard
Free Glycerol Mass%	<0.02	<0.02	<0.02	<0.02
Sulfated Ash Mass%	<0.02	<0.02	<0.02	<0.02
Water Content ppm	<0.05 (vol%)	<500	<500	<500
Oxidation Stability, hr	>3	>6	Meet diesel specs	≥10



OVERALL OBSERVATIONS

- Fuel with excessive glycerol can plug fuel filters and cause combustion problem
- Excessive ash in the fuel can lead to engine deposits and high wear levels
- Excessive water content contributes to corrosion of fitting parts in the fuel in fuel injection system
- Oxidation stability is at 10 hrs due to tank material used in Asia



OVERALL OBSERVATIONS

- Consideration for various oils such as
 - ✓ low viscosity and flashpoint for coconut oil
 - ✓ Iodine number for soybean oil
- Oxidation stability on fuel tanks made of metals being different from plastic or resin material in Europe



OVERALL OBSERVATIONS

- All in all the benchmarking of standard of biodiesel fuel in East Asia:
 - will harmonize the biodiesel standards in East-Asia
 - facilitate the use and trading of good quality biodiesel
 - for better engine performance, better environment and consumer protection.



Thank you