

Thai Biodiesel Industry in ASEAN: Opportunities or Threats

Testing of High Quality Biodiesel Utilization in Engine

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Monday 1 April 2013 (9:00 – 12:00hr)

Convention Center room CC-305, Thailand Science Park, Pathumthani



Outline

- Introduction on durability test
- Vehicle test
 - Plan
 - Midterm results
 - Future task



Introduction

New Fuels

Properties ✓

Engine Test

Vehicle Test

Performance/Fuel consumption ✓

Emissions ✓

Combustion Characteristics ✓

Durability Test

Engine

Vehicle



Vehicle Test

Fuel: B10

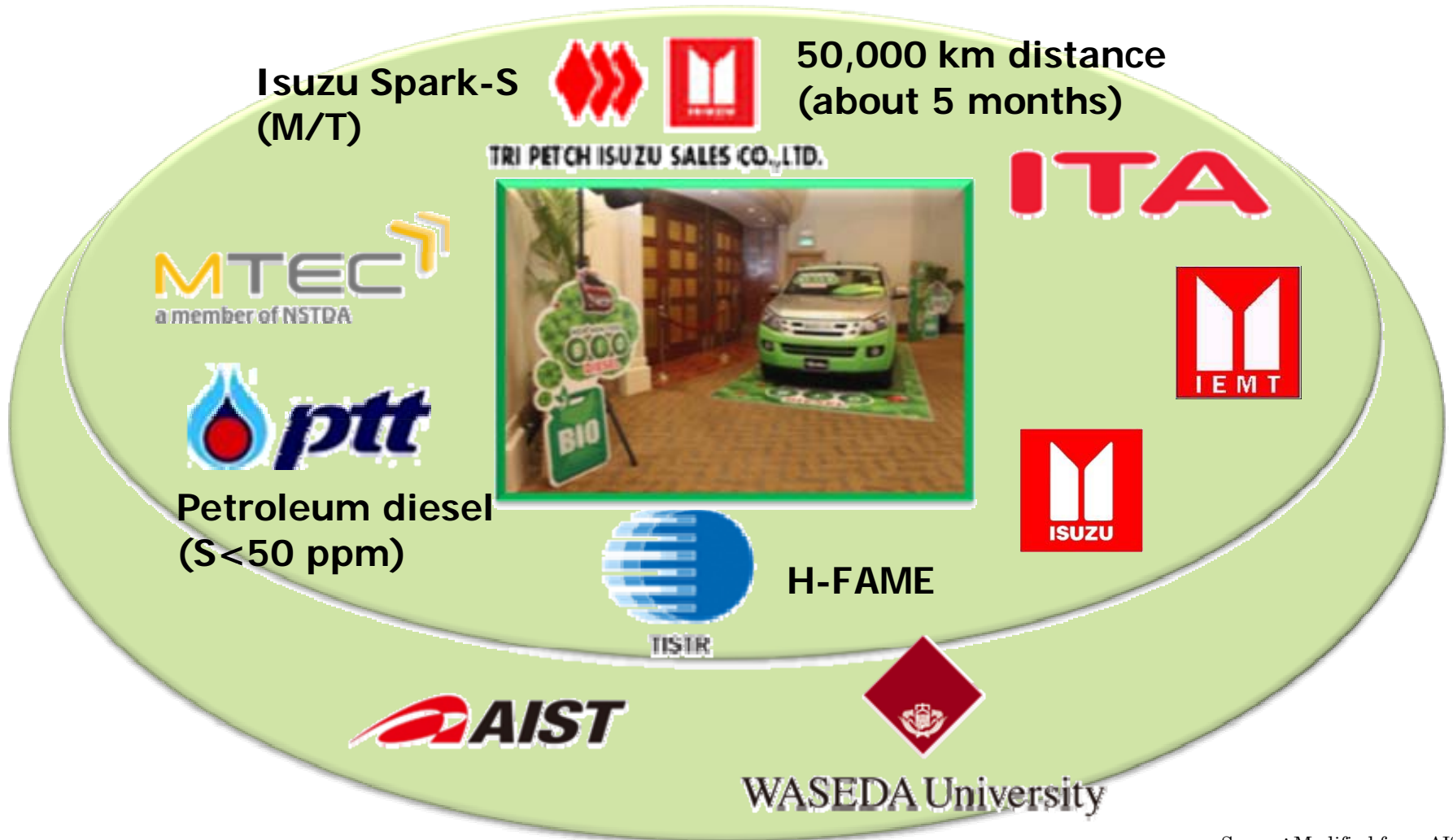
Vehicle: Isuzu All New D-Max Spacecab

**Engine model : 2.5L Diesel, DOHC 4-cylinder,
commonrail, M/T 4x2**

Test Protocol: Isuzu



Collaboration network of vehicle test using B10



Source: Modified from AIIST

Thailand Institute of Scientific and Technological Research (TISTR)



30 Jul 2012

Vehicle Test Plan

Field test

- Performance
- Fuel consumption

On road test

- Driving data collection
- Problem collection
- Maintenance data collection

Lube Oil Sampling

Accumulate distance (km.)

10,000

20,000

30,000

40,000

50,000



Engine disassembly investigation

Chassis Dynamometer

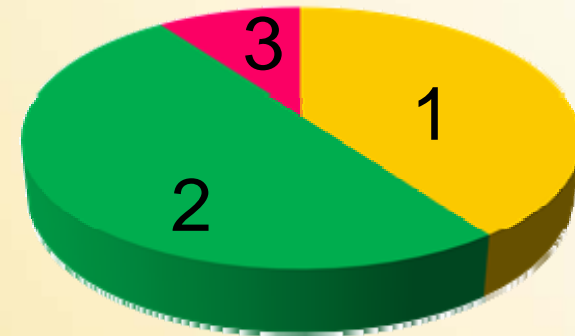
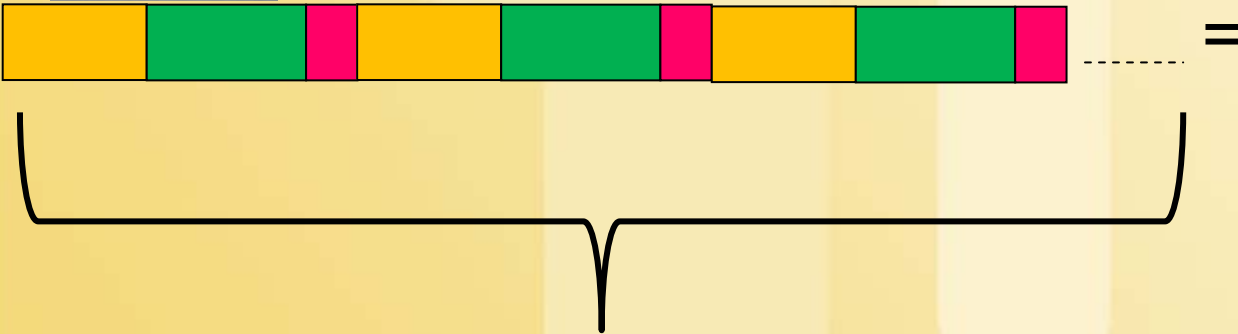
- Emissions (THC, NO_x, CO, CO₂)
- Performance



Vehicle Test Plan

On road test condition

1. Hi speed + Mountain
2. Hi speed + Suburb
3. Hi speed + Urban



50,000 kilometers



Actual starting date: 1 Nov 2012







Conclusions

30,000 km accumulated distance

- Road test has followed well with the plan
- Fuel consumption is in the normal range
- LOC is still over 10,000 km/L

25,000 km Check

- Except for NO_x , exhaust emissions are slightly higher than the initial test.
- All emissions are lower than EURO 3 standard
- Max power and torque are slightly better than the initial test.
- Dynamic vehicle performances are slightly better than the initial test

Future Tasks

Continue on-road test till mid April 2013



Thank you

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