

Fuel Regulation Amendment for Utilizing Bio Fuels in Japan

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- **Fuel Quality Regulation in Japan**
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Background

- Bio fuel has been discussing from the view point of **Global Warming** and **Energy Security** in Japan.

The latest government action

- Kyoto Protocol Target Achievement Plan
 - ✓ Tentative target **500,000** kL of bio fuels till 2010.
 - ✓ PAJ*) has announced the use of ethanol by **210,000** kL as **ETBE**.
- New National Energy Strategy
 - ✓ Target ratio of fossil fuels in transportation section is set up to **80%** in 2030 from almost 98% in 2004.

*) PAJ = Petroleum Association in Japan

Background *(Cont'd)*

- Fuel Policy Committee suggested that fuel quality regulation should be reviewed for future utilization of bio fuels in 2002.
- METI established the technical committee to decide the specification scientifically.
- Schedule
 - ✓ Ethanol
 - Study :Mid of '02- Early '03
 - Issue :Aug. '03
 - ✓ FAME
 - Study :Mid of '04- Mid of '06
 - Issue :End of '06 (plan)

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Why fuel quality regulations?

- **Car protection (safety)**
Cars are designed assuming a certain fuel quality
- **Environment protection**
Inappropriate fuel deteriorates exhaust emission
- **Consumer protection**
Consumers cannot distinguish fuel qualities
- **Incentive to sell low quality fuels**
Fuel dilution can also “dilute” high tax on fuels



Fuel quality **at the pump** of GSs should be regulated and monitored

Import deregulation made stricter control necessary

- **Before 1996:**
 - ✓ **Only several companies could supply fuels**
 - **Refining capability was a requisite to import petroleum products**
 - ✓ **The several companies were controlling supply chains**

↓

- **Since 1996:**
 - ✓ **Regulations were relaxed: Any company can import**
 - ✓ **Fuels from various sources came into market**
 - ✓ **Stricter control of fuel quality became necessary**

Regulations outline

“ Law for Quality Control of Gasoline etc.”

- ✓ **Gas stations (GSs) are required to register to METI**
 - **About 50,000 GSs**
- ✓ **Quality standards (mandatory and voluntary) for gasoline, diesel oil, and kerosene**
- ✓ **GSs are required to check quality of gasoline once in:**
 - **10 days**
 - **a year (if supply chain is approved by METI)**
- ✓ **Check work can be outsourced to the 4 registered testing organizations, including NPA**

Fuel Quality Inspections

- **National Petroleum Association** (non-profit org.)
 - ✓ visits each of the 50,000 GSs nationwide.
 - ✓ obtains samples of fuels
 - ✓ inspects fuels and report violation cases to METI
- **Economy and Industry Bureaus (EIBs)**
 - ✓ regional branches of METI.
 - ✓ visit GSs, according to the NPA report, and inspect the fuel quality,
 - ✓ cooperate with METI HQ, police dept., and fire dept.

If the regulation is violated...

- **Penalties, when EIBs find quality violations**
 - ✓ **METI instructions: to follow the regulation if disobeyed, announcement to public by METI**
 - ✓ **METI order: to suspend business for up to 6 mo.**
 - ✓ **fine up to JPY 1MM/ imprisonment up to 1 yr.**
- **Most of the violations are careless cases**
 - ✓ **They follow the METI instructions immediately**
 - ✓ **Some cases are on purpose**

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Basic Policy for Amendment

- No harm on vehicles existed in the market from the view point of environment and safety.
- For Ethanol Blending
 - ✓ Acceptable concentration was discussed because ethanol is pure single chemical.
- For FAME Blending
 - ✓ FAME concentration was set at up to 5%.
 - ✓ Properties to be added and the limit were discussed after blending FAME because FAME properties are quite different by raw material and refining process.

Quality standard items for gasoline

Items	Level
Lead	Not detectable
Sulfur	50 ppm max ^{*1)}
MTBE	7 v% max
Benzene	1 v% max
Kerosene	4 v% max
Methanol	Not detectable
Existent Gum	5 mg/100mL max
Color	Orange
Ethanol	3 v% max
Oxygen	1.3 wt% max
RVP	44 - 65 kPa max (summer)
Octane Number	89 RON min (Regular) ^{*2)}
Distillation	75 – 110 deg.C (T50) ^{*3)}
Copper corrosion	1 max
Oxidation Stability	240 min. min
Density	0.783 g/cm ³ max

mandatory

amended

Note : *1) 10ppm max ('08), *2) 96 RON min for Premium, *3) IBP, T10, T90, FBP and Residue are also specified.

Quality standard items for Diesel

Items	Level
Sulfur	50 ppm max ^{*1)}
Cetane Index	45 min
T90	360 deg.C max
FAME content	5 max
Methanol	TBD
Trigriceride	TBD
TAN	TBD
Individual Organic Acid	TBD
Oxi. Stability (Sludge)	TBD
Oxi. Stability (Acid)	TBD
Linolenic Acid ME	TBD
Carbon Residue	TBD
Kinematic Viscosity	1.7 mm ² /s min
Flash Point	45 deg.C min.
Pour Point	Depend on region and month
CFPP	

mandatory

Discussing
to be
amended

Note : *1) 10ppm max ('07)

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