

# Downstream Oil Industry Resiliency: Continuity of Business and Rebuilding the Community

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Investment Forum and Stakeholders Conference

Theme: E-POWER MO!

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# Presentation Outline

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- I. Standards Development
  - A. Legal Mandate
  - B. Policy Guide
  - C. How we do it
  - D. What we have done so far
  - E. Moving beyond the standard
    - 1. Code of Safety Practices
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# Standards Development

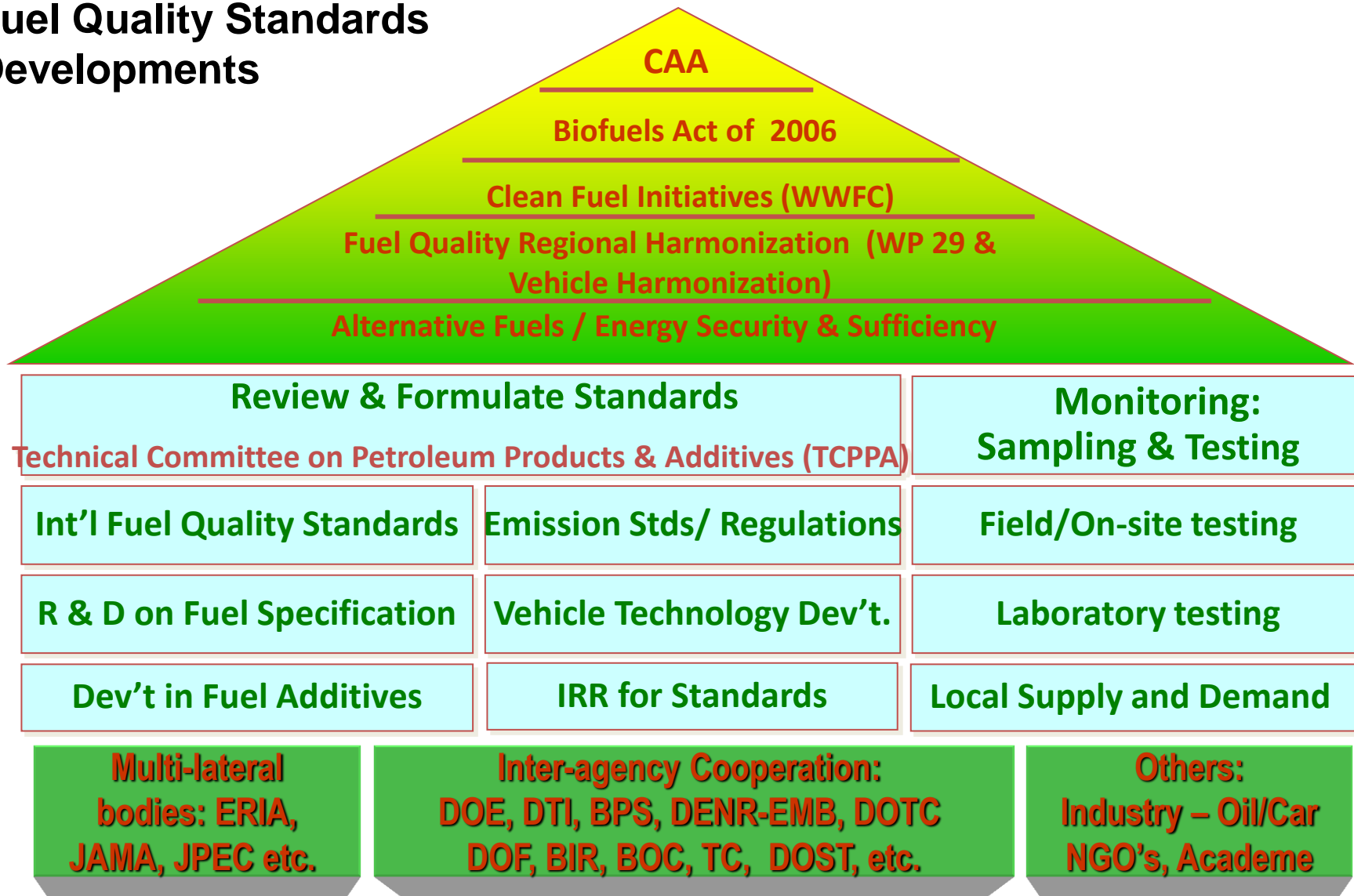
## Legal Mandate

Fuel Quality Standard Setting	• Standardization Mandate of RA 8749 / RA 9637 / RA 8479
Petroleum Facilities Standard Setting	• MOA with Bureau of Philippine Standards (BPS)
Fuel Quality Monitoring	• Depot product sampling (RA 8479 /RA 8749 /RA 9367)
Bioethanol Monitoring	• Imported Bioethanol Denaturing (RA9367/ EO 449 (Revenue Regulation))
Additive Registration	• RA 8479 / RA 8749
Others (Compliance to Reportorial Requirements)	• Registration & Processing RA 8479 / RA 8749/RA9367



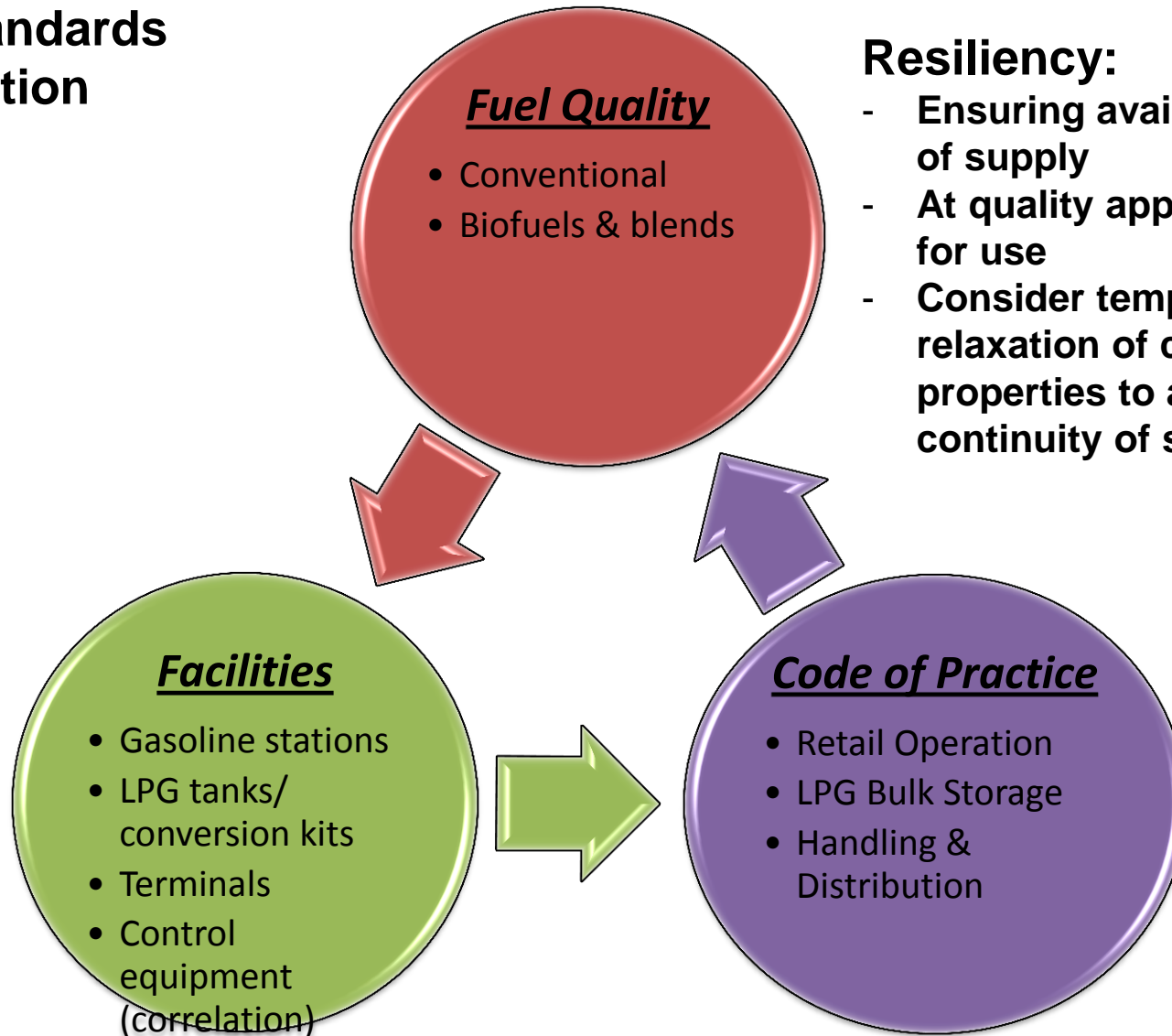
# Policy Guide - Cleaner Fuels

## Fuel Quality Standards Developments



# Policy Guide

## Quality Standards Harmonization



## Resiliency:

- Ensuring availability of supply
- At quality appropriate for use
- Consider temporary relaxation of certain properties to achieve continuity of service



# How we do it

## Standardization Technical Committees

### 1. Technical Committee on Petroleum Products and Additives (TCPA)

**Chairs** : DOE and DENR

#### Members

- **Government** : DOE, DENR, BPS-DTI, ITDI-DOST
- **Fuel Sector** : Petron, Shell, Chevron, PIP, IPPCA
- **Engine Suppliers/Manufacturers**: CAMPI, AMMDA, MDPPA
- **Consumer Sector/NGO** : FilCar Foundation, AWMA
- **Academe** : UP-NCTS, AIPSI

### 2. Technical Committee on Petroleum Processes and Facilities (TCPFF)

**Chairs** : DOE

#### Members

- **Government** : DTI-BPS, DENR-EMB, DILG-BFP, DOLE (BWC, OSHC)
- **Testing** : DOST-MIRDC, UP
- **Industry** : Petron, Chevron, Shell, Total, IPPCA (Seaoil, TWA)
- **Prof. Assoc.** : SOPI



# What we have done so far

## Fuel Quality Standards Development (Gasoline)

PROPERTY	GASOLINE (E0)					E-GASOLINE (E10)			
	CLEAN AIR ACT			POST CLEAN AIR ACT		BIOFUELS ACT			
	2000	2001 <sup>a</sup>	2003	2005	2009	2006	2009	E10	EURO 4-PH
Distillation temperature, 0C at:									
10% recovered, max	70	70	70	70	70	70	70	70	70
50% recovered	75-121	75-121	75-121	75-121	75-121	70-110	70-110	70-110	70-110
90% recovered, max	180	180	180	180	180	180	180	180	180
End point, max	221	221	221	221	221	215	215	215	215
Residue, % vol., max.	2	2	2	2	2	2	2	2	2
Hydrocarbons:									
Alcohols (C <sub>2</sub> to C <sub>4</sub> ), % vol., max. <sup>b</sup>	10	10	10	10	10	8.4	9.0-10	9.0-10	9.0-10
Aromatics, % vol., max.	45	45	35	35	35	35	35	35	35
Benzene, % vol., max.	4	4	2	2	2	2	2	2	2
Ethers (e.g. MTBE), % vol., max.	10	10	10	2 <sup>c</sup>	2 <sup>c</sup>			2 <sup>c</sup>	2 <sup>c</sup>
Lead Content, g/L, max.	0.013	0.013	0.013	0.005	0.005	0.005	0.005	0.005	0.005
Octane rating, min.									
Research Octane Number (RON)	93	81/87/ 93/95	81/87/ 93/95	81/93/ 95	81/93/ 95	93	93/95	91/95/ 97	91/95/97
Anti-Knock Index (AKI)	87.5	87.5	87.5	87.5	87.5	87.5	87.5	87.5	87.5
Vapor Pressure, @ 37.80C, kPa, max.	62	85/62	85/62	85/62	85/62	62	62	68/62	68/62
Sulfur, % mass, max.	0.10	0.2/0.1	0.2/0.1	0.05	0.05	0.5	0.05	0.05	0.005

Mandatory Implementation by  
Jan. 1, 2016 per DOE DC No.  
2015-06-0004

<sup>a</sup> multi-grade gasoline <sup>b</sup> ethanol <sup>c</sup> allowable contamination tolerance only. Intentional addition not permitted for both imported and locally-produced gasoline

Note: E10 standards also provide minimum reference specifications for base gasoline.



# What we have done so far

## Fuel Quality Standards Development (Automotive Diesel)

PROPERTY	CLEAN AIR ACT				BIOFUELS ACT						
	DIESEL OILS				FAME BLENDED DIESEL OIL						
	2000		2003		2007 (B1)		2009 (B2)		2012 (B2)		EURO 4- PH
ADO	IDO	ADO	IDO	ADO	IDO	ADO	IDO	ADO	IDO		
Calculated cetane index min. Or	48		50		50	50	50				
Cetane number, min. Or	48										
Derived cetane number, min .											
Carbon residue on 10% Distillation residue, % mass, max.	0.15	0.35	0.15	0.35	0.15	0.35	0.15	0.35	0.15	0.35	.015
Color, ASTM			2.5 max.	5.0 min.	2.5 max.	5.0 min.	2.5 max.	5.0 min.	2.5 max.	5.0 min.	2.5 max.
Copper strip corrosion, 3h at 50 °C, max.			No. 1	No, 1	No. 1	No. 1	No. 1	No. 1	No. 1	No. 1	No. 1
Density at 15 °C, kg/L	0.86 50	0.880	0.8600	0.8800	0.820- 0.860	0.880 max.	0.820-0.860 max.	0.820- 0.860 max.	0.820- 0.860 max.	0.880 max.	0.820- 0.860
Distillation, 90% recovered, °C, max	375	Report	370	Report	370	Report	370	Report	370	Report	370
<b>FAME <sup>a</sup>, content, % volume.</b>					<b>0.7-1.2</b>	<b>0.7-1.2</b>	<b>1.7-2.2</b>	<b>1.7-2.2</b>	<b>1.7-2.2</b>	<b>1.7-2.2</b>	<b>1.7-2.2</b>
Flash point, Pensky-Martens, °C, min.	52.0	52.0	55.0	55.0	55	55	55	55	55	55	55
Kinematic viscosity, mm <sup>2</sup> /s at 40°C	2.0- 4.5	2.0- 4.5	2.0- 4.5	1.7- 5.5	2.0-4.5	1.7-5.5	2.0-4.5	1.7-5.5	2.0-4.5	1.7-5.5	2.0-4.5
Lubricity, (HRFF), wear scar dia. @ 60 °C, micron, max.			460		460		460		460		460
<b>Methyl Laurate (C12 ME), % mass, min</b>					<b>0.4</b>	<b>0.4</b>	<b>0.8</b>	<b>0.8</b>	<b>0.8</b>	<b>0.8</b>	<b>0.8</b>
Sulfur, % mass, max.			0.05	0.03	0.05	0.30	0.05	0.30	0.05	0.30	<b>0.005</b>
Water, % volume, max. <sup>b</sup>					0.05		0.05		0.05		0.05
Water and sediment, % volume, max.	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10

Note: FAME blended diesel oils also provide minimum reference specifications for base diesel





# What we have done

## Developed/Promulgated Standards (PNS)

### A. Biofuels:

- PNS/DOE QS 002:2015 – Coconut Methyl Ester (B100)
- PNS/DOE QS 007:2014 – Anhydrous Bioethanol & Bioethanol Fuel (E100 & E98)

### B. Conventional Petroleum:

- PNS/DOE QS 003:2003 – Two-stroke (2T) Lubricating Oils
- PNS/DOE QS 005:2005\* - Liquefied Petroleum Gases (LPG)
- PNS/DOE QS 006:2005 – Fuel Oils (Bunker)
- PNS/DOE QS 009:2007 – Kerosene
- PNS/ASTM D 910:2010 - Aviation Gasoline Grade 100LL

### C. Test Methods:

- PNS/DOE TM 01:2015 – Determination of Lauric Acid Content in Fatty Acid Methyl Esters (FAME) by Gas Chromatography
- PNS/DOE TM 02: 2009 – Separation of Fatty Acid Esters (FAME) from FAME-Blended Diesel Oils by Liquid Adsorption Chromatography and Characterization by Gas Chromatography

- PNS/DOE FS 1-4:2005 - Retail Outlets
  - ✓ PNS/DOE FS 1-1:2005 – Health, Safety and Environment
  - ✓ PNS/DOE FS 1-2:2005 – Under ground Storage Tank
  - ✓ PNS/DOE FS 1-3:2005 – Piping System
  - ✓ PNS/DOE FS 1-14:2005 – Dispensing Pumps
- PNS/DOE FS 2:2006 - LPG Refilling Plant – General Requirement
- PNS/DOE FS 3:2013 - Auto -LPG Dispensing Station
- PNS/DOE FS 4:2007 - Liquid Petroleum Products (LPP) Depot
- PNS/DOE FS 5:2009 - Storing and Handling of CME and CME-Blends Petroleum and in LPP Depot
- PNS/DOE FS 6:2011 - Storing and Handling of E-Gasoline in Retail Outlet
- PNS/DOE FS 7:2011 - Storing and Handling of B5 in Retail Outlet
- PNS/DOE FS 8:2009 - Transportation of Petroleum Products by Pipeline (on-going)
- PNS/DOE FS 9:2015 - Code of Safety Practice in Auto-LPG Dispensing Station



# What we have done

## On-going Standards Development (DPNS)

### 1. Fuel Quality Standards

#### A. LPG review/update of 2005 specs\*

- DPNS/DOE QS 005:2016 – Liquefied Petroleum Gases (LPG) as non-motor fuel
- DPNS/DOE QS 012:2016 – Liquefied Petroleum Gases (LPG) as motor fuel

*(\*endorsed to BPS and awaiting for adoption and promulgation as PNS)*

#### B. E10 & B2 review/update of 2012 specs\*

- DPNS/DOE QS 008:2017 – E-Gasoline Specification (E10)
- DPNS/DOE QS 004:2017 – CME-Blended Automotive Diesel Oil (ADO)
- DPNS/DOE QS 013:2017 – CME-Blended Industrial Diesel Oil (IDO)

*(\*in general circulation for 2 months until July 31, 2017)*

### 2. Facility Standards

#### A. PNS/DOE FS 10:2017 – Code of Safety Practices for LPP in Retail Outlet (new)

*(\*endorsed to BPS and awaiting for adoption and promulgation as PNS)*

#### B. DPNS/DOE FS \_\_ - Code of Safety Practices for and LPG Refilling Plant (new)

*(\*on-going deliberation/consultation with LPG Association)*



# Moving beyond the standard

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- The oil companies or the industry to collectively help the government stop unfair business practices such as:
  - ✓ Illegal LPG refilling
  - ✓ Use of sub-standard or defective LPG cylinders
  - ✓ Poorly maintained operated retail outlets
  - ✓ Buying from bote-bote or LPG-refilled tin canisters
  - ✓ “pa-ihì”
- Allow the public to also know the other side of the “Oil Company” and not just about their prices
  - ✓ Encourage CSR
  - ✓ Include their social or environmental advocacies in their ad campaigns or messaging to the public
  - ✓ See the youth as a separate and distinct segment of the society and support advocacies that relate to them



# Thank You!

