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Harmonization of Fuel Standards
Experiences outside Asia

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Harmonization of Fuel Standards

- **Two cases will be discussed**
- **European Union**
- **Latin America and Caribbean Regions**
- **Different socio - economic conditions and approaches will be reviewed**

Approach to Harmonization

Europe

Latin America

**Existing Central
planning System**

YES

NO

**Mandatory
implementation of
recommendation**

YES

NO

**Recognition of
different socio
economic situations**

Marginal

YES

Rationale for Harmonization

	<u>Europe</u>	<u>Latin America</u>
Common Environm. Objectives and policies	YES	NO to very marginal
Flexible and cost effective satisfaction of fuel demand	YES	YES
Security of supply	YES	YES

Harmonization Phases

		<u>Europe</u>	<u>Latin America</u>
Direct impact on emissions	Phase One	Implemented over past 25 years	Being implemented
Direct impact on emissions	Phase Two	Implemented since 1996-2000	Under consideration
Specs. To enable advanced vehicle technologies		Being implemented in 2000-2005	Being debated

Size of Harmonization Task in LAC (Regular Grade Gasoline)

	<u>Lowest Value</u>	<u>Highest Value</u>
RON	80	93
RVP	8.4	12.0
T50,deg.C	100	140
Sulphur, ppm	500	2500
Benzene, %	0.5	5.0

Size of Harmonization Task in LAC (Diesel Fuel Quality Range)

	<u>Lowest value</u>	<u>Highest value</u>
Cetane Index	40	48
T90, deg.C	338	370
Sulphur, ppm	500	10000

Examples of Harmonization (Unleaded Premium Gasoline)

	<u>Europe 2000</u>	<u>Europe 2005</u>	<u>LAC 2001</u>	<u>LAC 2005</u>
RON	95-98	95-98	95	95
Aromatics, %	40	35	45	45
Benzene, %	1.0	1.0	2.5	2.5
Olefins, %	18	14	25	25
Sulphur, ppm	150	50	1000	400

Examples of Harmonization (Diesel Fuel)

	<u>Europe 2000</u>	<u>Europe 2005**</u>	<u>LAC 2001</u>	<u>LAC 2005</u>
Polyaromatics, %	11	6	30*	30*
Cetane number	51	53	45	47
Sulphur,ppm	350	50	5000	2000
Length of process,years	25	30	5	10
		**under discussion	*total aromatics	

Importance of Enabling Specifications **(Latin American City Study)**

<u>Emission Control Measures</u>	<u>PM10 Emission Reduction, %</u>
Improved fuel (Cetane N. 48, Sulphur 500 ppm)	16
Advanced fuel additives	10-15
Inspection & maintenance on diesel fleet	19
EURO II & III vehicle standards	75
EURO III & IV vehicle standards	81

Major Barriers to Harmonization **(European and LAC experiences)**

- **Loss of refinery competitiveness in some countries**
- **National strategic value of local refining capacity**
- **Capital intensive refinery investments**
- **Step by step introduction of “reasonable” specifications reduces barriers**

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