ENVIRONMENTAL AND HEALTH IMPLICATIONS OF FUELS QUALITY IN GHANA

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- WORKSHOP ON LOW SULPHUR FUELS IN GHANA
- HOLIDAY INN, ACCRA

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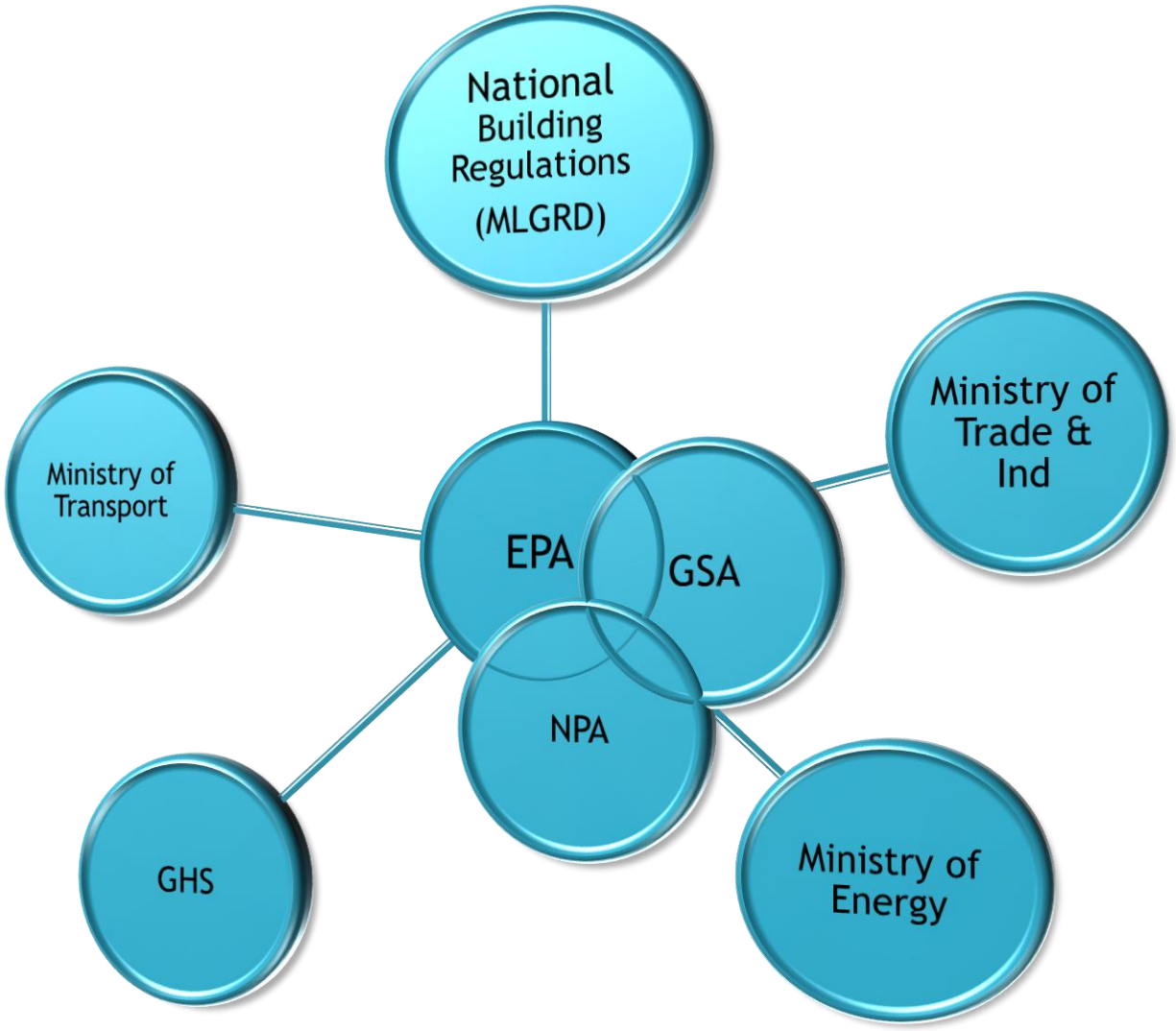
Presentation Outline

- Cross-sectoral Institutional mandates (EPA, NPA/MoE, MOH/ National Building Regulations, MoT/veh import policy, Ministry of Trade and Industries for non-mobile sources, among others)
- Major sources of Air Pollution in Ghana
- Transport and Vehicular Fleet
- Environmental implications of poor fuel consumption
- Milestone of Ambient Air Quality & Vehicular Emissions Monitoring (AQM) in Ghana.
- Health implications of exposure to emissions from consumption of poor fuel
- Current context
- The path Ways

Institutional Mandates



air pollution problems in Ghana)

Road Transport and Vehicular Fleet

- 50,000km of road network. Paved road= 9,486km and unpaved roads (feeder roads) 40,555.50km.
- Road transport accounts for about 94% of freight and 97% of traffic movement. Sector that consumes a lot of fuel.
- Increased road traffic over past 10 years

- 84.96% of vehicle fleet in Ghana are privately owned and for commercial activities

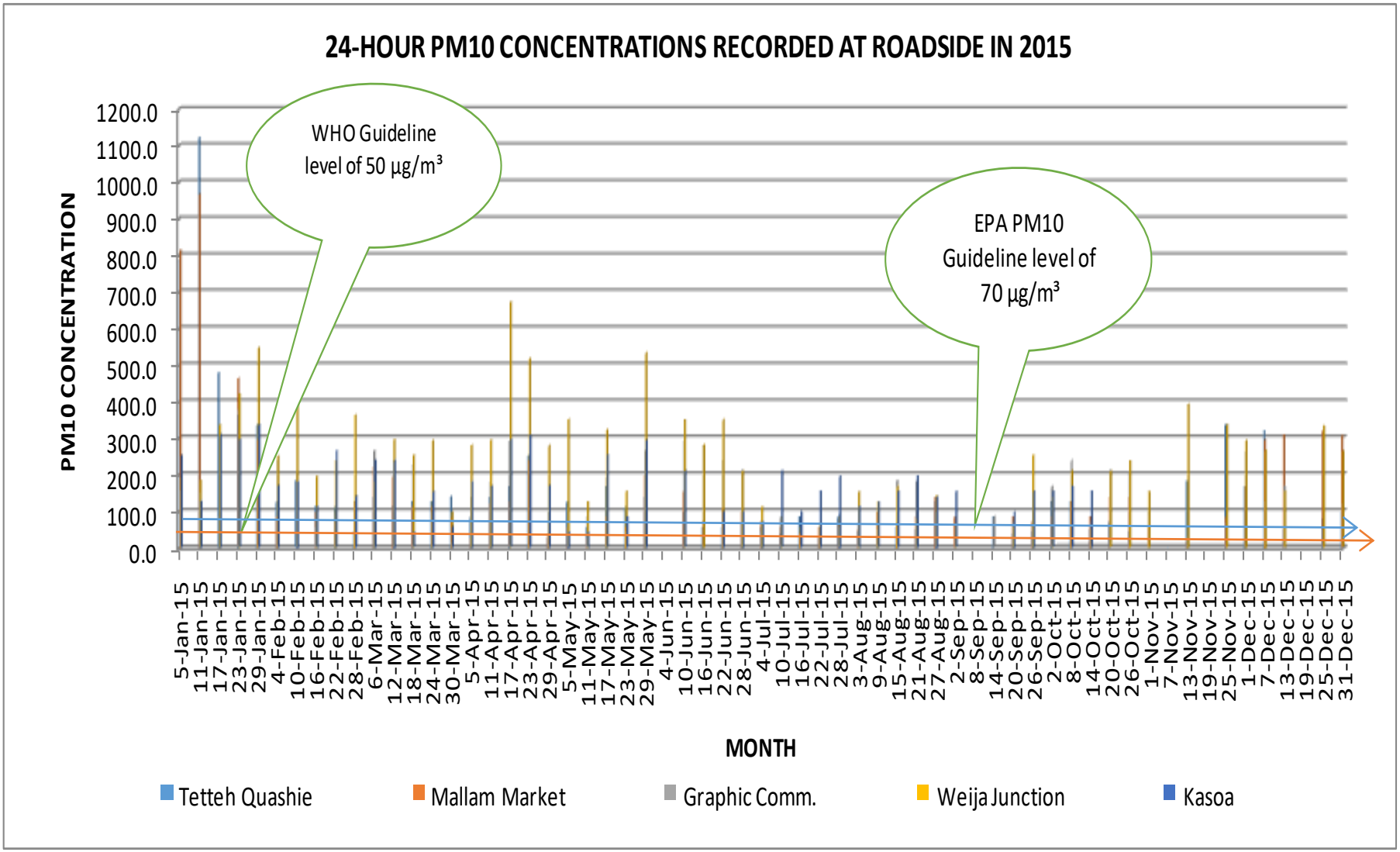
Milestone of Air Quality & Vehicular Emissions Programme in Ghana

- Air Quality Programme in 1996 by EPA; programme implementation in 1997 at Residential, commercial and Industrial areas.
- Pioneering vehicular emission monitoring in Ghana (1997-1998). Outcome: a decision for DVLA to integrate vehicle emission testing into the licensing scheme.
- A paper issued on the reduction of the age of vehicle imports into Ghana.
- Studies and Lead phase out programme in Ghana.
- EPA roadside air quality monitoring (2005-Date).
- Vehicular emissions inventory in Ghana (2006)
- Urban Transport Programme
- Roadmap to vehicular emissions and fuel economy standards in Ghana (2014-2020).
- Draft AQM and Vehicular Emission standards developed

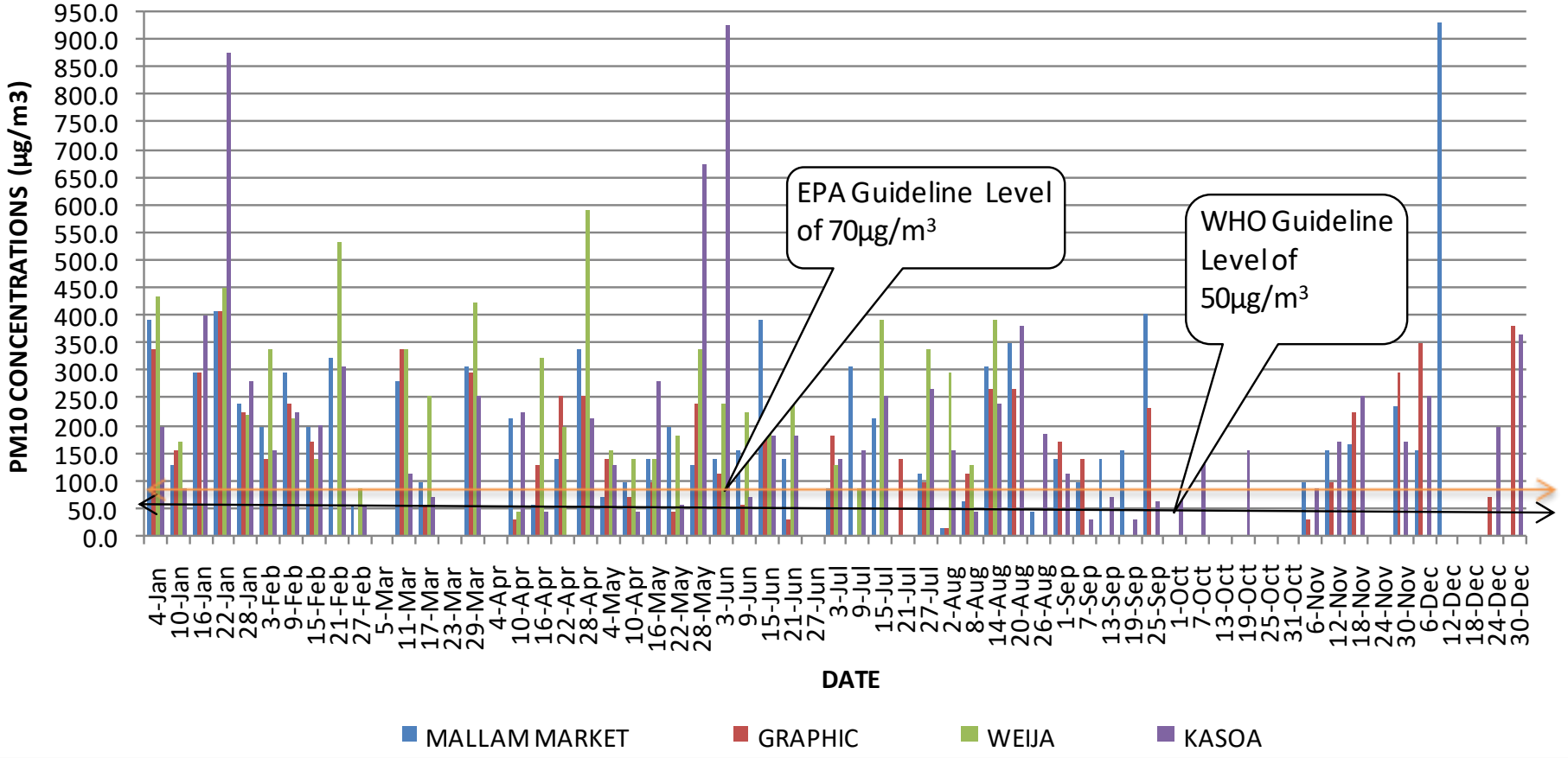
PROPOSED EPA VEHICLE EMISSION STANDARDS

FUEL	PARAMETER	RECOMMENDED LIMITS	PERIOD	AVERAGE COMPLIANCE (%)	AVERAGE NON-COMPLIANCE (%)
PETROL	CO (%)	**3.5**	PRE 1995	3,391 (89.1%)	10.9
		2.5	POST 1995	46,380 (91%)	9
	HC (PPM)	**800**	PRE 1995	3,696 (94.95%)	5.05
		300	POST 1995	49,547 (84.4%)	15.6
DIESEL	OPACITY (%)	**55**	PRE1995	1,954 (43.91%)	56.09
		40	POST 1995	1,637 (18.51%)	81.49

Road side Air Quality



Road side Air Quality



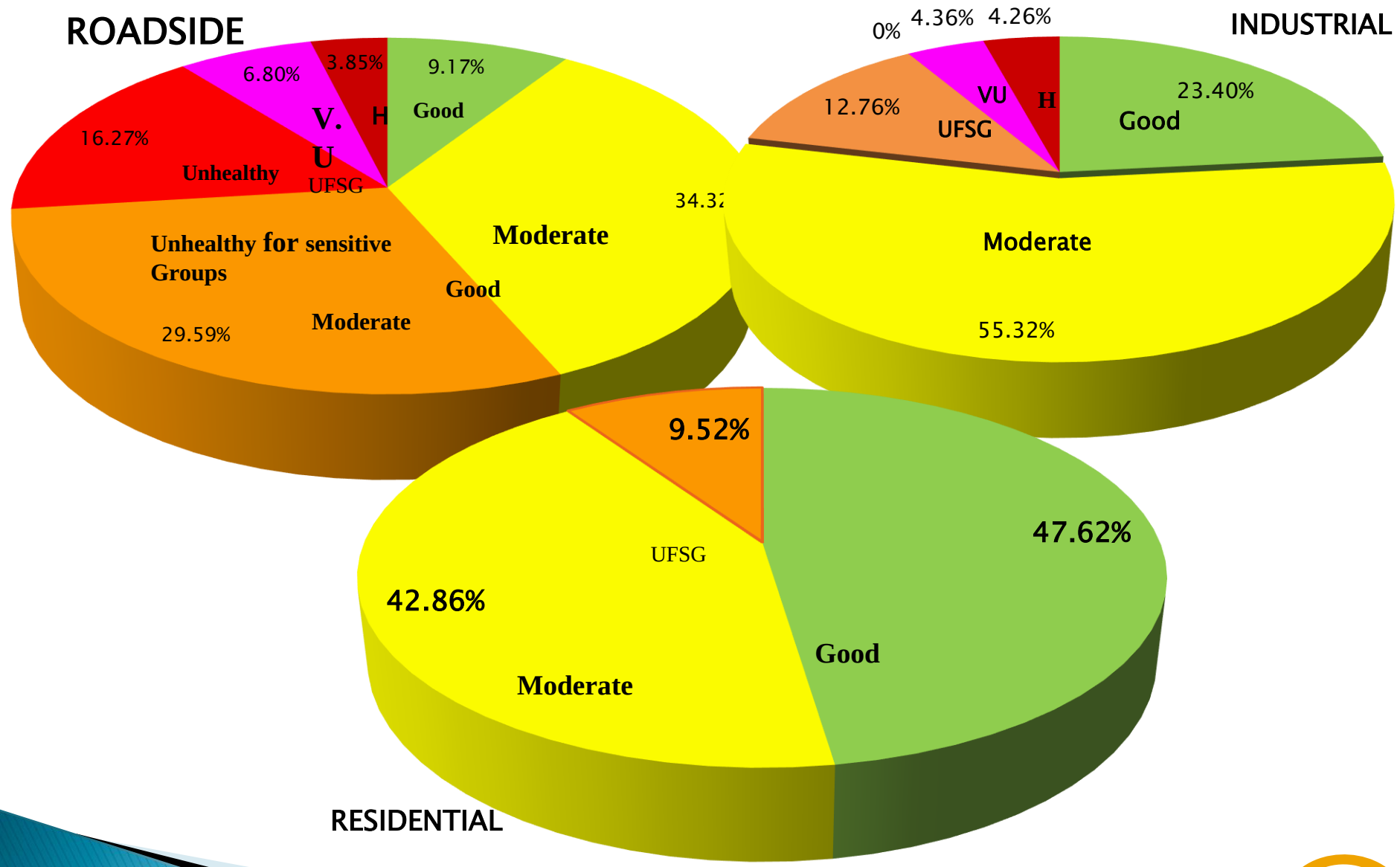
Environmental implications of consumption of poor fuel quality

- Malfunctioning of catalytic converters in vehicles.
- Reduced engine life due to use of poor quality lubricants/fuels
- Incomplete combustion of fuel leading to higher vehicular emissions (BC, CO, HC, CO_2, NO_X).
- BC, CO_2, NO_X are SLCP (GHG) have global warming potential and climate change consequences including Flooding, pest infestations, Heat waves, drought, poor plant growth and yield etc.

Environmental Implications, cont'n

- emissions affect crops via multiple pathways including radiactive forcing, CO_2 and ozone concentrations, temperature change, slow and fast precipitation changes, and agriculture yield changes.

Air Quality Index



Implications on Human well-being

- Respiratory infections from PM exposures.(second to malaria of the 10 burden of diseases in Ghana). Decreased productivity of affected persons.
- Aggravation of Asthma incidences; dizziness;
- Lung cancer[1] especially BC from exhaust of diesel engines.
- Death in extreme cases esp. from Carbon Monoxide exposure
- Decrease/Loss of agric produce and productivity which have the potential of defeating the sustainable development goals on poverty eradication.

Current Context

- Policy on taxation on imported used and over-aged vehicles and engines into Ghana. An effective deterrent??
- Continuous use of poor fuel quality (high sulphur levels)
- Congestion and poor roads, vehicle maintenance and driving pattern exacerbating emission problem.
- Long over-due national vehicular emission standards.
- funds and logistics for pollution related health studies, education/awareness creation by health workers among others.
- Refinery investment commitments

The Path Ways

- Restriction on Age limit of imported vehicles to 8 yrs; and increasing duty over CFI value (Cost of Freight and Insurance).
- Systematic plan for 50ppm sulphur level in fuels by 2020
- Public awareness & sensitisation on merit to reduce sulphur in fuels
- Implementation of roadmap to vehicular emission and fuel economy standards.
- develop standards & regulations for the fuel/vehicles technology; National vehicular emission standards
- Better investment in refineries
- Exposure Assessments: for emissions/air pollutants
- Pollution related health studies; Cost benefit in relation to GDP
- Collaborative efforts needed to reduce SLCP to help achieve<1.5 degree Celsius target by 2030s.

Let's clean the air !

A healthy fuel, environment & Public Health are what we want!

Thank You !