NATIONAL ENVIRONMENTAL STANDARDS AND REGULATIONS ENFORCEMENT AGENCY (ESTABLISHMENT) ACT, 2007

NATIONAL ENVIRONMENTAL (AIR QUALITY CONTROL) REGULATIONS, 2020

ARRANGEMENT OF REGULATIONS

Regulation:

S.I. No. 64 of 2014

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NATIONAL ENVIRONMENTAL STANDARDS AND REGULATIONS ENFORCEMENT AGENCY (ESTABLISHMENT) ACT, 2007

NATIONAL ENVIRONMENTAL (AIR QUALITY CONTROL) REGULATIONS, 2014**.**

In exercise of the powers conferred on me by Sections 34 of the National Environmental Standards and Regulations Enforcement Agency (Establishment) Act 2007 and all other powers enabling me in that behalf, I, MRS LAURENTIA LARABA-MALLAM, Honourable Minister of Environment hereby make the following Regulations-

[9th Day of December, 2014] Commencement.

PART I GENERAL PROVISIONS

1. The purpose of these Regulations is to provide for- Purpose

(a) for improved control of the nation's air quality to such an extent that would enhance the protection of flora and fauna, human health, and other resources affected by air quality deteriorations.

(b) all users, the right to-

(i) Clean air;
(ii) Utilize and benefit from all natural resources managed according to the principles of sustainable development;
(iii) Be informed of the nature and extent of the potential hazard of any activity, undertaking or project and to be served timely notice of any significant rise in the level of pollution and the accidental or deliberate release into the atmosphere of harmful or hazardous substances; and

(c) the clean-up and rehabilitation of the affected area.

2. The Scope of these Regulations include provisions for:- Scope
(a)maximum permissible limit values for certain pollutants in the air, avoid, prevent or reduce harmful effects on the environment and human health;
(b) the assessment and minimization of emissions from point, area and line sources;
(c) adequate information on emissions, ambient air concentrations of pollutants in the air, as well as air quality trends spatially and temporary; and
(d) measures to enhance improvements in emissions and ambient air quality.

3. These Regulations shall apply to Point, Mobile and Area sources of air pollution, as well as Indoor and Ambient air quality control. Application

PART II **EMISSIONS FROM STATIONARY SOURCES**	
4. – (1)Except with the written approval of the Agency, a person shall not install a new equipment as described in Schedule I to these Regulations, within the premises or facilities situate within an area designated as residential zone having demarcated boundaries which appear in the gazetted local plan prepared by the appropriate local planning authorities; (2) In the absence of such gazetted local plan described in sub-regulation (1), the premises shall mean such facilities situated at least 100 meters to the nearest dwelling house within the housing estate.	Prohibition of Installations
5. Where any accidental, emergency or unauthorized release or discharge of a contaminant into the air occurs, the person responsible for the release or discharge shall within 24 hours inform the Agency in writing as specified in Schedule II to these Regulations	Accidental Discharge of Pollutants
6. A person shall not discharge contaminants into the air from an industrial source, fuel-burning equipment and others higher than the concentrations prescribed sin Schedules III, IV, V, VI to these Regulations.	Maximum Air Contaminants Concentration
7. A person shall not import fuel-combustion equipment of any kind with two-stroke engine into the country.	Prohibition of Two-Stroke Engines
8. A person trading or operating an industry or process, in which fuel-burning equipment or industrial plant is used for the heating of metals leading to emissions of particulate matter, shall ensure that the concentration at any point in-stack of particulate matter shall not exceed the standards prescribed in Schedules V and VI To these Regulations.	Metals and Metallic Compounds
9. A person operating an industrial plant or facility shall forward to the Agency information related to its point sources emissions for criteria pollutants annually, within 3 months of the end of the calendar year.	Information on Emission for Criteria Pollutants
10. A person shall install air pollution control device to new equipment, installations or retrofit an existing facility with technology or technologies that enable that facility to meet the national air quality emissions standards.	Pollution Abatement Technologies
11. A person operating an industrial infrastructure emitting pollutants into the atmosphere shall channel each point of discharge into the atmosphere through stacks that meets Good Engineering Practice (GEP) stack height and complies with stack specification prescribed under Schedule VII to these Regulations.	Stack Specification

12. A person shall not burn or permit to burn standing biomass within its premise or neighbourhood, except where it is authorized in accordance with the National Environmental (Control of Bush or Forest fire and Open Burning) Regulations, 2011.	Prohibition to Burn
13. A person shall in accordance with the Environmental Impact Assessment Act- (a) Carry out an Environmental Impact Assessment (EIA) for new projects or modification including expansion of existing ones before commencement of activity in accordance with the Environmental Impact Assessment Act; (b) Submit Environmental Audit Report (EAR) for existing infrastructure on a three yearly basis or as may be required by the Agency; and (c) Submit an Environmental Management Plan (EMP) for any project as may be required by relevant Laws.	Environmental Impact Assessment and Environmental Management Plan
PART III - EMISSIONS FROM MOBILE SOURCES	
14. Mobile sources shall be categorized in accordance with the provisions in Schedule VIII to these Regulations.	Categories of Mobile Sources of Emission
15. Emissions from road vehicles shall be in accordance with the provisions of the National Environmental (Control of Vehicular Emissions from Petrol and Diesel Engines) Regulations, 2011, other extant Regulations and as provided in Schedules IX and X to these Regulations.	Emission from Vehicles
16. The Agency shall have the sole responsibility to resolve conflicts arising from multiple provisions in standards stipulated under extant Regulations.	Conflict Resolution
17. As from the commencement of these Regulations, a person shall not manufacture, assemble or import Two Stroke Engines of any kind for use in Nigeria.	Two-Stroke Engine Ban.
PART IV **CONTROL OF INDOOR AIR POLLUTION IN OFFICES, PUBLIC PLACES AND HOMES**	
18. The maximum concentrations of indoor air contaminants for offices and public places shall conform to the limits prescribed under Schedule XI to these Regulations**.**	Maximum Concentrations in Offices and Public Places.
19. The maximum concentrations for indoor air contaminants for homes shall conform to the limits prescribed in Schedule XII to these Regulations.	Maximum Concentrations in Homes.

20. A person shall ensure that the ventilation system in a building facilitates improved air quality and is designed in accordance with the extant building code of the relevant national regulating authority.	Building Requirements.
21. Banned pesticides under the provisions of National Environmental (Control Hazardous Chemicals and Pesticides) Regulations, 2014 and other extant Regulations shall not be used indoors.	Banned Pesticides.
22. (1) Every power Generating set from 10KVA and above which is in use, in operation or is capable of being operated shall register with the Agency. (2) Every power Generating set in operation in Nigeria shall undergo emission testing at least once a year and certified by the Agency. (3) A power Generating set shall not be positioned within the building where it can cause health hazard to the occupants. (4) A power Generating set shall be positioned in such a way that the flue gases- (a) are discharged or drawn back into the building or the building ventilation system; and (b) do not become a nuisance to the inhabitants of any building or the neighbourhood. (5) A person operating a power generating set running on petrol, diesel, kerosene or any fuel shall not discharge pollutants into the air higher than the concentrations prescribed in **Schedules XV, XVI, and XVII** to these Regulations. (6) The Agency or her Technical Partner may issue a prohibition order as specified in Schedule XVIII to these Regulations prohibiting the further operation of any generating set that has undergone an emission test and has contravened the acceptable conditions specified in Schedules **XV, XVI, and XVII** to these Regulations within the period of three months after the gaseous emission test. **(7)** The prohibition order shall be securely attached to a conspicuous spot on the power generating set. (8) The power generating set shall not be operated until its defects have been remedied to the satisfaction of the Agency or her Technical Partner, after which the prohibition order may be withdrawn**.** **(9)** The owner or the person operating the power generating set shall ensure that the prohibition order is not in any way obscured, rendered illegible or removed except with the written approval of the Agency. (10) For the purpose of Regulation 22 (2) of these Regulations, a log book containing the detailed specifications of the generator, the date, time and result of any test done shall be kept by the owner of the power generating set..	Power Generating Sets.

(11) The records in the log book shall be made available for inspection by the Agency or her Technical Partner.

Provision of Exhaust Chimney.

23. Every building especially homes and offices with cooking facilities shall have exhaust chimney to channel out the flue gases outside the indoor environment.

Prohibition of Smoking.

24. Smoking in public places is prohibited, except in designated area.

PART V - EMISSIONS FROM OTHER SOURCES, FUEL ADDITIVES, ETC

25. A person -

Fuel Additives.

(a) shall use fuel additives as may be provided by the appropriate regulatory authority;

(b) granted a licence to manufacture, process or trade in any fuel additive shall not import, sell, offer for sale, or introduce into commerce such fuel additive unless the same has been registered with the appropriate authority; and

(c) shall not introduce any proposed fuel additive that would in any way increase emissions of any of the regulated gases prescribed in Schedule IX to these Regulations**.**

Control of Fugitive Particulate Matter

26. A Person shall-

(a)not allow or permit the emission of any fugitive particulate matter in excess of the levels prescribed in Schedule X to these Regulations; and

(b) maintain the maximum limit values for evaporative and refueling emissions from gasoline vehicles as provided in Schedules X to these Regulations.

27. The National Environmental (Ozone Layer Protection) Regulations, 2009A shall apply in the importation, handling, storage, sele and use alternatives to Ozone Depleting Substance (ODS).

Agrochemicals Handling

28 The importation, handling, storage, transportation and use of chemicals and agrochemicals shall be in accordance with the extant laws and Regulations.

Renewable Energy

29. A person operating a renewable energy generating plant shall ensure that the plant does not exceed the permissible limits as contained in extant laws and Regulations.

Quarrying Operations

30. A person engaged in quarrying operations shall carry out such operation in accordance with the National Environmental (Quarrying and Blasting Operations) Regulations, 2013and other extant Regulations.

Mining operations

31. A person engaged in mining operations shall carry out such operations in accordance with the National Environmental (Mining and Processing of Coal Ores and industrial Minerals) Regulations, 2009and other extant Regulations.	Operations of Industrial Plants or Facilities.
PART VI - AMBIENT AIR QUALITY STANDARDS	
32. A person operating an industrial plant or facility shall forward to the Agency any information which the Agency deems appropriate regarding its operations.	Ambient Air Quality Standards.
33. A person undertaking business or activity releasing emissions into ambient air shall ensure that the ambient air quality within its premises or operational areas associated with emissions from own facilities do not exceed 60% of the ambient air quality standard as prescribed in Schedules XIII to these Regulations, without prejudice to the contributions emanating from other facilities to its premises**.**	
PART VII - CONTROL OF ODOUR	Control of Odour.
34. A person shall not emit or allow the emission of noxious and foul odourous substances to reach nuisance threshold levels within its neighbourhood such that not more than 5% of the population will experience annoyance greater than 5% of the time per month for up to three continuous months.	Odour Detection Threshold.
35. A person shall not release or cause the emission of malodourous substances beyond the detection thresholds as prescribed in Schedule XIV to these Regulations**.**	
PART VIII -ENFORCEMENT	Enforcement of Notice Reminder.
36.-(1) An enforcement notice shall be served where the Agency is of the opinion that an operator has contravened, is contravening or is likely to contravene any condition of a permit. the c(2) An enforcement notice shall specify the –(a) activities or matters constituting the contravention or making it likely that the contravention will arise, as the case may be; (b) steps that must be taken to remedy the contravention or to remedy the activities or matters making it likely that the contravention will arise; and (c) period within which those steps must be taken. (3) The provisions of sub-regulations (2) (a) of this regulation shall apply whether or not the particular manner of operating the facility in question, is regulated by or contravenes a condition of the permit. (4) An officer of the Agency may, in the course of is duty under these Regulations, at any reasonable time-	

(a) enter and search any premises or facility to carry out air emission testing, take samples or specimen for analysis, and measurements in length and of level of standards to which these Regulations relate; and

(b) seize and detain for such time as may be necessary for the purpose of these Regulations any article by means of or in relation to which he believes any provisions of these regulations has been contravened.

37- (1) Where a person fails to comply with the enforcement notice within the specified period given under Regulaitons 36(2) of these Regulaitons, a second notice shall be served.

(2) Where a person fails to comply with the second reminder of the enforcement notice within the specified time limit, the Agency shall issue a suspension notice, seal the facility or premises or take any other punitive action as may be necessary.

(3) Where a suspension notice is served pursuant to these Regulations, the permit shall, on the service of such notice cease to have effect as stated in the notice.

(4) The Agency may withdraw a suspension notice after verification of compliance.

Power to enter and Seal facility or Premises.

38. The Agency shall have the power to enter and seal any facility or premises found contravening any of the provisions of these Regulations.

Permit.

PART IX - PERMIT

39. The Agency shall issue permits for air quality control in accordance with the provisions of the National Environmental (Permitting and Licensing System) Regulations (2009).

PART X- OFFENCES AND PENALTIES

Offences and Penalties.

40. A person who violates any of the provisions of these Regulations commits an offence and shall on conviction--

(a) be liable to a fine of not less than one hundred thousand Naira or to imprisonment for a term not less than 6 months or to both, such fine and imprisonment and an additional fine of not less than N10, 000 for every day the offence subsists, for individual offenders; and

(b) where the offence is committed by body corporate, be liable to a fine of not less than N1,000,000 and additional fine of N50, 000 for every day the offence subsists	Interpretation.
PART XI MISCELLANEOUS PROVISIONS **41.** In these Regulations, unless the context otherwise requires- **"Act''** means the Act establishing the Agency; **"Agency"** means National Environmental Standards and Regulations Enforcement Agency (NESREA). **"Air"** means the mixture of gases that envelop the Earth, known as the atmosphere and comprising Nitrogen (78%), Oxygen (21%), Argon, Hydrogen and other gases (about 1%); **''Air Pollutant**'' means "pollutants" (as defined in this Regulation), emitted into or formed in the Earth's atmosphere; **"Air pollution"** includes the state of increased concentration of substances in the atmosphere which has or has the potential of adversely affecting the health of any living substance, ecosystem, natural or built environment, at a level that exceeds the carrying capacity of the atmospheric removal mechanisms to return the air to its natural background concentrations for such substances; **"Air Quality"** means an index of the healthiness of the air based on the quantity of polluting substances it contains. Air is considered safe when its harmful chemicals contents are below the standards considered safe for plants, animal and human habitation as well as the physical infrastructure within it; **"Ambient Air"** means planetary boundary layer or the troposphere(outdoor air) in which humans and other organisms live and breathe; **"Background Air Concentrations"** means "clean air", as defined in this regulation; **"Building"** means permanent or temporary structure constructed with exterior walls and a roof, all attached facilities required for human habitation as residential or for businesses, commercial, recreational, and industrial; **"Clean Air"** means the air whose regulated pollutant concentrations are below that specified in the ambient air quality standards in these regulation; **"Court"** means the Federal or State High Court; **"Emission**" means the quantity of air contaminant discharged from a known source into the atmosphere over a specified time; **"Emission Reduction Technology"** means the technologies used as scrubbers or as part of improved operational process to reduce emissions from any facility; **''Enforcement Notice''** Letters of Compliance Concerns or Abatement notices informing a person of observed violations and the need to remedy the same within a time limit, failure of which, a person shall be sanctioned as provided in these Regulations; "EIA" means Environmental Impact Assessment; "EMP" means Environmental Management Plan; **"Fuel-combustion equipment"** means any device used for the combustion of fuel in which heat is transferred from the products of combustion indirectly for the production of useful heat or power;	

"Flue Gas" means combustion or process related gases containing pollutants emitted directly into the atmosphere by small, medium or large scale industrial production or for the provision of services such as electricity generation, among others; **"Fugitive Emission"** means pollutants discharged into the atmosphere from sources other than combustion or production processes but related to general processes such as evaporation, frictional processes leading to wears, system leakages, in a stationary, area or line source; "**Hazardous substances**" mean those substances which present short-term acute hazards such as acute toxicity by ingestion, inhalation or skin absorption, corrosiveness or other skin or eye contact hazard or the risk of fire explosion; or long-term toxicity upon repeated exposure; **"Indoor air"** means the air inside a building including mobile homes, offices, commercial and residential homes; **"Installations"** mean the whole of a system of machineries and accessories set up and arranged to produce goods and services, and leading to the emission of pollutants into the atmosphere; **"Key Sources"** (for any pollutant) means a group of sources contributing up to the total pollutant emissions in the locality, state or nation; **"Mechanical ventilation"** means controlled air circulation within an indoor space using motorised mechanical systems to improve on the natural air circulation capability provided for in the building design; **''Mobile source'** includes sources such as road, air, railway and navigational vehicles, which emit pollutants into the atmosphere during locomotion; **"Odour"** means the property of a substance that gives it a characteristics scent or smell. Odour assessment, properties include intensity, detestability, character and hedonic tone, which is the perceived pleasantness or unpleasantness; **Odour Detectability''** means the minimum concentration of odour emitting substances that produces an olfactory response or sensation; **"Ozone Depleting Substances (ODS)"** means the wide range of compounds now known as chlorofluorocarbons (**CFCs),** chemically inert (non-toxic, non-combustible, physically very stable under high ranges of temperature and pressure, neither oxidized nor photo-dissociated in the lower atmosphere), are easily converted from liquid to gaseous states at ordinary temperatures, and which became very useful as refrigerants in air conditioning and refrigeration equipment, but later found to become photo-dissociated in the stratosphere to release chlorine radicals, which reacts strongly with stratospheric Ozone (O_3)converting it to Oxygen (O and O_2)atoms, and finally resulting in the depletion (reduction in the concentration) of stratospheric ozone leading to ground penetration of UV-B radiation, absorbed by stratospheric ozone and protecting human health from UV-B radiation; **"Particulate Matter"** means contaminants in solid and liquid phases in suspension in the atmosphere; "Pasting" means the Pasting of a notice at the address of the owner or occupant of the Premises or facility; or the putting of a notice in a public or conspicuous place so that people including those the notice is meant for, can see it;	

''Person" means a legal entity including an individual, association, corporate body, organization, government, government agency, institution that own facility or facilities which emit pollutants into the atmosphere; **"Point Source"** means a single source emissions into the atmosphere, contributing not less than 500 metric tonnes of CO, or 100 metric tonnes of any of NO, SO_2 and PM into the atmosphere during full operational annual cycle; **"Pollution Control Device**" means any infrastructure designed for use mainly as scrubbers to reduce the concentration of pollutants in their flue gas, thereby enhancing cleaner emissions from stacks of various air pollution sources; **"Pollution Control Technology**"means the technologies used in individual pollution control devices as defined in this Regulation; **"Pollutant"** means substances including gases, liquids, particulates, radioactive substances, biological materials, or other harmful chemicals/materials, noise or high energy radiation emitted into or formed in any part of the Earth's subsystems (atmosphere, lithosphere or hydrosphere), with capacity to cause diseases or death to humans and ecosystems; or likely to cause damage to any living organisms or to the natural or built environment; **''Public places''** means building or other facilities owned by government and organizations working for the overall interest of serving the society and established for the general use of the members of the public. They include government and private sector offices open to the public, hospitals and other healthcare facilities, commercial buildings, hotels, recreational facilities, public transport, amusement and entertainment facilities among others; **"Radon"** means an inert gas that does not readily interact with the body, but is usually released into buildings from the underlying soil; **"Stationary source"** means any fixed (non-moving) facility such as power plants, petroleum refineries, petrochemical plants, process industries, etc. associated with the production of goods and services, and leading to emissions of one or more types of pollutants into the atmosphere; **"Tail Pipe"** means the exhaust nozzle of a vehicle where the flue gases are released into the atmosphere; **"Two-Stroke Engine"** means an internal combustion engine which completes combustion within a single crankshaft, in an up (denoting fuel intake or compression) and down (denoting fuel combustion or exhaust) piston strokes; **''Vehicle"** means moving motorized means of locomotion propelled by a gasoline, diesel or other types of engines used as means of personal or public transport, or for movement of goods from place to place; **"Ventilation"** means the process of ensuring circulation of air within a building or any facility, which could be natural or motorized; **"Volatile Organic Compounds (VOC)"** means organic compounds in gaseous state in the atmosphere, and usually divided broadly into methane (CH4) and non-methane volatile organic compounds (NMVOC). **42.** These Regulations may be cited as the National Environmental (Air Quality Control) Regulations 2014.	Citation.

SCHEDULE I

NEW INSTALLATIONS WITHIN RESIDENTIAL AREAS NOT PERMITTED WITHOUT PRIOR APPROVAL

[Regulation 4]

(a) Any equipment, plant or facility used for the purpose of heating or generating power that is rated to consume—

(i)pulverised fuel;

(ii)any solid fuel at 20 kg or more per hour; or

(iii)any liquid or gaseous matter at 10 kg or Litre or more per hour.

(b) Any equipment, plant or facility that emits any solid particle exceeding 0.5kg per hour;

(c) Any equipment, plant used for grain milling or polishing and consumes 1.5kw and above;

(d) Any wood working machinery that consumes 0.75 kW and above;

(e) Any equipment or facility used in the manufacture, packing or repacking of paints, varnishes, lacquers and all pesticides;

(f) Any equipment, plant or facility used in the manufacture, packing or repacking of fish manure or animal feed or fertilizer;

(g) Any equipment, plant or facility used in the manufacture, packing or repacking of industrial chemicals, in the process of which mercury, antimony, arsenic, cadmium, zinc, lead, copper, etc or any compound thereof is emitted;

(h) Any equipment or plant used in the manufacture of asbestos containing products.

SCHEDULE II

PROCEDURE FOR REPORTING ACCIDENTAL DISCHARGE OF POLLUTANTS

[Regulation 5]

The information required includes the-

(a) date and time of the release or discharge;

(b) duration of the release or discharge;

(c) composition of the release or discharge showing-

(i) the concentration of air contaminants,

(ii) the emission rate, and

(iii) the total amount.

(d) description of the circumstances leading to the release or discharge;

(e) steps and procedures taken to control the release or discharge, as well as those taken to prevent similar releases or discharges in the future; and

(f) steps and procedures taken to clean up the release or discharge.

SCHEDULE III

POINT SOURCE MAXIMUM EMISSION LIMIT FOR FACILITIES, AND PROCESS

[Regulation 6]

Pollutants	Standard Applicable to Source	Maximum Permissible Limits (mg/Nm^3)	Maximum Permissible Limits (ppm)
1. Antimony and Its compounds	any source	10 as Sb	2.0
2. Arsenic and its compounds	Any source	10 as As	3.0
3. Cadmium and its compounds	Any source	10 as Cd	2.0
4. Carbon Monoxide	Any industrial Source	500 as CO	400
5. Copper and its Compounds	Any industrial source	100 as Cu	36
6. Hydrofluoric Acids and Fluoride compounds	Any source other than the manufacture of Aluminium from Alumina	50 as HF	56
7. Hydrogen Sulfide	i) Geothermal Power Plants	[a, b]	
	iii) Any source other than (i) and (ii)	7 as H_2S	5.0
8. Lead	Any trade, industry or process	10 as Pb	1.1
9. Mercury	Any Source	5 as elemental Hg	0.6
10. Nickel and its compounds, except Nickel Carbonyl [c]	Any source	20 as Ni	8
11. NO_x	i) Manufacture of Nitric Acid	2,000 as acid and NO_x and calculated as NO_2	975
	ii) Fuel burning steam generators		
	Existing Source	1,500 as NO_2	730
	New Source		
	• Coal-Fired	1,000 as NO_2	487
	• Oil-Fired	500 as NO_2	244
	iii) Any source other than (i) and (ii)		
	Existing Source	1000 as NO_2	487
	New Source	500 as NO_2	244
12. Phosphorus Pentoxide [d]	Any source	200 as P_2O_5	32
13. Zinc and its Compounds	Any source	100 as Zn	34.2

Key:

[a] - All new geothermal power plants starting construction by 01 January 2015 shall control H_2S emissions to not more than 150 g/GMW-Hr

[b] - All existing geothermal power plants shall control H_2S emissions to not more than 200 g/GMW-Hr within 5 years from the date of effectiveness of these regulations.

[c] - Emission limit of Nickel Carbonyl shall not exceed 0.5 mg/Ncm.

SCHEDEULE IV

STACK EMISSIONS FROM POINT SOURCES RELATED TO COMBUSTION

[Regulation 6]

Combustion Processes	Emission Standard					
	Flue Gas Concentration (kg/TJ-Energy Consumed)					
	PM_{10}	CH_4	VOC	SO_2	NO_x	CO
Public Electricity Generation:						
Coal	350		8	550	300	15
Heavy Fuel Oil (HFO)	1	15	0.1	2	190	0.6
Light Fuel Oil (LFO)	0.3	2		5	70	0.6
Natural Gas	0.1	1	2	0.5	110	1.0
Industrial Electricity Generation						
Coal	500	2	20	500	350	150
HFO	40	3	8	800	190	10
LFO	5	3	5	200	70	10
Natural Gas	0.1	1.4	5	0.5	110	10
Industrial Boilers/Heat Generation						
Fuel-wood	200		400		10	4000
Charcoal	200		400		10	4000
Commercial/Institutional Electricity/Heat Generation						
Fuel-wood	200	150	600	10	94	9000
Charcoal	150	100	400	10	75	4000
Coal	100	23	31	500	100	625
Chemical Process Industry						
Charcoal Kiln (kg/tonne)	1.24		2		0.112	1.6
Carbon Black (Stack) (kg/tonne)	6.7		77	0.045	6.2	123
Paint & Vanish (kg/tonne)			0.5			
Plastics (kg/tonne)			5.9			
Printing Ink (kg/tonne)			213			
Soap & Detergents (kg/tonne)	7					

SCHEDULE V

EMISSION STANDARDS FOR AIR POLLUTANTS FROM INDUSTRIAL SOURCES/ OPERATIONS

[Regulations 6 and 8]

S/N	Pollutants1	ppm	Averaging time (min.)
1	Ammonia	0.28	30
2	Carbon Disulfide	0.01	30
3	Chlorine and Chlorine Compounds expressed as Cl^{-2}	0.03	5
4	Formaldehyde	0.04	30
5	Hydrogen Chloride	0.13	30
6	Hydrogen Sulfide	0.07	30
7	Nitrogen Dioxide	0.20,0.14	30,60
8	Phenol	0.03	30
9	Sulfur Dioxide	0.18, 0.13	30,60

SCHEDULE VI

EMISSION LIMITS FOR SPECIFIC METAL POLLUTANT FROM STATIONARY SOURCES

[Regulations 6 and 8

NO	SUBSTANCE	LIMIT (mg/m^3)
1	Antimony	20-100
2	Arsenic	20-100
3	Cadmium	1.0-40
4	Copper	20
5	Lead	10-100
6	Mercury	1.0-230
7	Zinc	11.72

Source: Guidelines and Standards for Environmental Pollution Control in Nigeria.

SCHEDULE VII

INDUSTRIAL STACK HEIGHT REGULATION

[Regulation 11]

Industrial stacks shall comply with the Good Engineering Practice stack height (H_{GEP}), which ensures that emissions from the stack does not result in excessive concentrations of any air pollutant in the immediate vicinity of the sources, resulting from atmospheric downwash, eddies, or wakes which may be created by the source, nearby structures or terrain obstacles. For any industrial stack, the GEP Stack height shall be defined and calculated using the following relations:

$$H_{GEP} = H + 1.5L$$

Where H is the height of the adjacent structure or nearby structure, and L is the lesser dimension (height or maximum projected width of the adjacent or nearly structure or terrain).

A single representative stack may be used to represent several sources that are identified as "similar". "Similar stacks are those that are located within 100 m distance and emit the same pollutants, and have stack heights and flue gas exit velocities differ by less than 20%. The procedure for merging sources identifies one worst case representative stack from which all of the emission scrum the sources involved are modelled. The merged stack is typically located at the closest location, of all the stacks involved, to the property line. This location, if all other parameters were the same would result in the maximum modelled off-site concentration. Dissimilar stacks may be merged, by computing the parameter M for which stack, using:

$$M = \frac{(H_{ss} V T_s)}{Q}$$

Where M is the parameter accounting for the relative influence of stack height, plume rise and emission rate on concentration,

H_s is the stack height, and

$$V \quad \frac{\pi}{4} v^2 d^2$$

Where V is the stack gas volumetric flow rate (m^3/s), d is the stack exit internal diameter (m), v is the stack gas exit velocity (m/s), Ts is the stack gas exit temperature (K) and Q is the pollutant emission rate (g/s).

The stack with the lowest M value is used as the representative stack, so that the sum of emissions from all merged stacks is assumed to be emitted from the representative stack. The location of the representative stack is assumed to the actual location closest to the property line. For dispersion modelling from multiple stack locations, the representative stacks would be used.

SHEDULLE VIII
SCHEDULE ON MOBILE SOURCE CLASSIFICATION

[Regulation 14]

Mobile Source Grouping	Source Types	Definition of Source Type
Air Transportation	Domestic and international civil aviation.	Emissions from all aircraft types excluding military.
Road Transportation	Passenger cars	Automobiles designated primarily for the transport of persons, having a capacity of 12 persons or less, or equipped with no special features such as four wheel drives or off-road operation. Maximum gross weight of 3900 kg.
	Passenger cars with catalysts	Passenger cars (as above) with 3-way catalysts for NO_x control.
	Light duty trucks (LDT)	Automobiles designated primarily for the transport of cargo or equipped with special features such as four wheel drives or off-road operation. Maximum gross weight of 3900 kg.
	Light duty trucks with catalysts	LDT (as above) with 3-way catalysts for NO_x control.
	Heavy Duty Trucks & Buses (HDTB)	Any gasoline or diesel fuelled vehicles rated to exceed 3900 gross weight or designed to carry more than 12 persons at a time.
	Motorcycles	Any vehicle designed to travel with not more than three wheels in contact with the ground, and weighing less than 680 kg.
Railways	All rail travelling vehicles	Includes both passenger and freight coaches.
Water Transport	Internal Navigation	All internal and coastal navigation, including small craft and fishing vessels not included under the International Marine Bunkers
	International Marine Bunkers	Sea going ships of all flags, including fishing vessels.
Other Non-Road Transportation	Lawn and Garden Equipment	
	Agricultural Equipment	
	Logging Equipment	
	Light Commercial Equipment	
	Industrial Equipment	
	Construction Equipment	
	Airport Service Equipment	

Schedule IX

TAIL PIPE EMISSION STANDARDS FOR ROAD VEHICLES

[Regulations 15; 25(C)]

Mobile Source	Emission Standard									
	Tailpipe Concentration (%)					Emission Factor (g/km)				
	PM_{10}	Soot	CO	NO_x	VOC	PM_{10}	Soot	CO	NO_x	VOC
ROAD TRANSPORTATION										
Per Capita (PC)(Gasoline): [Fuel economy = 6.0 km/l								13	1.6	1.2
PC (Gasoline) with catalysts: Fuel economy = 9.4 km/l								3.5	0.6	0.3
PC (Diesel): [Fuel economy = 6.8 km/l]						0.4		0.9	1.0	0.3
Light Duty Truck, LDT (Gasoline): [Fuel Economy = 5.1 k/l]								15	1.8	2.0
LDT (Gasoline) with Catalysts		25						10	1.0	0.8
LDT (Diesel)		40				0.5		8.0	1.2	0.45
Heavy Duty Truck, HDTB		40				0.9		9.0	12	2
Motorcycles/Tricycles		45				0.3		14	0.6	2.6

SCHEDULE X

FUGITIVE EMISSION STANDARDS FOR GASOLINE VEHICLES

[Regulations 15; 26(a)(b)]

Fugitive Source	Pollutant	Emission Factor Standard (g/km)
Tank Evaporative Emissions	VOC	0.45
Tank Refuelling Emissions	VOC	0.30

SCHEDULE XI

INDOOR AIR QUALITY FOR OFFICES AND PUBLIC PLACES

[Regulation 18]

Parameter	Unit	8-hour average [a]	
		Excellent Class	Good Class
Room Temperature	^oC	20 to < 25.5	< 25.5
Relative Humidity	%	40 to < 70	< 70
Air movement	m/s	< 0.2	< 0.3
Carbon Monoxide (CO)	$\mu g/m^3$	< 2,000	< 10,000
	ppbv	< 1.7	< 8.7
Suspended Particulates(PM10)	$\mu g/m^3$	< 20	< 180
Nitrogen Dioxide (NO_2)	$\mu g/m^3$	< 40	< 150
	ppbv	< 21	< 80
Ozone (O_3)	$\mu g/m^3$	< 50	< 120
	ppbv	< 25	< 61
Formaldehyde (HCHO)	$\mu g/m^3$	< 30	< 100
	ppbv	< 24	< 81
Total Volatile Organic Compounds (TVOC)	$\mu g/m^3$	< 200	< 600
	ppbv	< 87	< 261
Radon (Rn)	Bq/m^3	< 150	< 200
Airborne Bacteria	cfu/m^3	< 500	< 1,000

Legends:

a. In some cases, it may not be practicable to take 8-hour continuous measurement. In these circumstances, surrogate measurement (i.e. an intermittent measurement strategy based on the average of half-an-hour measurements conducted at four time-slots) is also accepted.

SCHEDULE XII

MAXIMUM CONCENTRATIONS FOR INDOOR AIR CONTAMINANTS IN HOMES

[Regulation 19]

S/N	Pollutants	Average Time	Limit for Acceptable indoor Air Quality	Unit
1	Carbon Monoxide (CO)	8hrs	10	mg/m^3
			9	ppm
2	Formaldehyde	8hrs	120	$\mu g/m^3$
			0.1	ppm
3	Ozone (O_3)	8hrs	120	$\mu g/m^3$
			0.06	ppm
4	Total Volatile Organic Compound (TVOC)	8hrs	300	mg/m^3
5	Respiratory Dust (<10 microns)	8hrs	150	mg/m^3
6	Bacteria	8hrs	500	CFU/m^3 (algar plate)
7	Fungi	8hrs	500	CFU/m^3 (algar plate)

SCHEDULE XIII

AMBIENT AIR QUALITY STANDARDS

[Regulations 29, 30 and 33]

S/N	Pollutant	Time Weighted Average	Concentration in Ambient Air
1	Sulphur dioxide (SO_2)	Annual	80 µg/m^3
		24 hours	120 µg/m^3
		1hour	350 µg/m^3
2	Nitrogen dioxide (NO_2)	Annual	80 µg/m^3
		24 hours	120 µg/m^3
		1hour	200 µg/m^3
3	Carbon monoxide (CO)	8 hours	5.0 mg/m_3 10,000[a]
		1 hour	10 mg/m^3 25,000[a]
4	Particulate Matter (PM_{10})	Annual	60 µg/m^3
		24 hours	150 µg/m^3
5	Ozone (O_3)	8 hours	100 µg/m^3
		1 hour	180 µg/m^3
6	Lead (Pb)	Annual	1.0 µg/m^3 0.5
		24 hours	1.4 µg/m^3
7	Arsenic (As)	Annual	6,000 µg/m
8	Nickel (Ni)	Annual	20,000 µg/m^3
9	Cadmium (Cd)	Annual	5,000 µg/m^3
10.	Ammonia (NH_3)	Annual	0.2 mg/m^3
		24 hours	0.6 mg/m^3

SCHEDULE XIV

AIR QUALITY STANDARD FOR SOME MALODOROUS COMPOUNDS

[Regulation 35]

Substance	Chemical Formula	Irritation Threshold (ppmV)	Threshold Odour (ppmV)	Air Quality Standard for Odour (ppmV)
Hydrogen Sulphide	H_2S	50 – 100	0.00001-0.8	5
Carbon Disulphide	CS_2		0.21	0.1
Chlorine	Cl_2	1 – 6	0.01 - 5.0	0.1
Ammonia	NH_3	55 – 140	0.32 – 55	5
Benzene			468	50
Formaldehyde	HCHO	0.25 - 2.0	0.1 - 1.0	0.02
Methyl Mercaptan	CH_3SH		0.001 - 0.00026	0.0001
Ethyl Mercaptan	CH_3CH_2SH		0.00019 - 0.001	0.0001
Dimethyl Sulphide	$(CH_3)_2S$		0.000048	
Sulphur Dioxide	SO_2	6 – 20	0.1 - 3.0	0.5

(New schedule XV)

EMISSION STANDARDS FOR DIESEL POWERED GENERATING SETS ≤ 800 KW

Engine Power (P) ?	**CO**	**HC**	**NOx**	**PM**	**Smoke Limit**
	g/kW-hr				per meter(1/m)
P ≤ 19 kW	5.0	1.3	9.2	0.6	0.7
19 kW < P ≤ 50 kW	5.0	1.3	9.2	0.5	0.7
50 kW < P ≤ 176 kW	3.5	1.3	9.2	0.3	0.7
176 kW < P ≤ 800 kW	3.5	1.3	9.2	0.3	0.7

(New schedule XVI)

EMISSION STANDARDS FOR DIESEL ENGINES ≤ 800 KW FOR GENERATING SETS

Engine Power (P)?	**CO**	**NOx+HC**	**PM**	**Smoke Limit**
	g/kW-hr			per meter (1/m)
P ≤ 19 kW	3.5	7.5	0.3	0.7
19 kW < P ≤ 75 kW	3.5	4.7	0.3	0.7
75 kW < P ≤ 800 kW	3.5	4.0	0.3	0.7

(New schedule XVII)

PERMISSIBLE EMISSION LEVELS FOR GENERATING SETS THAT RUN ON PETROL AND KEROSENE

Class	Displacement (cc)	CO (g/kW-hr)	NOx+HC(g/kW-hr)
1	Up to 90	<=250	<=12
2	>99 and up to 225	<=250	<=10
3	>225	<=250	<=8

Class 1 generating sets are those that have a displacement of up to 90 cc, class 2 generating sets are those having displacement between 99 and 225 cc, while class 3 refers to generators with a displacement of more than 225 cc.

Displacement is the combined swept volume of the pistons inside the cylinders of an engine. Displacement is an important factor, as it has a direct impact on an engine's power output, fuel efficiency, and in some countries, how a vehicle is taxed.

Source: India

(New schedule XVIII)

PROHIBITION ORDER FOR POWER GENERATING SET (PETROL AND DIESEL)

1.Generator Registration No: . . . . . .

2 .Engine No .....

3. Date and Time of Emission Test: . . . . . .

4. Location: . . . . . .

5. Results: . . . .

6. Reference No.: . . . . . .

7. Date and Time of Previous Emission Test: . . . . . .

8. Location: . . . . . .

Results: …….

Reference No.: . . . . . .

9. In accordance with the provisions of sections 6, the above-named generator set is prohibited from operation effective from:

. . . . . (time)	. . . . . (date)

Name of Officer ----------

Designation; ----------

Signature;----------

Date .....Stamp

MADE at Abuja this … day of ……., 2020.

Hounarable Minister of Environment

EXPLANATORY NOTE
(*This Note does not form part of these Regulations but is intended to explain its purport*)

These Regulations provide for improved of the nation's air quality to enhance the protection of human health, flora and fauna, and other resources affected by air quality deterioration.