

**Pakistan environmental legislation and the  
National Environmental Quality Standards**

**Major Pakistan environmental legislation**

<b>Sector</b>	<b>Legislation</b>
<b>Environmental protection</b>	The Pakistan Penal Code (1860) Pakistan Environmental Protection Ordinance, No. XXVII of 1997
<b>Land use</b>	The Land Improvement Loans Act (1883) The Punjab Development of Damaged Areas Act (1952) The Punjab Soil Reclamation Act (1952) The West Pakistan Agricultural Pests Ordinance (1959) and Rules (1960) The Islamabad (Preservation of Landscape) Ordinance (1966) The Punjab Development Cities Act (1976) The Balochistan, NWFP, Punjab and Sindh Local Government Ordinance(s) (1979/80) The NWFP Salinity Control and Reclamation Act (1988)
<b>Water quality and resources</b>	The Pakistan Penal Code (1860) The Canal and Drainage Act (1873) The Factories Act (1934) West Pakistan (?) Act (1958) The Balochistan Ground Water Rights Administration Ordinance (1978) The Balochistan, NWFP, Punjab and Sindh Local Government Ordinance(s) (1979/80) On-Farm Water Management and Water Users' Associations Ordinance (1981) Indus River Water Apportionment Accord-(1991) Statutory Notification S.R.R. 742 (1993)

Major Pakistan environmental legislation (continued)

<b>Air quality</b>	<p>The Pakistan Penal Code (1860)  The Factories Act (1934)  The West Pakistan Prohibition of Smoking in Cinema Houses Ordinance (1960)  The Motor Vehicles Ordinance (1965) and Rules (1969)  The Balochistan, NWFP, Punjab and Sindh Local Government Ordinance(s) (1979/80)  Statutory Notification S.R.R. 742 (1993)  Statutory Notification S.R.R. 1023 (1995)</p>
<b>Noise</b>	<p>The West Pakistan Regulation and Control of Loudspeakers and Sound Amplifiers Ordinance (1965)  The Motor Vehicle Ordinance (1965) and Rules (1969)</p>
<b>Toxic or Hazardous Substances</b>	<p>The Pakistan Penal Code (1860)  The Explosives Act (1884)  The Factories Act (1934)  The Agricultural Pesticides Ordinance (1971) and Rules (1973)</p>
<b>Solid wastes and effluents</b>	<p>The Factories Act (1934)  The Balochistan, NWFP, Punjab and Sindh Local Government Ordinance(s) (1979/80)  Pakistan Environmental Protection Ordinance, No. XXVII of 1997</p>
<b>Marine and fisheries</b>	<p>The West Pakistan Fisheries Ordinance (1961)  Balochistan Sea-Fisheries Ordinance (1970) and Rules (1971)  The NWFP Fisheries Rules (1976)  Territorial Waters and Maritime Zones Act (1976)</p>
<b>Forest conservation</b>	<p>The Punjab Forest (Sale of Timber) Act (1913)  The Forests Act (1927)  The NWFP Hazara Forest Act (1936)  The West Pakistan Firewood and Charcoal (Restrictions) Act 1964  The Punjab Plantation and Maintenance of Trees Act (1974)  The Cutting of Trees (Prohibition) Act (1975)  The NWFP Management of Protected Forests Rules (1975)  The Balochistan, NWFP, Punjab and Sindh Local Government Ordinance(s) (1979/80)  The NWFP (Conservation and Exploitation of Certain Forests in Hazara Division) Ordinance (1980)  The NWFP Forest Development Corporation Ordinance (1980)</p>

Major Pakistan environmental legislation (continued)

<p><b>Parks and wildlife conservation protection</b></p>	<p>The West Pakistan Ordinance (1959)                  The Kohat Marzri Control Act (1954)                  The Sindh Wildlife Protection Ordinance (1972) and Rules (1972)                  The Punjab Wildlife (Protection Preservation Conservation and Management) Act (1974) and Rules (1974)                  The Balochistan Wildlife Protection Act (1974) and Rules (1975)                  The NWFP Wildlife (Protection Preservation Conservation and Management) Act (1975) and Rules (1976)                  The Pakistan Plant Quarantine Act (1976)                  Islamabad Wildlife (Protection Preservation Conservation and Management) Ordinance (1979/80)                  The Balochistan, NWFP, Punjab and Sindh Local Government Ordinance(s) (1979/80)                  Export and Control Order (1982)</p>
<p><b>Mineral development</b></p>	<p>The Regulation of Mines and Oil-Fields and Mineral Development (Government Control) Act (1948)</p>
<p><b>Cultural environment</b></p>	<p>The Antiquities Act (1975)                  The Punjab Special Premises (Preservation) Ordinance (1985)</p>
<p><b>Livestock</b></p>	<p>West Pakistan Goats (Restriction) Ordinance (1959)                  West Pakistan Punjab Animal Slaughter Control Act (1963)                  The Grazing of Cattle in the Protected Forests (Range Lands) Rules (1978)                  Pakistan Animal Quarantine (Import and Export of Animals and Animal Products) Ordinance (1979/80)                  The Balochistan, NWFP, Punjab and Sindh Local Government Ordinance(s) (1979/80)</p>
<p><b>Public health and safety</b></p>	<p>The Pakistan Penal Code (1860)                  The Boilers Act (1923)                  The Public Health (Emergency Provisions) Ordinance (1944)                  The West Pakistan Factories Canteen Rules (1959)                  The Balochistan, NWFP, Punjab and Sindh Local Government Ordinance(s) (1979/80)                  The West Pakistan Epidemic diseases Act (1979/80)</p>

Principal source: Table 5.8, The Pakistan National Conservation Strategy

**National Environmental Quality Standards for municipal and liquid industrial effluents (mg/l, unless otherwise defined)**

Serial No.	Parameter	Existing Standards	Revised Standards		
			Into Inland Waters	Into Sewage Treatment	Into Sea
1	Temperature / Temperature increase*	40°C	≤3°C	≤ 3°C	≤ 3°C
2	pH value	6-10	6-9	6-9	6-9
3	5-days Biochemical Oxygen Demand (BOD) at 20°C. (1)	80	80	250	80**
4	Chemical Oxygen Demand (COD) (1)	150	150	400	150
5	Total suspended solids	150	200	400	200
6	Total dissolved solids	3500	3500	3500	3500
7	Grease and oil	10	10	10	10
8	Phenolic compounds (as phenol)	0.1	0.1	0.3	0.3
9	Chloride (as Cl)	1000	1000	1000	SC
10	Fluoride (as F)	20	10	10	10
11	Cyanide (as CN) total.	2	1	1	1
12	An-ionic detergents (as MBAS) (2)	20	20	20	20
13	Sulphate (SO <sub>4</sub> )	600	600	1000	SC
14	Sulphide (S)	1.0	1	1	1
15	Ammonia (NH <sub>3</sub> )	40	40	40	40
16	Pesticides, herbicides, fungicides and insecticides (3)	0.15	0.15	0.15	0.15
17	Cadmium (4)	0.1	0.1	0.1	0.1
18	Chromium (trivalent & hexavalent) (4)	1.0	1	1	1

National Environmental Quality Standards (continued)

19	Copper (4)	1.0	1	1	1
20	Lead (4)	0.5	0.5	0.5	0.5
21	Mercury (4)	0.01	0.01	0.01	0.01
22	Selenium (4)	0.5	0.5	0.5	0.5
23	Nickel (4)	1.0	1	1	1
24	Silver (4)	1.0	1	1	1
25	Total toxic metals	2.0	2	2	2
26	Zinc	5.0	5	5	5
27	Arsenic (4)	1.0	1	1	1
28	Barium (4)	1.5	1.5	1.5	1.5
29	Iron	2.0	8	8	8
30	Manganese	1.5	1.5	1.5	1.5
31	Boron (4)	6.0	6	6	6
32	Chlorine	1.0	1	1	1

1. Summing minimum dilution 1:10 on discharge, lower ratio would attract progressively stringent standards to be determined by the Federal Environmental Protection Agency. By 1:10 dilution means for example, that for each one cubic meter of treated effluent the recipient water body should have 10 cubic meter of water for dilution of this effluent.
2. Modified Benzene Alkyl Sulphate; assuming surfactant as biodegradable.
3. Pesticides, herbicides, fungicides, and insecticides.
4. Subject to total toxic metals discharge.
5. Applicable only when and where sewage treatment is operational and BOD<sub>5</sub>=80 mg/l is achieved by the sewer treatment system.
6. Provided discharge is not at shore and not within 10 miles of mangrove or other important estuaries.

SC Discharge concentration at or below Sea concentration.

- \* The effluent should not result in temperature increase of more than 3C at the edge of the zone where initial mixing and dilution take place. In case zone is not defined, use 100 meters from the point of discharge.

Note: Dilution of gaseous emissions and liquid effluents to bring them to the NEQS limiting value is not permissible through excess air mixing/blowing in to the gaseous emissions or through fresh water mixing with the effluent before discharge into environment.

- \*\* The value of BOD and COD is 200 and 400 respectively

**National Environmental Quality Standards for industrial gaseous emission (mg/ nm<sup>3</sup> unless otherwise defined)**

Serial No.	Parameter	Source of Emission	Existing Standards.	Revised Standards
1	Smoke (1)	Smoke opacity not to exceed	40% or 2 (Ringlemann scale)	40 %
2	Particulate matter (2)	Boilers and furnaces: (i) Oil fired. (ii) Coal fired. (iii) Cement Kilns. Grinding, crushing, clinker coolers and related processes, metallurgical processes, converter, blast furnaces and cupolas	300 500 200 500	300 500 200 500
3	Hydrogen Chloride (3)	Any.	400	400
4	Chlorine (3)	Any.	150	150
5	Hydrogen fluoride (3)	Any.	150	150
6	Hydrogen sulphide (3)	Any.	10	10
7	Sulphur Oxides	Sulphuric acid plant Others.	400	5000 1700
8	Carbon monoxide (3)	Any.	800	800
9	Lead (3)	Any.	50	50
10	Mercury (3)	Any.	10	10
11	Cadmium (3)	Any.	20	20
12	Arsenic (3)	Any.	20	20
13	Copper (3)	Any.	50	50
14	Antimony (3)	Any.	20	20
15	Zinc (3)	Any.	200	200
16	Oxides of Nitrogens	Nitric acid manufacturing unit. Gas fired. Oil fired Coal fired	400 400 400	3000 400 600 1200

\*See Note on page 7

National Environmental Quality Standards (continued)

1. Or 2 on the Ringlemann scale
2. Based on the assumption that the size of the particulates is 10 micron or more.
3. Any source
4. In respect of emissions of sulphur dioxide and nitrogen oxides, the power plants operating on oil or coal as fuel shall, in addition to national Environmental Quality Standards (NEQS) specified above, comply with the following standard.

**Sulphur dioxide and nitrogen oxide ambient air requirements**

<b>A. SULPHUR DIOXIDE</b>				
Sulphur Dioxide Background Levels (ug/m <sup>3</sup> )				
Background Air Quality (SO <sub>2</sub> Basis)	Annual Average (ug/m <sup>3</sup> )	Max. In 24 Hour Interval (ug/m <sup>3</sup> )	Standards	
			Criterion I Max. SO <sub>2</sub> Emission (Tons/day/Plant)	Criterion II Max. Allowable Ground Level Increment To Ambient (One year average, ug/m <sup>3</sup> )
Unpolluted	<50	<200	500	50
Moderately Polluted*				
Low	50	200	500	50
High	100	400	100	10
Very Polluted**	>100	>400	100	10
* For intermediate values between 50 and 100 µg/m <sup>3</sup> linear interpolations should be used				
.** No project with sulphur dioxide emissions will be recommended				

<b>B. NITROGEN OXIDES</b>	
Ambient air concentrations of nitrogen oxides, expressed as NO <sub>2</sub> , should not exceed the following:-	
Annual Arithmetic Mean	100 ug/m <sup>3</sup> (0.05 ppm)
Emission levels for stationary sources discharges, before mixing with the atmosphere, should be maintained as follows:	
For fuel fired steam generators, as nanogram (10E-9 gram) per joule of heat input:	
Liquid fossil fuel	130
Solid fossil fuel	300
Lignite fossil fuel	260

# **FESCO ENVIRONMENTAL POLICY**

**2014**



**ENVIRONMENT AND SOCIAL SAFEGUARD CELL**

**PMU FESCO, WEST CANAL BANK,**

**ABDULLAHPUR, FAISALABAD**



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## **1. PREAMBLE**

The FESCO Environmental Policy provides an overarching framework for addressing the environmental issues particularly pollution of freshwater reservoirs, air pollution, lack of proper waste management, deforestation, loss of biodiversity, natural disasters and climate change. It also gives direction for addressing the core sectoral issues as well as the underlying causes of environmental degradation and meeting national/ international obligation.

The Environmental Policy, while recognizing the goals and objectives of Conservation Strategy, Environmental Action Plan and other existing environment related national policies, strategies and action plans provide broad guidelines, for addressing environmental concerns and ensuring effective management of environmental resources during FESCO activities ranging from Grid Stations (New, Augmentation/Extension), Transmission Lines and other essential/related infrastructure.

## **2.0 THE ENVIRONMENTAL POLICY**

### **2.1 Goal**

The Environmental Policy aims to protect, conserve and restore natural environment in order to improve the quality of life of the citizen through sustainable development of electrical infrastructure of FESCO.

### **2.2 Objectives**

The objectives of the Policy are:-

- a) Conservation, restoration and efficient management of environmental resources
- b) Integration of environmental consideration in policy making and planning processes for development projects
- c) Capacity Building of FESCO E&S Cell/work force and other stakeholders at all levels for better environmental management
- d) Meeting national/international obligations effectively in line with the national aspiration.
- e) Creation of a demand for environment through mass awareness and community mobilization

### 3.0 SECTORAL GUIDELINES

#### 3.1 Water Supply and Management

To provide sustainable access to safe water supply and effectively manage and conserve country water resources, FESCO should;

- a) Develop legal policy framework for promotion of safe drinking water within jurisdiction of FESCO
- b) Establish a water quality monitoring and surveillance system through testing of Water Quality Parameters from EPA approved lab for comparisons with National Environmental Quality Standard of Water placed at **Annex-A**
- c) Promote appropriate technologies for rain water harvesting in Grid Station & Transformer Reclamation Workshops and its safe disposal
- d) Enact Water Conservation Act and relevant standards to foster water conservation
- e) Launch phased programs for clean up regarding spillage of oil to water reservoirs

#### 3.2 Air Quality and Noise

In order to prevent and reduce air pollution and noise, FESCO should;

- a) Ensure effective enforcement of the National Environmental Quality Standard (NEQS) of Ambient and indoor Air quality placed at **Annex-B**
- b) Enact Clean Air Act
- c) Establish Air and Noise quality monitoring and surveillance system through testing of Ambient Air Quality Parameters from EPA approved lab
- d) Ensure reduction and control of harmful emission through regulatory programs
- e) Educate vehicle users to abide by NEQS
- f) Phase out sulphur from diesel and other oils/lubricants
- g) Promote cleaner production technologies
- h) Ensure enforcement of standards for ambient air and noise
- i) Control noise emission at source

### **3.3 Waste Management**

Pollution caused by liquid and solid waste within company entities would be prevented and reduced. For this purpose, FESCO should;

- a) Strictly enforce the National Environmental Quality Standard (NEQS) and self Monitoring, Evaluation & Reporting System
- b) Implement National Sanitation Policy
- c) Promote cleaner production techniques and practices
- d) Encourage reduction, recycling and reuse of solid waste; especially in transformer reclamation workshop arrangement should be there for solid and liquid waste management
- e) Enforce rules and regulations for proper management of hazardous waste
- f) Enforce regulation to reduce the risk of contamination of soil and ground water from storage tanks
- g) Adopt National Oil Spill Contingency Plan
- h) Adopt measures for mitigation of pollution caused by oil spills.
- i) Develop environmental risk assessment guidelines for existing infrastructure as well as new development interventions and implement remedial measures
- j) Adopt national emergency response and accident prevention plans to prevent, and mitigate the risks of environmental pollution due to accidents.

### **3.4 Forestry**

To ensure sustainable management of national forests within company jurisdiction and increase tree plantation for "safeguarding economic growth, environment and food security in the country, FESCO should;

- a) Implement the national Forest Policy
- b) Carry out intensive institutional arrangement to promote good forest governance
- c) Promote plantation of special species having height which do not create hurdles in smooth operations of Grid Stations and transmission lines.
- d) Promote periodic trimming of trees falling under transmission line instead of tree cutting
- e) Preserve relict and unique forest eco-systems
- f) Provide alternate source of energy like piped natural gas or liquefied petroleum gas (LGP) to the inhabitants of FESCO Colonies and Grid Stations to reduce pressure on natural forests.

### **3.5 Biodiversity and Protected Area**

The company would promote the conservation and sustainable use of national biodiversity and effective management of protected areas; and the equitable sharing of benefits arising thereof for the well being of the nation. In order to achieve this, FESCO should;

- a) Ensure effective implementation of the Conservation of Biodiversity Action Plan (BAP) 2000 align with development taking place at national and international levels
- b) Encourage involvement of local communities in conservation and sustainable use of biodiversity through provision of incentives and sense of responsibility
- c) Adopt bio-safety rules /regulations and guidelines.

### **3.6 Climate Change and Ozone depletion**

In order to effectively address challenges posed by climate change and depletion of the ozone layer, FESCO should;

- a) Implement the National Climate change Policy and Action Plan
- b) Establish Clean Development Mechanism (CDM) Cell
- c) Implement policy and operational framework for effective management of CDM process
- d) Promote the use of Ozone friendly technologies
- e) Phase out the use of ozone depleting substances in line with the provision of Montreal/Kyoto Protocol.
- f) Identification and implementation of CDM projects like;
  - i. Provision of LT capacitors at Industrial and Agricultural Load
  - ii. SF6 Leakage reduction
  - iii. Conversion of existing street lighting load to Solar Power System
  - iv. Provision of RMS/AMS Smart Metering to reduce carbon foot print which ultimately translate into a core CDM activity
  - v. Replacement of Energy –inefficient Tube Well Pumps /Motors with Energy Efficient Standard Pumps
  - vi. Installation of Energy Efficient Distribution Transformers

- vii. Encourage use of Compact Fluorescent Lamp (CFL) instead of conventional bulbs

### **3.7 Energy Efficiency and Renewable Alternatives**

FESCO would promote Energy efficiency and renewable sources of energy in order to achieve self reliance in energy supplies and as a mean of sustainable development. To this end FESCO will;

- a) Implement National Energy Conservation Policy
- b) Enforce energy conservation legislation and audit standards
- c) Enforce Building Energy Codes in offices and residential colonies
- d) Encourage use of waste resources for energy production.
- e) Encourage Solar Energy Projects.

## **4.0 CROSS SECTORAL GUIDE LINES**

### **4.1 Poverty and Environment**

To achieve environmental sustainability and poverty reduction in economic growth, FESCO may;

- a) Improve poor's access to environment friendly energy technologies
- b) Implement National Resettlement Policy 2002 in all development projects

### **4.2 Health and Environment**

To prevent, minimize and mitigate injurious health impacts associated with environmental hazards, FESCO may;

- a) Enforce occupational health, safety and environment rules & regulations during all activities of company
- b) Introduce effective waste management system in all healthcare facilities
- c) Make provision of safe water and sanitation facilities mandatory for all offices, hospitals and schools
- d) Promote dissemination of information on preventive health care at the grassroots levels

### **4.3 Disaster Management**

To ensure disaster risk reduction and adequate preparedness for disasters, FESCO may ‘

- a) Develop and implement disaster management strategy
- b) Establish disaster management unit in FESCO to deal with natural calamity, accidental spillage , Fire and other accidents



## **5. POLICY INSTRUMENTS**

The following key instruments would be employed for achieving the objectives of the Policy;

- i. Integration of environment into development planning
- ii. Legislation and regulatory framework
- iii. Capacity building
- iv. Awareness and Education

### **5.1 Integration of environment into development planning**

- a) Environmental consideration would be integrated into sectoral policies and plans
- b) Environmental Impact Assessment related provisions of Pakistan Environment Act 1997 would be diligently enforced for all development projects
- c) Strategic Environmental Assessment would be promoted as a tool for integrating environment into decision making

### **5.2 Legislation and regulatory framework**

- a) Existing environmental legislative and regulatory framework would be strictly enforced
- b) Necessary rules , regulations and standards would be enforced
- c) Existing environmental legislation would be reviewed and new legislation would be adopted where required and appropriate.

### **5.3 Capacity Building**

- a) Capacity of already established Environment Cell FESCO would be strengthened by provision of adequate staff, equipment , infrastructure and financial resources to enable it effectively implement the Policy.
- b) Environmental information management system would be established to provide accurate and timely information for decision making as well as ensure public access to environment information.
- c) Short, medium and long – term programs would be designed and implanted after comprehensive training needs assessment.
- d) Environment training, related to screening, preparation of IEE, EIA & EMP, implementation of management plans and monitoring be arranged at well reputed institutions.
- e) Relevant research institutions would be patronized.

#### **5.4 Public Awareness and Education**

- a) A strategy would be developed and implemented for raising environmental awareness of the general public, office staff as well selected target groups at all levels.
- b) Establishment of environmental education/training institution within company would be encouraged.

## **6. IMPLEMENTATION, MONITORING and Evaluation**

Following the approval of the policy, the FESCO would develop an action plan for its implementation.

To ensure effective coordination of Policy implementation and oversee the progress in this regard, “Environment Policy Implementation Committee” would be established in FESCO. The composition of the Committee is as under.

1. Chief Engineer Operation.
2. Chief Engineer Development.
3. DG (HRM)
4. Project Director GSC.
5. Superintending Engineer GSO.
6. Dy. Manager Civil Division.
7. Dy. Manager Transformer Reclamation Work Shop.
8. Manager/Dy. Manager Environment.

“FESCO Environment Policy Implementation Committee” would meet biannually. The Committee would report the status of implementation of the Policy on regular basis to Chief Executive Office FESCO & BOD FESCO. “Environment Policy Cell” needs to be established at Division Level for effective implementation of Policy.

To make this committee effective, CEO should be its patron in chief .This policy should be reviewed annually to cope with the changing legislative, technical and political scenario.