

## Air Pollution and Its Governing Legal Administrative Mechanisms in Iraq

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### Abstract

Iraq has had a big share of air pollution due to industrial development taking place in the country. To address the air pollution issues in Iraq, the government has passed some important environmental legislations, such as the Act of Ministry of Environment in 2008, the Act of Protect and Improve Environment in 2009, and the Order of Air Protection in 2012 with a few international environmental responsibilities. These legislations consist of mechanisms allowing administration to use it in order to maintain air quality. This paper discusses the executive mechanisms:- preventive and curative to maintain air quality by utilizing the existing legal system tools. Further, to give an explanation for the sources of air pollutants in Iraq. It relies on primary sources namely, in-depth interview with participants in different criteria such as the professionals including experts, academics and supported with secondary sources.

**Key words:** Sources of Air Pollution, Administrative Legal Mechanisms, Iraq.

### 1. Background of the study

Iraq is geographical territory of a place with 430,000km<sup>2</sup> with six neighbouring states and Euphrates and Tigris Rivers. It has 18 provinces, or what is also known as governorates, within three northern governorates; Dahuk, Sulaymaniyah and Arbil, are official designated to the Kurdish autonomous region, with independent legislative arm, since 1970. Baghdad is the capital of the Republic of Iraq. It is also taken into consideration that its considered effective administrative and educational centre inside the country. According to Statistics in 2014, Ministry of Planning about populace of Iraq, the population of the country has reached 36 million.

Iraq is divided into four geographical zones, defined as barren region plateau, North-Eastern highlands, Upland region, and alluvial plains. The desert plateau is of approximately 40% of the country's territory with a broad and stony undeniable topography. The Northeastern highland covers approximately 20%, and it extends to the south between Mosul to Kirkuk. The upland region is of 10%, comprising of transitional location between the highlands and wilderness plateau. The alluvial plain is 30% of Iraq composing of the alluvial plain that is shaped via the combination of deltas of the Tigris and Euphrates rivers.

The topographical characterization of Iraq is chargeable for its enrichment of natural resources, with crude oil taking the leading percent. However, environmental pollutants especially air pollution caused by military invasion and industrial waste have no longer been able to be duly attended to.

the degree of air pollution is compounded by the ever-increasing traffic volumes, risking humans and the environment from automobiles exhausts emissions.

The government has participated in the United Nation Conference on the Human Environment held in Stockholm in 1972 and shaped the Higher Committee on the Human Environment in 1974. This Committee was then replaced by Supreme Council for the Protection of the Environment, which followed by the Minister of Health. In 2003, the Ministry of Iraqi Environment was established. Being privy to the significance of environmental protection and improvement, the Iraqi Constitution of 2005 prepared environmental rights. As stated in Article (33): "First: Everyone has the right to live in safe environmental conditions. Second: The State shall ensure the protection of the environment and biodiversity and preservation." in line with this provision, the Iraqi parliament issued Act of the Environment Ministry No. (37) of 2008 and Act of Protecting and Improving the Environment No. (27) of 2009. The responsibility to control pollution rests with the executive bodies of the state, both at domestic and international tiers. Domestic measures by way of sanctions punitive preventive legal means and as global measures using cooperation with different countries and imposing environmental conventions.

### 2. Literature review

In line with Al-a'abidi<sup>(1)</sup> noted that the methods and techniques used by the administration are simplest a weapon applied whilst it's far vital to be able to maintain the safety of residents, especially with regards to their fitness and the safety of the surroundings in which they live. Subsequently, the speed of finding solutions to the troubles that harm the surroundings makes it luckier from the legislative and judicial branches of presidency to find quick and advanced solutions to such that topics in light of the long and complex procedures in respect of

judicial and legislative authorities. She expressed that the means used by the administration as a preventive and deterrent and at the equal time applied to all members of the community to confront the phenomenon of environmental pollution.

Qabas<sup>(2)</sup> shows that the financial rules perform an critical role in protecting the environment from pollutants. The study looks at targeted on identifying the maximum vital tools which may be used in monetary structures to shield and hold the environment. She confused that the imposition of taxes and collection of public charges are the approach to carry each aspects of the imposition and deduction and at the identical time is an organizational way that leads to the prevention of environmental issues, and paintings to protect and improve the surroundings. some European financial structures which have been successful within the use of those economic tools to hold the environment may be used as a version to making use of for preserve air exceptional inside in the country.

The justification of the cause of legislative intervention refers to the problem of pollutants as a legal problem. Consequently, it's necessary to guard the environment from pollution and depletion of its sources, this is an crucial and sizable difficulty. Therefore, it is essential to expand the responsibilities and commitments regarding the protection of this goal (environment). Therefore, this difficulty has imposed on public government, especially the want to take account of legal methods to get around this idealistic goal of defensive the environment, and decreasing the drain of its resources, that's the common background of humanity.

Al-hadeethi& Yassin<sup>(3)</sup> emphasize that the problem of pollutants in the environment is a legal problem preceding any other problems. due to, it is importance necessary to advance legal obligations and commitments regarding the protection of the environment. Different actors including the government, industry individuals and have been playing critical role in promotion environmental protecting and sustainability issues. The environmental problem has forced public authorities to take account of legal approaches in protecting the environment.

Furthermore, Abdul Hamid and Abdul Hadi<sup>(4)</sup> suggest that it has turn out to be necessary for the authorities to promote the safety legal guidelines of the environment, and create a brand new approach for the motive of protecting the environment. Besides, establishing cooperation between the country and its participants, so that it will hold up properly with scientific and technological development, after which reducing the percentage of this environmental pollution. They pressured that the environment protection is the duty of people and the administration too. It needs to be on people to enjoy a chunk of the vital environmental awareness to shield the environment from pollution. Besides, it is also the duty of the administration to shield this environment. They state that the administrative penalty imposed by using administrative our bodies on violators guarantees the implementation of legal guidelines, which refers a precautionary measure. to accomplish this definitely, it ought to offer folks who are equipped of tracking the environmental protection from the incidence of the environmental risks. in addition, the management ought to no longer leave the freedom for individuals or for each one could threaten the public system, along with the safety of the environment and also tracking any scenario of this disturbance and paintings to eliminate it due to the fact no person has the liberty to damage the atmosphere.

Pandey (2006) <sup>(5)</sup> explains that administration plays a considerable function in environmental safety and pollution control, and existence closely inter-related between environmental safety and improvement it. It is important to shield our environment and to keep it pollution-free. This can be achieved via keeping right ecological balance. Environmental pollutants represent the top challenge of many authorities and additionally same steps are taken via the authorities to govern on pollution for example in fields of air, water, and soil.

### **3. Research Objectives**

The objectives of this paper is identify the sources of air pollution in Iraq and examine administrative law mechanisms to control air pollutants issues.

### **4. Methodology**

This study employs legal research by using qualitative data. Primary data includes legislation, interviews, and documents, while secondary data in the form of textbooks, government publications and academic journals. Newspaper articles, internet sources.

### **5. The Sources of Air Pollution in Iraq**

Air pollution of Iraq is due to natural and unnatural sources. for example, transport, private electric mills, pollutants from industrials, and the dirt storms. a lot of these sources contributed to the pollution of the country's air. The following section discuss each sources of air pollution in Iraq, the subsequent headings could be discussed underneath this sub-subject matter, namely:

- 1) Unnatural Sources for Air Pollution; and
- 2) Normal Sources for Air Pollution.

### 5.1 Unnatural Sources for Air Pollution

unnatural sources refer to sources originating from human activities. four of such sources have been identified:- transportation, emissions from the oil and natural gas Industry, industry , and using of fuel for electricity energy production.

#### *i) Transportation*

After the industrial era, transportation has become an important part of our life. Motors and heavy duty vans, ships, trains and airplanes, all burn tons of fossil fuels to action. Emissions from vehicle engines encompass both primary and secondary pollutants. This is leading cause of air pollution and is of great public health threat, in particular, in urban areas with high traffic volume, and such pollution is very hard to control, because people depend heavily on cars and engines for transferring humans, good and services.

Emission from transport vehicle are accountable for sixty percent of the air pollution, this is more than pollutants mild and heavy industries, recording only twenty percent of the overall share of pollutants. vehicle emission has increased in Iraq with the car increasing after 2003 and in particular the number of imported vehicles has surged the market. The scenario is worsen with the increasing intake of leaded gasoline which has toxicity in high content. Furthermore, Iraq has lack proper planning for regulation of traffic. Older automobiles are connected with higher emissions of both domestic and international pollution index than more recent cars, each due to the fact overall performance degenerate as a characteristic of age and due to the fact older automobiles are more likely to employ obsolete, higher emitting technology. Moreover, absence of a policy to reduce traffic congestion and cope with cars use, has redoubled the numbers of automobiles in Iraq. A few research have shown that growth in transportation activity has dramatically increased the amount of CO<sub>2</sub> emitted in to the air. Transportation consists of the combustion of fossil fuels as a way to produce electricity and convert into motion. as a result air pollutants is constituted of deficient carbon reactions, unburned hydrocarbons or other factors existed within the gas or air via combustion. The fundamental pollution from the shipping sector in rate of for damaging fitness consequences include lead, exceptional types of particulate depend , ozone, several toxic VOCs, nitrogen dioxide, ammonia, carbon monoxide and sulphur dioxide. These emissions are dispersed into the ambient air according to atmospheric circumstances, which in turn degrades human fitness.

#### *ii) Emissions from the Oil and Natural Gas Industry*

Iraq has the fifth largest proved crude oil reserves within the international after Venezuela, Saudi Arabia, Canada, and Iran, and it's the second-largest crude oil producer inside the Organization of the Petroleum Exporting nations (OPEC) in 2014. The oil manufacturing dominates the Iraqi economic system. Oil contributes to over 70% of GDP, to ninety nine% of exports and to over 95% of government sales. This dominance will grow in future years as oil production and exports are set to growth. in addition petroleum, Iraq's different natural sources consist of natural gas, phosphates and sulphur. The oil and natural gas industry includes a extensive form of processes and system, from wells to natural gas.

Amassing lines and processing facilities, to reservoirs, and transportation and distribution pipelines. The oil enterprise is the most important enterprise supply of emissions of risky herbal compounds (VOCs), a collection of chemical compounds which participate to the formation of floor-stage ozone (smog). Publicity to ozone is related to a huge kind of health consequences, alongside angry allergies, raised emergency room visits and medical institution admissions, and premature lack of existence. In 2008, the EPA predicted VOC emission from the oil and natural gas industry at 2.2 million tons. The oil and natural gasoline industries is likewise a crucial supply of emissions of methane fuel, a greenhouse gas this is greater than 20 times as strong as carbon dioxide. Emissions of air toxics are like benzene, ethyl benzene, and n-hexane, as well as come from this industry. Air toxics are pollutants regarded, or suspected of inflicting maximum cancers and other critical fitness consequences.

#### *iii) Industry*

Emissions from the industries also contribute to air pollution. Specially, Iron and steel factories constitute major resources of atmospheric pollution by dioxins. It became also an important issue for pre-present day societies, with the combustion of biomass and fossil fuels detrimental each humans health and the home surroundings. however the increase of present day to day metropolis-production - and the shift from fuel-wooden to coal and then to oil-extended the extent and area of air pollutants problems.

Industrial sites encompass cement and bricks production, unsafe goods storage, petrol chemical industries and plant life the usage of massive quantities of hydrocarbon products. In most of manufacturing plants there are long tubes called chimneys installed high into the air and with the smoke and fumes mounting of it. This smoke includes of excessive emission degrees of carbon monoxide, natural compounds, and chemical compounds into the atmosphere. These are near from the residential regions.

So, the industrial plants contribute of air pollutants dramatically and it comes in a range of forms, from visible particles of soot or smoke to invisible gases like sulphur dioxide and carbon monoxide. Cement factories scattered in different parts of Iraq blow high-quality quantities of cement dirt that pollutes the air and it has very

harsh effect on human health specifically, on eyes and skin inflection and respiration illnesses, in addition, damages the nearby vegetations and flowers. as an instance, Badoosh cement manufacturing facility in Mosul emits huge quantities from dust to atmosphere which negatively affect on air high-quality.

*iv) The using of fuel for electricity energy production*

Iraq's electricity sector is suffering from problems. Those problems are reflected negatively on the citizens and the establishments of government. Because does not supply electrical strength required for them. With a purpose to bridge this shortfall in electric powered electricity, the citizen and the other institutions resorted to using private strength mills. Those turbines operate by benzene and diesel. Its launches quite a number gases and smoke-contaminated air. At the present, maximum strength is generated by burning fossil fuels and producing steam that's then used to pay a steam turbine which, in flip, drives an electrical generator. Maximum of those generators are running by means of gas or diesel, risky emission of gases from generators is one of the assets of air pollutants in Iraq. Emissions consists of important pollutant contributing to Iraqi's terrible air is particulate depend, which includes concentrations of soot and particulate count number, known as PM 2.5 and PM 10, and emissions of sulphur dioxide and carbon oxides.

*5. 2 Normal Sources for Air Pollution*

Nature causes air pollution without intervention from human. In Iraq, this source comes from:-

*i) Dust storms*

Iraq is one of the most encouraged countries inside the Middle East location concerning the occurrences of sand and dust storms. also Iraq is considered as one in every of more prone nations to climate modifications, which coping with a unique severa of environmental deterioration and growing frequency and intensity of excessive weather activities, especially sand and dust storms. The frequency of the occurrence has risen dramatically inside the ultimate years and with growing constantly. In addition, there are a few worldwide places geographically positioned in a characteristic that sand and dust storms nearly stuck with them. Unfortunately, Iraq is this sort of nations in which sand and dirt storms rise up continuously.

Iraq, in 2008, recorded 122 dirt storms and 283 dusty days. The anticipated as indicated with the aid of sources that inside the next ten years Iraq may additionally witness three hundred dusty days and dirt storms yearly. In summertime, Iraq's climate is hot, dry, and dust. in which, Iraq is struggling from the southern and southeasterly wind known as "Shargi".

This wind is a dry with occasional gusts, the occurrence length from April to early June and over again from overdue September through November. This wind brings with it drastic dust storms which can upward thrust to ranges of numerous thousand meters. Besides that, the "Shimali" wind blows from the north and northwest. Shimali winds can preserve for several days, characterized by strength inside the day and weaken at nights, which cause the introduction of devastating dust storms. it arise nearly continuously thru June and July and once more in August and September blow. at any time of the year, this wind can rip in the course of the Tigris and Euphrates River valleys of southern and central of Iraq.

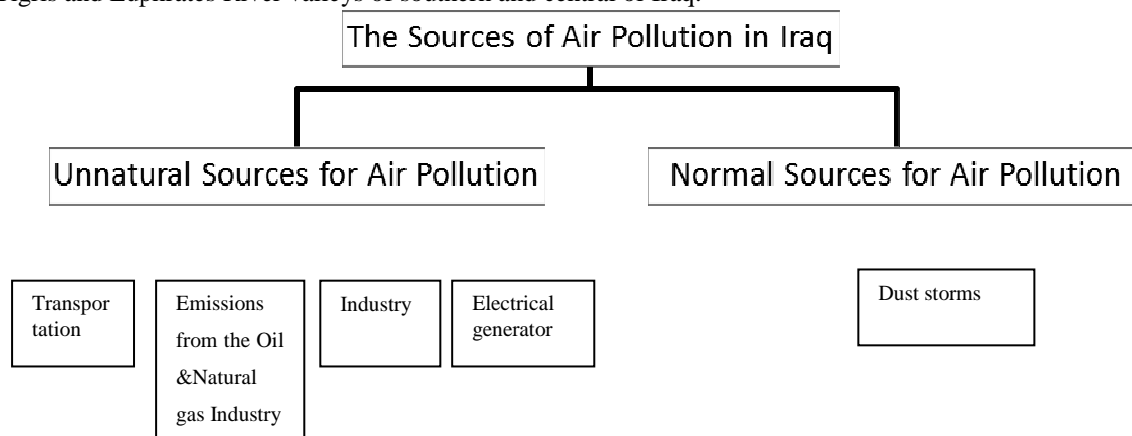


Figure 1: The Sources of Air Pollution in Iraq.

**6. Administrative legal mechanisms to control air pollution in Iraq**

Local government uses administrative legal mechanisms as a way to manage air pollutants problems. These mechanisms are represented by the measures are used and actions taken. Such as, environmental laws and regulations; environmental decisions and directives issued by the governor; administrative procedures; and individual provisions that deal with Individual cases such as licensing and environmental approvals. All these mechanisms are a means under hand of administration to tackle the problem of air pollution. To provide a legal

basis for administration through which it can intervene to address air issues in the country.

The variety of hazardous pollutants that occur in air also leads to many different administrative interventions. Interventions pertaining to environmental hazards are often more sustainable if they address the driving forces behind the pollution at the community level rather than attempt to deal with specific exposures at the individual level. In addition, pre-measures to reduce risks of air pollution are better than curative measures. Reducing air pollution exposure is largely legal issue. Legal mechanisms that be used by administration to reduce pollution at its source are plentiful. Getting these mechanisms applied in practice requires strong government or corporate policies that guide administrative decision making in the right direction.

Administrative legal mechanisms refer to a group of procedures, orders and decisions carried out by public authority for protecting the public system, aimed at the three main factors namely, security, health and peacefulness. Administrative Mechanisms is one of the main functions of administration. The aim of administrative legal mechanisms is to protect the public system and to prevent any violation. Administrative legal mechanisms are performed by administration of authority when it is necessary to face any violation and confusion at any time. The major the administrative legal mechanisms for air pollution-control which used by the administration according to law can be categorized as: - Preventive Mechanisms and Curative Mechanisms. These mechanisms may consist either of general rules or of specific decisions on individual cases (directives or sanctions). It includes the acts are practicing by the administration in the field of air protection from pollution.

### *6.1 The Preventive Measures of Administration for Air Pollution Control*

This group of administrative instruments is representative of attempts to maintain of air quality by utilizing the existing legal system tools before pollution case happened.

#### *i) Environmental instructions or directives*

The Law authorizes MOE issuing environmental instructions and regulatory prohibitions with respect to a particular category of activities, such as air pollution. Also from the regulatory tools, emission standards are probably the best known and most frequently used in controlling of air pollution. Emission standards should be based on the optimum level of environmental quality and according to global emission standards and neighboring countries. Indeed, the MOE has issued some environmental instructions. Such as, instructions No.1 of 2013 the Environmental Protection Fund, and the Resolution No.1 of 2015 on Rules of Procedure of the Department of Environmental Police. it necessary for each country, particularly Iraq, the environmental regulatory framework should be include such as these instructions, To empower environmental institutions to reduce crimes against the air through monitoring and punishing violators and removing damage.

#### *ii) The Environmental Impact Assessments*

Article 10 on environmental effect assessment was protected in the law protective and improving the environment. The MOE obliges all initiatives for which effect evaluation is obligatory before hooked up. The purpose is to pick out and rate the impact that the proposed assignment could have at the environment all through its recognition and utilization.

The 2009 Environmental law accelerated the jurisdiction and enforcement powers of the MOE and brought the concept of environmental impact assessments (EIAs), which need to be submitted to the Ministry and authorized earlier before work may begin. The evaluation ought to include the following elements: effective and bad affects of the challenge on the environment, method to prevent and deal with the reasons of pollutants in an effort to follow guidelines, Contingencies for pollution emergencies and precautions feasible opportunity to the usage of technology less dangerous to the environment, provisions to reduce waste. According on the results of the EIAs the MOE can be grant environmental approvals (permits).

#### *iii) Environment censorship*

Also, from the regulatory equipment, many Industrial installations ought to be act in an environmentally well suited way with the industrial air emission standards followed by way of the ministry in keeping with the countrywide and international emission standards. So, activities that have an impact on the environment shall be subjected to the environment censorship under Article (22) from the regulation 27 of 2009. "Activities that affect the environment shall be subjected to the environment censorship. The responsible party for such activities should show all cooperation and necessary facilities to the environment censorship teams to perform their mission including allow them to enter the sites".

### *6.2 The Curative Measures of Administration against Air Pollution*

The next group of administrative instruments is the compliance and deterrence mechanisms:-

#### *i) Environmental Responsibility*

As for the environmental responsibility, inside the Iraqi environmental regulation, Environmental responsibility based totally on the damage to the environment and individuals, without a need to prove fault and relationship among them. Further, it states to strict liability for minions (employees and machines that under his command), the obligation for environmental pollutants falls not most effective to the power that caused the pollutants, but

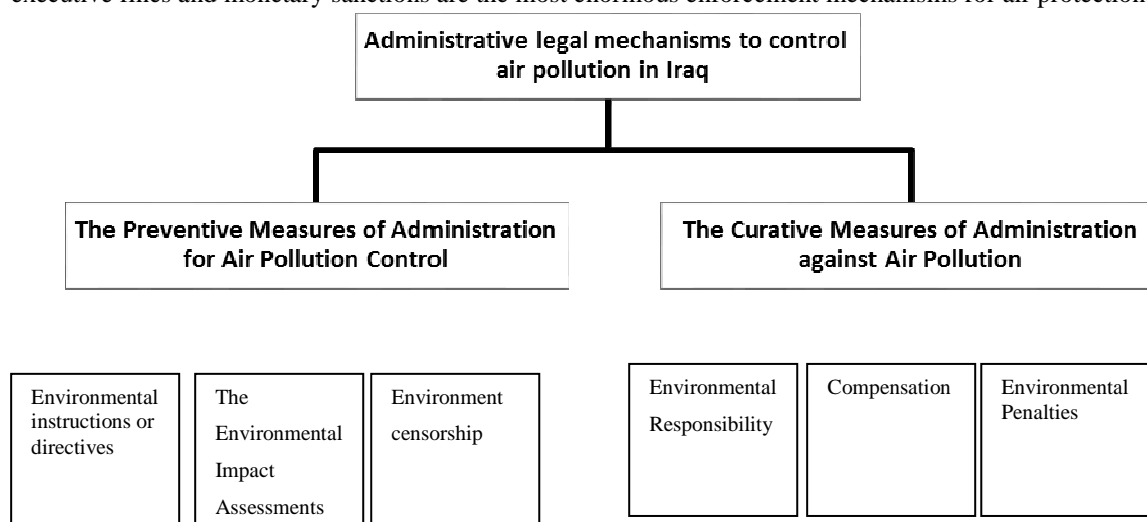
additionally to any entity that contributed to the number one causation by the negligence or failure to act to save you any persevered pollutants. Thus, the establishing of environmental obligation primarily based at the damages to the environment and individuals, inside the crimes of air pollution is one of the crucial points to keep air high-quality, by way of averting the aggrieved problem to proving the incorrect of violator, main to reduce the irregularities located on the air.

*ii) Compensation*

The administration can afford to pay the polluters enough to cover the abatement costs, to indemnity damages on a case-by-case basis, in order to reform the status, and in such a way that the procedure is fantastic for all parties worried, to the so-called "polluter-pays" principle, as a form of better-stage criterion. This principle says that the polluter should undergo the fee of wearing out the measures decided by means of the general public authorities to make sure acceptable environmental situations. As regards compensation, Amounts of money obtained from repayment are returned to the Environmental protection Fund. Repayment could be spent for damage due to activities dangerous to the environment. It applies to situations that the pollution came about within the air ambient. The proper to compensation, man or woman who suffers harm has the proper to compensation from the polluter, after court procedures.

*iii) Environmental Penalties*

The 2009 regulation also stipulates on predominant penalty for failure to comply with an responsibilities of this law. one among disadvantage of this law, it diagnosed one punishment for all types of environmental crimes, regardless of extent and extent of the damage due to pollution, it did not differentiate between crimes in opposition to factors of the surroundings from the air, water, soil. It changed into higher if legislator diagnosed especial and excessive punishment for air pollution crime extraordinary than the consequences of water and soil pollutants crimes. The reason goes returned to the specificity of the air and pollution because in occasionally can't be seen or felt the air pollutants. It establishes uniform penalties for every environmental violations, from non-compliance and environmental pollution, it includes:- (warning, closing, fine, and imprisonment). the executive fines and monetary sanctions are the most enormous enforcement mechanisms for air protection.



**Figure 2: Administrative legal mechanisms to control air pollution in Iraq**

**7. Conclusions**

In This paper reviewed administrative legal mechanisms in the Iraq that relate to the protection air pollution. Issue of pollutants prevention and control is dealt with by way of a hard and fast of law and regulatory methods in addition to administrative measures, by utilizing the existing legal device equipment or can formulate guidelines and improve establishments to observe and put in force environmental strategies and priorities. Many industrial installations have to act in an environmentally compatible manner with the industrial air emission requirements followed via the ministry in line with the country wide and worldwide emission standards. a lot of those mechanisms are also powerful units for surroundings control for Abatement of air pollutants. Growing life requirements with industrial and economic conditions for country have effected considerably on components of the environment, specifically air quality. Current mechanisms utilized by the administration have ended up not able to manipulate air pollutants issues. Therefore, air protection is based totally at the continuous development of an administrative legal mechanism's environmental performance over the years. The executive legal mechanisms need to therefore continuously change in line with the country's activities and external influencing factors together with contemporary industries and changes in era, that requirement to make non-stop

improvements in environmental safety regulations.

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