

The Position of Environmental Law in Malaysia in Dealing with Domestic and Regional Air Pollution Problems

Kedudukan Undang-Undang Alam Sekitar di Malaysia Dalam Menangani Masalah Pencemaran Udara Domestik dan Serantau

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ABSTRACT

For Malaysia, the increasing concentration of people and economic activities in urban and sub-urban areas, as well as the growing numbers of agricultural areas, industries and vehicle fleet have contributed to the problem of air pollution in the country. Since sources of air pollution are varied, different legal approaches are required to regulate and control various sources of air pollution. The main objectives of this paper are to lay down existing law applicable to protect air quality from various pollution sources, and to highlight one type of air pollution problem faced by Malaysia annually, namely that of transboundary haze pollution. Compared with other sources of air pollution, the control of haze is more complicated as it can originate both domestically and from abroad. If such haze derived beyond Malaysia's boundary, international efforts would then be required to regulate it. For this reason, the paper seeks to identify the position of law in Malaysia in controlling haze across border and to identify gaps in the law that require improvement.

Keywords: Air pollution, environmental law, transboundary haze pollution

ABSTRAK

Bagi Malaysia, peningkatan kepadatan penduduk dan aktiviti ekonomi di kawasan bandar dan pinggir bandar, serta pertumbuhan jumlah kawasan pertanian, industri dan kenderaan telah menyumbang kepada masalah pencemaran udara di negara ini. Oleh kerana pencemaran udara berpunca dari sumber yang pelbagai, pendekatan undang-undang yang berbeza adalah diperlukan untuk mengawal selia dan mengawal sumber-sumber yang berkenaan. Objektif utama kertas ini adalah untuk menggariskan undang-undang sedia ada yang melindungi kualiti udara daripada pelbagai sumber pencemaran, dan mengetengahkan salah satu masalah pencemaran udara yang dihadapi oleh Malaysia saban tahun, iaitu pencemaran jerebu merentasi sempadan. Berbanding dengan punca pencemaran udara yang lain, kawalan jerebu adalah lebih rumit kerana ia boleh berpunca dari kedudukan domestik dan juga luar negara. Jika jerebu berkenaan datangnya dari luar sempadan Malaysia, usaha-usaha antarabangsa adalah diperlukan untuk mengawal jerebu ini. Atas sebab itu, kertas ini bertujuan untuk mengenal pasti kedudukan undang-undang di Malaysia dalam mengawal jerebu merentasi sempadan dan jurang dalam undang-undang yang perlu diperbaiki.

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Kata kunci: *pencemaran udara, undang-undang alam sekitar, pencemaran jerebu rentas sempadan*

Introduction

According to WHO (2016), air pollution is “contamination of the indoor or outdoor environment by any chemical, physical or biological agent that modifies the natural characteristics of the atmosphere”. The importance of protecting and enhancing the quality of air has been well documented and recognized by the United Nations (UNEP, 2014) which supports the World Health Organisation’s resolution (WHO, 2015) that considers air pollution as one of the leading causes of disease and death globally. The recent report by the WHO has estimated that air pollution has killed about 7 million people across the globe in 2012, making it the world’s largest single environmental health risk (UN News Centre 2014). Over the years, the protection of air quality has becoming a paramount importance for countries worldwide including Malaysia requiring the setting up of policy and legal framework on the matter (Rom 2011).

At present, several approaches within Malaysia’s environmental law are being applied to regulate and control sources of air pollution. The main objectives of this paper are to lay down law applicable to protect air quality from different sources, and to highlight one type of air pollution problem faced by Malaysia annually, namely that of haze. Compared with other sources of air pollution, the control of haze pollution is more complicated as its source originates from abroad, beyond Malaysia’s boundary, requiring international efforts to regulate it. For this reason, examination will be done on the existing law relating on transboundary haze pollution in order to identify gaps in the law that require improvement.

Sources of Air Pollution

Since the quality of air in Malaysia is very much dependent on the level and pace of urban development, it is inevitable that the increasing number of transportations as well as industrial and agricultural activities have contributed towards the problem of air pollution (Maizatun 2016). According to the Department of Environment (2015), at present, the main sources of air pollution include industries, power plants, emission from motor vehicles, and open burning activities.

Apart from industrial emissions, emission for motor vehicles is another source of air pollution particularly in the urban area. According to the Road Transport Department of Malaysia (2014), there was over 25 million registered road vehicles in 2014, and from about 1 million numbers of new vehicles registered that year, passengers cars and motorcycles made up the highest number with over 90 percent, with the remaining vehicles consisted of good vehicles, taxis and buses. In addition to stationary and mobile sources pollution, open burning is another activity that contributes towards air pollution. It has been reported by the Department of Environment (2014) that over 6000 open burning cases were detected on the ground in 2014 which consisted of burning of garbage in residential areas or roadside, and burning of articles for religious purposes, as well as

burning of bushes, forests and agriculture areas. Whereas surveillance through satellites have detected the existence of over 4000 hotspots in Malaysia throughout 2014.

Major air pollutants in Malaysia include carbon monoxide, nitrogen oxides, sulphur dioxide, and particulate matter. Generally, carbon monoxide is a poisonous gas and an indication of air pollutant from transportation as a result of the incomplete combustion of hydrocarbons. Nitrogen Oxides on the other hand is the by-product of combustion when energy is used to oxidize nitrogen instead of a hydrocarbon, and an indication of air pollutant from transportation and industrial production. Sulfur dioxide is emitted from industrial activities as a result of the combustion of fossil fuels like coal and hydrocarbons. Whereas particulate matter include various solids in suspension in the atmosphere such as smoke, soot, and dust. In terms of air pollutant emission loads from various sources, the Department of Environment (2015) estimated that for 2014, the combined air pollutant emission load accumulated to over 1.9 metric tonnes of carbon monoxide, 836708 metric tonnes of nitrogen oxides, 221 471 metric tonnes of sulphur dioxide, and 25673 metric tonnes of particulate matter. As compared to the previous years, report from the Department of Environment (2015) has shown that the amount of overall emission load for Malaysia on the increase indicating higher consumptions of fuel oil and coke which was used as fuel in industries, power and heat generation plants. The increase in overall emission load is a concern for Malaysia which calls for the government to act on reducing the release of such emissions as highlighted by Shahrul et.al. (2013) and Maizatun (2016). At present a number of provisions have been introduced under environmental law, notably the Environmental Quality Act 1974 to deal with various sources of air pollution (Maizatun 2009). These provisions are examined below.

Law on Mobile Sources Air Pollution Control

Since Malaysia is a party to various United Nations conventions starting from the Stockholm Conference 1972, Malaysia is therefore highly influenced by, and committed itself to, the United Nations' sustainability agenda. It is on this basis that this country translated its commitment towards environmental protection and sustainable development into the National Environmental Policy Malaysia 2002 which upholds the needs to have a clean, safe, healthy and productive environment (Ministry of Science, Technology and the Environment, 2002). This policy directive has been reiterated by the Eight Malaysia Plan 2001-2005 (Economic Planning Unit, 2001) until the current Eleventh Malaysia Plan 2016-2020 (Economic Planning Unit, 2016) which linked such protection to the issues of global warming and climate change (Maizatun 2016). When comparing the link between environmental policy and law, Maizatun (2011) argued that it was the policy directive aiming at pollution free environment that prompted environmental law in Malaysia to be regularly updated to deal with any form of pollution including that of air pollution.

Like any other developing country, one challenge facing Malaysia in upholding the objectives of environmental policy is in combatting various types of environmental pollution, including that of air pollution (Department of Environment 2015). For this purpose, Malaysia relies mainly on the Environmental Quality Act 1974 which is the most important legislation on air pollution control. Section 22 of the Act provides for actions that constitute air pollution offences as well as the imposition of fine and imprisonment to those who contravene the law. Among actions that constitute such offence include

situations where a person “places any matter in a place where it may be released into the atmosphere; causes or permits the discharge of odours which by virtue of their nature, concentration, volume or extent are obnoxious or offensive; burns any wastes of the trade, process or industry; or uses any fuel burning equipment not equipped with any device or control equipment required to be fitted to such equipment”. Section 22 which is based on criminal sanction is linked to section 21 on acceptable conditions that provides for allowable limits of emission of pollution to be discharged into the environment. The discharge of pollution exceeding such limit is an offence unless the person holds a specific licence in accordance with Environmental Quality (Licensing) Regulations 1977. Different sources of air pollution are regulated using specific sets of acceptable conditions as provided by the Act.

Motor vehicles is considered to be the major source of mobile air pollution in Malaysia, and remain the highest contributor for carbon monoxide. Allowable emission limits for motor vehicles are set by the government in accordance with the United Nations’ standards which can be found within instruments such as the Environmental Quality (Control of Emissions and Diesel Engines) Regulations 1996, and the Environmental Quality (Control of Emission from Petrol Engines) Regulations 1996. Under these Regulations, emissions standard of pollutions such as carbon monoxide, hydrocarbon, and nitrogen oxides are imposed on the relevant motor vehicles based on related Economic Commission for Europe standards. The Regulations also impose various restrictions on diesel and petrol engine including that on installation or replacing of engine system, requirements on assembler or manufacturer to conduct certain tests on the vehicles, and control of smoke emission as well as density of smoke emitted from the exhaust pipe.

In addition to diesel and petrol engines, lead concentration also comes within the control of the Environmental Quality Act 1974 through the Environmental Quality (Control of Lead Concentration in Motor Gasoline) Regulations 1985. These Regulations were introduced to reduce and subsequently eliminate use of lead additives in motor gasoline due to the health consequences of lead exposure because when lead is emitted to the air, it can contaminate soil, urban dusts, and crops (UNEP 1999). The main objectives of the Regulations is to restrict the import or manufacture, and possession of motor gasoline lead or lead compounds in excess of 0.40 gramme per litre, unless the person is a holder of contravention licence. According to the Department of Environment (2014), in 2014, a total of 4,198 enforcement programmes were conducted in the cities throughout the country. A total of 540,567 diesel vehicles were visually inspected with the percentage of compliance of diesel vehicles was over 99 percent. During the same year, a total of 4,100 petrol engine vehicles were inspected using the CO-HC gas analyzer via the idling test method conducted at road-sides with overall percentage of over 97 percent compliance.

Another form of mobile source pollution regulated by the Act is emission from motorcycles by virtue of the Environmental Quality (Control of Emission from Motorcycles) Regulations 2003. Similar to diesel and petrol engine emissions, gaseous emission limit for motorcycle engines, as well as tests to be conducted by the manufacture, are also based on international standard, in accordance with the United Nations’ European Economic Committee Council Directive. For this purpose, the emission of carbon monoxide, hydrocarbons and nitrogen oxides is controlled according to specific categories of motorcycles such as whether they are imported or locally manufactured or assembled; a

new model or a current model; and engine type. Any manufacturer who fails to comply with these requirements, or fabricates the test commits an offence and shall on convictions be liable to a fine not exceeding RM100000 or to imprisonment not exceeding five years or to both. On the part of the registered owner or rider of any motorcycle in use, there is also a requirement by the Regulations to ensure that such motorcycle does not emit gaseous pollutant exceeding the prescribed limit, as otherwise it would be an offence, and upon conviction would be liable to a fine up to RM5000.

Law on Stationary Sources Air Pollution

Air pollution can derive from various stationary sources and the methods apply to control their emissions vary depending on available technologies and well as economic and other factors. Over the years, sources reduction and planning, and design modifications are becoming new legal strategies in stationary source emissions reduction as they are more cost effective and helps eliminate the source of air emissions before they are formed or emitted. Under the Environmental Quality Act 1974, emission from stationary sources is regulated by the new Environmental Quality (Clean Air) Regulations 2014. These Regulations, which was enacted to replace the revoked Environmental Quality (Clean Air) Regulations 1978, are meant to provide for new methods towards controlling air pollution from stationary sources through management and operational changes, and more stringent standards and advanced strategies. Premises or processes that come within the control of the 2014's Regulations are:

- "premises that are used for any industrial or trade purposes, or on which matter is burnt in connection with any industrial or trade purposes, including burning of waste;
- any other premises or process that discharges or is capable of discharging air pollutants into the open air;
- any industrial plant; and
- any fuel burning equipment, which are include any furnace, boiler, fireplace, oven, retort, internal combustion engine, vessel, or any other apparatus, device, mechanism, stack, chimney or structure used in connection with the burning of any combustible material".

One important feature of the 2014's Regulations is the mandatory self-regulation on the part of the premise known as "Best Available Techniques Economically Achievable" (BAT) which is considered a measure to prevent pollution and, where that is not practicable, generally to reduce emissions into the air from the industrial activities and their impact on the environment as a whole. In this regard: "Techniques" includes both the technology used and the way in which the facility is designed, built, maintained, operated and decommissioned; "Available Techniques" means those techniques that are accessible to the occupier and that are developed on a scale that allows implementation in the relevant industrial sector, under economically and technically viable conditions, taking into consideration the costs and advantages; and "Best" means effective in achieving a high general level of protection of the environment as a whole (Department of Environment 2016a). BAT which seeks to demonstrate compliance with the optimisation requirement through selections of management option and practices is introduced within the 2014's Regulations to replace the previous requirement that employed best practicable means.

BAT's overall purpose is to provide for a permit system for certain categories of industrial installations to conduct an integrated and comprehensive view of the pollution and consumption potential of their installation. It is also meant to reduce industrial discharges and ensure a high level of protection for the environment as a whole taking into account different types of environmental impact. Activities that are subjected to BAT under the 2014's Regulations include fuel burning, including heat and power generation in boilers, combustion turbines or generator; production and processing of ferrous and non-ferrous metals; oil and gas industries; non-metallic industry in cement production; all stationary asphalt mixing plants in form of liquid, solid or gas; pulp and paper industry; chemical and petrochemical industry; production of pharmaceutical products, plant health products and biocides, and mixing and packaging of chemicals, pesticides, pharmaceutical products; solvent use in industry for dressing, printing, coating, degreasing, waterproofing, painting; and waste incinerators.

Through the BAT, the said premises are regulated to restrict their emission that emphasized on pollution prevention techniques rather than end-of-pipe treatment. The Environmental Quality Act 1974 also encourages the premises to develop and introduce new and innovative technologies and techniques which meet BAT criteria and looks for continuous improvement in the overall environmental performance of the premise's activities as part of sustainable development. For this purpose, the Regulations impose various requirements on the part of the owner or occupier of such premises including to comply with specific parameters, concentration or levels; to equip air pollution control system in the premise; to equip the premises with relevant equipment and to conduct performance monitoring of the air pollution control system, and to maintain records of performance monitoring of the air pollution control system. In addition, it is a requirement upon the owner or occupier of specific premises to incorporate measures to reduce the emission of air pollutants in accordance with the BAT including requirements on opacity and black smoke.

Law on Haze Pollution

The ambient air quality measurement in Malaysia is described in terms of Air Pollutant Index (API) which is comparable to the corresponding air quality standards recommended by the World Health Organisation (Department of Environment 2013). The API which is being continuously monitored by the Department of Environment is based on parameters including ozone, carbon monoxide, nitrogen dioxide, sulphur dioxide particulate matter, total suspended particulate, and lead. These parameters are the pollutants for which the national ambient air quality standards are set, and they are designed to protect human health as well as the environment (Department of Environment 2013). Using these parameters, the API transforms the air quality data measured into a single number ranging from 0 to 500, with higher values indicating higher levels of pollution (Department of Environment 2014). Ever since its adoption in 1996, the API has become pertinent in Malaysia as an air quality indicator particularly in the event of haze as it can measure the level of pollution on the air and its associated health effects.

In Malaysia, the occurrence of haze phenomena was first noted in the 1960s and by the 1990s it has become a regular problem (Department of Environment, 2016b).

According to the Department of Environment (2015), among activities that contribute towards the problem of haze include uncontrolled open burning activities apart from emissions from factories and motor vehicles. Due to the seriousness of haze problem, the Environmental Quality Act 1974 was amended to include a specific provisions on open burning (Maizatun, 2009) through section 29A that completely bans “open burning” and strictly prohibits any person from causing open burning on any premises, and land. The penalty imposed by this section is a fine of up to RM500 000, and a jail term for five years, or both. Nevertheless, section 29AA was subsequently introduced to provide for some exceptions to certain open burning activities in the form of “Declared Activities” as listed in the Environmental Quality (Declared Activities) (Open Burning) Order 2003. These declared activities include certain farming activities, religious rites as well as activities involving health and safety measures as required by certain laws.

While section 29AA allows for open burning practices, this permission is not absolute. The Department of Environment, which has a duty to monitor the quality of the air throughout Malaysia, may notify the Director General of the status of air pollution in the country. In the event that the API reading has reached an unhealthy level, or where such activity would be hazardous to the environment, the exemption will be withdrawn. Thus, during that situation, any such fire, combustion or smouldering would not be allowed to be occurred (Department of Environment, 2016c).

However, to a large extent, the recurring haze problem facing Malaysia has been attributed mainly to forest fires and open burning activities in the neighboring country Indonesia (Jayakumar, et.al. 2015) causing the API to reach the hazardous level of 500. Unlike other types of air pollution, haze poses a great challenge for Malaysia and other ASEAN countries due to the facts that it is transboundary in nature, originating from abroad, namely Indonesia, and has crossed into Malaysia’s air space causing serious air pollution annually. According to Siegert & Hoffmann (2000), in Indonesia, forest fires are used as means of large scale land clearing for purposes including that of palm oil plantations. It is estimated that that in 2015 the fires have removed about 21000 square kilometers of forests and peatland in Indonesia.

The occurrence of serious haze pollution has been recorded by the Department of Environment (2016b) starting 1991 when Malaysia experienced very hazy weather condition due to the forest fires in Sumatra and Kalimantan and continues to recur almost every year until now. Haze has caused the presence of a large number of particles suspended in the air including dust, dirt, smoke and various chemicals. Due to the specific emission characteristics of land and forest fires, haze is predominately made of very fine particles with a diameter of less than 10 μm . While larger sizes particles would be cleared out of the atmosphere within a few hours, fine particles have the longest residence time in the atmosphere and travel extensive distances. The Department of Environment (2015) predicted that Malaysia and other neighbouring countries would continue to face the haze problem during the annual southwest monsoon unless Indonesia no longer practice its forest burning activities.

The substantial cost of haze endured by Malaysia has raised a significant question about the possibility of a legal action being taken against Indonesia or anyone that causes serious air pollution problem to Malaysia. The application of domestic law on air pollution is quite direct, either through criminal law or civil law. However, in the event where the

act of open burning that causes the haze happens outside Malaysia, international law, which is not a straight forward process, will be applied. The voluntary nature of international law also means that it is not possible for Malaysia to infringe on the sovereignty of another country unless that country waives its sovereign immunity willingly (Sands et al 2012). Until now, Malaysia has not possess any suitable legal framework on the matter. However, at present, Indonesia has already ratified the ASEAN Agreement on Transboundary Haze Pollution (AATHP) in 2014. Generally, the objective of AATHP is to prevent and monitor transboundary haze pollution through national efforts and regional and international cooperation. Nevertheless it has been argued by scholars such as Tan (2014) that the content of this Agreement is non-imposing in nature, reflecting ASEAN's adoption of the "non-interference" principle. Thus, the Agreement does not forbid certain types of conduct that cause open burning, nor does it include obligations for compensation. Obviously missing from the Agreement is the enforcement measures or rule on state liability. Without such measures, it is not possible to hold Indonesia, or any corporation or individual responsible for haze (Varkkey 2015).

Suggestions and Conclusion

Malaysia's dynamic economic and social growth for several decades have led to an increase in pollutant emissions to the air and gave rise to health, environmental and other issues. In Malaysia, the regulation of air pollution comes mainly under the jurisdiction of federal law, namely the Environmental Quality Act 1974 which is empowered to control air pollution from various sources. As already discussed, the Act uses various methods in dealing with different sources of air pollution, including implementing emissions standards, conducting inspection and maintenance standards, and enforcing strict criminal sanctions for non-compliance of the law. At the same time, continuous monitoring of the status of air quality by the Department of Environment not only provides information on the degree of air contamination over a certain area, but also allows for assessing the effectiveness of control mechanisms as well. However, recent years have observed that air quality is no longer a domestic problem where both sources and effect are confined within one state but is already extended beyond a national boundary. Thus, for Malaysia, it is necessary this country to look at the target of air pollution control in a much wider perspective, and for that reason to identify existing constrains, and to ensure that the required mechanisms to achieve that target are in place.

Malaysia must ensure that the aim of environmental law is not simply towards achieving the ambient air pollution standard, but also towards the global issue of climate change. This is due to the fact that there is a direct linkage between the traditional air pollutants and greenhouse gases since both derived from common sources including fossil fuel burning, and industrial and agricultural practices. Addressing the issues of air pollution and climate change may be a challenging task for a developing country such as Malaysia. However, it can be argued that since they come from the same sources, strategies used to reduce air pollution can also be applied towards reducing greenhouse gasses emission. In this regard, environmental law has a role to play towards reducing the emission of the greenhouse gases, while at the same time taking radical changes, not only in methods of reducing air pollution, but also in other transformations, such as in the use of renewable energy and green technology as proposed by the latest Eleventh Malaysia Plan.

In the context of air quality protection, the concern for transboundary haze pollution needs to be addressed due to the fact that it is causing serious health, economic and other implications. For this reason, the law needs to be revised to allow Malaysia to have an extra territorial jurisdiction enabling it to take action against companies or entities that cause air pollution to Malaysia from abroad. This approach, which has been taken by Singapore through the enactment of an Act relating to transboundary haze pollution as a mean to provide an extra-territorial liability for the purpose of haze should be emulated by Malaysia. In addition, it is also important to evaluate the content of the AATHP which is the only international legal document available to Malaysia in dealing with transboundary haze pollution. Since the Agreement does not forbid certain types of conduct that cause open burning, nor does it include state liability and obligations for compensation, it is necessary for the content of the Agreement to be revised especially in relation to control measures and enforcement based on international law principles of state liability and responsibility. While it is necessary for Malaysia to take a fast action in combatting the haze problem, it is also vital for Malaysia to acknowledge that this transboundary pollution problem facing the region is both complex and unique. Thus any suggestion on the improvement of the law on haze must take into account factors including the unique relationships between Malaysia, Indonesia and other affected countries, and principles they adhere to in dealing with multi-dimensional regional haze issue.

As a whole, environmental policy directives play a major role in shaping the target, and the manner in which air quality of a nation is being managed. Malaysia already realises that the control of air pollution is both important and complex due to varied sources of the problem, and due to the fact that air pollution it is not simply a localized agenda, but has transgressed to become regional and global issues. It also acknowledges that in every situation, the set of available legal and other instruments might be different. But common to all should be the aim of the actions undertaken, which is in enhancing the quality of aspects the environment including that of air. While Malaysia has taken various measures in its air quality protection and pollution control, integrated and ambitious approach are still needed to ensure effective and long term protection of air quality for the country.

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