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Prasanna S,

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No. 08, Arul Nagar, Seera Thoppu,

Maudhanda Kurichi, Srirangam,

Tiruchirappalli – 620102

Phone : +91 73059 14348 – [info@iledu.in](mailto:info@iledu.in) / [Chairman@iledu.in](mailto:Chairman@iledu.in)



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## EVOLUTION OF GREEN TECHNOLOGIES IN THE MOTOR VEHICLE SECTOR

**AUTHOR** – MANAV DUTT GAUR, STUDENT AT GURU GOBIND SINGH INDRAPRASTHA UNIVERSITY

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### ABSTRACT

I aim to analyse the Right to Clean Environment vis-a-vis introduction of Electric & Hybrid Vehicles under the various initiatives undertaken by the Government of India and the subsequent needful amendments to The Motor Vehicle Act, 1988, The Central Motor Vehicle Rules 1989 and the development of the legal eco-system thereof. The focus of the paper would be to throw light on the action plans undertaken by the Indian legislature with respect to the systematic and chronological development brought forth by the Indian judiciary stepping up from the role of interpreters of law to provide modern day solutions to modern day problems to ensure the fundamental right of the clean environment enshrined in the Part III of the Constitution of India. The paper also analyses whether the definition of Alteration in motor vehicle as provided by the section 52 of the Motor Vehicle Act, 1988 is proficient to answer whether conversion to alternate fuel technology is a legally acceptable “alteration” under the scheme of the act and the recent amendments with respect to Electric Vehicles thereof. This also analyses the development of the Central motor vehicle rules and the standard of such conversions.

The rapid urbanization that fuels the growth of India has contributed to the tremendous increase in the number of motor vehicles plying on the roads. This exponential increase in the fleet of vehicles brings increased mobility and serves as a catalyst for better connectivity and opportunities of social, economic and cultural growth on one hand while creating an effect similar to choking with the vehicular pollution as one of the main sources of air pollution<sup>18</sup> that chokes rural and urban India. According to the website of The Transport department of Delhi, the registered vehicular population has reached nearly three times to 7.6 million from 2.2 million in 1994, registering a growth rate of 14% per annum. Where around two-Third of the registered Motor Vehicles are two-wheelers.

### INTRODUCTION

This Chapter covers a comprehensive analysis of the EV related laws in Norway, The United States of America and The Great Britain to understand the global take on the model shift to a sustainable form of transportation which can be achieved with EVs and PHEVs. Norway leads the global race to shift from the traditional ICE vehicles to an electric mobility-based system by providing an ecosystem of infrastructure creation and fiscal incentives. “The Electric Vehicle Industry is projected to be valued at around \$567,299.8 million by 2025.” Several

nations are taking measures to ensure that there is a place for EV and PHEV vehicles in their jurisdictions globally and nationally. The policies enacted range from local municipalities to nations. Though these policies vary in tactics, the goal remains the same: to reduce the sovereign’s carbon footprint and develop economic growth. Research and practical applications of governmental policies can encourage sales.<sup>46</sup> Policymakers can draft legislation that entices consumers to demand more EVs or create environments that promote manufacturers to produce more EVs. This is a

key distinction that any legislator must consider before drafting legislation, and it must fit specifically into their jurisdiction. Working in isolation may lead to Indian Markets falling behind in the adoption of Cleaner EVs and PHEVs, hence it is imperative to draw a parallel with the proposed legal structure in India with the leading examples of clean mobility provisions from around the world.

### DEVELOPMENT OF ELECTRIC VEHICLES

In the light of the grave situation of vehicular pollution, vehicles that run on cleaner alternative fuel sources are found to be the trade-off between the environmentally deficient vehicles and vehicles with limited detrimental effect on the environment. This chapter covers the types of vehicles powered by alternative fuel technologies and the reason why hybridisation and/or electrification of the motor vehicle industry is a potential solution to the burning issue of vehicular pollution in the socio-legal and environment of India. In order to overcome the burden of polluting vehicles, the transportation industry is trying hard to manufacture vehicles that can run on alternate power sources.

The issue with CS mode is that its charging efficiency relies mainly on regenerative braking and gasoline. This is where the plug-in HEVs (PHEVs) emerged as a concept to provide a possible solution. Unlike HEVs, PHEVs have the ability to be charged externally through power outlets. The PHEV vehicles mostly make use of the power to run an electric motor (EM) which acts as a primary source, while ICE acts as a backup source of power. The Various Barriers to the mass adoption of EVs are:

- a. **High Cost of Acquisition:** The batteries used in EVs constitute around 50% of the total cost of the vehicle. The Battery technology is in its initial stage and mass production is expected to significantly reduce the cost of acquisition.
- b. **Range Anxiety:** Unlike traditional ICE vehicles, battery operated vehicles

require charging after covering a comparatively shorter distance. Long Charging period and lack of charging infrastructure further reduce the confidence to take the EVs over on longer journeys.

- c. **Lack of Robust Charging Infrastructure:** The infrastructure required for potent charging stations is in its infancy in the Indian context, as opposed to the wide availability of petrol and diesel.

### THE RIGHT TO ENVIRONMENT

The part III of the Constitution of India confers fundamental rights to citizens; the scope and application of fundamental rights is extended to citizens as well as non-citizens. The Supreme Court in the **Chairman, Railway Board v. Mrs. Chandrima Das & Ors.** emphasised on the extent and the application to all provide a life with human dignity to all persons in the country.

Iyer, J., has characterised Article 21 as, “*the procedural magna carta protective of life and liberty*” However, the Gopalan case narrowed the meaning of Article 21 to a literal interpretation.

It was **Maneka Gandhi v. Union of India** that acted as the catalyst for the transformation of the view taken by the Supreme Court on Article 21 The Extended view envisaged an unbreakable nexus between the Article 14, Article 19, Article 21 to ensure the quality of life. This transformation of article 21 gave a force and vitality that led to the scope not restrictive to mere animal existence of a person.

Another Dimension of Article 21 that is important for understanding the development of the right to environment is the meaning and scope of the term “law”. Law, ordinarily connotes law made by legislature, but it has evolved to include ordinances passed by the executive, rules made by the Supreme Court of India and rules made by the High Court also fall under the purview of Article 21. In the process of expanding the ambit of the right to life, the supreme court has integrated many Directive principles with Article 21 by its creative interpretation to impose

positive obligation on the state to ensure a better enjoyment of a dignified life to an individual.

The Right to Environment is part and parcel to the right to a dignified life enshrined under the part III of the Constitution. Even though it has not been specifically laid down into the Constitutional Framework, the Directive Principles of State Policy have carried the duty to protect and improve the environment. Additionally, the Right to Environment has received the recognition of the International Community.

The Basel conventions thrusts the aim and object of the Right to Life by recognising the right to information and the participation of the community to righteously protect the environment and in turn ensure prosperity of human life. The Supreme Court has maintained its stance on sustainable development as an important feature of the Indian Environmental law and held that while the growth of the industries and rate of industrialization is important, the protection of ecological balance and ecosystems is indispensable.

With the theme of intergenerational equity, the Supreme Court laid down the practice of Environmental Impact Assessment to understand the adverse effects and consequences on the environment to ensure that industrialization does not harm and disturb ecosystems. In **Subhash Kumar v. State of Bihar**. The Supreme Court held that:

*“Hygienic Environment is an integral facet of healthy life. Right to live with Human dignity becomes illusory in the absence of humane and healthy environment.”*

The following doctrines have evolved over the last 50 years to constitute a framework for the disposal of matters related to environmental concerns and violation of the Right to Environment Under the Article 21 of the Constitution of India:

1. Doctrine of Absolute Liability in **Union Carbide Corporation v. Union Of India**.

The Bhopal Gas Tragedy was one of the biggest environmental developments in the Indian Legal Ecosystem. Absolute Liability is attracted when an enterprise is involved in an “inherently dangerous” or a “hazardous activity”, the enterprise is strictly responsible and obligated to compensate for any damage or harm suffered by any individual by the virtue of the dangerous or hazardous substance escaping. This obligation is not subjected to any exemptions.

2. The Polluter Pays Principles embraces the principle of international environmental law where the polluting party pays for the harm or damage done to the natural environment. The principle has been used in leading judgements where the polluter was found polluting the environment and was directed to remedy and repair natural harm. In **Vellore Citizen's Welfare Forum v. Union of India** the Supreme Court has recognised the polluter pays principle is an essential feature of the doctrine of sustainable development. In **Municipal Council, Ratlam v. Vardhichand & Ors.**:

The court held that bankruptcy or lack of funds does not absolve the duty to discharge the statutory obligation which are necessary for the existence of human life.

3. The Precautionary Principle was developed in the **Vellore Citizens Forum Case**, where the importance to anticipation and prevention of environmental degradation with Environmental measures was recognised to be the backbone of avoiding environmental disasters. The judiciary held that the lack of scientific certainty alone cannot be allowed to absolve or postpone the measures that must be taken by the polluting party.
4. **M.C. Mehta v. Kamal Nath and Others** led to the development of the Public

Trust Doctrine that is based on the ancient Greek concept principle that resources like air, water, sea and the forests have significance and importance for the people as a whole and allowing them to be subject to private ownership is unfair and unjust.

In **R. Chandran v. The State of Tamil Nadu** the Madras High Court examined the validity of the act of converting a public park into a commercial parking area and held the law to the settled proposition of the Doctrine of Public Trust.

5. Doctrine of Sustainable Development: The 'Brundtland Report' 199 by the World commission on Environment and Development (WCED) was instrumental to the development of the Doctrine Sustainable development as it held that only the development that meets the needs of the present without compromising the ability of the future generations to meet their own needs" 200 can be categorised as sustainable development. There is a need for the courts to strike a balance between development and environment. The **Rural Litigation and Entitlement Kendra v. State of U.P., Vellore Citizens Welfare Forum v. Union Of India & Ors.** are the leading cases where the courts have held that, it is to be always remembered that growth at the cost of the quality of life for the future generations cannot be allowed and the concept of sustainable development, after being recognised as a viable concept to tackle poverty and to improve the quality of human life while living within the permissible limits which do not harm the supporting eco- system can only sustain the true growth of the Indian Economy.

Although it is important to note that even after a number of statutes have been enacted to protect, preserve and

develop various facets of the environment, the attitude administrative bodies and officers has come out to be lax and unresponsive from time to time, this has compelled the Supreme Court to issue requisite orders to fill the vacuum created by the inaction of the administrative cogs of the system. The court relied on the Directive Principles provided by Article 47 and 48A to justify the cognizance in several cases and remedy various environmental problems by giving direction to various inactive administrative bodies to take initiatives to reduce environmental pollution and honouring the DPSPs. Another important facet of the Right to Environment is the evolution of the burden of proof for cases concerning environmental cases. The Onus of proof is on the developer/industrialist/ polluter to prove that their actions did not have a deterrent environmental effect.

#### CONCLUSION

The industrialization and various technological advancements have made this world a more convenient place than ever. However, this convenience came at the cost of large-scale environmental degradation. With the overuse of natural resources causing doubts for the quality of life for generations today and tomorrow, various studies have been able to show a direct correlation between global climate change, environmental pollution and increasing diseases amongst all generations. The vehicular pollution has been traced as a major contributor to this degrading environmental mayhem and various efforts have been undertaken to put an end to the large-scale degradation thereof. Internal combustion engines are the backbone of the transportation industry today and electric vehicles offer a potential viable solution to the high emissions of the ICEs. Electric Vehicles are offered in various guises such as "Plug-in Hybrid Electric Vehicle", "Hybrid Electric Vehicles" and use a combination of ICE and the best of battery

technology offered today. In addition to the contributions of technological giants, governments and the judiciary has also taken cognisance of the deplorable state of environment and various facets of the “Right to Environment” and other remedies available to mankind raise a ray of hope amongst the general public.

With the break of industrialization and technological advancements, nations have made enormous progress in terms of infrastructure development and capacity building in various sectors. However, this convenience came at the cost of large scale environmental degradation. With the overuse of natural resources causing doubts for the quality of life for generations today and tomorrow, various studies have been able to show a direct correlation between global climate change, environmental pollution and increasing diseases amongst all generations. This rampant degradation of the environment has led to the development of the concept of sustainable development.

1. The vehicular pollution has been traced as a major contributor to this degrading environmental mayhem and various efforts have been undertaken to put an end to the large-scale degradation thereof. Internal combustion engines are the backbone of the transportation industry today and electric vehicles offer a potential viable solution to the high emissions of the ICEs. Electric Vehicles are offered in various guises such as “Plug-in Hybrid Electric Vehicle”, “Hybrid Electric Vehicles” and use a combination of ICE and the best of battery technology offered today. In addition to the contributions of technological giants, governments and the judiciary has also taken cognisance of the deplorable state of environment and various facets of the “Right to Environment” and other remedies available to mankind raise a ray of hope amongst the general public.

2. However, the adoption of EVs and Hybrid Vehicles is surrounded by various barriers to the

entry and adoption in the market, namely high cost of acquisition, lack of infrastructure and driveability related concerns such as lack of consumer awareness and range anxiety. While the Hybrid Vehicles and EVs may be the solution for cleaner mobility, the transition period and the gestation period of the industry is long. Hence the need for continuous improvement of the current transportation matrix arises. This is why various judgements and decisions have focussed on improving the state of technology and emissions standards to ensure that while we strive for a cleaner tomorrow, we do not forget to build a cleaner today.

The Right to clean environment has been recognised as part and parcel to the right to dignified life under Article 21 of the Constitution of India, the road has not been straight. The Indian Judiciary has taken strict and stern steps which have caused ripples in various industries.

1. The Maneka Gandhi Judgement, the scope of Article 21 has been recognised to be indispensable to the basic structure and principles of the Indian Constitution. The article 21 has received various interpretations to provide a dignified life and various elements of environmental law have been held to be crucial to the same. The Courts have taken cognisance on the instance of Social Activists, Non-Governmental Organisations and on their own on the burning environmental issues at various instances. The chapter contains three landmark decisions from the Indian Judiciary

2. The CNG busses case forwarded an important aspect of the judicial pronouncements where inaction on the part of the plaintiffs was not considered as a valid ground of extending strict guidelines by the supreme Court which were in the knowledge of the plaintiff.

3. The NGT judgement directing various measures to curtail choking air pollution highlighted the importance of a multi-disciplinary approach in addressing environmental matters. The precautionary principle plays an important role behind the

theme of the judgements with respect to prevention of the environment.

4. The E-rickshaw judgement presented the court with a dichotomy of releasing the problem but the question of over-reaching the scope of their powers. The court restricted it's judgement to the grant of a writ to stop any further operation by the offending parties instead of drafting rules.

5. The principles of environmental law which have evolved over the last 4 decades read in consonance with approaches taken by various courts highlights the sensitivity of the role of judiciary finds the cleavage between being careful to not overthrow the separation of power while still addressing the plight of every individual who suffers due to the global environmental crisis.

