

An Innovation in Green Technology based on Environment Protection

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ABSTRACT: *Technology is considered as the main reason behind pollution as well as environmental degradation when resource depletion and environmental pollution become severe social issues. The suitable way to attain sustainable development is implementing green technological innovation by integrating environmental protection along with technological improvement. Green technology innovation are regarded as an endeavor in accordance with ecological law, with critical importance in achieving fiscal, technological, social, and natural sustainability. The characteristics of green technology, such as external consequences, specificity, volatility, and market failure, mean that careful device planning is needed. The constraining, incentivizing, and guiding role of green technology advancement is widely understood by minimizing internalization of fiscal, externalities, as well as uncertainties, as well as saving transaction costs. Comparative analyses in conventional technological advancement and green technology innovation are carried out. This paper established basic framework for the improvement of environmental system from viewpoint of the innovation model of green technology, which includes upgrading of environmental laws, technical standard system, accounting system as well as economic incentive system.*

KEYWORDS: *Economic, Environmental System, Green Technology, Green Technological Innovation, Technology Innovation.*

1. INTRODUCTION

In various past studies based on building as well as nurturing green technological innovation potential, numerous scholars have investigated the way device development encourages green technological innovation. According to W. Jinglian the fundamental strength of fostering technical development is due to the system mechanism that facilitates technological progress [1]. The technological innovation is a multi-step process that begins with idea innovation and ends with system innovation. On the other hand, it is found that system innovation plays a role in technology innovation by lowering transaction costs, reducing behavior risk as well as forming incentive mechanism. From the standpoint of green technology advancement, green technology innovation is a significant topic that needs more study by introducing novel practices in the context of sustainable growth and from the perspective of the shared relationship of encouragement, restraint, and guiding between advanced analytics tools [2], [3].

1.1 The Structural Demands for Advancement of Green Technology :

The advancement of green technology has put an end to the practice of ignoring systems or relying solely on technological knowledge. Marx emphasized the relationship between technologies and system, as well as the degree of productivity development and the stability and improvement of the decision-making system. In the current, thorough explanation of long-term change theories, Enoch had claimed that the Marxist analysis paradigm is the most convincing, since it contained all the variables that the innovative classic analysis had ignored, for example, system, land, nations, as well as ideology. Marx highlighted the significance of property rights in flourishing economic organization, as well as the inadaptability of the current system and new efficient technologies. According to new structural economics, functional changes are dictated by the structure and the transition system; an efficient system and system change decide technical growth, while an inefficient system limits it. North argues that system reform paved the way for technological change and global transition in works like "Structure as well as Change of Economic History" in addition to "the Rise of Western World." Experts in growth Lewis states that the most imperative ways to change traditional industries was for new departments to have an impact on traditional departments, causing traditional departments to modernize their concepts and systems in order to encourage traditional departments to advance in technology [4].

Green technological innovation differs from general technological innovation as it is difficult to assess green technological innovation exclusively based on business supply beneath a market incentive mechanism. Accordingly, green technological innovation requires a framework that not only provides an opportunity but also a constraint as well as a direct method to encourage green technological innovation.

1.2 Green Technological Innovation's External Effects:

In actual situations, economic activities have varying degrees of external implications, which implies that economic operations that do not include market sales have unpaid positive or detrimental impacts upon everyone. Green technological advancement, on the other hand, has external effects because it is aligned with a non-exclusive public commodity property, while external effects offer "free-rider" advantages to others. Other businesses or society often "free-ride" on the technological advancement rights of the corporations that own them. This will almost certainly result in a lack of enthusiasm for enterprise innovation expenditure. Green technological innovation is basically a method of producing technical information. New information is contained in all of the outcomes, whether they are new goods, new technology, or new organizations. And when these carriers of technological advancement enter the area of consumer development and distribution, spillover effects eventually arise, resulting in a situation where overall collective income far outweighs private gains. In certain cases, the private costs of technological advancement cannot be fully covered, resulting in a lack of incentive to participate in such activities[5].

1.3 Uncertainties in Innovation of Green Technology:

Innovation of green technology has gone over several stages having an advanced version of complexity than mature technology, involving technical uncertainties like design as well as trial manufacturing process, Research & development and market uncertainty, amongst various other. Market uncertainty along with technology reduce expected earnings, increase the likelihood of green technology growth and significantly delay the technology innovation process.

1.4 Green Technological Innovation's Unique Qualities:

Non-green technology does have external negative consequences, such as when individual marginal costs are lower than social marginal costs or when individual marginal benefits are higher than social marginal gains. As a consequence of the application, the natural ecosystem can deteriorate to some extent. Green technology has a promising external effect as well as its adoption would preserve or reinforce the ecological system, raise environmental resources and improve ecological performance of the ecological system. On the other hand, non-green technology involves customers to pay a premium price. In business terms, both green and non-green technologies are constrained by market regulation. In comparison to green technology, non-green technology is at a disadvantage in competition due to cost differences. Green technology has a lot of consistency. It must not only meet the requirements of technological progress, but also the requirements of environmental law, resulting in a low likelihood of success. As a result, the individual costs of green technological innovation are much higher as regards technological innovators than those of non-green technological innovation on the same basis of sales [5].

1.5 Failure of Market:

In the business mechanism, failure of market refers to a set of phenomena that cannot efficiently allocate economic resources. The key event comprises a lack of development and research duo spending in corporate risks as well as technological risks and inadequate research investment because the return on investment does not remain monopolized. Since innovation in green technology with a positive external impact is specific, the process of the market cannot randomly solve its externality[6].

2. LITERATURE REVIEW

X. Xu et al. proposed the Fuzzy Model-Based Quantum Greenhouse Evolutionary Ventilation Algorithm. The QGEVA has been improved to include a new binary differential operator, as well as a new rotational angle look-up for several genetic algorithm operators. Combining function of penalty, the objective function, and the supplementary flow function yields the fitness function. The constructed models can be used in greenhouse effects for regulating and controlling natural ventilation. This result indicates that the industry's environmental chain has increased eco-efficiency in an energy-intensive industrial cluster.

Ren Xu et al. proposed a hidden Markov model which is based on probabilistic detection algorithm given by Eskin to detect resource mismanagement and low-carbon unbalanced behaviors. This approach uses the information resources in the information system as the monitoring object, records data from the user's activity set, uses data to set the HMM model parameters, and combines an Eskin probability detection algorithm to

detect resource misuse compartment and irregular low carbon usage compliance. The development of an ecosystem for green technology advancement offers a fresh viewpoint.

Wei Zhang et al. discussed green energy advancement as a goal of environmental decentralization, the driving force behind pollution control. From the perspective of environmental sustainability finance, the paper investigates the effect of environmental decentralization on green technology innovation. The research can be used to determine appropriate levels of environmental decentralization at different levels of government and to develop distinct environmental decentralization strategies. Reforming the environmental protection system is vital for strengthening carbon treatment and green energy advancement. Using panel data from 30 Chinese provincial administrative regions from 2008 to 2016, this document examines the impact of environmental decentralization and environmental protection investments on green innovation technology.

3. DISCUSSION

3.1 Ecological Efficiency and Green Technology Innovation:

The innovation in the manufacture of goods as well as processes that directs to environmental progress and are used through industrial applications of knowledge to produce direct and indirect ecological improvements is part of the present scenario. This involves a number of related concepts from developments in environmental technologies in innovative ways of encouraging socially appropriate, sustainable growth. The field of research aimed at understanding the way new carbon ideas as well as innovations are being propagated and known as eco-innovation dissemination.

A greenhouse's primary aim is to change the environment; in the winter, crops evolve based on greenhouse temperature models, which can be used as a hypothesis for greenhouse management (Figure 1). Green technology is a term used to describe environmentally sustainable technology that has gained popularity in the last two decades. This technology was created and is now being used to determine environmental effects. The main idea is to build up the latest technologies, which would not affect our nature's resources and whose impact could be less detrimental for humans, animals and our planet's climate. Green systems have the so-called environmental and renewable technologies. Green technology is mostly designed to minimize the global warming and reduce the greenhouse effect.

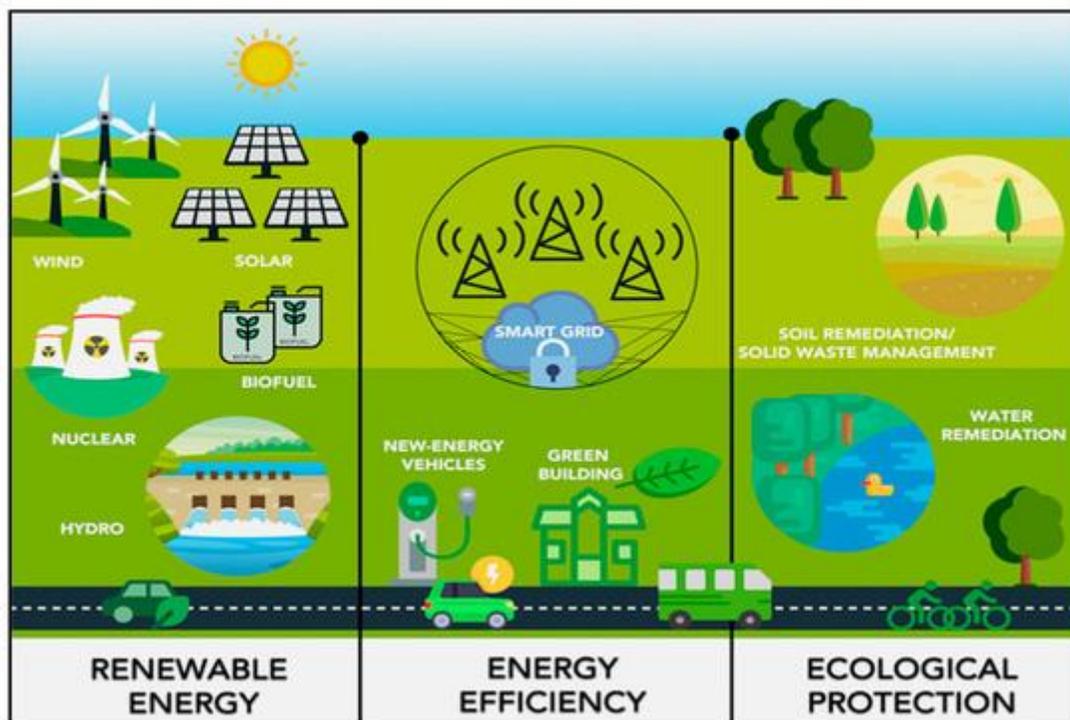


Figure 1: The layout of ecological efficiency as well as green technology innovation. This figure indicates that existing models can predict the environmental variables of solar greenhouses, which implies that present greenhouse microclimate prototypes cannot be utilized explicitly to inhibit the greenhouse system.

Designing a greenhouse system usually necessitates an effective method for determining the specifications of a greenhouse microclimate modular system, since they often neglect small variables of impact, depending on the actual greenhouse situation. To accurately estimate the relevant parameters in the experimental model, many variables must be monitored. The simulation's test results indicate that existing models can predict the environmental variables of solar greenhouses, which implies that existing designs of greenhouse microclimate cannot be utilized explicitly to maintain the greenhouse system. There is greater interest in research for agricultural production in modeling natural-ventilation solar greenhouses. In order to boost the efficiency of natural airing of solar greenhouse gases, mathematical modeling methods were implemented.

3.2 Improvement Of The Environmental Infrastructure Through The Framework Of The Green Technology Innovative Process:

3.2.1 The Improved Framework of Environmental System:

The comparative analyses of green technology innovation and traditional technical innovation, as well as a difference study of environmental system change, the researchers create a basic framework for the improvement of environmental systems based on the perspective of innovation model of green technology (Figure 2).

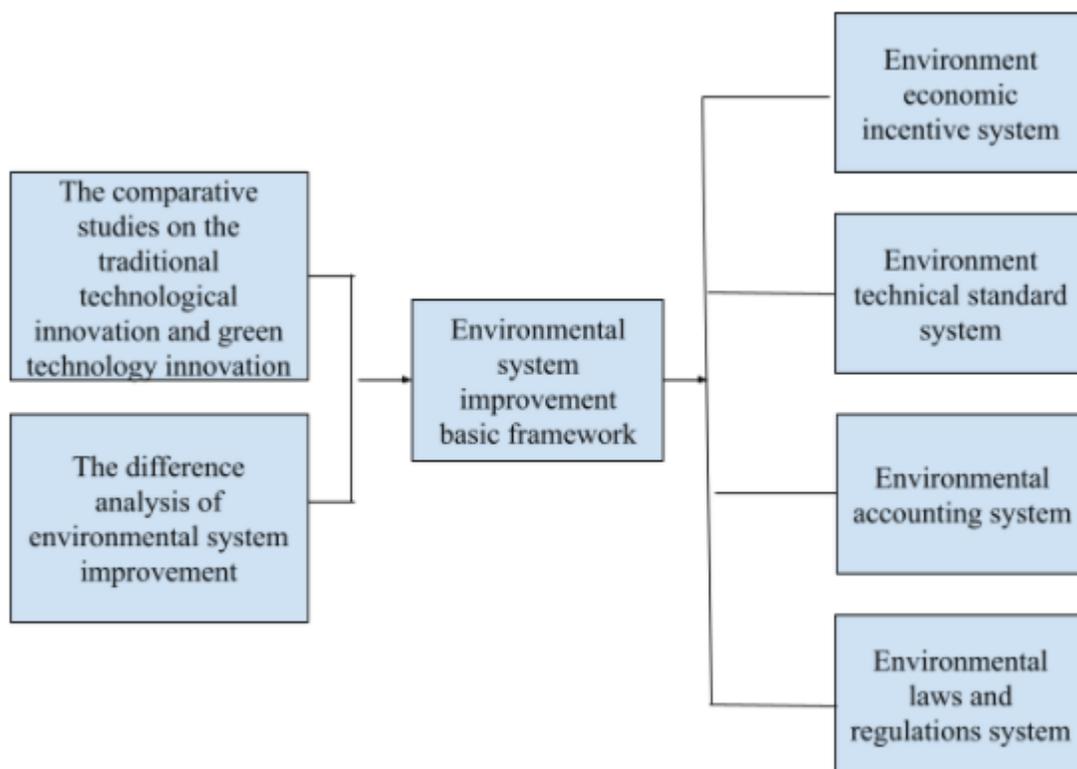


Figure 2: The green technology innovation model's structure for developing environmental systems.

3.2.2 Environmental Rules And Regulations:

Since green technology execution in china is in initial phase, perfecting the related environmental rules is a significant first step toward improving the infrastructure of environment by using the green technology conceptual structure. This has the potential to accelerate the growth of green technology innovation. China has increasingly increased environmental quality and regulation regulations in recent years, including legislation to prevent air pollution, solid waste pollution, water pollution, environmental noise pollution, and other environmental safety legislation. The regulatory scheme for environmental and resource protection, as well as the regulatory framework for social and economic sustainability growth, is the foundation for green technology innovation creation. China should progressively refine the requisite regulations for green technology development, as well as improve special resource and industrial law, according to this paper (Figure 3).

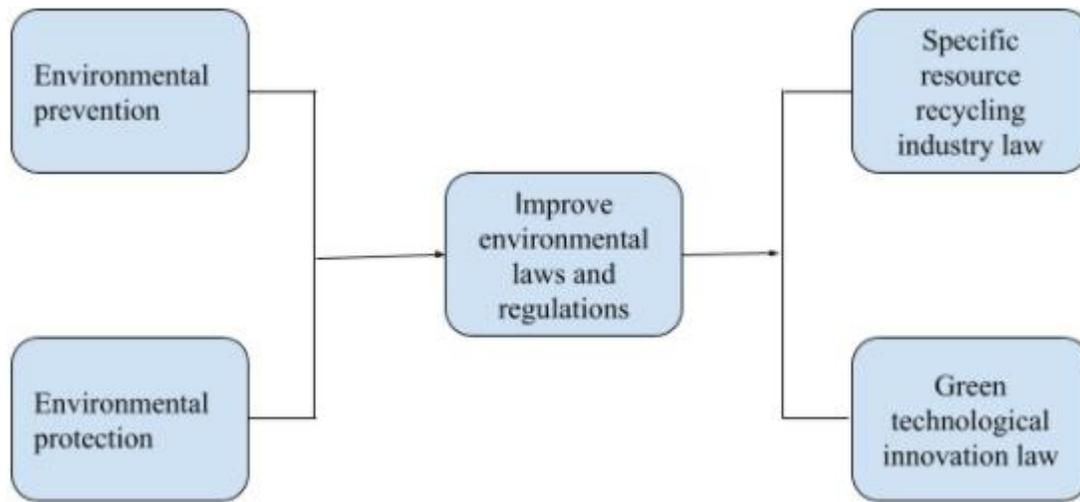


Figure 3: Illustrates the Precision Mechanism of Environmental Rules and Regulations.

3.2.3 The System For Environmental Accounting:

The cost of the climate and natural resources is not included in the improvement of the current accounting scheme. The environmental accounting scheme is currently in the study and implementation stage in several nations. The valuation of environmental costs and benefits is a challenging task (Figure 4). This paper provides the following suggestions:

- a. Promotion of environmental accounting research and practice;
- b. Unification of environmental performance and financial performance;
- c. Guideline enterprise on actively focusing on environmental management;
- d. Rational development and resource utilization;
- e. Improved rates of resource reuse and the elimination of negative environmental impacts.

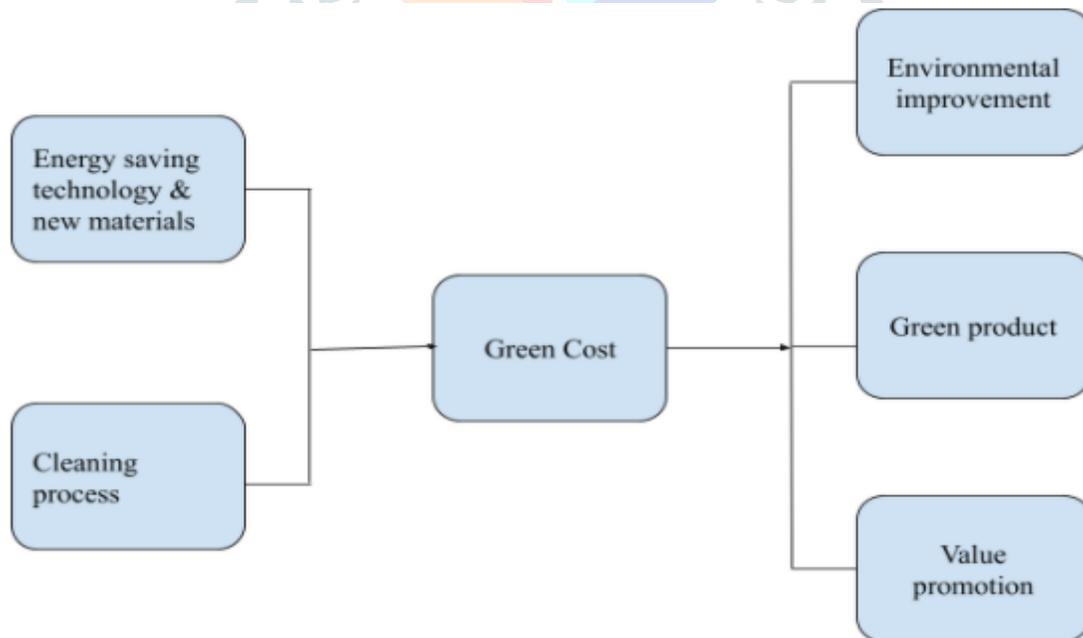


Figure 4: Function mechanism of green cost. The environmental accounting scheme is currently in its early stages of growth.

3.2.4 The Incentive System Environment Economy:

The government can give environmental enterprises and goods policy concessions and price incentives, as well as lower import duties on environmentally friendly equipment. Prioritize the development of recycling industry, environmental conservation industry, environmental sector, as well as green food industry to substitute and guarantee green technology advancement (Figure 5).

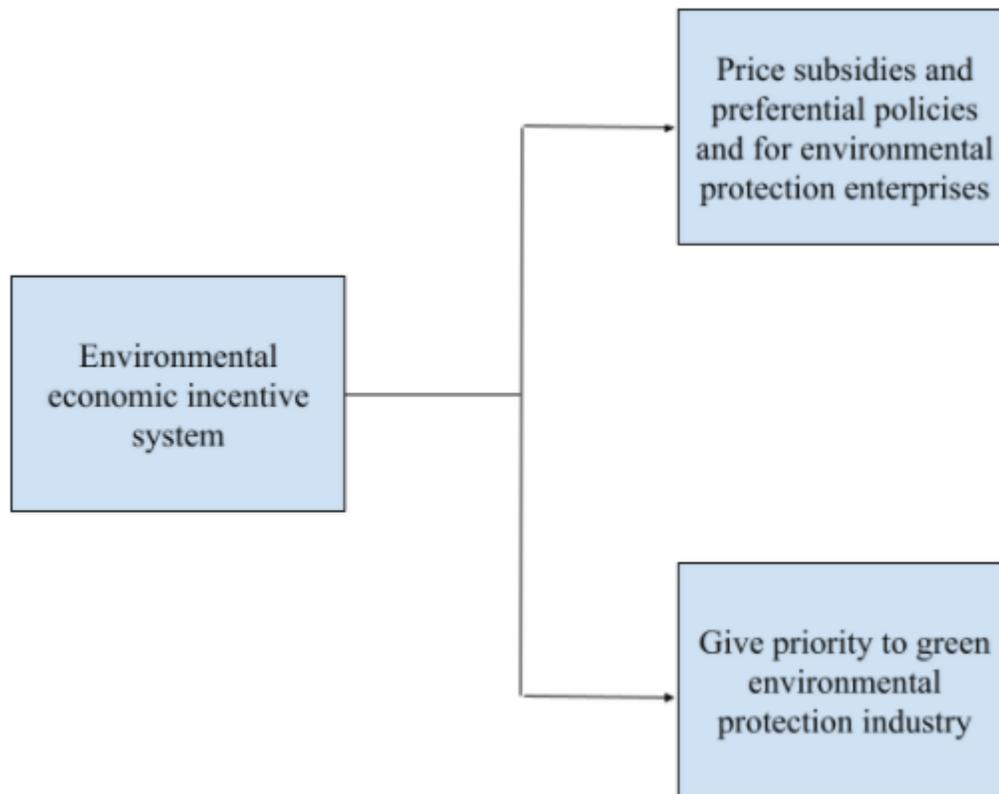


Figure 5: This diagram depicts the Perfection function of the environmental economic reward scheme.

3.2.5 The Enhancement of the Technical Standard System for the Environment:

The environmental technical rule is a vital cornerstone in achieving environmental recognition. Whether or not to use environmentally friendly technologies in the manufacturing process is an essential aspect of the ecological environment norm. Development and distribution has become technical links as a result of green technological progress. Strengthening the environment technical standard structure will be accomplished by conducting an environmental technical standard report, designing a sustainability strategy based on emerging environmental standards policy as well as mainstream trend of global environmental technical standards (Figure 6).



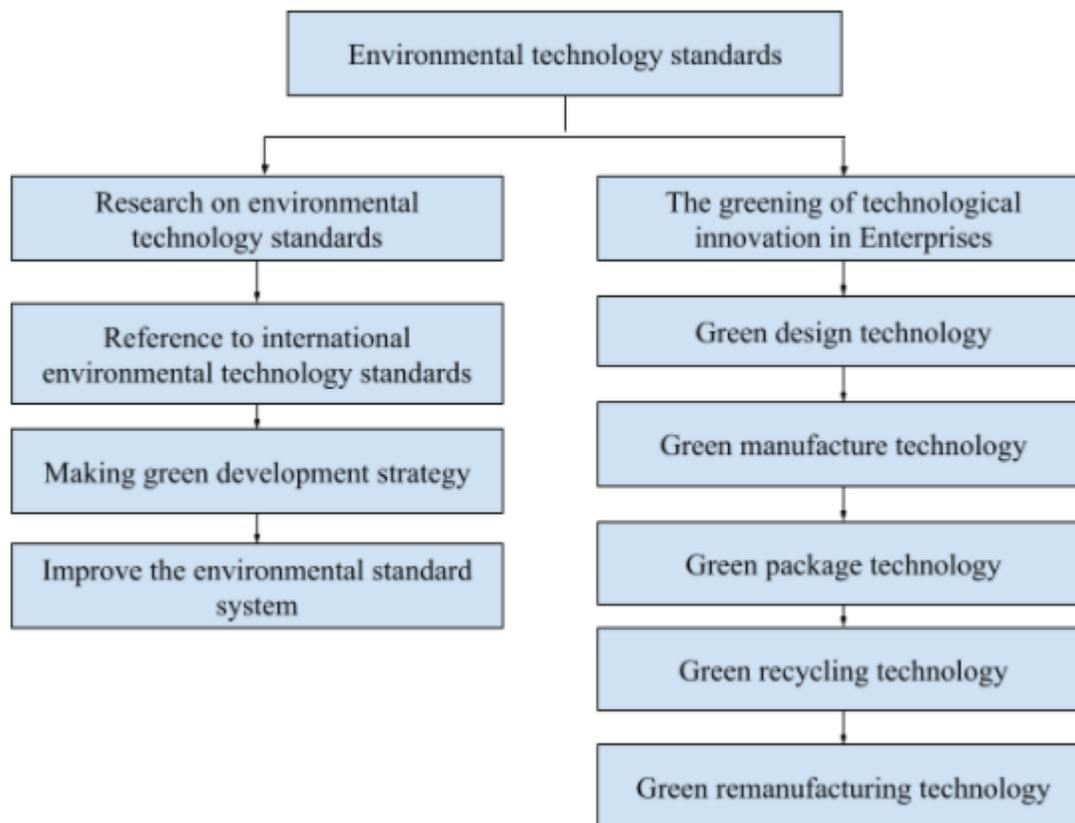


Figure 6: The Perfection Process of the Environmental Quality Standard Structure is depicted.

3.3 Green technology advancement is a feature of institutional innovation:

A framework is described as a set of rules that govern the behavior of people, which contains both formal as well as informal systems. Advancement of institution is a vibrant process that largely concerns changes in institutional arrangements as well as the functioning of structure main bodies in order to reap additional benefits. Our culture is dedicated to green technology advancement and must provide a green mechanism for technological innovation as soon as possible. In a system environment like the economic and political system, various specific institutions and moral values, beliefs, ideology and customs, green technological innovation is created. It corresponds to the stage of social growth and different systems create different reward mechanisms to influence the green innovation of the people. But the system with relative stability shows its role in a long time, the forming phase of a system. Any systems favoring green technological innovation would be against it with technological innovation shifts. The system is currently the biggest barrier to curbing green technological progress, making system innovation extremely urgent. If system improvement is carried out, it would encourage green-technical innovation and social-productive power creation rather than a modern, science and rational system which is considered as backward as well as not in favor of green-technology innovation. As a result, device advancement has become increasingly important in promoting green technological innovation. A secondary purpose is primarily used to incentivize, limit and direct developments in systems to green technology innovation by eliminating insecurity, internalizing economic externalities and saving transaction costs.

4. CONCLUSION

The innovation of green technology is a form of industrial operation that seeks to strike a balance between environmental and economic regulation. Green technology advancement, on the other hand, is a more regulated, higher-cost, and more-investment-intensive economic venture. It necessitates system creativity in order to have a consistent and efficient incentive. Technological progress is strongly affected by the institutional climate. Different system environments create different rewards, constraints, and guides, which influence people's technical innovation. Green technology innovation refers to the constraining and leading function of device innovation. Green technical progress is the primary means of ensuring the social economy's long-term growth. This paper contrasts green technology and conventional technical innovation, with the goal

of establishing a structure for environmental system enhancement from a model perspective for green technology innovation, such as environmental law and legislative improvement, environmental accounting, environmental standards, and the environment and economy.

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