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Green Policy Development and Its Impact on the Construction Industry in China

Mohammed Shareef M. S. Hasan[1,2*]

[1]*School of Civil Engineering and Mechanics, Huazhong University of Science and Technology, Wuhan 430074, Hubei, China.*
[2]*Northern Electricity Production, Ministry of Electricity, Iraq.*

Author's contribution

The sole author designed, analyzed and interpreted and prepared the manuscript.

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ABSTRACT

China will account for around 50% of the global built up area by 2020. To curb the energy demand and environmental conservation the government launched several programs and policies. Combined, the increase in construction activities and stringent enforcement of the green laws, have created demand for sustainable buildings and economy. Moreover, China adopted two green building rating systems: Three-Star and LEED.

This paper examines the green policies and their effects on the construction industry in China. It reviews past literature on green policy development with focus on origin and other major milestones. Furthermore, it comprehensively explores the, direct and indirect, impacts of the green development China.

The papers primary study done among experts practising sustainable developments points out: the current practices and drivers and challenges of the green development in China. The major drivers include Government enforcement policies, incentives and the developer's vision. On the other hand, the major challenges were green certification- costly and time-consuming, cost of green projects, and lack of qualified green suppliers.

Keywords: Green policies; sustainable development; clean economy; environmental conservation.

**Corresponding author: E-mail: shareef977@yahoo.com;*

1. INTRODUCTION

China's economy has been growing at an average rate of 10% in the past two decades [1]. The unbridled growth did drive the expansion of the construction industry that led to a significant increase in ecological challenges and an increased need for energy by 40% from 1990 to 2009 [2]. The cardinal cause of increased energy consumption and environmental degradation is the continued expansion of the floor space and use of heavy energy consuming devices. China's built area increases by an average of 1.8 billion m^2 annually [3]; the urban and rural built area occupying 20.6 Billion M^2 and 24 Billion M^2 respectively [4].

To curb the burgeoning and widespread ecological and social problems, China has come up with policies and plans to enhance the paradigm shift to a more sustainable and green development. The policies are providing a framework for the green development that is eco-friendly and reduces the energy intensity. The plans and laws are being enacted in the wake of increased calls to conserve the environment despite the spiralling growth of the construction industry and increased energy needs.

China has started enjoying the policies effects such as reduced CO_2 emission and energy intensity, and use of eco-friendly and renewable building materials. Also, the use of renewable and clean energy in existing and new buildings, with the economy increasingly being environment sensitive. Despite achieving several milestones, the government has not been effective enough in enforcing the laws, especially in the rural and small city zones.

MOHURD defines the green building as a sustainable practice of creating healthy and eco-friendly structures that conserve resources such as energy, land, water, and materials [5]. Furthermore; these structures should protect the environment, and minimise on pollution through the building's lifecycle. Also, *United States Green Building Council*-USGBC states that green buildings should be high performance and sustainable, eco-friendly, with much focus on occupant comfort and resource sensitive [6]. Therefore, Green buildings integrates techniques, construction material, and technologies that enhance the environmental performance of the building. Thus they are energy efficient, limit water utilisation, use recycled and non-toxic materials and they generate little or no waste [7].

2. LITERATURE REVIEW

2.1 Rating Systems

China uses two voluntary building rating systems namely, LEED and three-star system. They provide the guidelines which the buildings are graded for energy efficiency and sustainability.

2.1.1 Three-star system

The green building rating system was introduced in 2006; it is a voluntary rating system that is credit-based. It regulates and evaluates buildings on control several items and credits them in six categories [8]. In this system; the credit items include land savings and outdoor environment, energy savings, water savings, materials savings, indoor environmental quality, and operations and management. Furthermore, it has a seventh stringent category called *preference* items that are hard to be implemented as it targets 10% on-site renewable power generation.

China enacted the *Implementation Guideline of Green Building Development* in 2012 to promote this rating system and has offered subsidies on green buildings. Moreover, some local governments have made this rating system a mandatory requirement for future development [8]. Currently, this is the most commonly used rating system in China.

2.1.2 Leadership in energy and environment design

The rating system was developed and is managed by the USGBC; it is the most commonly used rating standard in North America. In this system, buildings are rated as *platinum, gold, silver or certified*; the score is derived from their green building attributes. In China, the system is not used as much as the 3–star. The green building rating attributes are site selection, water efficiency, energy, materials and resources, indoor environmental quality, and design innovation [6]. In LEED, the developer is expected to meet the minimum number cumulative credits. Unlike the 3-Star, it rates building under the following categories: construction, existing, schools, and neighbourhood developments.

Table 1. Three-star rating

Grade	Land saving and outdoor environment (Total: 10 items)	Energy saving and energy utilization	Water saving and material resource utilization (Total: 7 items)	Material saving and material resource utilization (Total: 9 items)	Indoor environment quality (Total: 7 items)	Operating management (Total: 8 items)	Preference items (Total: 9 items)
One star	4	2	3	3	2	4	-
Two star	5	3	4	4	3	5	3
Three star	6	4	5	5	4	6	5

Source (MOHURD, 2013)

In China, LEED has over 500 registered and certified LEED projects, a minuscule percentage of the total green area, representing 67 million M^2 [7]. Moreover, China green industry is the third largest market for LEED in the world.

Table 2. LEED grading system

Grade	Credits required
Certified	40-49
Silver	50-59
Gold	60-79
Platinum	80

Source: (LEED, 2016)

2.2 Policies

China's green construction policies aim at transforming the building sector to a healthy and ecological functioning industry. To curb the growing energy demands and environmental degradation, China has come up with hybrid policies, to allow it meet the 5M M^2 of green floor area target by 2020 [9]. The codes are either mandatory in urban areas and on commercial buildings or voluntary in rural zones. The development process of environmentally sensitive policies dates back in 1979. However, it is until 2005 that the policies boldly addressed the green construction methodology.

The policies have at each stage provided the strategic opportunities and strengthened awareness to deal with both the foreseeable and unforeseeable challenges and risks. The codes provide the minimum and comprehensive regulations during the design and construction phase [7]. In 2007, the government further initiated the *Acceptance Code,* to enhance the compliance levels among the developers, with the main cities recording high rates of success compared to the smaller towns and rural areas.

2.2.1 Environmental protection law

At the height of accelerated economic growth, imbalanced and non-sustainable growth, China enacted this law in 1979 for trial implementation to solve the then protruding environment degradation. This law focuses on preventing and controlling pollution [10]. The law key weakness was it had end-pipe solutions as it only relied on the administrative enforcements; thus it relatively effective at reducing the pollutant loads.

Table 3. Other environmental laws 1984-1997

Law	Year enacted
Water pollution prevention and control law	1984
Air pollution prevention and control law	1987
Water and soil conservation law	1991
the solid waste law	1995
Energy conservation law	1997
Cleaner production promotion law	2002

Source: (Zhilin, Shuchun, & Bing, 2014)

2.2.2 China's 11th 5-year plan

The policy consolidates and improves on the progress made by the environmental protection law and other predecessor laws. It provides a comprehensive and well coordinated sustainable development framework that is developed along the scientific concept of developments with the target of developing a harmonious China. Moreover, the 11th FYP provides a premium sustainable plan, and it attaches more importance on energy consumption, and greenhouse reduction [11]. The law was in action from 2005-2010. The cardinal line of this plan was to ensure China meets her energy demands and is energy secure, with bias on the commercial buildings.

In the plan, it is anticipated that the energy consumption, water use per industrials value added and emission of pollutants will be reduced by 20%, 30%, and 10% respectively [5]. Also, the focus is given to renewable and clean energy sources such as hydropower, wind power, solar and natural gas.

2.2.3 China's 12th 5-year plan

This plan transformed China from an investment-driven dynamo into a global powerhouse with a steadier and more stable, sensitive and trajectory economy. It strengthened the sustainable development and improved the ecological standards [11]. A third of the policy goals are focused on natural resources and environment conservation [5], consequently forming a strong building block for sustainable development practices in China. The policy targets include reducing the energy intensity by 16 percent and emission, and use of non-fossil fuels to 11.4 percent. Also, the manufacturing processes were to cut down on their emissions by 10 percent from 8 percent and the CO_2 emission being cut by 17 percent [5]. Finally, it provides incentives and constraints approaches, encourage resource-saving and clean material production.

On the buildings, this plan did expand and support the implementation of the performance contract. It created the platform for the existing buildings to adopt the energy saving renovations. Moreover, it created a framework for the implementation of energy efficient building labelling.

2.2.4 Green building action plan

The plan was initiated in 2013 to allow China meet energy reduction targets of 40-45% by 2020. The National Development and Reform Commission (NDRC) and MOHURD developed this policy. In the case of new buildings, the plan is stringent on the enforcement, all energy codes in urban centres must be adhered to. This plan targets one billion m^2 of floor space to be 3-star [5]. For existing buildings; the plan supports the retrofitting of residential buildings and targets to renovate 570 Million m^2 of floor area [5].

2.3 Policy and Practice Review in China Construction Industry

The construction industry is adopting the green construction technologies to curb down on the direct and indirect, adverse effects the conventional construction approaches cause [8]. There is a paradigm shift in China's construction industry, from conventional techniques to sustainable construction activities; and it requires support from a constellation of construction professionals and developers to be successful.

Currently, China's construction industry strives to use low-carbon development, energy conservation and use green technologies. These green developments are featured in the Chinese Five Year Plans, with the MOHURD and other related agencies providing the guidance. It is the role of these institutions to help in the formulation and enforcement of these laws.

China has made several milestones in the development and utilisation of renewable and clean energy. The potential and programs focusing on renewable energy have been captured in the 5 Year Plans. Moreover, the plans suggested the adoption of the integrated of renewable energy technologies in all government, commercial and urban buildings [12]. For instance, the *Green Building Action Plan* has set an ambitious energy reduction target of 40-45% by 2020 for existing and new buildings [5].

Table 4. Selected targets of the eleventh five-year plan

Indicator	Unit	Year		Five-year change	Expected/ Restricted
		2005	2010		
Natural environment					
Reduction of energy consumption per unit of GDP	Percentage	-	-	-20	Restricted
Reduction of water consumption per unit of industrial value added	Percentage	-	-	-30	Restricted
Reduction of emission of major pollutants	Percentage	-	-	-10	Restricted

Source: (Kevin & Mark, 2013)

The laws and 5 Year Plans have put a greater focus on the environmental degradation solutions. The government's commitment to cut down on greenhouse emission and resource conservation is highlighted. The plans provide the blueprint for the sustainability not only in the construction industry but across other related industries. Further, these policies and plans provide guidance at macro-level [3]. However; different projects should interpret policies based on their specific needs.

2.4 Green Policy Impact on the Construction Industry in China

China's adoption of the green policies and programs has had a direct impact on natural water resources, land use and greenhouse emission [13]; the policies' indirect effects include social and health life for the Chinese people. Therefore, as the green policy shapes the construction industry, so is the environment, society, and the economy being positively impacted [13].

2.4.1 Building materials

The Chinese government has stringent guidelines on the greener building materials. In the wake of addressing energy security and environmental degradation, the government's policy encourages developers to use sustainable and clean materials. Previously, China construction industry depended on concrete and brick; however, there is a shift to using energy efficient and renewable materials such as wood, photovoltaic glass, fiberglass, and special ceramics [14]. Also, with the introduction of government incentives and waivers on green construction materials and projects, the country has witnessed an increase in demand and acceptance of green technologies among the construction stakeholders. The eco-friendly materials have created sustainable buildings that have eased pressure on natural resources, reduced construction waste due recycling and reduce carbon emission [14].

2.4.2 Energy conservation and environmental protection

Energy intensity reduction and environmental conservation are some of the major the targets in the Chinese Five Year Plans and laws [15]. The plans and laws will have a direct impact on the building industry that consumes up to 30% of China's total energy [5]. For instance, in the 12th FYP, China targeted buildings to save 116 Mtce in energy that was achieved through retrofitting existing buildings, installing energy monitoring systems and use of renewable energy in these buildings. The government footed the retrofitting bills at 9.1B RMB from 2011 to 2013 [5].

The policy initiatives include an energy efficient product discount scheme in which the air conditioner and light bulb were subsidised. Also, the NDRC initiated supporting energy conservation policies such differential electricity pricing for the commercial and residential buildings. This program was composed of the subsidised process, recovering full cost and resource scarcity and pollution externalities. Another program was phasing out incandescent lighting that was initiated to reduce the energy intensity, and it puts an embargo on importing and selling of light bulbs with over 100W [4]. For instance, according to the *Design Standard for Energy Efficiency of Residential Buildings* in 1995 (JGJ 26-95), residential building cut down on energy use by 50% from the 90s, today China targets 65% cut in the energy consumption. As of 2014, the energy efficiency targets for commercial buildings stood at 30%. It is evident that as the energy codes are improved, the demand for efficient products is created thus new markets that never existed.

Table 5. Energy-efficient product discount scheme

Energy-efficient product discount scheme				
Item	**Year**	**Subsidy**	**Units sold**	**Electricity conserved annually**
Light bulbs	2008	30%-50%	360 million	12.5 billion kW h
Air-conditioners	2009	300-650	34 million	10 billion kW h
Flat-panel TVs	2012	100-400	n/a	n/a
Washing machines	2012	70-260	n/a	n/a
Water heaters	2012	100-400	n/a	n/a
Refrigerators	2012	70-260	n/a	n/a
Desktop PCs	2012	260	n/a	n/a

Source: (Kevin & Mark, 2013)

Table 6. Public sector key energy conservation projects

Public sector key energy conservation projects	
Project description	**Energy conservation target (Mtce)**
Renovate 2000 government building, schools, and hospitals	1.2
Install 25 million energy-efficient light bulbs	0.6
Install passive cooling and optimise layout of 1000 public data	0.4
Install 12 million energy-saving sockets	0.64
Install energy-efficient stoves in public institution canteens	0.36
Renovate 30 million square meters of governments buildings	1.3
Install 1000 solar water heaters, 100 solar heaters, 1000 solar photovoltaic projects, and 1000 geothermal heat pumps	0.2
Gradually increase the proportion of new energy vehicles to 50% of all new purchases by 2015	n/a

Source: (Kevin & Mark, 2013)

The energy reduction programs have impacted positively to the environment, with the decline of adverse environmental effects such as air pollution, water pollution, CO_2 emission and shortage of energy [4]. The curbing of this environmental atrocities is due to the stringency of the laws and their effective enforcing procedures.

2.4.3 Economy

The Chinese government hardly considered the sustainability of its economy. However, with the YFP China adopted strategic transformation from the perspective of balancing between the environment and development. China shifted to a green economy with guaranteed growth through implementing the scientific outlook on development and constructing an ecologically civilised community [16]. Currently, the economy is growing slower but at a healthier economic rate than before.

The economy is growing between 6.5-7%, and is supporting clean industrial production, low-carbon development and energy conservation [16]. Consequently, there is an improved environment that has enhanced quality and efficiency in the country. Moreover, the countries development is based on green technological innovations. The green policies and incentives on the green technologies have led to more stakeholders embracing this construction methodology, thus a spur in the economy.

2.5 Problems of Policy Implementation and Law Enforcement

The green policy implementation proves to be an arduous task. First, the policy advocates for renewable technologies that are expensive to set up. Also, they do not yield their energy immediately as oil and coal on a short and medium term.

Secondly, most of the policies are impressive and desirable in theory; however, they face challenges at implementation, accountability and are sometimes against the interests of the local community. For instance, hydroelectric dam's constructions have led to the displacement of millions of Chinese; such projects face unanimous resistance from the local community. Also, the enforcement of these laws is not effective as it is expected. Some local authorities fail to enforce for their regions to record higher productions thus allowing their region to enjoy the economic development credits [3].

Finally, the citizen role in such projects is vague, the views of the ordinary Chinese are normally not considered by the authorities. Consequently, it has led to increased cases of petitions from the locals and environmentalists, with some activists being detained.

2.6 BRICS Green Development Trends

BRICS countries have different economic and social challenges. Nevertheless, the challenges are not an obstacle in the concerted efforts to meet the green developments targets. This business block has set up a green development fund, with member states adopting the use of renewable and clean energy. Furthermore, member countries have projects and technologies that are sustainable. Brazil, India and South Africa invested $7.6 billion, $7.4 billion, and $5.5 billion respectively in 2014 in green projects. Finally India has renewable and clean energy sources targeting 100GW of solar energy, 10GW of nuclear power, 10GW of biomass energy and 5GW of hydropower .

3. METHODOLOGY

The study methodology took a multidisciplinary approach to meet the study objectives. The study results informed the secondary data; and was from various institutes and study journals. The secondary themes from the study include energy saving, reduced carbon emission, environmental conservation.

The primary data was collected from green experts' opinion, who made up the 30 study sample. The constellation of the green experts included architects, engineers, environmentalist, landscape architects, quantity surveyors, and constructors. The study participants were asked to give their opinions on the current practices of the green development, key drivers and challenges of green policy implementation and any other experience they felt was relevant to the study.

It was mandatory for the study participants to have designed, developed or be involved in a green project in China. The participant demographic data was collected in addition to their opinions on the study themes.

The data analysis was done in SPPS, a tool that enabled a higher level of analysis of the primary data. Mann-Whitney U tests were used to test the alternative hypothesis for the study with the analysis of variance (ANOVA), correlation and regression analysis being done. All tests will be done at $\alpha = 0.05$ level of significance to respond to the study inquiries and decide whether to reject or accept the study hypotheses.

4. RESULTS

The selected green development experts were asked to give their opinions on the current practices of the green development, key drivers and challenges of green policy implementation and any other experience they felt was relevant to the study.

4.1 Current Practices of Green Development in China

All the experts had a good grasp of the current green development practices and policies. They drew their experience from developing both sustainable residential and commercial buildings across the country, especially in the main cities. Several experts had developed buildings that have achieved over 60% green development goals. The green certification process was considered expensive and time-consuming. Nevertheless, developers did practice sustainable development only. Moreover, Three-Star Green building certification was found to be more cumbersome than LEED certification but remained the most commonly used. In most construction companies, they have invested in Research and Development and train their staff for them to have a competitive edge over their competitors.

Table 7. Current practices

Current practices	Mean	Std. deviation
Green policy	3.97	1.353
Green certification process	3.42	1.356
Research and development	3.72	1.171
China five year plans	3.68	1.416
Policy acceptability	3.32	1.148

From the Table 5, tests express the divergent opinions on the current practices from the green experts, developers, and the government. The government officials had a positive view of the current practices compared to the green experts, with the developers the least being the least sceptical on most of the plans.

4.2 Key Drivers and Challenges of Green Policy Implementation

Government enforcement policies, incentives, and the developer's vision were the seen as the key drivers for implementation. For instance, in Shenzhen, it is a requirement that all new residential buildings meet at least One Star Green rating as from 2013. Furthermore, cities that granted subsidies expedited permit allocation and allowed developers to enjoy waivers during the construction lifecycle witnessed increased numbers of green developments. The majority of the experts did concur that mandatory green policies shaped the vision of the developers into using green technologies in their developments.

The results in Table 10, below, highlight the divergent views of the developer, green experts, and government on the drivers of green development in China. Across the stakeholders, green policies were supported as key drivers, with technological innovation receiving least support from developers but much support from the experts.

Table 8. Mann-Whitney U tests: Current practices

No		Developer vs. expert		Expert vs. Government		Developer vs. Government	
		MeW U test	KeS test	MeW U test	KeS test	MeW U test	KeS test
1.	Green policy	-0.25	0.41	-0.18	1.21	-0.19	0.82
2.	Green certification process	-3.51	2.62	-5.83	3.82	-3.64	1.22
3.	Research and development	-2.60	1.42	-3.42	1.72	-0.68	0.49
4.	China five year plans	-1.96	1.22	-3.24	2.58	-1.67	0.56
5.	Policy acceptability	-3.12	2.42	-6.48	3.33	3.24	1.02

The policy faces challenges during implementation. Majorly, the cost of sustainable initiatives is very high compared to conventional construction approaches. As green construction is still at infancy in China, there was lack of enough demand and lack of mature, sustainable supply chain. Also, the profits that come with green buildings are not clear, with the early adopters of sustainable development having not recouped their costs. Sustainability was not a factor for choosing a building among most tenants due to their lack of awareness. Factors that informed clients' choice of the building were location, the housing typology, plinth area and price. Finally, there are no enough qualified green products suppliers; moreover, the few suppliers take more time to deliver their products.

Table 9. Drivers

Drivers	Mean	Std. deviation
Green policies	3.88	.957
Incentives	3.17	1.142
Local government waivers	2.64	1.294
Developers vision	3.38	1.387
Technological innovations	3.67	1.130

Table 10. Mann-Whitney U tests: Drivers

No		Developer vs. expert		Expert vs. Government		Developer vs. Government	
		MeW U test	KeS test	MeW U test	KeS test	MeW U test	KeS test
1.	Green policies	0.74	1.11	2.24	0.89	1.20	0.82
2.	Incentives	0.45	0.35	2.79	0.22	0.48	1.02
3.	Local government waivers	4.2	1.42	1.02	0.48	0.68	0.49
4.	Developers vision	3.35	2.30	2.06	0.56	0.26	0.52
5.	Technological innovations	4.12	2.28	3.42	2.25	0.71	0.26

Table 11. Challenges

Barriers	Mean	Std. deviation
Cost of green projects	3.72	.951
Lack of customer awareness and demand	3.52	1.274
Lack of qualified green suppliers	3.69	.977
Green certification- Costly and time-consuming	3.66	.890
No clear policies on buildings	3.67	1.130

Table 12. Mann-Whitney U tests: Challenges

No		Developer vs. expert		Expert vs. Government		Developer vs. Government	
		MeW U test	KeS test	MeW U test	KeS test	MeW U test	KeS test
1.	Cost of green projects	2.50	1.41	2.34	0.98	2.67	0.22
2.	Lack of customer awareness and demand	0.86	0.91	0.62	0.82	1.10	0.98
3.	Lack of qualified green suppliers	0.62	1.52	3.20	1.72	2.68	1.49
4.	Green certification- costly and time consuming	3.25	0.42	1.84	1.26	0.36	0.96
5.	No clear policies on buildings	0.86	0.91	0.62	0.82	1.10	0.98

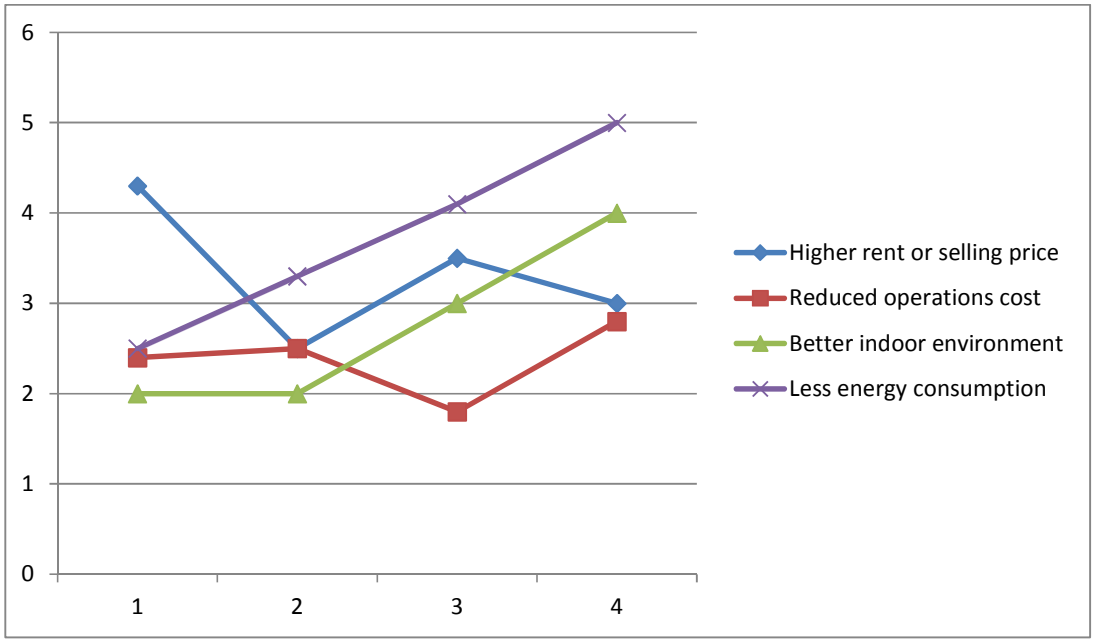

Fig. 1. Trends of adoption of the green development elements

The MeW tests highlight contrasting views on the challenges facing the green development in China. The cost of green projects is supported as a challenge by the developers and experts, with less support from the government.

See Appendix I: Data Analysis Tables.

4.3 Green Building Market Prospects in China

All the study participants expect a significant growth of the Chinese green development. The growth is motivated by improved rent on green properties, reduced operation cost, an improved indoor climate, and less energy consumption. The chart below shows the forecasted trends of the green development elements in China in the next five years.

5. RECOMMENDATIONS

There has been a significant impact of the green policy in China, amidst challenges such lack of awareness, not enough guidelines and misconceptions over the green methodology. In China, the green concept is still at infancy, and will have to be supported to enhance its adoptions. China has used a top-down approach by coming up with various policies and initiatives that offer the blueprint for successful green development. There is a strong correlation between development and environment; in this regard, China has continuously improved existing plans and policies to create a conducive environment for green development. Apart from policies, the government has set up various agencies to establish and monitor the green development.

All stakeholders should be brought on board by the government to ensure the policies are effectively enforced. The shift from the conventional construction methodologies to green development requires the use of legislative pressure (mandatory) and voluntary approach of self-regulation and incentives [8]. With no standard approach to solving the environmental degradation, energy consumption, and excessive CO2 emission, the policies should consider the local culture and needs in coming up with strategies to address these problems. Currently, China a major consumer of energy and it strives to have a balanced and eco-friendly economy, and there should be a bridge between the policy and successful implementation. Frameworks should be provided to guide all the relevant stakeholders for the construction industry to embrace sustainable development fully.

6. CONCLUSIONS

The green development has been associated with eco-friendliness, reduced gas emissions and energy consumption and economic spur. From the paper, it can be seen that China has formulated several green policies. Moreover, the paper explores the green practices in the built environment, their positive impact on the environment and economy. From the 1979 Environmental Protection Law to the 12th Year Plan, the laws provide the blueprint for the green practices and technologies. However, during the enforcement of the policies, it has been noted that the unique needs of the particular project should be considered for successful implementation.

China's green development potential is yet to be fully exploited, and it requires the collaboration of all the relevant stakeholders for the success of the green policies. The methodology has been embraced via the provided legislatures and incentives enjoyed when a development goes green. Moreover, there should be a more consolidated green approach; comprehensive policies and increased awareness to ensure the benefits of green development are enjoyed by the environment and the Chinese population.

COMPETING INTERESTS

Author has declared that no competing interests exist.

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APPENDIX I: Data Analysis Tables

Goodness of Fit Statistics

In order to establish the implications of green policy, the researcher conducted a regression analysis. The researcher applied the statistical package for social sciences (SPSS) aid in the computation of the measurements of the multiple regressions for the study. A multiple regression analyses was conducted. Results are presented as below.

Model summary

Model summary				
Model	**R**	**R square**	**Adjusted R square**	**Std. error of the estimate**
1	.871[a]	.738	.769	0.231

According to the (R Square = 0.769), 76.9% of the variations in the current practises of green policy is influenced by Key Drivers of Green Policy Implementation and Challenges of Green Policy Implementation. Other factors affecting current practises of green policy account for 23.1%.

Anova

Model		Sum of squares	Df	Mean square	F	Sig.
1	Regression	26.216	5	5.243	18.333	.000[a]
	Residual	31.175	109	.286		
	Total	57.391	114			

a. Predictors: (Key Drivers of Green Policy Implementation, Challenges of Green Policy Implementation
b. Dependent Variable: Current Practices of Green Policy

The above table shows the explanatory power of the model. According to the probability value, (p= 9.000), the model is significant and therefore predictions made based on this model are statistically significant.

Coefficients

Coefficients						
Model		**Un-standardized coefficient nts**		**Standardized coefficients**	**T**	**Sig.**
		B	**Std. error**	**Beta**		
	(Constant)	2.023	0.715		2.829	0.007
	Key drivers of green policy implementation	0.199	0.200	0.179	0.996	0.004
	Challenges of green policy implementation	-0.184	0.189	-0.165	-0.974	0.005

Current practices of green policy

The Tables above presents the coefficients of the variables. According to the estimates, all the variables (Key Drivers of Green Policy Implementation and Challenges of Green Policy Implementation) were statistically significant as per the probability values, (0.004, 0.005) respectively.

Peer-review history:
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