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A STEP TOWARD A GREENER ENVIRONMENT: CARBON CREDIT

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ABSTRACT
The Green Environmentalist strives to persuade politicians and businesses to work for the environment because, in the current situation, global warming is very expensive. You may be aware that the principal greenhouse gas created by burning fuels, carbon dioxide, has sparked a worldwide panic due to the frightening rate at which its concentration is rising in the earth's atmosphere. This has made it possible to trade carbon both inside and outside of the regulated environment, so creating a global "carbon market." The Kyoto Protocol governs the management of greenhouse gas (GHG) emissions in this carbon trading system, and pre-established emission limitations are necessary to control the GHG emissions of various businesses and trading entities dispersed to the countries within them. This research study aims to clarify the fundamental ideas and implications of carbon credits. It also emphasises environmental protection measures. In the context of India, the report also explores commercial potential in the international emissions market.

Keywords: Carbon Credits, Kyoto Protocol, Carbon Tax & (CDM) Clean Development Mechanism

INTRODUCTION
The sky has been growing darker over recent years due solely to the long-term impacts of the massive amount of carbon dioxide emitted into the atmosphere, which has drastically altered our climate. This ongoing build-up of carbon dioxide in the atmosphere has a hand in the current phenomenon of global warming. The intentional clearance of forests to make way for more factories and many other human buildings is one of the many additional factors besides the combustion of fossil fuels that has raised the amount of carbon dioxide in the atmosphere. Government agencies and corporate organisations have been compelled to put in place measures that would help in lowering the amount of carbon due to the growing awareness of unsafe levels of greenhouse gases (GHG) and the accompanying phenomenon of global warming.

Kyoto Protocol: Initiated by the United Nations Framework Convention on Climate Change, the Kyoto Protocol was ratified by 181 nations as well as the European Union as a whole in 1997, and it went into force in 2005. The worldwide community proposed this agreement to address and reduce greenhouse gas emissions that have contributed to global climate change. Commercial companies who produce more carbon dioxide than is authorised are required by the Protocol to reduce their emissions to specified levels, purchase carbon credit certificates that can be traded in the market, or pay a fee for the emissions, known as a carbon tax.

Fig.1: Kyoto Protocol mechanism

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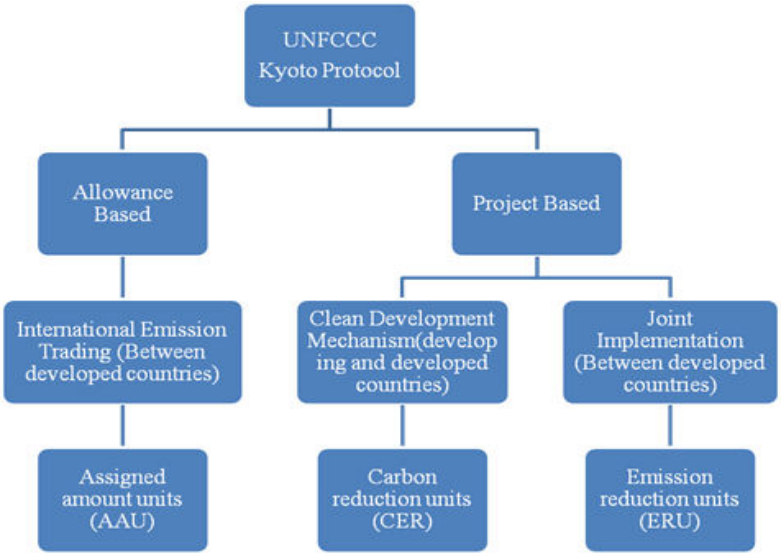

(Source: www.unfccc.in)

About Carbon Credit: International agreements have imposed production caps on GHGs that countries can create, and these caps have in turn set caps for enterprises. In attempt to change the situation, tools like carbon credits and carbon offsets were established to encourage businesses to operate in a more environmentally friendly manner. One carbon credit permits the release of one tonne of carbon dioxide or an equivalent amount of other greenhouse gases into the atmosphere. Businesses that exceed their quotas must purchase carbon credits to make up for the extra emissions, while those that fall below them can sell the excess credits. This credit-for-credit trade between companies has promoted carbon trading all across the world.

Two exchanges, the Chicago Climate Exchange and the European Climate Exchange, allow corporations to trade credits or buy and sell them on global markets at the going rate. The third market in the world to trade carbon credits may soon be the Multi-Commodity Exchange of India (MCX). Using the carbon trading system, which involves buying and selling carbon credits, it is possible to limit the amount of emissions on a worldwide scale. Like any other financial instrument, buying Carbon Credits from various businesses is quite easy and straightforward because they are exchanged on a public market.

The system also encourages businesses to adopt greener practises so they can raise money by selling carbon credits. Carbon credits make it very simple for businesses to adhere to the scheme because they are widely traded on the market.

Role of India on Carbon Credit

India is starting to take a significant role in the market for carbon credits worldwide. This has sparked Carbon credit's creator, developer, and trader will open an office in India. The field of carbon credit is rapidly expanding right now, notably in India, yet very few corporations are aware of it. The need to raise awareness of this industry is very critical. India is allowed to sell excess credits to industrialised nations because its GHG emissions are below the target. According to estimates, India accounts for 31% of global carbon trading, which could generate $25 billion by 2010. Trading in carbon credits is a fantastic business opportunity because of this the foreign businesses who are unable to adhere to the rules can purchase excess credit from international businesses. Numerous Indian corporations have had their stock ratings revised in light of the windfall that will come their way once carbon trading begins. Shell Trading International and SRF Ltd have agreements in place for the selling and purchase of credit for reducing emissions. Both Suzlon Energy and Shriram EPC operate in the wind energy sector and can take advantage of carbon credit benefits.

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More than 200 Indian organisations have sought to register their CDM Project in order to obtain carbon credits, making India the underdog in this race. Additionally, the 800 million farmers in India have a rare chance to make money by selling carbon credits to industrialised countries. Due to the employment of regenerative braking systems in its rolling stock, India's Delhi Metro Rail Corporation (DMRC) has become the first rail project in the world to get carbon credits.

As a result, businesses with low emissions will develop plans to cut emissions even further in order to maximise the number of carbon credits they can sell on the global market and boost their profitability. As a result, the system continues to depollute the environment more and more.

Environmentally Friendly Ways to Offset Carbon Emissions

A different financial option that employs a similar methodology to minimise greenhouse gas emissions is carbon offset. One metric tonne of CO2 or an equivalent greenhouse gas is reduced by the value of a carbon offset credit. It makes a significant contribution to the promotion of green energy sources including wind and solar energy as well as the support of initiatives for reforestation and wildlife preservation. This significant reduction is made possible by using more sustainable energy sources, such as wind and tidal energy. Even individuals are employing this strategy and purchasing carbon offsets to improve the environment and raise public awareness of environmental preservation.

Purchasing carbon offsets is simple and may be done quickly online through one of the many websites that offer this service. However, it's vital to remember that purchasing carbon offsets does not absolve us of our obligations because everyone of us can make a significant contribution to reducing our carbon footprints by making tiny changes to our everyday routines. These tiny adjustments can make a big difference in halting further environmental harm. Using low-energy bulbs and LED lighting, using renewable fuels like biodiesel, and turning off lights and other electronic devices when not in use are just a few essential habits that we should uphold. A 2L gasoline automobile driven on average 400 km per week would require 19 trees to be planted to absorb all the CO2 produced, according to the westnet.com estimate.

As long as the trees are not cut down, 19 trees can offset all of your car's emissions for as long as you live. There are a few simple things we can do to drastically lower our carbon emissions, such as carpooling, which reduces costs by half and also allows for savings. Eating vegetarian meals is another option to lessen your carbon footprint because animal protein requires a lot more energy to create than vegetable protein does. By limiting the amount of rubbish we put in our landfills, or by not taking anything that can't be eaten or reused, we can also reduce the amount of carbon waste.

(CDM) Clean Development Mechanism

A wealthy country can "sponsor" a greenhouse gas reduction project in a developing nation under the Clean Development Mechanism (CDM), where the cost of project activities is often substantially cheaper but the atmospheric effect is comparable around the world. While the developing nation would benefit from the capital investment, clean technology, or advantageous change in land use, the developed nation would receive credit for reaching its carbon reduction targets.

Table 2.3: States contribution to India economy for total CER up to 2021

Name of States/Country	No of Projects	CER up to 2012	Total CER
Multi State	84	13,23,143	0.18
Andhra Pradesh	206	8,68,23,972	12.01
Arunachal Pradesh	1	1,56,393	0.02
Assam	13	8,52,579	0.12
Bhutan	1	5,29,914	0.07
Bihar	8	7,50,896	0.1
Chhattisgarh	104	2,73,68,203	3.79
Delhi	16	38,23,996	0.53
Goa	4	11,86,500	0.16

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Gujarat	351	5,70,52,200	17.57
Haryana	35	45,12,243	0.62
Himachal Pradesh	91	1,72,73,314	2.39
J&K	4	96,86,384	1.34
Jammu & Kashmir	2	1,28,326	0.02
Jharkhand	32	2,40,46,731	3.33
Karnataka	250	6,96,97,979	9.64
Kerala	16	6,42,032	0.09
Madhya Pradesh	70	87,87,799	1.22
Maharashtra	367	6,16,20,089	8.52
Meghalaya	4	15,98,429	0.22
Multi State	97	2,53,30,436	3.5
Orissa	79	2,27,94,520	3.15
Pondicherry	1	1,39,332	0.02
Pondicherry	2	14,674	0
Punjab	74	1,21,57,425	1.68
Rajasthan	218	6,31,78,620	8.74
Sikkim	10	99,73,169	1.38
Tamil Nadu	355	5,18,82,998	7.18
Tripura	1	44,27,526	0.61
Uttaranchal	36	1,94,54,380	2.69
Uttar Pradesh	163	3,78,13,167	5.23
Uttarakhand	13	10,30,493	0.14
West Bengal	76	2,67,99,892	3.71
Total	2784		100
No of Projects : 2784 CER up to 2012 : 722827037 tonnes			

(***Source:*** Sate wise Approved Projects retrieved from http://www.cdmindia.gov.in/reports_new.phpassed on Feb. 28, 2021.)

Carbon Credit Market in Maharashtra: The analysis concentrated on the Maharashtra market's potential. One study focused on the Municipal Corporation's initiative to earn carbon credits and the potential for future carbon initiatives. In Maharathstra, Nadene Ghouri (2009) examined the realities affecting the environment and human rights while focusing on florochemical firms. GFL had degraded the region of land and water closest to the facility, which had an impact on people. GFL is a part of a global carbon-trading programme with its headquarters in London that aims to stop global warming. It appears to be an effective approach to reduce global carbon emissions under the Kyoto Agreement and under UN supervision. However, a current study has shown numerous significant flaws and gaps in the plan.

Carbon Credit Market in Mumbai

BEST: Now competing internationally to obtain carbon credits for its municipal transportation is the venerable BEST Undertaking. The more than a century-old public transportation corporation, which completed 75 years of municipalisation this year, has planned to purchase and trade in carbon credits on a global platform with significant green projects like electric, hybrid buses and solar charging. Carbon credits are quantifiable, independently verified reductions in emissions from approved climate action programmes. These initiatives aim to cut, eliminate, or prevent greenhouse gas emissions.

"BEST has made a commitment to using green energy. By 2023, the project plans to have 3,000 electric buses in service after replacing 400 conventional buses with them. By 2025, it intends to replace all 10,000+ buses in its fleet with electric ones. Additionally, since 2007, around 60% of the fleet has been run on CNG. The enterprise is also finalising a contract to purchase 700 MW of energy from the Solar Energy Corporation of India Ltd (SECI) for the purpose of charging electric buses, according to a senior official. The BEST anticipates that once the fleet of 10,000 electric buses hits Mumbai's streets, it would generate carbon credits

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worth Rs 5,000 crore. The project intends to roll out the full fleet over the next three years. It now transports roughly 35 million bus passengers daily and provides electricity to 10.8 lakh users.

EKI Energy Services Ltd. (EKI), a top global developer and supplier of carbon credits, today announced that it will contribute up to INR 200 crores to a new INR 1000 crores (125 million USD) climate impact fund that it has established in collaboration with the Singapore-based Impact Capital Asset Management Pte Ltd. (ICAM).

OBJECTIVES

1. To assess the worldwide carbon credit market in relation to carbon trading, the Kyoto Protocol, GHG emissions, and global climate change.
2. To integrate the numerous technologies and characteristics taken into account by organisations, as well as to look at the risk level and contributing elements to the Maharashtra energy sector's registered CDM projects.
3. To assess the challenges selected organisations encounter in implementing CDM projects and the effects of CDM initiatives on organisational functions.
4. To investigate the market for carbon credits' potential in Maharashtra and India.

HYPOTHESIS

H1: There is a significant relationship in the organisations from the public and private sectors, the time span of the project, and the technology used for CDM projects.

H2: Time span of the CDM project, classification of organisations based on investment, staff count, public & private sector organisations, and technology used for CDM projects all differ significantly from barriers influencing CDM programmes.

LITERATURE REVIEW

Sarkar (2010) has concentrated on the growth of carbon credits in India. One of the steps industrialised nations have taken to fulfil their promises to reduce GHG emissions is the Clean Development Mechanism (CDM), which involves funding projects in developing nations that aim to reduce GHG emissions under the auspices of the UNFCCC.

The Certified Emission Reductions (CERs) system used by CDM allows for the trading of greenhouse gas reductions, with each CER representing one metric tonne of carbon dioxide equivalent (CO_2e). Nations that have agreed to emission reduction targets under the UNFCCC (Annex-1 countries) and those that have not yet agreed to emission reduction targets can trade CERs (Non Annex countries). Out of the three Kyoto mechanisms, the Clean Growth Mechanism (CDM) is the only mechanism for the developing world that promotes cleaner development in poor nations and brings new investments and technologies there. It offers a chance to use greener technologies and receive compensation for lowering emissions. There are four stages in the project cycle that CDM goes through (IISD, 2009)

RESEARCH METHODOLOGY

• **Selected Example Design**: The samples are defined in terms of the number of organisations in the energy industry. Based on the accessibility and ease of the data, sample organisations are chosen. Non-probability convenience sampling is the sample design in use here.

• **Target Audience:** the businesses that have projects registered under the NCDMA for CDM in Maharashtra state during Kyoto Protocol Phase I (up until 2012).

• **Target Audience:** In Maharashtra, businesses in the energy industry (renewable and non-renewable) that have registered their large-scale projects for reducing carbon emissions with NCDMA as of 2012. There are 33 organisations in total that have large-scale CDM projects registered in Maharashtra.

Data Collection

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For an in-depth analysis, the current study combines the collecting of both primary and secondary data. A pilot study was used to pre-test the questionnaire, and it underwent some minor revisions. Personal, telephone, and email interviews have all been used to gather the data. Secondary data are gathered from publications such as periodicals, journals, research papers, articles, magazines, newspapers, websites, and other reference materials that can be found from a variety of sources.

Data Analysis

1) Time span of the CDM projects

Table No. 1: Time span of the CDM projects

Particulars	Phase I (1to 7years)	Phase II (8to 14years)	Phase III (15 to 21years)
Time span	8	9	5

Interpretation: Majority of the energy sector organisations had registered their CDM projects for the Phase I (1 to 7 years) and Phase II (7 to 14 years).

2) Technology adopted for CDM Projects

Table No. 2: Technology adopted for CDM Projects

Particulars	Solar	Wind
Technology adopted for CDM Projects	11	11

Interpretation: From the above table, it is interpreted that out of 22 organisations, 11 organisations used windtechnology and 11 organisations used solar technology.

3) Carbon credit can be deployment of corporate social responsibility

Table No. 3. Carbon credit can be deployment of corporate social responsibility

Particular	No	Yes
Deployment of CSR	4	18

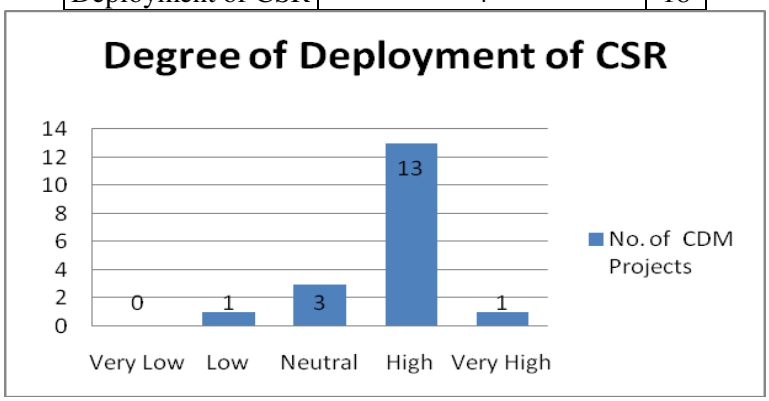

Figure 2: Degree of deployment of corporate social responsibility

Interpretation: From the above table, it can be interpreted that out of 22 organisations, 18 organisations agree upon deployment of corporate social responsibility. From 18 organisations, 14 organisations said that the degree of deployment of CSR is high. So CDM Projects is affecting CSR.

4) Aspects considered for CDM Projects

Table No. 4: Aspects considered for CDM Projects

Aspects considered for CDMProjects	Strongly Disagree (1)	Disagree(2)	Neutral(3)	Agree (4)	Strongly Agree (5)	Weighted Average
Reduce Pollution level	0	2	4	7	9	

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	0	4	12	28	45	17.8
Eco Friendly	0	1	1	1	19	
	0	2	3	4	95	20.8
Positive Impact on Human Well Being	0	1	2	3	16	
	0	2	6	12	80	20
Does not make Environment Safe	16	5	0	1	0	
	1	10	0	4	0	3
Sound Technology	0	2	2	4	14	
	0	4	6	16	70	19.2
Technology affect Positive on Company	0	0	3	7	12	
	0	0	9	28	60	19.4
Technology help in development of Economy	0	1	7	8	6	
	0	2	21	32	30	17
Upgradation of Technology	1	3	5	11	2	
	1	6	15	44	10	15
PDD is Real	1	0	3	6	12	
	1	0	9	24	60	18.8
Proper Methodology for CER	0	1	2	3	16	
	0	2	6	12	80	20
Create Employability	1	1	3	5	12	
	1	2	9	20	60	18.4
Reduce Poverty	1	3	6	7	5	
	1	6	18	28	25	15.6
Improve Quality of Life	0	4	4	7	7	
	0	8	12	28	35	16.6
Attract add. Investment	0	2	2	12	6	
	0	4	6	48	30	17.6
Clear Time Span	0	0	2	8	12	
	0	0	6	32	60	19.6
Clear Baseline	0	0	1	10	11	
	0	0	3	40	55	19.6

Interpretation: After taking weighted average of all the aspects considered by the energy sector organisations for CDM Projects, the result reveals that eco-friendly, positive impact on Human well-being and proper methodology of CER are playing vital role compare to other aspects considered by the organisations for the CDM Projects.

5) External factors affecting CDM Projects

Table No. 5. External factors affecting CDM Projects

External Factors	No. of Organisations
Global Market	19
Economy Growth	8
Carbon Trading	12
Political Changes	11
CDM Mechanisms	11

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Trade Relations	2

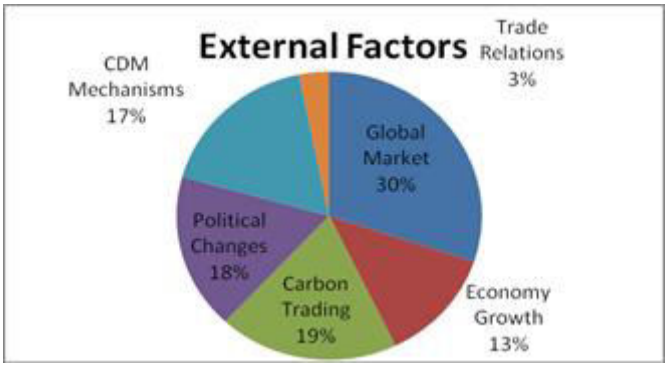

Figure 3: External factors affecting CDM Projects

Interpretation: From the above graph, it can be interpreted that Global market condition is highly affecting the CDM Projects. Other than Global market, Carbon Trading and political changes also affects the CDM Projects.

6) Internal factors affecting CDM Projects

Table 6: Internal factors affecting CDM Projects

Internal Factors	**No. of Organisations**
Monitoring Cost	13
Adopting Technology	8
HR Practices	1
Management	10
Others	1

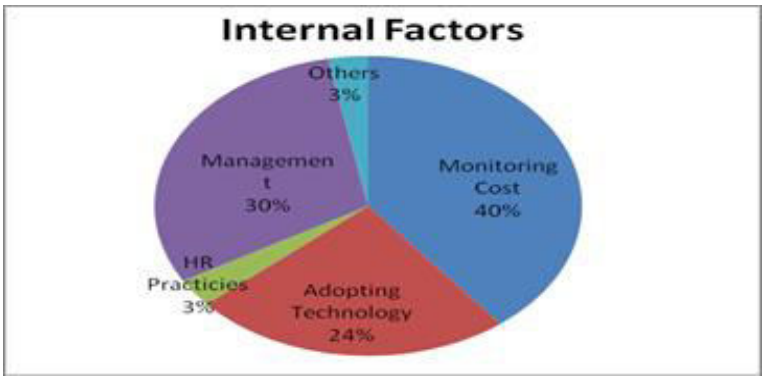

Figure 4: Internal factors affecting CDM Projects

Interpretation: From the above graph, it can be interpreted that monitoring cost of the CDM Projects is highly affecting the CDM Projects which is 40%. Other than monitoring cost, management and technology also affects the CDM Projects.

7) Impact of CDM Projects on energy sector organisations

Table 7: Impact of CDM Projects on energy sector organisations

Impact of CDM Projects	**Very Low**	**Low**	**Neutral**	**High**	**Very High**
Administration	3	5	10	3	1
Operations	1	2	9	8	2
Finance	0	0	4	14	4
Human Resource	1	3	11	7	0
Technology	1	2	8	7	4

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Marketing	2	5	8	6	1
Management	0	1	9	11	1
Stakeholder	0	0	5	15	2
Competitors	3	4	8	7	0
Economy	0	2	7	7	6

Interpretation: The above data shows that the CDM Projects has an impact on financial aspect, managementaspects and stakeholders of the energy sector organisation.

Hypothesis Testing

H1 0: Time span of the Projects and risk associated with the registered CDM Projects is independent.

H1 A: Time span of the Projects and risk associated with the registered CDM Projects is dependent.

Table 8: Mean rank of external factors and time span

Particular	Time span	N	Mean Rank
External factors	1.0000	8	6.50
	2.0000	9	13.72
	3.0000	5	15.50
	Total	22	

Table 9: Mean rank of internal factors and time span

Particular	Time Span	N	Mean Rank
Internal Factors	1.0000	8	11.25
	2.0000	9	12.83
	3.0000	5	9.50
	Total	22	

Table 10: Chi-square Test- Time span of the Projects and risk associated with theregistered CDM Projects

Sr. No.	Risk associated with registered CDM Projects	Sig. Value
1	Feasibility Risk	0.755
2	License Risk	0.200
3	Time Over-run Risk	0.089
4	Capital Cost Over-run Risk	0.045
5	Technology Risk	0.063
6	Market Risk	0.850
7	Supply Risk	0.682
8	Operation Risk	0.107
9	Legal Risk	0.261
10	Financial Risk	0.155
11	Counter Party Risk	0.427
	Overall result of risk associated with CDM Projects	0.048

Interpretation: The above referred table shows the significant value for the risk associated with registered CDM Projects is 0.048 which are less than 0.05. It means that null hypothesis is rejected. It can be interpreted that time span of the Projects and risk associated with the registered CDM Projects are dependent. From the above table, all the risk associated with the registered CDM Projects does not have individual difference except capital cost over-run risk.

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H2 0: Estimated CER p.a. by energy sector organisation and technology adopted for CDM Projects are independent.

H2 A: Estimated CER p.a. by energy sector organisation and technology adopted for CDM Projects are dependent.

Table 11: Chi-square Test- Estimated CER p.a. by energy sector organisation andtechnology adopted for CDM Projects

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	5.238	2	.043
Likelihood Ratio	5.661	2	.059
Linear-by-Linear Association	.759	1	.384
N of Valid Cases	22		

Interpretation: The result of the test shows that the significant value is 0.043 which is less than 0.05. Null hypothesis is rejected. From the above table, it can be interpreted that estimated CER p.a. by energy sector organisation and technology adopted for CDM Projects are dependent. It can be understood that estimated CER p.a. by energy sector organisation and technology adopted for CDM Projects are inter-related.

FINDINGS

- The results showed that the CDM Projects are impacted by a number of internal and external factors.
- Changes in the global economy have played a significant impact in project implementation over the past few years as an external element, and a scarcity of competent labour has increased monitoring costs as an internal factor.
- The study's findings suggest that the CDM Project life cycle involves a variety of risks. Capital cost overrun risk, operational risk, and supply risk were discovered to be impacting the CDM Projects out of all the hazards connected with Projects.
- Also impacted by CDM Projects are organisational processes.
- The functions of an organisation most influenced by CDM are finance, stakeholders, and management.
- Equity and loans are the primary sources of carbon finance employed by organisations in the energy sector. Because of the contracts they had with foreign organisations, the organisations that had registered CDM projects are not required to participate in carbon trading. Because of the variations in the price of carbon, some organisations that have chosen to participate in carbon trading prefer forward contracts.
- According to the current trend, corporate social responsibility (CSR) is given top attention by organisations, and the study found that carbon credits help CSR initiatives succeed. According to the responders from the energy organisations, the level of CSR implementation is high.

SUGGESTIONS

• **Advice for the governing body:** India has the capacity to produce additional carbon credits. Indian government agency NCDMA has been promoting the idea on the market more and more. Global economic conditions and trade relations have an impact on the CDM market, thus an economy must develop a strategy to counteract these challenges. For the organisation to properly implement CDM Projects, the government must provide more sources of carbon financing.

Organizational suggestions: Numerous factors influencing CDM Projects were researched. Analysis showed that the majority of organisations employed wind and solar as renewable energy sources. Therefore, there is still room for research into other renewable energy sources. Due to the availability of specialist staff, CDM Projects have an impact on administrative tasks and enable businesses to have access to manpower that

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will improve their performance. The danger of time overrun and the risk of capital failure are linked to CDM projects, demonstrating the need for enterprises to exert extra effort to finish the projects on schedule.

CONCLUSION

The terms carbon offset and carbon credit still need to establish themselves in common usage. To give our future generations a better, cleaner environment, comprehensive education is needed to raise public awareness of the issue. Nevertheless, there are hints of growing activity in the increased demand for carbon credits and the emergence of fresh financial mechanisms for emission trading. Additionally, it can be said that when it comes to developing nations, India is emerging as a pioneer in the creation of creative carbon trading methods and portfolios.

REFERENCES

1) The ICFAI Journal of Environmental Economics, 4(3):71-81, Jatinder S. Bhatia and Harsh Bhargava (2006), "Global Warming and Clean Development Mechanism Projects: State and Trends in India."

2) "Indian Business Prospects in the Global Emissions Market," Kalpagam, U. and Karimullah, 2007. Global Business Review, 8(2):237–249.

3) Chakraborty, Debrupa. "Perspectives of Climate Change Policies in Business Decision Making", The ICFAI Journal of Environmental Economics, 4(4):7–18 (2006).

4) " Understanding the Behavior of the Emissions Market from a Financial Perspective: An Insight into Carbon Trading The Applied Finance Journal of the ICFAI, 12(11), pp. 59-69, by Jatinder S. Bhatia and Harsh Bhargava, 2006.

5) Avi-Yonah, Reuven S. and Uhlmann, David M. (2009), Why a Carbon Tax is a Better Response to Global Warming than Cap and Trade in the Fight Against Climate Change. Harvard Environmental Law Working Paper No. 117; Stanford Environmental Law Journal, Vol. 28, No. 3, 2009. Available at SSRN: http://ssrn.com/abstract=1333673.

6) Barnwal and Tiwari (2008), An examination of the CO2 credits and life cycle energy metrics for a hybrid photovoltaic/thermal greenhouse drier. Int. J. Low-Carbon Tech. Vol. 3 Issue 3, p203-220.s

7) B. Emily, C. Esteve and E. Manuel (2008), “International Environmental Agreements, "UNFCCC negotiations (pre-Kyoto to COP-9): what the process tells about the politics of CDM-sinks." Vol. 8, p95–112.

8) Bernstein, P.M., Montgomery, W.D. & Tuladhar, S.D. (2006). Possibility of lowering carbon emissions from non-Annex B nations through technological advancements. Economics of Energy, Vol. 28, Issue 5-6, p. 742-762.