

## Overview of Legal and Policy Measures of Carbon Trading and Renewable Energy Certificate (REC) In India

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### Abstract

It is scientifically well proven facts that carbon dioxide is the main cause of greenhouse gas emission by burning of fossils fuels. Kyoto Protocol to the United Nations Framework Convention on Climate Change (UNFCCC) empower the parties to curb greenhouse gas emissions from the diverse industries by elaborating the mechanisms of Clean Development Mechanism Joint Implementation, and Emission Trading. This has created an international market for carbon trading. The paper addresses the global and Indian's national carbon trading system, starting with the UNFCCC, and Kyoto Protocol comprising carbon credit components. The paper also tries to examine the obligation of India under the Kyoto protocol and later discuss the legal and policy framework implemented by India to encourage CDM and carbon trading in India. It traces different policy measures like National Action Plan and State Action Plans on Climate Change, National Mission on Enhanced Energy Efficiency (NMEEE), Climate Change Action Program, 2010, Perform Achieve and Trade (PAT), Renewable Energy Credit Trading System (REC), PILOT ETS in some Indian provinces, the significant arrangements of Energy Conservation Act, 2001 and The Environmental Protection Act, 1986, Air (Prevention and Control of Pollution) Act, 1981 are likewise examined. This paper further discusses the positives and negative aspect of this scheme and also its review, criticisms and problems. It ends by providing an Indian perspective to this scheme. Study of this paper would be especially beneficial for the governments, stakeholders and research scholars to know the whole legal and policy mechanism of carbon trading.



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### Introduction

Climate change means a change or variation in climate which is caused by an anthropogenic

activity that alters the configuration of the earth's environment and which is besides natural climate variability detected over certain periods.<sup>1</sup>

<sup>1</sup>UNFCCC Article 1(2) Definitions

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under UNFCCC Article 1(2) Definitions and It is a serious environmental issue worldwide. It is mostly caused by the atmospheric build-up of Green House Gases (GHGs). Global fluctuations in the concentration of carbon dioxide are mainly due to the use of fossil fuels and improvements in land use, whereas methane and nitrous oxide are primarily due to agriculture. Global Warming is a special example of the general term "Climate Change" which applies in recent decades to the observed spike in the ambient air temperature near the surface of the earth and oceans. The UNFCCC thus makes a distinction between climate change attributable to human activities altering the atmospheric composition and climate variability attributable to natural causes.<sup>2</sup>

Climate change is real, catastrophic and existential threat to humanity. Many tools, techniques, methods, and measures could be undertaken to save the earth from an ever-changing climate. There are many ways to reduce and lower greenhouse gases especially Carbon dioxide from the climate. It also helps to create and install long-term, large-scale renewable energy plants and installations to reduce carbon.<sup>3</sup>

Annex B countries under the Kyoto Protocol have accepted targets to make limitations on emissions. These targets signify the levels of allowed emissions also called assigned amounts over 2008-2012. These permitted emissions are broken into allocated units of quantity (AAUs). Trading of carbon, as provided for in Article 17 of the Kyoto Protocol, requires countries with emission units to sell this surplus power - emissions allowed but not 'used' - to countries that are above their targets under Article 17 of the Kyoto Protocol.<sup>4</sup>

Thus, in the form of pollution reductions or removals, a new product has been produced. Since the biggest greenhouse gas is carbon dioxide, people clearly talk about trading in carbon. As every other asset, carbon is now tracked and exchanged. This is considered as the "carbon market."

Carbon offsetting is an action or process of compensating for carbon dioxide emissions arising from industrial or other anthropogenic activities.

Carbon trading is the process of buying and selling permits and credits to emit carbon dioxide. While Renewable Energy Certificates (RECs) are a type of environmental commodity, they are intended to provide an economic incentive for renewable energy sources to generate electricity. When a one-megawatt hour of electricity is generated from an eligible renewable energy resource, one REC is generated. REC is the environmental attribute associated with the generated unit of electricity.

#### **Are Offsets and RECs the Same?**

No, carbon offsets and RECs can support an organization to make reductions in emission footprints, they have completely distinct tools for a specific purpose. Offsets and RECs are just different things in the same area; both identify environmental benefits that could mitigate climate change and reduce dependency on fossil fuel. Carbon offsets and RECs are just different commodities that represent the environmental aspect.

REC signifies one megawatt of energy produced from renewable sources for example as wind, solar, hydro, biomass because renewable energy does not emit carbon dioxide. It is an indirect way of emission reduction and offset means reduction in greenhouse gas in one place to offset emission occurring somewhere else. Offset is a direct way of emission reduction.

#### **International Legal Regime: Carbon Trade UNFCCC**

The UN Framework Convention on Climate Change (UNFCCC) is an international treaty that deals with environmental issues and developed to address the problem of climate change and parties to the UNFCCC conducted a meeting to discuss ways to achieve the treaty's aims, it is the supreme decision-making body for the implementation of UNFCCC.

The overall goal of this Convention is to maintain a balance in the atmospheric absorption of greenhouse gases at a degree that will preclude harmful anthropogenic interference with climate composition., provide for an agreed framework to deal with the issue.<sup>5</sup>

<sup>2</sup>IPCC Available at <https://www.ipcc.ch/sr15/chapter/glossary/> (Visited on March 12, 2020)

<sup>3</sup>Global Stewards Available at <http://www.globalstewards.org/reduce-carbon-footprint.htm> (Visited on March 12, 2020)

<sup>4</sup>Kyoto Protocol Article 17

<sup>5</sup>Full text of the Convention – Article 2 (objective), United Nations Framework Convention on Climate Change, visited on March 12, 2020

Article 4 of the convention set out the basic principle of the UNFCCC that all parties have common but differentiated responsibilities and respective capacities and recognize the responsibilities of developed countries in reduction of GHG.<sup>6</sup>

One of the key duties of the Convention is to establish and make available national anthropogenic emissions inventories of greenhouse gases emission not covered under the Montreal Protocol by means of analogous sources and sink removals using comparable greenhouse gas emissions.

Parties to the UNFCCC are classified into Annex-I countries, there are 43 industrialized or developed countries and "economies in transition" (EIT) in the Annex-I countries list and EITs are the 14 former centrally-planned (Soviet) economies of Russia and Eastern Europe,<sup>7</sup> Full text of the convention - Annex I, United Nations Framework Convention on Climate Change, visited on March 11, 2020 and there are 24 countries listed in Annex-II of the Convention, including the European Union. These parties comprise of members (OECD), They are expected to provide EITs and developing economies with financial and technological assistance to help them to cut their greenhouse gas emissions.<sup>8</sup>

Annex B the Parties related to in Annex B to the Kyoto Protocol are Annex I Parties with first or second round goals for Kyoto greenhouse gas emissions. An amendment to Annex B was contracted upon consisting a list of Annex I countries which have second-round Kyoto Protocol targets, which start from 2013–2020 and the said agreed amendments have not come into force.<sup>9</sup>

Least-developed countries which have unique position under the UNFCCC due to their limited capacity to get used to the effects of climate change. Non-Annex I countries to the UNFCCC not given in Annex I of the Convention are mainly low-income

developing economics and they become Annex I countries when they are sufficiently economically and technologically self-dependent.<sup>10</sup>

### **Kyoto Protocol**

The core and main feature of the Kyoto Protocol are its requisites that countries must reduce their greenhouse gas emissions and lays down the cap on targets and limits. This protocol aid and advice countries to meet their emission targets, and to reassure the private sector and developing economies to subscribe to greenhouse emission reduction. The main aim and endeavor of the Protocol includes mechanism to earn carbon credits, the clean development mechanism and joint implementation.<sup>11</sup>

### **International Emissions Trading**

Article 17 of the Kyoto Protocol provides for emissions trading between countries who have accepted to limit and reduce the emissions (Annex B Parties). Countries that have "assigned amount units" to spare because of reductions in emissions under article 3 of the Kyoto Protocol and Annex B could sell these units to countries that have emissions gone beyond their targets.<sup>12</sup>

Article 17 of the Kyoto Protocol states that Annex B countries which have committed under the Kyoto Protocol to acquire emission units from other countries who committed under the Protocol and use them to meet the targets and in order to comply with the quantified pollution restriction and mitigation commitments under that Article, all such trade must be besides to domestic measures,<sup>13</sup> clearly IET is a cooperative mechanism and is applicable to only developed countries.

### **Clean Development Mechanism**

The key aim of the Clean Development Mechanism is to promote the realization of sustainable development by parties not addressed by

<sup>6</sup>Full text of the convention – Article 4 (commitments) , United Nations Framework Convention on Climate Change, visited on March 12, 2020

<sup>7</sup>Full text of the convention - Annex I, United Nations Framework Convention on Climate Change, visited on March 11, 2020

<sup>8</sup>Full text of the convention - Annex II, United Nations Framework Convention on Climate Change, visited on March 11, 2020

<sup>9</sup>Parties & Observers, United Nations Framework Convention on Climate Change, (Visited on: March 11, 2020)

<sup>10</sup>UNFCCC, Sixth Compilation and Synthesis of Initial National Communications From Parties Not Included In Annex I To The Convention.

<sup>11</sup>Note by the Secretariat. Executive Summary. Document Code FCCC/SBI/2005/18, Geneva, Switzerland: United Nations Office, p. 4

<sup>12</sup>"Emissions Trading". United Nations Framework Convention on Climate Change. Archived from the original on 29 April 2010. Retrieved 2010-04-07

<sup>13</sup>Full text of the convention – Article 17 ,Kyoto Protocol to UNFCCC visited on June 18 2020

Annex I. To encourage compliance with their quantified commitments for emission limitation and removal under the Article 3.<sup>14</sup>

Article 12 of the Kyoto Protocol defines and deals with Clean Development Mechanism (CDM) and permits emission-reduction and abatement projects in developing countries to earn certified emission reduction (CER) credits and one CER is equivalent to one tone of CO<sub>2</sub>. These CERs could be traded and sold and availed and used by industrialized countries to fulfill and achieve the target of emission reduction under the Kyoto protocol. The CDM helps in sustainable development and emission reductions and provides industrialized countries.

The union government of India established the National Clean Development Mechanism (CDM) Authority a designated national authority (DNA) intending to protect and improve the quality of the environment in terms of the Kyoto Protocol. The National Clean Development Mechanism (CDM) Authority functions are receiving projects for evaluation and approving as per the guidelines and general criteria laid down in the relevant rules and guidelines issued by the Clean Development Mechanism Executive Board and The Conference of the Parties to the United Nations Framework Convention on Climate Change will act as a Framework Convention on Climate Change.

#### **Joint Implementation**

Article 6 of the Kyoto Protocol a country which has made an obligation under the Kyoto Protocol may partake in an emission reduction project other country which also has a reciprocal obligation under the Protocol. Joint implementation a project earns emission reduction units (ERUs) and each ERU which is equivalent to one tone of CO<sub>2</sub> like CDM. All emission reduction units must be legitimate, quantifiable, verifiable, and supplemental and additional to what would have happened without the project.

In a joint implementation mechanism, there are two ways through which projects could be applied

for approval: Party-verification and international independent body verification. Joint implementation Supervisory Committee looks after and it reports to the countries that have ratified the Protocol.

Before approval and recognition of the project as CDM or Joint implementation, a letter of approval is given by the host country and in the same way; the project participant requires a letter of authorization. CDM and Joint implementation are third-party validation.

Kyoto Protocol was legally bindings on developed countries to reduce emission targets and the first commitment period began in 2008 and ended in 2012 and the second commitment period commenced from January 1, 2013, and its deadline is December 31, 2020,<sup>15</sup>

#### **Indian legal Regime: Carbon Trading Kyoto Protocol: India's Obligation**

India signed and ratified the Kyoto Protocol in August 2002. India is a Non-Annex-I country to UNFCCC; a Non-Annex-I country is under no binding obligation to cut carbon emissions and also not bound by the obligations applicable to all developing countries which include preparation of national inventories of anthropogenic emissions.<sup>16</sup> Under the Kyoto protocol, the developing has further under obligation to implement national and regional programs reduce global warming,<sup>17</sup> and to make promotion and cooperation in the development and transfer of technologies, reduce or prevent anthropogenic emissions of GHGs not controlled by the Montreal Protocol in all relevant sectors.<sup>18</sup>

The obligation under the Kyoto protocol also includes consideration of climate change while working on social, economic, and environmental policies and actions. To make appropriate methods that will reduce its adverse effects on the environment, promotion and progress of scientific research to avert the ill effect of climate change to ensure the objectives of convention.<sup>19</sup>

<sup>14</sup>Full text of the convention – Article 12 ,Kyoto Protocol to UNFCCC visited on on June 18 2020

<sup>15</sup>GOI, Ministry of Environment and Forest, Annual Report, 382 (2013-14)

<sup>16</sup>Supra n 11, Article 4(1) (a)

<sup>17</sup>Ibid., Article 4(1)(b)

<sup>18</sup>Ibid, Article 4 (1) (c)

<sup>19</sup>Ibid, Article 4(1)(g)

The National Action Plan on Climate Change has been prepared to support domestic actions for adaptation and mitigation of climate change. NAPCC comprises of eight National Missions that is the, National Mission for Enhanced Energy Efficiency National Mission on Sustainable Habitat and National Solar Mission that talks going to restrict and lessen the ozone harming substance discharges in India, all States and Union Territories have likewise executed a State Action Plan on Climate Change (SAPCC) that lines up with the embodiment of NAPCC.

India has willfully put forward an initiative to reduce the emission intensity of Gross Domestic Product by 20-25% by 2020 from the 2005 level barring the emissions from the agriculture sector.

The government has instructed revising the Ministry of New and Renewable Energy's goal for renewable energy ability to 175 GW by 2022. The revised target of 175 GW has capacity also of 100GW Solar, 60GW Wind, 10GW Biomass, and 5 GW Small Hydro Power. There is a total of 2800 major industries and out of 2800, 920 industries have installed on-line continuous monitoring devices.

Ministry of Environment Forest and Climate Change has suggested amendment to the certain provisions of the Environment protection rules 1986 intending to control pollution, bringing energy efficiency and said amendment also aim to make solid waste management, water conservation, and zero liquid discharge for stringent compliance by various categories of industries.<sup>20</sup>

### Legal and Policy Framework

India has significant position in the support and enabling of the development of CDM projects by creating a National CDM Authority. To enforce Clean Development Mechanism (CDM) projects in India. India certified and indorsed the Kyoto Protocol. India's climate change policy framework is based on the National Action Plan on Climate Change (NAPCC). NAPCC consists of eight public missions focused on enhancing efficiency of vitality productivity, solar technology, and feasible

ecosystems. To date, 7,814 CDM projects have been registered globally and 1,527 billion CERs from 2574 CDM projects have been released. By the end of 2020 there will be about 3,8 billion tons of emission reduction, and India will rank second in the world, followed by Brazil, to build CDM projects next to China. India is approximately 20 percent of CDM project activities compared to 50 percent of China and CERs are 13 percent compared with 60 percent of China. India generate less CERs at small-scale and as compared with china which produces large-scale CDM projects.<sup>21</sup>

### The National Environmental Policy, 2006 (NEP)

The National Environment Policy tries to direct regulatory reform, programs, and projects for environmental conservation and preservation; audit and order of enactment. Additionally the policy also tries to encourage joint ventures of different stakeholders such as public institutions, local communities, academic and scientific institutions, the investment community, and international partners, in assembling their assets for environmental protection. The primary point of NEP that while protection of environment as well as jobs and prosperity of all is also expedient.<sup>22</sup>

### National Action Plan and State Action Plans on Climate Change

The National Climate Change Action Plan (NAPCC) is a policy document drafted by the Climate Change Council of the Prime Minister. It has been made bearing in mind that India's economic need to exploit its natural resources needs to be according to the need to maintain ecological balance. The NAPCC's objectives are the protection of the poor and vulnerable sectors of society, the achievement of national growth and an economic direction that improves environmental sustainability. The establishment of eight national missions was convenient, not only supporting these principles, but also forming the essence of the overall national mission.

Ministry also urged state governments to prepare the State Climate Change Action Plan (SAPCC). The aim of these SAPCCs was to build up institutional

<sup>20</sup> <https://pib.gov.in/newsite/PrintRelease.aspx?relid=124324> (Visited on 18/02/2020)

<sup>21</sup> Prof Dr.Smt. Chittawadag. Mahananda "CDM Projects and Sustainable Development A Study of Sustainability Claims of Select CDM Projects in Karnataka" Vol. 2 Issue 9, September 2015

<sup>22</sup> <http://www.indiaenvironmentportal.org.in/content/265376/national-environment-policy-2006>

capacities and introduce sectoral activities to tackle climate change. 24 States have adopted SAPCCC so far.<sup>23</sup>

### **National Mission on Enhanced Energy Efficiency (NMEEE), 2010**

The main aim of the launching of this mission was The Energy Conservation Act of 2001. The emission calculation is that upon execution of the mission, there would be fuel savings of 23 million tons per year, and the greenhouse gas emissions would reduce to 98.55 million tonnes per year. There are four schemes under NMEEE Perform Achieve and Trade Scheme (PAT) and it applies to large scale energy-intensive industries. It is a market-based mechanism to improve on the economic efficiency of energy efficiency and energy savings qualification which can be traded through Market Transformation for Energy Efficiency (MAT)

it gives more emphasis to innovations to make energy-efficient appliances and affordable. Energy Efficiency Financing Platform (EEFP) ensures that there is sufficient finance available for energy efficiency project implementation. Framework for Energy Efficient Economic Development (FEEED) preparing its fiscal instruments to promote energy efficiency. Climate and Development Knowledge Network, FEEED was taken to remove the concerns of investors and banks that avoid taking risks, and this scheme gives innovative fiscal instruments. Bureau of Energy Efficiency (BEE) began two different types of funds intending to give a boost to the confidence of investors and banks so avoiding the risk of projects getting stalled due to a shortage of funds. These two types of funds are the Partial Risk Guarantee Fund for Energy Efficiency and Venture Capital Fund for Energy Efficiency. Bureau of Energy Efficiency (BEE) and Energy Efficiency Services Limited (EESL) is the overseeing agencies for NMEEE.

In the 1st cycle of PAT, as implemented by BEE, in the period from 2012 to 2015, 400 industries were

able to reduce their emissions to the tune of 31 Million Tonnes of Carbon Dioxide. In the 2nd PAT cycle, which is from April 2016 to March 2019, the target for reducing energy consumption is 8.869 Million Tonnes of Oil Equivalent (MTOE) including 11 sectors. A big success story of the EESL program was the implementation of Unnat Jyoti Affordable LEDs for All (UJALA) and it transformed India's access to LED bulbs which has saved huge energy for the nation and this result in the reduction of carbon emissions every year to the tune of 27 million tones.<sup>25</sup>

### **Perform Achieve and Trade (PAT)**

PAT is a regulatory tool for decreasing energy consumption in energy-intensive industries; it is a market-based method for increasing cost-effectiveness by certifying the capacity to be exchanged for surplus energy savings. The key industries in the PAT scheme are energy-intensive industries, including thermal power plants. The energy savings of PAT Cycle-I designated consumers (DCs) have been moved to tradable energy saving certificates (ESCerts). Approximately 38.25 lakh ESCerts were issued to 309 allocated customers by Service of Electricity, Government of India, while 110 Designated Consumers were arranged to purchase approximately 14.25 lakh for their enforcement.<sup>26</sup>

### **Renewable Energy Credit Trading System (REC)**

Renewable Energy Credit Trading System trading system was started in India in November 2010, it intends to advance renewable energy in areas that have a low potential for renewable power generation. GOI plans for this system to contribute altogether to sustainable power source age objectives illustrated by the NAPCC and the Electricity Act, 2003 Electricity Act No 36 of 2003.<sup>27</sup> REC mechanism has created a national level market for the renewable producer to compensate for their cost. One REC (Renewable Energy Certificate) represents 1 MWh of energy generated from renewable sources.

<sup>23</sup><https://www.indiawaterportal.org>

<sup>24</sup>Climate and Development Knowledge Network, "Creating Market Support for Energy Efficiency: India's Perform Achieve and Trade scheme." (July 2020).

<sup>25</sup>[www.https://beeindia.gov.in](https://beeindia.gov.in)

<sup>26</sup><https://beeindia.gov.in/content/pat-read-more>

<sup>27</sup>Electricity Act No 36 of 2003

Under this REC mechanism, a renewable energy generator will produce power in any part of the world by renewable resources and the generator gets the cost equal to that from any traditional source when the environmental characteristic is sold at the market-determined exchanges.<sup>28</sup>

### Pilot ETS

A mission trading Emissions Trading Scheme (ETS) is a market-based solution to pollution control, generating commercial pollution enables us to try to add the benefit motive as a motivation for good results. The key method of emission trading is known as "cap and trade": an emission cap is set and then permits are produced up to the extent of this cap and one permit for each ton of emissions they emit must be retained by the businesses or other institutions protected by the system, enabling trade in these permits to place a price on pollution and the cost of emitting one ton of carbon dioxide is the cost of the permit is the production of one ton of carbon dioxide and it provides versatility as to how and when waste is minimized. This is superior to other pricing forms, such as carbon taxes, which do not ensure any clear reduction standard. Trading of pollution in the context of the Clean Growth Process is a core aspect of the Kyoto Protocol (CDM).<sup>29</sup>

India's pilot ETS mechanism was introduced in the three states of Gujarat, Tamil Nadu and Maharashtra on 1 February 2011. Although the pilot ETS process focuses on particulates that are dangerous to human health, for example, SO<sub>2</sub> and SPM and these government pilot programs could be helpful for a probable CO<sub>2</sub> trading system that could possibly be linked to a global carbon trading system.<sup>30</sup>

India's MOEF began the pilot ETS scheme along with the Central Pollution Control Board (CPCB) and the State Pollution Control Boards (SPCBs). After the enactment of the Environment (Protection) Act, 1986, and the Rules to limit harmful natural effects from

industrialization, there has been an administrative and regulatory system and professional capacity and expertise to enforce ETS in India.<sup>31</sup>

### Energy Conservation Act, 2001

According to the Energy Conservation (EC) Act 2001, the Central Government has been enabled to determine the rules and regulations for Designated Consumers under which industrial units from 9 high consuming or demanding areas (Aluminum, Cement, Chlor-Alkali, Fertilizer, Iron and Steel, Paper and Pulp, Railways, Thermal Power and Textile) have been announced as Designated Consumers. The Act requires the DCs to outfit a report of energy usage to the Designated Authority just as to Bureau of Energy Efficiency (BEE)<sup>32</sup>; designate or appoint an Energy Manager who will be in-charge of submission of annual energy consumption returns of the Designated Agencies and BEE Sec 14 Energy Conservation Act 2001 comply with the energy conservation norms and standards prescribed under the Act<sup>33</sup>, and purchase Energy Saving Certificates (ESCs) for compliance in the event of default. The Act has been amended with the addition of a new provision to enable this and it allows such trading.<sup>33</sup>

### Conclusion

It tends to be presumed that India has risen as an important player in carbon trading after China. India is the principal receiver of carbon trading and carbon credits are dealt on the Multi Commodity Exchange (MCX)—the country's biggest commodity exchange. India has vast number of carbon credits suppliers but under the present Indian legal and policy framework, the purchasers who are based in based in European market are not allowed to trade on in the Indian market. The union government has been requested by The National Commodity and Derivatives Exchange Limited (NCDEX) draft an appropriate legal and policy mechanism for allowing trading of certified emission reductions. The Forward Contracts (Regulation) Reform Bill was proposed

<sup>28</sup>Green Clean Guide, Renewable Energy Certificates: India (December 2010). Available at <http://greencleanguide.com/2010/12/25/renewable-energy-certificates-india/> (visited on May 25, 2015).

<sup>29</sup>*Ibid*

<sup>30</sup>GOI, Ministry of Environment and Forest, "Detailed Project Report: Pilot Emissions Trading Schemes in Gujarat, Maharashtra and Tamil Nadu." 17, (February 2011). Available at <http://www.indiaenvironmentportal.org.in/files/file/Detailed%20Project%20Report-mfes.pdf> (visited on May 25, 2015).

<sup>31</sup>*Ibid*

<sup>32</sup>Sec 14 Energy Conservation Act 2001

<sup>33</sup>*Ibid* Section 2 (ma)

and is pending in Parliament to establish and make bottleneck free in the carbon trading market, it is among the few noncontroversial laws. If the FCRA Bill is passed one could see mushrooming growth in commodity exchanges and MCX, the amendment also supported and assisted the trader in using NCDEX as a stage for carbon credit trading, he added. However, detailed regulations addressing all facets of the issues involved with carbon trading should be implemented in order to promote and control the forthcoming carbon trading industry in India.

But India lacks effective and transparent policy and legislative framework for trading of carbons in the market, there are several problems and issues in dealing with trading in CERs that are yet to be redressed and resolved. Just, for example, most of these carbon credits are traded with foreign buyers from Europe and elsewhere so whether the same trade of the credits to off-shore units would amount to exports is not clear. Similarly, whether CERs would be considered to be goods originating in India as they are issued by an offshore entity is also not clear.

The key bottlenecks are taxation regulations, adequate accounting practices, carbon credit export paperwork, and so on. Finally, the selling of carbon credits is a source of perverse benefits for both organizations and the government. India recognizes that any mitigating steps would entail a high degree of productivity in the production and power sectors, which could have a negative effect on the Indian economy. A recent government study said that if it were expected to reduce its GHG emissions to the 1990 emission levels under the Convention, it might have cost India \$2.53 trillion, which is why there is a political resistance to enforce the mandates of international commitment as developing countries such as India perceive climate change to be a concern generated by developed countries.

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#### Conflict of Interest

The authors do not have any conflict of interest.

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