



**CORPORATE DISCLOSURE  
CRUCIAL FOR NATIONAL  
CARBON MARKET**

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## **Institute of Public & Environmental Affairs (IPE)**

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## Executive Summary

Establishing a national, unified carbon emissions trading market is one of the most important measures for China to implement its Paris Agreement commitments. Economic theory and systems theory consider clarity of property rights to be a foundation and a prerequisite for the normal operation of trading markets. Carbon emissions permits can be seen as a virtual asset and a public good. Therefore, disclosing such information as total emissions volume, emissions reductions and reduction measures for enterprises with carbon allowances benefits the defining and clarifying of property rights surrounding such virtual assets. In turn, this makes possible the effective supervision of trading processes to ensure fairness, impartiality and the absence of cheating. On one hand, all of this will reduce the costs of carbon market transactions. At the same time, disclosure can help prevent rent-seeking behavior and give rise to carbon pricing information that optimizes resources allocation.

China's national carbon market is set to launch in 2017. It is worrisome that the requirement to "establish a greenhouse gas emissions information disclosure system" raised in China's Work Plan for Greenhouse Gas Emissions Control during the 13<sup>th</sup> Five-Year Plan Period (the "13<sup>th</sup> FYP GHG Emissions Control Work Plan") has not yet been implemented. None of the seven provincial and municipal trading pilots launched since 2013 have made progress on the public disclosure of carbon emissions data for key carbon-emitting entities<sup>1</sup> or the state of allowances distribution. Issues such as major price volatility and limited market price discovery have arisen during pilot operations. It has been very difficult for the market to predict the price of carbon, largely due to a lack of market transparency.

Our report highlights that in other countries, disclosure of trading markets information has been crucial to achieving emissions reductions and key for the smooth and efficient operations of trading mechanisms. In the US sulfur dioxide market, the first open market emissions trading scheme, SO<sub>2</sub> emissions control and trading information for power sector enterprises is fully disclosed to the public. Disclosure of data on emissions trading plans can build confidence in these plans. On the international greenhouse gas emissions trading market, legal requirements for information disclosure are made at the EU level, and countries and enterprises have all published allowances data. California not only publicly discloses information, but has also established channels for public participation and interactive communication.

During the 2017 *lianghui* meetings, several representatives and committee members raised bills and proposals concerning carbon market information disclosure. In an open

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<sup>1</sup> In Chinese, *zhongdian paifang danwei*, or literally, "key emitting entities." The term "carbon" has been added for clarity on occasion in this report to indicate that these entities have been designated for inclusion in China's carbon market schemes due to their heavy CO<sub>2</sub> emissions.

reply, the National Development and Reform Commission (NDRC) expressed its support and stated that it would seriously consider relevant recommendations in the next stage of work. Our report recommends to establish and improve a greenhouse gas emissions information disclosure platform and promote the establishment of an enterprise disclosure system for greenhouse gas emissions in accordance with the relevant requirement to "establish a greenhouse gas emissions information disclosure system" in the 13<sup>th</sup> FYP GHG Emissions Control Work Plan.

With China's carbon emissions scheme set to launch, this report proposes to raise compulsory disclosure requirements as soon as possible for information relevant to the carbon market, beginning with the most urgent information already required by legal statutes and that enterprises have already submitted. Doing so will ensure that the scheme is better able to achieve its aim of optimizing the costs of emissions reductions.

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Establishing a national, unified carbon emissions trading market is one of the most important measures for China to implement its Paris Agreement commitments. A prerequisite for the launch of China's national carbon market in 2017 is the government's ability to accurately grasp information about total carbon emissions nationwide. This requires enterprises trading on the market to truthfully report data, third parties to conduct accurate verification, and the government to fairly allocate allowances. The above information should be made public without violating the premises of superseding laws and on the basis of balancing "confidentiality with disclosure." In this sense, carbon market information disclosure is of vital importance to the regular operation of the market: it can enhance market transparency, give rise to stable market expectations, and help market actors make rational decisions. It also allows for societal supervision to protect the order, safety and interests of the market.<sup>2</sup>

According to our analysis, the seven pilot markets launched since 2013 in cities and provinces have failed to impel key carbon-emitting entities to disclose to the public their carbon emissions data and the status of allowances distribution. A lack of such critical information not only affects market participants' confidence in market transactions, but also weakens the enthusiasm of parties' participation, to the point of making it difficult achieve real emissions reduction results through trading.

Based on the requirements raised in China's Work Plan for Greenhouse Gas Emissions Control during the 13th Five-Year Plan Period (the "13<sup>th</sup> FYP GHG Emissions Control Work Plan"), we recommend to promptly "establish an information disclosure system for greenhouse gas emissions. Regularly announce the status of progress toward achieving China's low-carbon development targets and policy actions, set up an information disclosure platform for GHG emissions data, and research the establishment of a national notification system for China's efforts to confront climate change. Promote local GHG emissions data information disclosure. Promote the establishment of an information disclosure system for GHG emissions, and encourage enterprises to actively disclose GHG emissions information. Companies that are state-owned enterprises, listed companies, or part of the scope of the carbon trading market should take the lead in publishing GHG emissions data and action measures for control."



## Issues with the Current State of Carbon Disclosure in China

**1. At the policy level, pilot carbon markets' legislation does not include in the scope for disclosure such information as carbon emissions data from key enterprises for emissions control, the status of government allocation of allowances, and third-party verification information.**

<sup>2</sup> <http://www.ngd.org.cn/jczt/jj2017qglk/2017lkcy/45519.htm>

Based on local regulations and government rules for the pilot carbon markets, it can be seen that each locality has only made requirements for the public disclosure of a list of key entities for emissions control. None touched on disclosure of carbon emissions data for such key entities, the status of government allowances allocation, or third-party verification information.

Article 5, Chapter 34 of the current departmental regulations, the Administrative Measures on Carbon Emissions Trading, only lists out the following under the scope for information disclosure: types of greenhouse gases involved, industries, lists of key carbon-emitting units, method of emissions allowance allocation, usage, rules for storage and cancellation, status of emissions units surrendered, and list of verification agencies and trading institutions. The designated scope does not include carbon emissions data from units for emissions control, the status of government allocation of allowances, or verification information from third parties.

In the latest version of the Administrative Measures on Carbon Emissions Trading (draft submitted for approval), Article 28 of Chapter 5 adds, “the standard involved, the emissions of entities for control and allowances surrendered.” However, the level to which emissions data and the status of allowance allocation shall be disclosed, as well as the mode of disclosure, remain unclear. In addition, information that safeguards societal supervision, such as allowance allocation data and verification report information, is not yet incorporated into the scope for disclosure. The nondisclosure of these important pieces of information relating to carbon markets will no doubt adversely impact the effectiveness of government regulation and societal supervision.

**2. In practice, the transparency of carbon emissions monitoring, reporting and verification (MRV), which is a key point for supervision and management, still needs improvement.**

During the process of establishing the carbon market, high-quality data on greenhouse gas emissions have been the basis for carbon trading. While the current rules regard MRV as an important regulatory system, they do not yet include the monitoring plans of entities for emissions control, emissions reports, or verification agencies’ reports into the scope for information disclosure. The public thus has no means of overseeing the implementation status of monitoring plans, the accuracy of emissions reports, as well as verification activities and conclusions. The government’s supervision may thus exhibit bias or loopholes, making it impossible to form a “closed loop.”

**3. The status of disclosure for pilot carbon markets is not encouraging.**

The pilot carbon markets have already been operating for five consecutive years and are gradually getting on track. This report conducted a comparison and analysis of the key elements of information disclosure for seven pilot provincial and city markets during their 2016 operations (see Figure 1). Up through January 2017, six provincial

and city pilot markets (excluding Tianjin) had published their 2016 annual carbon emissions allowances allocation plans. The allocation of allowances based on a set total in these six provinces and cities abided by principles of fairness, impartiality, and openness, and mainly relied on free distribution. Management of allowances allocation draws on a combination of historical methods and industry baselines and is carried out by pre-allocating allowances and then adjusting them after the fact. Beijing, Shanghai, Chongqing, Hubei, and Guangdong published information about their allowance caps, and Beijing, Shanghai, Hubei, Guangdong, and Shenzhen published the number of allowances as well as a list of enterprises for emissions control. Compared with 2015, there was a decrease in allowance caps and an increase in the number of enterprises for emissions control. In terms of the level of disclosure, Guangdong positively stands out, as it places disclosure and transparency as priorities in the construction of market mechanisms.<sup>3</sup>

As of November 2017, the method of allowances allocation to participants in each of the pilot markets still remained to be seen. Along with a lack of futures and market signals, this lack of transparency very likely exerted a significant impact on transaction activities and the behavior of market participants. Looking at information published by pilots for the previous year, data on carbon emissions of enterprises for emissions control was not published, and the number of enterprises on the lists of enterprises for control was published as promised, but not the lists themselves. With only information about whether those who signed commitments fulfilled them, the public is unable to participate in market supervision.

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<sup>3</sup> [http://www.gdlowcarbon.gov.cn/dtgz/tjy/tpfqjysd/201607/t20160729\\_363202.html](http://www.gdlowcarbon.gov.cn/dtgz/tjy/tpfqjysd/201607/t20160729_363202.html)



**Table 1. Comparison of Information Disclosure in Pilot Carbon Markets**

	Beijing	Tianjin	Shanghai	Chongqing	Hubei	Guangdong	Shenzhen	
Start Date	11/28/2013	12/26/2013	11/26/2013	6/19/2014	4/2/2014	12/19/2013	6/18/2013	
Policies and Regulations	Decision Concerning the Standing Committee of Beijing Municipal People's Congress' Launch of Carbon Emissions Rights Trading Pilot Work in Beijing Municipality Under the Premise of Strict Control of Carbon Emissions Caps  Administrative Measures on Beijing Municipal Carbon Emissions Rights Trading (Trial)	Interim Measures on Management of Carbon Trading in Tianjin Municipality	Trial Measures on Management of Carbon Emissions in Shanghai Municipality	Decision on Several Matters Concerning Carbon Emissions Management  Interim Measures on Management of Carbon Emissions Trading in Chongqing Municipality	Interim Measures on the Management of Carbon Trading in Hubei Province	Measures on Management and Trading of Carbon Emissions Rights in Guangdong Province	Regulations on Management of Carbon Emissions in Shenzhen Special Economic Zone  Interim Measures on Management of Carbon Trading in Shenzhen Municipality	
2016 Annual Plan for Allowances	Total Allowances	Existing facilities allowances total around 46 million tons, accounting for 45% of total emissions	<b>Not yet disclosed</b>	155 million tons (including direct issuance of allowances and reserve allowances)	100,371,810 tons <sup>4</sup> , five million tons less than in 2015 (decrease of 6%)	253 million tons, 28 million tons less than in 2015 (decrease of 10%)	422 million tons, 14 million tons more than in 2015 (added aviation, paper industries)	<b>Not yet disclosed</b>
		Enterprises for Control	947 enterprises <sup>5</sup> , 34 fewer enterprises than in 2015	109 enterprises <sup>6</sup> , same number as the previous year	312 enterprises <sup>7</sup> , 122 more enterprises than in 2015	<b>Not yet disclosed</b> , 230 enterprises in 2015	236 enterprises <sup>8</sup> , 69 more enterprises than in 2015	244 enterprises <sup>9</sup> , 27 more enterprises than in 2015

<sup>4</sup> <http://www.cqdpcc.gov.cn/article-1-23797.aspx><sup>5</sup> <http://www.bjpc.gov.cn/zwx/tztg/201609/t10533579.htm><sup>6</sup> [http://www.tjdpcc.gov.cn/dtzt/tzgg/201707/t20170704\\_66037.shtml](http://www.tjdpcc.gov.cn/dtzt/tzgg/201707/t20170704_66037.shtml)<sup>7</sup> <http://www.shdrc.gov.cn/gk/xxgkml/zcwj/zgjl/23039.htm><sup>8</sup> [http://www.hbfgw.gov.cn/xw/tzgg\\_3465/gg/tpwj/201701/t20170103\\_109021.shtml](http://www.hbfgw.gov.cn/xw/tzgg_3465/gg/tpwj/201701/t20170103_109021.shtml)<sup>9</sup> [http://www.gddrc.gov.cn/zwgk/tzgg/zxtz/201607/t20160708\\_361089.html](http://www.gddrc.gov.cn/zwgk/tzgg/zxtz/201607/t20160708_361089.html) , [http://www.gddrc.gov.cn/zwgk/tzgg/zxtz/201701/t20170106\\_382101.html](http://www.gddrc.gov.cn/zwgk/tzgg/zxtz/201701/t20170106_382101.html)<sup>10</sup> [http://www.szpb.gov.cn/xxgk/qt/tzgg/201609/t20160918\\_4938028.htm](http://www.szpb.gov.cn/xxgk/qt/tzgg/201609/t20160918_4938028.htm)

Corporate Disclosure Crucial for National Carbon Market

	Industries	Power and heating supply, gas, water production and supply, cement, petrochemicals, manufacturing, other services, transportation and shipping	Iron and steel, chemicals, power and heating, petrochemicals, oil and gas extraction	Power, iron & steel, petrochemicals, chemicals, non-ferrous metals, building materials, textiles, paper, rubber, chemical fiber and other industrial sectors; aviation, ports, airports, railways, commerce, hotels, finance and other non-industrial sectors; automotive glass, power and heating, tap water production	Power, electrolytic aluminum, ferrous metals, calcium carbide, caustic soda, cement, steel	Power, heating, cogeneration, cement, glass, other building materials and ceramics	Power, steel, petrochemicals, cement, aviation, paper	26 industrial sectors including power, electronics, and manufacturing; construction, water, power, gas, ports, subways, buses
Supervisory Agency		Municipal Commission on Development and Reform	Municipal Commission on Development and Reform	Municipal Commission on Development and Reform Municipal Energy-Savings Supervision Center entrusted with implementing administrative punishments	Municipal Commission on Development and Reform	Municipal Commission on Development and Reform	Municipal Commission on Development and Reform	Municipal Commission on Development and Reform
Content Required to be Released to the Public		List of annual key emitting units and reporting units	List of enterprises involved; involved enterprises' credit information	List of emitting units included in allowances management; units' illegal behavior included in credit information records	List of units for allowances management; enterprises' illegal behavior	Enterprises' allowances handover information; blacklist of those who have not implemented allowance handover obligations	Total allowances granted; allowances allocation implementation plan; enterprise credit information	List of entities for control; method and rules for allowances pre-allocation; performance list and performance status of entities for control; credit information of enterprises for control

## Examining the Necessity and Feasibility of Carbon Disclosure



### ✧ Necessity Based on Emissions Trading Principles

Economic theory and systems theory – especially property rights economics – believe that clarity of property rights is a foundation and a prerequisite for the normal operation of trading markets. The intrinsic nature of transactions is the alienation<sup>11</sup> of effectively defined property rights among different traders. When discussing the institutional requirements on which the effective operation of pricing systems depend, economist Ronald Coase points out that the arrangement of property rights systems is a premise for pricing systems to fulfill their normal role. Only after property rights systems have been established can the boundaries, types and jurisdiction of tradable goods and rights be clarified, and will traders and even society be able to discern, acknowledge and confirm such properties. It is only then that transactions can be smoothly carried out and the optimum allocation of resources between different uses and users be achieved.

Therefore, based on the Coase theorem, initial determination of the property rights of carbon emissions allowances can take place through clear delineation of environmental resources property rights as well as reasonable institutional arrangements, and through such means as the allocation and auction of property rights. This can establish a market for environmental resources that don't have a market, and then draw on transactions to promote the circulation of scarce carbon emissions rights between different uses and users, thereby achieving effective allocation of environmental resources. However, at the same time, Coase also states that once market transaction costs are considered, the initial defining of legal rights will have an impact on the operational efficiency of the economic system. As Steven N.S. Cheung said in his book *Economic Explanation*, "It is known to many that the apparent shortcomings of the market are the result either of unclear property rights or of the incidence of transaction costs." Therefore, clear property rights are not only the result of initial allocation, but are also the result of transactions. Or, in other words, the defining of property rights is not only related to initial allocation, but also continuously evolves through property rights transactions.

Carbon emissions rights are virtual assets and public goods. How such property rights are defined, as well as how they are allocated, affects numerous enterprises and communities, including the interests of society. At the same time, the privileges of property rights – as well as their corresponding powers, responsibilities and duties –

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<sup>11</sup> In property law, "alienation" is the capacity for a piece of property or a property right to be sold or otherwise transferred from one party to another.

involve changes to alienation, as well as the mode of change. They are thus of vital importance to the evolution and clarity of property rights defining. Going one step further, the supervision and management of property rights defining, gradual clarification, implementation and execution of property rights alienation, processes and results of transactions, and existence of “leakages” and rent-seeking behavior are all basic conditions and institutional arrangements that affect whether property rights transactions can achieve optimal allocation of environmental resources. They are thus fundamental issues of public management and public policy that must be monitored and controlled.

The rules for defining the rights of carbon emissions allowances and the method of allocation, as well as related emissions rights caps and the reduction status and continuous changes to these caps, all touch on the public interest and the distribution of benefits. Since they are issues concerning the public domain, they also belong to the scope for information disclosure.

Furthermore, disclosing such information as the emissions, emissions reductions and related reduction measures for enterprises that trade carbon allowances benefits the effective supervision of property rights transaction processes, and helps ensure their fairness, impartiality and the absence of cheating. Thus, on one hand, such disclosure will help lower the costs of carbon rights transactions. At the same time, it will help to prevent rent-seeking behavior, and give rise to carbon pricing that is capable of optimizing resource allocation, thus achieving the actual goal of establishing the carbon market in the first place.

### ✧ Necessity Based on Emissions Trading Models

In order to achieve emissions reductions through trading, it is necessary to ensure strict control of emissions rights caps and to continuously reduce them. Only by controlling the total amount of emissions from the source can trading achieve pollution reduction targets. Strict control of emissions caps and continuous reduction requires sufficient information disclosure in order to gain trust from enterprises and society in the market, and to avoid the risk of artificially high emissions permit caps.

The United States sulfur dioxide (SO<sub>2</sub>) emissions trading market is the origin for many of today’s different emissions trading schemes. Faced with a growing reality of SO<sub>2</sub> pollution and working to realize air quality targets stipulated in the Clean Air Act, the US Environmental Protection Agency (USEPA) proposed the idea of emissions trading as a solution to the conflict between economic development through construction of new enterprises and environmental protection.<sup>12</sup> Emissions trading would allow the transfer and exchange of emissions reductions between different

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<sup>12</sup> Zhang Zhaogui. Lessons from US Sulfur Dioxide Emissions Trading. China Petroleum Enterprises. 2010 (8): 32-33.

factories. In the 1990s, amendments to the the Clean Air Act formally introduced the licensing of SO<sub>2</sub> emissions permits for power plants and a mechanism for cross-regional trading of emissions allowances. From 1990 to 2007, the US reduced SO<sub>2</sub> emissions by 43% as a result of emissions trading, achieving the target three years ahead of schedule and at only a quarter of the predicted budget.

In the US SO<sub>2</sub> emissions trading scheme, information on SO<sub>2</sub> emissions control and transactions between power sector enterprises is all fully disclosed to the public. Based on the US experience, one can see that disclosing data on emissions trading plans can build confidence in such plans. Disclosed high-quality data is critical for the efficient functioning of market pricing for allowances and for minimizing the costs of achieving emissions reductions targets. Disclosed data enables brokerage firms, inspection agencies, academic institutions and other third parties to access and analyze data. These analyses help to maintain the health of planning, and provide momentum for future improvement of planning and impact assessments. Using disclosed data, the USEPA can call on the public to supervise planning and increase public acceptance of plans.

Keeping facility data open is particularly important for ensuring system integrity, and has also proved extremely valuable for NGOs to supervise the operation of the system, determine how it works and focus attention on major abnormalities. The role of market participants in enhancing the reliability, functionality and successful implementation of the system should not be underestimated. Disclosure of such data as facility-level information and allowances data can ensure the most basic public accountability, and moreover, the minimum level of transparency required by the carbon market.

### ◇ Necessity Based on China's Pilot Carbon Markets

The trial operation period for China's domestic pilot carbon markets saw such issues as major price fluctuations, limited functionality of the market price discovery mechanism, and insufficient liquidity. Among these issues, it was difficult to predict trends in the price of carbon based on the market, an issue that to a large extent is related to the transparency of the market. Without transparent information about total figures and enterprises' emissions, it is difficult for market actors to establish trust in the market, and they cannot make effective predictions. Second-tier market transactions naturally had trouble reaching high levels of activity, and it was difficult to achieve emissions reductions targets through the carbon markets.

Timely disclosure of reliable information is of critical importance to carbon market systems. Policy-dependent carbon markets can only guide the market and determine the price of carbon when requirements and supply are clarified. Otherwise, the market becomes equivalent to a black market, and determining prices becomes a guessing game. The current performance of the pilot carbon markets exhibits an excess allocation of allowances, but the markets have no means of ultimately determining the number of surplus allowances. Speculation and rumors confuse the markets, resulting in no means

of actually motivating enterprises to independently reduce emissions, and weakening the positive effects of financial incentives and other mechanisms to incentivize participation.

To achieve increasing demands for emissions reductions, it is essential to tap into the power of the market. Disclosure and transparency contribute to participation in the market. Enterprises are the main subjects of market transactions, and are thus the main force for emissions reductions. During each segment and period of production, the management of each type of energy-consuming equipment must have reliable and accurate data in order to be able to support the enterprise's management, technological upgrading and use of new technologies. Only then will energy efficiency improve and carbon emissions be reduced. The accuracy and reliability of data serves as a foundation for enterprises to determine green development strategies, increase energy efficiency and reduce carbon emissions. Long-term, continued issues with data quality will cause even more issues, which will become even more real with greater disclosure. Carbon Disclosure Project's climate change report<sup>13</sup> shows that there were 25 disclosing enterprises in 2017, and only one Chinese enterprise made CDP's 2017 global climate change A-list.

At this stage, enterprises' development data is scattered across different government departments and agencies, including those dedicated to environmental protection, development and reform, industry and information technology, commerce, science and technology, quality, supervision and inspection, housing and urban-rural development, and statistics. Among these bodies, the Ministry of Environmental Protection (MEP) exhibits the highest level of information disclosure. There is a significant gap between the level of MEP's information disclosure and that of the National Development and Reform Commission (NDRC), Ministry of Industry & Information Technology (MIIT), the Ministry of Housing and Urban-Rural Development (MOHURD) and other departments, whose disclosure urgently needs expansion. As Premier Li Keqiang said in May 2016, "At present, more than 80% of our country's information and data resources are in the hands of all different levels of government; such data that is 'hidden and locked away' is a great waste." Cooperating to promote enterprises to fully disclose pollution control, energy efficiency and carbon reduction data should become an important component of government departments' drafting and implementation of relevant policies. Currently, information disclosure for energy resources and climate change is still in its infancy, and the power of information disclosure has not yet been applied and brought into play. Major industries all report their energy use and carbon emissions status to relevant state units, but this information is not disclosed to the public. As a result, the state of public supervision remains weak.

The costs of carbon market regulation will increase with the establishment of China's

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<sup>13</sup> <https://b8f65cb373b1b7b15feb-c70d8ead6ced550b4d987d7c03fcdd1d.ssl.cf3.rackcdn.com/cms/reports/documents/000/002/821/original/China-edition-climate-change-report-2017.pdf?1509623078>

unified national market. The establishment of an information disclosure system can introduce societal supervision to the carbon market. This societal supervision includes oversight from such bodies as media, environmental groups, investors, credit rating agencies, asset evaluation agencies and others. Tapping into societal supervision can help make up for the carbon market's deficiencies and limitations in the role of government. An open and transparent carbon market also helps to play a synergistic role in coordinating pollution reduction and carbon reduction targets and oversight among environmental, energy and other markets.

### ✧ Feasibility Based on the Experience of Carbon Markets in the EU and the US

According to international practice, disclosure of trading markets information is crucial to achieving emissions reductions, and is key for market mechanisms to operate smoothly and efficiently. The European Union has established requirements for information disclosure at a legislative level, with data on the distribution of allocations all published at the national level and enterprise level. For example, in Austria's 2008-2012 distribution plan, data on the distribution of allowances for each industry and sub-industry as well as each pollution-discharging facility is all clearly stated. California not only discloses emissions information, but has also established a public portal for interaction and communication with the public.

#### **a) The EU Experience<sup>14</sup>**

Article 17 of the 2003 EU Emissions Trading Directive states, "Decisions relating to the allocation of allowances and the reports of emissions required under the greenhouse gas emissions permit and held by the competent authority shall be made available to the public." And Section 15a of the 2009 EU directive to improve and extend the greenhouse gas emission allowance trading scheme of the Community stipulates, "Member States and the Commission shall ensure that all decisions and reports relating to the quantity and allocation of allowances and to the monitoring, reporting and verification of emissions are immediately disclosed in an orderly manner ensuring non-discriminatory access." In the above regulatory requirements, no matter whether information concerns the distribution of allowances, enterprise reports or the

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<sup>14</sup> Environmental information disclosure entered into a period of maturation internationally when the Aarhus Convention was signed. On June 25, 1998, the Economic Commission for Europe convened its fourth meeting of European environmental ministers in Aarhus, Denmark, after which 36 European countries signed the Aarhus Convention. This convention protects the public's access to information and their right to participate in decision-making and to legal relief, as well as guarantees the right of current and future generations to live in a sufficiently healthy and comfortable environment. Nowadays, the Western countries that have made contributions to environmental information disclosure systems are mainly signatories and parties of the Aarhus Convention. This situation demonstrates that corporate information disclosure is of great significance to establishing an effective emissions rights trading market, and poses value for China to study when formulating legislation.

verification results of independent verification agencies, it all must be made public and accept public supervision, especially from environmental NGOs.

At the outset of the EU ETS, data on the actual emissions situation of enterprises was extremely scarce, initial emissions limits were allocated only based on enterprises' self-assessments of their emissions situation, and no one knew how strict cap controls would be. In this situation, the market price of EUA (EU Allowance Unit of one ton of CO<sub>2</sub>) was quickly pushed up. It was only in April 2006 when the first verification report was made available that it was discovered that actual emissions quantities were not as high as expected, so the EUA market price quickly fell. The EU realized that open and transparent information is key to the smooth functioning of trading mechanisms. Subsequently, legislation stressed the need for disclosure of MRV of carbon emissions.

The EUTL (European Union Transaction Log, as shown in Figure 1) is publicly searchable, and the public can locate the annual allowances allocation for each fixed pollution-discharging facility. The following figure shows an allowances allocation table that includes facility ID, name, city, account holder, account status, permit ID, 2013-2020 allowances allocation situation, and permit status. It also provides facilities' detailed information as well as a query function for how facilities have historically honored their allowances.

The screenshot shows the EUTL website interface. At the top, there is a navigation bar with the European Commission logo and the text 'CLIMATE ACTION European Union Transaction Log'. Below this, there is a breadcrumb trail: 'EUROPA > European Commission > Environment > Climate Change > European Union Transaction Log'. The main content area is titled 'Allocation Table Installation Information' and includes a search filter for 'EU ETS Phase' set to 'Phase 3 (2013-2020)'. Below the search filter, there are fields for 'National Administrator' (France), 'Allowances for operators' (507842794), and 'Allowances from NER\*\*\*' (2508939). The main table is titled 'Detailed Information on the Allocation Table Installations' and contains the following data:

Installation ID	Installation Name	Address City	Account Holder Name	Account Status	Permit ID	Latest Update	2013	2014	2015	2016	2017	2018	2019	2020	Status	Options
2	NESTLE FRANCE - Usine de Boué	Boué	NESTLE FRANCE SAS	open	05100007	2015-04-28 16:48:32	18618	16661	22459	22046	21628	21206	20779	20351	Active	Installation's details History of Installation's Allocation Compliance History - All Phases
3	Sucretrie de Bucy	Bucy le Long	TEREOS FRANCE	open	05100114	2014-01-27 16:53:59	84637	83167	81680	80177	78659	77125	75572	74013	Active	Installation's details History of Installation's Allocation Compliance History - All Phases
4	GREENFIELD SAS	Château-Thierry	GREENFIELD SAS	open	05100143	2014-01-27 16:53:59	4599	4519	4438	4358	4274	4190	4106	4021	Active	Installation's details History of Installation's Allocation Compliance History - All Phases

Figure 1. Screenshot of EU Registration Log



Operator Holding Account Information									
<b>General Information</b>									
National Administrator	Account Type	Account Holder Name		Installation ID	Company Registration No		Account Status		
France	100-Holding Account	NESTLE FRANCE SAS		2	542014428		open		
<b>Details on Contact Information</b>									
Type	Name	Main Address Line	Secondary Address Line		Postal Code	City		Country	
Account holder	NESTLE FRANCE SAS	BP 900	Noisiel/		77446	Marné la Vallée Cedex 2		France	
<b>Installation Information</b>									
<b>General Information</b>									
Installation ID	Installation Name	Permit ID	Permit Entry Date	Permit Expiry/Revocation Date		Subsidiary Company	Parent Company		E-PRTR identification
2	NESTLE FRANCE - Usine de Boué	05100097	1988-08-23				NESTLE FRANCE SAS		
<b>Address Information</b>									
Main Address Line	Secondary Address Line		Postal Code	City	Country	Latitude	Longitude	Main Activity	
BP 1	/		02450	Boué	FR	6.99026767	25.60563716	20-Combustion of fuels	
<b>Contact Information</b>									
Name	Main Address Line		Secondary Address Line		Postal Code	City	Country		
<b>Compliance Information</b>									
EU ETS Phase	Year	Allowances in Allocation	Verified Emissions	Units Surrendered	Cumulative Surrendered Units**	Cumulative Verified Emissions***	Compliance Code	Options	
2005-2007	2005	30217	18159		0	18159	B	<a href="#">History</a>	
2005-2007	2008	30217	18949	35108	35108	35108	A	<a href="#">Details on Surrendered Units</a>	
2005-2007	2007	30217	20417	20417	55525	55525	A	<a href="#">History</a>	
2008-2012	2008	24014	21290	21291	21291	21290	A	<a href="#">History</a>	
2008-2012	2009	24014	17411	17410	38701	38701	A	<a href="#">History</a>	
2008-2012	2010	24014	19270	19270	57971	38701	A*	<a href="#">Details on Surrendered Units</a>	
2008-2012	2011	24014	16893	16893	57971	55594	A*	<a href="#">History</a>	
2008-2012	2012	24014	16335	16335	91199	91199	A	<a href="#">History</a>	
2013-2020	2013	18618	18797	18797	18797	18797	A	<a href="#">History</a>	
2013-2020	2014	16661	17330	17330	36127	36127	A	<a href="#">History</a>	
2013-2020	2015	22459	17947	17947	54074	54074	A	<a href="#">History</a>	
2013-2020	2016	22046						<a href="#">History</a>	
2013-2020	2017	21628						<a href="#">Details on Surrendered Units</a>	
2013-2020	2018	21206						<a href="#">History</a>	
2013-2020	2019	20779						<a href="#">History</a>	
2013-2020	2020	20351						<a href="#">History</a>	

Figure 2. Screenshot of Nestle France's Account Holder Information

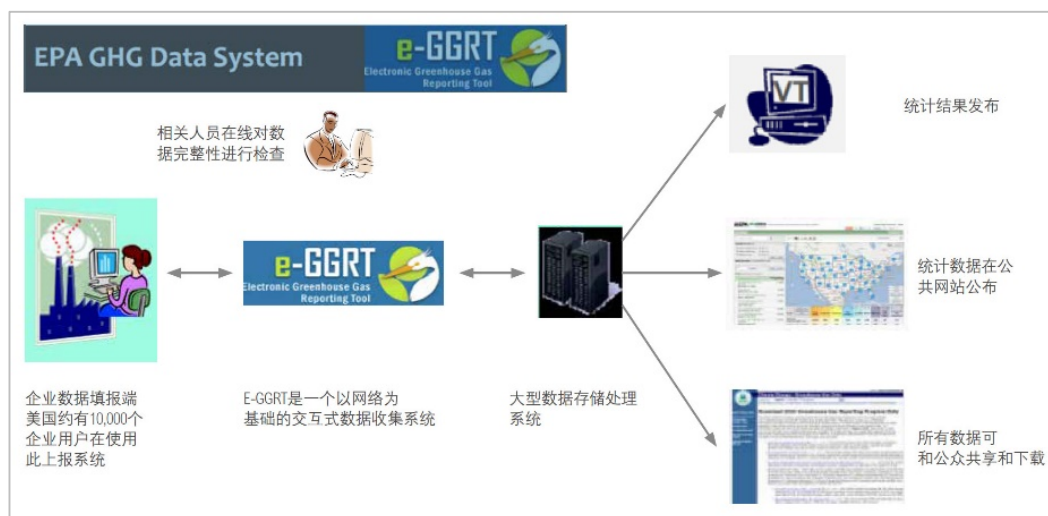
Figure 2 is a screenshot of the account holder information page for Nestle France. Apart from detailed information about pollution-discharging facilities, compliance information for each year is also listed out in detail, including such information as annual total allowance allocation, verified emissions totals, units of allowances surrendered, and coded compliance level.

## b) The US Experience

The California Air Resources Board (CARB) believes that trading plans must be based on transparency to ensure the efficient operation of the market. Therefore, extensive information must be provided to the public that includes all aspects of cap-and-trade plans: from emissions reports and third-party verification reports as the cornerstone, to the allocation of allowances, offsets, units of allowances surrendered, auction announcements and results, market data and implementation status. Furthermore, the entire inventory of greenhouse gases and accounting expenses for the complete auditing process should also be provided. In California's experience, government departments have not only published emitting enterprises' names and emissions information and established several consultative committees, but have also invited stakeholder representatives to participate in the policymaking process and held internet webinars. This not only allows for the incorporation of recommendations but also serves as a golden opportunity for interaction and communication with the public.

In the area of MRV, the US Greenhouse Gas Reporting Program (RGGI) uses an electronic reporting model. Data collection and reporting are completed using the online Electronic Greenhouse Gas Reporting Tool (e-GGRT), which includes such unique aspects as real-time reporting, verification of accuracy and high-efficiency publication. At the same time, the network's direct system is also a platform for public

participation. The public can freely access and check relevant GHG emissions data, setting up an external supervisory check on the US's compulsory reporting mechanism.<sup>15</sup>



**Figure 3. Flowchart of the Basic Functions of e-GGRT**

The EPA has established a reporting system based on existing laws and regulations in the US in order to provide a safeguard toward the collection and effectiveness of information. Reporting and disclosure of emissions data are unified, thus ensuring the scientific value of data and providing a channel for the public to obtain data, and ultimately achieving data disclosure.

Publicly disclosed data can be checked via the Facility Level Information on Greenhouse Gases Tool (FLIGHT) provided by the PEA. This tool presents the information and data of facilities in the form of an interactive website, and concurrently generates custom charts for user download.

<sup>15</sup> Zheng Shuang, Zhang Xin, Liu Haiyan, Yin Lei, Song Ranping. Supporting China National Carbon Market with Effective MRV for GHG Data. Beijing: World Resources Institute, 2016.

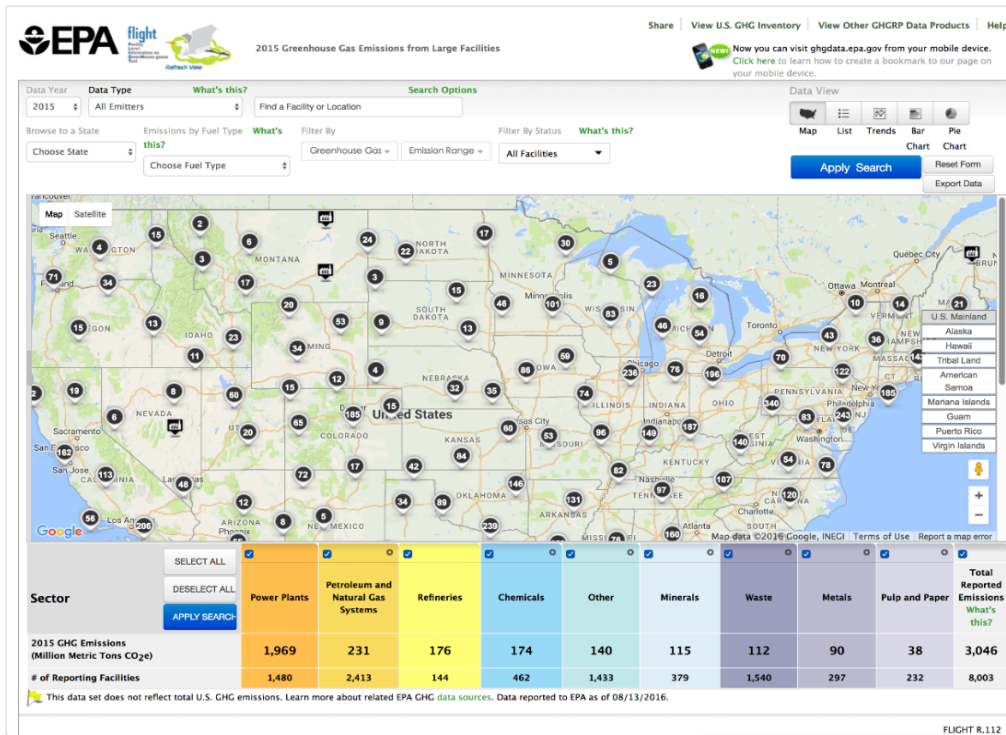


Figure 4. Screenshot from Facility Level information on Greenhouse Gases Tool (FLIGHT)

In 2015, a total of 8,003 facilities reported data, with greenhouse gases totaling 3.05 billion tons of carbon dioxide, 4.9% lower than the totals reported in 2014. Disclosed totals amounted to about half of that year’s total emissions in the US.

Each discharging facility’s information includes basic information, emissions totals, emissions totals for each type of greenhouse gas, as well as total emissions from each type of pollution source and types of fuels burned.

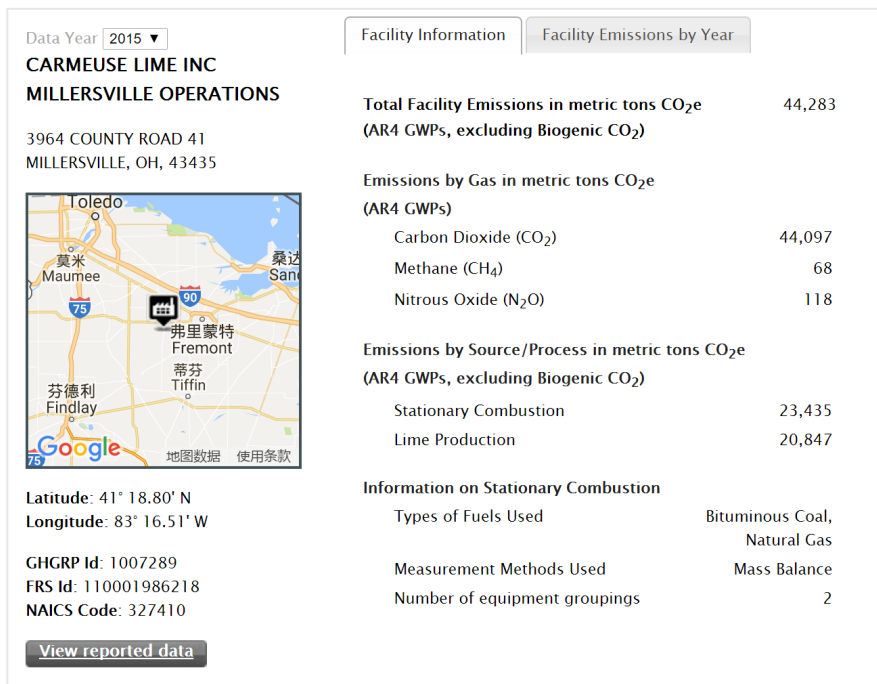


Figure 5. Detailed Information Page for an Individual Facility

California has also developed a visualization tool (IEVT<sup>16</sup>) to showcase air pollutants and GHG emissions data from large-scale facilities. The interactive platform allows for users to locate, check and analyze emissions data.

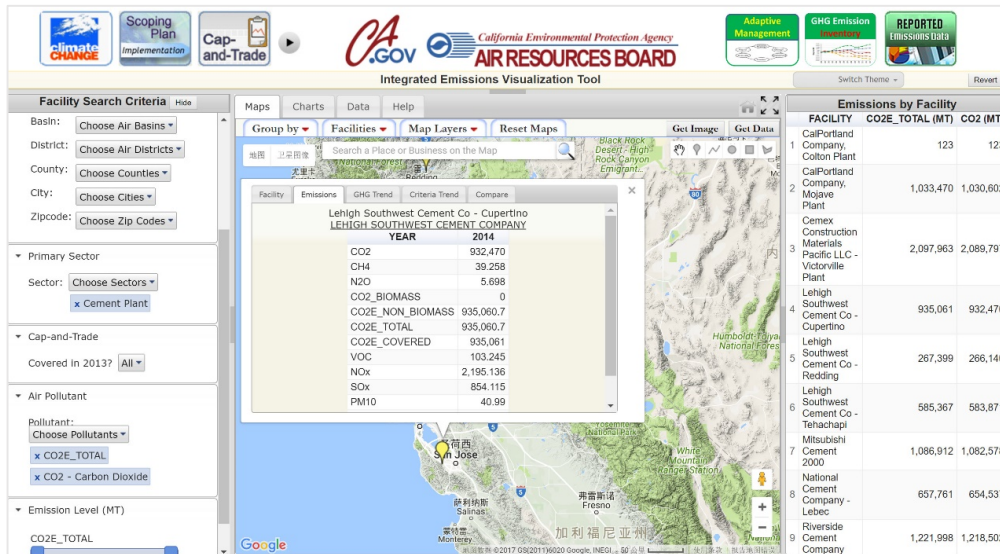


Figure 6. Screenshot from California's Visualization Tool (IEVT)

<sup>16</sup> <https://www.arb.ca.gov/ei/tools/ievt/>

## Positive Government Response to NPC and CPPCC Proposals



During the *lianghui* (“two sessions”), Lü Zhongmei, NPC representative and deputy director of the CPPCC’s Committee on Social and Legal Affairs, raised a proposal based on the issues outlined in this report. She recommended<sup>17</sup> “to accelerate the promotion of national carbon market information disclosure; to add a clause to the general provisions of the Administrative Measures on Carbon Emissions Trading currently being formulated that clearly entrusts the public with the right to report and lodge complaints; and to appropriately broaden the scope of information disclosure and the scope of subjects obligated to disclose.”

In a letter containing responses to **proposals No. 7070 and No. 1474** raised at the fifth meeting of the 12<sup>th</sup> session of the NPC and **proposal No. 3738 (Resources and Environment Category No. 223)** raised at the fifth meeting of the 12<sup>th</sup> session of the CPPCC, the National Development and Reform Commission (NDRC) stated,<sup>18</sup> “promoting information disclosure related to the national carbon trading market will benefit the strengthening of societal supervision, increase the transparency of the market, and raise the level of public participation in the carbon trading market. We endorse your relevant recommendations concerning the strengthening of carbon market information disclosure, and will integrate [them] with national carbon trading market construction work, using the strengthening of the establishment of a carbon trading market information disclosure system to further regulate supervisory management of carbon market information disclosure, in order to strive to promote the establishment of a transparent, open, and just national carbon emissions trading market.”

In terms of legislation, the NDRC pointed out that its current legislative work on the Administrative Measures on Carbon Emissions Trading places “disclosure” as one of the fundamental principles of system design, and puts forth principles and rules on information disclosure for key carbon-emitting units, emissions caps, emissions status verification and other areas. It will also further clarify the disclosure scope and disclosure procedures for carbon emissions information from enterprises participating in the national carbon market. The NDRC said that it will appropriately clarify the requirements and division of duties for carbon markets information disclosure work in related special rules and regulations. NDRC will further research and expound on the disclosure scope and content of information for relevant areas such as carbon emissions monitoring, reporting and verification in order to give rise to effective societal supervision, and integrate its findings with the formulation and launch of the Administrative Measures on Carbon Emissions Trading and relevant rules and regulations in order to standardize public supervision rights for the carbon market.

<sup>17</sup> <http://www.ngd.org.cn/jczt/jj2017qglk/2017lkcy/45519.htm>

<sup>18</sup> <http://zfxgk.ndrc.gov.cn/PublicItemView.aspx?ItemID={3c2d4bf3-5bf0-422d-bacc-0e31431df1ef}>

In terms of system construction, the NDRC affirmed that “strengthening information disclosure for key emissions units is conducive to a forming a good situation for all of society to jointly supervise.” It expressed that it would actively work together with the China Securities Regulatory Commission (CSRC) and relevant departments to research the establishment of a disclosure system for state-owned enterprises and publicly-listed companies and gradually improve the level of disclosure of enterprises’ carbon emissions information. It will also work together with relevant departments to gradually improve the indexing systems for data and statistics and statistical systems, establish and improve an information disclosure platform for GHG emissions data, and promote the establishment of an information disclosure system for corporate GHG emissions based on the relevant requirements to “establish a disclosure system for greenhouse gas emissions information” raised in the “13<sup>th</sup> FYP” GHG Emissions Control Work Plan.

In terms of carbon emissions total cap assessments and information disclosure, following the launch of the national carbon trading market, the NDRC will also integrate the requirements in the “13<sup>th</sup> FYP” GHG Emissions Control Work Plan to regularly publish the status of progress toward achieving China’s low-carbon development indicators and policy actions. It will carefully consider related recommendations in the next phase of work.

In addition, the response to Recommendation No. 8038 raised at the fifth meeting of the 12<sup>th</sup> session of the NPC also mentions to “establish a system for sharing carbon data, provide relevant data resources to all types of research agencies, use the development of carbon emitting industries to promote energy savings and carbon reductions as well as relevant environmental protection work.”

It can be seen from the above responses that the demand for carbon market information disclosure has received a high level of attention at the government level.





## Recommendations

In order to protect the public's right to know and to supervise, to promote the stringent implementation of the carbon market cap target, and establish an open and transparent national carbon market, we raise recommendations in three areas:

### 1. Improve legislative requirements for information disclosure

In relevant legislation, expressly stipulate the public's right to obtain carbon emissions transaction information, endow the public with the right to supervise, and tap into the role of public supervision in order to oversee whether or not enterprises are actually completing their emissions reductions targets. Allow the public to resort to legal channels or appeal to administrative supervision toward those enterprises that do not complete their emissions reduction targets.

In relevant regulations, clarify and abide by the principle of "disclosure as the norm, and non-disclosure as the exception," and specifically list out industries or matters for exception for which disclosure is not required. At the same time, clearly require for emitting entities to disclose "each emissions control unit's annual emissions and status of allowance units surrendered," and add a disclosure requirement for the "annual allowance allocation status of each unit for emissions control."

Widen the scope of subjects required to disclose, and further clarify the information disclosure obligations of emissions control entities and verification agencies. Clarify stipulations for emissions control entities to publicly release "the previous year's carbon emissions report," "the current year's carbon emissions monitoring plan," and publish disclosure obligations for disclosure of routine carbon emissions information.

### 2. Draw from environmental best practices<sup>19</sup>

Looking at China's domestic situation, environmental information disclosure mechanisms are already relatively mature. Especially since China's Environmental Protection Law was amended in 2014, the Ministry of Environmental Protection has issued the Measures on Environmental Information Disclosure for Enterprises and Public Institutions, which clarifies the subjects, scope, methods, timing, responsibilities and other aspects of information disclosure. Real results from unblocking public supervision channels are quite evident. The establishment of an information disclosure system for China's carbon market can draw from the legislative experience of these environmental information disclosure systems.

Information disclosure systems established by environmental protection departments

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<sup>19</sup> See Appendix 2.

can also serve as references for departments in charge of the carbon market to construct mechanisms. The public oversight formed by environmental information disclosure systems has already proved to be a catalyst for promoting key pollution sources to comply with the law and reduce their emissions.



**Figure 7. The Ministry of Environmental Protection's Disclosure System**

### 3. Road map for disclosure

We recommend for relevant government departments to implement disclosure by starting with requirements already stipulated by law and with information already possessed and submitted by enterprises:

- ① Provincial- and city-level publication platforms
- ② Disclose carbon emissions data from enterprises for emissions control
- ③ Promptly publish supervision information
- ④ Disclose enterprises' credit information



## Appendix 1 Legislative Basis

- Chapter 5 – Supervision Management, Article 34 in the Administrative Measures on Carbon Emissions Trading issued by the National Development and Reform Commission in December 2014 makes specific provisions on carbon transaction information disclosure.

*The departments of the State Council in charge of carbon trading shall promptly release to the public the following information: types of greenhouse gases involved, industries involved, list of key emitting units involved, method of emissions allowance allocation, usage of emissions allowances, rules for storage and cancellation, each year's annual state of allowance settlement for key emitting units, list of recommended verification agencies, and list of recognized trading agencies, etc.*

- The term “information disclosure” was added to the title of Article 5 in the Administrative Measures on Carbon Emissions Trading (draft submitted for approval) researched and drawn up by the NDRC, with the draft stipulating as follows:

*The departments of the State Council in charge of carbon trading shall release to the public the following information: types of greenhouse gases involved, industries involved, list of key emitting units involved, method of emissions allowance allocation, usage of emissions allowances, rules for storage and cancellation, **each year's annual state of emissions** and allowance settlement for key emitting units, list of recommended verification agencies, and list of recognized trading agencies, etc.*

- The Work Plan for Greenhouse Gas Emissions Control during the 13th Five-Year Plan Period released by the State Council in November 2016 fully deploys work during the 13<sup>th</sup> FYP to confront climate change and advance low-carbon development. It clearly raises the establishment of an information disclosure system for greenhouse gas emissions, as well as work to support and safeguard mechanisms for public participation in confronting climate change.

*3) Establish an information disclosure system for greenhouse gas emissions. Regularly announce the status of progress toward achieving China's low-carbon development targets and policy actions, set up an information disclosure platform for GHG emissions data, and research the establishment of a national notification system for China's efforts to confront climate change. Promote local GHG emissions data information disclosure. Promote the establishment of an information disclosure system for GHG emissions, and encourage enterprises to actively disclose GHG emissions information. Companies that are state-owned enterprises, listed companies, or part of the scope of the carbon trading market should take the lead in publishing GHG emissions data and action measures for control.*

## **Appendix 2      Environmental Best Practices**

China's environmental protection authorities have established an environmental information disclosure system, allowing for social organizations and the public to access this information and supervise the implementation status of enterprises' pollution emissions control. China's air pollution information disclosure has achieved historical progress since January 2013, with 338 cities at the prefecture level and above now disclosing air quality information every hour. This disclosure plays an important role in protecting the public's right to know as well as the public health. The Measures on Self-monitoring and Information Disclosure for Key State-Monitored Enterprises, which went to effect in January 2014, further set a precedent for real-time disclosure of pollution source automatic monitoring data.

After nearly three years of efforts, the environmental authorities of every province-level jurisdiction apart from Tibet have established and begun to operate a disclosure platform for automatic monitoring information from key monitored enterprises. Provinces such as Shandong and Zhejiang have actively responded to public supervision efforts based on data from their platforms, motivating over 600 enterprises to issue public explanations about their public-facing data exceeding legal standards, with over 100 of these enterprises making substantive improvements to their pollution discharge situation. These best case practices demonstrate that information disclosure can have a positive effect on promoting key pollution sources to comply with laws and reduce their emissions.

In the area of green supply chain practices, the pollution source supervisory data published by Chinese environmental authorities is already being used to help enterprises determine the environmental compliance status of their suppliers. Since 2007, the principle of "green choice" has achieved relatively strong application. With information disclosure acting as the lever, and prospective brands serving as the fulcrum, such "green choice" theory has provided leverage for small- and medium-sized supplier factories to reduce their emissions. The Corporate Information Transparency Index (CITI) evaluation work has reached considerable scope, covering 267 brands from 14 industries. Over 50 major international and Chinese brands including Apple, Adidas, Dell, Levi's and Huawei regularly use the Blue Map Database to manage their suppliers in China. Over 4,000 suppliers have been successfully motivated to improve their environmental performance, with close to 1,000 suppliers actively disclosing their environmental discharge data. Following even more brands' adoption of green procurement, in the year 2017, the number of suppliers issuing public responses totaled 1,444 factories, the highest annual total since the Blue Map Database was first launched in September 2006.

IPE has integrated energy and carbon emissions data into its system for promoting a PRTR<sup>20</sup> in order to attempt to motivate enterprises to disclose their carbon emissions data.

能源及二氧化碳			
能源名称	数值	计量单位	数据来源 (请从下拉菜单选择)
固体燃料			
其中:			
无烟煤		吨	
烟煤		吨	
褐煤		吨	
液体燃料			
其中:			
原油		吨	
燃料油		吨	
柴油		吨	
煤油		吨	
液化石油气		吨	
天然气		立方米	
电力消耗		千瓦时 ( kWh )	
外购蒸汽		GJ	
总能耗		吨标煤	
万元产值能耗		吨标煤/万元	
未来一年节能目标		吨标煤/万元	
二氧化碳当量 ( CO <sub>2</sub> e )		吨	

能源及二氧化碳

指标	数值	数据来源	提供方式
无烟煤	-	-	-
烟煤	-	-	-
褐煤	-	-	-
原油	-	-	-
燃料油	-	92吨	E
柴油	-	128吨	E
煤油	-	-	-
液化石油气	-	-	-
天然气	-	-	-
电力消耗	-	128047200千瓦	E
外购蒸汽	-	-	-
总能耗	-	15025吨标煤	E
万元产值能耗	-	0.0619吨标煤	E
未来一年节能目标	-	0.0037吨标煤	-
二氧化碳当量	-	145112.9吨	E

On June 5, 2016, the China Urban Realty Association (CURA), the Society of Entrepreneurs & Ecology (SEE), and the China Real Estate Chamber of Commerce (CRECC), along with Landsea and Vanke, jointly launched the “real estate green supply chain action.” This initiative is not only the first time that Chinese brands are working together as an industry to promote supply chain environmental management, but has also been called a “global first” by UN Environment’s top official. Green choice supply chain management systems are being applied to the two major supply chain categories of iron & steel and cement. These two industries not only comprise a huge amount of total local pollutant emissions in China, but are also high energy consuming industries, with especially prominent greenhouse gas emissions. Because of its huge potential for energy savings and emissions reductions, this initiative is worthy of attention from Chinese and international actors alike, and once it gets underway, it will also become one of the most important actions for the Chinese and even the global business community to implement the Paris Agreement.

<sup>20</sup> <http://www.ipe.org.cn/IndustryRecord/Regulatory.aspx>



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