

Building Public Trust in Greenhouse Gas Emission EIA

Lessons from China's National Emission Trading System(ETS)



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Background

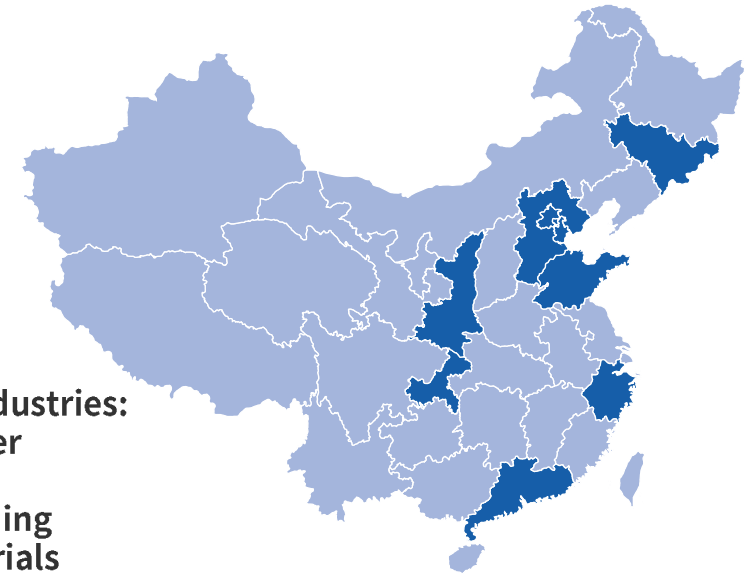
01 41 countries or regions, making up 63% of global GDP, have established ETS mechanisms. **China National Emission Trading System(ETS) launched** in 2021.



02 China is promoting **EIA** as another tool in GHG emission reduction and chose more than **200 projects from 9 provinces as pilot.**

Pilot Industries:

- Power
- Steel
- Building Materials
- Metals
- Petrochemical
- Chemical



Building Public Trust in GHG EIA

01

Why trust matters
for GHG EIA?

02

How China's ETS
builds trust?

03

Guiding principles
for GHG EIA

Part 1: Why Trust Matters for GHG EIA?



Methodology

- one-year social media monitoring (**Web crawler**)
- **Keywords:** climate change, carbon market, GHG EIA, etc
- **639,477** related articles



Data Quality

“Invisible” emissions



Enforcement Credibility

“Real” costs



Policy Effectiveness

“Unique” value

MAIN CHALLENGES

Challenge 1: Data Quality - "Invisible" Emissions

How to make invisible emissions believable?



Invisibility

GHGs have no color or smell, and its adverse effect do not appear immediately, unlike visible pollutants.



Dependency

Public rely on EIA reports for emission data.



Foundation of Trust

Data that EIA utilizes must be authentic.



Conclusion: Data credibility is the first threshold for public trust

Challenge 2: Enforcement Credibility - "Real" Costs

Core Question: Why follow rules if they are not enforced?

1. Substantial Costs

>\$8.8 trillion

Annual investment required worldwide to achieve the 1.5°C climate goal. (Source: CPI)

2. Fairness Dilemma

Unfair enforcement leads to widespread non-compliance.

3. System Collapse Risk

Lack of trust can break the entire climate change system.



Conclusion: Trust is the cornerstone of effective policy enforcement

Challenge 3: Policy Effectiveness - "Unique" Value



Why GHG EIA if we have a carbon market?



Is it just an extra burden?



Carbon Market

Manages existing emissions (Toll System)



GHG EIA

Controls new emissions (Emission Standard)



Conclusion: GHG EIA must clearly demonstrate its unique, complementary value to avoid being perceived as redundant bureaucracy

Part 2: How China's ETS Built Public Trust

Lesson 1: A Multi-Level Legal System

Comprehensive Legal & Technical Foundation

The system is built on a solid foundation, ranging from high-level central government policy documents down to detailed technical guidelines for monitoring, reporting, and verification (MRV).

KEY MILESTONE (2024):

Promulgation of the **Interim Regulations for the Management of Carbon Emission Trading**. This landmark regulation formalizes the legal basis for compliance, enforcement, and trading activities.

Strict Penalties for Non-Compliance

Zero Tolerance for Rule-Breakers

The new regulations explicitly criminalize data falsification and mandate strict penalties for entities failing to surrender the required carbon allowances.

CASE STUDY: NINGXIA ENTERPRISE

A major industrial company was issued a record fine of **¥424 Million** for non-compliance.

Message to the market: Cheating has severe, real-world financial consequences.

Lesson 2: A Smart Digital System



National Carbon Trading Market Management Platform

Core Feature: Intelligent Validation Model

A robust system equipped with **over 100 automated protocols** to ensure data accuracy.

Key Function

Actively and efficiently assesses the quality of submitted emissions data, identifying potential anomalies and irregularities in real-time.



Operational Impact & Results



Annual Processing: Analyzes over **3 million data points**.



Action Mechanism: Automatically detects anomalies and flags them to local government bodies for prompt review and action.



Tangible Outcome: Data quality issues have decreased by **~30%** year-over-year, significantly enhancing the credibility of corporate emissions reports.

Lesson 3: Remarkable Effectiveness



Transparent Performance Reporting: Annual reports showcase the market's success through key indicators, ensuring accountability and transparency to the public.



Comprehensive Market Coverage

60%+ of China's Total CO₂ Emissions

Spanning key high-emitting sectors: Power, Steel, Cement, and Aluminum.



Carbon Intensity Reduction

10.8% Decrease

Significant drop in the power sector's carbon intensity, demonstrating operational decarbonization.



Strong Economic Incentives

564 entities earned **58.25 million tons**

Generated approximately **¥4 billion** in revenues through low-carbon retrofits.



Conclusion: These tangible and verifiable results are the cornerstone of building strong conviction among stakeholders and winning broad public praise.

Part 3: Principles for GHG EIA to Build Trust

Principle 1: Integrate into Existing EIA Regulations

Leverage the Mature Framework

- Add GHG assessment requirements to existing national and local EIA regulations, avoiding the creation of a new, parallel administrative system.

Key Benefits:

- Optimizes use of government administrative resources.
- Minimizes compliance burden and operational disruption for enterprises.

Proposed Structure for GHG EIA

6-Step Analysis Framework

1. **Policy Consistency Analysis** (Alignment with climate goals)
2. **Engineering Analysis** (Source identification & quantification)
3. **GHG Emission Accounting** (Calculation methodology)
4. **Mitigation Measures Analysis** (Reduction potential & cost)
5. **Monitoring & Reporting** (MRV system design)
6. **Conclusion** (Overall impact assessment)

Principle 2: Connect with Carbon Market Methods



Align Evaluation Indicators

- Use **emission per unit of product** as the core evaluation indicator for GHG EIA, similar to the carbon market's quota allocation method.
- Set the bar high, aiming for the **industry's advanced level** to drive high-quality green development.



Synergistic Effect

- GHG EIA serves as a "gatekeeper": predicts and controls new emissions **before** they happen.
- Carbon market acts as a "regulator": provides crucial data support and early warnings for quota allocation **after** emissions occur.
- Together, they create a closed-loop mechanism to accelerate the adoption of advanced low-carbon technologies.

Principle 3: Balance Pollution Control & GHG Reduction

Expand the Accounting Boundary

Include not just direct process emissions, but also emissions from:

- Pollution control facilities (e.g., desulfurization units)
- Indirect energy sources (e.g., purchased electricity and heat)

A Two-Step Approach

Step 1: Screen all options to ensure strict compliance with **pollution control standards** (e.g., NO_x, SO₂, particulate matter).

Step 2: Among all technically and environmentally compliant solutions, select the one with the **lowest GHG emissions** footprint.

Strategic Goal

Move beyond a trade-off mindset.

Achieve **environmental co-benefits** by integrating both objectives at the **project's inception** phase.

Ensure that reducing local pollutants does not inadvertently increase the project's overall carbon footprint.

Conclusion: Trust is a Must-Have

Without Trust

- A carbon price is just a meaningless number.
- An Environmental Impact Assessment (EIA) report is just paper.
- A climate policy is just empty words.

With Trust

- Companies invest in low-carbon tech (fair rules).
- The public supports new projects (honest assessments).
- International partners cooperate (real data).

Trust turns policies into action and commitments into results.

Future Research Directions



Shift from Intensity to Total Volume Control (Post-2030)

- How to design an emission allowance "replacement" system for new projects?
- How to ensure fairness in a cap-based system?



Reconciling EIA Predictions with Actual Emissions

- What are the rules when reported emissions significantly differ from EIA predictions?



Gradually Expanding GHG EIA Coverage

- How to expand to new sectors (aviation, agriculture) and new gases (methane)?



Let's continue the conversation!

Message me your questions or comments in the IAIA26 app.

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