

China Industry Program Strategy

Overarching goal: To develop industrial energy efficiency policies that decrease energy consumption in key energy-consuming enterprises.

Goal #1: Assist China to develop energy efficiency agreements in carbon-intensive industrial sectors and incentive policies necessary for their implementation.

Means:

1. Develop energy efficiency targets in China's most energy-intensive industrial sectors.
2. Assist with developing regulatory and incentive policies including tax and fiscal policies to encourage implementation of enterprise energy efficiency targets.
3. Assist in establishing auditing, benchmarking, evaluation, and monitoring systems for industrial sector targets implementation.

Evaluation Criteria (Key Performance Indicators):

We support and evaluate projects based on the ability to deliver measurable progress in the form of key performance indicators. Overall progress includes these metrics:

1. The amount of industrial energy saved in metric tons of coal equivalent (tce), and carbon avoided.
2. Whether energy consumption per unit of industrial output declines over time.

Goal #2: Assist with developing and implementing mandatory energy efficiency standards for industrial equipment.

Means:

1. Assist with developing and implementing mandatory standards for major industrial equipment, focusing on the most carbon-intensive equipment first.
2. Assist in the development of energy labeling of industrial equipment.
3. Assist with developing monitoring and supervision systems at the national and provincial levels in order to guarantee effective implementation of equipment standards and labeling.
4. Assist with developing incentive policies to promote the manufacture and use of higher efficiency equipment.

Evaluation Criteria (Key Performance Indicators):

We support and evaluate projects based on the ability to deliver measurable progress in the form of key performance indicators. Overall progress includes these metrics:

1. The amount of energy and carbon saved through the adoption and implementation of equipment standards.
2. Whether mandatory standards and labeling for major equipment are adopted.
3. Whether manufacturers implement the standards effectively.
4. Whether a regular process of standards updates ("reach standards") becomes institutionalized at the national level.

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Industry

Goal #1: Assist China to develop new implementation policies that decrease energy consumption in key energy-consuming enterprises.

Industrial Enterprise Energy Efficiency Agreements

China is developing European-style Energy Efficiency Agreements (EEAs) in its major industrial sectors. This market-oriented approach creates a partnership between industry and government to save energy and reduce carbon emissions. EEAs link national energy savings targets with the specific targets of industrial sectors and individual enterprises. EEAs outline both government and enterprise responsibilities for achieving energy efficiency. EEAs are being tested by two steel companies, Jinan Steel and Iron Group and Laiwu Steel and Iron Group, and the Shandong provincial government. The two enterprises intend to cut a million metric tons of carbon dioxide over the next three years. Both are ahead of schedule in attaining this goal.

Given the progress of the two enterprises, the China Iron and Steel Association (CISA) made an assessment of how to promote EEAs throughout China's steel and iron sector based on the Shandong pilot project. The National Development and Reform Commission (NDRC) now aims to expand the program nationally to cover the entire iron and steel sector.

Incentive Policies For Energy Efficiency Agreements

Given the momentum of EEAs, which encourage enterprises to set aggressive energy savings targets, the central government now needs to provide both strong regulations—such as aggressive pollution levies—and incentive policies.

China expanded its pollution levy system in July 2003 to apply to large energy-consuming industrial enterprises. An enhanced levy could serve as an incentive for enterprises to meet energy efficiency targets. Grantees Beijing University and Lawrence Berkeley National Lab (LBNL) are analyzing policies that would amend the pollution levy to incorporate EEAs. The team's recommendations have been submitted to NDRC and the State Environmental Protection Administration (SEPA).

NDRC and SEPA have requested further assistance from Beijing University to design an implementation plan. Beijing University is (1) analyzing the feasibility of jointly applying pollution levies and EEAs in China's iron and steel sector, (2) designing pollution levy and EEA policies, including assessing substantially increased pollution levies to form an incentive for enterprises to invest in efficiency technologies, (3) assisting the Shandong EEA pilot program in implementing the proposed policies, and (4) developing methods for evaluating enterprise pollution reductions and energy savings.

Tax and Fiscal Policies for Industrial Energy Efficiency

Capital investment in energy saving technologies is low in China. Enterprises have difficulty securing loans for technical upgrades. China's state-owned banks are accustomed to large-scale loans, and not smaller energy efficiency loans; banks are disinclined to incur the higher costs of servicing smaller loans. In addition, when enterprises save on their energy costs, this increases taxable revenue and creates a disincentive to invest in energy efficiency. Well-designed tax and fiscal policies are needed to correct these market failures.

LBNL and the China Energy Conservation Investment Corporation (CECIC) are designing tax and fiscal policies for the industry sector. LBNL is providing benefit-cost analysis and training in best practice tax and fiscal policies from Europe, Japan, and the U.S. Momentum is growing for a potential project modeled on the successful United Kingdom carbon levy program, where high-energy consuming enterprises are assessed a tax that is largely refundable if and only if the enterprise meets an aggressive energy savings target. This program has proved largely profitable to UK enterprises due to cost reductions from energy savings.

International Policies on Industrial Energy Efficiency

Analysis has shown that if China's *Energy Conservation Law (ECL)* was to be fully implemented, China could reduce its total energy consumption by 800 million tons of coal equivalent by 2020. However, in the seven years since its adoption, the ECL has proven to be too general to be well implemented.

Grantee the South-North Institute for Sustainable Development (SNISD) and other Chinese and international experts are analyzing the ECL and comparing its strengths and weaknesses to international best practice laws and policies in order to develop recommendations to broad energy efficiency and renewable energy policies.

ACEEE Summer Study

The American Council for an Energy-Efficient Economy holds a biennial workshop on industrial energy efficiency, considered to be the leading conference of its type internationally. Chinese attendees have the opportunity to compare Chinese energy efficiency practices with international experts from leading industrial economies globally. ACEEE supports six Chinese delegates to participate in these conferences. Chinese representatives attend formal sessions, present papers, participate in informal sessions describing their projects in China, and participate in informal discussions with other summer study attendees working in their areas.

Recommendation: NDRC and SEPA should develop incentive policies to spread Energy Efficiency Agreements nationally. For example, all large, energy-consumptive enterprises should be required to pay a heavy pollution levy, which could be offset to the extent the enterprise successfully implements an aggressive Energy Efficiency Agreement.

Goal #2: Assist with developing and implementing mandatory energy efficiency standards for industrial equipment.

Industrial Equipment Reach Standards

The China National Institute of Standardization (CNIS) is developing “reach standards” for energy-consuming equipment. Reach standards are efficiency standards that “reach” well above current market averages, equivalent to the very best examples internationally. Once a high reach standard is established, all manufacturers are given three or so years to bring all their products up to the standard.

CNIS with assistance from ACEEE is developing a reach standard for electric motors. The team aims to complete the standard in 2005 and will encourage the Standardization Administration of China to make it effective in 2008. The standard would improve the average efficiency of industrial motors by three percent and bring savings of 27 million tons of coal equivalent (tce) and 21 million metric tons of carbon by 2020.

Reach Energy Efficiency Standards for Pumps

ACEEE and CNIS are developing a reach standard for clean water centrifugal pumps, the most common pump used in industrial processes. The team’s goal is to secure adoption of the standard in 2007 and have it go into effect in 2010. ACEEE and CNIS are (1) compiling information on the efficiency of traditional versus clean water centrifugal pumps in both the domestic and international markets, (2) conducting manufacturer surveys to identify barriers to a reach pump standard, (3) holding stakeholder workshops, (4) drafting the standard, and (5) developing strategies to encourage enterprises to invest in and utilize the more efficient pumps.

Recommendation: NDRC and SAC should speed up the development and implementation of energy standards for industrial equipment, including motors, pumps, and compressors. MOF should approve substantial increases in the budgets for standards development and implementation personnel at the central, provincial, and local levels.