



China's GHG emissions reductions policies

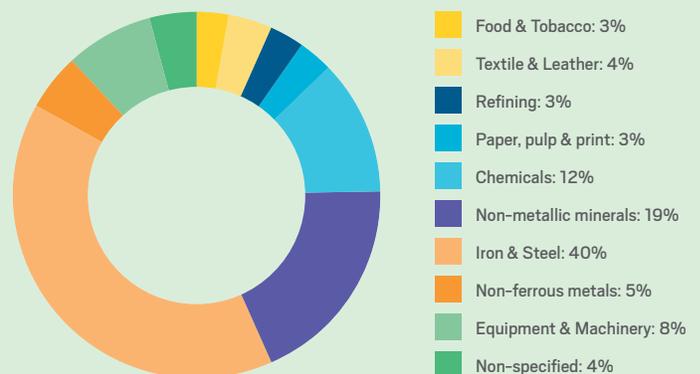
China's industrial emissions far outweigh any other source of greenhouse gases in the country. To lower emissions and target pollution, the Chinese government is implementing a bold agenda for its energy conservation policy, starting with the top 10,000 enterprises.

ENERGY PROFILE

China's industry is responsible for approximately 70 percent of the nation's total energy use. Heavy industry also accounts for a very high share of China's GHG emissions.

The iron and steel sector and the cement sector are responsible for 53 percent of industrial final energy consumption and 62 percent of direct industrial CO₂ emissions. The high emissions relate to coal being used heavily as fuel in both sectors as well as process emissions from calcination in cement production.

FIGURE 1: The Chinese manufacturing industry's final energy consumption (2010). *Source IEA*



National targets

Economy-wide targets are a key driving force in all industry-related policies and measures under the Chinese government's Five-year Plans (FyPs). According to the goals in the 12th Five-Year Plan (2011–2015), China's mandatory energy and carbon targets are:

- Energy intensity (energy consumption per unit of GdP) reduction of 16 percent below 2010 levels by the end of 2015
- Carbon intensity (carbon emissions per unit of GdP) reduction of 17 percent below 2010 levels by the end of 2015.

To meet these targets, the State Council has released a comprehensive work plan that details 50 specific measures which are to be carried out in support of the energy intensity target (as well as absolute reduction targets for criteria pollutants such as chemical

oxygen demand, ammonia, sulfur dioxide, and nitric oxides). Many of these measures are devolved to provincial governments and/or target specific industries and companies.

Policy structure

China has developed a comprehensive mix of energy efficiency and GHG mitigation policies that are well positioned to deliver on its target savings. These policies combine both targets and energy performance standards. They focus on different stakeholders (industry, energy service companies, financial sector) and also include mandatory closure of inefficient plants. The ranges of supporting measures that have been implemented by China include mandatory requirements as well as financial incentives. Industry policy guidelines and other measures in turn make up a comprehensive suite of implementation tools.

Policy types

The Institute for Industrial Productivity offers a framework for industrial energy efficiency policy packages. The pyramid below goes beyond just listing policies and instead illustrates a layered analysis according to a “policy pyramid”, which connects various policies, measures and implementation tools.

IIP POLICY PYRAMID



Effort-defining policies

The top-10,000 Enterprise Program is one of the major policies in the industry sector that supports the achievement of China’s 12th FyP targets. The program is an expansion of the successful top-1,000 Enterprise Program that ran during the 11th FyP period. Based on voluntary energy saving targets, it aims to cover two-thirds of China’s total energy consumption, and will include 15,000 industrial enterprises that use more than 10,000 tons of coal equivalent (tce) per year.

China has also introduced comprehensive regulatory backstops to improve minimum performance at the bottom-end of the market. These include the industrial energy performance standards introduced in 2008, which cover over 20 industrial products as well as regulations that mandate small plant closures and the phasing-out of outdated capacity. The energy efficiency appraisals for new large industrial projects (fixed-asset investments), which were introduced in late in 2010, address infrastructure lock-in. All new investments must undergo independent assessments and the government reviews their energy-saving status before they are approved by regulators. Projects that pass will be subject to government supervision and managers are required to submit energy-reports (Xinhua, 2010).

Supporting measures

Underpinning the Top-10,000 Enterprise Program (and provincial policies that target “key enterprises”) are a number of mandatory supporting measures, which include:

- The assignment of energy managers, implementation of energy conservation plans and implementation of energy management systems (EnMS) according to the Chinese standard GB/t 23331-2012)
- Reporting of energy consumption data

- Energy audits, according to the Chinese audit standard GB/t17166-1997
- Energy efficiency benchmarking (under the top-10,000 program).

Several other supporting measures that encourage industrial energy efficiency and supplement the effort-defining policies are included below:

- The use of differentiated electricity pricing, in which electricity prices are higher for companies with higher electricity intensity. This differs from common practice in other countries.
- Measures not targeted specifically at the industry sector but that are aimed at facilitating industrial energy efficiency include fiscal incentives for qualifying energy service companies (ESCOs) and demand-side management for utilities.
- Policies targeting financial instruments or institutions play a key role in supporting the deployment and distribution of energy-efficient technologies. Such policy requires the strict control of credits and loans to energy-intensive enterprises and the incorporation of energy performance. This strongly favors energy-efficient projects and the phasing out of outdated production capacity.
- Financial rewards for energy-saving technical retrofits support boiler/furnace retrofitting, waste heat and waste pressure utilization, motor system energy conservation, energy system optimization, green lighting, and energy conservation in buildings (MoF, 2010; NDRC, 2010). Under the 12th FyP, this program has been extended to qualifying ESCOs in order to promote the market and achieve greater savings. Under the 12th FyP, the value of the reward has increased from RMB 200 to at least RMB 240 per ton of coal equivalent energy (tce) saved, with central and western regions of China receiving rewards of RMB 300. Many of these incentives are also linked to the “Ten Key Projects” financial incentives program, which targets technological improvements in ten areas and is a key element of China’s Medium and Long-Term Plan for Energy Conservation.

Implementation toolbox

China’s implementation toolbox contains a range of guidelines and tools, such as guidelines and standards for energy management systems implementation (including sector-specific EnMSs), training programs, lists of closure thresholds and energy efficient technologies, and eligibility criteria for ESCOs to receive fiscal incentives. Note that this is not an exhaustive list, and there are numerous other tools other than those listed in this factsheet.

This factsheet is based on data from IIP as well as other sources. For more information about industrial energy efficiency and GHG policies in China, and a full list of references, please visit the IIP Industrial Efficiency Policy Database: www.iipnetwork.org/databases/policy