Key Projects of the

Climate and Air Quality Policy Office

Seoul Metropolitan Air Pollutant Emission-Cap Management System

The Seoul Metropolitan air pollutant emission-cap management system has been implemented since 2008 as part of measures to control metropolitan air quality. It allocates yearly emission allowances for nitrogen oxides (NO_x) and sulfur oxides (SO_x) to large establishments, requiring them to keep their emissions within the allowances and allowing them to trade any surplus allocations. It began with 117 large establishments(Class 1[2]) in January 2008, and 295 establishments are participating in emission-cap management as of the end of 2013.

Allocations in the first year of implementation in 2008 were higher than emissions by 2.3 and 2.1 times for NO_x and SO_x, respectively, casting doubt on the effectiveness of the emission-cap management system. However, allocations have since been continuously reduced, and in 2013, both NO_x and SO_x allocations are around 1.2 times the emissions. Future allocations will be assigned at actual emission levels to ensure effective operation. Emissions trading was only 1.4% for NO_x and 0.5% for SO_x in the first year of implementation in 2008, but these have increased to 6% and 23%, respectively, at unit prices of 285,000 won per ton of NO_x and 180,000 won per ton of SO_x as of 2013. Demand for emissions trading is expected to increase in the future as allocations approach actual emissions.

Air Pollutant Tele-Monitoring System (TMS)

A smokestack tele-monitoring system (TMS) called CleanSYS is being used to constantly monitor the air pollutants emitted by major industrial emitters. Automatic sensors installed in smokestacks continuously measure seven types of air pollutants (dust, SO_2, NO_x, NH_3, HCl, HF, and CO) to produce data every 5 and 30 minutes.

The SmokeStack TMS was first installed in the Ulsan-Onsan Industrial Complex in 1988, and as of the end of July 2014, it has been installed in 1,477 smokestacks of 569 major industrial emitters (Classes 1 to 3) nationwide. The construction of control centers to collect measurements began in 1998, and a total of four control centers are being operated in each region. The transmitted data is also used as administrative information for emission charges and administrative dispositions. Based on its stable operation over the

2) Class 1 air pollutant-emitting facilities are large establishments that generate no less than 80 tons of total air pollutants per year.

years, the SmokeStack TMS has been the foundation of the Seoul Metropolitan Air Pollutant Emission-Cap Management System from 2007.

Preparing for the Greenhouse Gas Emissions Trading Scheme

The emissions trading scheme is a system in which the government allocates emission allowances to greenhouse gas-emitting businesses, requiring them to keep their emissions within the allocated emission limit. Emissions of allocated businesses are anually assessed, and businesses may trade any surplus or shortage of emission permits with other businesses. Firms with a high reduction capacity (low marginal abatement costs) can achieve greater reductions and sell surplus emission allowances on the emission market, and those with a low reduction capacity (high marginal abatement costs) can cut costs by purchasing emission permits instead of directly reducing emissions.

Korea is actively participating in international efforts to relieve climate change and is endeavoring to fulfill the national greenhouse gas reduction goals set in 2009. As part of such efforts, Korea will implement the greenhouse gas emissions trading scheme starting in 2015. An associated law was enacted in 2012 and a national emission allocation plan, associated guidelines, and other relevant measures were prepared by September 2014. The relevant infrastructure was established by designating an emissions permit exchange and building a trading system. Allocations to each business will be completed and a mock exchange among target businesses will be held in 2014.

Allocation will be 100% free during the early stage of implementation from 2015 to 2017. The proportion of auctioned allocation will be gradually increased to 3% from 2018 to 2020, and to at least 10% in 2021 to reduce the industrial burden in the early stages of implementation and ensure the soft landing of the scheme. An establishment that has been allocated emission allowances is required to carry out emission and reduction activities during the period concerned, measure its emissions, and report it to the government after verification by an external agency. The government evaluates the appropriateness and certifies the emissions.

In addition, the Greenhouse Gas Inventory and Research Center of Korea (GIR) was established in 2010 to ensure the systematic management of greenhouse gas emissions information. It is in charge of setting greenhouse gas reduction goals for each sector and industry and managing statistical data.

The tele-monitoring systems (TMS) called CleanSYS are installed on smokestacks for constant monitoring of air pollutants.

Electric Vehicles

Korea is endeavoring to promote the technological development and distribution of electric vehicles, plug-in hybrid electric vehicles (PHEV), hybrid vehicles (HEV), fuel cell electric vehicles (FCEV), and other eco-friendly cars that have outstanding fuel efficiency and satisfy low-pollution requirements. This matter is covered by the "Green Car Development Strategies and Projects" announced by the Presidential Committee on Green Growth in December 2010.

The groundwork was established to distribute electric vehicles by setting funding criteria for electric vehicle and charging facility based on the results of an electric vehicle verification project in 2011 and expert advice. National agencies, local governments, and public institutions, upon purchasing an electric vehicle, are provided with a subsidy to partially cover the price difference compared to an equivalent standard vehicle, and assistance is being provided to build a charging infrastructure.

In addition, 10 cities, including Seoul and Jeju, were selected as leading electric vehicle (EV) cities. A charging infrastructure network will be established around these cities, which will be nurtured as hubs for full-scale electric vehicle distribution. Private sector distribution was expanded throughout the country from 2014 to stimulate the distribution of electric vehicles. To ensure successful private sector distribution, an electric vehicle charging infrastructure information system was built to provide drivers with real-time information on charging stations, and tax benefits of up to 4.2 million won are offered for acquisition tax and special consumption tax. A total of 1,871 electric vehicles and 1,971 charging stations had been distributed by 2013. Public parking discounts, expansion of dedicated parking lots, and other various incentives will also be increased.

Mid- to long-term measures are being implemented to expand the charging infrastructure to account for the fact that Korea has a high number of apartments and other multi-unit dwellings, which makes it difficult to establish individual charging facilities. First, the charging infrastructure will be expanded in the public sector. Support measures will be prepared regarding the installation of private charging stations to encourage the charging infrastructure to expand into major supermarkets, public parking lots, and expressway service areas.

Korean government endeavors to strengthen the infrastructure for electric vehicles, including the charging station network.