

Tax on Pollution

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Vietnam is on the road to industrialization and modernization. Changing from a centrally planned economy to a market one, the country has to face big challenges in economic growth and environmental protection. Today, environmental protection becomes an extremely important issue of development over the world, especially for developing countries. Vietnam's economic growth has given rise to negative trends including environmental pollution. It is always a current affair along with evolution of a manufacturing economy. Therefore, it is a must to study this question and take measures to control its bad effects by imposing tax on pollution.

According to statistics in 1997, the country had 617,805 industrial establishments and 35 licensed industrial parks. The industrial value amounted to VND\$354,030.1 billion in 2004 (export value US\$19,553 million-accounting for 73.8% of the country's total export). Domestic manufacturers on the whole have small production size with obsolete equipment and technologies; however, only 20% of them innovate their technologies. As a result, environmental pollution caused by these outdated factories are very serious, especially those which are located in residential areas.

1. Tax for environmental protection

The Government has promulgated laws on environmental protection, minerals, and fisheries...to rectify its shortcomings in improving the people's living conditions. Moreover, it will manage to impose pollution tax with a view to fighting against environmental pollution as well as transferring "dirty" technologies into Vietnam.

Many countries have applied the principle by William Baumol

and Wallace Oates to establish the tax rates. In our country, most authors depend on foreign experience to build tax rates for Vietnam, but not implement this principle fully.

Formula to calculate the pollution tax: This is based on the level of pollution. This method is considered optimal but requires a system of regular and accurate measurement. According to this method, tax agencies shall define what the business discards, their concentration and volume.

The following formula is used to calculate tax for establishments, which violate regulations on effluent and fume emission:

$$P = \sum A_i (C_{id} - C_{itc}) * Q * K_1 * K_2$$

Where:

P: Total fine for each time of violation (VND).

A_i : Fine rate for a unit of pollutant (VND/kg)

C_{id} : Actually measured concentration of pollutant (mg/l or g/m³).

C_{itc} : Permitted concentration of pollutant as regulated.

Q: Volume of pollutant expelled into the environment (m³/s or m³/day).

K_1 : Ecology coefficient according to regulations on environmental quality requirements for each region across the country.

K_2 : Times coefficient since pollutants exceed limit (based on the first measurement/inspection to the last one).

2. Experience from foreign countries

a. China

This nation collects pollution tax from businesses discarding effluent, fume, solid, noise and others, in which tax from effluent account for 70% of the total. The tax is based on the volume, concentration and feature of pollutants in water. If these factors exceed limit, the business has to pay an additional tax of effluent and assume responsibility for

monitoring and treating pollution up to standard. China has applied four principles as follows:

Tax higher than costs of equipment operation and initial depreciation.

Same tax for pollutants having the same volume and feature

Additional tax for pollutants exceeding limit.

Higher tax for serious pollutants.

b. Singapore

Singapore applies pollution tax for effluent discarded by manufacturers which exceeding limit.

Variable tax based on biochemical oxygen requirement and total volume of solid discards.

Fixed tax for organic effluent thrown out at waste treatment sites as regulated.

c. Malaysia

The country collects tax on effluent for environmental protection, not for increasing the Treasury. This tax is imposed on establishments expelling effluent over limit. It depends on the water source where waste is discarded into as well as concentration, feature and volume of discarded pollutants.

d. The Netherlands

The industries must pay tax for discarding hard metals and organic substances. Pollution tax is used just for building waste treating factories according to law. The tax is also based on building costs of these treating factories.

e. Germany

The waste limit is defined for businesses and factories. Tax is calculated on volume of pollutants. Tax is also used for building new waste treating factories. Pollution fines are applied to force businesses to use clean technologies or install waste treating system and control pollution within limit. Pollution tax and fines shall not become hurdles to business activities.

In short, policies to collect tax for environmental protection are the government's macro-management tools to improve human living conditions and help make economic growth sustainable. ■