

Carbon tax – key instrument for energy transition!

Global warming is the most challenging problem facing humanity today due to the excessive use of fossil fuels. Carbon tax (carbon dioxide tax) is a simple and efficient way to reduce the use of fossil fuels, improve energy efficiency, and make renewables more competitive. It can be tax neutral, as reducing other taxes will complement carbon tax implementation. It is a smart move to a more sustainable lifestyle and investment for the future. Therefore, the carbon taxes are an indispensable tool for rapid transition to a climate compatible energy system using less fossil fuel and more renewables.

• Easy to apply

All countries already have some kind of energy taxation and it is administratively easy to introduce the carbon tax in all countries at a low level.

• Easy to calculate

The tax is easy to calculate based on the carbon content of the fuel and the importers or big energy producers can easily estimate and pay the tax.

• Tax neutral

Carbon tax must not lead to higher taxation in general. The Carbon tax can be raised at the same time as other tax is reduced.

• Economic

The Carbon tax will make it more profitable to use fossil fuels efficiently, switch to renewable energy sources or to abstain from using fossil energy altogether. For countries with large fossil fuel imports, the carbon tax can stimulate the internal economy and improve terms of trade.

• Efficient

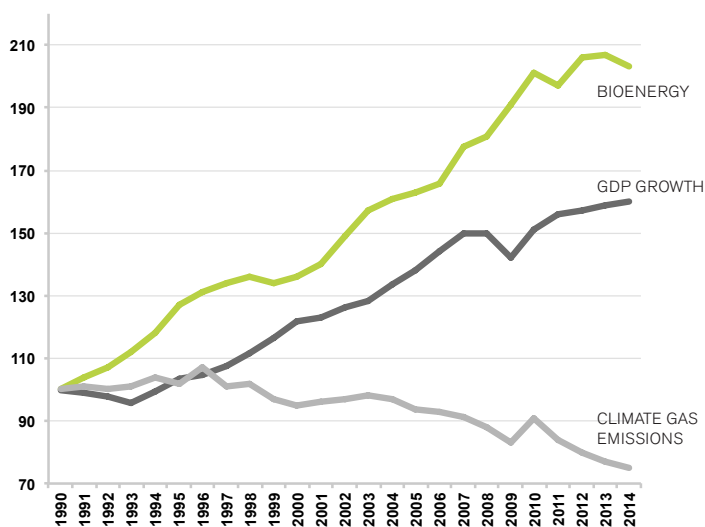
The purpose of carbon taxation is not to punish people for their life style or technical equipment today, but to help them make the right choices and investments for the future.

Background and theory

Polluter Pays Principle and Carbon Dioxide Tax

Internalising environmental costs: According to Polluter Pays Principle (PPP), emitters of CO₂ should pay a Carbon tax for their emissions and in this way pay for current and future costs caused by the emission. Hence, the environmental costs (external costs) are internalised and made a part of the total cost of the polluting activity.

Carbon content of the fuel as basis: The Carbon tax should be in relation to the emission of CO₂ by the different fossil fuels. This is well known, and in direct relation to the carbon content of each fuel.



The Swedish example: Sweden introduced carbon tax in 1990. Since then Sweden has experienced rapid economical growth and decreased carbon emissions. GDP increased by 60 percent in real terms. Greenhouse gas emissions decreased by 25 percent 1990–2014, and the use of bioenergy doubled. The diagram shows changes from 1990 (1990 = 100 percent).

Applied to all sectors: The Carbon tax should be introduced in all sectors of society. If cap and trade is used for certain sectors, Carbon taxes should be adopted for other sectors and in the long run, it should replace cap and trade system.

General acceptance needed: Initially, the level of the Carbon tax is not the main issue. More important is to get a general acceptance. Once the tax is introduced, it can be raised gradually to make it possible for companies and individuals to take action to reduce their use of fossil fuels.

A green tax shift: The purpose of the tax is not to increase taxation, but to steer the economy in a sustainable direction. Other taxes can be lowered to compensate for the raised Carbon tax, in a "green tax shift". If the tax shift is not applied, incomes from the Carbon tax can be used for research and development of renewable energy technologies or for adaptation and compensation for people affected by the emissions. »

Fossil fuel emissions and environment

Emissions of CO₂ from use of fossil fuels cause damage to the environment in the short and long run. The damaging influence on the climate is of primary concern as the future cost to society may be large.

Climate change will influence and damage future generations who have had little or no part in the use of fossil fuels. Low lying third world countries affected by rising sea levels, and farmers affected by changing climate patterns causing drought and flooding are two examples of negative impacts of climate change.

Imposing a Carbon tax is the most efficient way of applying PPP to the climate issue. The Carbon tax is a better steering measure than alternative systems.

Tax application and consequences

A Carbon tax can be applied to all sectors of society, whereas cap and trade has only been used to limit emission of large emission sources like power plants and heavy industries.

The Carbon tax is levied on all fossil fuels at the production or wholesale level. The big producers pay it: oil, coal and natural gas companies, and added to the price of the fuels. That way the tax raises the price of all fossil fuels and in the end is paid for by all consumers. The price of gasoline, diesel fuel, heating oil, coal for combustion in power plants, natural gas for power plants and individual households, etc. will be expensive.

All countries already have some kind of energy taxation, and it is easy to introduce the Carbon tax on top of other energy taxes. The level of the Carbon tax should be in direct relation to the emissions of carbon dioxide from the different fuels.

Bioenergy does not pay Carbon tax, as the carbon dioxide released at combustion of biomass and biofuels is equivalent to the carbon dioxide uptake by the plants used as biomass for energy. If bioenergy is produced with the input of fossil fuels, these inputs will be taxed according to the normal Carbon tax, and they will thus automatically be included in the cost of producing bioenergy. In this way, calculations of carbon balances for biomass for energy will not be necessary, and there will be an economic incentive to produce biomass in a climate efficient way.

The Carbon tax will make it more profitable to use fossil fuels efficiently. It will also make it more profitable to switch to renewable energy sources or to abstain from using fossil energy altogether, e.g. taking the bike instead of the car. The tax will therefore reduce the consumption of fossil energy compared to a situation with no Carbon tax. The level of reduction depends on the tax level and other alternative technologies.

The Carbon taxation will also stimulate development of low carbon technologies by creating a growing market. Sweden has long practiced the green 'tax shift': as the Carbon tax has been raised, income tax has been lowered. This means lower taxation for households using less fossil fuel than average.

Comparison to alternative systems

When comparing Carbon taxation, cap and trade, and administrative systems like quota, feed-in tariffs, and mandatory obligations, Carbon tax has certain clear advantages.

- A Carbon tax includes the whole society and not just industries or energy producers
- A Carbon tax creates a high degree of certainty for investors as it always remains the same, or probably higher if previously agreed upon.
- Instead of politicians picking technologies and incentives, the Carbon tax ensures that the decisions are left to the market.

Carbon tax globally

Carbon tax is levied so far in Sweden, Denmark, Finland, France, Ireland, Japan, Norway and Slovenia. Several other countries have considered Carbon taxation. The tax may differ considerably between the countries, and the levels vary.

For example, France decided to introduce Carbon tax step by step with an upper limit of 100 Euros per ton CO₂ to be reached after several years. Sweden has the highest Carbon tax, about 121 Euros per ton CO₂ for private consumers.

The European Commission has proposed a common minimum Carbon tax in the member states in its proposal for a new energy taxation directive. The minimum level would be 20 Euro per ton of carbon dioxide. The work on the directive is currently on hold and should be activated.

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