



## **A study on macroeconomic cost of CCS in Korea**

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CCS is an important measure for mitigating the problem of World Climate Change and already several projects are entered the step of commercialization.

The benefits of CCS implementation ultimately depends on the alleviation level of CO<sub>2</sub> on earth because it is caused by the mitigation of the World Climate Change problem. Thus it is possible not to coincide at same time between starting the CCS and getting the benefits. Considering the high costs of CCS, the time mismatch between imposing the costs and getting the benefits is apt to impose some heavy burden on the individual national economy. For this reason, at the political decision-making, the policy makers should consider the macroeconomic effects.

Meanwhile, Korean electricity market's supply side is comprised of competitive production and a sole distributor(public enterprise) and then electricity is supplied by a single price structure(administered pricing). Under this condition, if CCS is introduced to power setor, electric charges must be increased and production costs will go high. High production costs will have unfavourable effects on disposable income, price level, purchasing power and so on. In order to minimize these effects, policy makers have to consider the economic effects of introducing CCS.

This study estimates the microscopic cost of CCS using ICCSEM 2.0 methodology made by CO<sub>2</sub>CRC and after that, the macroeconomic effects of introducing CCS is estimated on the basis of microscopic cost estimating results. The macroeconomic effects of CCS applied to Power Generation sector are estimated using macroeconomics model and Input-Output analysis. A macroeconomics model is an analytical tool designed to describe the operation of the national economy. This model is usually applied to examine the dynamics of aggregate quantities such as the total amount of goods and services produced, total income earned, the level of employment of productive resources, the level of prices and so forth. Introducing the input-output relationship of Korean industries, the macroeconomics model can show what response is caused by the CCS cost as supply and demand shock.

This study is intended to provide a basic information for making reasonable policies which is to minimize the economic costs of introducing CCS.