

# Estimating marginal cost of reduction of greenhouse gas emissions by local governments and implication.

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Distribution of commission among governments Estimation of marginal cost  
Wide-range cooperation

## 1 Research background

For reduction of greenhouse gas emissions, action at local level is essential. In such situation, many local governments in Japan have made plans and implemented various approach. But, actually, the progress of the plans is unfavorable and many local governments perhaps can't achieve the reduction of the amount of greenhouse gas they set. Two factors are main reasons for this; there are no criteria to set the goal reflecting local characters and distribution of power among governments is not well.

## 2 Method of research

To solve such problems and improve effects of the green house gas reduction by local governments, I focus attention on a concept of efficiency and wide-range cooperation. In concrete terms, I estimate the marginal abatement cost of prefectures belonging to *Kansai extended association* and *Heads of nine state summit* and get implications for effective plans.

## 3 Result and speculation

As the result of estimation, there is dispersion among prefectures. Therefore, in the light of efficiency, it is quite useful to implement the reduction of greenhouse gases by wide-range cooperation. As the implication of the result, it become obvious that marginal abatement costs are relative to the proportion of the reduction, but as the result of Tokyo and Osaka shows, the structure of prefectures have more influence on the marginal abatement costs. For the efficient reduction, it is important how each wide-range cooperation deals with these prefectures. I think that in the days ahead by improvement of the accuracy of the estimation and more extensive discussion about what factors effect on the structure of prefectures, this idea become more useful in implementing the reduction of greenhouse gases among prefectures.