A cost effective CO2 strategy - DTU Orbit (06/05/2019)

A cost effective CO2 strategy: Denmark

In January 2008 the Danish Government decided to prepare a strategy for reducing CO2 from the transport sector in Denmark. The decision to prepare the strategy was part of the follow-up to the national Infrastructure Commission report of January 2008. The preparations have been chaired by the Ministry of Transport, with the Technical University of Denmark as one of the main contributors. The CO2-strategy was to be based on the principle of cost-effectiveness. A model was set up to assist in the assessment. The model consists of a projection of CO2-emissions from road and rail modes from 2020, a scenario-part and a cost-benefit part. Air and sea modes are not analyzed. The model adopts a bottom-up approach to allow a detailed assessment of transport policy measures. Four generic areas of intervention were identified and the likely effect on CO2 emissions, socioeconomic efficiency and other concerns of the potential measures within those intervention areas: • Reductions in the need to travel • Improved efficiency of the transport system • Improved fuel efficiency of transport activities • Reduced CO2 intensity of the fuels. Within each area a number of measures were analysed. The measures are evaluated according to CO2 reduction potential and according to the ‘shadow price’ on a reduction of one ton CO2. The shadow price reflects the costs (and benefits) of the different measures. Comparing the measures it is possible to identify cost effective measures, but these measures are not necessarily those giving the largest amount of CO2 reductions. These differences will be illustrated. It is not straightforward to point out cost effective measures as derived effects on e.g. revenues from transport related taxes and fees are influenced largely by any change that improve energy consumption. This case will be illustrated through the calculation undertaken for measures such as increasing fuel taxes, restrictions on goods distribution and increasing incentives to purchase energy efficient vehicles (government purchase, taxi’s, company cars etc.). In addition connections (conflicts and synergies) between measures are also addressed. It has not been possible to analyse combinations and packages of measures consistently in a model like the one outlined above. However, the obvious connections are addressed and clearly show the limitations with respect to fulfilling the target set by the Kyoto protocol and the EU agreements on future reductions. The findings are not yet public but will become so in early October when the plans of the Government are announced. The correspondence between the findings and the final policy plan will be discussed. This will be linked to the experience with several previous national strategies for climate and transport and associated implementation deficits will be discussed, reflecting the presently changing institutional conditions for policy formulation and implementation. The main differences compared to earlier CO2 strategies are the EU ETS and targets set for non-ETS sectors; the CO2 strategy is closely linked to a simultaneous plan for future infrastructure investments. Work on the latter plan is headed by the Ministry for Finance, which gives the CO2 strategy and the investment plan a higher focus and larger probability for being adopted. Compared to earlier, focus is more on cost effectiveness, but the ministerial division of the work is still prevailing and there is no institution securing monitoring and follow-up on the plans. It remains to be seen how the balance between a stronger political back-up and the similarities with earlier relatively closed processes will influence the final implementation of the plans; this balance will be addressed and reflections on their success will be given.

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