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Practices in Project Appraisals of Major
Public Investment Projects under the
Norwegian State Project Model

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English summary

Major public investment projects may have impacts far into the future, and many result in significant greenhouse gas emissions. By contrast, in other cases, the projects are investments aimed at reducing emissions. Global warming and climate change inflicts heavy costs on society, and it is therefore essential that emissions are handled in a consistent and comparable manner in cost-benefit analyses of public investments.

In the absence of a global agreement on emissions cuts that commits all countries and leads to a single global carbon price, it is not readily apparent what price to use in cost-benefit analyses. One approach might be to attempt an estimation of the global marginal social cost of carbon. Another approach is to use the principle of implicit valuation, and look at what costs the Government is willing to accept by, for example, setting binding targets, signing environmental agreements, and adopting a green tax (the marginal abatement cost). Different approaches and assumptions can lead to dramatically different carbon prices.

In this report we present the results of a review of 111 cost-benefit analyses of major public investment projects that have been subjected to external quality assurance according to the State Project Model—also referred to as the Quality Assurance scheme—introduced by the Norwegian Ministry of Finance in 2000 (2005). Under the scheme, two cost-benefit analyses are performed per project; one is performed by the sectoral ministry or agency and one by the external reviewer. The studied analyses carried out on investment projects mainly from the following sectors: transport, construction, defense, fisheries / coastal affairs, and ICT. The relevance of greenhouse gas emissions varied somewhat, but we note that climate targets and climate considerations were prevalent in 3/4 of the investment projects, and were considered either a primary or important consideration in 40% of the cases.

When we then look at how greenhouse gas emissions are presented in the cost-benefit analyses, we find that such effects are mentioned in 70% of the analyses and given a monetary value in 55% of the analyses. Transport projects had a particularly high share of monetary valuation. The analyses reveal very little difference between ministries and agencies on the one side and reviewers on the other. Either both parties mention and price the effect or neither of them does

When it comes to the choice of carbon price, when used, the prices are relatively low in most analyses, on average just over NOK 200 per tonne (EUR 25). There is no systematic variation across sectors, or between ministries/agencies and reviewers. Few of the analyses discuss and justify their choice of carbon price. Often, especially in the case of transport projects, they refer to the agencies' own handbooks on cost-benefit analysis, where standardized rates for different effects are established. When we examined these handbooks, we found that the justifications given varied. Some refer to the EU ETS allowance price listed at some point in time, while others refer to previous estimates of the marginal abatement cost of fulfilling the Kyoto Protocol. In other analyses, outside the transport sector, some analyses use an estimate of international allowance prices while others use the existing level of green taxes. Very few analyses can be said to present a thorough assessment of the choice of carbon price, and hardly any mention other approaches, such as the global marginal social cost of carbon, the price path that would support the 2 degrees Celsius target supported by Norway or domestic emission reduction targets, not even as a sensitivity analysis.

It should also be noted that the use of the existing (more or less green) taxes is probably far more widespread than stated in our listing. In many analyses, the presentation of the greenhouse gas emission effect only includes emissions generated in the operational phase of the project. Emissions generated in the construction phase are often not explicitly addressed. It is probably assumed that these effects are internalized through green taxes on inputs to production.

The analyses in our study were performed in the period 2005–2013, and most of them seem to have used a constant real carbon price throughout the period of analysis. An ascending carbon price path has only been used in some of the most recent analyses. The public agencies in the transport sector have recently implemented ascending carbon price paths based on the medium scenario for the EU ETS allowance price, estimated by the central government working group “Climate Cure 2020.”

The greenhouse gas emissions appear to have a limited impact on the calculated net present value of the projects, especially compared to timesavings. This might be the reason why hardly any of the analyses present sensitivity analyses with respect to the carbon price— it does not matter much anyway. This is in contrast to the fact that climate targets and climate considerations were described as important when the projects were initiated. When looking at the analyses where climate considerations are mentioned among project targets, we find that these targets are often presented again in the summary/conclusion part of the reports: this is the

case in of 54% of the cost-benefit analyses from the ministries/agencies and 28% of the cost-benefit analyses from the reviewers. To the extent that this changes the recommendation, it implies that there is an additional (implicit) valuation of the greenhouse gas emission. Some agencies also inform us that they have ambitious climate targets that restrict their choice of project, design etc., in the form of setting requirements that apply to all projects.

The combination of a low carbon price, which many people do not really accept, and letting climate targets restrict decisions in other ways, is not optimal. The result could be that the way greenhouse gas emissions are handled becomes more or less random, and similarly random how much reduction is obtained per dollar. A better solution would be to use a common carbon price that is high enough to reflect Norway's ambitions in this area. If the government has a domestic goal, it should establish this goal as a common target price for all emission sources so that tradable emissions would be charged a carbon tax in addition to the allowance price, while non-tradable emissions would be charged a higher carbon tax. The same carbon price should be used in cost-benefit analyses. This would highlight Norway's willingness to pay for targets beyond what the country has committed to, and at the same time it would ensure cost-effectiveness within Norway.

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Forskningsprogrammet Concept skal utvikle kunnskap som sikrer bedre ressursutnytting og effekt av store, statlige investeringer. Programmet driver følgeforskning knyttet til de største statlige investeringsprosjektene over en rekke år. En skal trekke erfaringer fra disse som kan bedre utformingen og kvalitetssikringen av nye investeringsprosjekter før de settes i gang.

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NORWAY

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The Concept research program aims to develop know-how to help make more efficient use of resources and improve the effect of major public investments. The Program is designed to follow up on the largest public projects over a period of several years, and help improve design and quality assurance of future public projects before they are formally approved.

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