

Environmentally Related Financial Implications of Refined Preferred Options

Chapter 21



CHAPTER TWENTY - ONE

ENVIRONMENTALLY RELATED FINANCIAL IMPLICATIONS OF THE REFINED PREFERRED OPTIONS

1. In order to define the financial implications of the environmental infrastructure associated with the implementation of the Preferred Options, consideration needs to be given to both capital stock (i.e. those facilities which directly improve the environment eg sewerage, tunnels, bridges, covered sections of roads to minimise interface/noise problems, indirect costs (e.g. fuel restrictions, taxes on vehicles/industrial emissions) and non-quantifiable or monitoring costs. None of these categories are easily defined within the framework of the EA of the TDS but rather require detailed input from cost estimators at a detailed level.
2. In general there are three categories of funding for the environmental costs associated with the development strategies : general taxation as environmental improvements benefit a wide cross section of the community, environmental taxes (fuel or sewage charges) and fines/fees/levies imposed on polluters using "the polluter pays" principle. The latter concept has gained widespread acceptance and has been endorsed by the Organisation for Economic Cooperation and Development.
3. In reality the quantification of the environmental benefits accrued through the improvements are extremely difficult to determine and are open to much discussion. In the recent case where the sewage charges were imposed by the Government, it was stressed that the surcharge imposed on the user is not a tax on pollution but rather an environmental tax which all sectors of the community have to pay. Such a method of revenue generation would however be difficult to employ on a widespread basis and recourse is usually made to the punitive measures for collection of "taxes" viz. smoke emission vehicles.
4. Whichever solution is adopted, there are often significant costs associated with effecting improvements to living and working conditions. These costs may be monetary or opportunity costs which need to be considered in detail with regard to the overall benefits accrued.
5. When considering land use planning at the district or local level, there will be conflicts to be resolved between the pros and cons of alternative measures or proposals (for example bridge or tunnel) and it may be necessary to trade between benefits and associated costs to the community when making final selections.
6. Environmental costs which will be incurred with the implementation of the Preferred Options are outlined in Table 21.1 and include feasibility studies and EIA/Engineering Designs which are required for some specific components of the Preferred Options.

Table 21.1 COST IMPLICATIONS

Cost Implication	Scenario A	Scenario B
Direct Costs		
(i) sewage collection, treatment and disposal	<p>treatment costs (correlated to Sewage Charges) on a daily basis at 1995 prices at least HK\$2.3M (2011) for domestic and >> HK\$3.8M for industrial and commercial</p> <p>broad estimates of capital costs were estimated and using the same assumptions for levels of treatment etc. for Scenario A and B the rough order of costs would be 66% of those estimated for B. Requires detailed assessment and needs to consider original development proposals as well as base and strategic growth to ensure there is no double or triple counting for this environmental cost.</p>	<p>treatment costs (correlated to Sewage Charges) on a daily basis at 1995 prices at least HK\$2.5M/day and HK\$4.8M/day for industrial and commercial</p> <p>capital costs estimated to be 33% higher than proposed for Scenario A. Comments made with respect to detailed assessment even more pertinent.</p>
(ii) noise mitigation measures from transport proposals may be buffer zones, setbacks, covering sections of sensitive roads/rail (interface)	can only be defined through detailed study	as Scenario A
(iii) promote more public transport patronage	difficult to provide a cost estimate as there are disbenefits from the loss of revenue from road taxes, fuel etc. recommended target date is 2001	as Scenario A
(iv) use of whisper asphalt or similar to reduce traffic noise etc.	can only be estimated when the actual details of length, width of road etc. are known; recommended target date 2006	as Scenario A
Indirect Costs		
(i) possible fuel restriction taxes on vehicles/industrial emissions	difficult to ascribe costs but recommended by 2006	as Scenario A
(ii) more stringent water and sewage charges	already charging for water and sewage but may need to be increased in view of the increased in population and the greater demand on water supplied by the PRC	even more pertinent in this case as the water demand will significantly increase with the forecast increases in population and increasing affluence, waste disposal costs will also be more significant as the costs of effluent treatment reflect the forecast volumes of waste to be treated
(iii) new air quality monitoring stations on Lantau and Tuen Mun	between HK\$1.5 and HK\$2.3 million for each station	as Scenario A

Table 21.1 COST IMPLICATIONS (Cont'd)

Cost Implication	Scenario A	Scenario B
Non Quantifiable Costs (for this Study)		
(i) Review of the cumulative impacts of Port Back Up and Open Storage, and off-site	recommended before 2001	recommended before 2001
(ii) Review of Industrial Water Users	recommend before 2001	recommend before 2001
(iii) Overview of SMP's	2001	2001
(iv) Study into ways to Reduce Background Noise Levels (through revision to HKPSG and NCO)	target by 2006	target by 2006
(v) Study into sewerage strategy Study for NENT and NWNT	target by 2006	target by 2006
(vi) Development of Strategic Environmental Management Plans for each District	target by 2001	target by 2001
(vii) Development of Regional Environmental Protection Goals	target by 2001	target by 2001
(viii) Definition of intra-territorial and district level carrying capacities	aim for 2006	aim for 2006
(ix) Develop intra-territorial/ Regional air quality model and GIS system	< 2001	< 2001
(x) Intra-territorial dust study	< 2001	< 2001
(xi) develop pedestrianisation and cycle routes in areas other than new towns where these are already included in the development plans	aim for 2001-2006	aim for 2001-2006

Table 21.1 COST IMPLICATIONS (Cont'd)

Cost Implication	Scenario A	Scenario B
Non Quantifiable Costs (Cont'd)		
(xii) promote research and development	2001 >	2001 >
(xiii) enhance accessibility for recovery, recycle and reuse of materials for individuals as well as corporations	aim for 2001	aim for 2001
(xiv) study feasibility of Route Y in terms of Engineering and Environmental Protection Requirements	not recommended	recommend study by 2006
(xv) develop conservation management centres, marine parks and educational centres for promotion of sustainable growth and development	target date of 2001-2006 (Staggered development)	target date of 2001-2006
(xvi) define Regional Environmental Quality Objectives	aim for 2001	aim for 2001