New investment in rural water infrastructure

Introduction

The broad aim of the agreed CoAG water reform Framework is to promote a more efficient and sustainable water industry. For new rural investment this involves ensuring that investment is undertaken on an economically viable and ecologically sustainable basis.

Clause 3(d)(iii) of the agreed CoAG Framework states that in relation to rural water supply:

> '*that future investment in new schemes or extensions to existing schemes be undertaken only after appraisal indicates it is economically viable and ecologically sustainable;*'

The Council believes that the aim of this clause is to ensure that future investments in rural water infrastructure make good economic and ecological sense and are in the interests of the community overall now and in the future. Basing investment decisions on robust assessments of economic viability and ecological sustainability is an important part of compliance with CoAG commitments.

To provide a transparent basis for its third tranche assessment, this paper provides a guide to the Council's interpretation of the intent and coverage of commitments under clause 3(d)(iii) of the agreed Framework.

Investments covered by clause 3(d)(iii)

Clause 3(d)(iii) relates to rural rather than urban water investment. However, definitions of the rural sector have varied. For the purposes of rural pricing and new rural investment (clause 3 of the agreed framework) the Council considers the rural supply sector to include all water and wastewater services other than those supplied to urban or non-major urban (NMU) customers. A broad definition has been adopted to achieve a comprehensive application of reform across the water and wastewater industry.

The Council suggests that investments that have both rural and urban components (e.g. a dam that is predominately for rural use but also provides urban services) should be subject to clause 3(d)(iii). An alternative interpretation would be to only require that the share of overall costs attributable to the provision of rural water for primary production be recovered. However, the Council suggests that this would not lead to a balanced consideration of the total net benefit/cost of the project.

Therefore, the Council considers new rural investment to include all non urban investment and that clause 3(d)(iii) should also apply to investments that are predominantly for rural purposes (e.g. primary production) but may provide some services to urban or NMU users.

Assessing the economic viability of new investment in rural water infrastructure

The Council's view is that all new rural investment projects should recover at least direct costs (as defined below). However, large projects may also have significant flow-on effects, in which case, a more detailed cost benefit analysis is appropriate. Further, the Council notes that there are instances where government assistance through transparent community service obligations (CSOs) may be appropriate. Given the above the Council believes a three stage process is appropriate to firstly establishing whether the investment is economically viable (stages 1 & 2) and then, secondly, establishing the price that should be charged (stage 3):

- Stage 1: establish whether the project is expected to generate sufficient revenue (excluding any government assistance) to recover its direct costs;

- Stage 2: establish whether broader social benefits (e.g. flood control) and costs (e.g. negative downstream effects) are significant and if so determine whether the sum of direct and broader benefits now and in the future is greater than the stream of direct and broader costs. This could be established through a transparent cost benefit analysis that includes appropriate public consultation; and

- Stage 3: once the economic viability is established through the preceding stages the government may consider whether a transparent Community Service Obligation (CSO) is appropriate to reflect benefits that would not directly flow to the revenue earned by the project developers.

Direct costs

The Council's view is that, all new rural investments should have the potential to recover all direct costs, namely:

- administration, operations and maintenance;
- cost of capital;
- externalities (e.g. contribution to salinity control programs);
- taxes or tax equivalent regimes (TERs); and
- provision for asset consumption.

A range of estimates have been provided in setting cost of capital requirements for large infrastructure developments with most suggesting

a maximum rate between 6 and 8 per cent. The 1994 paper by the Working Group on Water Resource Policy that accompanied the Strategic Framework agreement suggested a rate of 4 per cent but noted that each jurisdiction will need to determine the most appropriate rate having regard to its circumstances. The Council suggests that, as a minimum, new rural investments recover at least a risk free return as indicated by the rate on 10 year government bonds.

The net present value of these costs should be compared with that of the future stream of revenues expected to be derived from the investment. Expected future revenues should be based on realistic estimates of future market prices.[1]

Considering broader social costs and benefits

It is suggested that direct cost recovery is an appropriate threshold for small investment projects (such as an on-farm dam). However, larger projects (such as an irrigation scheme or a major dam) may have broader impacts. Thus considering broader range of costs and benefits in addition to direct costs and revenues would be appropriate.

For example, in the past regional development has been used to justify projects that have not been able to recover their direct costs with proponents arguing that as these broader gains represent a public benefit the government should cover the shortfall in the project's commercial returns. The Council suggests that where broader regional benefits (such as increased economic activity and employment) are included in the analysis they should be estimated through a *robust* and *transparent* methodology. Further, these regional benefits need to be compared with their associated costs. For example, the transaction costs and opportunity cost of the government providing financial assistance to the project should be considered.

The Council acknowledges that quantification of broader social benefits and costs is often a difficult task. However, all relevant costs and benefits should be at least identified and considered as part of a balanced analysis. Estimates of broader benefits and costs should be based on the best available information with any assumptions and limitations clearly documented. Sensitivity testing, scenario planning and risk analysis are also valuable in ensuring a robust result. Where quantification is not possible detailed qualitative discussion of the likely magnitude and direction of particular costs and benefits should be provided.

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[1] For example, through using a long-term average of past prices (although significant changes in market structures may mean that the predictive power of past prices may be limited).

An open transparent process

Assessments of economic viability should involve an open transparent process. In its draft report on the "Impact of Competition Policy on Rural and Regional Australia", the Productivity Commission recommended that all cost benefit cost studies should be publicly available. To this the Council adds that studies should involve an appropriate amount of consultation with relevant stakeholders. The depth of analysis and the level of consultation should be consistent with the project's size and likely flow-on effects.

Government assistance and direct cost recovery

The Council suggests that government assistance should not be included in considering whether or not a project can recover its direct or broader costs. The CoAG Framework does not preclude governments from transparently subsidising the prices charged by water service providers. However, it is the Council's view that if governments wish to subsidise prices upon completion of a new investment this should be considered separately from calculations of commercial viability. Under this approach governments therefore face two separate questions when considering future rural investment projects:

1. Is the project able to recover all costs on a stand alone basis?

2. What price should service users be charged upon the projects completion?

Thus, under the suggested approach, the government may provide assistance for construction of new water storages but only once the stand alone viability (including broader economic benefits) of the project has been demonstrated. Including government assistance in net present value calculations may lead to construction of dams that are not economically viable and a repetition of the types of decisions clause 3(d)(iii) was designed to avoid.

Assessing the ecological sustainability of new investment in rural water infrastructure

Water infrastructure developments of potential concern to ecological sustainability range in size from a small farm dam or low capacity pump on a river or aquifer, through to on-stream weirs, large off-stream storages and to dams. The Council has the view that, albeit with some possible exceptions identified below, the likelihood for an infrastructure development to adversely impact on ecological sustainability will be proportional to the magnitude of the development. Hence, in general, the effort jurisdictions place in their assessment of potential impacts of new water resource developments and the steps required to avoid or manage impacts would be proportional to the size of the proposed development.

The Council recognises the potential for some impacts to be disproportionately high relative to the scale of development. For example, a small weir may be enough to inhibit the movement of fauna along a river. In any case, irrespective of the magnitude of the scale of the infrastructure, where such fauna are considered to be rare, endangered, vulnerable or threatened the requirement to maintain biodiversity would necessitate due consideration being given to measures for ensuring the ongoing survival of the species. Further, the environmental impacts of individual minor development may be comparatively insignificant (farm dams, small capacity pumps) but the cumulative effect of many such impacts may have severe consequences for biodiversity or ecosystem processes.

The Council recognises that development does not come without environmental consequences. For example, building dams must drown natural features behind the dam wall and will create a non-flowing deep water environment where one previously did not exist. The questions that must be addressed are:

- how significant are these consequences of development for biodiversity and the maintenance of ecological processes?
- what is the process adopted by jurisdictions to assess this potential impact and its consequences? and
- what steps have been taken by jurisdictions to guarantee such consequences are managed to ensure ecological sustainability?

The Council will look for the processes used by jurisdictions to consider ecological sustainability to be independent, open and transparent, involve a wide ranging stakeholder consultation, and incorporate the best scientific advice. While potential impacts of water infrastructure development apply to both aquatic and terrestrial ecosystems, the issues associated with terrestrial consequences of developments will be considered in greater detail in the context of the catchment management requirements contained within the CoAG water reform framework.

Medium to large scale infrastructure developments

When States and Territories assess the ecological sustainability of medium to large scale infrastructure developments the Council will look to see that appropriate regulatory and policy structures and decision processes are in place. The Council will also look for evidence, where available, that these mechanisms are leading to outcomes consistent with CoAG commitments.

With regard to this scale of development approvals, the Council would seek assurances that the process used involves a level of independence and transparency among parties involved in the process. At the operational level this should equate to independence among government development

agencies, development proponents, individuals responsible for conducting impact assessments, and government agencies involved in making recommendations that lead to a decision to proceed or not to proceed with development.

Given jurisdictions are required to conduct an environmental impact assessment, environmental management plans or similar approaches the Council will assess; the assessment process, the decision process, and consequent implementation and subsequent monitoring to ensure ecological sustainability.

In particular, the Council will be looking for information on:

- **Assessment** including impact assessment studies, who does them, and what do they cover. The Council would expect information on the direct impacts during the construction phase, the indirect impacts arising from ongoing infrastructure operation, and the uses of the product the infrastructure has delivered. In considering the impacts of a project, the Council will look for consideration of impacts on individual species, ecological communities, ecosystem processes (instream and terrestrial), and on local communities. In short, the Council is looking for independent assessments that are comprehensive enough to have detected all likely impacts on biodiversity and ecosystems.

- **Decision process** – Where a decision is made to proceed with development following an impact assessment that indicates an environmental impact will occur, the Council seeks information on who has decided the level of impact is considered to be ecologically sustainable, and what considerations were taken into account in forming such a decision. The reasons for these decisions should be publicly available.

- **Implementation of a decision to proceed with development** – This will require a process for developing environmental management plans and guidelines which give details on what must be addressed and to what level. Plans should include assessment of the resources needed to meet the desired outcome as specified. There should also be a capacity to revise plans and operations of infrastructure in light of findings from monitoring studies to ensure ecological sustainability of the resource.

- **Monitoring of development impacts** – Time lags between the completion of development and some ecological responses to a project may mean that the total impacts of development do not emerge for many years. The Council is therefore interested in the commitment jurisdictions have made to ongoing monitoring to ensure it is comprehensive, scientifically robust, adequately funded, and contains

appropriate actions to redress situations where resource use becomes ecologically unsustainable.

Small to medium scale infrastructure developments

In relation to this level of development, the Council will look for assessment and decision processes that provide adequate flexibility whilst ensuring the consequences of small to medium scale infrastructure developments e.g., farm dams, bores and surface water pumps can be regulated. The Council would want information on the impact assessment and management of a project considered when the potential consequences of such a structure (individually or as a cumulative impact) are not ecologically sustainable. It is envisaged for this level of development that information would only need to be provided where necessary on a case-by-case basis.