



POEO (HRSTS) Regulation Review
Reform and Compliance Branch
Environment Protection Authority
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Dear Sir/Madam

Please find below my submission to the Review of the Protection of the Environment Operations (Hunter River Salinity Trading Scheme) Regulation 2002. My comments are limited to the state of economic analysis of this Salinity Trading Scheme.

Economic analysis of government policy has two key dimensions:

1. is government intervention warranted – i.e. do the benefits of any intervention exceed the costs?
2. if government intervention is warranted, what is the best form of such intervention?

There is no doubt that the Hunter River Salinity Trading Scheme (HRSTS) is a clever implementation of a “cap and trade” or permit trading scheme for managing pollution. This is a standard economics approach to pollution control. What is less clear, however, is whether or not any intervention is actually warranted to manage salinity in the Hunter and – if it is – whether the HRSTS is the best form of such intervention.

My conclusion is that there are serious defects in the economic analysis in the 2001 Regulatory Impact Statement for the Hunter River Salinity Trading Scheme, and therefore this analysis cannot be used to support the current review. Further, even if prior economic analysis had been adequate, there have been such substantial changes in the Australian and Hunter economies that previous economic analysis is irrelevant. Contemporary economic analysis is desirable to assess whether any current intervention to manage salinity in the Hunter River is justifiable and, if it is, whether the Hunter River Salinity Trading Scheme is the preferred intervention instrument.

Please note by way of background that, from late 2004 until my retirement in mid-2011, I was manager of the economics section in variously-named environment departments in the NSW public sector, including the Department of Environment and Conservation, and the Department of Environment, Climate Change and Water, both of which incorporated the Environment Protection Authority. However, I was not involved in the development and implementation of the Hunter River Salinity Trading Scheme, nor in the development of the current review of this Scheme.

I would be happy to personally discuss my submission with EPA staff if required.

Yours faithfully

[signed]

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and
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Introduction

The Discussion Paper for the current review of the Hunter River Salinity Trading Scheme states:

This review is not a review of the fundamental basis of the Scheme. This was considered at the time the Regulation was first developed and is outlined in the Regulatory Impact Statement (EPA 2001).

This review will start with the premise that the Scheme (as established by the Regulation) is the overall preferred mechanism for controlling saline water discharges in the Hunter River catchment and the focus will be on how the Regulation can be improved. (p.1)

and

As mentioned in Section 1.2, this review will not be considering whether the Scheme is the most cost-effective option for managing salt in the Hunter River, as this was considered at the time the Regulation was made (see Regulatory Impact Statement: EPA 2001). (p.13)

Objections to Failure to Undertake Comprehensive Review

There are at least four objections to the stance adopted in the Discussion Paper asserting that a comprehensive review is currently unnecessary because it "was considered at the time the Regulation was first developed and is outlined in the Regulatory Impact Statement".

1. Under the NSW Government's Guide to Better Regulation (p.22, emphasis added) (http://www.dpc.nsw.gov.au/__data/assets/pdf_file/0009/16848/01_Better_Regulation_eGuide_October_2009.pdf):

Most reviews should consider:

- whether the policy objectives of the regulatory scheme remain valid
- whether the terms of the regulatory scheme remain the most efficient way to achieve those objectives with the least impact, and
- whether the regulatory scheme is being implemented and enforced in the most efficient manner with the least administrative burden and cost impacts necessary.

Without testing the first two preceding dot points, it is not possible to be sure that the Hunter River Salinity Trading Scheme is (still) the best way to achieve the environmental objectives.

2. More importantly, there does not appear to have ever been a defensible economic analysis of the Salinity Trading Scheme. The above quotations from the Discussion Paper imply that an adequate analysis of the Salinity Trading Scheme was undertaken as part of the 2001 Regulatory Impact Statement. From an economic perspective however, as outlined below, an adequate analysis of the Scheme was not undertaken in the 2001 Regulatory Impact Statement. (Note further that some of the argument in support of the Salinity Trading Scheme depends on the BA (Hons) thesis of S.A.Y. Smith (1995) from the University of Newcastle which is not easily available.)

3. For entirely new regulatory proposals – like the Hunter River Salinity Trading Scheme in the 1990s – the benefits and costs of intervention are very difficult to predict "ex ante" – i.e. prior to the intervention.¹ It is important that, after the implementation of regulatory schemes, "ex post"

¹ e.g. R. David Simpson 2011 Do Regulators Overestimate the Costs of Regulation? NCEE Working Paper Series, Working Paper # 11-07, (National Center for Environmental Economics, U.S. Environmental Protection Agency), December, 2011
[http://yosemite.epa.gov/ee/epa/eed.nsf/ec2c5e0aaed27ec385256b330056025c/3d6285cbf1cda9fc8525796e005c6003/\\$FILE/2011-07.pdf](http://yosemite.epa.gov/ee/epa/eed.nsf/ec2c5e0aaed27ec385256b330056025c/3d6285cbf1cda9fc8525796e005c6003/$FILE/2011-07.pdf)

ChemSec (The International Chemical Secretariat), 2004. Cry wolf: predicted costs by industry in the face of new regulations, The International Chemical Secretariat, April, 2004.
http://www.chemsec.org/images/stories/publications/ChemSec_publications/Cry_wolf_report.pdf

[footnote continued next page]

assessments are undertaken to assess the validity of the assumptions used within the analysis, and to investigate the applicability and accuracy of the empirical data used. To the current author's knowledge, no detailed "ex post" economic analysis has ever been undertaken of the Hunter River Salinity Trading Scheme.

4. Even if an adequate analysis of the Scheme had previously been undertaken, since 2001 there have been dramatic changes in the physical and social geography, and economy, of the Hunter Valley; to the Australian mining sector generally; and to Australian macroeconomic conditions affecting mining. Further, technological change since the 1990s, and the enormous investment in civil engineering in the Hunter region, are likely to have substantially changed the costs of engineering solutions to salinity in the Hunter. In particular, the continued creation of massive voids through mining may provide sinks for saline water which are preferable to river discharge. Thus, the results of previous economic analyses have little if any relevance to the contemporary appropriateness of any intervention to manage salinity in the Hunter catchment or, in particular, the Hunter River Salinity Trading Scheme. A contemporary economic analysis is required to assess the contemporary relevance of the Scheme.

Economic analysis

(a) Introduction

Appropriate economic analysis of government intervention requires at least two steps:

- (i) that the benefits of any intervention at least exceed the costs of such intervention.
- (ii) that the preferred intervention has the largest net benefits of any preferred option.

The following information in the Discussion Paper suggests that it is unlikely that appropriate economic analysis of the Hunter River Salinity Trading Scheme was ever undertaken:

As mentioned above, the 900/600 $\mu\text{S}/\text{cm}$ salinity targets were set in consultation with stakeholders, and on the advice of irrigators, which was that they would not accept deterioration beyond those levels (EPA 2001). (p.7, emphasis added)

A proper economic assessment would not permit a stakeholder group to specify ex ante a pollution standard – this simply holds economic analysis hostage to the demands of a particular vested interest group. Proper economic assessment would seek to identify, on the basis of the benefits and costs of reducing pollution damage, the best pollution standard. And this pollution standard is not an invariant constant, but will change as the costs and benefits of pollution mitigation themselves change. So, for example, proper economic analysis would have investigated what would have been the costs and benefits of setting salinity targets above and below the levels of 900/600 $\mu\text{S}/\text{cm}$ demanded by irrigators. Similarly, proper contemporary economic analysis would examine the costs and benefits of other "cap" levels of salinity in the river.

For example, the limitation of salinity to 900 $\mu\text{S}/\text{cm}$ in all three sectors of the river under "flood flow" conditions to meet irrigator demands seems to be absurd prima facie. "Flood flow" conditions are likely to have been accompanied by general rain throughout the Hunter catchment, and irrigation is therefore highly unlikely to occur. Following a "flood flow" event, by the time irrigators again wish to extract water from the river, any water containing salinity levels above 900 $\mu\text{S}/\text{cm}$ is likely to have passed into the estuary. The salinity limitation under "flood flow" conditions would seem to

Ruttenberg, R. 2001, Why Do Regulatory Agencies Overestimate the Compliance Costs of Their Regulations? Ruth Ruttenberg and Associates, Inc, Prepared for Public Citizen Foundation, Inc. Washington, DC, December 2001.

Hodges, H., 1997, Falling Prices: Cost of Complying with Environmental Regulations Almost Always Less than Advertised, Economic Policy Institute, Briefing Paper, Washington, D.C.
<http://www.epi.org/page/-/old/briefingpapers/bp69.pdf>

Mason, Keith 1991 "Looking Ahead: The Environmental Impact" EPA Journal; Jan 1991; vol 17(1), 45-47.

require careful economic analysis. Further, the EPA's proposal to remove the "flood flow exemption" (Issue 6, pp.14-15 in the Discussion Paper) similarly demands careful economic analysis.

(b) Economic analysis in the 2001 Regulatory Impact Statement

The fundamental principle underlying cost-benefit analysis (CBA) in a Regulatory Impact Statement (RIS) is the proper specification of an appropriate "base case". The general rule in economics is to identify what would be the "state of the world" in the absence of the regulation being investigated, and to examine the benefits and costs of achieving a different "state of the world".

In the case of the Hunter River Salinity Trading Scheme, a reasonable "base case" would have been to consider the likely future state of salinity in the Hunter River without a Salinity Trading Scheme but with other likely pollution regulation relating to salinity control. What these "other" salinity control measures might have been is briefly outlined in the 2001 Regulatory Impact Statement for the Hunter River Salinity Trading Scheme (p.7).

However, the "base case" in the RIS for Hunter River Salinity Trading Scheme was defined in a very different – and quite unacceptable – manner. In Chapter 6 "Assessment" of that RIS it is specified that:

This chapter identifies the impacts of the proposed Regulation against the option of continuing the pilot Scheme framework and other options in some cases. The assessment is a mix of qualitative and quantitative analysis. Costs and benefits, where quantified, are given as the difference in costs and benefits that would occur under the proposed Regulation when compared with the "base case" that would occur if the pilot Scheme were to continue (Section 6.1). (p.26, emphasis added)

Defining the base case as "continuing the pilot Scheme framework" is an economic nonsense because it precludes an examination of the benefits and costs of establishing a Salinity Trading Scheme per se. Moreover, defining the base case as "continuing the pilot Scheme framework" assumes that the pilot Scheme would have continued in the absence of the HRSTS; this seems to be a policy nonsense.

Moreover, the actual base case also specified changes from the pilot Scheme – e.g. increase in credits allocated in the Upper and Middle Sectors – so that the costs and benefits of the proposal were incommensurate with any prior economic analysis of the pilot Scheme itself.

To put it most simply, the key question that needs to be answered about the Hunter River Salinity Trading Scheme is:

Do the benefits exceed the costs of capping salinity at 900/600 $\mu\text{S}/\text{cm}$ at various parts of the river and under different flow regimes?

Unless this question is directly addressed, it will never be known whether or not any intervention to manage salinity in the Hunter catchment is warranted – let alone the Hunter River Salinity Trading Scheme as a "preferred" measure.

Conclusions

For the reasons outlined above, failure to undertake a comprehensive economic analysis of the Hunter River Salinity Trading Scheme as part of the current Review is inconsistent with the NSW Government's Better Regulation Principles as outlined in the Guide to Better Regulation. Society can have no confidence either that it is economically appropriate to intervene to manage salinity in the Hunter River nor – if intervention is justifiable – that the Hunter River Salinity Trading Scheme is the preferred intervention instrument.