Independent review of Biodiversity Conservation Fund charge system to replace the NSW biodiversity offset payment calculator

Reviewer Comments

O'Connor NRM

February 2022

Abbreviations

BCF	Biodiversity Conservation Fund
BCT	Biodiversity Conservation Trust
BOPC	Biodiversity Offset Price Calculator
BOS	Biodiversity Offset Scheme
NSW	New South Wales
OTG	Offset Trading Group
PCT	Plant Community Type
TFD	Total Fund Deposit

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Summary Comments

The documents reviewed provide a sufficient technical basis for consideration of the proposed revised system for calculating a biodiversity credit charge.

The design and review processes for development of the econometric model and the cost-structure tool provide sufficient information to have confidence in implementation of the three-pronged approach to improving the charge system.

The commitment to, and design for, continuous improvement is appropriate given market participant feedback (e.g. O'Connor NRM, 2021), and necessary given data limitations for the cost-structure tool and the econometric model. However, both of these methods take a 'strengths-based' approach by building out from more data rich parts of the BOS implemented to date. This approach is most likely to assist the new system to improve to meet stakeholder satisfaction, however, communication of key issues and anticipated review points will be important.

A key finding from the landholder consultation (O'Connor NRM, 2021) was that rule changes, occluded information and uncertainty were both barriers to participation (in credit development) and influenced credit availability and prices. Sufficient communication to give confidence in participation during continuous improvement cycles will be needed.

Contents

The review method

The review was undertaken document review of the reports on the specific tools and products describing the process for the new charge system. This included the following documents

Document	Approach
Biodiversity Conservation Trust (2022) BCF Charge System: Methodology for implementing the Biodiversity Offset Payment Calculator Draft February 2022	Review of key issues
Marsden Jacob Associates (2022). BCT—Econometric Model Report, Biodiversity Offset Program,	Review of report and NCEconomics issues register for issues and responses
Opteon Solutions (2022). BCT Developer Charge System, Method and Estimated Land values of the IBRA Sub-Regions in the Sydney Hunter OTG Group	Review of report and NCEconomics issues register for issues and responses
NCEconomics (2022). Issues register.	Review of issues and responses
Biodiversity Offsets Payment Calculator Order DRAFT (2022) under the Biodiversity Conservation Act 2016	Context
BCF Charge System scenario testing	Review of outputs

Context was provided by reference to BCT project documents and the report on consultation with landholders with biodiversity stewardship agreements (O'Connor NRM, 2021), and the summary of the review of the BCF charge system offset calculated by NCEconomics (2022).

Interaction and feedback from the BCT during the development of the O'Connor (2021) report and on a preliminary draft of this report also clarified some issues.

The Issues Register NCEconomics (2022)

The Issues Register (NCEconomics, 2022) provides a thorough examination of the core components of the BCF charge system development.

The identification, classification and explanation of issues through review of core components of the scheme provides a detailed evaluation of the work and recommendations for further explanation and improvement. The ranking system for issues, combined with recommendation and response (from BCT and partners) provides a clear demonstration of review and improvement.

Of the 40 issues originally raised as needing 'consideration or action', all but one was down-rated after response from the BCT (and the remaining issue is actionable).

Where issues were of substance or overlapped with issues raised by this review, they are noted in the following sections reviewing other key documents.

BCF Charge System: Methodology for implementing the Biodiversity Offset Payment Calculator

The document describes the method for the BCF Charge System, which will constitute the biodiversity offset payment calculator (BOPC) under section 6.32 of the BC Act. It outlines the BCT's operational processes for applying the procedures and calculating the charge in line with the decision-making framework and principles, and transparency measures

The aim is for implementation of a system for calculating a biodiversity credit charge that reflects a reasonable estimate of the cost to the BCT of acquitting a credit obligation in a like-for-like manner, with a modest margin applied to account for risk. The like-for-like rules for native vegetation and threatened species result in a large number of offset trading groups (OTG) representing ecological and biogeographic similarity for the purposes of achieving ecological offsets where required. The charge system comprises a decision-making framework and four decision-support systems to establish a biodiversity credit charge:

1. an econometric model: to estimate the likely cost of satisfying a biodiversity offset obligation for ecosystem credits based on historical market trading data
2. a cost-structure tool for ecosystem credits
3. a cost-structure tool for species credits
4. market soundings

Table 1 provides specific comments on components of the report and the management of issues raised in the NCEconomics report and issues register

Econometric Model Report, Biodiversity Offset Program,

The Econometric Model Report, Biodiversity Offset Program (Marsden Jacob Associates, 2022) provides background and description of an econometric model designed to assist in establishing the biodiversity credit charge.

The model described is an appropriate model type for the purpose of the BCF charge calculation, however, forecasting with the model may be problematic given current data limitations and data capture in the program. Data confidentiality processes will be required to ensure confidence in the econometric model where it is operational in the face of the cost-structure calculation alternative.

NCEconomics (Issues Register) provides a thorough review of the model, its usefulness and limitations and BCT responses are appropriate for the stage of development and intended use of the model. Key issues for the model which are reported to be understood are limitations on the explanatory power of the models originally tested, particularly in regards important components of credit prices.

BCT Developer Charge System Method and Estimated Land values

The method described follows accepted approaches to land valuation, including land classification and modelling based on past sales data. The review from NCEconomics (2022) provides important feedback with appropriate responses from the BCT and Opteon Solutions.

The key issue for using the method and data are ensuring that estimations are made from contemporary data or adjusted for time, and that a contingency for land value is incorporated in the charge system (as per the charge system methodology reviewed in Table 1.) to ensure that the charge system sufficiently prices this major component of offset credit pricing; especially given potential time-lags in finding and extinguishing credits.

Table 1. Review comments on the Methodology for Implementing the Biodiversity Offset Payment Calculator. Where a note draws on review comments from the NCEconomics (2022) review it is noted as 'NCE issues'

Section		Reviewer Comments
3.0	**Cost-structure tool for ecosystem credits**	The report provides sufficient information on the technical basis for the charge system calculation; however, public-facing communication documents will be required to provide confidence in the changes and the continuous improvement process.
	Overview of the credit charge calculation	The predicted credit charge and component variables are comprehensive of considerations for determining the charge and accord with the information revealed about price construction by BSA holders (O'Connor NRM, 2021). The component variables appropriately include indices for variable components to ensure the charge price remains fit-for-purpose as costs vary. The approach to calculating a value for each variable is sound and relies on what has already been learned in implementation of the BOS, makes use of available data from established BAM and allows continuous improvement. Incorporation of risk indices to allow contingency to be built in is an appropriate way to manage the problem of developing a charge system given the information asymmetry between the BCF and landholders.
3.2	Mapping Offset Trading Groups	Communications materials for stakeholders need to explain how mapping is undertaken and data limitations overcome if OTG information is shared with potential BSA proponents. The process for updating or recalculating PCTs or BSA sizes based on improved or ground-truthed data needs to be transparent to maintain confidence for the BSA-proponent.
3.3	Estimating total fund deposit	Calculating average TFD values by OTG and geographic area (and BSA size) is appropriate given the drivers of management costs. Annual adjustments to incorporate new data and methodology changes are appropriate. It may be worthwhile setting control limits on movements in management costs to provide early warning for annual recalculations. The NCE issues register notes that NCE helped develop Monte-carlo analysis to consider TFD variation is incorporated in the risk margin approach. This should be made clear here.
3.4	Estimating land value of an OTG	The method is sound and appropriate for incorporation of land value.
3.5	Estimating credit value per hectare	The correlations are not strong and additional information may be needed to support the approach taken.
3.6	Estimating ecosystem credit yield	The approach is sound and deals sufficiently with the issues of data paucity by using continuous improvement.

Section		Reviewer Comments
4.0	**Cost structure tool for species credits**	
4.1	Assigning a charge	The approach is sound and allows calculation of costs based on the main factors of difficulty to obtain offsets and cost of offsetting. The use of available data and extrapolation is practical and the intent to continuous improvement is appropriate where data is scarce. Updating categories is appropriate.
5.0	**Econometric model for ecosystem credits**	
		The report summarises the proposed econometric model described in the Marsden Jacobs (2022) report. The auto regressive integrated moving average (ARIMA) time-series forecasting model is an appropriate choice for predicting a like-for-like charge for a limited number of OTGs for which there is sufficient data. It is not clear when there will be sufficient data to trial the model on other OTGs, however the report processes proposed offer continuous improvement and transition to charging based on market information.
6.0	**Market soundings**	
		Market soundings could be improved with more information from the demand side (noted in NCE issues)
7.0	**Decision-making framework**	
		The report identifies that the BCT will *generally* use the cost-structure tools to calculate a BCF charge unless the econometric model or market soundings are expected to produce a more reliable estimate. Clarifying rules under which a switch would be made between one method of calculation a charge, and another, may be necessary to provide confidence for BSA-proponents to generate and trade credits with confidence in the processes and pricing that underpins the charge system. This is dealt with in section 7 but could perhaps benefit from explanation through flow diagram or similar.

References

Biodiversity Conservation Trust (2022) BCF Charge System: Methodology for implementing the Biodiversity Offset Payment Calculator Draft February 2022

Marsden Jacob Associates (2022). BCT—Econometric Model Report, Biodiversity Offset Program,

O'Connor NRM (2021). Biodiversity Conservation Fund Charge System Consultation, Landholder Biodiversity Stewardship Agreement (BSA) Interviews

Opteon Solutions (2021). BCT Developer Charge System—Land Value Method –Central West LLS Region

Opteon Solutions (2022). BCT Developer Charge System, Method and Estimated Land values of the IBRA Sub-Regions in the Sydney Hunter OTG Group

NCEconomics (2022). Independent review of BCF charge system to replace the NSW biodiversity offset payment calculator.

Biodiversity Offsets Payment Calculator Order DRAFT (2022) under the Biodiversity Conservation Act 2016

BCF Charge System scenario testing. February 2022.