

11 August 2015

NES-PF Consultation Team
Ministry for Primary Industries
PO Box 2526
Wellington 6140

Dear Madam or Sir,

Re: Submission on National Environmental Standard for Plantation Forestry

Summary

NZBIO is the industry association for New Zealand's bioscience community. Our role is to help advance New Zealand's economic growth by assisting companies developing high value businesses from bioscience. NZBIO has no vested financial interests, or support from companies with vested financial interests, in commercialised genetically modified organisms (GMOs).

NZBIO agrees with the National Environmental Standard for Plantation Forestry proposal insofar as it relates to the treatment and regulation of genetically modified organisms. Under Section 6.4 of the NES-PF Consultation Document, it is correctly noted that use of genetically modified organisms are regulated by the Environmental Protection Agency (EPA) under the Hazardous Substances and New Organisms Act 1996. NZBIO agrees that the EPA is best placed to evaluate risks of genetically modified organisms (if any) and that approval and conditions imposed under the EPA regime will be sufficient to ensure any risks associated with the deployment of tree stock will be managed.

About NZBIO

NZBIO is the industry association for New Zealand's bioscience community. The aim of NZBIO is to advance New Zealand's economic growth by assisting companies developing high value businesses from bioscience. With over 60 corporate members and another 70 individuals, NZBIO has broad representation of the sector in the country from multi-national pharmaceutical companies to small start-ups.

As well as what might be considered 'core biotech companies' - those for which bioscience is the main activity and are focused on the production of bioscience products, we represent companies and organisations involved in primary production - such as forestry, farming and food production, industrial and environmental research and technologies, high tech manufacturing, alternative fuels, human therapeutics, diagnostics and devices, animal health products, and biologically-based clean tech companies.

Bioscience is obviously already a strong contributor to the New Zealand economy with core biosciences companies exporting \$0.5B in 2011¹ (the last year for which figures are available) and industries based on bioscience, such as the more advanced end of the food and agritech industries,

¹http://www.stats.govt.nz/browse_for_stats/industry_sectors/science_and_biotechnology/Bioscience_HOTP2_011.aspx

contributing substantially more. The bioscience sector also invests a significant amount in R&D; \$101m by private industry in 2012,² an investment that is aimed at increasing the productivity and export returns of the sector. If New Zealand is to reach the Government's goal of doubling exports in real terms by 2025 this investment by industry will need to be strengthened in what is very much a biobased economy.

Introduction

In a 2013 Ministry of Business Innovation and Employment (MBIE) report,³ the Agriculture, Forestry and Fishing sector was shown to account for 7.7% of GDP and \$5.0 billion pa or 8 % of exports and Food & Beverage Manufacturing, which is based on raw materials from the Agriculture Forestry and Fishing sector, was 4.5% of GDP at \$23.8 billion pa or 23.8% of exports. This makes Food and Beverage manufacturing the largest contributor to New Zealand's exports and Agriculture Forestry and Fishing the second largest exporter. The Wood and Paper sector is also a strong contributor to New Zealand exports at \$2.6 billion pa and 4% of the total.

While New Zealand has a strong reliance on these primary industries, it is also important that New Zealand seeks to enlarge and diversify its economy by building the country's manufacturing sector. Micro-organisms, and the enzymes derived from them, play an important and increasing role in adding value to primary industries such as agriculture and forestry as well as manufacturing processes. This is particularly the case as the global economy seeks low energy, low waste processing technologies and seeks to replace petrochemical derived feedstocks with renewables from biomass.⁴ Innovation in this area requires the discovery, importation or development by GM technologies of new micro-organisms. All of which are covered by the Hazardous Substances and New Organisms Act 1996 and despite a range of natural advantages in the area, New Zealand has made relatively little progress on a modern manufacturing industry based on biomass and low energy processing.

Forestry has been one of the core active areas for the application of GM technologies in New Zealand. There is considerable scope for increasing the value of New Zealand's log output by altering the wood quality. New Zealand forestry is based on *Pinus radiata* which grows relatively quickly, even on poor soils, but produces wood of relatively low quality.

The Crown Research Institute SCION has undertaken an economic analysis of the potential value of GM trees in New Zealand. In a 2004 ERMA application SCION looked at improving tree qualities using GM techniques to:

- Increase growth rates
- Improve density
- Provide more consistency for lumber

²Research and Development in New Zealand: 2012' Statistics New Zealand, 15 August 2013, http://www.stats.govt.nz/browse_for_stats/businesses/research_and_development/research-development-in-NZ-2012.aspx

³ The New Zealand Sectors Report 2014, Main Report, MBIE, 2014 <http://www.mbie.govt.nz/what-we-do/business-growth-agenda/sectors-reports-series/pdf-document-library/nz-sectors-report.pdf>

⁴ Opportunities for a Fermentation-based Chemical Industry, Deloitte, September 2014, <https://www.rabobank.com/nl/images/deloitte-fermentation-study.pdf>

- Improve biofuel/pulping efficiency

SCION estimated this would add \$530 million pa to the New Zealand economy by 2030 and this estimate was reiterated in a subsequent application in 2010.⁵

The ability to alter wood, by lowering lignin content is particularly important if wood based biofuels are to become economic. It could also have a dramatic effect on paper production with GM reduction of lignin estimated to improve pulping cost by \$US15/tonne. In 2013 New Zealand produced 1.4 million tonnes of wood pulp so this would represent a saving of \$US21 million. In 2011 the Green Growth Advisory Council predicted there was potential for \$NZ400 million pa from biochemicals from wood by 2020.⁶

ArborGen, which was cited by SCION as a commercialisation partner in its 2010 application to ERMA for a field trial of GM *Pinus radiata*, is working to commercialise a range of GM trees modified to use less water and nitrogen in the US and South America.⁷

GM technologies also offer considerable potential to improve disease resistance in forestry. GM technology is already being used make the American Chestnut resistant to chestnut blight⁸ and bananas resistant to fungal disease.⁹ In both cases the technology was essential because of a lack of sufficiently related species or difficulties in using traditional breeding.

Existing regulatory systems

NZBIO notes several local councils have taken steps to invoke provisions in the Resource Management Act 1991 to further regulate the regional use of GM technologies and we consider this both an unreasonable financial burden and an unnecessary replication of existing regulatory systems. NZBIO agrees with the position provided by the Minister for the Environment at the Hastings District Plan Hearings Committee Meeting 27 May 2015 (Section 29.1 Hazardous Substances and GMO) including:¹⁰

National-Level Decision Making

- It is not appropriate for councils to use the Resource Management Act 1991 (RMA) for the purpose of controlling GMOs. Decisions about the testing and release of GMO's are best made at the national level, by the Environmental Protection

⁵ EPA Database <http://www.epa.govt.nz/search-databases/Pages/applications-details.aspx?appID=ERMA200479>

⁶ Greening New Zealand's Growth: Report of the Green Growth Advisory Group <http://www.med.govt.nz/sectors-industries/environment/pdf-docs-library/Greening%20New%20Zealands%20Growth.pdf>

⁷ ArborGen Press Release, October 2014 <http://www.arborgen.us/arcadia-biosciences-and-arborgen-to-develop-drought-tolerant-and-nitrogen-efficient-eucalyptus-trees/>

⁸ A New Generation of American Chestnut Trees May Redefine America's Forests Scientific American, March 2014 <http://www.scientificamerican.com/article/chestnut-forest-a-new-generation-of-american-chestnut-trees-may-define-americas-forests/>

⁹ <http://phys.org/news/2011-02-genetically-key-banana-industry.html>

¹⁰ Submission of the Minister of the Environment to Hastings District Council Proposed District Plan – Section 29.1 (Attachment 16, Item 2, page 299-302) https://www.hastingsdc.govt.nz/files/agendas/District%20Plan%20Hearings%20Committee/2015-05-27/Attachment%20District%20Plan%20Hearing%20270515%20Sec%2029.1%20Harzardous%20Substances%20GMO_Part3.pdf

Authority (EPA), using the clear and robust process for decision making, as set out in the Hazardous Substances and New Organisms Act 1996 (HSNO).

- The EPA is expert in environmental risk assessment. Approvals for GMO activity can have conditions attached to protect the environment from adverse effects.
- The cost of a HSNO approval from the EPA can be up to \$40,000. The additional cost of preparing the application can be much greater than this figure. An applicant who is not in a financial position to meet these costs is not granted approval.

Monitoring

- The EPA may impose controls on an approval to require monitoring, auditing, reporting and record keeping. The costs of this fall on the applicant.

Public input into HSNO decision making

- HSNO has clear processes for public, including public authority, input into decision making. This allows community concerns to be fully considered by the EPA.

Technical expertise

- The EPA has the necessary risk assessment, legal, policy and scientific expertise required to consider GMO applications.

Duplication of regulation and compliance costs

- The proposed objective and policies [council regulation of GMO] would create unnecessary duplication with HSNO. They will also impose additional compliance costs on applicants.

Your proposal under Section 6.4 of the NES-PF Consultation Document avoids unreasonable compliance costs and duplication while maintaining a stringent regulatory framework. NZBIO fully supports your proposal insofar as it relates to the treatment and regulation of genetically modified organisms.

NZBIO would be pleased to present this submission in person and no part of this submission needs to be withheld under the Official Information Act 1982.

Yours sincerely,



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