PROVINCIAL DEVELOPMENT UNIT

BRIEFING

August Waste Update

Date:	11 September 2019	**Priority:**	Medium
Security classification:	In Confidence	**Tracking number:**	0723 19-20

Action sought		
	Action sought	**Deadline**
Hon Grant Robertson **Minister of Finance**	**Note** the contents of this briefing **Agree** to refer this briefing to the Associate Minister for the Environment	11 September 2019
Hon Phil Twyford **Minister of Transport** **Minister for Economic Development**	**Note** the contents of this briefing **Agree** to refer this briefing to the Associate Minister for the Environment	11 September 2019
Hon David Parker **Minister for Trade and Export**	**Note** the contents of this briefing **Agree** to refer this briefing to the Associate Minister for the Environment	11 September 2019
Hon Shane Jones **Minister for Regional Economic Development**	**Note** the contents of this briefing **Agree** to refer this briefing to the Associate Minister for the Environment	11 September 2019
Fletcher Tabuteau **Parliamentary Under-Secretary to the Minister for Regional Economic Development**	**Note** the contents of this briefing	11 September 2019

Contact for telephone discussion (if required)				
Name	**Position**	**Telephone**		**1st contact**
David van der Zouwe	Head of Investment Management	Privacy of natural persons	Privacy of natural persons	✓

PROVINCIAL DEVELOPMENT UNIT

Eleanor Green	Policy Advisor	Privacy of natural persons		

The following departments/agencies have been consulted
Ministry for the Environment

Minister's office to complete:

☐ Approved ☐ Declined

☐ Noted ☐ Needs change

☐ Seen ☐ Overtaken by Events

☐ See Minister's Notes ☐ Withdrawn

Comments

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Purpose

This briefing provides you with an update on the work stream to identify projects to be funded through the $40 million waste allocation.

Executive summary

Through Budget 2019, $40 million of Provincial Growth Fund (PGF) funding was allocated towards commercial waste minimisation projects, with a focus on projects which reduce plastic waste to landfill by turning plastic waste in to valuable commodities. Since the announcement the Provincial Development Unit (PDU) and the Ministry for the Environment (MfE) have been working with applicants to test their commercial viability, and alignment with PGF criteria and the objectives of the waste allocation.

Through this work, the PDU has identified that investing in 1-2 major plants that provide substantial closed loop recycling facilities for fully recyclable plastics, as well as several smaller projects which convert non–recyclable waste plastic and other materials in to other valuable products, could be an appropriate use of the $40 million waste allocation.

There are seven types of plastic in New Zealand. The type of plastic and its value as a commodity affects the ability of that plastic at the end of its life to be recycled back into what it was originally, or recycled in to a different product. It also affects its value on the international market. Officials consider that where the PGF can make the most difference to plastic waste in New Zealand, is targeting projects which process plastics that have very low value on the international market, or that cannot currently be processed on-shore. This has the potential to create jobs and reduce plastic waste going to off-shore or to landfill.

Officials are currently working on three closed-loop plastic recycling projects, three waste-to-energy projects and several projects which turn plastic or other waste materials in to commercial products.

PROVINCIAL DEVELOPMENT UNIT

Recommended action

The Ministry of Business, Innovation and Employment recommends that you:

a **Note** the contents of this briefing

Noted

b **Agree** to refer this briefing to the Associate Minister for the Environment

Agree / Disagree

Robert Pigou
Head of the Provincial Development Unit
MBIE

..... / ..... / .....

Hon Grant Robertson
Minister of Finance

..... / ..... / .....

Hon Phil Twyford
Minister of Transport
Minister for Economic Development

..... / ..... / .....

Hon David Parker
Minister for Trade and Export

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Hon Shane Jones
Minister for Regional Economic Development

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Background

1. Through Budget 2019, $40 million of Provincial Growth Fund (PGF) funding was allocated towards commercial waste minimisation projects, with a focus on projects which reduce plastic waste to landfill by turning plastic waste in to valuable commodities. Ministers identified plastic waste as a concern after the China National Sword policy which saw China close import markets for the majority of recyclables, particularly plastic waste. While several markets, for example Indonesia and Malaysia, still accept mixed plastic waste, these markets are at risk of closing down.

2. Additionally, an amendment to the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal, that will restrict shipments of difficult-to-recycle plastic waste to developing countries without their informed consent of the material being imported, has been signed by 187 countries including New Zealand in May 2019. This has meant that many plastic types are at risk of being unable to be exported, leaving recycling centres in New Zealand with plastic waste which would be at risk of being sent to landfill if a solution is not found.

3. This allocation was announced in July 2019 and sought applications by 30 September 2019. This led to an influx of correspondence, expressions of interest and applications for funding for waste projects. The PDU have been working through these projects with applicants and MfE, to test their commercial viability, and alignment with PGF criteria and the objectives of the waste allocation.

4. A process was greed by Minister Jones and Minister Sage for joint consideration of these projects by PDU and MfE officials. Officials have engaged with a number of applicants and potential applicants as well as councils and other waste sector stakeholders. Through this engagement we have built an understanding of the waste ecosystem and options to best address the objectives of the $40 million allocation.

5. We consider investing in that 1-2 major plants that provide substantial closed-loop recycling facilities for fully recyclable plastics, as well as several smaller projects which convert waste plastic which is non recyclable in New Zealand, and other materials into other valuable products, could be an appropriate use of the $40 million waste allocation. The types of waste plastic and their recycling potential are discussed below.

Plastics types and recycling

6. There are seven categories of plastic in New Zealand. The type of plastic and its value as a commodity (and therefore whether it is collected and separated) affects the ability of that plastic to be recycled back into what it was originally at the end of its life, or recycled in to a different product. See **Annex One** for a detailed list of plastic types.

7. A key objective of the $40 million waste allocation is to develop and invest in projects which address the bales of plastic which are currently not being recycled on-shore in New Zealand.

8. When China implemented its National Sword policy, it ended all imports of low quality, or contaminated plastic waste to China. Some high quality plastics are still accepted, and those such as Types 1 and 2 plastics, are fully recyclable and in demand globally.

9. Type 1, PET, is a valuable form of plastic. PET makes up the majority of all plastic bottles and some food containers as well as many other products. Currently PET, from New Zealand kerbside collection, is recycled at Flight Plastics in Lower Hutt, which is struggling to source enough feedstock to service its needs. A limited volume is shipped off-shore to Australia and Asia, where it fetches a good market price.

10. Type 2, HDPE, is also valuable. HDPE makes milk bottles, ice bream tubs, buckets and shampoo bottles as well as many other products. Currently there is limited processing for HDPE in New Zealand, and no closed-loop recycling. The majority of HPDE is currently exported to markets overseas for recycling.

11. New Zealand currently has no onshore capability for processing HDPE, despite the fact that it is at least a quarter of our plastic imports yearly, while PET is only seven percent.[1] Flight Plastics have approached the PDU to discuss working on a proposal to build a plant in the regions to process HDPE (discussed below).

Bales of plastic currently unable to be recycled on-shore

12. Plastic types 3, 4, 6 and 7 have less capacity to be fully recycled commercially. Type 5 can be recycled but currently is not separated from 'mixed plastic' waste in New Zealand like type 1 and 2 are. These are lower quality plastics (such as soft plastic packaging) that cannot be exported following China's National Sword Policy. This is the kind of plastic which is at risk of going to landfill if global mixed plastic prices continue to remain very low, or the markets close altogether.

13. While low value mixed plastics have low commodity values, the plastic can be converted into another kind of product, such as a building aggregate, depolymerised to make oil, or turned into fence posts (in essence, 'down-cycled'). Investment in projects which utilise this technology are smaller scale, and so could be designed to best benefit the region they are located in.

14. These are the kinds of investments which could have a significant impact of preventing plastic going to landfill, within the current regulatory system. These projects could lead to increasing recycling rates (e.g. bringing back soft plastic recycling schemes which have ceased following the crash in global mixed plastic prices following China's National Sword policy) and preventing plastic from ending up in waterways. However the government has committed to a programme of work to revamp New Zealand's resource recovery system. Part of this work includes looking at how New Zealand can shift away from lower value plastics and support a move toward a circular economy meaning that over time these types of plastics (3-7) may be phased out.

15. Based on this information, officials consider the best approach to allocating the $40 million is to aim to invest in 1-2 major plants that provide substantial closed loop recycling facilities for fully recyclable plastics, as well as several plants which convert non–recyclable waste plastic and other materials in to other valuable products. This is with the understanding that difficult to recycle waste feedstock may be significantly reduced by regulatory controls and market trends in the future, and so there are risks to the sustainability of these enterprises.

16. Officials are currently working on three major closed-loop plastic recycling projects, three waste to energy projects and several projects which turn plastic or other waste materials in to commercial products such as roading aggregate. These projects are discussed below.

Top priority projects

17. In June 2019, Regional Economic Development (RED) delegated Ministers where presented with the existing pipeline of waste projects, initial priorities for assessment based on their location, the waste stream they address and the maturity of the project in the Commercial Inform Commercial Information). The projects identified were:

[1] 'Rethinking Plastics' *Draft report of the Prime Minister's Chief Science Advisor* pp.26 https://www.pmcsa.ac.nz/our-projects/plastics/

- Commercial Information - declined project
- Commercial Information
- Commercial Information
- Commercial Information

18. Other waste projects that could make up part of the waste allocation have also been identified, and the PDU and MfE have been working to develop promising proposals. An update on these projects follows.

Commercial Information - declined project

Prejudice to Negotiations

Prejudice to Negotiations

Prejudice to Negotiations

Emerging investment opportunities

34. The following projects have emerged as aligning with the objectives of the allocation.

Prejudice to Negotiations

Prejudice to Negotiations

Commercial Information

Optical sorters for regional Materials Recovery Facilities

38. Materials Recovery Facilities (MRFs) are sorting centres usually owned by councils where material collected through recycling initiatives is sorted and then baled for sale. The MRFs in Auckland and Christchurch are equipped with optical sorters, a machine that can sort fibre, glass and plastic from each other, plastic into its various types, and glass into different colours. This allows for better sorting and higher recovery of valuable materials, leading to higher bale prices when sending recyclables off-shore, and creating a higher quality product for recyclers after sorting.

39. MfE have noted that the low quality of regional recycling sorting impacts on recyclers such as Flight Plastics, who get lower quality and often contaminated feedstock. This can result in material being destroyed or sent to landfill rather than recycled if its of poor quality or has too many different types of plastic mixed in the bales. Without machine sorting, recyclables are normally sorted by hand, leading to higher health and safety risks for employees.

40. An option for the PGF could be to invest in a number of optical sorting machines for regional MRFs, to increase the value of baled materials, reduce recyclable material going to landfill, and incentivise recycling of material as it is of higher quality for producers. The cost of these sorters is roughly estimated to be around $Commercial Informatio each.

Tyre waste projects

41. During the original drafting of the waste position paper, MfE advised that the PGF should not invest in waste tyre projects as there had already been significant Waste Minimisation Fund (WMF) investment in waste tyre projects that would be coming online in 2020 (Commercial Information Commercial Informatio). Due to the scale of this investment and the demand it will create, it was unclear how much the project would impact the tyre waste stream, particularly in the upper north island.

42. This advice, combined with the low quality of many of the waste tyre proposals, meant that PDU adopted the position of declining to fund waste tyre proposals, and recommending applicants instead apply to the WMF.

43. Recently, with the allocation of $40 million of the PGF for waste investments, the PGF has received an influx of applications and expressions of interest for waste projects, some of which included small, community centred tyre projects. These projects may have merit and the ability to create jobs and increase productivity in the regions, without impacting on Commercial Information .

44. The primary concern with these projects for the PDU is the PGF objective of additionality, and ensuring that these projects do not duplicate WMF investments. If there is duplication, investment could compromise the success of either PGF or WMF projects, as they compete for the waste stream or market share of the finished product. MfE have indicated that they would support PGF investment in tyres, so long as there is a point of difference to the projects they have already funded, such as a different kind of tyre feedstock to be processed. e.g. truck and tractor tyres

45. If the PGF were to change its stance on investment in tyre projects, it may be necessary in terms of fairness to contact previously declined tyre project applicants and let them know that due to the policy change they are welcome to resubmit their application for consideration under the $40 million waste allocation.

Next steps

46. Officials will continue to work through waste projects with applicants, aiming to have initial projects ready for decisions in the October RED Ministers decision round.

Annexes

47. Annex One: Plastic Types

Annex One: Plastic Consumer Packaging Types

- Type One: Polyethylene Terephthalate (PETE or PET). High value and still in demand globally. New Zealand has on-shore processing which expanding as market demand for recycled PET grows and recycling rates increase.
- Type Two: High-Density Polyethylene (HDPE). High value and still in demand globally. No on-shore processing. HDPE makes up a quarter of New Zealand's plastic consumption, and so considerable opportunity to develop an on-shore recycling plant.
- Type Three: Polyvinyl Chloride (PVC). Can be exported in mixed bale, but will be unable to be exported under the Basel Convention without prior informed consent. PVC has low recycling or reuse ability. Many waste processors can't use PVC when processing mixed waste plastic.
- Type Four: Low-Density Polyethylene (LDPE). Can be exported in mixed bale, but will be unable to be exported under the Basel Convention without prior informed consent. Can't be recycled back in to itself but can be depolymised and good for making composite products.
- Type Five: Polypropylene (PP). Currently exported in mixed bale, but able to be traded internationally as pure type 5 plastic. Able to be fully recycled, but currently has no on-shore processing and is not separated from mixed bale plastics.
- Type Six: Polystyrene or Styrofoam (PS). Can be exported in mixed bale, but will be unable to be exported under the Basel Convention without prior informed consent. Cannot be recycled back in to itself. A small amount of PS can be used in making composite products, but it has limited end of life use.
- Type Seven: Miscellaneous plastics (includes: polycarbonate, polylactide, acrylic, acrylonitrile butadiene, styrene, fiberglass, and nylon). Can be exported in mixed bale, but will be unable to be exported under the Basel Convention without prior informed consent. This type encompasses every other form of plastic and so is highly problematic. Some forms, such as nylon, have high recyclable ability, while others have none.