

**In Confidence**

Office of the Minister of Housing

Cabinet

**Kāinga Ora – Homes and Communities’ proposed offsite manufacturing (OSM) supply programme**

**Proposal**

- 1 This paper seeks to inform Cabinet on Kāinga Ora Homes and Communities’ proposed offsite manufacturing (OSM) supply programme.

**Relation to government priorities**

- 2 Kāinga Ora has been set a target of constructing a net 4700 additional transitional and public houses by June 2022. This is driven by the Government’s policies to increase the supply of warm, dry houses across New Zealand for those most in need.
- 3 The proposal in this paper will help the Government achieve the additional transitional houses by June 2022 and, in exceptional circumstances, deliver public housing.

**Executive Summary**

- 4 Kāinga Ora has identified an opportunity to diversify existing construction methods to deliver on targets for transitional housing by June 2022, they are proposing the pre-purchase of up to 1,000 OSM units from New Zealand-based companies. In exceptional circumstances some units may be utilised for public housing however this will be strictly limited given the primary focus on the Government’s transitional housing targets.
- 5 Kāinga Ora is in the early stages of scaling up its use of OSM to complement traditional builds in its developments. It has used a number of different OSM solutions in both state and market homes over the past three years, which has provided valuable information on the benefits of OSM and how its use may be scaled up. Currently, about 15 percent of its builds in design or construction utilise OSM technologies.
- 6 The proposed OSM supply programme relies on a combination of supply from local and offshore manufacturers to meet delivery targets for June 2022. This is part of a step-change that is necessary for Kāinga Ora to increase delivery of new housing supply at scale and pace.
- 7 New Zealand’s current OSM sector is limited in terms of houses it can supply, and it will take time for it to increase capacity. It is my expectation that Kāinga Ora will prioritise working with local suppliers and manufacturers, decreasing reliance on offshore manufacturing as domestic capacity increases.
- 8 As Kāinga Ora scales its OSM supply programme, it will provide certainty of demand to the domestic OSM supply market. This will enable domestic production capacity to

increase in the medium to long term, enabling OSM technologies be adopted more widely.

- 9 Once this proposal is underway, Kāinga Ora will supply me with weekly reporting, this will include key achievements and updates on the programme, as well as information on the use of domestic versus offshore manufacturing.

## Background

- 10 Throughout New Zealand, there is demand for housing, with significant pressures on emergency and transitional housing. Increasing supply of new build housing is critical for ensuring people most in need have access to warm, dry, quality homes.
- 11 Kāinga Ora is working at pace to deliver on its housing targets of 4700 additional transitional and public houses by June 2022. It has made progress through growing its internal capabilities and its supplier arrangements over the past four years. However, increasing demand in national construction activity, coupled with increasing demand for land, has significantly shifted the residential construction environment.
- 12 This increased demand is being exacerbated by a constrained New Zealand construction sector, which is facing price increases, supplies and material shortages, and workforce shortages. The supply chain challenges experienced by the sector reflect global demand and the manufacturing challenges impacted by COVID-19, as well as the global freight constraints across all sectors.
- 13 Kāinga Ora recognises that there is both an opportunity and a need to adopt different approaches to building more homes at a faster rate. In particular, it is difficult to secure builders for smaller sized homes outside metropolitan areas, so Kāinga Ora has considered more innovative build methods for one to two bedroom homes, including off-site manufacturing.

## OSM enables Kāinga Ora to deliver additional transitional housing supply at pace

- 14 This Government has taken a longer-term view of housing need, providing funding to enable delivery of more new build transitional housing. OSM products are an effective way to increase supply and support the delivery of targets, while providing a range of benefits and opening up new opportunities and ways of working.
- 15 Kāinga Ora has an important role to play in promoting the use of OSM. It has been working alongside the New Zealand OSM sector for several years, but is still in the early stages of scaling up its use to compliment traditional builds.
- 16 Kāinga Ora has piloted a variety of OSM methods and identified some significant opportunities for the construction industry. Those opportunities include:
- 16.1 increasing the speed of delivery
  - 16.2 opening up new land opportunities
  - 16.3 cost efficiencies
  - 16.4 enabling sector innovation in New Zealand

- 16.5 increasing flexibility in supply lines.
- 17 By pre-purchasing OSM modular units, Kāinga Ora can accelerate the speed of delivery, compared to traditional build methodologies. As units must be contracted ahead of time, this enables aspects of the build process to be run in parallel, such as securing land and consenting.
- 18 While OSM modular units are designed to provide high quality, permanent housing solutions that have a 50-year plus lifespan, they are also more easily transported than traditional builds. It is not Kāinga Ora's intention to relocate units as a matter of practice, but this flexibility supports Kāinga Ora to unlock new land opportunities that were previously unfeasible, such as shorter term leases. It also provides opportunities for Kāinga Ora to partner with Māori in new and different ways.
- 19 Analysis by Kāinga Ora indicates procuring housing through OSM is, initially, at least cost competitive with traditional building methodologies and cost efficiencies are expected to be gained over time. This analysis is based on a like-for-like comparison between the two methodologies.
- 20 Use of OSM by Kāinga Ora supports the continued building of long-term relationships with local suppliers and streamlining of processes to better enable OSM integration across the sector. This will facilitate a much greater proportion of OSM delivery in the future.
- 21 Delivering housing through OSM expands overall market capacity, which is particularly significant now, while it is stressed by a large private build programme, intense competition for labour from overseas, and constrained product and materials supply chains. Kāinga Ora can test at scale new OSM supply lines and make those supply lines available for community housing providers and other market participants.

**Kāinga Ora has proposed increasing its use of OSM to meet demand for transitional housing**

- 22 Kāinga Ora has identified an opportunity to diversify existing construction methods by pre-purchasing up to 1,000 OSM units from New Zealand-based companies, with domestic and off-shore manufacturing facilities. These units will be volumetric modular in nature (complete, contained, weather tight units) to maximise time to build before land availability and access is complete.
- 23 Units would be prioritised for transitional housing to help satisfy the Government's priority for new build, sustainable transitional housing. Traditionally, transitional housing has been delivered through purchasing developments from developers that are pre-consented with build partners already identified. Creating additional transitional housing through utilising OSM provides an opportunity to add more homes quickly to New Zealand's total stock.
- 24 The use of OSM units through this proposal will also help deliver public housing in exceptional circumstances. The utilisation of OSM units for public housing will be limited to no more than 10% of overseas OSM procurement. This ensures the proposal remains focused on the delivery of transitional housing. The scope of OSM utilisation may expand in future as the local manufacturing capacity grows,

particularly as the Government continues to build momentum on its significant public housing build programme.

- 25 Module suppliers will complete a pre-qual review through Consentium (Kāinga Ora's Building Consent Authority) before manufacture starts. Where possible Kāinga Ora will be working with suppliers to develop prototype homes ahead of full manufacture. The prototype process will allow for the QA, testing and inspection process to be trialled ahead of full manufacture.
- 26 All OSM units would be designed to current New Zealand quality standards, including Homestar 6 and Healthy Homes specifications and will be reviewed by Kāinga Ora quality assurance teams to ensure these meet the high build and performance standards expected for their new homes.
- 27 Funding to acquire OSM units at this scale is available within existing Kāinga Ora budgets. A series of contracts with providers would be established, as agreed by the Kāinga Ora Board. This would see Kāinga Ora use its spending power differently to fulfil its mandate and support change across the sector.
- 28 Securing sufficient land represents a significant logistical challenge that Kāinga Ora faces. An inability to acquire sufficient land in time could result in Kāinga Ora storing pre-purchased units in New Zealand or overseas. This does carry reputational risk if units are held in storage and unavailable to those who need them most. Storage may carry additional cost, but this can be met within contingencies.
- 29 Kāinga Ora is actively working to meet that challenge, with a co-ordinated nationwide campaign being run to secure land - until recently Kāinga Ora has not purchased land outside major metropolitan centres at this scale. Regionally based teams are building key relationships and networks to support this process.
- 30 This proposal has been endorsed by the Kāinga Ora Board for Ministerial and Cabinet consultation.

**Kāinga Ora has engaged with New Zealand OSM Suppliers as a part of this proposal**

- 31 The proposal for Kāinga Ora to increase its use of OSM is consistent with its strategic priorities and my expectations for it to explore innovative delivery models that support growth in the capability and scale of the wider urban development and construction sectors.
- 32 It is my expectation that Kāinga Ora will purchase all suitable and available production capacity from the New Zealand market. For this Programme, Kāinga Ora has assessed suppliers against two primary criteria:
  - 32.1 suppliers who have delivered volumetric OSM solutions to Kāinga Ora before, as pre-qualification to its standards is already complete; and,
  - 32.2 suppliers' factory capacity in the next 12 months, given the skills and supply constrained market.
- 33 Kāinga Ora is actively engaging with 12 New Zealand based OSM providers that are either on their OSM panel or suppliers it has had prior contracts with, and has

contacted 17 New Zealand based suppliers to assess their future suitability and capacity. Suppliers who sit outside the primary criteria are being engaged as part of Kāinga Ora's medium and long term OSM Strategy.

34 An assessment of the domestic market identified that suitably qualified local manufacturers who deliver volumetric OSM solutions only hold available capacity of 100-200 OSM homes by June 2022.

**The majority of pre-purchased OSM units will be manufactured offshore**

35 As New Zealand currently lacks manufacturing capacity to meet all the demand, Kāinga Ora intends to:

- continue accelerating delivery through business-as-usual methods, including using OSM on a site-by-site basis (currently 15% of Kāinga Ora's construction pipeline);
- deliver an additional 100-250 units manufactured in New Zealand, including pre-purchasing where necessary; and,
- deliver an additional 750-900 pre-purchased OSM units from New Zealand companies who manufacture their products offshore

36 While Kāinga Ora will work to optimise all residual local manufacturing capacity, the current level of demand requires the majority of the 1,000 pre-purchased OSM units to be manufactured offshore. These units would comprise one and two bedroom homes, which reflect approximately 70% of total delivery requirements for June 2022 - domestic manufactured units will be targeted at larger family homes.

37 Suppliers with domestic and offshore manufacturing of OSM are assessed against the same criteria, as noted in para. 30. In addition, for offshore manufacturers, Kāinga Ora would seek assurance that prospective suppliers have proven experience meeting New Zealand quality standards and consenting requirements, as well as verified ethical practices in place throughout their supply chain.

38 s 9(2)(j) [redacted]  
[redacted]  
[redacted]  
[redacted]

39 s 9(2)(j) [redacted]  
[redacted]  
[redacted]

40 Kāinga Ora is implementing a quality assurance process that includes the review and inspection of modules manufactured overseas through 3rd party inspections. s 9(2)(j) [redacted] had independent ethical audits completed by Sedex, a major international auditor specialising in supply chain and ethical auditing.

**Kāinga Ora is expected to decrease reliance on offshore OSM manufacturing**

41 New Zealand's current OSM sector is limited in terms of houses it can supply, and it will take time for it to increase capacity. It is my expectation that Kāinga Ora will

prioritise working with local suppliers and manufacturers, decreasing reliance on offshore manufacturing as domestic capacity increases.

- 42 In July, Kāinga Ora will be communicating with domestic suppliers about its intent to increase its use of OSM through a future-focussed OSM plan and working with PrefabNZ to partner closely with the leaders in the OSM industry.
- 43 As Kāinga Ora scales its OSM supply programme, it will provide certainty of demand to the domestic OSM supply market. This will enable domestic production capacity to increase in the medium to long term, enabling OSM technologies be adopted more widely.
- 44 In addition, the experience gained by the NZ construction firms involved in assembling those homes on site will be invaluable for the local market as it grows its manufacturing capacity.
- 45 More broadly, this Government is committed to building domestic OSM capacity. For example, the Provincial Growth Fund has invested \$600,000 in Hector Egger New Zealand, a company based in Cromwell. This is supporting the company to manufacture high-tech prefabricated timber buildings for residential and commercial use, with manufacturing having commenced earlier this year.

### Implementation

- 46 Kāinga Ora is currently working with suppliers in the design and consenting phase, with initial contracts to be agreed in July 2021. The first batch is expected to be manufactured from September 2021, with manufacturing and shipping of modules taking approximately five months to arrive in New Zealand in February 2022, with homes ready for occupation in the first half of 2022.
- 47 This proposal presents complex logistical cargo challenges in the current environment. Kāinga Ora has dedicated internal resources and engaged external industry advisors (Maifreight) to consider available options, provide advice and resolve issues that will arise as this programme of work is implemented.
- 48 Once manufactured, modules will be stored in the country of manufacture to aggregate optimal shipping loads, from there a combination of both direct bulk shipping and chartered vessels to multiple New Zealand ports provide options and flexibility in supply.
- 49 While current global shipping delays are a reality, the chartering of bulk cargo shipping with self-contained cranes for unloading provides greater flexibility at ports where containerised shipping is a bottleneck. For example, the Ports of Auckland have one dedicated container wharf but multiple bulk shipping wharves.
- 50 Domestic arrangements once products have been delivered to New Zealand ports will be able to be managed by existing transport capacity. Specific arrangements will be made for each shipment. While awaiting onward transport, modular units will be placed in secure storage locations, additionally due to their nature OSM units are resilient to weather and damage.



- 51 In parallel, land is being secured and resource consents applied for to enable site works to start in November 2021 - ready to receive the first batch of modules for installation.
- 52 Kāinga Ora is actively exploring all options to secure land in areas where transitional housing is in high demand, such as purchasing land, long term leases, repurposing land, and temporary occupation. OSM units are more easily transported than traditional builds and will allow Kāinga Ora to unlock new land opportunities that were previously unfeasible.
- 53 Kāinga Ora is currently working on options for site works, in particular whether this responsibility would be best placed with the OSM supplier or with Kāinga Ora itself. These site works would include clearance, civil, foundations, soft/hard landscaping and finishing. Required works will be contracted subject to the needs of each site.
- 54 Kāinga Ora is working closely with agencies across government to maintain visibility of transitional housing demand and understanding of provider capacity to support implementation.

### Financial Implications

- 55 This proposal would require Kāinga Ora to make up to s 9(2)(j) available toward the purchase, shipping, transporting and insuring of OSM units. This includes a contingency to cover cost variances that can be reasonably expected, given current levels of uncertainty.
- 56 This total cost is comparable with traditional delivery methods and will be funded from the Kāinga Ora current budget envelope. The expenditure includes OSM homes, shipping, transport (including to site), insurance and fees.
- 57 I have consulted the Minister of Finance on this proposal and the Minister was provided with a copy of the business case.

### Legislative Implications

- 58 This proposal carries no legislative implications.

### Impact Analysis

#### Regulatory Impact Statement

- 59 A regulatory impact statement is not required for this proposal.

#### Climate Implications of Policy Assessment

- 60 A Climate Implications of Policy Assessment is not required for this proposal.

#### Population Implications

- 61 A significant number of Kāinga Ora residents are of disadvantaged backgrounds or have to live with lifelong challenges such as disabilities. The supply of additional warm, dry homes via the OSM programme will support all of these residents.

- 62 Kāinga Ora understands the importance of working with communities regarding new developments and previous experience has shown that some communities are more reluctant to have transitional housing in their community. Strong engagement is a business-as-usual requirement for Kāinga Ora, and the pace of the OSM builds will mean they will start this engagement early to avoid any community reluctance.
- 63 Kāinga Ora intends to ensure that there are opportunities to partner with Māori throughout this process. Temporary placement of OSM on Māori land is a possible outcome, given that units are able to be transported more easily than traditional housing.

### Human Rights

- 64 This proposal is consistent with the New Zealand Bill of Rights Act 1990 and the Human Rights Act 1993.
- 65 For offshore manufacturing, there may be risks related to labour standards, health and safety, and business ethics. Kāinga Ora seeks assurance from all prospective suppliers that ethical practices are in place throughout their supply chain, verified through independent auditing.
- 66 s 9(2)(j) had independent ethical audits completed by Sedex in 2019, a major international auditor specialising in supply chain and ethical auditing.

### Consultation

- 67 The Ministry of Housing and Urban Development was consulted on this proposal.

### Communications

- 68 Kāinga Ora intends to publicly announce this proposal when contracts are signed. Details will be available on their website and I may put out a press release at the time if appropriate. Media opportunities or updates may be available at various times.

### Proactive Release

- 69 This paper will be proactively released in line with standard timelines, subject to any commercial considerations at the time.

### Recommendations

The Minister for Housing recommends that Cabinet:

- 1 **note** the contents of this paper

Authorised for lodgement

Hon Dr Megan Woods

Minister of Housing

### Appendices

- 1 Renders of proposed OSM delivered houses.