ASSESSMENT OF ENVIRONMENTAL EFFECTS

The following assessment is an extract from planning evidence prepared by Mark Allan, Director – Environment and Planning at Aurecon.

MERITS OF THE PROPOSAL – ASSESSMENT OF EFFECTS

Residential Land Supply

- Mr Colegrave's evidence assesses the need for the Proposal under the NPS UD, its eligibility for early release under the PWDP's 'certification' criteria, the likely economic costs and benefits of the Proposal, and the likely impact of the proposed neighbourhood centre (North Block) on nearby centres.
- Mr Colegrave notes the District's strong population growth in recent years *is projected to continue* well into the foreseeable future, which is causing strong and sustained growth in demand for additional housing ¹. At the same time, housing in the district is becoming increasingly unaffordable². He considers these circumstances give context to the NPS UD directive that high growth areas like the District provide "at least" sufficient feasible / realisable capacity "at all times" to meet future housing demand, including for stand-alone and attached dwellings in both new and existing areas.
- 3 Mr Colegrave considers the latest housing capacity assessment (**HCA**) is unreliable on the basis that it fails to test sufficiency for different dwelling types in new and existing locations, as required by the NPS UD. He points to the high concentration of new development that has occurred on the urban periphery of Kaiapoi since 2010, a situation he considers likely reflects the challenge of making intensification in provincial areas like Kaiapoi financially viable. And the fact the consented stages of Beachgrove represent the only significant area of undeveloped residential land left in Kaiapoi.
- Essentially, Mr Colegrave does not consider the plan enabled capacity associated with the application of new Medium Density Residential Standards and Policy 3 (building height) of the NPS UD will be delivered. Consequently, he has identified a looming shortfall in greenfield capacity for

¹ Economic evidence of Mr Colegrave, para 10

² Economic Evidence of Mr Colegrave, para 80

standalone homes in the District, adding "The proposal helps plug this looming gap in feasible capacity by providing quality, master-planned housing that is in step with market demand".

Mr Colegrave considers the Proposal gives effect to a range of local and national strategies and policies, while ensuring the efficient functioning of the local housing market. Influential is that the Proposal enables significant housing development capacity and supporting commercial activity within the Kaiapoi Development Area under the PWDP, which implements the strategic direction and form for future urban growth espoused in the Greater Christchurch Urban Development Strategy 2007 and subsequent spatial and statutory planning documents.

The Proposal will deliver economic benefits associated with a substantial, direct boost in the District's dwelling capacity. As noted above, it will help to narrow the gap between likely future supply and demand. And by being more responsive to growth in demand, the rate at which district house prices grow over time will reduce, contributing to affordability⁴ and, therefore, consistency with the NPS UD (Objective 2). This benefit is further compounded by the Proposal's ability to unlock further development of the balance of the Kaiapoi Development Area / Future Development Area to the north⁵.

Other benefits of the Proposal identified by Mr Colegrave include the provision of a range of lot sizes and housing typologies (consistent with Policy 1, NPS UD); the creation of critical mass to gradually improve the range and viability of local service provision, with a corresponding reduction in retail spend leakage to Christchurch City; achieving a high level of infrastructure efficiency that will avoid unnecessary financial risks and cost for WDC while helping keep the costs of new homes as low as possible; the generation of significant one-off economic stimulus associated with construction activity; ongoing employment associated with the neighbourhood centre contributing to the District's employment self-sufficiency; ⁶

I also consider the single ownership (subject to contract) of the Site by a willing and able developer is a relevant factor, whereby the capacity enabled by the Proposal is likely to be converted to market supply in a timely manner compared to other Development Areas under fragmented ownership.

9 The main potential economic cost of the Proposal is the loss of land for rural production. Mr Colegrave refers to Mr Dunham's evidence on the productive potential of the Site, and quantifies

³ Economic evidence of Mr Colegrave, paras 69-72

⁴ Economic evidence of Mr Colegrave, paras 77-79

⁵ Economic evidence of Mr Colegrave, paras 83, 84

⁶ Economic evidence of Mr Colegrave, paras 86-94, 97, 102, 103 and 105

the economic cost of forfeiting the land for rural uses. Having estimated the annual economic activity the Site could theoretically sustain if used solely for rural production, Mr Colegrave considers the values for revenue, GDP, employment and wages / salaries to be negligible compared to the substantial boost in employment provided by the Proposal⁷.

Mr Colegrave describes the size and function of the proposed neighbourhood centre in the context of the nearest existing centres, being the Kaiapoi Key Activity Centre and the Waimak Junction large format retail area. He considers it highly unlikely that the Proposal will cause adverse effects on the vitality of either of these centres, given the proposed centre is of a small scale, will grow organically over time in response to demand, and will fulfil a different (and complementary) role and function⁸.

Overall, the economic evidence is that MRZ-enabled development of the Site represents a significant boost in residential supply, which will help keep pace with housing demand in the District and contribute to affordability, as required by the NPS UD. The Proposal will generate a wide range of enduring economic benefits and avoid any material economic costs.

Character, Amenity and Landscape

The Proposal will inevitably change the character, amenity and landscape of the Site and its immediate setting. The nature, extent and appropriateness of this change has been assessed in the technical evidence of Messrs Weir (urban design) and Kamo (landscape, visual and character). Collectively, their evidence concludes that the Proposal and MRZ-enabled development of the Site is appropriate in the context of the established urban form and character of Kaiapoi and its interface with the openness of the semi-rural setting.

It is relevant to consider changes in the character and amenity of the area in terms of Policy 6 of the NPS UD, which recognises that such changes are not, of themselves, an adverse effect. Both experts consider the Proposal presents a logical extension of the established residential character of Kaiapoi, and a more appropriate development outcome than RLZ, particularly in light of the urban outcome anticipated in the Kaiapoi Development Area.

The ODP has been designed to ensure MRZ-enabled development integrates with neighboring development, with the nature and scale of development being generally consistent and compatible with that already established in the immediate area. It appropriately addresses key site constraints,

⁷ Economic evidence of Mr Colegrave, paras 112-117

⁸ Economic evidence of Mr Colegrave, para 131

including the boundary with rural land to the east (through the substantial open space buffer associated with the realigned and enhanced McIntosh Drain), the potential for inundation during high rainfall events (through raising ground levels and stormwater management) and the potential for airport noise reverse sensitivity effects (through more restrictive residential density associated with qualifying matter - airport noise). The Proposal will integrate with existing and future roading and three waters infrastructure and enable a range of lot sizes and housing typologies that meet the needs of the community without compromising amenity values.

- Mr Weir observes the Proposal will increase development capacity in a manner that is supportive of existing development patterns in Kaiapoi while increasing connectivity with wider Kaiapoi, supporting a more compact urban form and encouraging modal shift towards public and active transport. I consider these elements to be consistent with the fundamentals of a well-functioning urban environment.
- Overall, any effects of the Proposal in terms of character, amenity and landscape matters are considered acceptable for the reasons set out in the technical evidence, and in the context of the NPS UD (vis-à-vis Objectives 2 and 4, Policies 1, 6 and 8). The Proposal will not erode Kaiapoi's urban form or character, but rather will serve to reinforce it through MRZ-enabled development of the Site in accordance with the appropriately designed ODP.

Transport

- Mr Carr has undertaken a Transportation Assessment to support his evaluation of the anticipated transportation effects of the Proposal, including the functionality of the road network, connectivity with the existing urban environment, and the availability of different transport modes.
- Mr Carr has demonstrated that the traffic generated by MRZ-enabled development of the Site can be accommodated on the adjacent roading network. While some improvement schemes will be required, e.g., at the Williams Street / Beach Road / Smith Street roundabout, he has assessed these as being able to be accommodated within the legal road reserve.
- There is nothing to indicate the increase in traffic flows on the road network as a result of the Proposal would have any adverse road safety effects. The relatively flat topography of the Site means the internal roading network can be readily designed to meet appropriate guides and standards.

- The Site is well positioned to support active transport accessibility, being within 1km of Kaiapoi North School and 3km of Kaiapoi town centre. The existing frontage roads have suitable provision for the increased level of walking and cycling attributed to the Proposal. Further, the location of the proposed neighbourhood centre will be within 1km of all of the North Block, most of the South Block and all of the existing Beachgrove subdivision.
- The ODP provides a high degree of compliance with the transport requirements of the PWDP. The internal roading network and connections to the frontage roads will be designed and constructed in accordance with the transport provisions of the PWDP, with which Mr Carr notes the ODP shows a high degree of compliance. Any areas of non-compliance can be appropriately assessed through the consent process, providing certainty that any required design improvements will be implemented.
- Mr Carr's overall conclusion is that the Proposal can be supported from a traffic and transportation perspective and that there are no traffic or transportation reasons why MRZ-enabled development is not appropriate in this location.

Infrastructure

- The evidence of Mr Miskell assesses the existing infrastructure capacity and new infrastructure requirements to service MRZ-enabled development of the Site. It is supported by civil engineering concepts to demonstrate how future subdivision and development can be serviced in accordance with WDC requirements. It confirms there are no servicing impediments to the Proposal.
- The approach to stormwater management has been developed in conjunction with the flooding assessment undertaken by Mr Brunton. The design concept for the North Block involves a primary reticulation pipe network to collect and convey the 5-year ARI event, discharging to two new basins that will contain and treating the first flush volume (25mm rainfall) from impervious surfaces. McIntosh Drain will be realigned and enhanced to accommodate the basins. Stormwater exceeding the first flush volume will bypass the basins and discharge directly to the realigned McIntosh Drain.
- For the South Block, primary reticulation will collect and convey the 5-year ARIs in a pipe network to a proprietary treatment device designed to treat the first flush volume (10mm/hr) on impervious surfaces. The network will discharge into swales around the perimeter of the block, which will be designed to accommodate the 200-year ARI event and minimize flooding in the surrounding area.

- Secondary reticulation for the Site will be provided via overland flow paths contained within the road network and designed to contain the 50-year ARI event within prescribed limits on depth of surface flooding. Finished floor levels will be set with 500mm freeboard, based on Mr Brunton's modelling of the 200-year flood event.
- 27 Modification of the existing Moorcroft basin will allow for the proposed road connection to Magnolia Boulevard, as shown on the ODP.
- Wastewater servicing can be managed via a combination of the remaining capacity within the existing low pressure sewer network established in the Beachgrove development and WDC's planned upgrade of the existing Moorcroft wastewater pumpstation. Mr Miskell's analysis shows there is capacity within the existing low pressure network to service the remaining stages of Beachgrove and the future development of the Site. He refers to confirmation from WDC's Network Planning Team Leader that the Kaiapoi wastewater treatment plant has sufficient capacity to service MRZ-enabled development of the Site, and that incremental upgrades to the plant will be undertaken by WDC in response to increased demand over time and funded through development contributions.
- WDC's Network Planning Team Leader has also confirmed there is sufficient source capacity in the Kaiapoi water supply scheme for future development, with upgrades planned for expected increased future demand. as does the Kaiapoi potable water network. Mr Miskell has described the proposed water supply network layout for the Site, the final design of which will be agreed upon with WDC during the consenting and detailed design phases.
- Overall, the technical evidence demonstrates that the Site's environmental conditions and existing reticulated networks do not preclude the Proposal from a servicing perspective. The detailed design of three waters infrastructure will be appropriately addressed through the subdivision consent process and in consultation with WDC's development engineers.

Tāngata Whenua and Cultural Values

The Site is within the takiwā of Te Ngāi Tūāhuriri Rūnanga. Natural resources (water, mahinga kai, indigenous flora and fauna, cultural landscapes and land) are taonga to manawhenua, and integral to the history and identity of mana whenua. The protection of sites and areas of significance to Māori for the benefit of current and future generations is essential to the cultural identity of Kaiapoi

and Greater Christchurch, so it is therefore important that urban development does not impact them.

The Site is subject to Historic & Cultural Overlays (Wāhi Tapu SASM 005 – silent file, Ngā Tūranga Tūpūna SASM 013 – cultural landscape of high coastal settlement) under the PWDP. The identification of these sites and areas of significance to Māori will ensure cultural values are appropriately addressed through the subdivision consent process (noting the matters of discretion where resource consent is triggered by activities within the overlays) and engagement with tāngata whenua.

Flood Management

- Mr Brunton has undertaken a flood management assessment of the Proposal and MRZ-enabled development of the Site.
- The Site is located within a High Hazard Area as defined in the CRPS (being subject to water depths greater than 1m in a 500-year flood event), and the Non-Urban Flood Assessment Overlay (North Block), Urban Flood Assessment Overlay (South Block) and Coastal Flood Assessment Overlay in the PWDP.
- Mr Brunton outlines the proposed flood hazard mitigation for the Site, based on the results of his hydraulic modelling of surface flooding within the Site and surrounding area pre- and post-development of the Site. The proposed mitigation involves filling the Site to elevate ground levels above the existing flood level; specifying a minimum finished floor level above the 200-year event and incorporating an allowance for predicted climate change plus 500mm freeboard; and constructing a stormwater system to collect and convey Site-generated runoff to the receiving drainage system.
- Under the post-development scenario, Mr Brunton's evidence demonstrates that modelled water depths within the Site during a 200-year event reduce to zero (from pre-development inundation water depths of 1-2m). While the surrounding area will experience a small increase in water depth as a result of displacement, Mr Brunton considers this will be indiscernible in the context of the 1-2m water depths experienced in the surrounding area during a 200-year event. Further, the Proposal will not cause any additional buildings within the surrounding area to be inundated in the 5-year to 200-year events, and only a small reduction in floor level freeboard to several existing

buildings (yet still retaining sufficient freeboard as per the Building Code to protect them from inundation).

- What Mr Brunton's evidence shows is that it is possible to alleviate the flooding risk on the Site with only minimal (and indiscernible) effect on the surrounding area. Provided the proposed surface flooding mitigation is implemented as Mr Brunton has described and modelled, the post-development Site will no longer be considered a High Hazard Area as defined in the CRPS. In addition, the behaviour of surface flooding in the area will not be significantly altered.
- Because the PDWP identifies the Site as being subject to flood assessment overlays, Flood Assessment and Coastal Flood Assessment Certificates will need to be sought from WDC as part of the subdivision consent application process, in accordance with Rules SUB-R4, NH-R1 & R2, NH-R15 & R16 and NH-S1 & S2 of the PWDP. The PWDP adopts a similar definition for high hazard areas as the CRPS, so it follows that the proposed flooding mitigation will similarly bring the Site under the high hazard threshold in the PWDP, in which case the Flood Assessment Certificates issued by WDC would specify the minimum finished floor level required for development. Notably, "raised building floor levels and raised land which are required to be raised to meet the requirements of a hazards assessment certificate" are excluded from the PWDP definition of 'natural hazard mitigation works'. In this regard, it is my view that the proposed flooding mitigation can be legitimately considered by WDC when processing a request for a Flood Assessment Certificate. The relevant matters of discretion (NH-MD1, MD3 and MD4) usefully provide for (amongst other things) an assessment of:
 - (a) the setting of minimum floor levels and minimum land levels (NH-MD1(1));
 - the frequency / extent any proposed building is predicted to be damaged (NH-MD1(2) a, taking into account proposed land and floor levels (NH-MD4(1));
 - (c) the extent to which the proposal causes flood water displacement or flow path disruption onto other sites (NH-MD1(4);
 - the extent to which mitigation measures are proposed and their effectiveness (NH-MD1(5), NH-MD3(8);
 - (e) any increase in the risk to life or property (NH-MD3(1)); and
 - (f) the ability for flood water conveyance to be maintained (NH-MD3(6).

Based on Mr Brunton's specialist evidence, and the efficacy of the PWDP's natural hazard provisions, I consider flood risk can be appropriately managed at the subdivision consent stage and through appropriate design of landform and freeboard, such that significant adverse effects associated with flood hazard within the Site and surrounding area are avoided.

Ecology

- The ecological evidence of Ms Coates identifies and evaluates the ecological features of the Site, assesses the potential effects of the Proposal on those ecological features, and recommends mitigation and enhancement measures.
- Terrestrial vegetation and habitat on the Site are heavily influenced by agricultural activities, with managed pasture the dominant vegetation type. Freshwater values are limited to constructed drains (both farm and roadside), with the highly modified, but natural McIntosh Drain on the eastern boundary (but outside of the site). Instream values are limited due to the artificial nature of the channels, rural land use and lack of riparian vegetation.
- While the Proposal will result in different pressures on ecological values, any Ms Coates considers any adverse effects on ecological values from MRZ-enabled development of the Site can be adequately mitigated at the consent stage. She notes that stormwater management and the development of greenspace to the east of the North Block through realignment of Mcintosh Drain will significantly increase ecological values through riparian planting, provision of fauna habitat and stormwater management.⁹
- The current legislative framework (e.g. NES for Freshwater; NPS for Indigenous Biodiversity and Freshwater Management; CRPS chapters relating to freshwater, ecosystems and indigenous biodiversity, and beds of waterbodies and their riparian zones; Wildlife Act) provides for additional surveys for indigenous lizards, nesting birds and freshwater fauna to be requested, or indeed required, as part of any subdivision consent process and prior to construction works.
- Based on the ecological evidence, the Proposal is not expected to result in detrimental effects on ecological values. On the contrary, it is likely to enhance ecological values through increased botanical values, indigenous vegetation cover and habitat for native fauna.

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⁹ Ecological evidence of Ms Coates, para 14 and 80

Reverse Sensitivity

- The entire South Block and part of the North Block is located under the 50dBA airport noise contour, as is the majority of the established urban area of Kaiapoi. The Proposal accounts for potential reverse sensitivity effects associated with the operations of Christchurch Airport by adopting 'qualifying matter airport noise' introduced through Variation 1, which limits residential density to one dwelling / 200m². In this way, and with reference to the Spatial Plan in respect of strategic infrastructure, MRZ-enabled development under the airport noise contour will "be carefully managed...to ensure the safety and wellbeing of residents, and to safeguard the effective operation, maintenance and potential for upgrades" of the Airport.
- Momentum Land Limited filed evidence in respect of Hearing Stream 10A (airport noise). I note the key findings of Patricia Harte (planning), which are based on the technical evidence of Fraser Colegrave (economics) and Reeves (acoustic) and Professor Clarke (aeronautic acoustic), as being:
 - (a) The PWDP provides for noise sensitive activities (which include residential activities) as permitted activities in residential zones under the 50 dBA noise contour and (subject to achieving indoor sound levels) under the 55 dBA noise contour, an approach that is consistent with the operative District Plan and was supported by Marshall Day in their review of the PWDP noise provisions. Ms Harte considers this, coupled with the Council's practice of recording the potential for increased aircraft noise on LIM of properties within the 50 dBA, to be "a balanced approach to providing for residential use under the 50dBA contour while limiting the potential for residents to be annoyed to the extent that they lodge complaints about aircraft noise."
 - (b) The fact that ECan has not lodged a submission opposing the Proposal could indicate that they are satisfied with the identification of the Site (as part of the wider Future Development Area) for future residential growth. Given the limited opportunities for land to be rezoned for residential purposes in Kaiapoi, such opportunities "should be taken and their full potential recognised and provided for if at all possible".
 - (c) Through Variation 1, the Council has chosen to control Medium Density Residential development under the 50 dBA noise contour by way of a qualifying matter, effectively restricting development to a maximum density of one dwelling / 200m² site. Ms Harte

¹⁰ Protecting Strategic Infrastructure, Spatial Plan, page 53

- agrees with this approach to mitigating (rather than avoiding) potential adverse reverse sensitivity effects.
- (d) The NPS UD elevates housing shortage as a matter of national significant, and "[does] not require or prioritise protection of strategic infrastructure when making planning decisions that contribute to well-functioning urban environments and enable a variety of homes the meet the people's needs in terms of type, price and location of households. Rather, decisions on urban development are to be integrated with infrastructure and planning decisions (Objective 6) and engagement with infrastructure providers is required (Policy 10(b)).
- (e) No potential issues associated with air noise contours were raised throughout the preparation of Plan Change 1 to the CRPS, which introduced the Future Development Areas now identified on Map A, indicating their suitability for greenfield development.
- (f) Based on the evidence of Professor John-Paul Clarke, "it has not been established that it is necessary to avoid the activity of residential development or intensification within the 50 dB Ldn, CIAL airport noise contour, because that activity in that location is not likely to result in material harm."
- (g) "the preferred approach in the Proposed Plan and Variation 1, of minimum lot size 200m2, one house per site and LIM notice is better aligned with NPS-UD policies regarding integration of housing development with planned infrastructure, than is CIAL approach of preventing/avoiding residential development / intensification within the 50 dBA airport noise contour. In my opinion this approach is unlikely to result in reverse sensitivity issues for CIAL."
- I adopt Ms Harte's analysis and conclusions detailed in her evidence as they relate to Momentum's rezoning request. On this basis, I do not consider the Proposal raises any reverse sensitivity concerns that should preclude a decision in its favour.

Land Suitability

The Tonkin and Taylor Preliminary Site Investigation (**PSI**) appended to Mr Morley's evidence (contamination) identifies the potential for contamination to be present in parts of the Site as a result of historical land uses. Mr Morley has outlined the further contaminated land investigations that will be undertaken prior to bulk earthworks, the results of which will determine controls and

procedures to manage any contaminated land present that will be set out in a Site Management Plan and Accidental Discovery Protocol. Subject to these further investigations and management of contaminated land, Mr Morley concludes that the Proposal and MRZ-enabled development of the Site is appropriate from a contaminated land perspective.

The Tonkin and Taylor Geotechnical Reports appended to Ms Sleight's evidence (geotechnical) identify earthquake-induced liquefaction and static settlement as the key geotechnical-related natural hazards for the Site. In summary, Ms Sleight considers that mitigation measures can be designed to reduce the consequences of liquefaction to levels that correspond to a TC2 site, preloading will mitigate consolidation settlements, and ground improvement / foundation design will mitigate lateral spreading. Based on these measures, which are consistent with current good practice and a suitable response to the Site's conditions, Ms Sleight concludes that the Site is geotechnically suitable for the Proposal and future development is unlikely to accelerate, worsen or result in geotechnical-related hazards.

Mr Dunham as assessed the physical attributes and productivity of the Site to determine the impact of the Proposal on the productive potential of the Site for rural / rural lifestyle land uses. To summarise Mr Dunham's key findings, the soils on the Site are predominantly unusable for grazing and / or land management activities for 5-6 months of the year due to being waterlogged or having excessive moisture content; infrastructure is poor and requires significant upgrade to increase productivity; the location of and access to the Site is a major disincentive for agricultural services support, noting particularly the urban activities surrounding the South Block; there is no scale or sufficient land class diversity on the Site to manage and mitigate farming risk, and even at high stocking rates the financial returns are likely to be little better than breakeven; and no prudent land user is likely to assess the Site as a sustainable and viable farming operation. On this basis, the loss of RLZ land is not considered an impediment for the Proposal.

Effects Conclusion

I consider that the actual or potential environmental effects of the Proposal will be akin to those already deemed acceptable through the progressive development and expansion of Kaiapoi (e.g. Beachgrove, Moorcroft Estate, Sovereign Palms) and the long-standing identification of northeast Kaiapoi as the strategic direction for urban growth. The changes to amenity values (including

effects on urban form, landscape character and visual amenity) are not adverse when considered in the context of the established urban character of Kaiapoi and the positive effects of the increased housing supply enabled by the Proposal. The Proposal will achieve a consolidated urban form for Kaiapoi and any potential adverse effects of MRZ-enabled development on the Site are able to be appropriately avoided or mitigated.

For the reasons expressed in the technical evidence, which has informed my views, I am satisfied that the effects of the Proposal will be appropriate and acceptable, particularly in light of the efficacy of the PWDP's MRZ, Subdivision and Natural Hazard provisions and the ODP to guide development that is considerate of the receiving environment. I accept the Proposal signifies, in a zone sense, a fundamental 'shift' from RLZ to MRZ, however this is envisaged by the WDDS, the CRPS (Future Development Area), the PWDP (Kaiapoi Development Area and notified 'certification' mechanism) and most recently the Spatial Plan. The Proposal more closely reflects the established residential character of the Site's context, enables more efficient land utilisation than RLZ, and contributes significantly to rural residential land supply. It is therefore more appropriate than RLZ.

Influential to my finding the effects of the Proposal to be acceptable, and the Proposal being the most efficient, effective and appropriate way to achieve the objectives of the PWDP, are the contextual and locational factors of the Site. These include the identification of the Site for future urban development in all strategic spatial planning documents produced since 2007; the location of the Site within a future urban development area in both the CRPS and PWDP; the ability to mitigate flood risk and reverse sensitivity effects to acceptable levels; the accessibility to existing amenities (commercial, community, educational, recreational) within a walkable catchment of the Site; the single ownership of the Site; and the identified need to enable the development of planned and anticipated greenfield land now in order that the PWDP keeps pace with housing demand into the long term.