

25 July 2017

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# Carlton Connect Initiative: High Level Economic Analysis

Dear Adam,

In accordance with our engagement agreement dated 22 June 2016 we are pleased to present you with this Report on the high level economic analysis of the development of your proposal for the Carlton Connect Initiative.

The objectives of this engagement were to undertake a high level analysis of the potential economic impacts of the precinct development, focusing on the construction impacts and ongoing productivity uplift for the Victorian economy associated with the potential for the project to concentrate employment in close proximity to the University of Melbourne.

#### **Restrictions on the Report use**

Our report details our key assumptions, limitations, results and approach of our high level assessment of the potential economic impacts of the Carlton Connect Initiative. This report should not be relied upon for any other purpose. Other persons accessing this report should do so for their general information only as Ernst & Young ("EY") has only acted for, and advised the Client, and has not acted for or advised anyone else in respect of the contents of this report. EY disclaims all liability to any party for all costs, loss, damage and liability that the third party may suffer or incur arising from or relating to or in any way connected with the provision of the deliverables to the third party without our prior written consent. Any commercial decisions taken by Lendlease are not within the scope of our duty of care and in making such decisions you should take into account the limitations of the scope of our work and other factors, commercial and otherwise, of which you should be aware of from sources other than our work.

EY has prepared this high level economic analysis and has relied on information provided by Lendlease. We do not imply, and it should not be construed that we have performed audit or due diligence procedures on any of the information provided to us. We have not independently verified, or accept any responsibility or liability for independently verifying, any such information nor do we make any representation as to the accuracy or completeness of the information. We accept no liability for any loss or damage, which may result from your reliance on any research, analysis or information so supplied.

#### Basis of our work

We have performed research and analysis using information and data made available by Lendlease, and data from a range of publicly available documents and databases.

We have not independently verified, or accept any responsibility or liability for independently verifying, any such information nor do we make any representation as to the accuracy or completeness of the information. We accept no liability for any loss or damage, which may result from your reliance on any research, analyses or information so supplied.

Care should be taken in communicating the results to third parties. We recommend that the presentation of results should include the phrasing provided in the summary results section of the report and that the report is provided to third parties as further information to clarify the approach and limitations.

Please do not hesitate to me on (03) 9655 2659 if you have any questions about the contents of this Report.

Yours sincerely

Cameron Bird Partner

# EY Report: Carlton Connect Initiative – Economic Analysis

# **Key limitations**

- ▶ Due to the limited timeframe, a high level economic analysis has been undertaken which relies heavily on a number of broad assumptions including the use of benchmark parameters to estimate the potential future employment of the precinct. The economic analysis is also based on current day economic flows between industries. The economic impacts are expressed in today's dollars without any value escalation or adjustment for possible changes to industry mix or relative flows between industries that might occur over time. As such, the results provided in the report below should be treated as indicative only, and caution should be taken in interpreting the findings of the analysis.
- A high level, scenario based analysis has been undertaken to provide an indicative range for the potential economic impacts of the project. This report is not a feasibility study and has not sought to test the validity of the development scenario provided by the client.
- ▶ The analysis has not used dynamic economic and land use impact models, with input-output modelling used to estimate the direct and indirect impacts of construction and static land use and industry analysis used to estimate the ongoing impacts of the precinct on overall productivity and economic activity.

# **Key assumptions**

- The development scenario provided by the client is the basis of our work.
- ► The indirect or flow-on effects of the project have been estimated for the rest of the economy resulting from the direct expenditure. This study adopts an input output approach using REMPLAN to calculate the indirect (wider) economic impacts. While Computable General Equilibrium (CGE) is particularly useful for measuring the impact of large shocks to the economy, this type of dynamic modelling could not be completed in the time available. It is considered that the use of REMPLAN will provide a meaningful high level analysis of the potential impacts of the development.
- Employment estimates are based on high level assumptions regarding the average rate of employment per Gross Floor Area (GFA) by type of development. These assumptions have been primarily sourced from the Census of Land Use and Employment (City of Melbourne).
- Productivity impacts are based on the assumption that the project will influence Melbourne's urban structure over time such that new employment in the precinct reflects an overall redistribution of employment from across Melbourne or from interstate and overseas, with the precinct attracting higher productivity land uses and employment in line with the proposed development profile.
- All monetary values have been expressed as real values (using a FY17 price base), which excludes the effects of inflation. This enables the comparison of results between different years using a constant price base.

# **Development opportunity: The Carlton Connect Initiative**

The design approach for Carlton Connect Initiative is intrinsically linked to the vision to create a culture of collaboration and innovation that facilitates engagement between business and academia. The guiding principle for the development has been to create an enlivened village atmosphere that encourages the exchange of ideas and information.

To maximise the opportunity for collaboration this exemplary mixed-use precinct will be a 24-hour site catering specifically to:

> People working on-site, from students and start-ups to big businesses and research teams

- An open door approach to events including hack-athons, floor talks, festivals, exhibitions, workshops and ThoughLabs that bring new audiences of people into the precinct to discover and network
- Retail opportunities, shops and cafes that expand and compliment the surrounding small businesses and attract new customers.

The development proposal provided to EY by the client for this study envisages approximately 14,000m<sup>2</sup> of new private investor commercial floor space, as well as 2,115m<sup>2</sup> University of Melbourne commercial floor space and around 773m<sup>2</sup> of retail space which will include a mix of cafes, casual dining and a minisupermarket. The commercial space is expected to attract a vibrant mix of start-ups and small businesses, providing valuable and flexible working space for corporate tenants and collaborative project teams.

Education and research facilities including a 1,402m<sup>2</sup> University of Melbourne Fabrication Lab will provide the facilities to turn an idea into a prototype and allow University of Melbourne researchers to showcase their work among precinct dwellers and the larger community. The 4,011m<sup>2</sup> science gallery is expected to be a state of the art education space for university students and researchers. A summary of the proposed use is outlined below. There Carlton Connect Initiative will also include a 1,990m<sup>2</sup> childcare centre.

Fable 1 Proposed floor area			
Use	M <sup>2</sup>		
Investor Commercial Tower (high density office)	7,537		
Investor Commercial Tower (low density office)	6,463		
UoM Commercial (innovation accelerator program)	2,115		
Melbourne School of Engineering	17,884		
Fab Lab / Maker Space	1,402		
Science Gallery	4,011		
Superfloor	4,426		
Retail	773		
Student Accommodation	15,357		
Plant / BOH	8,890		
FM / Concierge Office	425		
End of Trip	1,029		
Childcare (including external area)	1,990		
Carpark	2,392		
Total GFA (excluding car park)	72,043		

The economic impact analysis has been based on the assumption that commercial floor space in Carlton Connect Initiative will successfully attract small businesses and entrepreneurs most suited to the collaborative office spaces.

Other floor space in Carlton Connect Initiative includes end of trip facilities and public spaces that have not been included in the ongoing economic productivity estimations as they are assumed to not be major working spaces like the commercial floor space and thus would not generate new and increasingly productive jobs.

Total construction cost has been estimated to be around \$425 million from 2017 to 2020 including a \$50 million fit out.

# Key findings of the economic analysis

### **Recommended wording of results**

- Given the nature of the development contemplated for the Carlton Connect Initiative and the focus on bringing together enhanced education and research facilities alongside innovative commercial working spaces designed for collaboration, the project can be expected to make a contribution to growing the Victorian economy from the ongoing employment that will be supported by the Initiative.
- The construction of the Carlton Connect Initiative will have a direct and indirect impact on the economy throughout the construction period. High level economic analysis suggests that during the construction phase, the project has the potential to generate:
  - \$1.24 billion in gross output and \$466 million in value added (i.e. net output) over the period between 2017 and 2020, and an average of 1,149 jobs per annum
- By catering for new employment in highly productive sectors in central Melbourne, the Carlton Connect Initiative will make a contribution to the Melbourne economy by accommodating a share of future jobs growth in a more productive location and by attracting innovative commercial businesses.
- If successfully delivered and occupied, the development of the precinct in Carlton, as proposed by the University of Melbourne and Lendlease will have an estimated 3,193 workers by 2020, with approximately 2,551 working in commercial and scientific industries that are the core element of the proposed development.
- ▶ This relocation of employment to a more productive location and industry sector has the potential to increase the size the Victorian economy by \$90 million in 2020 assuming the attraction of researchers, entrepreneurs and small businesses to innovative buildings (measured in today's dollars using GVA as a proxy for GSP). Depending on the ability of the project to attract workers from interstate or overseas, the increase could be as much as \$226 million in 2020 if it is assumed that 50% of commercial jobs in the precinct are new to Victoria.
- While this analysis shows the potential increase in the size of Victoria's economy as a result of the development, the flows though the economy that this employment will support are of much larger value. For instance, the Carlton Connect Initiative has the potential to support up to 8,571 ongoing jobs (3,193 direct and 5,378 indirect) across a range of industries by 2020. High level analysis suggests that these ongoing jobs have the potential to contribute up to \$2.77 billion (\$1.08 billion direct and \$1.69 billion indirect) in gross output and \$1.32 billion (\$507 million direct and \$811 million indirect) in value added to the Victorian economy.
- Note: Estimates of gross output (total economic activity) and Gross Value Add (GVA) are not additive and should not be presented as such, as GVA reflects gross output adjusted for costs of goods and services produced. Furthermore, the productivity (GVA) uplift reflects the economic benefit of the project, whereas the direct and indirect contribution to gross output and GVA represent overall economic activity (the total flows of goods and services through the economy). As such, they cannot be added to the productivity/GVA impacts associated with the relocation of employment to a more productive location and industry sector.

#### **Construction phase impacts**

The construction of the Carlton Connect Initiative will have a major direct and indirect impact on the economy throughout the construction period in terms of gross output (total value of goods and services produced), value added (a proxy for Gross State Product (GSP) that nets out the costs of goods and services produced) and employment.<sup>1</sup>

High level economic analysis suggests that during the construction phase, the project has the potential to generate:

\$1.24 billion in gross output and \$466 million in value added (i.e. net output) over the period between 2017 and 2020, and an average of 1,149 jobs per annum generated from expenditure of \$425 million over three years between 2017 and 2020.

#### **Productivity impacts**

The Carlton Connect Initiative masterplan will be embedded with technology to support the requirements of a world leading innovation precinct. A digital community will be supported through a state-of-the-art technology platform. This platform will enable:

- Intra-community communication
- Facilitation and collaboration
- Skill sharing and networking
- ▶ Simple management of shared spaces and facilities (such as co-working or Superfloor).

The development of the precinct in Carlton as proposed by the client will have an estimated 3,193 workers by 2020 in commercial, scientific, education and research industries. Approximately 2,551 will be working in commercial and scientific industries that are the core element of the proposed development.

This relocation of employment to a more productive location and industry sector has the potential to increase the size the Victorian economy by \$90 million in 2020 (measured in today's dollars using GVA as a proxy for GSP). Depending on the ability of the project to attract workers from interstate or overseas, the increase could be as much as \$226 million in 2020 if it is assumed that 50% of commercial jobs in the precinct are new to Victoria.

While this analysis shows the potential increase in the size of Victoria's economy as a result of the development, the flows though the economy that this employment will support are of much larger value. For instance, the Carlton Connect Initiative has the potential to support up to 8,571 ongoing jobs (3,193 direct and 5,378 indirect) across a range of industries by 2020. High level analysis suggests that these ongoing jobs have the potential to contribute up to \$2.77 billion (\$1.08 billion direct and \$1.69 billion indirect) in gross output and \$1.32 billion (\$507 million direct and \$811 million indirect) in value added to the Victorian economy.

<sup>&</sup>lt;sup>1</sup> Three common indicators of the economic analysis are:

Gross output – Market value of goods and services produced, often measured by turnover/revenue. Gross output is also referred to as 'gross economic contribution'

Value added – Market value of goods and services produced, after deducting the cost of goods and services used (a proxy for Gross State Product (GSP) or Gross Regional Product (GRP))

Jobs – Number of jobs generated by an industry or attraction. For this study they are expressed as Full Time Equivalent (FTE), but a larger number of part-time direct and indirect jobs may be generated.

# Approach and assumptions

This section presents the methodology used to undertake the high level economic analysis of the Carlton Connect Initiative, which has been undertaken relying on inputs provided by Lendlease, which provided a development profile for the precinct (i.e. gross floor area by use) in line with their proposal.

The analysis has focused on the following two measures of economic output:

- Input-output analysis of the economic impacts of the construction of the proposed development
- Productivity uplift from ongoing employment in the precinct (i.e. a long term impact on GSP).

The methodology/approach undertaken is presented in the following sections.

### **Construction impacts**

Economic analysis measures the impact of a project or policy change in terms of economic activity, with the metric expressed in terms of changes to Gross State Product (GSP) / Gross Regional Product (GRP), employment and other economic indicators.

Three common indicators of the economic analysis are:

- Gross output Market value of goods and services produced, often measured by turnover/revenue. Gross output is also referred to as 'gross economic contribution'
- Value added Market value of goods and services produced, after deducting the cost of goods and services used (a proxy for GSP or GRP)
- ▶ Jobs Number of jobs generated by an industry or attraction.

All three measures are valuable in their own right. Industry output is a measure of production, value add is a measure of wealth generation, and arguably, employment is a measure of the distribution of income.

Economic analysis studies generally involve two broad steps:

- Calculation of direct impacts ('economic shocks') this step involves the measurement of all direct (incremental) expenditures or productivity improvements to a region (such as a State economy or local economies) as a direct result of the initiative, netting off any diversionary expenditure to other sectors of the economy.
- Calculation of indirect (wider) impacts Direct economic impacts will have associated indirect or flow-on impacts for the rest of the economy. For instance, injections in expenditures in the construction sector will have downstream impacts through an increase in expenditure in industries connected with the construction sector, and so on. This can be modelled using multiplier (input/output) analysis.

### **Construction costs**

The estimated construction costs for the precinct have been provided by the client and were used to estimate the value added to the economy during the construction period. The construction costs include the development construction costs and the direct infrastructure costs associated with the development of the precinct. Table 2 shows that construction costs will be staggered across 2017 through to 2020, totally \$425 million by completion of construction (including fit out).

Milestone	Costs (\$m)	Commencement	Completion
Commence Demolition / Early works	\$50	Nov-17	Sept-18
Construction Commencement	\$162.5	Oct-18	Sept-19
Final construction and final fit-out	\$212.5	Oct-19	Sept-20
Total	\$425		

Table 2 Construction costs (\$m, real) 2017-2020

Source: Lendlease

## **Ongoing employment**

This urban renewal project is expected to create ongoing economic activity and employment in the precinct for the following land uses:

- Commercial
- University education and research
- Student Accomodation
- Childcare
- Retail.

To estimate ongoing employment for each land use we have applied GFA/employment ratios obtained from available land use and employment data. These ratios are summarised in the table below. Employment estimates have been provided for the childcare and student accommodation areas which are presented in Table 4.

Table 3: Ongoing employment ratios

Land use	Total estimated GFA (m2)	Employment ratio (m2 / assumed FTE)
Education <sup>2</sup>	23,297	40m <sup>2</sup>
Commercial <sup>3</sup> (University of Melbourne Innovation space)	2,115	12m <sup>2</sup>
Commercial (high density)	7,537	5m <sup>2</sup>
Commercial (low density)	6,463	10m <sup>2</sup>
Commercial (Superfloor)	4,426	20m <sup>2</sup>
Retail <sup>4</sup>	773	41m <sup>2</sup>

Source: Lendlease (floor space), EY research (employment ratios)

Using this analysis we are able to estimate the ongoing employment resulting from the development of the Initiative in line with the land use assumptions (i.e. ongoing jobs for each year once full build out is achieved linked to the assumptions of employment per floor space identified above). Table 4 below provides an analysis on the ongoing employment following the full build out of the precinct (by 2020). We note that these are conservative estimates assuming the plant, concierge office, end of trip and public realm spaces specified in the CCI area schedule are predominantly public spaces and thus will not generate significant ongoing employment.

<sup>&</sup>lt;sup>2</sup> City of Melbourne, Census of Land Use and Employment, 2015; City of Sydney, City of Sydney Floor Space and Employment Survey 2012 - CBD Precinct Summary Report 2012, 2012

<sup>&</sup>lt;sup>3</sup> City of Sydney, City of Sydney Floor Space and Employment Survey 2012 - CBD Precinct Summary Report 2012, 2012. Note: This ratio incorporates both portioned and open plan office space and excludes other uses such as meeting rooms, reception areas, photocopy areas and breakout spaces. It is to be noted that current trends in office floor design are gentrifying towards smaller gross floor area, with predictions ranging between 8 – 10m<sup>2</sup> per employee <sup>4</sup> City of Melbourne, *Census of Land Use and Employment*, 2015

Table 4: Potential ongoing employment

Land use	Ongoing jobs	
Retail	21	
Education and Training	582	
Commercial	2,551	
Student accommodation	10	
Childcare	30	
Total	3,193	

Source: EY analysis

Overall, the Carlton Connect Initiative has the potential to support up to 8,571 ongoing jobs (3,193 direct and 5,378 indirect).

### **Ongoing employment – Productivity impact (GSP)**

The delivery of the Carlton Connect Initiative provides a means to realise the expected benefits of an innovation precinct in the immediate vicinity of Melbourne University in a way that enhances the overall productivity of Melbourne, with one of the key benefits of the proposed development being the 'move to more productive jobs' (M2MPJ) that will be facilitated by the project's impact, particularly in relation to the potential for the project to attract additional productive, knowledge-based industries and workers in Melbourne. These changes in the location of employment will therefore impact the overall productivity of the workforce.

The appraisal of major urban renewal projects increasingly takes into account these 'city-shaping' impacts. For example, major projects in Victoria and NSW in recent times have estimated these impacts following Australian and UK guidelines (NSW Treasury and UrbanGrowth NSW, Infrastructure Australia, WebTAG). For the purposes of this analysis, the potential productivity impact has been estimated following guidance from the UK WebTAG<sup>5</sup>.

The productivity benefits have been estimated using the formula below:

$$GSP \ Impact = \Delta Emp * GSPW * (PI_{destination} - PI_{origin})$$

Where:

 ΔEmp
 Change in employment in destination region

 GSPW
 Average GSP per worker (across all industries)

 PI<sub>destination</sub>
 Productivity index<sup>6</sup> for the destination region

 PI<sub>origin</sub>
 Productivity index<sup>9</sup> for in the origin region

In the proposed scenario, it has been assumed that providing enhanced innovation potential in the precinct and additional commercial land uses and workers in the Carlton Connect Initiative, the overall urban structure of Melbourne will become more productive as more high value (knowledge based) business choose to locate within the development.

To estimate the impact of the Carlton Connect Initiative on overall productivity, analysis has been undertaken on the proposed development and industry mix and the long term impacts of redistributing employment. In the absence of a detailed land use impacts model, two scenarios have been developed which assume that the employment attracted to Carlton would be either fully redistributed from across Melbourne (i.e. a redistribution of existing jobs), or only half being redistribute from across Melbourne, with

<sup>&</sup>lt;sup>5</sup> UK Department of Transport, TAG Unit A2.1 – Wider Economic Impacts Appraisal, 2014

<sup>&</sup>lt;sup>6</sup> Productivity index calculated as ratio between the industry-weighted average GVA per worker of the subject region and the industry-weighted average GVA per worker for the State.

the remainder of employment being sourced from and interstate/overseas which would, in effect, result in the creation of new jobs.

For this analysis we have compared the average productivity of the industry mix proposed for Carlton with average productivity of employment across other parts of Melbourne. In this case, the concentration of commercial land uses and employment suggests that the average productivity of the new precinct will be higher than most other locations.

It has also been assumed that 40% of the new commercial focussed workers in the precinct will be highly innovative. Analysis undertaken in the 2016 Australian Innovation System Report<sup>7</sup> suggests that these innovative workers are, on average, between 1.2 and 2 times more productive than the average non-innovative worker depending on the level of innovation.

Table 5 Average gross operating profit<sup>8</sup>, by innovation status and degree of novelty (\$2014–15)

	Average gross operating profit per business (\$'000s)	Average gross operating profit per employee (\$'000s)
New-to-market innovators	550	28
New-to-business innovators	297	17
Non-innovators	110	14

Source: Australian Innovation System Report, Department of Industry, Innovation and Science, 2016

As it is anticipated that the project will likely attract a mix of different innovators into the precinct, it has been assumed that the productivity of highly innovative workers in the precinct will be, on average, 1.6 as large as the average for Greater Melbourne. Note that the productivity uplift is assumed to only apply for commercial workers, as it is considered unlikely that workers moving to the precinct in other industries (such as retail trade, accommodation and food services etc.) will experience the same productivity uplift.

Based on this analysis, the average productivity (measured in GVA per worker) is estimated to be around \$122,979 and the average productivity of innovative workers at the Carlton Connect Initiative is estimated to be around \$170,522.

Table 6: Productivity per worker (Gross Value Added, \$, real)

Region	Productivity (\$GVA/worker, \$, real)	
Greater Melbourne	\$106,576	
Melbourne CBD	\$147,845	
Carlton	\$122,585	
Carlton (innovators)	\$170,522	

Source: EY analysis

In order to estimate the potential impacts of the project, two scenarios have been developed to provide an indicative range of productivity uplifts. These scenarios are summarised in table 6.

<sup>&</sup>lt;sup>7</sup> Australian Innovation System Report, Department of Industry, Innovation and Science, 2016

<sup>&</sup>lt;sup>8</sup> Gross operating profit is defined as Total income (i.e. Total operating expenditure + Capital expenditure)

#### Table 7: Scenario definition

Scenario	Description
Scenario 1 Full redistribution of employment	The first scenario assumes that the employment created within the precinct will be a result of jobs being redistributed from across Metropolitan Melbourne as the project alters the longer term evolution of Melbourne's urban structure. Note that in the absence of detailed land use modelling, it is difficult to predict exactly where employment will be redistributed from, however based on experience from similar initiatives, it is expected that there will be flow-on impacts across the Melbourne metropolitan area with jobs relocating to the areas. The increases in key station catchments will result in a net decrease across Metropolitan Melbourne compared to
	the base case projection as determined by the Victorian Government's official land use forecasts (Victoria In Future).
Scenario 2	The second scenario assumes that only half of the employment being created within the
Partial redistribution of employment with remainder sourced from interstate and overseas	precinct will be a result of jobs being redistributed from across Metropolitan Melbourne, with the other half being newly created jobs that will add to the current level of employment. This assumes that project will be able to attract workers from interstate and overseas.

Source: EY analysis

# **Tabulated results**

### **Construction phase impacts**

A cross sectional/point time analysis of the changes in output, value added and employment in line with the impact of the full build out completion (2020) is presented below.

Table 8 Economic impact of Carlton Connect Initiative (2017-2020)

Cumulative (2017-20)	Direct impact	Indirect impact	Total impact
Output (\$m, real)	\$425	\$812	\$1,237
Value Added (\$m, real)	\$123	\$343	\$466

Source: REMPLAN, EY analysis<sup>9</sup>

It is expected that during construction, development will create a combination of part time, casual and full time jobs that align to the structure of the economy. Direct job creation represents those jobs in the construction industry generated as a result of the project while indirect jobs is the flow on employment in other industries (e.g. retail, manufacturing) generated from construction activity. Over the duration of the year construction period, the estimated number of jobs created from construction is:

#### Annual average employment (2017 – 2020): 1,149 (326 direct and 823 indirect)

#### Productivity impacts (GSP) of ongoing employment

While the proposed development will not have a direct impact on productivity, it will likely support and help to facilitate a number of jobs moving between locations with differing levels of productivity which, in turn, has the potential impact the overall productivity of the workforce.

By catering for new employment in highly productive sectors, the development will help to support a net increase in productivity which has the potential to increase the Victorian economy by \$90 million in 2020. Depending on the ability of the project to attract workers from interstate or overseas, the increase could be as much as \$226 million in 2020.

<sup>&</sup>lt;sup>9</sup> REMPLAN is an economic analysis software package designed for use by economic development practitioners. REMPLAN provides detailed economic data for single or combinations of local government areas and also incorporates a dynamic economic modelling capability to allow the analysis of 'what if' scenarios.

Table 9 Productivity uplift results (\$m, real)

	2020
Scenario 1 - Full redistribution	\$90m
Scenario 2 - Partial redistribution of employment	\$226m

Source: EY analysis

### Overall economic flows supported by ongoing employment

In order to calculate the economic flows supported by the ongoing employment in the precinct, a multiplier analysis has been undertaken using REMPLAN.

The analysis shows that by 2020, the Carlton Connect Initiative has the potential to support up to 8,571 ongoing jobs (3,193 direct and 5,378 indirect) across a range of industries. High level analysis suggests that these ongoing jobs have the potential to contribute up to \$2.77 billion (\$1.08 billion direct and \$1.69 billion indirect) in gross output and \$1.32 billion (\$507 million direct and \$811 million indirect) in value added to the Victorian economy.

Table 10 Ongoing operations impact (2020)

Ongoing operations	Direct impact	Indirect impact	Total impact
Output (\$m, real)	\$1,079	\$1,687	\$2,765
Value Added (\$m, real)	\$507	\$811	\$1,319
Source: DEMDLAN, EV enclusio			

Source: REMPLAN, EY analysis

Estimates of gross output (total economic activity) and Gross Value Add (GVA) are not additive and should not be presented as such, as GVA reflects gross output adjusted for costs of goods and services produced. Furthermore, the productivity (GVA) uplift reflects the economic benefit of the project, whereas the direct and indirect contribution to gross output and GVA represent overall economic activity (the total flows of goods and services through the economy). As such, they cannot be added to the productivity/GVA impacts associated with the relocation of employment to a more productive location and industry sector.