

Gladstone region non-resident population projections, 2016 to 2022

Introduction

With the use of fly-in/fly-out and drive-in/drive-out (FIFO/DIDO) work practices, it is common for resource regions to have a large population of non-resident workers who live in the area only while on-shift. This non-resident population is not included in the Australian Bureau of Statistics' (ABS) official resident population estimates for these areas.

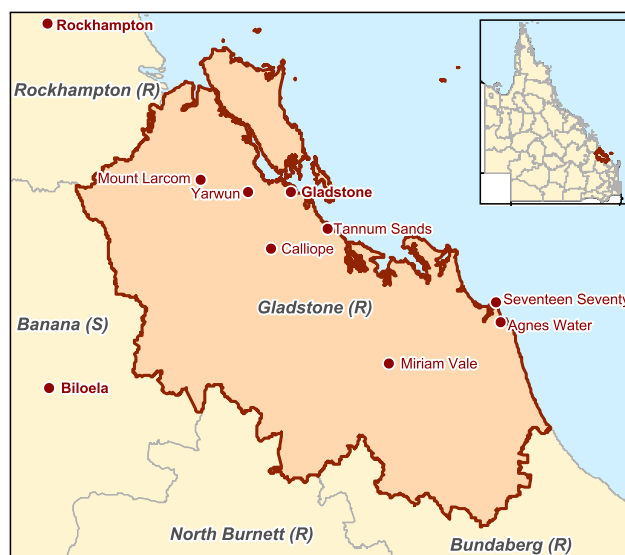
To bridge this information gap, *Gladstone region non-resident population projections, 2016 to 2022* provides projected numbers of non-resident workers on-shift for the local government area (LGA) of Gladstone (R) (Figure 1). The report presents three projection series, based on information provided by industry regarding existing operations and future projects. Data tables to supplement the report are available on the Queensland Government Statistician's Office (QGSO) website (www.qgso.qld.gov.au).

Key points

Key points of this report include:

- The non-resident population of Gladstone (R) declined from a peak of 6,660 persons in June 2014 to 5,430 persons in June 2015.
- The size of the non-resident population of Gladstone (R) is closely linked to construction activity for major resource projects. Workforces for existing operations and projects that have commenced production are largely resident rather than FIFO/DIDO, and have relatively little impact on the region's non-resident population.
- Construction of Wiggins Island Coal Export Terminal (WICET) and the first liquefied natural gas (LNG) project was completed in 2015, along with the first trains for each of the other two LNG projects. Two LNG trains are still under construction, and are expected to be in commission by the end of 2016.
- Three projection series represent a range of potential non-resident population outcomes for Gladstone (R) out to 2022, based on different assumptions about future project and operations workforces. All three projection series anticipate that the region's non-resident population will continue to decline in 2016, as LNG project construction activity winds down.
- The Series A projection, which takes into account the FIFO/DIDO workforces of all existing operations and projects currently under construction, expects that the non-resident population will decline to 400 persons by 2018 then remain relatively stable to 2022, with a small temporary increase to 430 persons in 2019.
- The Series B projection includes projects that have had an environmental impact statement (EIS) approved but are yet to reach final investment decision (FID). This series follows the same trajectory as Series A to 2021, before increasing to 460 persons in 2022.
- The Series C projection follows the Series A and B projections to 2017, then increases to 1,220 persons in 2019, before falling to 540 persons by 2022. This series factors in projects that have lodged an EIS but are yet to proceed through to final approval.
- None of the projection series for Gladstone (R) include consideration of the Arrow Bowen Pipeline, Arrow Surat Pipeline, or Moura Link – Aldoga Rail Project, which are classified as Category E.

Figure 1 Gladstone (R) study area



The study area for projections in this publication is defined as the LGA of Gladstone (R). This region includes the city and port of Gladstone, as well as other residential centres and the rural hinterland.



Gladstone region – future influences

The LGA of Gladstone (R) hosts Queensland's largest multi-commodity port and is a major industrial hub. Gladstone (R) has close links with the resource sector, with around 5,600 full-time employees and contractors working in alumina refining, aluminium smelting, cement and chemicals production, power generation, rail transport and coal export operations in 2015 (QGSO, 2015). Coal exports from the Port of Gladstone totalled 68.6Mt for 2014–15, including 461,000t loaded from WICET, which commenced operations in April 2015 (GPC, 2015).

With construction of many resource projects approaching completion in 2015, the size of the region's non-resident workforce began to decline. The number of non-resident workers on-shift in Gladstone fell to 5,430 persons in June 2015, down from the peak of 6,655 persons recorded a year earlier (QGSO, 2015). While WICET's transition from construction to operational status was a contributing factor, most of this change was associated with the completion and commissioning of three LNG projects:

- Queensland Curtis LNG (QCLNG/BG Group) project commenced commercial operations from its second Gladstone train in July 2015, with plateau production of LNG expected in mid-2016 (BG Group, 2015).
- The Gladstone LNG (GLNG) project exported its first shipment of LNG from Gladstone in October 2015 (Santos GLNG, 2015a), with first shipments from its second train due in the second quarter of 2016 (Santos GLNG, 2015b).
- The Australia Pacific LNG (APLNG) achieved first export of LNG from Gladstone in January 2016 (APLNG, 2016). Construction continues on the project's second train which is expected to be complete by the end of 2016.

With all four trains operational by the beginning of 2016, LNG production and export reached a notable milestone with the 100th shipload of gas departing Gladstone in January 2016 (LNG World News, 2016).

The ongoing operational workforces for these LNG projects will be small compared with their construction workforces, and predominantly resident rather than FIFO/DIDO. As a result, changes to the size of Gladstone (R)'s non-resident population out to 2022 will be influenced largely by the commencement of future projects, including those currently in the development pipeline (Table 2, page 5). These include:

- the Gladstone Nickel Project, which had an EIS approved in 2009 but has yet to announce FID
- the Euroa Steel Plant Project (formerly the Gladstone Steel Making Facility), which has yet to have an EIS approved
- the WICET Expansion (WEXP1 and WEXP2), which has been approved but has yet to announce FID
- the Arrow Bowen Pipeline and the Arrow Surat Pipeline, which both have elements in Gladstone (R). While these projects have been approved, FID has yet to be announced.

The Arrow LNG Plant project proposed for Gladstone was declared "off the table" by joint venture partner Royal Dutch Shell plc in January 2015 (Royal Dutch Shell plc, 2015), and has since been categorised as "cancelled/divest" in the company's quarterly reports (Royal Dutch Shell plc, 2016a). More recently, Shell successfully acquired all issued share capital of BG Group plc as of January 2016, giving Shell effective control of the QCLNG/BG LNG operations in Gladstone and BG Group's extensive gas infrastructure and tenements in the Surat Basin (Royal Dutch Shell plc, 2016b).

Projection methodology

QGSO's 2016 to 2022 non-resident population projection methodology comprises four different series, which represent a range of possible outcomes arising from the future development of resource projects and operations in Gladstone (R). Each series estimates the cumulative non-resident population that would be present in the LGA at 30 June of each year to 2022, should the operations and projects listed in each category proceed according to advised timeframes and workforce numbers.

Users of these projections should note that there is a degree of uncertainty about the likelihood of these projects proceeding as assumed, and as such the projections should be regarded as being indicative scenarios rather than probabilistic predictions. QGSO does not advocate any one of these four projection series as being the most likely or favoured outcome. See caveats on page 6 of this report for further details.

The four projection series are based on the workforces of operations and projects at the time of preparation. Projects are categorised and included in each scenario according to their standing in the EIS process¹.

- **Series A** projection is based on the number of non-resident workers on-shift who were engaged in existing resource operations and associated infrastructure activities in the area at June 2015. The projection takes into account future changes to those operational workforces as advised by resource company sources, as well as the estimated

¹ The projections also include some projects where an EIS is not or may not be mandatory.

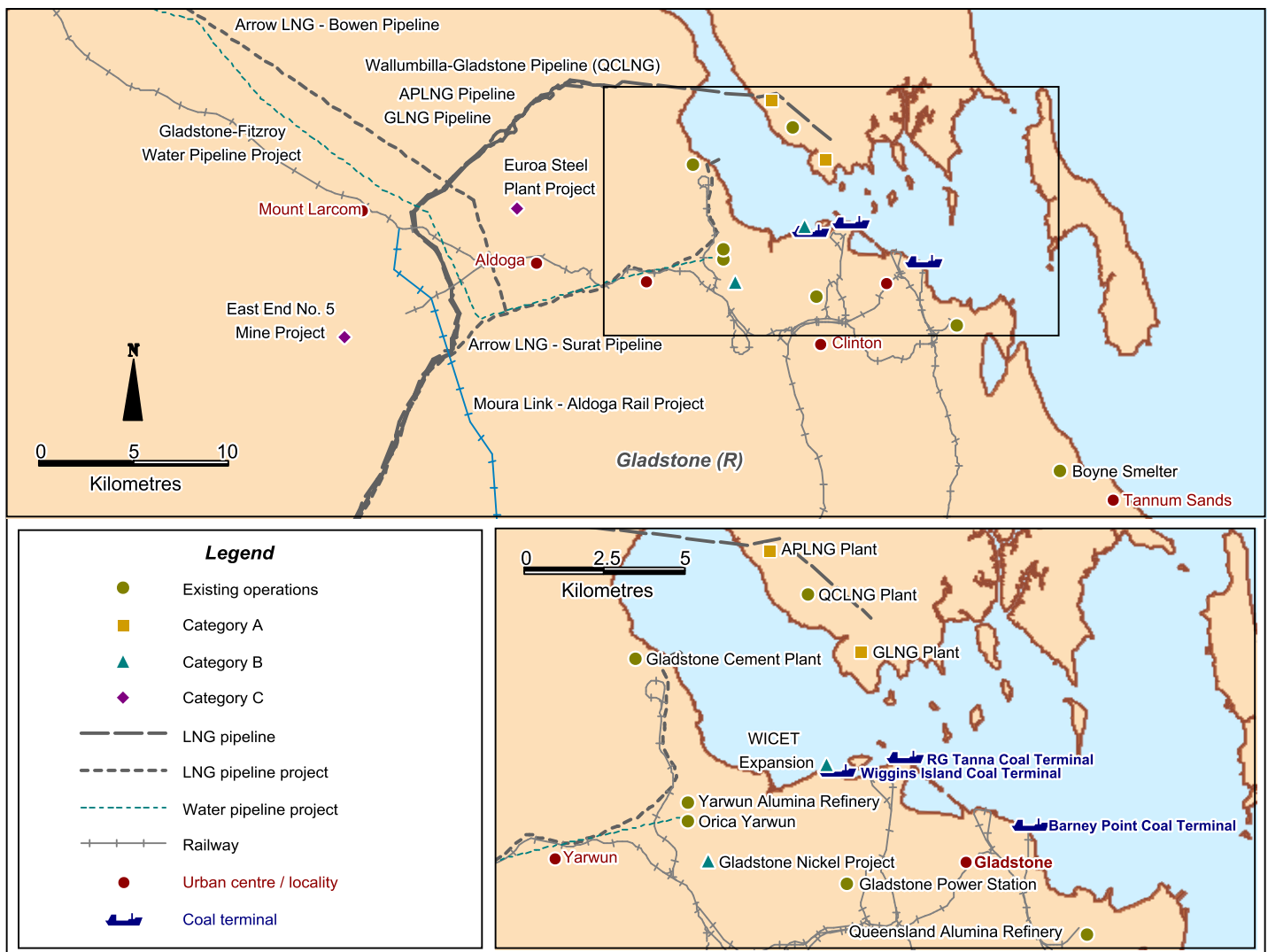
non-resident construction and operational workforces of Category A projects (i.e. those that had reached FID) at the time of preparation.

- **Series B** projection includes the Series A projection plus projected growth in the non-resident population arising from Category B projects (those that have an EIS approved but have yet to reach FID).
- **Series C** projection includes the Series A and B projections, plus the projected growth in the non-resident population arising from Category C projects (those that have lodged an EIS, but have yet to proceed through to final approval).
- **Series D** projection includes Series A, B and C projections, plus the projected growth in the non-resident population from Category D projects (those that have yet to publish an EIS, including projects that have lodged an initial advice statement (IAS) as well as projects that have yet to begin the approvals process). There is no Series D projection for the Gladstone region in this edition as there are no future projects in category D.

Where FID for an approved project has been delayed indefinitely, or in circumstances where it is not possible to give consideration to indicative workforce data or sequencing, the project is designated as Category E and is not included in any of the four projection series. Other projects that are dependent on Category E projects in order to commence are also designated as Category E, and excluded from consideration.

A full list of existing operations and projects included in each category is available in Table 2 (page 5), and a map of existing operations and future projects in Gladstone (R) is shown in Figure 2.

Figure 2 Existing operations and future projects^(a), Gladstone (R)



(a) Future project status is current as at March 2016. Existing operations are included in Series A projections. See Table 2 (page 5) for a full list of existing operations and future projects by category. Pipelines, rail corridors, and other locations shown in map are indicative only.

Source: QGSO, 2016

Projected non-resident workers on-shift, Gladstone region

The non-resident population of Gladstone (R) fell from a peak of 6,660 persons in June 2014 to 5,430 persons in June 2015 (QGSO, 2015). This decline in the number of FIFO/DIDO workers present in the region was expected, and is largely due to the completion of construction for major resource projects during that period. These included the first two trains of the QCLNG LNG Plant and the WICET port facility, which began operations in 2014–15. Construction of the first trains of two other LNG plant projects (GLNG and APLNG) has since been finalised, and both have commenced operations.

Three projection series are presented (Table 1, Figure 3). Each anticipates that the future non-resident population of Gladstone will diminish in coming years, as construction of the final two trains for the APLNG and GLNG reaches completion. The three series also reflect changes to the number of non-resident workers engaged in resource industry operations, while two series include the impact of projects that are in the development pipeline but have yet to reach approval or FID.

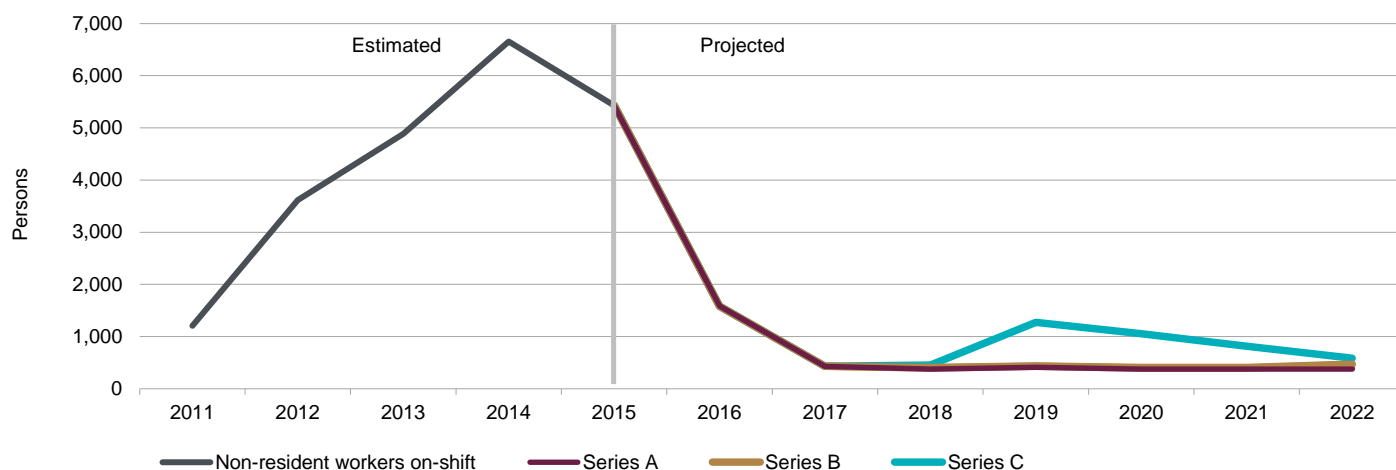
Series A projects the non-resident population to continue to decline rapidly to 430 persons by June 2017, following the expected completion of construction of the APLNG and GLNG LNG Plants in late 2016. The number of non-resident workers on-shift will then remain relatively stable to 2022, with some minor fluctuations. This residual non-resident population includes the relatively small number of non-resident workers involved in ongoing operations.

The Series B projection follows the same trajectory as Series A to 2021, before increasing to 460 persons in 2022. This series reflects the additional influences of the proposed Gladstone–Fitzroy Water Pipeline, the Wiggins Island Coal Export Terminal (WICET) Expansion and the Gladstone Nickel Project.

The Series C projection further factors in the non-resident populations associated with the proposed East End No. 5 Mine Project and Euroa Steel Plant Project. According to this series, the number of non-resident workers on-shift in Gladstone (R) will increase from 410 persons in 2018 to 1,220 persons in 2019, before falling to 540 persons by 2022.

None of the projection series for Gladstone (R) include consideration of Arrow Energy's LNG projects (the Arrow Bowen Pipeline and Arrow Surat Pipeline) or Aurizon's Moura Link – Aldoga Rail Project, which are classified as Category E (refer Table 2, page 5).

Figure 3 Past and projected non-resident workers on-shift, Gladstone (R)



Source: QGSO estimates, 2011 to 2015; QGSO projections, 2016 to 2022

Table 1 Projected non-resident workers on-shift, Gladstone (R)

Projection series	Number of non-resident workers on-shift at 30 June							
	Estimated		Projected					
	2015	2016	2017	2018	2019	2020	2021	2022
Series A	5,430	1,580	430	400	430	400	400	400
Series B	5,430	1,580	430	400	430	400	400	460
Series C	5,430	1,580	430	410	1,220	1,010	760	540

Figures in this table have been rounded to the nearest 10; see Notes at end of report for details.

Source: QGSO estimates, 2015; QGSO projections, 2016 to 2022



Queensland Government Statistician's Office

Table 2 Resource operations and future projects, Gladstone (R)

Category ^(a)	Project / operation name	Company name	LGA
<i>Existing operations</i>			
A	Boyne Smelter	Pacific Aluminium	Gladstone (R)
A	Gladstone Cement Plant	Cement Australia	Gladstone (R)
A	Gladstone Power Station	NRG Gladstone	Gladstone (R)
A	Gladstone rail operations	Aurizon	Gladstone (R)
A	Orica Yarwun	Orica	Gladstone (R)
A	Port of Gladstone ^(b)	Gladstone Ports Corporation	Gladstone (R)
A	Queensland Alumina Refinery	Queensland Alumina	Gladstone (R)
A	QCLNG LNG Plant ^(c)	QGC (BG Group)	Gladstone (R)
A	Wiggins Island Coal Export Terminal (WICET)	WICET Pty Ltd	Gladstone (R)
A	Yarwun Alumina Refinery	Rio Tinto Aluminium	Gladstone (R)
<i>Future projects</i>			
A	APLNG LNG Plant ^(d)	ConocoPhillips	Gladstone (R)
A	GLNG LNG Plant ^(e)	Santos GLNG	Gladstone (R)
B	Gladstone–Fitzroy Water Pipeline	Gladstone Area Water Board	Gladstone (R), Rockhampton (R)
B	Gladstone Nickel Project	Gladstone Pacific Nickel	Gladstone (R)
B	Wiggins Island Coal Export Terminal (WICET) Expansion – WEXP1 and WEXP2	WICET Pty Ltd	Gladstone (R)
C	East End No. 5 Mine Project	Cement Australia	Gladstone (R)
C	Euroa Steel Plant Project	Euroa Steel Plant Project Pty Ltd	Gladstone (R)
E	Arrow Bowen Pipeline	Arrow Energy	Gladstone (R), Rockhampton (R), Isaac (R)
E	Arrow Surat Pipeline	Arrow Energy	Gladstone (R), Banana (S), Western Downs (R)
E	Moura Link – Aldoga Rail Project	Aurizon	Gladstone (R)

(a) The four categories include existing operations, as well as future projects grouped according to their status in the EIS process as at March 2016. See methodology (page 2) and caveats (page 6) for further details. There are no Category D projects in Gladstone (R).

(b) Includes the RG Tanna and Barney Point Coal Terminals.

(c) BG Group's Australian business QGC Pty Limited is the operator and majority owner of the Queensland Curtis LNG (QCLNG) project.

(d) Australia Pacific LNG (APLNG) is a joint venture between Origin Energy, ConocoPhillips and Sinopec.

(e) Santos Gladstone LNG (GLNG) is a joint venture between Santos, PETRONAS, Total and KOGAS.

Source: QGSO, 2016



Caveats

QGSO's non-resident population projections provide an estimate of the number of non-resident workers on-shift by LGA. They are based on the on-shift non-resident worker population estimates established in previous years and take into account future workforce growth arising from resource industry and infrastructure projects planned for the region, as reported directly by resource companies.

Projections are based on the best available data and advice at the time of preparation. Numbers of non-resident workers on-shift are projected for the period to 2022 only, as it is considered that the reliability of information regarding future projects diminishes considerably beyond that point. Projected numbers of non-resident workers on-shift presented in this report represent an estimate for 30 June of the indicated year. Temporary peaks and falls in project workforces may occur in between these mid-year estimates for successive years.

The three projection series represent a range of possible outcomes based on the status of projects in the EIS process at the time of production in March 2016 (see the projection methodology, page 2, for further details). These outcomes are subject to change over time as projects proceed through the approvals process. Projections reflect the cumulative impacts of multiple projects at a given point in time, and changes to any individual project will affect the projected cumulative outcome.

Category E comprises projects that have completed the approvals process but where FID has been delayed indefinitely; projects where it is not possible to give consideration to indicative workforce data or sequencing; and other projects that are dependent on the commencement of projects in this category. These projects could not be allocated to a projection series at the time of preparation. Changes in the status of these projects could substantially alter any or all of the possible outcomes represented by the four projection series.

The projections reflect certain assumptions about the likelihood of projects advancing according to advised commencement dates, sequencing of project stages and timing of workforce peaks. Changes to any of these factors can make a significant difference to the cumulative non-resident workforce at a given point in time, particularly during construction phases. Short-term influences such as extreme weather events, industrial action and supply chain delays can all result in changes to project scheduling and to these projections.

QGSO does not advocate any one series as being the most likely or favoured outcome and users should consider the assumptions affecting each potential scenario. Given the volatile nature of the resource sector and the inherent uncertainty about the likelihood of projects proceeding as indicated, these projections should be considered as being indicative of the range of potential outcomes rather than literal accounts of future growth.

Notes

(R) – Regional Council (S) – Shire

Non-resident workers are people who fly-in/fly-out or drive-in/drive-out (FIFO/DIDO) to work and live in the area temporarily while rostered on, and who have their usual place of residence elsewhere. Non-resident workers include FIFO/DIDO mining and gas industry employees and contractors, construction workers and associated sub-contractors. Figures in this report refer to the number of non-resident workers on-shift, or present in the area at a given point in time, and should not be confused with total non-resident workforce numbers.

Data in this report are derived from surveys conducted by QGSO in 2015 and other sources. The Survey of Accommodation Providers counted the number of non-resident workers on-shift during the last week of June 2015. See the *Gladstone region population report, 2015* <http://www.qgso.qld.gov.au/products/reports/gladstone-region-pop-report/index.php> for further details. The Resource Operations Employment Survey and the Resource Projects Employment Survey gathered workforce information from all resource companies with existing operations or future projects in Gladstone (R) at June 2015. A full list of existing operations and future projects is available in Table 2 of this report.

Figures in tables have been rounded to the nearest 10. As a result of rounding, discrepancies may occur between sums of the component items and totals. Percentages and other calculations are made prior to rounding of figures and discrepancies might therefore exist between these calculations and those that could be derived from the rounded figures.

Data tables to supplement this report are available on-line at <http://www.qgso.qld.gov.au/products/tables/index.php>.

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