

Are there 27,000 jobs in the Galilee Basin?

Briefing Note
January 2014

Rod Campbell

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As we begin the 21st century, new dilemmas confront our society and our planet. Unprecedented levels of consumption co-exist with extreme poverty. Through new technology we are more connected than we have ever been, yet civic engagement is declining. Environmental neglect continues despite heightened ecological awareness. A better balance is urgently needed.

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Key points:

- Queensland government statements that the development of the Galilee Basin would result in an increase of 27,000 jobs are unfounded.
- No source is provided for this estimate. It is likely to be based on the economic assessments of the four main Galilee Basin projects, Carmichael, Alpha, Kevin's Corner and China First.
- These projects propose to employ around 9,000 people, not 27,000.
- The 27,000 figure comes from "indirect" employment impacts, which have been estimated with an economic model the ABS says is "biased", the Productivity Commission says is "abused" and the NSW Land and Environment Court found to be "deficient".
- These models are inaccurate as they assume there is unlimited labour in the economy and they ignore the negative impacts of large mining projects on other mining projects and other industries like agriculture and manufacturing.
- Agricultural employment has decreased by 28 per cent in Queensland during the mining investment boom. Manufacturing has been steady, despite modelled predictions of large increases.
- Importantly the models assume that all these projects are financially viable and will proceed on schedule. With low coal prices this will not be the case, as demonstrated by a Galilee Basin proponent going into administration recently.

Introduction

In recent media statements senior Queensland Government members have claimed that development of coal mines in Queensland's Galilee Basin will create 27,000 jobs.¹ No source for this figure is provided in the media statements and no such estimate features in the Government's Galilee Basin Strategy.²

Although no source is provided, the 27,000 estimate is likely to have come from the economic assessments of the four most advanced Galilee Basin projects, Carmichael, Kevin's Corner, Alpha and China First. The economic assessments of these projects estimate their total impact on Queensland employment at 26,974 jobs, as shown in the table below:

Table 1: Total employment impact of Galilee Basin projects for year 2030

2030 employment impact		Source
Carmichael	10,797	Supplementary Environmental Impact Statement, economic appendix (GHD, 2013), page 30, table 9
Alpha	5,691	Environmental Impact Statement, economic impact statement, appendix N, (Economic Associates, 2010), page 51, table 5.17
Kevin's Corner	6,532	Environmental Impact Statement, economic impact statement, appendix V, (Economic Associates, 2011) Page 67, table 5.21
China First	3,954	Environmental Impact Statement, economic impact assessment, (AEC group, 2010), page (xv) table ES.6
Total	26,974	

The estimates in table 1 are all based on the year 2030. All assessments assume that these projects are into their main production phase by 2030 and that a similar level of employment impact is sustained over most of the project life. Earlier years are more volatile during construction and the different timing of each project, so the 2030 estimate would be more indicative of the general cumulative employment claims of the projects.

Three points should be noted about these estimates:

- These estimates do not estimate how many people work in these mines, but the impacts of the projects on "downstream" or "indirect" jobs in other industries.
- The method used for making most of these estimates is "input-output" modelling, which has been described by the Australian Bureau of Statistics (ABS) as "biased", the Productivity commission says is regularly "abused" and the NSW Land and Environment Court has dismissed as "deficient".³
- They assume the projects are financially viable and will proceed as planned.

¹ <http://www.smh.com.au/it-pro/well-do-what-it-takes-in-galilee-basin-seeney-20141117-11o6zb.html>
<http://www.abc.net.au/lateline/content/2014/s4130566.htm>

The figure is 28,000 in this media statement -

<http://statements.qld.gov.au/Statement/2014/11/17/historic-agreements-bring-jobs-to-queensland>

² (Queensland Government, 2013)

³ (ABS, 2011; Gretton, 2013; Preston, 2013)

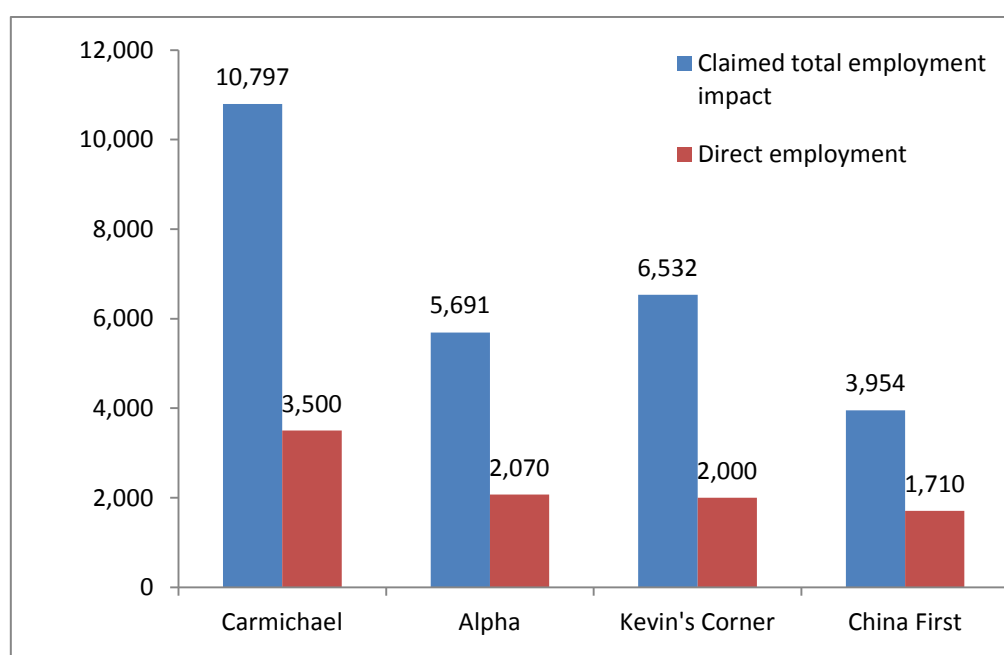
Direct and Indirect jobs in Galilee Basin Projects

The numbers of people who would actually work on the Galilee Basin mine projects is far smaller than the estimated indirect impacts, as shown in Table 2 and Figure 1 below:

Table 2: Galilee Basin Projects' direct and indirect jobs in 2030

	Indirect	Direct	Source - Direct
Carmichael	10,797	3,500	Supplementary Environmental Impact Statement, economic appendix (GHD, 2013), page 31, figure 22
Alpha	5,691	2,070	Environmental Impact Statement, economic impact statement, appendix N, (Economic Associates, 2010), page (xiv)
Kevin's Corner	6,532	2,000	Environmental Impact Statement, volume 1, section 2, Project description, page 31
China First	3,954	1,710	Environmental Impact Statement, economic impact assessment, (AEC group, 2010), page (vi)
Total	26,974	9,280	

Figure 1: Galilee Basin Projects' direct and indirect jobs in 2030



Sources: as above

Table 2 and Figure 1 show that the numbers of people who would actually work in Galilee Basin mining projects is estimated by the proponents at 9,280, around one third of the claimed total employment impact.

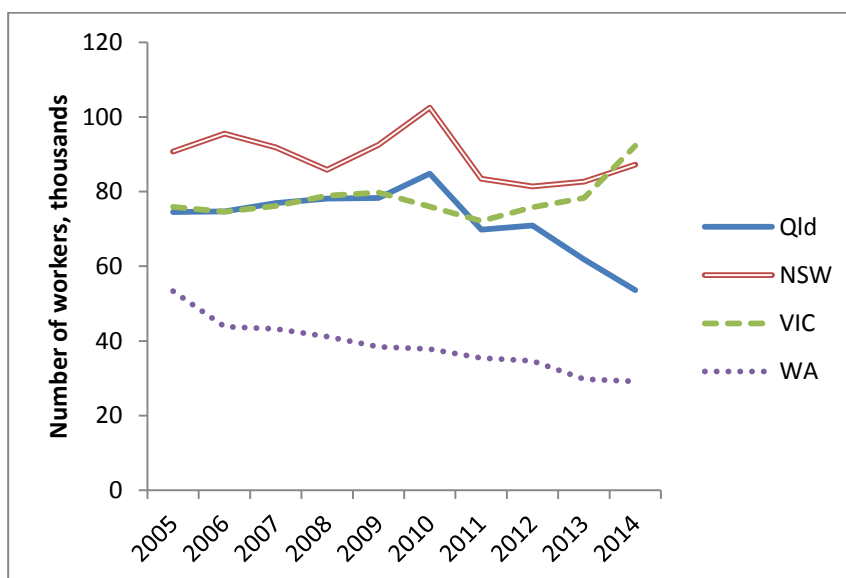
Indirect jobs calculations

The employment estimates for the Carmichael, Alpha and Kevin's Corner projects are based on input output models. These models are mathematically certain to overstate the employment impacts of the projects as they:

- Assume there is an infinite amount of skilled labour in the economy.
- Assume that workers for these projects do not come from other mining projects or other industries.
- Assume that wages and other costs faced by these projects and other industries do not change in the region as a result of the projects.⁴

Clearly these are not realistic assumptions. There is a limited amount of labour in the economy and most workers on mining projects come not from unemployment, but from other mining projects and other industries. This is more the case for mining projects than for any other industry, as shown in research by the Reserve Bank of Australia.⁵ This is also shown by real world data from the ABS. Figure 2 below shows reductions in agricultural employment in the mining states of Queensland and WA, while Victoria has seen an increase and NSW has returned to earlier levels:

Figure 2: Employment in agriculture 2005-2014, selected states



Source: ABS (2014) 6291.0.55.003 Labour Force, Australia, Detailed, Quarterly, presented in (Campbell, 2014)

Figure 2 shows that 21,000 jobs have been lost in Queensland agriculture since 2010, 28 per cent of total agricultural employment. A still greater percentage has been lost in Western Australia. Input output modelling assumes that this decline does not, indeed cannot, happen.

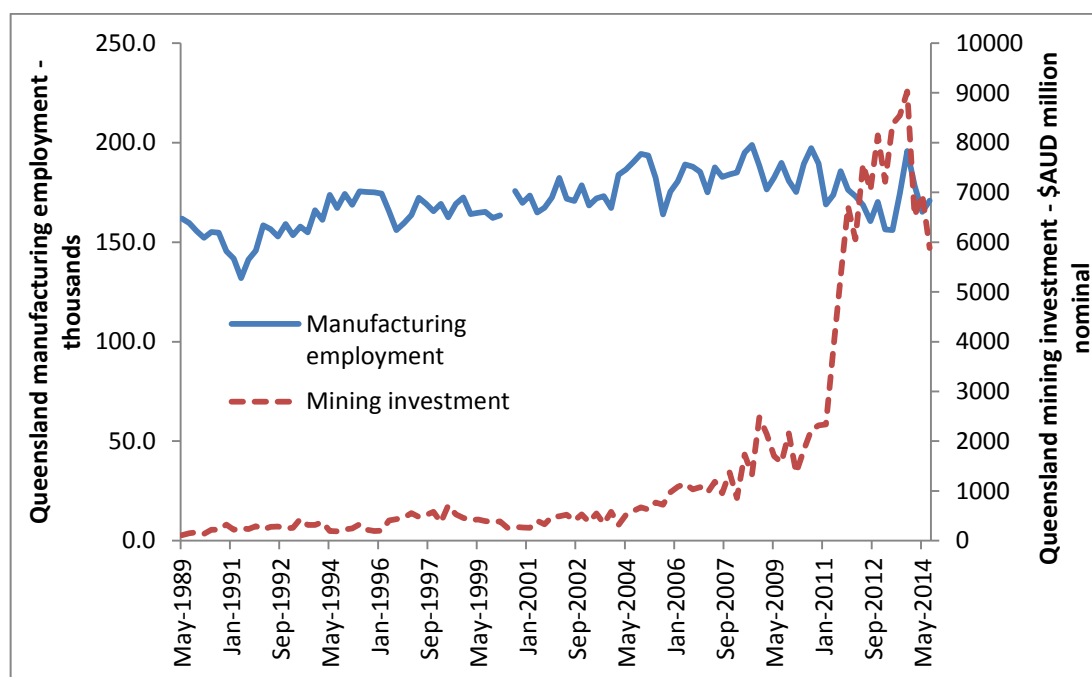
Input output models usually predict a large increase in manufacturing employment due to increased mining spending on machinery and equipment. For example, the Kevin's Corner economic impact assessment estimates that due to the expenditure of the project that Queensland manufacturing employment would increase by 3,500 people.⁶ However, ABS data shows that no such increases actually occur. Queensland manufacturing employment has remained around the same level despite massive increases in mining spending, as shown in Figure 3 below:

⁴ For more detailed and technical discussion of the limitations of input output modelling, see (ABS, 2011; Denniss, 2012; Gretton, 2013; Layman, 2002)

⁵ (D'Arcy, Gustafsson, Lewis, & Wiltshire, 2012)

⁶ (Economic Associates, 2011) See page 67, table 5.21, years 2029-30

Figure 3: Queensland manufacturing employment and mining investment



Sources: ABS 6291.0.55.003 Labour Force, Australia, Detailed, Quarterly and ABS 5625.0 Private New Capital Expenditure and Expected Expenditure, Australia

Figure 3 shows that despite unprecedented levels of mining investment since 2008, the state's manufacturing employment has barely changed. If anything manufacturing employment has trended downwards.

The reason manufacturing employment has not changed with mining investment is that while some parts of the manufacturing industry benefit from mining spending, others are negatively affected. As manufacturers compete for labour, wages are bid up. Workers go to the benefiting parts of the industry from the negatively affected parts. The negatively affected parts may take on new staff, or they might reduce employment, close down or delay their operations. The data shows that few new staff have entered the sector.

The only Galilee Basin project not to use input output modelling in its assessment is the China First project. Its modelling is based on 'general equilibrium' modelling which does not assume unlimited labour. The assessment for that project actually notes that for most of the project's life there will be 1,666 less people working in manufacturing in Queensland as a result of the project. This more sophisticated model and more realistic assumptions is the reason the China First project has the least difference between its direct and indirect employment estimates.

Financial viability

All the employment modelling assumes these projects are financially viable and will proceed according to schedule. Current coal prices make this an unrealistic assumption. Many economists and banks are sceptical that the projects will proceed. Macquarie Bank has said that developing these projects would require people to "ignore conventional economics".⁷

⁷ (Scharples, 2013)

In fact, few of the Galilee Basin projects are likely to proceed as planned. The marginal financial nature of Galilee Basin projects and the inaccuracy of input output models is demonstrated by Bandanna Energy, which has recently gone into administration. One of Bandanna's key assets is the South Galilee Basin coal project. The project's input output model concluded that it would employ 1,909 people and increase annual output by \$1.2 billion from 2019 to 2047. In fact, the project is financially unviable, so is likely to employ zero people, produce zero output and has lost money for shareholders.⁸

Conclusion

Claims that the development of the Galilee Basin coal projects will create 27,000 jobs are unfounded. If the projects do go ahead they will require only around 9,000 workers.

The remainder of the 27,000 estimate is based on indirect jobs estimates which are unreliable. The modelling techniques used are questionable and empirical data shows that they ignore the negative effects of mining projects on other industries, particularly agriculture and manufacturing.

Due to the dubious financial viability of the Galilee Basin projects, even the 9,000 jobs estimate is unlikely to be realised.

⁸ (Aurecon Hatch, 2012) see p39-40

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Subsidisation of Abbot Point coal port expansion

Briefing note
16 January 2015

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Key points

- Environmental risks of Abbot Point port expansion have been well publicised, but economic costs to Queensland taxpayers have not been widely reported.
- Nearly \$2 billion has been spent on facilitating expansion of the Abbot Point coal port.
- Further spending is likely, at least hundreds of millions.
- Queensland Treasury emphasises that such spending comes at the expense of schools and hospitals.
- No cost benefit analysis or other economic assessment has been conducted, contrary to Queensland Government guidelines and statements by Treasurer Tim Nichols.
- The dubious financial viability of Galilee Basin coal projects threatens the expansion of Abbot Point and the large sums spent by taxpayers.

Introduction

The Abbot Point Port is located 25 kilometres from the town of Bowen, Queensland, adjacent to the Great Barrier Reef World Heritage Area. Ships accessing the port must pass through the Great Barrier Reef.

The Abbot Point Port currently has one operating coal terminal. The operating terminal has capacity to export 50 million tonnes per annum (Mtpa). 23 million tonnes were shipped in 2013-14 and the port is on track to export over 30 million tonnes in 2014-15. The coal comes from mines in the Bowen Basin to the south of the port.¹

Proposals for several very large new mines in the Galilee Basin, further to the west, have spurred proposals to expand the Abbot Point port and increase its export capacity. The most advanced development proposal, the Terminal 0 development, is for a 70 Mtpa expansion.²

To facilitate the expansion projects, the Queensland government is proposing to dredge 3 million cubic meters of material to make the port deeper and help ships access it.³ The initial proposal to dump the dredge spoil in the Great Barrier Reef Marine Protection Area was met with considerable public backlash and has since been changed to a proposal to dump the spoil onto nearby wetlands, which are also environmentally significant.⁴

While environmental aspects of the Abbot Point project have been widely reported, less well known is the economic assistance given to the port by the Queensland taxpayer.

Nearly \$2 billion of public money has been spent to date on items that assist the expansion of the Abbot Point port. The Queensland Government intends to spend much more, at least hundreds of millions in the coming years to expand the port further.

Despite the Queensland Treasurer calling for cost benefit analysis to be done for all major government projects, there has been no economic assessment of any kind for the Abbot Point expansion proposals.

¹ <http://www.nqbp.com.au/abbot-point/>

² <http://www.nqbp.com.au/abbot-point/>

³ <http://www.dsdip.qld.gov.au/infrastructure-planning/securing-the-future-of-the-port-of-abbot-point.html>

⁴ <http://www.smh.com.au/environment/conservation/new-abbot-point-dredge-plan-to-dump-spoils-in-wetlands-20141029-11dppx.html>

The Queensland government money spent on Abbot Point comes at the expense of spending on other government services such as education and health. This fact has been emphasised by Queensland Treasury.

There is a real opportunity cost for governments in undertaking the initial capital expenditure. Governments face budget constraints and spending on mining related infrastructure means less infrastructure spending in other areas, including social infrastructure such as hospitals and schools.⁵

Even as a commercial investment this expenditure is risky, with Macquarie Bank considering the development of the Galilee Basin as “ignoring conventional economics.” This makes economic assessments that look at the riskiness of any expansion even more important.

Taxpayer assistance to Abbot Point port expansion

The Abbot Point Port is owned by the North Queensland Bulk Ports Corporation (NQBPC), a corporation owned by the Queensland government. While NQBPC’s day-to-day operations are funded by user fees, their projects receive money for capital expenditure from the Queensland state budget.

In addition to port infrastructure, Queensland taxpayers have also put large amounts of money into coal railways to assist the Abbot Point project.

Since 2008-09 Queensland taxpayers have spent nearly \$2 billion on assisting the expansion of Abbot Point, as shown in the table below:

Table 1: Taxpayer assistance to Abbot Point port expansion

Budget items from 2008-09 to 2014-15	Total cost \$m
INFRASTRUCTURE AND PLANNING	
Abbot Point State Development Area (Land)	19.8
Abbot Point State Development Area (service infrastructure)	12.1
Abbot Point Indigenous Land Use Agreement	4.5
Abbot Point supply (Ergon)	32.4
Goonyella-Abbot Point Expansion (Missing Link Project)	830.7
Goonyella-Abbot Point Expansion (Long Lead Time Items)	42.1
Abbot Point Expansion X50	724.1
Abbot Point Expansion X21	20.0
Abbot Point Expansion X25	95.0
Abbot Point Expansion SR1 & SR2	71.0
Abbot Point Expansion X110 (Prelim)	37.5
X230 Masterplan	4.0
Abbot Point Terminals 2 & 3	23.6
Common User Infrastructure	1.6
Abbot Point Port Development	28.9
Total	1,947.1

⁵ (Queensland Treasury, 2013) p15

Sources: Queensland Budget Papers 2008-09 to 2014-15. See also (Peel, Campbell, & Denniss, 2014)

Table 1 shows the largest items of expenditure relevant to the Abbot Point expansion have been in railway infrastructure to the port and the X50 project, which expanded the ports capacity to the current 50 Mtpa. These projects alone account for over \$1.5 billion.

Table 1 does not include expenditure for the current dredging proposal as this item does not yet appear in the State Budget Papers. Table 1 does not include potential expenditure on future rail projects to the Galilee Basin which the government intends to spend “hundreds of millions” on.⁶

Economic assessment of Abbot Point expenditure

There has been no public economic assessment of the current proposals for the Abbot Point expansion. This is surprising as Queensland Treasurer, Tim Nichols, declared cost benefit analysis would be compulsory for major projects in this year’s budget speech:

*As promised at the election, all major projects now undergo a cost benefit analysis. No longer do we have dams without pipes, pipes without dams, nurses without pay and trains without seats!*⁷

The Treasurer’s call for cost benefit analysis is consistent with Queensland Government guidelines⁸ and recent research from the Australian Coal Association Research Program, which says that one of the “key aspects of economic assessment that can improve confidence in the inputs to the decision-making process” is:

*Inclusion of a **comprehensive Cost Benefit Analysis**, with proper identification of non-market impacts...*⁹

Not only have the Abbot Point projects not been properly assessed, but no public cost benefit analysis has been carried out for any of the Galilee Basin mine proposals, or of the Queensland Government’s Galilee Basin Development Strategy.¹⁰

Cost to Queensland of subsidising coal infrastructure

Supporters of coal projects argue this expenditure is justified as they allow increases in royalties and user fees over time. This argument ignores two key issues:

- Money spent on coal infrastructure cannot simultaneously be spent on other government services. Other services, such as education and healthcare, also provide economic benefit as well as directly benefiting the Queensland community.
- Mining investment is risky. Markets may change, companies may go bankrupt and projects may not proceed as expected. The returns to the state are uncertain and in the future, while the opportunity costs to the budget are certain and immediate, as are many wider environmental and social impacts of the projects.

⁶ <http://www.smh.com.au/it-pro/well-do-what-it-takes-in-galilee-basin-seeney-20141117-11o6zb.html>

⁷ (Nicholls, 2014) p4

⁸ (Qld DIP 2011, p18)

⁹ Hunter Research Foundation (2014) *Approval and planning assessment of black coal mines in NSW and Queensland: A review of economic assessment techniques*

¹⁰ (Queensland Government, 2013)

These points are emphasised by Queensland Treasury:

There is a real opportunity cost for governments in undertaking the initial capital expenditure. Governments face budget constraints and spending on mining related infrastructure means less infrastructure spending in other areas, including social infrastructure such as hospitals and schools.¹¹

Investment in Abbot Point comes at the expense of investment in other parts of the Queensland economy and community. Proper economic assessment should be carried out, particularly as there are doubts about the financial viability of Galilee Basin coal projects which are the drivers behind the port expansion.

Financial viability of Galilee Basin coal projects

The risk of investment in Abbot Point not being paid back is considerable and is widely discussed by economists and banks:

Development of the Galilee Basin looks increasingly remote, Macquarie Group Ltd., Australia's biggest investment bank, said in a May 1 research note. Prospects for project paybacks look extremely poor, the bank said. Further delays are likely unless "deep pocket" backers are able to ignore conventional economics.¹²

Detailed studies of Galilee Basin projects have concluded that they are "beyond speculative" and:

The magnitude of financial capital and infrastructure required, coupled with a depressed thermal coal market outlook make opening up the Galilee basin a challenging and high risk proposition.¹³

The marginal financial nature of Galilee Basin projects is demonstrated by Bandanna Energy, which has recently gone into administration. One of Bandanna's key assets is the South Galilee Basin Coal Project, which now looks unlikely to proceed.

Conclusion

Aside from the potential environmental impacts of the Abbot Point expansion, the Queensland public should be aware of the economic aspects of the expansion and related projects.

Nearly \$2 billion of public money has been spent to date on items that assist the expansion of the Abbot Point port. The Queensland Government intends to spend much more, at least hundreds of millions.

There is no economic assessment of the expansion proposals, contrary to the promise of the Queensland Treasurer to make cost benefit analysis compulsory for all major projects.

This expenditure comes at the expense of other spending on government services such as education and health care.

Even as a commercial investment this expenditure is risky, with Macquarie Bank considering the development of the Galilee Basin as "ignoring conventional economics."

¹¹ (Queensland Treasury, 2013) p15

¹² (Scharples, 2013)

¹³ (Buckley & Sanzillo, 2013) p9

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