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An analysis of the economic impacts of Arrow Energy's Gladstone LNG Plant

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Introduction

Arrow Energy plans to build a Liquefied Natural Gas (LNG) plant in Gladstone to export coal seam gas (CSG) from its reserves in the Surat and Bowen Basins. This construction project is proposed to occur at the same time as a large number of other projects in Gladstone such as the Yarwun Alumina Refinery Expansion, the Gladstone LNG Project, the Queensland Curtis LNG Project as well as many other mining projects in the local region. It is also proposed to occur during a larger mining boom in Queensland and Australia with the Federal Budget 2012-13 estimating investment of $120 billion in the resource sector in 2012-13 and a resource investment pipeline totalling $450 billion.

Arrow's LNG project will no doubt be very profitable to its foreign owners Royal Dutch Shell and PetroChina and to those people fortunate enough to be employed by Arrow either directly or indirectly. Balanced against these small numbers of winners are a large number of losers. Arrow's Economic Impact Assessment (EIA) does make an attempt to show some of the negative effects that the LNG project will have on the Gladstone region, Queensland and Australia.

The negative effects in the EIA include:

- The loss of 1,600 jobs across Queensland and Australia; 1,000 in Manufacturing
- $441.5 million of manufacturing activity will be lost
- Upward pressure on inflation
- Small and medium sized businesses will be hit with higher bills for payroll and rent. This could result in some of them shutting down
- Housing affordability will decline for those not employed in the new LNG plant
- More upward pressure on exchange rates
- Adding to existing skill shortages

Arrow's LNG project will involve two separate construction phases. The first construction phase will occur from 2013-14 to 2016-17 and then a second construction phase from 2022-23 to 2024-25. This will have the effect of creating a yoyo economy. During the construction phases thousands of mostly Fly in Fly out (FIFO) workers will descend on Gladstone. During the non-construction phases only around 450 operational workers will be required. This will create large spikes in demand that will be followed by large falls. This is likely to create further dislocation in the local economy.

When taking into account the current economic conditions and looking at the effects that the project is likely to have on the Gladstone, Queensland and Australian economies, this paper concludes that there is no economic case for this project to proceed. The project is likely to make worse economic pressures that are already weighing down the economy and will produce minimal broad economic benefits.

Economic context

To fully understand the effect that Arrow's LNG project will have, it needs to be put into an economic context. The Gladstone, Queensland and Australian economy are currently undergoing a mining construction boom. There are a large number of mining construction projects currently underway and many more being proposed. A disproportionately large number of these projects are being proposed and constructed in the Gladstone region. The large number of construction projects has put a variety of pressures and constraints on the economy.

There are shortages of skilled labour for key occupations required by Arrow to construct its new LNG plant in Gladstone. These skills shortages are particularly acute in Queensland and Gladstone.[1] There are a number of similar projects underway in Gladstone such as the Yarwun Alumina Refinery Expansion, the Gladstone LNG Project and the Queensland Curtis LNG Project.

The Gladstone region currently has a very tight housing market due to the large amount of construction projects that are under way.[2] These construction projects are attracting increasing numbers of workers to the region who need to be housed. Rent and housing prices have risen significantly in recent years.

With a large number of mining related projects being proposed and underway in Gladstone, it is interesting that the unemployment rate in Gladstone is higher than the Queensland average and rising. This may seem contradictory, but it actually highlights why a continued boom in mining construction is likely to overall have negative effects on the economy. As the EIA notes:

> *Over the year to September 2010, the unemployment rate lifted by 0.4 percentage points compared to September quarter 2009. Over this period, both the number of employed people and the labour force contracted in Gladstone. This was likely attributable to factors such as a strengthening in the Australian dollar*[3]

The EIA also points out Gladstone's bleak employment history.

> *Compared to four years ago, the unemployment rate has increased by 1.7 percentage points*[4]

Gladstone is highly dependent on manufacturing[5] and the high exchange rate, which has been largely caused by the mining boom and which will be further exacerbated if Arrow's LNG project goes ahead, is costing jobs.

Exchange rate

The Australian exchange rate is currently at historically high levels. This is caused primarily by the increase in the value of the mining industries exports. This high exchange rate is putting pressure on other parts of the economy that are exposed to international competition. These pressures are particularly difficult for industries such as manufacturing, agriculture, tourism and international education.

On the impact of exchange rates the EIA says:

> *The Arrow LNG Plant is expected to contribute to maintaining the strength of the Australian dollar, which may adversely impact the profitability and long term prospects of some sectors that are exposed to international competition. Key industries expected to be impacted by the exchange rate include manufacturing, some agricultural commodities and tourism-related sectors.*[6]

[1] Arrow Energy (2012a) p13
[2] Arrow Energy (2012a) p13 - 14
[3] Arrow Energy (2012a) p17
[4] Arrow Energy (2012a) p17
[5] Arrow Energy (2012a) p13
[6] Arrow Energy (2012a) p55

When the LNG plant is complete it will allow larger gas exports which will put additional upward pressure on exchange rates. The effect of Arrow's LNG plant on the exchange rate is likely to be small but this can be said of all mining projects. It is all the mining projects collectively that have forced up the exchange rate and the Arrow LNG project will add to this.

The high exchange rate has an effect on the whole Australian economy as well as the Queensland and Gladstone economies. It has already had a negative effect on the Gladstone economy that is highly dependent on the manufacturing industry.

Labour shortage

The EIA estimates that in the first three years 1,601 jobs will be lost from other businesses in Queensland because of the LNG project. The majority, 1,089 will be in manufacturing.[7] This is of particular importance for a town like Gladstone which has a disproportionality high dependence on manufacturing. Manufacturing contributes over 40 per cent of the Gladstone economy's total value add.[8]

The LNG plant will have a peak construction workforce of about 3,500[9]. The Queensland construction industry is currently experiencing shortages in skills that will be required for construction of the Arrow LNG Plant[10]. Arrow will overcome this problem by offering higher wages to attract workers. Almost all these workers will come, not from the ranks of the unemployed, but rather will be poached from other projects and other firms. As the EIA says:

> *The Arrow LNG Plant will compete with local business and industry for constrained labour resources. Due to the high incomes on offer from the project during both construction and operation, it is expected that the Arrow LNG Plant will attract labour away from other businesses both locally and further afield.*[11]

This is at a time when local businesses are having difficulty attracting and retaining staff[12]. This not only limits a firm's ability to expand but also potentially makes the business unviable. Businesses that are unable to raise their prices will not be able to pay the higher wage costs and businesses on the margin may be forced to shut down.

The poaching of staff from other businesses does not increase total employment, since every new job created at Arrow's plant has the effect of destroying a job elsewhere. Since the skill set required for the construction of the LNG plant is similar to those skills used by the manufacturing industry, most of the staff poached is likely to come from the manufacturing industry.

The manufacturing industry is also likely to lose workers because the mining industry and those projects exposed to the mining industry are currently enjoying historically high commodity prices. The mining industry can afford to pay higher wages to attract the skills they need. The manufacturing industry is not enjoying historically high prices. Indeed because of the high exchange rate, an effect caused by the mining boom, the manufacturing industry is facing particularly low prices for their goods. This makes the manufacturing industry very vulnerable to having staff poached by firms exposed to the commodities boom.

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[7] Arrow Energy (2012a) p43 Job loss numbers taken from Table 5.3

[8] Arrow Energy (2012a) p13

[9] Arrow Energy (2012a) p9

[10] Arrow Energy (2012a) p21

[11] Arrow Energy (2012a) p39

[12] Arrow Energy (2012a) p40

Possible net loss of jobs for Gladstone locals

While there are skills shortages in some areas, paradoxically it is possible that the employment outcomes for locals in Gladstone could be negative. That is the LNG project might cost more local jobs than it creates leading to a net loss of jobs for those living in the Gladstone area.

This comes about because Arrow plans to primarily use FIFO workers. Of the 3,000 construction workers it plans to source only between 5 per cent and 20 per cent from the local area.[13] The rest will be FIFO workers. This means that between 150 and 600 will be local employees. Modelling done by the EIA shows that the project is expected to destroy 385 jobs in Gladstone.[14] These jobs will be lost due to effects on resource costs that the LNG project will create. These resource costs will come primarily in the form of higher employment costs. Add to this the effect the exchange rate is having on manufacturing dependent Gladstone and it is highly likely that more local jobs will be destroyed than created.

Housing shortage

The EIA notes:

> *Gladstone's property market is currently very 'tight', with high demand for property resulting from a number of large new and expansion projects being developed in the region*[15]

The EIA goes on to show that rental vacancy rates are extremely low[16], rental prices have been rising steeply in recent years[17] and property prices have also risen sharply[18]. An increase in demand driven by strong growth in commodity trade through the port, coupled with strong wages growth for those exposed to the high commodity prices has led to rapid rises in accommodation costs.

These higher accommodation costs are not just borne by those with rising wages because of exposure to the commodities boom. They are also borne by people who are not exposed to the boom. These people are facing higher rents and property prices with no commensurate increase in wages.

During the Arrow LNG project's construction phase between 2,400 and 2,850 new FIFO workers will be added to the Gladstone region, all of which will need accommodation. Arrow plans to mitigate this issue by setting up worker camps at the construction site.[19] While this will have some effect, there is no requirement for FIFO workers to live there. These highly paid workers are perfectly entitled to seek accommodation in the town. This will add further pressure to an already stressed accommodation market.

Cost of living and inflation

The Arrow LNG project will create cost of living pressures.

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[13] Arrow Energy (2012a) p10

[14] Arrow Energy (2012a) p43 Job loss numbers taken from Table 5.3

[15] Arrow Energy (2012a) p13

[16] Arrow Energy (2012a) p23

[17] Arrow Energy (2012a) p23

[18] Arrow Energy (2012a) p22

[19] Arrow Energy (2012a) p49

> *The Arrow LNG Plant is expected to contribute to wage and cost increases throughout Australia, in particular in Gladstone where the increase in labour demand is anticipated to result in a considerable increase in real wage rates… and may also have some effects in terms of maintaining higher costs for housing and accommodation… Higher costs of production is likely to see prices for some goods and services increase to maintain business profitability*[20]

Those that will be most severely affected will be lower income earners.

> *For households, the increase in prices for goods and services and for housing represents an increase in the cost of living, the impact of which will be felt most acutely by lower income earning households. An increase in the cost of living will result in a reduction in disposable incomes, with the most obvious impact being on demand for discretionary expenditure items*[21]

While the owners and workers of Arrow's new LNG plant will undoubtedly be better off, most of the Gladstone community and surrounding regions will face higher prices and higher accommodation costs. This could lead to a further widening of the gap between rich and poor in the region. The EIA acknowledges that this could be an issue;

> *The distribution of wealth can also generate other negative impacts for local households, in particular lower income earning households, through an increase in the "wealth divide".*[22]

Impact on domestic gas prices

Arrow's LNG plant is expected to have an impact on domestic gas prices. Queensland gas prices are low by world standards. This occurs for a number of reasons, one of which is that Queensland has a large level of gas production but does not currently have the capacity to export all of that gas. This has the effect of depressing local gas prices relative to the international price.

Arrow's LNG plant as well as other gas export projects will increase the capacity of Queensland gas producers to export gas to the more profitable overseas market. This will increase the profits of gas producers but will also have the effect of increasing Queensland gas prices.

Modelling conducted on behalf of Arrow shows that wholesale gas prices in Queensland are expected to more than double by 2015. The price is then expected to rise even higher, possibly as high as five times the current wholesale price by 2025.[23] These price increases will obviously have a significant impact on consumer gas prices for Queenslanders and represent another cost of living increase that Queenslanders will have to endure in order for gas producers to make larger profits.

Impact on other industries

Arrow's LNG project is expected to positively impact firms directly related to the LNG plants construction and operation. For other industries in Gladstone, Queensland and Australia the effect are likely to be very different.

[20] Arrow Energy (2012a) p56 - 57

[21] Arrow Energy (2012a) p57

[22] Arrow Energy (2012a) p52

[23] Gas prices taken from figure 8 Arrow Energy (2012b) p29

modelling outcomes suggest the industries of manufacturing, transport and storage, mining and agriculture could record a decline in output relative to the baseline scenario.[24]

Staffing issues are likely to be one of the major issues affecting other industries. The EIA reports that certain industries will be more severely affected than others.

Attraction and retention of staff will be more of an issue for lower income paying industries (in particular agriculture, smaller manufacturing businesses and many service based industries such as retail, education and local government) that are unable to compete for labour on a price basis. Issues of attracting and retaining staff may be exacerbated by potential impacts of the project on costs of living, which has the effect of reducing disposable incomes and placing cost pressures on lower income earners.[25]

Some industries profitability will also be affected.

For businesses where increases in labour and other input costs are not matched by an equivalent increase in the prices of their goods and services, this will erode business profitability, potentially impacting on business viability. This impact is likely to be felt most strongly by industries that are price takers, such as many agricultural and manufacturing businesses where final products compete on global markets with limited capacity to increase prices to match increases in costs.[26]

Profitability issues will not be limited to Gladstone.

with labour costs anticipated to increase as a result of the project… this has the potential to erode operating profits for a range of businesses and industries throughout Queensland and Australia, resulting in lower gross operating surplus (and thereby a reduction in any of the returns to factor incomes of capital, land or entrepreneurship) where an equivalent increase in prices received for end products and services do not follow.[27]

Taxation

Arrow's LNG plant is expected to be extremely profitable. This profitability is shown in the EIA estimates of tax revenue flowing to the federal government in the form of corporate tax payments.[28] Tax payments to the Queensland government are expected to be far smaller. Over the first 16 years of the project they are expected to average just $13.8 million per year.[29]

Conclusion

In the current economic climate, Arrow's proposed LNG plant will have wide spread negative economic effects. While the project is expected to be highly profitable for its foreign owners, the net economic benefits, if any, will be at best small.

[24] Arrow Energy (2012a) p37
[25] Arrow Energy (2012a) p40
[26] Arrow Energy (2012a) p40
[27] Arrow Energy (2012a) p48
[28] Arrow Energy (2012a) p56
[29] Arrow Energy (2012a) p55

The Gladstone community are already suffering from the economic and social dislocation caused by the mining boom, including a higher unemployment rate than the rest of Queensland and Australia. If this project goes ahead they can expect further dislocation including cost of living increases and more job losses from their economically important manufacturing industry.

The mining boom has already put parts of the economy under significant stress. Arrow's LNG plant will simply add to these pressures. Constructing an LNG plant in Gladstone at this time in net economic terms is likely to be negative.

References

Arrow Energy (2012a) Arrow LNG Plant Environmental Impact Statement, Appendix 21: Economic Impact Assessment

Arrow Energy (2012b) Arrow LNG Plant Environmental Impact Statement, Appendix 22: Implications for Domestic Gas Markets