

ARC Research Team Addendum to Submission Number 95

Analysis of Conflicting NRW statistics for Queensland's Bowen Basin

Accurate quantification of the non-resident workforce is fundamental to the Inquiry's Terms of Reference for informing appropriate policy responses. It is of some concern therefore that submissions of the Queensland Resources Council (QRC) and the University of Queensland's Centre for Social Responsibility in Mining (CSR) (the recipient of substantial resource industry funding) have reiterated misinformation in their submissions to the House of Representative's Standing Committee on Regional Australia 'FIFO inquiry' by stating that non-resident workers (NRWs) in the Bowen Basin represent only 15 per cent of that region's resources sector workforce. Available data and government reports such as produced by the Queensland Government's Office of Economic and Statistical Research (OESR) which publishes the results of their annual survey of NRWs in the Bowen Basin contradict thisⁱ. Even the QRC's own website and QRC-commissioned reports (for example, Deloitte 2011; Rolfe et al. 2010) clearly show these statements to be incorrect. The following analysis identifies some specific examples of conflicting information which also illustrates how quantifying proportions of NRWs remains extremely problematic, yet is essential to inform appropriate policy responses.

1. QRC Submission 125

'... only 15 percent of central Queensland's Bowen Basin mine workforce is non-resident (up from 12 percent in 2006, according to 2011 Queensland Government data)...' (QRC Submission 125: 12).

QRC references the *Bowen Basin Population Report, 2010* prepared by OESR (2011). What this government report states, in reality, is that:

'The FTE [full-time equivalent] population of the Bowen Basin [i.e. all men, women and children] was estimated at 98,452 people at the end of June 2010, comprising 83,839 residents and 14,613 non-resident workers... Non-resident workers account for 15 per cent of the Bowen Basin's **FTE population** [emphasis added] in 2010, compared with just 12 per cent in 2006' (OESR 2011: vi).

Clearly the 15% is a reference to the proportion of NRWs to FTE population, not a proportion of the mining workforce.

Moreover **data from the QRC website do not include contractors** (see Appendix 1). Any realistic assessment of the size of the non-resident workforce must include not only those NRWs directly employed by member organisations of QRC but also contract workers including those of principal contracting companies and third-party contractors. Most contractors are NRWs.

The analysis that QRC relies on for its assessment of the economic impact of the minerals and energy resources sector in Queensland (Rolfe et al. 2010) uses a blunt approach that consolidates numbers for coastal and inland local government areas to the level of Statistical Division (SD) and thus **substantially under-estimates the actual number of NRWs**. For example, NRWs who live in places like Mackay and Yeppoon and hence are not residing employees in the Bowen Basin are not identified as NRWs (see Appendix 2). In addition, the Rolfe et al. (2010) **report for QRC does not make allowance in its reckoning for the many NRWs who travel from other states**, especially NSW but also from further afield. Furthermore this QRC study points to the percentage of NRWs as more than double the 15% stated by the QRC in Submission 125 and CSRM Submission 73 and is at odds with the 43% calculated from the QRC website (see Appendices 1 and 2).

2. CSRM Submission 73:

'... one estimate places the FIFO/DIDO workforce across Queensland's Bowen Basin to be in the vicinity of 15 per cent of the total industry workforce in the region...' (Submission 73: 4).

CSRM's source is not referenced in this submission, although it is identical to the QRC estimate, but clearly this statement cannot be justified given the most recently published OESR 2010 survey results (2011) and those for earlier years, since 2006 (OESR 2010).

3. QRC commissioned report: *Queensland Resource Sector State Growth Outlook Study* (Deloitte Access Economics, 2011)

This report, published in November 2011 after the close of submissions to the APH inquiry, used information about NRWs supplied by the QRC in their assessment of demands for labour (also electricity and water) that it forecasts to result from planned expansion within the resources sector. Some misinformed or invalid statements with regard to NRWs in the Bowen Basin are addressed here.

'The growth in the non resident workforce, especially in the Bowen Basin needs to be put into perspective. The Office of Economic and Statistical Research estimate that there were 14,613 non resident workers in the Bowen Basin in 2010 (defined as employees of mining companies, contractors and construction workers). Given the high level of construction activity at present, it is estimated that construction workers constitute approximately 50% of this group of non resident workers, meaning there are approximately 7,307 employees of mining companies and contractors who work in the Bowen Basin but are currently non residential' (Deloitte 2011:35).

This extract suggests that none of the construction workers were resource sector workers which is highly improbable given the large number of new projects in advanced stages of development but which are not yet operational (i.e. in their

construction phase). In fact, most if not all of those surveyed are likely to be employed by the resources sector. This view is supported by the same OESR (2011) report referenced by Deloitte above in which OESR describes the NRWs included in their survey as follows:

'The characteristics of non-resident workers in the Bowen Basin differ according to the nature of their employment, and the types of accommodation that they occupy when living in the area. While most non-resident workers are company staff or contractors who are directly engaged in mining production, there are other groups of FIFO workers who fall outside of that narrow definition. These include maintenance contractors, exploration crews, project construction workforces, and miscellaneous workers' (OESR 2011: 44).

Clearly the OESR survey is concerned with surveying all resource sector NRWs (i.e. not only those engaged in production but also including, for example, those constructing new and expansion mines) and thus the '*other groups of FIFO workers*' referred to by OESR are also directly employed by the resources sector. Thus the Deloitte estimation which was based on information supplied by the QRC that only 7,307 or 50% of the 14,613 NRWs identified in the Bowen Basin by the OESR survey in June-July 2010 were employees of mining companies and contractors appears to be misleading.

Furthermore, the Deloitte **report does not recognise that those counted in the OESR (2011) survey excluded NRWs in the leave cycles of their rosters**; that is, those who had returned to their '*place of usual residence*' when not in the work cycle. These also should be counted when estimating the number of resource sector workers employed for Bowen Basin projects in 2010, the basis for Deloitte's forecast for the QRC of the number of additional employees demanded in the years to 2020.

'The Queensland Resources Council estimates that there were approximately 25,000 employees of mining companies and contractors working in the Bowen Basin in 2010¹²' (Deloitte 2011: 35)

Footnote 12 referenced above stated: '*All companies including Bowen Basin coal companies are obliged to divulge their total employee and contractor workforce numbers to the QRC annually*' (footnote 12 on page 35).

It's not clear what's meant by '*all companies*'. Contracting companies such as principal contractors – for example, Worley Parsons and Leighton Holdings – are not member companies of the QRC although these types of companies are increasingly being engaged by project developers (mining companies) to perform many facets of mine development (construction), operation and maintenance. What obligation do these contracting companies have to report their employment numbers (including third party contractors they might employ) to the QRC? Are their employees included in the 25,000 total for the Bowen Basin in 2010?

If the QRC estimate of '*approximately 25,000 employees of mining companies and contractors working in the Bowen Basin in 2010*' (Deloitte 2011: 35) is, indeed, correct and the OESR (2011) survey results are accepted, then 25,000 less (14,613 NRWs counted in OESR June 2010 survey x 1.5 (assuming rosters of 2 on: 1 off) =) 21,920 NRWs in the work *and* leave cycles of their rosters leaves only around 3,080 **resident** workers in the Bowen Basin in June. This figure seems highly improbable and is far short of other estimates.

4. In summary:

Industry and other sources offer widely varying estimates of numbers for the non-resident workforce, either directly or indirectly engaged in resource extraction in the Bowen Basin and adjacent coastal LGAs, as shown in Table 1 below. Status of contractors is often unknown and rarely included. It appears that NRWs in the leave cycle of their rosters are usually excluded, as are construction and maintenance contractors. Our estimate to the House of Representatives FIFO inquiry based on available evidence (Table 4.1 in Submission No. 95: 6) indicated that the NRW proportion of the resource sector workforce *in* the Bowen Basin in June 2010 (excluding those away in the leave cycle of their rosters) was around 59% (i.e. 14,613 NRWs of the total workforce of 24,765 as indicated by Qld's Department of Employment, Economic Development and Innovation (DEEDI) and Mines Rockhampton in August 2010). Assuming rosters of two weeks on followed by one week off (common but by no means standard within the industry), NRWs in June 2010 would have totalled 21,920. Assuming NRWs in their leave cycles had not been integrated in any workforce numbers, subsequent incorporation of estimates would increase the proportion of NRWs in Bowen Basin's resources sector to around 68% (21,920 as percentage of 24,765 + (14,613 x 0.5 =) 7,306 NRWs in leave cycles = 32,071).

Table 1: Summary of resource sector workers in/adjacent to Bowen Basin c. mid-2010

<i>Sources</i>	<i>Workers in Bowen Basin</i>		<i>In adjacent coastal LGAs</i>
	<i>Resident</i>	<i>Non-resident</i>	
<i>QRC (FIFO Inquiry Sub. 125; QRC in Deloitte 2011)</i>	21,250	3,750 (15 % of 25,000)	
<i>CSRM (FIFO Inquiry Sub. 73)</i>		15% of unknown	
<i>QRC (Website)</i>	11,917(a)		8,811
<i>QRC (Rolfe et al. 2010)</i>	13,178(b)		6,770
<i>OESR (2011) based on June 2010 survey results</i>		14,613 (c)	
<i>ARC Research Team: Carrington et al. (2011) based on OESR (2011) and Rolfe et al. (2010)</i>	13,178 (b)	14,613 (c)	

- (a) QRC states resource sector contractors are excluded
- (b) QRC states resource sector contractors are included
- (c) Only those workers in the work cycle of rosters; excludes workers in leave cycle

5. Some updates for employment data for Central Queensland coal projects

The Queensland Government's Mining and Safety website states:

'The Bowen Basin has 47 operating coal mines... produced 180 million tonnes of saleable coal in 2009-10, representing 87 per cent of the state's total output, and directly employ around 29 550 full-time equivalent (FTE) positions (as at 30 June 2011).'

(<http://mines.industry.qld.gov.au/mining/central-qld-info-maps.htm>)

The most recent DEEDI-released map for Bowen Basin coal mines and projects indicates that 32,190 workers were employed in operating mines as at September 2011. We arrived at this by summing the mining workforces for 44 currently operational projects presented in the DEEDI map (DEEDI 2011a).³ This map also indicated that new or expansion projects which are expected to be operating in the Bowen Basin within five years from September 2011 will require an additional 7,620 workers. For the adjacent Central Galilee Basin, a further 9,940 workers are anticipated for coal resource projects expected to come on line within the same five year time span (DEEDI 2011b).

What is not clear is whether the number of 'operational' workers represents the total FTE number or only those in the work cycle of rosters. Clearly it does not include the many thousands of essentially NRWs constructing new or expansion mining projects or those directly employed by the resources sector for a variety of other jobs including exploration, transportation, processing and the operations of work camps: management, cooking, cleaning, security and so on. Nor is there any information about proportions of NRWs to local employees in the sector. If the proportion of NRWs was

60% in September 2011 and the operational workforce numbers provided by DEEDI included only those in the work cycle of rosters, then total number of NRWs, including those in the leave cycle would have been around 29,000 ($32,190 \times 0.6 \times 1.5$, assuming work to leave ratio of 2:1).

The QRC forecasts an additional 17,400 operational workers will be required in the Bowen Basin by 2020 with 75% as NRWs; 80% of the construction workforce would also be NRWs (Deloitte 2011: 34). Furthermore, the demand for NRWs for new projects in the adjacent Galilee Basin will most likely exceed numbers for the Bowen Basin.

Table 2: Forecast additional operating employees in Central Queensland coal projects by 2020

	<i>Local workers</i>	<i>NRWs</i>	<i>Locals :NRWs</i>	<i>Total NRWs, assuming roster of 2 on : 1 off (a)</i>
<i>Bowen Basin</i>	4,200	12,700	25 : 75	19,050
<i>Galilee Basin</i>	800	14,700	95: 05	22,050
<i>CQ total</i>	5,000	27,400		41,100

(a) Assuming forecast NRW 'operational' number relates to those in the work cycle of rosters
Source: after Deloitte 2011: 34

As previously highlighted, the Deloitte (2011) report has not considered numbers of NRWs in the leave cycle of their rosters. If a 2 on to one off roster is assumed –this may well be conservative as there are moves within the industry towards more symmetrical rosters – the total number of *additional* NRWs for Central Queensland coal projects by 2020 could be as high as 41,100.

References

- Carrington, K., Hogg, R. McIntosh, A. & Scott, J. 2011, Submission to the House of Representatives Standing Committee on Regional Australia Inquiry into the use of 'fly-in fly-out' (FIFO) workforce practices in regional Australia, Submission No. 95. Available at <http://www.aph.gov.au/house/committee/ra/fifodido/subs/Sub95.pdf>
- CSRM (Centre for Social Responsibility in Mining) 2011, Submission to the House of Representatives Standing Committee on Regional Australia Inquiry into the use of 'fly-in fly-out' (FIFO) workforce practices in regional Australia, Submission No. 73. Available at <http://www.aph.gov.au/house/committee/ra/fifodido/subs/Sub73.pdf>
- Department of Employment, Economic Development and Innovation (DEEDI) 2011a, *Bowen Basin Coal Mines and Coal Projects*, updated December 2011, DEEDI, Queensland Government. Available at <http://mines.industry.qld.gov.au/assets/mines-pdf/CQ-Bowen-Basin-mines-and-staff-A3-Dec2011.pdf>
- Department of Employment, Economic Development and Innovation (DEEDI) 2011b, *Central Galilee Basin Exploration and Mining Projects*, updated November 2011, DEEDI, Queensland Government. Available at

http://mines.industry.qld.gov.au/assets/mines-pdf/CQ_Galilee_Basin_Projects_map_A3_Nov_2011.pdf

Deloitte Access Economics 2011, *Queensland Resource Sector State Growth Outlook Study*, Queensland Resources Council, Brisbane.

Office of Economic and Statistical Research (OESR) 2011, *Bowen Basin Population Report 2010*, Queensland Treasury, Brisbane.

Office of Economic and Statistical Research (OESR) 2010, *Bowen Basin Population Report 2009*, Queensland Treasury, Brisbane.

QRC (Queensland Resources Council) 2011, Submission to the House of Representatives Standing Committee on Regional Australia Inquiry into the use of 'fly-in fly-out' (FIFO) workforce practices in regional Australia, Submission No. 125. Available at <http://www.aph.gov.au/house/committee/ra/fifodido/subs/Sub125.pdf>

Rolfe, J., Lawrence, R., Gregg, D., Morrish, F. & Ivanova, G. 2010, *Minerals and Energy Resources Sector in Queensland Economic Impact Study*, Queensland Resources Council, Brisbane.

WADMP (Western Australian Department of Mines and Petroleum) 2009, *Western Australian Mineral and Petroleum Statistics Digest 2008-09*, WADMP, Perth.

Appendix1

A1 QRC website

The QRC's website (<http://www.queenslandeconomy.com.au/spend-and-jobs-by-area-qld>) permits interrogation of direct fulltime employees of mining companies (**not including contractors or part time workers**) by local government area (LGA). That is, the website refers only to full time employees of QRC's member organisations. The results displayed for these types of workers in LGAs which comprise the Bowen Basin and adjacent coastal LGAs are shown in Table A1 and represented in Figure A1. Results have been further consolidated into Statistical Division (SD) totals for Mackay and Fitzroy. Most employees residing in the coastal LGAs would travel during the work cycle of their rosters, most likely but not only as drive-in, drive-out (DIDO) NRWs to Bowen Basin 'host' communities, returning to their permanent homes during their leave cycles.

The number of contractors directly employed by industry members of the QRC is not known but is anticipated to be significant and increasing given the many billions of dollars of projects at advanced stages of approval and development in Qld. In Western Australia, contractors have represented in excess of 50% of mining labour force statistics since the early 2000s (WADMP 2009). Any realistic assessment of the size of the NRW must include contractors as well as full time employees.

Table A1: Resource sector employees *excluding* contractors within SDs embracing the Bowen Basin

	<i>Bowen Basin LGAs</i>	<i>Coastal LGAs</i>	<i>SD totals</i>
<i>Mackay</i>		3,977	
<i>Isaac</i>	5,522		
<i>Whitsunday</i>	446		
<i>Mackay SD total</i>	5,968	3,977	9,945
<i>Rockhampton</i>		2,318	
<i>Gladstone</i>		2,516	
<i>Central Highlands</i>	5,070		
<i>Banana</i>	879		
<i>Fitzroy SD total</i>	5,949	4,834	10,783
Total	11,917(57.5%)	8,811(42.5%)	20,728(100%)

Source: after QRC website accessed 1 February 2012

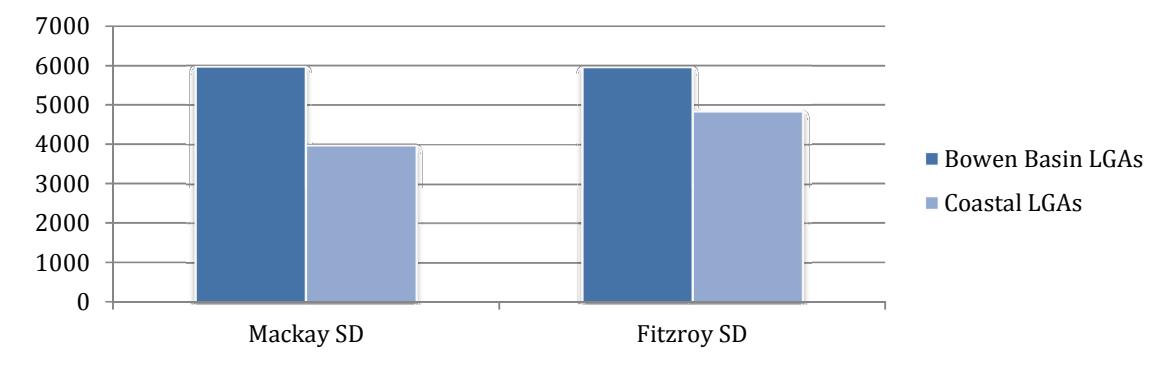


Figure A1: Resources sector direct fulltime employees *excluding* contractors

Source: after QRC website

Appendix 2

A2. QRC commissioned report: Minerals and Energy Resources Sector in Queensland Economic Impact Study (Rolfe et al. 2010)

This report was based on data collected by the QRC from member organisations. It is not clear if employees of non-member companies such as principal contracting companies and third-party contractors have been incorporated. Among other matters, Rolfe et al. reported on direct economic impacts of the resources sector by SD including number of residing employees. More than half (52%) of resources salaries were reported to have been paid to employees in the two SDs of Mackay and Fitzroy.

As stated in our submission to the FIFO inquiry (Carrington et al. 2011, Submission 95), consolidation at the level of SD is a blunt approach which does not recognise the geographic reality of resource sector activities in, for example, the Mackay and Fitzroy SDs which are inclusive of the LGAs which comprise the Bowen Basin. Specifically many thousands of mine workers live in cities, towns and localities of coastal LGAs (or

example, in Gladstone, Rockhampton, Yeppoon, Mackay and the Whitsunday islands as well as many smaller locations) and thus outside the mining region of the Bowen Basin.

Appendix Two of this QRC report (Rolle et al. 2010: 69-70) does, however, list numbers of 'residing' mining and resource employees by LGA. We have reservations about some aspects of the methodology used including the allocation of postcode for some resource projects as listed in Appendix One (Rolle et al. 2010: 67-68) and presumably the basis for Appendix Two LGA totals. Nevertheless, based on the data as presented, around 34% of resource sector employees in the SDs which embraced the Bowen Basin had their permanent homes in coastal LGAs. While some employees residing in coastal areas may also work there, this proportion is understood to be minimal. Bearing in mind that many other NRWs travel from outside the SDs of Mackay and Fitzroy including from interstate – the methodology does not account for NRWs from other states – **34% is indicative of the minimum proportion of NRWs in the Bowen Basin**. This is over double the 15% stated by the QRC in Submission 125 and CSRM Submission 73 and is at odds with the 43% calculated from the QRC website.

Table A2: Resource sector employees *including* contractors within SDs embracing the Bowen Basin

	<i>Bowen Basin LGAs</i>	<i>Coastal LGAs</i>	<i>SD totals</i>
<i>Mackay</i>		3,065	
<i>Isaac</i>	6,965		
<i>Whitsunday</i>	292		
<i>Mackay SD total</i>	7,257	3,065	10,322
<i>Rockhampton</i>		1,465	
<i>Gladstone</i>		2,240	
<i>Central Highlands</i>	4,996		
<i>Banana</i>	925		
<i>Fitzroy SD total</i>	5,921	3,705	9,626
<i>Total</i>	13,178	6,770	19,948
	(65.9%)	(34.1%)	(100%)

Source: Rolfe et al. 2010

ⁱ Note: The Bowen Basin/Galilee Basin Population Report 2011 is not expected for release until early April 2012: personal correspondence OESR 6 Feb 2012.