

MEETING MINUTES



MINUTES OF: Arrow Surat Community Reference Group (ASCRG)
 HELD AT: Dalby Leagues Club
 DATE: Wednesday, 11 September 2019
 COMMENCEMENT TIME: 9.05 am

Present:	<p>Jane Walker – GasFields Commission Queensland John Hughes – Department of Natural Resources Mines and Energy Ian Hayllor – Chair of Resource Sector Interactions, AgForce</p> <p>Proxies: Jodie Taylor – General Manager Community & Liveability, Western Downs Regional Council, for Paul McVeigh Brian Bender – Basin Sustainability Alliance, for Lee McNicholl</p> <p>Presenters: Leisa Elder – VP External Relations & Tenure Management, Arrow Energy John Dennehy – Director/Exercise Physiologist, Better Movement Clinic David Wolf – Project Manager, Off Plot, Arrow Energy Chris Wicks – Senior Development Planner IFL, Arrow Energy Michael Ryan – Approvals Manager, Arrow Energy Stephen Denner – Hydrogeology Team Lead, Arrow Energy Brydie Hedges – Community Engagement Manager, Arrow Energy Jason King – General Manager Contracting Procurement & Logistics, Arrow Energy Liz Edwards – Community and Communications Manager, Arrow Energy</p>
Apologies:	<p>Simon Gossmann – Groundwater Manager, Arrow Energy Lee McNicholl – Basin Sustainability Association Graham Clapham – Central Downs Irrigators Ann Leahy MP – Member for Warrego Pat Weir MP – Member for Condamine Colin Boyce MP – Member for Callide Mayor Paul McVeigh – Western Downs Regional Council Matthew Paull – APPEA Cr Nancy Sommerfield – Toowoomba Regional Council Scott Braund – Lot Feeders Association Rohan May – President, Dalby Chamber of Commerce & Industry</p>
Chair:	Leisa Elder – VP External Relations & Tenure Management, Arrow Energy
Secretariat:	Rita Hassan – Senior Community Officer (Dalby), Arrow Energy
Disclosures:	None recorded

	Joint meeting – ASCRG & AIFL Committee	ACTION/ SUGGESTIONS
ITEM 1	<p>Welcome</p> <ul style="list-style-type: none"> Leisa Elder welcomed everyone, acknowledged apologies and thanked Jodie Taylor (WDRC) for attending as proxy for Mayor Paul McVeigh and Brian Bender (BSA) for attending as proxy for Lee McNicholl. Leisa welcomed new member to the AIFL committee, Max Murray (Operations Manager Surat, Arrow Energy). Leisa acknowledged the time that members have given to the meetings over the nine years since the committee was formed. 	
ITEM 2	<p>John Dennehy – Better Movement Clinic</p> <ul style="list-style-type: none"> John shared information on rural health and his experiences as an exercise physiologist and advocate for rural allied health services. 	

	Joint meeting – ASCRG & AIFL Committee	ACTION/ SUGGESTIONS
	<ul style="list-style-type: none"> • John's involvement with the National Rural Health Alliance and experience working in rural and remote settings has contributed to Better Movement Clinic's vision "to create equality of health care no matter geographic location, culture or perceived barrier". • People in remote and very remote Australia access Medicare Benefits Schedule services at about half the rate of their metro counterparts. At the same time, rural people are: <ul style="list-style-type: none"> ○ 47% more likely to have diabetes ○ 50% more likely to have cancer ○ 20% more likely to have kidney disease. • Statistics show that 11 more people die in rural Australia every day due to preventable health conditions, which is not surprising given the shortfall in rural health services. • Better Movement Clinic has partnered with local organisations to help fill the gap, including: <ul style="list-style-type: none"> ○ PCYC, to deliver the Arrow-funded Healthy Bodies, Healthy Minds program ○ Heart of Australia, by providing local cardiac rehabilitation services. • Physical movement influences risk of chronic disease and assists with injury management. Determinants of movement include: <ul style="list-style-type: none"> ○ individual (e.g. income, gender, ethnicity) ○ social (e.g. support, role models) ○ environmental (e.g. open spaces, safety) ○ political (e.g. public transport, school/workplace, funding). • The Australia 24-hour movement guidelines promote the need for adequate sleep, 60 minutes per day of physical activity (more huff and puff the better) and reduced inactivity/sitting time. • Key takeaway - <i>a 10% increase in movement can reduce risk of chronic disease by 50%.</i> 	
ITEM 3	<p>Arrow update – Leisa Elder</p> <ul style="list-style-type: none"> • Planning for the Surat Gas Project continues – Arrow is working towards a financial investment decision (FID) before the end of 2019, although this is ultimately a matter for Arrow's shareholders. • Upcoming information sessions (17-19 September) will be held across the Surat to update the community on Arrow's current activities and proposed development areas to 2025. • In addition, we have ~\$100 million of appraisal work planned in the Bowen. The Bowen is a very different basin with deeper coal requiring more complex drilling techniques; Arrow believes the Bowen is a great resource potential. Arrow is the only gas company operating in the northern Bowen Basin area. 	
ITEM 4	<p>Operations update – David Wolf</p> <p><u>Hopeland Pilot Pipeline</u></p> <ul style="list-style-type: none"> • A 2km pipeline has been completed, connecting the existing Hopeland Pilot site to third-party infrastructure, bringing pilot gas into production rather than being flared. • Temporary flaring of gas via a field flare will be required once pilot 	

	Joint meeting – ASCRG & AIFL Committee	ACTION/ SUGGESTIONS
	<p>wells are restarted and before tie-in work is complete.</p> <p><u>Daandine area</u></p> <ul style="list-style-type: none"> • Three of 15 wells have been drilled in the Daandine area. • Extra traffic may be noticed on Dalby-Kogan and Daandine-Nandi roads. • Night time drilling is also taking place. If drill rig lighting is causing an issue, let us know as this can be addressed through Arrow's land liaison officers. • Five older wells will be decommissioned in September/October. When wells are decommissioned, they are filled with concrete and the upper section is cut and capped 1m below the ground surface. • Maintenance on existing wells to occur in late 2019. <p><u>Kogan North area</u></p> <ul style="list-style-type: none"> • One well will be decommissioned in September. • Three new wells were drilled in July and are undergoing completion, to be online in December 2019. <p><u>Stratheden area</u></p> <ul style="list-style-type: none"> • Well maintenance activities are taking place from August to October. <p><u>Tipton</u></p> <ul style="list-style-type: none"> • Gathering and surface installation for 10 new wells will occur in October. • A new construction contractor will be mobilising in two weeks' time to start work on the gathering system for another 11 wells in Tipton. • Increased traffic is expected along Broadwater Road. <p><u>Meenawarra</u></p> <ul style="list-style-type: none"> • Two wells drilled earlier in the year will be completed and online late December. • Positive results are being seen from production tests in this area. <p><u>Plainview East Pilot</u></p> <ul style="list-style-type: none"> • A new gas production pilot is being planned north of Cecil Plains, east of the existing Plainview Pilot. It will be very similar to Plainview Pilot, with similar objectives. • The pilot will be connected to Tipton so no flaring will be required. • Engagement with landholders has commenced and some site surveys have been completed. • Twenty-five soil gas monitoring points will be installed to baseline and monitor for gas migration in the region surrounding the pilot. <p><u>Additional activities</u></p> <ul style="list-style-type: none"> • Arrow, with the local council, is trialling a dust suppression product to reduce the need for watering down roads. • Dust, noise and light wash have been raised as concerns through community feedback. • Arrow uses feedback to plan future work and look for solutions to better manage impacts. 	

	Joint meeting – ASCRG & AIFL Committee	ACTION/ SUGGESTIONS
	<ul style="list-style-type: none"> • For example, recent monitoring has contributed to our understanding of well site noise. We now know more about the different noise levels that will emit from difference wells, which will inform our planning. • Ian Hayllor said he was very impressed to hear that gas would go to market rather than being flared. The community appreciated this investment by Arrow. The committee has spent years working through issues. Ian suggested an action be taken to document key achievements for reflection. • Nev Wirth, Arrow Intensively Farmed Land committee (AIFL) said noise from multi-well pads was still a concern (and more noticeable than noise from a single-well pad), especially when close to housing. • Nev suggested that noise from multi-well pads can be noticed up to 1km away. Single wells can't be heard from 100m. David Wolf said that Area Wide Planning (AWP) aimed to draw out these concerns so that they could be addressed. • Jane Walker said it was great that Arrow had taken the initiative to meet landholders, talk to them and get the real issues first hand. • Nev Wirth said the AWP meeting held the day prior was positive and had addressed some issues. He said it would be interesting to see what could be achieved together. 	<p>Action: Arrow to document the committee's key achievements</p>
ITEM 5	<p>Surat Gas Project update – Chris Wicks</p> <ul style="list-style-type: none"> • The current Surat Gas Project (SGP) includes three or four delivery points to QGC, which is a change to the original project. • The current scope includes 700-800 wells from 2020 to 2025. 	
ITEM 6	<p>Area Wide Planning – Chris Wicks</p> <ul style="list-style-type: none"> • AWP helps Arrow identify infrastructure locations and incorporate landholder knowledge into development plans. They also help landholders make informed decisions about development on their properties. • Two recent AWP shed meetings were held with landholders: <ol style="list-style-type: none"> 1. <u>Duleen Kupunn</u> <ul style="list-style-type: none"> • The second shed meeting for this landholder group was coordinated to response to concerns raised by landholders. • Key issues: <ul style="list-style-type: none"> ○ area-wide subsidence from coal compaction ○ rehabilitation ○ construction impact management – rig noise and light, and road maintenance. 2. <u>Broadwater Road, Nandi South</u> <ul style="list-style-type: none"> • This shed meeting included a visit to a nearby multi-well pad. The site visit shows landholders what to expect. <p>Phasing maps have been developed to give an indication of where work will be occurring over the next few years:</p> <p><u>Daandine area development</u></p> <ul style="list-style-type: none"> • This area is immediately south of the existing Daandine area. 	

	Joint meeting – ASCRG & AIFL Committee	ACTION/ SUGGESTIONS
	<ul style="list-style-type: none"> • Initial activity is planned for 2020. <p><u>Dalby area development</u></p> <ul style="list-style-type: none"> • Development will move east from existing areas of operation, towards the Condamine River, commencing in 2020-2021. <p><u>Tipton and Cecil plains area development</u></p> <ul style="list-style-type: none"> • Development will move east towards the river from 2022-2025. <p><u>Kogan to Chinchilla area development</u></p> <ul style="list-style-type: none"> • AWP will begin in 2020. <p><u>Miles area development</u></p> <ul style="list-style-type: none"> • Arrow has an opportunity to hook up to existing facilities in the southern section of tenure. Construction is proposed for 2021 in this area. • Chris advised that Arrow will provide an update to the community on these development areas and timeframes through September community information sessions. • Brian Bender requested an update on Arrow’s approvals in the Hopeland area. Leisa Elder said Arrow currently has a six-well pilot in this area. The government approached Arrow to carry out testing to provide a level of comfort before applying for an environmental authority (EA) to cover activities in this area. • Michael Ryan said Arrow considered the approvals it required over the entire tenure . This reduces risk in financial investment considerations. • Brian asked why it was so difficult to get a copy of an environmental authority. Leisa asked John Hughes (as a State Government representative) to comment. John advised that the Department of Environment and Science held an EA register which should be publically available. Jane Walker offered Brian assistance to get a copy of an EA, if required. Brian advised he already had a copy of the EA he was seeking. 	
ITEM 7	<p>Regulatory approvals – Michael Ryan</p> <ul style="list-style-type: none"> • Progressing State and Federal government approvals ensures Arrow has tenure security for the whole development. • Petroleum lease (PL) applications have progressed well: <ul style="list-style-type: none"> ○ one of 16 approvals remains outstanding ○ the last PL application is dependent on an agreement between Arrow and an overlapping tenure holder before it can be assessed by the Minister. • Environmental authorities are grouped to cover the 16 PLs; five new EAs have been approved. • Pipelines are usually covered under an EA; however, off-tenure pipelines require a different type of easement agreement called a Petroleum Pipeline Licence (PPL) which require their own new EA: <ul style="list-style-type: none"> ○ two of six PPLs have been lodged and approved ○ four remaining PPLs will be progressed at the end of 	

	Joint meeting – ASCRG & AIFL Committee	ACTION/ SUGGESTIONS
	<p>2019 and in 2020.</p> <ul style="list-style-type: none"> • Arrow’s Environmental Impact Statement (EIS) secondary approvals require management plans. • Stage one approvals under the Federal <i>Environment Protection and Biodiversity Conservation Act</i> (EPBC) have been approved, with stage two approvals remaining. These include: <ul style="list-style-type: none"> ○ biodiversity and Water Management and Monitoring Plans (three of four approved) ○ off-tenure pipeline approval (lodged in May 2018; still to be approved). <p><u>Whyalla RIDA application update</u></p> <ul style="list-style-type: none"> • A Regional Interests Development Approval (RIDA) for Arrow’s Whyalla property was approved on 1 August 2019. • Arrow will drill eight groundwater monitoring bores to refine our groundwater model and inform our Hopeland EA amendment application. • These will be installed up and down the water pressure gradient from the former Linc Energy site. • Arrow’s Whyalla property is not classified as priority agricultural land use (PALU). • The RIDA approval gives Arrow authority to undertake this drilling. • Brian asked if this approval was different to the 14 bores approved for this area. • Leisa Elder and Michael Ryan advised the Government approved 14 bore installations; how and when they are installed is up to Arrow. Based on the results from the first eight bores, Arrow will determine whether additional bores are required. • Brian said that the water levels in the Walloon Coal Measure (WCM) bores were dropping. He also noted his concern of potential movement of water from the former Linc Energy site. 	
ITEM 8	<p>Groundwater monitoring bore installation and bore assessment update – Stephen Denner</p> <p><u>Bore assessment update</u></p> <ul style="list-style-type: none"> • The draft 2019 Underground Water Impact Report (UWIR) for the Surat Cumulative Management Area (CMA) identified 58 immediately-affected area (IAA) bores for which Arrow is the responsible tenure holder (IAA bores have a predicted drawdown of greater than 5m within three years). • Of these 58 bores: <ul style="list-style-type: none"> ○ three have been made good ○ four have been abandoned and destroyed ○ 10 have completed bore assessments. • Brian Bender asked how many impacted bores had been carried over from the 2016 UWIR. Stephen advised Arrow carried out 24 make goods so far and would need to check if/how many have been carried over. The 58 IAA bores in the 2019 report do not include carry overs, only those still being assessed. 	<p>Action: Arrow to advise on the number of bores carried over from previous UWIR</p>

	Joint meeting – ASCRG & AIFL Committee	ACTION/ SUGGESTIONS
	<p><u>UWIR monitoring network</u></p> <ul style="list-style-type: none"> • The Surat Basin UWIR monitoring network includes about 600 monitoring points (across the entire CSG industry). • Arrow currently monitors 210 groundwater bores in the Surat Basin. • Arrow will be required to install further monitoring points in the Surat Basin over the next three years to comply with the 2019 UWIR and other obligations, including: <ul style="list-style-type: none"> ○ 18 for water level and pressure for the UWIR ○ one for water quality for the UWIR ○ two for Condamine Alluvium connectivity research ○ eight for water quality and pressure for the PL253 (Hopeland) Environmental Authority ○ four for ground movement monitoring. • Ian Hayllor asked where the Condamine Connectivity bores would be installed. Stephen said they would target the Condamine Alluvium and Springbok Sandstone at the Plainview East Pilot. The monitoring points at Plainview Pilot to the east and west of the Horrane fault will measure communication across the fault. • The monitoring sites around the former Linc Energy (PL253) site will be installed in ~October this year. The ground movement monitoring points will be installed into bedrock, so they will be permanent. Data will be collected on the natural surface movement in this area. • Nev Wirth asked the timeframe for water level recharge following CSG development. Chris Wicks said around half the water would be removed from wells in the first three years of operation, which would give an indication of water production. • Glen Ogden (AIFL) said he had heard of an area of the WCM where the standing water table is improving – how can this be? Stephen said he would have to look at the history of use in this area to understand it better and noted that all of Arrow’s monitoring informs the models, adding to the bigger picture. • Nev Wirth asked if there was a critical point of water level decline due to the CSG industry. He stated that he understood the predicted water take was not as large as it was originally predicted, but believed there must still be a limit set [in the event that modelling is incorrect]. • Stephen said Arrow had trigger levels built into Federal Government approvals which, if reached; require Arrow to implement management actions to address potential groundwater impacts. If management actions are not enacted, companies face penalties. • Brydie Hedges (AIFL) said that Office of Groundwater Impact Assessment modelling showed we would not reach trigger levels. 	<p>Action: Arrow to provide an update on potential for water recharge in the WCM</p>

	Joint meeting – ASCRG & AIFL Committee	ACTION/ SUGGESTIONS
	<ul style="list-style-type: none"> • Brian Bender stated that the CSG industry did not have an allocation like the agricultural industry. Agriculture was taking beyond the replenishment rate but water take had tripled since the gas industry arrived. The limit for CSG is whatever is required to access the gas. There is no new water for agriculture. • Ian Hayllor said that, to his understanding, most make-good agreements to date had been cash settlements, not new bores into the Huttons. Water managers needed to keep a close eye on the Condamine Alluvium, the Hutton and the Springbok Sandstone. He encouraged any monitoring that was taking place. • Nev Wirth said that it was the unknown that was of greatest concern, especially with a new industry. • Glen Ogden suggested that there needs to be a way to replace the water, beyond cash payments. • Nev Wirth said he believed make good is an impossible target. 	
ITEM 9	<p>Beneficial use network – Brydie Hedges</p> <ul style="list-style-type: none"> • Brydie advised that the beneficial use network (BUN) is Arrow’s response to its community commitment to offset any potential impact to the Condamine Alluvium. • The offset will be achieved through substitution of Arrow’s treated produced water, for Condamine Alluvium allocations held by local irrigators. • The BUN sub-committee to the ASCRG includes a group of allocation holders who are co-developing a solution on how the network might operate. • The committee has developed a shortlist of possible network options, with the next step to shortlist preferred options. • The process has included engagement with Western Downs Regional Council (WDRC). • Jodie Taylor said the Council’s Utilities Infrastructure team had raised concerns about costs. While Council would like to avoid using their allocation and use CSG water instead, using CSG water would be a short-term solution which would not justify the cost. • Brydie advised that Arrow had also spoken to Toowoomba Region Council regarding beneficial use of water, however there were similar concerns regarding feasibility. • Warren Myring suggested untreated CSG water could be used for non-potable purposes. • Ian Hayllor said he supported the BUN as it would help to protect the Condamine Alluvium for future generations. • Brydie noted the next BUN meeting will be held on 1 October, with a progress update at the next ASCRG meeting. 	

	Joint meeting – ASCRG & AIFL Committee	ACTION/ SUGGESTIONS
ITEM 10	<p>Local content update – Jason King</p> <ul style="list-style-type: none"> • Jason advised that Arrow’s commitment to local content not only supports local suppliers, it also makes good business sense - e.g. better delivery times and often good economic value. • Arrow provides data to the Queensland Resources Council (QRC) on economic spend. For the last financial year, 2018-2019, the figure was ~\$350M: <ul style="list-style-type: none"> ○ 59% local ○ 40% interstate and ○ 1% overseas. • Ian Hayllor asked what Arrow considers “local”. Jason said Arrow used the Government’s definition of local, which is Queensland. • Jodie Taylor said it would be good to see this data broken down further into a regional level. • Leisa Elder noted that data on this was also available at industry-wide level through research by the University of Queensland, Centre for Coal Seam Gas (CCSG). • Jason provided an update on some local good news stories, including: <ul style="list-style-type: none"> ○ Dalby rural supplies – agricultural and other supplies ○ Baker Rossow Consulting Engineers – technical drawing services ○ MJ Smith - construction and civil construction services ○ Stonestreets Coaches – bus services and charters ○ IOR Petroleum – distribution of fuel. • Jason advised that opportunities in Arrow’s 2020 work plan and budget will include pads, tracks and civil work, which will be the majority of the contracting opportunity. There will potentially be a steady ramp-up of activity after 2020. Arrow’s larger work program will include additional opportunities such as drilling and wellhead equipment and accessories. • Refurbishment of drilling equipment is another area where Arrow is looking for longevity of supply. Arrow is working with local suppliers to identify the available skills base. • Jodie Taylor asked how the local business community could find out about work packages that are coming up, and Arrow’s engagement around procurement opportunities. Jason said that Arrow used ICN Gateway and networks on the ground to disseminate information. The tendering process includes local content requirements and plans. • Jane Walker raised the concern of a local electrical business which lost staff to the CSG industry. The business supported locals in obtaining tickets, etc. to support work in the gas sector, only to lose them to the industry. This business owner saw this as a positive reflection of the high standard of training he provided but it equated to time and money lost to his business, plus the strain of re-recruiting and training. Jane asked if there was any opportunity for Arrow to support businesses to train staff. • Leisa Elder advised that Arrow invests in training by funding local traineeships in the community and by supporting university 	

	Joint meeting – ASCRG & AIFL Committee	ACTION/ SUGGESTIONS
	<p>access at a number of Queensland universities.</p> <ul style="list-style-type: none"> • Jodie asked if it was possible to see data on local spend in the Western Downs Region. Local staff numbers and direct employment of people living locally was valuable to the economic development of the community. • Leisa said Arrow already provided this data to QRC so it was available to share. Arrow could also provide an update on the tenders going out. • Brydie Hedges suggested Arrow can include local content as a regular item on the ASCRG agenda. • Nev Wirth advised that he believes the CSG industry's expansion has had an impact on the agricultural industry, which Nev believes is losing skilled workers leading to an increased cost of employment. 	<p>Action: Arrow to provide a breakdown of local spend, employment and tender opportunities at each ASCRG meeting</p>
ITEM 11	<p>Arrow in the community – Liz Edwards</p> <p><u>Ekka 2019</u></p> <ul style="list-style-type: none"> • Arrow was the official energy partner of this year's Ekka, supporting events like Beef Week and Youth in Dairy competitions. • Heart of Australia attended to provide tours of the 'Heart 3' mobile clinic for farmers attending Beef Week. • The Broncos women's team participated and won (unofficially) the young farmers challenge for the second year in a row. <p><u>Broncos emerging leaders camp</u></p> <ul style="list-style-type: none"> • Arrow took 44 Western Downs middle and high school student to Brisbane to expose them to the virtues of leadership and teamwork. <p><u>Other social investment</u></p> <ul style="list-style-type: none"> • Arrow will be supporting Drought Angels by funding vouchers for farmers. • A camp will be held in Emu Gully (near Toowoomba) for around 40 Western Downs secondary students, through Arrow's partnership with Beyond the Broncos Indigenous Girls Academy. It will focus on preserving and protecting Indigenous cultural heritage through learning activities involving elders, Indigenous NGOs and content experts from universities and industry, and Indigenous Arrow staff. 	
ITEM 12	<p>Any other business</p> <ul style="list-style-type: none"> • Jodie Taylor asked for copies of the development phasing maps. 	<p>Action: Arrow to forward Jodie Taylor phasing maps</p>
ITEM 13	<p>Minutes of previous meeting & actions</p> <ul style="list-style-type: none"> • Minutes distributed for comment/feedback. <p>Endorsed for publication on website.</p>	
ITEM 14	<p>Agreed outcomes, actions, deliverables</p> <ul style="list-style-type: none"> • Arrow to document the committee's key achievements • Arrow to advise on the number of bores carried over from previous UWIR 	

	Joint meeting – ASCRG & AIFL Committee	ACTION/ SUGGESTIONS
	<ul style="list-style-type: none">• Arrow to provide an update on potential for water recharge in the WCM• Arrow to provide a breakdown of local spend, employment and tender opportunities at each ASCRG meeting• Arrow to forward copies of phasing maps to Jodie Taylor.	
	Next meeting – 21 November, Toowoomba	

There being no further business, the meeting was closed at 11.45am