

SAFETY LEADERSHIP

Andrew Faulkner
CEO

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ARROW ENERGY

WHAT WE INHERITED

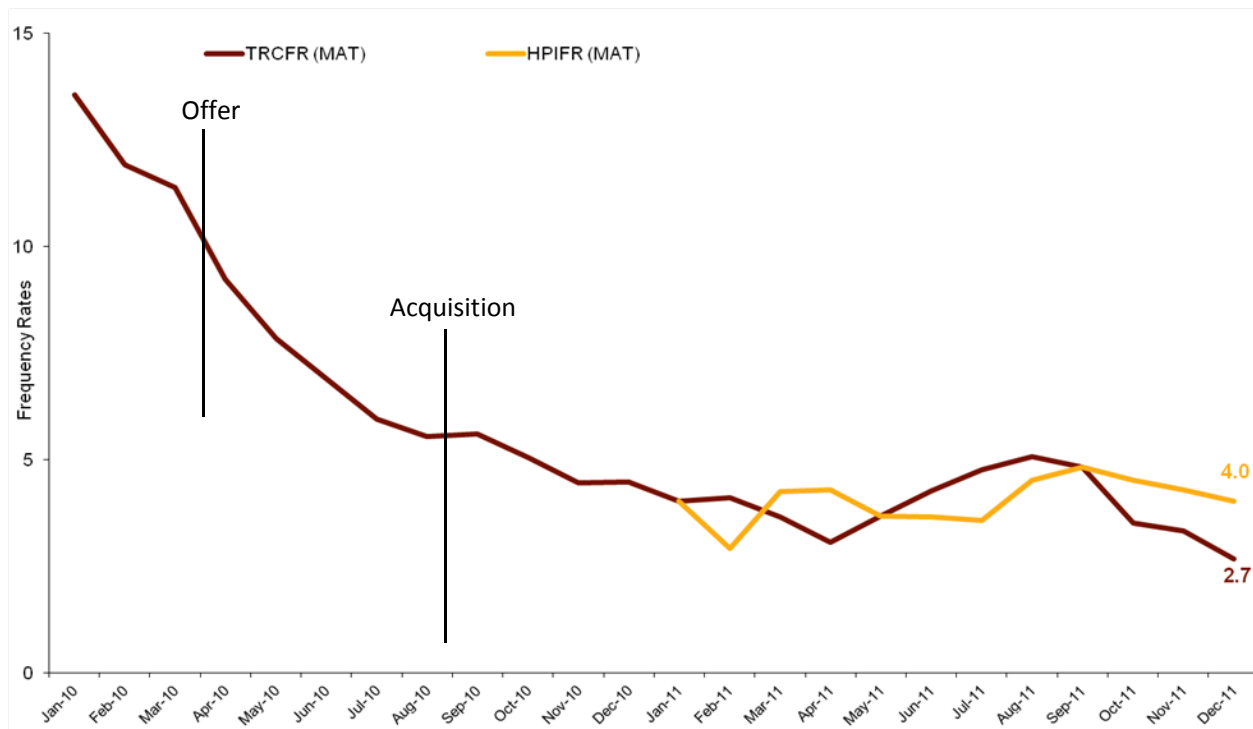
- August 2010: Shell and PetroChina acquired Arrow
- A relatively 'young', entrepreneurial company
- Existing domestic business with operations back to 2000 and first commercial gas production in 2004
- Legacy issues
- Very wide geographical area with significant driving distances and road transport risk
- Low level of competency and experience in contractor sector
- Minimal HSE systems in place
- CSG-LNG project aspirations.



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IMMEDIATE ACTIONS

- Vice President Health Safety and Environment (HSE) on Leadership Team
- Arrow HSE standards
- Life Saving Rules consequence management
- Robust HSE Annual Improvement Plan.



Arrow Total Recordable Case Frequency Rate and High Potential Incident Frequency Rate (January 2010 – December 2011)

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2012 SAFETY PERFORMANCE

- Total recordable case frequency rate (TRCFR) at end 2012 was **8.0**
 - (3.0 in January)
- 29 recordable safety incidents
 - nine high potential incidents
- Over 90% were low severity
 - no permanent disability or impairment
 - e.g. twisted ankle/knee, two stitches to finger, back injury from lifting boxes.

TRCFR: End-2012



8.0



1.2



1.7

International Oil & Gas Producers

QLD CSG

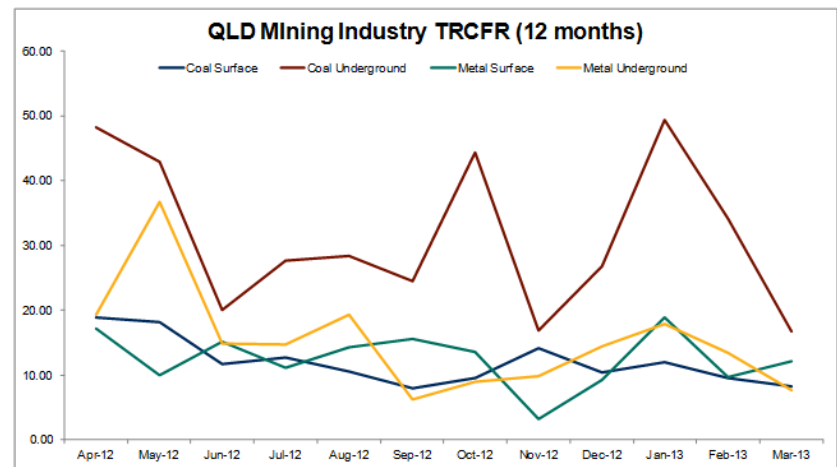
Arrow, QGC, Santos, Origin

5.6

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2012 SAFETY PERFORMANCE

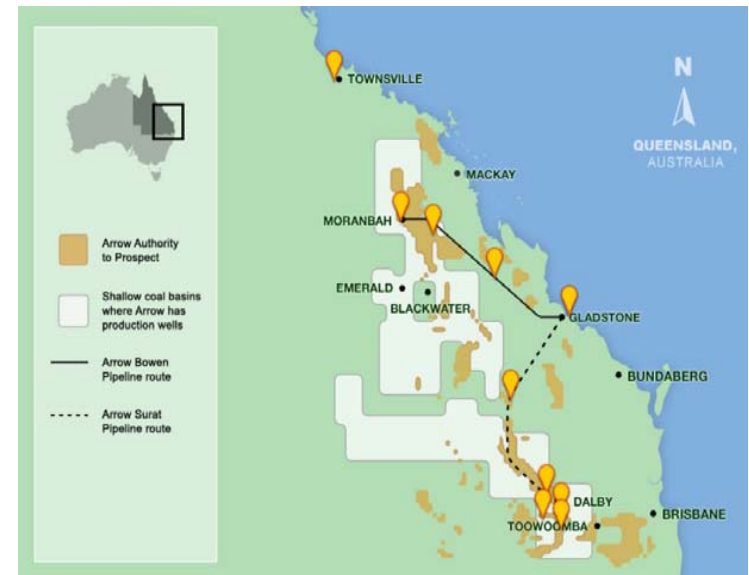
- Arrow on Shell “watch list”
- Safety performance **unacceptable**
 - inconsistent with LNG project aspirations
- Leadership intervention needed
- Time before FID to get it right.



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CHALLENGES

- Arrow placed on Shell Upstream International watch list; ‘perfect storm’ of contributing factors:
 1. Unconventional gas
 - geographic spread
 - infrastructure
 - contractors
 2. Land-based operations
 - travel distances
 - fatigue
 - traditionally worse safety performance
 3. Australian culture.
- Key areas of exposure:
 - vehicle / transport safety
 - drops
 - electrical work and specialist contractors
 - contractors/subcontractors
 - gas.



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WHAT WE'RE DOING WELL

1. Unconventional gas

- Upgrade of standard well design (e.g. BoP, barriers)
- Vehicle/transport safety:
 - driver competency training
 - in-vehicle monitoring system (IVMS) and safe vehicle specifications implemented
 - weekly driver behaviour monitoring
 - heavy haulage code of practice
 - mandatory bus service for staff travelling between Brisbane and Dalby



2. Land-based operations

- 24/7 journey monitoring centre
- 12 hour rule – fatigue management
- Life Saving Rules panel and consequence management
- Incident Review Panel
- DROPs program
- Contract holder (HSE) training and Arrow HSE induction for all contractors
- **Collaboration with other CSG-LNG proponents.**



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COLLABORATION WITH OTHERS

- Qld CSG-LNG industry has very active safety committee
- Principle is improvement by active collaboration:
 - aeromedical rescue services – two fully fitted helicopters
 - consistent vehicle safety standards and IVMS reporting for contractors
 - consistent HSE assessment template in prequalification
 - joint audit program of drilling contractors
 - joint contractor safety forums
 - mutual aid working group – shared GIS info
 - aligned safety competency requirements for site supervisors.
- Company CEOs meet quarterly
- Sharing of consolidated safety performance & trends/issues
- All significant incidents shared ASAP via safety alerts
- APPEA/shareholders also key sources of learning
- Philosophy: *safety offers no competitive advantage.*



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SAFETY CULTURE AND BEHAVIOUR

- No need for more systems and processes
- Arrow's key area for improvement is **safety culture and behaviour** (point 3 of the 'perfect storm'):
 - rapid staff growth
 - large number of small local contractors (agriculture / mineral backgrounds)
 - cultural survey revealed a range of attitudes towards safety.



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VISIBLE SAFETY LEADERSHIP IMPROVEMENT PROGRAM

- Key themes:
 - improved safety communication/visibility
 - contractors/subcontractors
 - consequence management/personal responsibility
 - learning and sharing
 - focused behavioural training program for all
 - competency/supervision
 - shareholder/industry.

S

Safety leadership

A

Assess the Risks

F

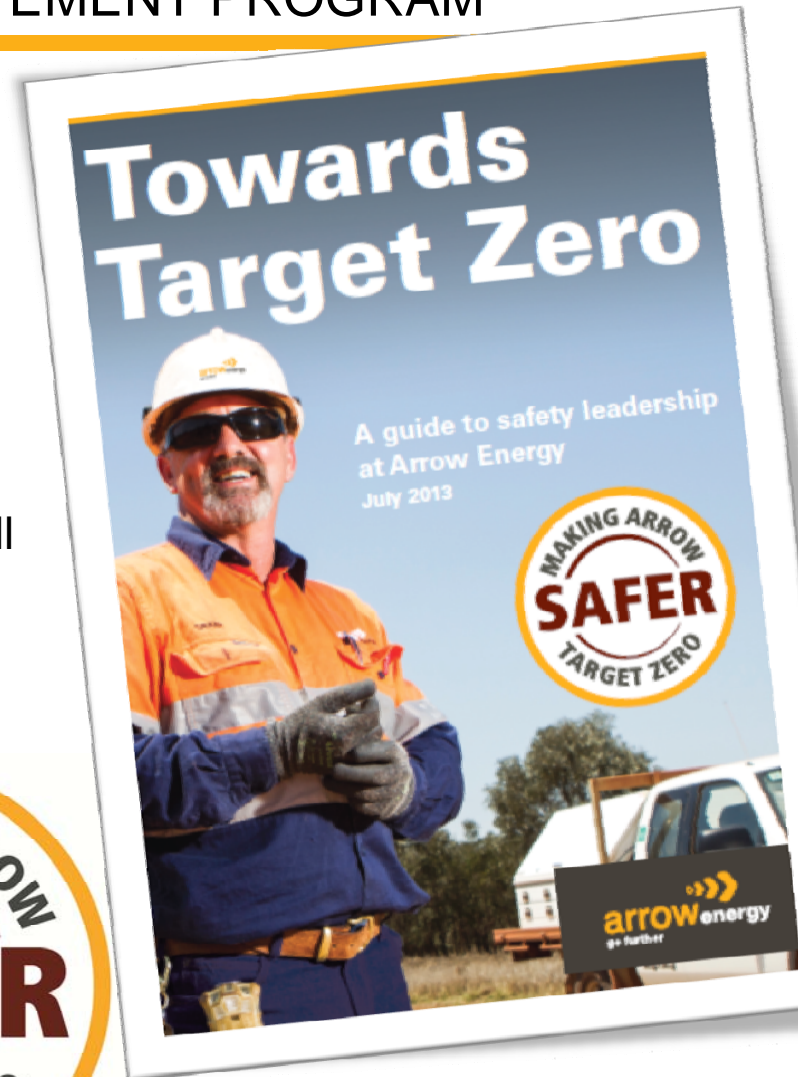
Follow the rules

E

Engage in safety conversations

R

Respect



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Australian Workplace Culture



Characteristic	How it can go wrong	How to respect the culture
Mateship	<ul style="list-style-type: none"> ✓ Not automatically respectful of authority ✓ Team culture can go against authority 	<ul style="list-style-type: none"> ✓ Involve and 'ask' people to participate ✓ Feeling people are listened to ✓ Make competitive nature work for safety ✓ Team believes we've 'got each others' back'
Give a Fair Go / Fair Dinkum	<ul style="list-style-type: none"> ✓ Feeling that not being treated fairly ✓ Lose respect for managers for non-authentic behaviour 	<ul style="list-style-type: none"> ✓ Respect earned through action, not title ✓ Follow through on actions ✓ Genuine and consistent ✓ Acceptance of feedback/challenge ✓ Clear and "fair go" in treatment ✓ Avoid 'penny-pinching' and 'noise'
She'll be Right / Have a Go	<ul style="list-style-type: none"> ✓ Not great at always following rules and procedures ✓ Dismissal of intervention/feedback ✓ Acceptance that injuries are normal 	<ul style="list-style-type: none"> ✓ Will get the job done, and deliver ✓ Clarity of expectations – WHY / WIIFM? ✓ Ask for their help in problem solving
On Ya	<ul style="list-style-type: none"> ✓ Opposite behaviour when praise not given and/or not given appropriately 	<ul style="list-style-type: none"> ✓ Understand type of praise which works ✓ If personal - low key, understated ✓ Publicly praise teams

Sources: *Sentis Report to AAPEA Leadership Forum, 2008*

DET WA, Employability skills and workplace culture in Australia, 2009

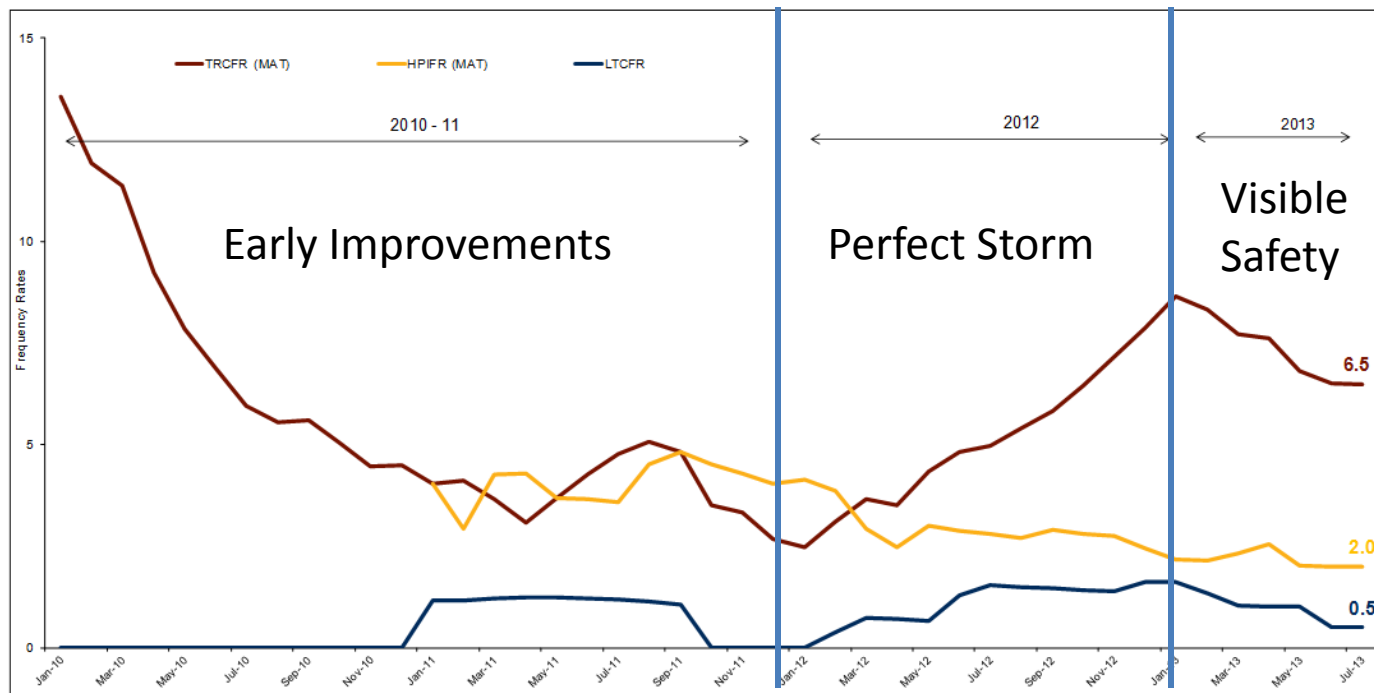
Swinburne University, Australian Workplace Culture, 2012

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VISIBLE SAFETY LEADERSHIP IMPROVEMENT PROGRAM

- Leadership intervention is starting to show results approaching CSG-LNG industry average:
 - improving High Potential Incident Frequency Rate (HPIFR) trend, in particular serious vehicle accidents
 - improving Total Recordable Case Frequency Rate (TRCFR) trend
 - improving Lost Time Case Frequency Rate (LTCFR), consistent with continued low severity.

Arrow incident trends:



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CEO SAFETY PLEDGE

“I will be a visible safety leader and advocate both internally and externally. I accept that I am accountable, and will be judged accordingly for the safety of my own people, including contractors. I will understand and drive down the risks that can lead to high potential incidents and injuries. I will demonstrate this by:

- ensuring that the Arrow work plan and budget, and its subsequent execution, remains consistent with our safety goals
- holding all staff and contractors, and explicitly my Leadership Team, accountable for their safety behaviours and performance within their areas of responsibility
- hosting CEO to CEO level safety meetings with the ten most significant contractors
- supporting delayed start-up if contractors are not ready to operate safely, and contract termination if safety performance is poor and improvement is not made
- taking the Leadership Team to the field twice per year for the regular meeting as well as two days of safety focused events
- spending at least one day per month in the field talking with frontline staff/contractors on safety
- verifying that Arrow is both actively learning from incidents and sharing learnings with others.”

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REVISED SCORECARD WITH SAFETY PARAMETERS

Theme	Measure	Item Achievement Rating (FYLE)
Safety	Combined HiPoFR/TRCFR Multiplier	

A

Theme	Measure	Weighting	Item Achievement Rating (FYLE)
Asset Integrity Process Safety	Total recordable loss of primary containment incidents	7.5%	
Operations	Domestic Project Milestones (Number achieved out of 7)	10.0%	
	Operating margin - Value in AUDM's	10.0%	
LNG Project	Project milestones (Number achieved out of 7)	35.0%	
	Drilling Performance - total other wells (number)	10.0%	
	Drilling Performance - Cycle Time Improvement (%)	10.0%	
	Completed appraisal pilots ready to produce (number)	10.0%	
	Applications for superior tenure (number)	7.5%	
SCORECARD RESULT based on a weighted average of the individual scorecard items		100.0%	
OVERALL SCORECARD RESULT			

Overall BPF =

A x B

(Capped at 1.5 max)

B

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WHY SAFETY MATTERS TO US



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CONCLUSIONS

- CSG – special challenges
- Arrow is relatively young company, exposed to ‘perfect storm’
- Sizable improvements seen from establishment of systems and controls, especially in vehicle safety area
- A long way to go to get to international benchmark
- More systems not the answer – Visible Safety Leadership is showing immediate results; need to sustain
- The collaboration between CSG companies continues to lead to real safety performance improvements
- Success is when Arrow personnel make the safety right choices, not because of regulation or procedures but **because they want to.**

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