



FUTURE STATE
18 MAY 2017

IDEAS & SOLUTIONS
FOR QUEENSLAND 2027

QUEENSLAND
FUTURES
INSTITUTE

INNOVATION . INDEPENDENCE . IMPACT

QFI's AIM

The Queensland Futures Institute aims to lead policy debate on issues essential to the future growth of Queensland. Tackling the most difficult policy issues; drawing upon evidence-based research; collaboratively engaging business, industry, researchers, local government and the community in developing workable solutions; to bring about essential reform.

Partnering with some of Queensland's most passionate advocates for change, we bring together like-minded people across many sectors and disciplines to address issues and create opportunities in Queensland.

Our driving philosophy: an innovative, robust and thriving economy to enhance the social well-being and quality of life of all Queenslanders

QFI's Mandate

Committed to improving the state of Queensland through private-public collaboration, the institute has five futures themes that guide its activities:

- Greater attraction and retention of local and international **investment**
- Creating thriving **regions**
- Queensland an **energy** clean tech leader and international hub for collaboration and commercialisation
- **Education** services that are world-leading and of global demand
- Investing in and leveraging the extensive capability of our **research** institutions
- Enhancing the value of our world-class **natural assets**
- Increasing our **trade** with Asia and beyond
- Queensland as a world leader in the development and adoption of **technological innovation**
- A system of **government** to reflect rapidly changing community expectations

QFI IDEAS FOR THE FUTURE

EDUCATION AND RESEARCH

Professor Ian Frazer AC, Ambassador and Chair of the Board of the Translational Research Institute Board

Establish Queensland as a premier location for the conduct of medical research by industry and academia, by introducing a single uniform public health system eHealth record across the State, by introducing opt out consent for contribution of data to medical research, by rationalising the governance aspects of the conduct of research in the public hospital system, and by expanding the pool of clinical research talent through creation of further practitioner research fellowships across all sectors of the public health service.

Professor Peter Høj, Vice-Chancellor and President, The University of Queensland

Australia needs to transform its economy and Queensland Governments have realised this through past initiatives, including the current Advance Queensland Initiative. This Initiative is well positioned to take advantage of the recently announced National Innovation Statement for Australia. The Initiative should be maintained and it is a great credit to the current government that it has been boosted. This will strengthen the higher education sector and enhance its reputation, which is crucially important to further boost service export earnings from international student tuition. Whilst this activity now contributes \$3billion to the Queensland economy, it can be boosted further. The Initiative will also promote innovation in business and services to not only further develop existing businesses, but also attract and develop new activity.

Additionally, the development of new businesses and presence of tens of thousands of Queensland educated alumni throughout Asia will also allow us to leverage the growing economies of Asia, including Indonesia.

EMERGING TECHNOLOGY

Ms Linda Apelt, Chief Executive Officer, Montrose

One of the most significant economic, social and cultural contributors to the quality of life for Queenslanders is the Arts. A significant mega trend in this area is the growing digital consumption of media, particularly among the under twenty five age group. A very significant opportunity for Queensland is to better invest in and support the emergence of digital media production in Queensland. An investment in this area would play a vital role in the growth of Queensland's digital economy.

Dr Catherine Ball, Co-Creator, World of Drones Congress and Co-Founder, SheFlies

Remotely Piloted Aircraft Systems (RPAS) aka Drone Technology

Queensland is positioned to become a globally recognised leader in the development, application, and regulation of drone technology. Brisbane is set to host the global World of Drones Congress for the next few years; and there are trial and test sites being developed across the State.

The value add to businesses from drone technology can be in the data they collect and use; the telecommunications required; the development of technology safe to use in urban areas; and the ability to respond quickly to emergencies. Australia still has the most progressive RPAS legislation in the world and many countries are looking to the Australian regulatory framework as a way to manage their own air space.

Some areas that will need continued support with regard to policy and grants include:

Precision Agriculture

Emergency Response

Data management, archiving, and storage

Geo-ethics and the engagement of communities with these technologies

Development of trial and test sites

Professor Martin Betts, Deputy Vice-Chancellor (Engagement), Griffith University

Proposal for an Advanced Design and Manufacturing Centre at the Gold Coast Health and Knowledge Precinct to provide:

- Advanced digital fabrication technologies that provide viable direct, end-use product manufacturing capabilities in high value innovation products spanning personalised medical devices through to next generation electronics.
- Co-location in knowledge precincts to facilitate authentic, long term engagement between industries and research organisations, with additive manufacturing enabling swift progression from discovery science to prototype, to product in market.
- Significant new markets nationally and internationally through the agile approach of a highly skilled workforce addressing specific client needs for short run/high customisation products via advanced design and distributed digital fabrication technologies.
- The intellectual and creative capital of the State to assure national leadership in design for manufacture rejuvenation:
- Customised design and transmission for distributed manufacture, utilising clean and energy efficient materials and integrated into global supply chains.
- Increased return on investments in advanced informatics capability, not least through identification and capitalisation of new market opportunities.

Ms Karina Collins, Partner, BDO

The recent advances in data analytics capability offers significant opportunity to contribute to Queensland's social and economic growth. We see an opportunity for Government to:

- Use data to provide deeper insights into the current state of government agencies and departments
- Create interfaces between agencies and departments for integrated policy making
- Better connect agencies and departments in regards to data sharing and insights
- Empower agencies and departments with data analytics and business intelligence capabilities

What might be a part of the Solution?

Leveraging the Open Data Project - a One-Government Data Insights Strategy - focused on generation of integrated social and economic insights:

The outcomes to Government?

- Improved knowledge – arming agencies and departments with deep insights (beyond data)
- Integrated Government Policy (end-to-end) – providing improved services and community outcomes
- Increased assurance over evidence based investment decisions –increasing Government's likelihood of realising investment benefits

Mr John Lord AM, Chairman and Independent Director, Huawei Australia

A Better Connected World is approaching

A Better Connected World will have a significant impact on every country's socioeconomic development. Connectivity will drive economic benefits and become a demand from the consumer – business and personal consumers.

Whole of Government Approach to Digitisation incorporating Internet of Things & Connectivity

By 2025 there will be 100bn global IoT connections – P2P 10%, M2M & T2T will make up 90%. To achieve the economic benefits & meet consumer expectations Governments need to ensure the latest technologies are considered, if not included, for all infrastructure, community and social projects.

Incorporating Latest Digital & ICT Technologies Will Have Economic Benefits for Government & Business – E.G.s

1. AFR Friday 6 May – CSIRO sensors throughout aged people's homes, measuring food consumption, monitoring health, all remotely. Allows aged to stay at home longer, lessening care accommodation and improving the aged living experience
2. Huawei & SE Water in Melbourne – remote IoT sensors monitoring all their connectivity points – water wastage, under use, over use, defect prevention, all remotely
3. Huawei & Netherlands Towns – remote sensors supporting smart cities through efficient parking, lighting, optimum people and transport flows.
4. Huawei & Metricon Stadium – Huawei has incorporated the latest technologies in Metricon to maximize the spectators experience

Dr David Williams, Executive Director, CSIRO Digital National Facilities & Collections

“Data driven policy intervention.”

To recognise the value of existing and new datasets and how state of art analytics and modelling can help inform and support policy decision making in Queensland. At the same time this can improve the visibility of outcomes to the population as well as services. Provide on line access to data sets that enable multi-disciplinary analysis of issues with spatially referenced outputs. Ensure quality of data sets is a known feature. Understand and use value of new remote observational systems to improve outcomes of the analytics. In terms of confidentiality we can now run analytics across encrypted data to retain individual anonymity. E.g. health data. We can use machine learning capabilities to run analytics across disparate datasets and at the same time weight the data in terms of quality. Data access platform needs to be a spatial map (google maps style) with metadata available on line for all and access conditions provided. Will work across all areas:

- Traffic modelling
- Health
- Smart cities
- Rural resources and planning
- Sustainable environmental management using all inputs in a synergistic way. Important for Barrier reef for example
- Marry hard data with soft social outcomes.

Aim to create Queensland as a modern state of art place for future digital technology companies and build on the new innovation statement.

ENERGY

Mr Paul McCartney, Joint Chief Origination and Transaction Officer, Clean Energy Finance Corporation

CEFC perspectives on Queensland's clean energy goals

In pursuing pathways towards a 50% Renewable Energy Target by 2030, Queensland is now well engaged in the process of making the important transition towards the State achieving a stable and secure energy system into the future.

The CEFC stands ready to assist the State by continuing to develop financial mechanisms that will unlock the investment required to help Queensland broaden its energy mix and utilise important technologies such as wind, solar, storage, pumped hydro, and baseload renewables such as biomass. The CEFC can also play an important role in assisting Queensland in upgrading network infrastructure to unlock potential renewables corridors across the State.

The CEFC has a range of programs that can support the realisation of this energy transition. These include the Reef Funding Program which is making available up to \$1 billion of investment finance (debt and equity) over 10 years for clean energy projects and businesses that support delivery of the Reef 2050 program. Example investments include projects or businesses that meet the CEFC's core investment mandate of being a renewable energy, energy efficiency, or low emissions technology but also have a positive co-benefit for the health of the Reef (either directly by improving water quality, or indirectly by reducing emissions). This represents a significant investment of capital into the Queensland economy.

In addition, the CEFC also has a mandate to make available up to \$1 billion over 10 years to a Sustainable Cities Fund, operating nationally, to leverage private sector capital to accelerate the deployment of projects such as renewable energy plants and installations, next-generation transport management systems, green field buildings and retrofit of existing properties to best in class energy efficiency standards. In this area, the CEFC has been an active participant involved in the leveraging of project opportunities through the Townsville Cities Deal.

Further, the CEFC continues to roll out effective early stage financing mechanisms under its \$200 million Innovation Fund that can leverage such priority sectors for Queensland as aviation and transport bio fuels.

Mr Ian McLeod, Chairman, QFI Energy Committee

- Ergon Energy captures every regional city and town in Queensland every year with spatial LIDAR data and high resolution imagery. There is an opportunity for Queensland to leverage this investment and information across communities and industries to improve efficiency, reduce risks and costs. There is also an opportunity to progress utility infrastructure and community resilience work to reduce longer term economic losses from disasters. Queensland should strive to become a centre of excellence for spatial intelligence and use it as an export opportunity for knowledge based services.
- The government's response to climate change is predominantly focused on renewable energy and associated targets. Transport is a major contributor to carbon yet there is very little in the way of policy and support for electric vehicles. The charging infrastructure is already there in most people's garages. Promotion of electric vehicles along with government leading by example in the use of EV's would start create awareness and a second hand market.
- There has been significant work done in restructuring electricity network and retail tariffs in Queensland. Excluding the cost of smart metering there is a significant portion of the regional residential customers who would be better off on the Time Of Use Seasonal Demand tariff than the flat tariff. Migration of these customers would also assist in reducing future network constraints. A Market Led Proposal to roll out Smart Meters should be promoted. This will also assist with holding jobs levels in the industry for the short term.

INFRASTRUCTURE

Mr John Aitken, Chief Executive Officer, Brisbane Marketing

Greater Brisbane generates almost 50% of Queensland's economy and mutually contributes to and benefits from the success of our diverse regions. Successful regions + successful Brisbane = Queensland economic future.

Brisbane's future economic success has many drivers. The Brisbane2022 New World City Action Plan provides clear priorities that will drive Brisbane's future success including what each of Brisbane's 8 key priority growth industries require most to grow and prosper.

Timely delivery of infrastructure, strong destination brand, supportive business environment, agglomeration of industries to create efficiencies and visibility (precincts), , attracting talent, investment, major and industry events; and increasing attention to education, research, development and innovation represent some of the competitive platforms where all levels of government can play an important role.

Cross River Rail and Brisbane Metro will greatly assist in unlocking the future potential of Brisbane's key employment and innovation precincts. Brisbane Airport's second runway, International Cruise terminal, Howard Smith Wharves, Dexus and Stamford's vision for City Reach and Destination Brisbane Consortium's Queens Wharf Project will begin to unlock the world class business and tourism opportunities of Brisbane's river precincts.

A timely joint vision by all levels of government to work closely with asset owners and industry through a commitment of co investing in world class infrastructure and connectivity on the Brisbane River and adjoining Moreton Bay will significantly advance Brisbane's future as a destination for investment, talent and tourism.

Ms Julieanne Alroe, CEO and Managing Director, Brisbane Airport Corporation (President)

My pitch is in respect of infrastructure. Given the asset re-cycling is off the table and that we need more infrastructure to help drive growth, the Government needs to focus on how to quickly and reliably get private sector investment approved and into development.

This means quick decisions as to the appropriateness of MLP and if deemed suitable, a streamlined approval process for the next stages of the MLP. Greater clarity on environmental approvals so that it is not an endless series of challenges and court interventions that just frustrate what the government has already approved.

Where federal money is required to help fund infrastructure, Queensland agencies should use approved IA business case models to make assessment of the projects quicker and more straight forward and reducing re-work and delays. While this will not guarantee funding it makes it easier to make the case that Queensland projects are worthy of funding and prove that these projects add genuine value to the community and the economy.

Mr Mark Courtney, General Manager, MacroPlan Dimasi

We need a system that has more flexibility to deal with globalisation, advances in ICT, the massive demographic shift in terms of aging and the rising Asian middle class. Queensland is undergoing a shift in its employment pattern. In SEQ for example, jobs are being creating in the suburbs, not in Brisbane's CBD. With such changes impacting in centres throughout Queensland, we need a planning and infrastructure platform that has the capability to respond faster and appropriately to the "new". Perhaps rather rely on one large ticket cross river rail, why not change tack and move towards a broader spend across the regions to future proof our employment futures. Jobs growth in the delivery of such projects would enhance the liveability of the regions and ensure that the trend of employment is addressed. Perhaps the new Planning Act 2016 will represent a positive response to this need. However we see that a more nimble flexible use of resources to coordinate and manage the impact to the State from the megatrends and promote economic growth through a geographically broader infrastructure spend would be an appropriate response.

Mr Andrew Young, Chief Executive Officer, Brisbane Markets Limited

Queensland is positioning itself to increasingly be an exporter of agriculture products to serve a growing Asian market. Horticulture is a large part of the state's agricultural industry and fresh produce has a very bright future if it can service the growing demand for product. One significant barrier to the future growth of fresh fruit and vegetable exports is the lack of appropriate phytosanitary treatment facilities in Queensland. This problem will increase due to the ongoing shift away from some of the traditional chemical treatments, some of which have already been banned, and the potential damage caused by some of the newer alternative treatments, such as vapour heat.

Brisbane Markets Limited has undertaken a number of feasibility studies over recent years with respect to the construction of a purpose-built low-dose X-ray facility located at the Brisbane Markets. For this type of project to be successful, a seed capital component is required to assist with its establishment. Our studies suggest that with the higher capital cost of such a plant (\$12 - \$15 million) a long lead time is required before a facility of this type becomes feasible. We ask the Government to consider their assistance through an investment (say \$5 - \$10 million) to support the construction of a purpose-built facility at the Brisbane Markets, as an established marketing and distribution hub, to support the longer term growth of the horticulture industry in Queensland.

INNOVATION

Ms Helen Burns, Partner, PwC

The focus and determination to remove domestic and family violence from the Queensland community has been a defining and admirable characteristic of the Palaszczuk government. This desire has been coupled with a wish to improve child safety to better protect Queensland's most vulnerable citizens.

Better use of data across government agencies and departments combined with predictive analytics would ensure vulnerable citizens are both identified and helped before misfortune occurs. We have worked with Federal Departments and have shown how rigorous data analytics can improve investment and social outcomes. Overcoming barriers to the sharing of data and introducing platforms to enable data analysis can help create a safer and more equitable community for which all Queenslanders can be proud.

Mr Brett Kelly, Chief Executive Officer, Norco

A Day With A CEO. My idea is to offer a free one off consultative day to small business operators that never get this type of experience/exposure looking at their respective business. Qld CEO's could volunteer some time to small business. This could be promoted by the Government and through the QFI. This would be great PR for everyone involved as well as for the CEO's company and show Qld business and Government taking an initiative that no other states have done. I would be happy to take the lead in organising all aspects if there is an interest.

Professor Arun Sharma, Deputy Vice-Chancellor, Research and Commercialisation,
Queensland University of Technology

Queensland has a strong imperative to develop a more innovation-driven entrepreneurial economy that is less reliant on the traditional sectors of agriculture and mining. Innovation precincts can arise where there is a combination of deep sectoral domain knowledge and strong technological capability, together with enabling factors such as professional services firms, access to risk capital and a culture of entrepreneurial education. While Silicon Valley is the dominant example, the financial technology cluster in London and agricultural technology cluster in Israel provide other examples of linkage of sectoral domain knowledge and strong universities with research and technological capability.

For Queensland to become a global technology hub for sectors in which it has significant sectoral capability, it needs to focus on its sources of competitive advantage:

- World class domain knowledge in sectors such as mining, agriculture, environmental management especially linked to the Great Barrier Reef and a significant public health system with strong research investment in life sciences;
- It is the only developed region of the world that has both tropical and subtropical climate which gives it an edge in climate-linked expertise in environmental management, health, agriculture, infrastructure and built environment.

Mr Paul Spiro, Chairman, Gadens

The Advance Queensland initiative of creating the Office of the Queensland Chief Entrepreneur (OQC E) and the appointment of Mark Sowerby as the Chief Entrepreneur has been extremely well received in the business and general community. The goals of OQCE (encourage Queenslanders to become entrepreneurs, showcasing Queensland start-ups, connecting with rural and remote Queensland and the stimulation and attraction of investment and venture capital to Queensland) are admirable and, with the right amount of effort, achievable.

The Creative Industries go hand-in-hand with the goals of the OQCE (encourage Queenslanders to become Creatives, showcase Queensland start-up Creative Industries, connect rural Queensland through cross-cultural activities and attract people to live and invest in Queensland by showcasing Queensland creativity) and perhaps, as an adjunct to the OQCE and Chief Entrepreneur, consideration could be given to the creation of a Chief Cultural Officer (CCO) to coordinate the diverse cultural activities that exist in Queensland.

In the same vein as suggested by Rob Jones in the QFI Ideas and Solutions for Queensland 2026, the CCO could have a mandate to drive “creative thinking” to enhance the liveability and attractiveness of Queensland. There are a lot of threads in the Creative Industries in Queensland (both in the government and private spaces) and the CCO could be positioned to weave these threads together for the betterment of Queenslanders and future Queenslanders both in terms of lifestyle and improvement in the return on the government’s investment in the Creative Industries.

PRODUCTIVITY

Mr Peter Carne, Public Trustee of Queensland

1. Orderly transfer of wealth – efficient transfer of wealth is important to keep funds available to be spent in the Queensland economy. Intestacies impact on timeliness of administration. Two key instruments assist in the orderly management and transfer of wealth: a well-drafted will and an enduring power of attorney (EPA) giving a trusted person the authority to make personal and financial decisions. Efficient administration of estates allows assets to be put to best and most effective use.
2. Support for ageing population – as they age, a significant proportion of adults will become less mobile and their capacity will diminish. Objective: to facilitate older Queenslanders to live with dignity and comfort. Some will prefer to move to aged care facilities. The majority want to continue to live in their own homes: support services will be in high demand. Government can play a vital role in ensuring service providers help older Queenslanders stay at home and in encouraging the creation of EPAs.
3. With age comes increased vulnerability and risk of financial abuse – the Queensland Government has a real interest in having strong social and legal systems to prevent and prosecute abuse.

Dr Andrew Johnson, CEO and Director of Meterology, Bureau of Meterology.

Over coming decades, the challenge for humanity will be to simultaneously enhance economic prosperity, whilst sustainably providing water, food, energy, housing and transport for nearly 9 Billion people and protecting the natural environment upon which economic activity and societal wellbeing depends. These drivers are most acutely expressed in the global tropics and will directly impact on the trajectories of our immediate region and of northern Australia.

There is an important role and enormous opportunity for the Queensland Government in supporting industry and the community in navigating increasingly complex economic and environmental performance issues so that as a State we can respond with agility and wisdom to the rapidly accelerating pace of disruptive innovation and global shocks.

Mr Jason Scott, Executive General Manager, The Courier Mail & Sunday Mail

Possibly the No1 concern for the Queensland economy is the unemployment rate. At 6.2% it is too high to unlock consumer and business confidence. Critically, youth unemployment _ is double that. And with a participation rate of 65%, there's no doubt thousands more Queenslanders would like more hours if they could. And yet so many small businesses don't open their doors on Sundays and public holidays because they can't afford the wages. According to the CCIQ: *"Since the introduction of the Fair Work Act, the rate of inactive young people in the labour market has reached historical highs. Workplace reforms such as increased minimum work engagement periods and ongoing increases in junior rates of pay act as examples of award rate disincentives discouraging businesses from taking on young workers."*

CCIQ's Workplace Relations Survey of Feb 2015 found that 74% of small businesses in retail reduced both operating hours and employment hours as a direct result of penalty rates. If Sunday rates were the same as Saturday rates, businesses would be open for longer and overall employment hours would increase. As a journalist, I accept there are two sides to every story. I believe the key stakeholders need to explore every opportunity to make it easier for small business to prosper and provide employment opportunities for Queenslanders.

THRIVING REGIONS

Professor Sandra Harding, Vice-Chancellor and President, James Cook University

The global importance of the Tropics was clearly highlighted in the first Report of the State of the Tropics Project, a world-defining, international project convened by JCU. The Report clearly reveals a new global dynamic: the future of the world belongs to the Tropics.

By the early 2040s, more than half of the world's population will live in the Tropics. By 2050, around 67 percent of the world's children will live in the Tropics. Economic development is proceeding at a faster rate than the rest of the world and coupled with a large and growing middle class, this means that there is a growing demand across the tropical world for goods and services of the type Queensland can supply.

There is also a hunger for education, better health and good governance, and a strong desire to reap the benefits of new knowledge and innovation. Sustainable infrastructure and food security will be key to regional and global security. These needs coincide neatly with TIQ's Priority Sectors, and yet the Tropics are not currently a specific focus for that organisation's activities.

Yet the Tropics are being recognised as looming large for global development. On 14 June 2016, the United Nations General Assembly resolved without dissent to inaugurate an International Day of the Tropics. The date chosen was June 29, commemorating the launch by Nobel Laureate Aung San Suu Kyi of the inaugural State of the Tropics Report on that date in 2014. The UN's 2030 Agenda, replacing the Millennium Development Goals, will largely play out in the Tropics.

With three Trade and Investment Commissioners located in the Tropics and four Regional Advisers in Tropical Queensland, TIQ is attentive to some markets, but our push needs to be redefined and asserted through a dedicated Commissioner focussing on the larger tropical opportunity to leverage Queensland's distinct advantage in tropical science, knowledge, expertise and business know-how.

Mr Dominic McGann, Chairman of Partners, McCullough Robertson

To develop a working group comprising the State of Queensland, Indigenous People, other landowners, the broader community and proponents, to ensure that Queensland has a clear understanding of the need for and elements of an efficient carbon economy.

Mr Trent Twomey, Chairman, Advance Cairns

The key issue that Advance Cairns believes if addressed by the Queensland Government, that would greatly contribute to the future social and economic growth of Queensland is an internal policy change to align Government departmental boundaries.

Currently there is a distinct variation of boundaries across a wide range of industries, including Health, Roads, Police Services, Economic Development Agencies, etc) which limits the ability for all industries to work collaboratively from a regional growth and future planning perspective. An alignment of departmental boundaries across all industries would empower Local Governments to work “hand in glove” in the strategic planning of economic and social growth across all regions of Queensland.

Professor Janet Verbyla, Vice-Chancellor and President, University of Southern Queensland

Building diverse and sustainable regional cities across Queensland is central to the future sustainability and prosperity of the State. Economic diversification and building digital and physical infrastructure to enable the development of a strong services sector (including education and training) across regional Queensland should be a priority.

In the face of rapidly changing global economies, strategies are needed to build human capital and robust social systems that support self-organisation, resilience and a capacity for change. This includes embracing new forms of digital infrastructure and technology.

Queensland should prioritise the development of regional communities that are focussed on small business sustainability, skilling for enterprise and entrepreneurship; the promotion of better health awareness and lifestyles; and the greater nurturing of the wellbeing of people and communities.

Economic diversification would pave the way for regional Australia to open up new economic activities including new service industries, niche manufacturing, creative technology, sustainability and green jobs. In partnership with State Government and local communities, regional universities have a major role to play in building robust regions. Australia’s regional universities already play a key role nationally in developing regional economies, and contributing to social, cultural and environmental development of the regions. As public institutions, regional development is core to their civic mission.

PARTNERS AND MEMBERS



INNOVATION . INDEPENDENCE . IMPACT

COMMITTED TO IMPROVING THE STATE OF QUEENSLAND

For further information on the Queensland Futures Institute,
please contact Steve Greenwood,
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Please see our website www.qldfutures.com.au