
Kwinana Major Project Conference 2023

Accelerating decarbonisation by developing clean energy supply chains &
critical mineral manufacturing in the region.

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DECARBONISING KWINANA – A COLLECTIVE EXERCISE

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- Thank you for your welcome to Country Kevin, and your acknowledgement to Country Mr Premier.
- And thank you for that introduction, Izzy.
- Kaya all.

Introduction

- My theme: To present what the foundational strength that must be present in a complex industrial precinct like Kwinana looks like, and upon which its decarbonisation can occur.
 - So first, some definitions of terms I will use:
 - A **Precinct** - means a place where industry happens, and with Kwinana, this is the original heavy industrial core plus its expansion into the Rockingham Industry Zone (RIZ).
 - A **Cluster** - is a geographic agglomeration of enterprises.
 - An **Enterprise** - is a business (not an industry).
 - An **Industry** - a sector, like chemical manufacturing, or advanced manufacturing.
 - When I say '**complex**' when referring to an industrial precinct - this means it is home to many different industrial processes and enterprises operating in close proximity in a precinct.
 - **GH2** is green hydrogen and that can be blue hydrogen if the CO2 is properly sequestered.
 - **WTC** – Western Trade Coast.
 - **KIC** – Kwinana Industries Council.
 - OK, now those of you who know me well enough will know that because I haven't got time to muck around, I tell it straight, respectfully... always...
 - And that's what I'm going to do for you today.

- So, some quick background for context:
 - Kwinana is located within the WTC – you know this already, and some key metrics are:
 - It generates at least \$20Bn into the State Economy – for me I think it is quite a bit higher than that though.
 - The precinct has characteristics that make it attractive for new entrant enterprises:
 - It is one of, if not the, world’s best practice example of industrial symbiosis (the reuse of by-products and exchanges of manufactured materials within the precinct).
 - This is true, and we (KIC and its members) can be very proud of our part in that achievement.
 - There is a 30,000 strong skilled workforce who attribute their jobs to the WTC, and two-thirds live within 15-20 kms of where they work – a very important characteristic of a successful industrial precinct.
 - Similarly, it has associated with it, a very competent support industries sector (like engineering workshops, labour and plant hire, technical and fabrication services).
 - Conversely, the precinct has characteristics that raise questions about its future:
 - It has a public sector governance environment, shall I say, which ‘needs work’.
 - I say this because it is very complex, and there are too many players,
 - and years of inadequate action has taken its toll on the efficiency of common user infrastructure, land availability,
 - and the old chestnut of buffer zone malleability when it comes to residential development encroachment approvals.
 - Incredibly, our northern and southern (not the one in the middle) local governments with municipal responsibilities over the WTC, are active in seeking reductions to our buffer zone.
 - In 2008, a Parliamentary Enquiry into a WTC enterprise made three findings, one of which was that “Planners, State and Local, did not understand the purpose of industrial buffer zones”. And if you ask me, I’d say they still don’t.
- Now, back to my speech outline:
 - I’ll talk quickly about who or what KIC is, and how we work.
 - I’ll give some context around what’s coming to the WTC.
 - Then I’ll go to some of the more significant constraints associated with our decarbonisation journey, and expand on them.
 - I’ll describe our decarbonisation journey – that’s what you’re here for isn’t it?
 - And finally, I’ll share an insight into my vision for the industrial future of the State.

Kwinana Industries Council

- Here's a quick brief on who we are at KIC – our role and function.
 - We were incorporated as an industry association Inc in 1991.
 - And I started at the beginning of 2007 – so over 16 years now – how did that happen?
 - KIC is strong – we have:
 - 16 Full members – almost all of the large companies – see the banner.
If you are a large company and you're not there, better come and see me....
 - And 36 Associate members, some are also quite large.
 - None in the AMC ... yet. You need to be, if you are here –
ok there's my BD out of the way...
 - The core to KIC's DNA is its world-renown member-led collaborative approach to issue resolution:
 - Seriously, do not underestimate how highly regarded this feature is.
 - And like I said earlier, it is one of the best examples of Industrial Symbiosis in the world – literally.
 - We operate with seven Key Strategic Issues, with top of the list being buffer zone protection.

Projects in Kwinana

- Now to the major **physical** projects for Kwinana – where do we start?
I'm not going to spend time describing these because there are specialist speakers who will do a sterling job themselves later in the conference proceedings. But...
 - New port and associated major infrastructure:
 - KIC is deeply embedded in the process for the past 6 years, and come to think of it, the one 14 years ago when we were also looking at moving the port to Kwinana.
 - Will catalyse efficiencies and thus carbon footprint reductions.
 - We need the new port to happen quickly, very quickly please Mr Premier.
 - Australia's first two Waste to Energy Plants:
 - The stuff you put in your weekly bin verge collection – far better environmental outcomes than sending it to a landfill, and a source of renewable energy.
 - Oil refining is gone, importing is in, and we see a major internationally significant pivot to a renewable energy hub – do not underestimate the significance of this decision for the decarbonisation task ahead of us, as a State.
 - Battery precursor materials manufacture – some are here and many are coming - the arrival of the battery precursor materials manufacturing industry - Li, Ni, Co, Mn, HPA, Graphite etc., with multiples of many. Batteries – decarbonisation – hand in hand really.
 - The AUKUS & defence presence. It's significant... I guess, but what does it need?
 - You know, I wish the Feds would just say what their infrastructure needs are going to be so we can get on and work with and around them.

- And of course, decarbonisation – this is a huge and new focus of **critical importance** to business continuity into the future. And as you know, it’s the subject of my talk.
- As I go through this, please bear in mind that our decarbonisation task is in the context of numerous key constraints.
- I believe the Department of JTSI now finally understands these, and its role in fixing them, but progress is shall we say Utopian (as in Rob Sitchian).
- So, to our decarbonisation journey – now this is exciting! Really, it is!
 - This didn’t start in Kwinana, no not at all.
 - Well, it kinda did actually - with the industrial symbiosis stuff we started 30 years ago... And the water re-use work from 20 years ago, and – well, now the decarbonisation work from four years ago.

Decarbonisation Journey

- So folks, our decarbonisation journey starts with the climate change **policy** environment.
 - There’s a hierarchy of climate change policy driving through from Global to the enterprise level.
 - Global Policy – 2016 - the Paris Agreement. This set the scene for climate change action.
 - International policy.
 - After some years of discussion and signalling, this year the European Union signed off on its **Carbon Border Adjustment Mechanism (CBAM)** – gotta love the acronyms –
 - crudely, this is code for their tax on embedded carbon in the stuff they import...
 - and if it’s from us, our stuff just got a lot more expensive to send there.
 - CBAM’s have been talked about for around three years now, so not a surprise... to industry.
 - In the USA, the Inflation Reduction Act (IRA) was enacted last year, and boy have we seen some great local ideas, associated with carbon reduction, leave Australia and head to the good ‘ol US of A in a stampede toward very generous capital grants.
 - IRA – carrot; CBAM – stick; Us – ?
 - Now to National and State policy.
 - What do I think?
 - Well, it’s late, it tries to pick winners, it tries to control, and it directs capital into its preferred technologies.
 - There are influencers and influences.
 - I am less than impressed.
 - But we work with what we’ve been served up with.

- We've observed that it's difficult for any technology, unless it is main stream and on the 'preferred list', to get access to initiating capital;
- That's why there are no surprises in seeing the stampede to take a dip in the US ocean of grants.
- Go where you are wanted, work with the willing.
- On, so now we get to enterprise level carbon reduction policy direction and directives.
 - This is where the rubber hits the road.
 - This is where the skin is in the game.
 - This is where projects are developed, capital is invested, where risks and returns are scrutinised.
 - And where careers and an enterprise's financial sustainability is on the line.
 - This is where climate change policy was being developed by enterprise boards years ago.
 - And it remains well ahead of our State and National policy directives.
- Why is that, do you reckon? Here's my take on it.
- Around 4 years ago, and depending on the company, enterprises saw the writing on the wall.
 - Decarbonise or run the risk of losing your customers or contracts.
 - This imperative is nothing much to do with climate change, and everything to do with corporate financial sustainability.
 - Industry looked to the emerging global and international mega policies and saw a message - 'decarbonise... or else...'
 - The choice was obvious, and so began Kwinana's 'in earnest' decarbonisation journey.
 - And this was built on past work in this area and primarily on the fact that KIC had been working with its members to facilitate resolution to numerous common areas of concern – they were used to working together.
 - An industrial precinct is strong if the enterprises can work together to achieve positive resolutions to commonly held problems.
 - This mechanism for identifying a collegiate interest, Kwinana has this, via its own industry association, the KIC, it is in Kwinana's DNA.
 - This is why the Kwinana Precinct is so demonstrably strong when compared to areas like Collie or Kemerton, for example.
 - The collegiate interest is a very powerful phenomenon, and not one easily replicated – it takes time, but it can be done. Ask me later about it if you'd like to know how.

- So, how did we **meet** this global policy directive?
 - as a collective of enterprises? And...
- How did KIC **facilitate** this achievement for, and on behalf, of its members?
 - Well, in 2020, at a KIC Board meeting, we had a discussion about a collective project to take the Kwinana Precinct to Net Zero Carbon.
 - At that meeting it became clear, that while many were reluctant to use the dreaded ‘NZ’ term, all had been responding internally to requirements from their own boards to get, implement and report on their journey to achieve net zero.
 - And do remember what I said earlier, corporate financial sustainability was the main driver.
- So, I’ve said that one of KIC’s major strengths is its ability to bring its members together as a collegiate of common interests as a way to collectively tackle commonly held problems.
 - Que Carbon Reduction KIA - the process.

KIC Carbon Reduction Project for the KIA

In mid-2020 the KIC Board agreed to tackle carbon reduction as a collective, and the first Phase of the CRKIA project was initiated.

- This was to be a three-phase strategy, and here’s what we did....

Phase One

- Phase One involved:
 - Firstly, building an inventory of GHG emissions – Scope 1 and 2, and included KIC’s Full and Associate members.
 - This was done and the annual task is 8 million tonnes;
 - Per company it is reducing, but precinct wide, it is going to increase for a while – we have new enterprises coming in. This is good because it increases the extent of the complexity, and therefore the strength of the precinct.
 - The second part was to get an inventory of published individual company commitments, and this too, was done.
 - That report was adopted by the Board in 2021 and is published on our website at www.kic.org.au/library (and type in CRKIA to the dialog box).
- While this was going on, the International Economic Agency, which runs the Conference of Parties (or COP) meetings, heard about KIC and what was going on in Kwinana.
- The world was hearing about our work, and I was surprised by this –
 - was what we were doing that novel?
- Accenture, the consultants working with the IEA were in the process of developing a Statement of Ambition for major industrial precincts to sign up to “Accelerating the Transition of Industrial Clusters towards Net Zero”. The initiative was created by the World Economic Forum in collaboration with EPRI and Accenture.

- They have a goal of getting 100 of the world's largest industrial precincts to commit to net zero.
- I was asked to help with the final edits to their Statement, and
 - KIC was the first signatory to it.
 - By COP 26 there were 5 precincts, Humber in the UK being one of these; now there are around 20, I believe.
- In a live video hook up for COP 26, from the comfort of my dining room table in the middle of the night, I was asked to explain the KIC's collective approach to precinct decarbonisation.
 - Of course, this I did. It's on Youtube, and there is a link on our website under the Environment tab at the top. www.kic.org/environment

Phase Two

- So, back to the Decarb report. Phase Two :
 - This was an exercise in fact finding about what practical decarbonisation technologies were out there – and there were five streams of inquiry – these being...
 1. KIC Members.
 2. The Innovators – what technologies were under development or piloting.
 3. The Educators – what were the PhD candidates bringing forward.
 4. Relevant Associations (like Perth Peel H2).
 5. Government – what policies were coming down the line, and what grants or forms of assistance might we expect to see.
- The Phase 2 Report was adopted by the Board in late 2022, but is not yet published.
 - There is a lot of IP in the report, and as we didn't receive any governmental financial assistance for the report, private it will stay... for the time being.
- From the report, there were three primary carbon reduction strategies that emerged.
 - Unsurprisingly they were common-user strategies and not so much about individual enterprise stand-alone strategies.
 - Having said that though, there were many discussions about technologies and strategies that were taken off line and became individual enterprise-level investigations – as should be and must be, the case.
 - This is how business is done in the private sector.
 - Some will stack up, some will fail.
- The three common-user strategies identified were:
 1. A green (and only green) Hydrogen reticulation network to deliver or receive the gas to or from the front gates of the Kwinana enterprises, and more broadly, the WTC.
 2. Similarly, a CO2 reticulated network to gather or deliver the gas to or from the front gate.

3. And the third one, please excuse the deliberate muddlement (there's a new word –, I like it) muddlement around this, but it is an **industrial scale, renewable energy, micro-grid**.
- Yes, this is fanciful, but it is deliberately defined like this to convey what we are after – it is an:
 - “Industrial scale” – gotta be big (big beyond the comprehension of most), and the private sector can do this as well.
 - “Renewable energy” – that's clear – gotta be green. The private sector can do this. And the last bit...
 - “Micro grid”. This is the gristly bit.
 - This says ‘behind the meter’, or ‘off the grid’.
 - It says if you generate excess on-site you poke a cable through the back or side fences to supply your neighbours also behind the meter.
 - it says, maybe, even a private sector owned and operated second electricity grid from somewhere that can make green electricity cheaply (think the Mid-West Region) to Kwinana, where the massive energy demand will be.
 - And away from the crippling tariffs that destroy the financial viability of many weak, good, or even some of the great renewable energy projects.
 - Beyond the monopolies.

Phase Three

- Ok, so Phase Three of the project is Implementation, and we're in that now.
 - Earlier this year we established our member-only Carbon Reduction Working Group and have continued to meet monthly, to progress our strategies.
 - This of course does not preclude Individual companies progressing with their own decarbonisation work, as indeed they are.

Forging the green path

- So, what's happened in the intervening couple of years then?

Conference of Parties

- COP 27 came and went, and KIC was asked to update the IEA and precinct members, up to around 15 by then if I recall rightly, on our progress since COP 26.
- And I've just been invited to do the same for COP 28.

Policy Environment

- The Federal policy environment is still changing (for major emitters under the Safeguard mechanism), posing some very challenging reduction requirements with little notice,

- and not much in the way of support except for the pre-chosen technologies it would seem, and
- interestingly, I received (and accepted) an invitation to attend a two-day limited participation workshop in London to:
 - discuss, present and share ideas about how to get the enterprises located within complex industrial precincts to work together on their decarbonisation journeys.
- It became apparent that KIC's work in publicly progressing our collegiate approach was quite well known 'up north' (Europe, UK, the States), and also well regarded – something I was pretty chuffed about I have to say.
 - What it means is that what little old KIC is doing on behalf of its members is in fact world class. Who would have thought.
 - (it interests me that here in Perth, we've not had a reach out from the government sector to find out about what we are doing.... odd). Anyway, I digress...

London Workshop

- The key take aways from the workshop were:
 - In Europe they're now openly calling it a climate crisis.
 - The **scale** of the decarbonisation task is well beyond what many can imagine – I think many have not realised that.
 - The **pace** of the conversion to renewables has to pick up.
 - The renewables mix is currently reliant on coal and gas with little to no sequestration.
 - Future components are:
 - No coal or gas without rock-solid proof of successful CO2 sequestration.
 - Only fully green-credentialled energy, and offsets or sequestration will require commitments and scrutiny.
 - Nuclear and hydro will have only a marginally increased presence in some places.
 - Some other technologies – wave, tidal etc. will be insignificant against the **total** requirement.
 - Solar and wind **will not** be able to fill the gap.
 - So, when **non-CCUS** (Carbon Capture, Utilisation and Storage) gas and coal-based energy goes, **what fills the gap?**
 - This is the big worry.
 - There is no other major source, as yet on the agenda. What could it be? Ask me later.
 - The anti-coal environment groups are moving in on gas.
 - And finally, they wanted to understand how can governments get industrial scale collaborations happening?
 - Talking about this was primarily why KIC was invited – because we are in fact, doing it.

- Now, let's go back to what's happening today to advance this.
 - We have a member that's willing to give serious consideration to stepping in to provide the infrastructure to move GH2 and conditioned CO2 into and out of Kwinana and maybe in time, across the State. Think about it!
 - I'm in discussion with the leadership folk in other regions (Shire CEOs, Hydrogen Hubs, Development Commissions) about how they can connect into this project – hub and spoke stuff.
 - This concept is potentially scalable from the Kimberly to the Great Southern, and east, utilising the existing LNG pipeline corridor.

- The next major task for us is to build the business case for each of our three collective strategies, including the links with the regions.
 - And then, we plan to take this to the government to see if we can get them to partner with us.
 - What we will be trying to do is in the interests of the State, and the Feds because it is a way that they can make significant progress toward the meeting of their policy commitments.
 - Of course, it is also in the interests of industry – why else would we want to be doing it?
 - Business is there to make a profit.
 - If there is no profitable business opportunity, then it is either a government service, or it is run as a charitable 'not-for-profit' sector organisation.
 - There are commercial business opportunities, of that be assured – we just need a clear shot at developing them.
 - It would be a fantastic outcome if the public sector could partner up with us, there is a choice here:
 - make it hard for us,
 - or work with us.
 - We like the latter of course.
 - My take on the problem with departmental processes?
 - It operates under a 'command and control' model, and we need it to be moved to a 'facilitation' model.
 - Facilitation as partners will work.
 - Industry needs the government sector to work with us.
 - That is the only way industry can do its bit to assist the government achieve its climate change targets – carrot or stick...?
 - Stuff is taking way too long, and is currently, in fact, working against our efforts in some instances.
 - Decarbonisation is really hard under the current departmental command approach.
 - Let me give you an example.

- Imagine you are the Minister or DG or CEO of a department responsible for delivery of some form of major key infrastructure that industry needs in its decarbonisation journey;
 - (you can assume it is common user infrastructure)
 - and you were presented with an ‘early idea’ proposal by a substantially-resourced private sector consortium of interested parties
 - (so it is a serious proposal)
 - to build, and operate a brand new, additional, substantial, and needed infrastructure project.
 - The thing delivered doesn’t matter for this example, but I could talk about three (3) proponents (who shall remain unnamed) and their proposals.

- As that Minister, or DG, what is going to be your reaction?
 - You think...
 - Nice idea....
 - We need to be doing this....
 - but we can’t afford to...
 - You think it’s our role to deliver this, so maybe we can partner with a Public/Private/Partnership arrangement...
 - so, I’ll take the discussions to the next level, because clearly they are serious.
 - **Or...** do you say:
 - Yikes! This is a threat to my department’s monopoly,
 - ...even though it’s needed, but...
 - we can’t afford to do it,
 - so, I’m going to say ‘no thanks’.
 - Of these two options, which is the answer these three un-named proposals have received – and they have all received the same response....
 - The first? The second? Neither?
 - ‘Neither’ is the correct answer.
 - The answer these proponents got was this.
 - OK sounds great, and here’s how it will work...
 - You **build** it, and you **operate** it, and here’s the ‘but’.... **we will own it.**
 - **BONGGGGG!!!** (loudly). That was the death knell for the project that you just heard.
 - The answer wasn’t ‘yes’ or ‘no’ to the proposal – both are problematic for our subject Ministry or department.

- The **deliberate** introduction of a **known, impossible** to accept, and thus **fatal** condition, **successfully killed off the proposals.**

- It is well known in the commercial world, that no asset on the books = no project!
 - This is happening folks, and many in this room know this to be true.

- Oh, and did you know this State rejected applications from a WA-developed and internationally patented GH2 technology?
 - Only for it to be picked up by the NT, last year?
 - I believe project construction starts later this year – all approvals gained.
 - It is expanding internationally, and
 - It presented, what was in my humble view, the 80% plus solution to the decarbonisation of the KIA, and possibly ultimately the State.
 - And we rejected the technology.
- I'll park that for the time being – but I'm fairly sure it will eventually surface when we see NT GH2 being supplied to our northern WA mine sites. I lament.
- **Industry and Government - working together - is the way**
 - Industry has:
 - the skin in the game,
 - capital,
 - it knows what needs to be done to achieve Net Zero, and
 - it is prepared to take on the risk if it stacks up as a viable project,
 - where capital invested to build an asset, makes a commercial return.
 - The State has skin in the game as well in:
 - achieving the results its policies require,
 - growing the State's economic base,
 - activating the regions,
 - moving from exporting smashed up big rocks, to down-stream processing,
 - facilitating the introduction of higher-tech advanced manufacturing and advanced local content support.
 - Need I go on...
 - Ponder this....
 - How would you describe the State's approach?
 - I think you'll agree that in practical terms, this Utopian outcome isn't the picture we in industry see;
 - but it absolutely could be.

Green vision

- So, to conclude on a high note, and I am very optimistic about this –
- Here is my vision for the future:
 - WA becomes a green energy export mega-State – absolutely, I agree with the Premier.
 - When I was in the UK at that workshop –
 - Rotterdam said they wanted to be importing 20m t GH2 per annum and they were building the pipelines already.
 - But they don't yet know where it is coming from.
 - Antwerp 16 million.
 - The Germans are investing heavily in the Rotterdam infrastructure.

- Could they be getting it from us in the future?
 - Well, I don't see why not?
- If the market is there and there is a commercial return to be made...why not produce it?
- What an incredible opportunity.

- So, to Kwinana
 - Well, I see us as the national and international benchmark for the decarbonisation of a major complex industrial precinct –
 - we are already on that journey.
 - It will be **THE** place to investigate and to learn from to give effect to the transitions elsewhere – people are asking me how we do it all the time, and from all over the world. Already.
 - Kwinana – well, the WTC – will be the State's decarbonised hub:
 - with its spokes deeply and extensively into the regions,
 - all interconnected well beyond the capacity of the current electricity or gas pipeline.

- What starts here could even grow to be the equivalent of, well, 'ring mains' around Australia for CO2 and GH2 and green electron transportation.
 - It can start right here, by allowing the use of private sector capital,
 - and the ministries and departments moving from command and control (as I've already said - code for 'not really helping', actually), to facilitation.
 - This **IS (actually IS)** in the State's interest!
 - In the future, and through my rosy (green) tinted glasses, when those private sector funded proposals are presented to government, the response has changed to:
 - "How can we help you to facilitate the development of your project?", or,
 - "What do you need from us, let's see where we can help".
 - ... and the "No, you build, you operate, we own", oh, and "there's the door" protectionist mentality has been pushed back where it belongs – to within
 - the Nation Building Authority in Canberra, where grand ambitions collide with bureaucracy,
 - only to be frustrated by self-interest, publicity stunts, constant shifts in political priorities, and yes, bureaucracy.
 - The WTC and Western Australia is a major source for the world's GH2 and
 - like with LNG, we are an internationally significant exporter of energy.
 - World prominence in the technical and practical aspects of:
 - supply of GH2 and its chemical derivatives,
 - and ditto - how to do:
 - world-leading CO2 collection,
 - conditioning, and
 - either re-use or sequestration.

- Crikey! I hope Rob Sitch isn't listening to this.
 - There's material here for a series of Utopia episodes – gulp.

 - So, to you all, thank you for hearing me out.
 - Please do reach out to connect with me on LinkedIn if you like.
 - And I hope you have a great conference.
- Kaya.

