

**Submission
No 23**

**INQUIRY INTO PLANNING SYSTEM AND THE IMPACTS
OF CLIMATE CHANGE ON THE ENVIRONMENT AND
COMMUNITIES**

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Date Received: 25 October 2023

Planning system and the impacts of climate change on the environment and communities

Submission by *Nigel Howard FRSC*

25/10/2023

I have spent my entire career working to try to promote practical action on climate and environment since reading Limits to Growth in 1973. As Director of Centre for Sustainable Construction, I have pioneered work on Building Environmental Rating Schemes and Life Cycle Assessment in UK (BREEAM, UK and EU Regulations, UK Eco profiles and Green Guides to Specification). As Vice President for USGBC I pioneered development and implementation of 6 versions of LEED throughout US and Canada. In Australia as CEO of Edge Environment, I led the Building Products Life Cycle Inventory Project to completion in 2011. I have seen my greatest achievements degenerate into greenwash as corporations starting with good intentions have found it easier and cheaper to greenwash their activities than to actually transition.

Into retirement, I am convenor for the Northern Beaches Climate Action Network and use my scientific training to advocate for good science used to drive our corporations and politics with very limited success. Marketing and messaging now trumps good science at every turn.

Thank you for inviting public submissions.

In the past year, climate records have not just been broken, they have been smashed. This suggests that the tipping points for the 15(17) compounding climate feedback loops identified in the 2017 “Hothouse Earth” research (<https://www.pnas.org/doi/10.1073/pnas.1810141115>) may have already been crossed. The implications of this are dire – an unstoppable transition of the earth’s climate to 4-6DegC of warming which may be unsurvivable by mankind and 90% of other species. It was thought that we would not cross these tipping point thresholds until 2DegC of warming – by about 2030 and that the transition would be slow – moderated substantially by slow changes in deep ocean temperatures. However, the dramatic changes in just this year may indicate that we’ve been far too complacent. It is totally bleeding obvious to me that we now need radical and urgent action, not just nice words and self-delusion.

No New Coal Mining or Gas Fracking!

The largest cause of climate impact from Australia is also the impact hidden behind international rules for carbon accounting, and that is the impact from fossil fuel exports. Our exports currently quadruple Australia’s true liability for carbon emissions to 4.8% of global emissions making Australia the 3rd or 4th largest emitter globally. We take revenue from the exports but then pretend that we have no liability for the emissions when these fossil fuels are consumed. This is morally reprehensible and these emissions know no national boundaries when it comes to the climate changes caused. We are recklessly ignoring our “Duty of Care” for our own youth and all future generations globally. Accordingly, in our planning, we cannot approve ANY new coal mines or gas extraction and especially not any gas fracking due to the extreme importance of fugitive emissions from these operations. <https://theclimatecenter.org/energy-efficiency/study-shows-natural-gas-fracking-more-harmful-than-coal>. There’s simply no point doing anything about our buildings if we don’t stop approving new coal and gas and rapidly phasing down our exports!

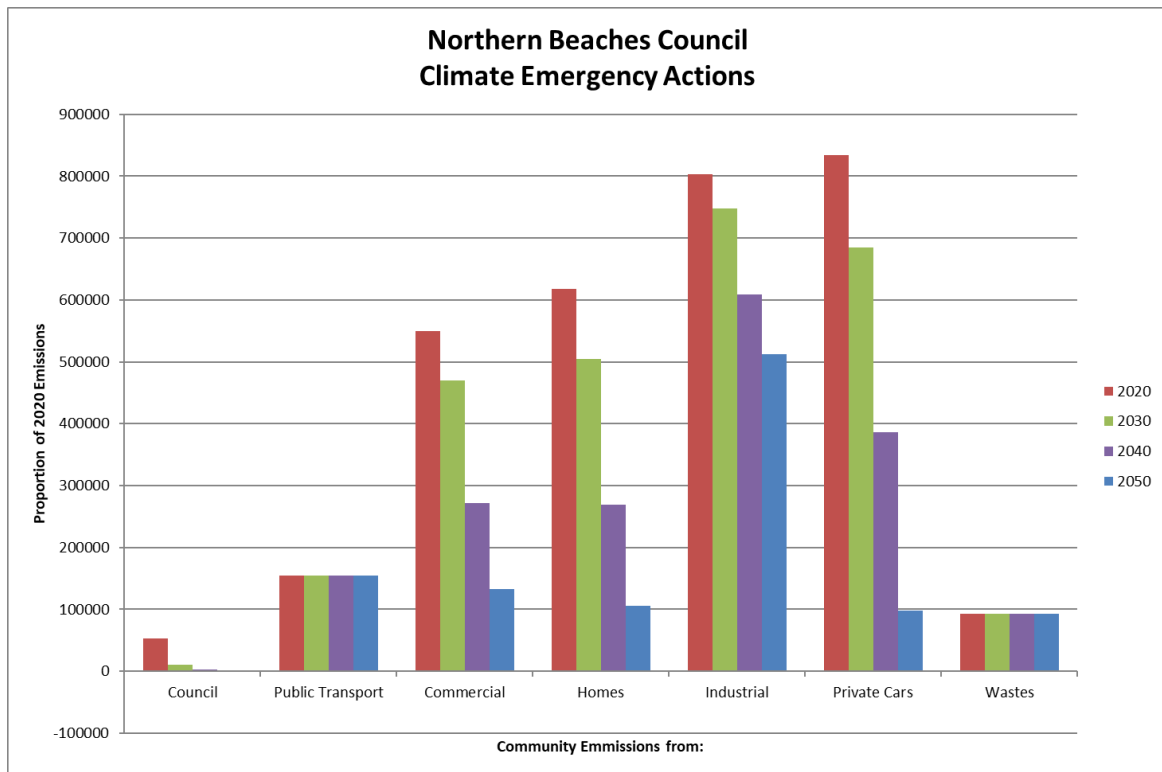
Energy Storage is the Key Constraint but we are Ignoring the Biggest Opportunity – Electric Vehicle Batteries

Our per capita emissions from domestic energy use are highest in the OECD (twelfth worst globally). This is inexcusable when we have such good wind and solar renewable energy resources to transition to. We lead the world in rooftop solar but can still do much better with SA leading the transition – NSW needs to catch up. The biggest constraint to the uptake of renewables now is energy storage, with excess solar generation during the day being curtailed or wasted, when it should be being stored for use in the evenings and overnight. The best form of storage is distributed storage because this allows local energy generation to be stored and used locally, minimising demand on the grid and minimising the costs of grid upgrade. Schemes like Snowy 2.0 are great for flashy headlines and politicians spruiking themselves, but giant storage schemes that require huge grid upgrades to distribute the stored energy are expensive follies. The best form of storage SHOULD be electric vehicle batteries. It is inevitable that we will transition our 20 million cars to electric vehicles and if we matched this with bi-directional chargers in homes, then as we transition to electric vehicles we could make 3.5 Snowy 2.0's worth of distributed car battery storage available to our grid simultaneously reducing the need for grid upgrades. <https://johnmenadue.com/myopic-thinking-electric-vehicles-and-renewable-power/>

By anticipating the inevitable future and planning for it, enabling, promoting then mandating bi-directional charging in homes through our planning ordinances and our regulations, we can take the best path into the future. Our current path will see community batteries, home batteries and Snowy 2.0 made redundant as the transition to electric vehicles with bi-directional charging catches up. Planning is supposed to anticipate the future and plan for that future, not ignore obvious trends, waste money on Kodak investments and forever try to play catch-up because we failed to anticipate the obvious.

Where Our Emissions Come From

I am a member of the Northern beaches Council Environment Strategic Reference Group and of a self-appointed sub-group aiming to put pressure on Council to really deliver on its “Climate Emergency Declaration” and commitments made in their “Protect Create Live” strategy. We have audited all of the policies and initiatives being taken by all 3 levels of government to determine the extent to which Council are on-track to meet their commitments to 50% community emissions reductions by 2040 and net zero by 2050. In summary, ~60% of our emissions come from buildings – 20% each from homes, commercial buildings and industrial buildings. We are nowhere near the trajectory needed to get to net zero by 2050, heading for just 39% emissions reductions most achieved due to AEMO Integrated System Plan and State level incentives and initiatives for increasing solar and uptake of electric vehicles. This graphic summarises our findings from baseline 2022. Buildings and private cars comprise over 90% of our emissions, all of which can be greatly improved by planning mandates and building regulations.



The National Construction Code and BASIX

In November 2022, the National Construction Code V2 for Housing was updated and I participated in a Campaign for Net Zero for the NCCV2. That campaign failed because of intense vested interest lobbying, but it should have succeeded because a Net Zero mandate for new houses:

- Would deliver 4 times faster emissions reductions from new houses nationally than the 7* energy efficiency standard adopted. Out to 2050 a net zero mandate would provide 56% of the emissions reductions needed from housing.
- Would have ensured that all new houses were built with solar panels from new (far more efficient and cost-effective than retrofit for net zero)
- All new homes would be ***MORE affordable from day 1*** because the energy cost savings for net zero homes are 5 times greater in NSW climate zones (8 times greater in NT and N QLD) than the additional mortgage payments for the net zero measures.
- Net zero is MUCH harder to game and verify compliance than the complications of energy modelling - a year of homeowners energy bills reveals whether the house has achieved its net zero performance giving homeowners recourse to compensation for under-performing homes.
- Net zero is much easier to achieve than 7* energy efficiency – all that is needed is to ensure that at least enough rooftop solar is provided to exceed the annual energy demands for the building. Housebuilders can/will over-provide (and pass the cost to owners). The additional cost added to homeowners mortgage payments will be so small compared to their energy cost savings, homeowners won't even notice the difference.

- Net zero is a great opportunity for homebuilders to value-add sell additional solar and chargers for electric vehicles, batteries or better still bi-directional chargers for suitable vehicles.
- Net Zero for NCCV2 and into BASIX provides a precedent for Net Zero for V1 and for all other buildings.

The case for net zero for NCCV2 and for BASIX is provided in other attachments. This was presented to Jihad Dib whilst Labor were in opposition, but nothing came of it!

BASIX and NCC MUST mandate Net Zero NOW – it is literally critical!!

Existing Buildings

Even if we mandated net zero for all new buildings, we still have to transition the existing building stock to net zero through accelerating the uptake of rooftop solar and by further accelerating grid scale renewables. Had we adopted Net Zero, then we would be reducing the problem of new buildings added to the stock that immediately need retrofit for net zero, but we didn't/haven't yet.

The policy levers are more limited for existing buildings, but there are still several ignored opportunities:

- Mandatory disclosure of energy bills and emissions for every building sale or new lease – this would create purchasing pressure on owners to improve their buildings to reduce energy costs (improve energy efficiency) and to reduce emissions by installing solar panels and/or contracting 100% renewable power. ACT have had mandatory disclosure measures in place since 1997 for residential property <https://www.planning.act.gov.au/build-buy-reno-vate/reviews-and-reforms/managing-buildings-better/stage-one-reforms/disclosure-statements>
- Energy inclusive leases. One of the biggest constraints to improving energy efficiency and installing solar power is the landlord/tenant problem where the landlord invests but the tenant gets the savings/benefits, giving the landlord no incentive. In the UK some landlords now provide energy inclusive leases, such that the landlord pays the energy bill and adds this to the rental rates for tenants. This incentivises the landlord to improve energy efficiency and install (or contract) renewable energy and to then share the savings with tenants. <https://www.gov.uk/get-help-energy-bills/pay-energy-with-rent#> . Model inclusive leases need developing and promoting to landlords (and tenant advocate groups)

Hydrogen is a Distraction – we don't need gas (any gas)

Hydrogen is nothing more than clever fossil fuel industry spin that far too many have fallen for <https://reneweconomy.com.au/griffith-warns-against-drinking-the-kool-aid-on-renewable-hydrogen/> It offers nothing in terms of decarbonisation because directly stored and used renewable power is MUCH more efficient for nearly all applications – twice as efficient for energy storage 3-5 times more efficient for transport. In fact any renewable power that we divert from displacing coal fired power from our grid indirectly causes 50kgCO2 emissions (retained at fossil fuel power stations) per kg of so-called “Green” hydrogen – even Gray hydrogen only causes 11-15kg CO2 per kg of hydrogen. <https://johnmenadue.com/the-green-hydrogen-myth/>

So the net effect of building a hydrogen economy is to delay the decarbonisation of our grid and not just trivially – if we really did try to export 1.79Mt of hydrogen by 2030 (ALP aspiration inspired by Deloitte – go figure!!), that would take **ALL** of our current national renewable energy generation – it just doesn't pass the pub test. The only viable applications long-term after we've decarbonised the

grid are for hydrogen as chemical feedstock and possibly for ore reduction (but direct electrolytic refining is moving from pilot to full scale viability and is much more efficient again). The hydrogen economy that the fossil fuel industry are spruiking so aggressively will fail economically for all of these reasons. NSW Government should not follow down the oil and gas industries very well funded (in desperation) rabbit hole!

NSW should make all development of “Green” hydrogen contingent on first fully decarbonising our grid – then we truly would be reducing not enhancing emissions and we would let the economics of hydrogen settle globally before jumping in. There is no panic – there is nothing difficult about the technology and whenever Australia enters this market it will have the cheapest renewable power so it will still easily be able to compete. If we jump in and try to make an industry that’s already of very doubtful economic viability, we will be forever trying to justify a fundamentally inefficient and economically flawed industry.

In Planning terms, all new developments must exclude gas (all gas).

Save our Forests, Bush, Prairies, Mangroves, Sea Grasses, Peat Bogs and promote Carbon Drawdown Agriculture

We have to stop emissions, but we also need to maximise drawdown. This means that we have to reduce approvals for logging, eliminate it on native lands and in threatened species habitats and expand the areas where logging is prohibited. New development needs to be in-fill development that doesn’t erode precious bushland. We need to also protect and restore bushland, prairies, mangroves, sea grasses, peat bogs and promote carbon draw-down, drought resilient agriculture. This is no substitute for real actual emissions reductions because even if we maximised all of this globally on every scrap of viable land or sea, we would only reduce atmospheric CO2 by about 30ppm in a CENTURY. We add 30ppm from emissions in a DECADE, so we must not delude ourselves that natural carbon drawdown is a silver bullet that permits business as usual for our emissions. (Derived from Dooley, K et al. 2022, ‘Carbon removals from nature restoration are no substitute for steep emission reductions’, One Earth, vol. 5, pp. 812-824).

Even if we stopped all emissions today and maxed out all feasible carbon drawdown mechanisms, it will take centuries for our climate to recover to the safe zone that our species has evolved within – we are now in uncharted territory for our species.

Embodied Carbon

There is absolutely no point trying to include embodied carbon into planning mandates unless a single, scientifically robust methodology is universally adopted for all assessments. For 30 years the Life Cycle Assessment community have failed to establish such a methodology – the ISO standards are far too weak to enforce consistency, comparability and robust science.

As Director of the Centre for Sustainable Construction in UK (BRE) I was principal author for the UK Ecopfiles Methodology which involved 23 material product sectors in achieving consensus (over a 10 year period) on the methodology to be used for UK construction products. I also pioneered the “Green Guides to Specification” which were (still are 25 years later) a simplified elemental assessment of the life cycle performance of different elements of construction based on the UK Ecoprofiles Methodology – each alternative was rated A to C (now A to D). I was also responsible for BREEAM and we rewarded credits in BREEAM for use of A rated specifications. The Ecohomes version of BREEAM was adopted into the UK Building Regulations as the Code for Sustainable Homes

for a number of years until the Conservative government did a purge on regulation in about 2008. As Vice President for the US Green Building Council responsible for LEED, I participated in the US National Life Cycle Inventory project which failed to establish a single consistent standard due to vested interest lobbying. I initiated the LCA into LEED project to try to fill the gap – this was taken over when I moved to Australia by Dr Greg Norriss of Harvard but later abandoned due to vested interest lobbying. Here in Australia, through my company Edge Environment, I led the Building Products Life Cycle Inventory (BPLCI) industry/government jointly funded project to replicate UK Ecoprofiles with the 10 major construction product suppliers in Australia. This work was completed in 2011. Simultaneously, as President of the Australian Life Cycle Assessment Society, I presided over the launch of the Aus LCI methodology (developed in parallel and consistent with BPLCI, but BPLCI was more complete on recycling/recycled content). Subsequently, commercial vested interests have lobbied against both efforts, especially the metals industries (Steel) to remove the key requirements on recycling/recycled content. Removing these requirements has allowed them to cheat on their environmental profiles such that they can claim 20 times as much future recycling as their recycled content (plainly absurd) and this amounts to a 40% reduction in their carbon emissions and changes completely their apparent carbon competitive position compared to concrete and timber structures. (They also lobbied successfully within EU standards against timber being able to claim carbon credit for sequestered carbon in ecoprofiles, arguing that the carbon is released eventually)

I have advocated internationally and in Australia for fixing the BPLCI and AusLCI methodologies to eliminate these abuses, but the commercial power of the materials industries is too great. My LCA Round Table LinkedIn Group provides a comprehensive critique of the problems in LCA, the absurd extent to which methodology distorts LCA (and embodied carbon) outcomes. The draft “Grail” methodology (collation of the best components from all of my methodology development experience) is also published here for any institutions to take up and modify to their requirements. The “Grail” methodology was adopted by the independent National Standards organisation until commercial vested interests banded together to boycott their excellent work. GBCA and government agencies should have endorsed the work of National Standards, since only this was producing truly scientifically robust, consistent and comparable results.

This is not just academic – it very materially affects the outcome of all LCA’s, ecoprofiles environmental product declarations (EPD’s) and life cycle carbon assessments. The LCA Round Table LinkedIn Group includes a taxonomy of methodology choices revealing the extent to which arbitrary practitioner (and vested interest) choices affect outcomes and even for just energy sources it has been reported that methodology can alter results by 300%. Since almost all LCA results (and especially embodied carbon results) are dominated by the energy inputs to their processes, we can infer that all LCA results probably also vary by 300%. With such variation based on arbitrary methodology choices where commercial vested interests have so much power over their consultants’ methodology choices, it is no surprise then that for competing applications every sector can produce an LCA justifying their own products as having the lowest embodied carbon. Methodological pollution of results doesn’t just affect each individual study, it is endemic in the background datasets that all practitioners use to compile their LCA/LCC results – not only endemic, but hidden in the inaccessible arbitrary choices made by the practitioners developing the background data and they are all different. LCA currently stands for “Lost Cause Actually”!

In summary the entirety of LCA and LCC studies internationally is currently an exercise in sophisticated, impossible to disentangle greenwash. NSW Dept. of Planning should reconsider including embodied carbon assessments until a single, universally consistent methodology is adopted and the required background datasets are compiled consistent to this methodology. If this is not

done NSW Dept. of Planning will become another part of the problem, perpetuating the greenwash, rewarding the cleverest cheating rather than the genuinely lowest carbon buildings and give it unwarranted credibility.

In the meantime, NSW planning could sponsor the development of Green Guides to Specification for Australia using a single consistent methodology (ideally the "Grail" since it has had so much industry consensus development in its history and been thoroughly tested). This would provide a FAR simpler and lower-cost entry to embodied carbon than full LCC can provide and it would ensure universal consistency and scientifically robust application. This could be applicable to both residential (BASIX) and commercial/industrial/multiresidential (NCCV1) buildings. (I am retired and not looking for work, but would be willing to provide advice in the development and roll-out).