

Chair – The Transport System, Pressure and Levers for Change

Before we move on to our Q&A session it is worth pausing to reflect more deeply on all of this.

Firstly there is an environmental imperative to transition to a new world – a zero emission world and do so very quickly. We don't know what this world will look like but it must be one that places less demand on the planet - a much lighter footprint on the planet than exists today – not just a little bit but by orders of magnitude. This will be a world that pollutes less, must restore the damage done to the biosphere and consumes less of everything – including transport.

The question is can we make this transition within the limited time we have left – by 2035 at the latest but ideally by 2030? Talk about zero emissions for transport is meaningless on its own – the future of transport depends on the future of the city and the ability to make this transition to a world that no one is talking about let alone have a plan to get there.

The city model we have developed is based on fossil fuels. The early transition is one that continues to use them but more efficiently, but how would the model work if they were removed completely? We can see what cities looked like before the fossil fuel age – they were tiny and the food required to support them was grown in and around them. People did not travel far to work – in fact most people lived on the land or adjacent to waterways that produced food.

People may argue that technology will solve this problem but some of the technological “solutions” politicians and others are counting on are unproven, may never be feasible or may arrive too late to be of value. As the UN stated recently, to rely on unproven technology in this situation is both reckless and irresponsible. This means we must use and refine existing technology as best we can to start with, but even then there are no magic bullets and a technology driven strategy will not be enough. It will have to be accompanied and driven by behavioural change.

It is important to apply lessons from the history of past collapses of societies and civilisations that have occurred over thousands of years - that is a very common recourse to using technology, rather than changing behaviour. Nations and politicians continue to be mesmerised by technology and the belief it will solve our problems – but it has often been the abuse/overuse of technology that has got us into this mess in the first place. We are repeating the follies of the past and it will end in tears. And we should know what failed cities and civilisations look like – archaeologists certainly know what they look like. They have been digging through remains that had often been covered by centuries of sand or vegetation – abandoned because they could no longer support the population that lived in them. If we want to avoid a similar fate we better start thinking about the kind of model that can survive the environmental challenges we are facing and develop a plan to manage the transition.

John and Tony have provided plenty of actions that can be used to rapidly reduce transport emissions now – and it is imperative governments respond accordingly but this only buys a bit more time to address the most fundamental question and ultimate challenge of achieving zero and there is increasingly pressure to do so. This pressure is becoming increasingly broad based. It is coming from:

- industry itself and wants government leadership and intervention to put us on this path
- the community – and it will vote accordingly
- trade and commercial pressure from international markets etc which impose costs and penalties on the Australian economy
- international pressure from other governments and countries who see us as a laggard and will seek to impose penalties of all kinds to encourage us to lift our game
- environmental obligations and pressure arising from commitments made at COP26

- an increasing body of environmental case law which will impose penalties on recalcitrant governments, and corporations. Two cases in the Haig are relevant – one against the Dutch government itself and one against Royal Dutch Shell. It is likely more will follow
- our scientists who will continue to present evidence that demands action and positive responses to our environmental challenge
- from changes in the natural environment itself and the capacity of the planet to support life which will put increasing pressure on communities to adapt.

One thing we can be certain of we will not get there based on business as usual and the thinking that underpins it. This means amongst other things abandoning current dogma of continuing population and economic growth to improve living standards. Because we have so little time we need to look at ways in which we can turbo charge the process of change.

I talked about lessons from history of past failures but there there also are positive lessons that can be learnt from earlier crises that did not end in collapse or failure. These were situations in which governments recognised the threat and declared a state of emergency and used it to create an environment in which rapid change and adaption was possible. Examples include WW2, the OPEC oil crisis, the Ozone crisis and even our latest pandemic which enabled vaccines to be developed within a year instead of the norm of 15 years. But we need to look at where pressure for change is coming from, to reinforce the positive directions and use it to our advantage – use it as a pathway to adaption instead of fighting it in an effort to maintain business as usual.

This is a huge challenge. Prof Johan Rockstrom ([Potsdam Institute for Climate Impact Research](#) (PIK), based in Germany) has argued the scale and complexity of the task is huge and compares it to an Apollo project. We argue that a government response to zero emissions must be pursued on the same basis. It needs a plan ofcourse, but this must be supported by the organisation and political structures required to make it happen and it must be given top priority.

The question now is how to start this process and what are the most powerful levers for change. This is the subject of a short paper by Donella Meadows which I often refer to “Places to intervene in a system in ... increasing order of effectiveness.”

Anyone who has read Donella Meadows’ papers on systems thinking and ways to change a system will know that the place to start is the mindset: that is, the accepted assumptions about what the problem is and what are the solutions.

If you want someone to do something for you it is fairly easy **if they want to do it**, but if they **don’t** you have a challenge, and that challenge is to change the mindset that determines what they do. **The starting point must be** to change the political mindset that is driving our system in a way that generates the kind of outcomes we don’t want. If we cannot change this we will change very little.

So how do we change the collective mindset? The answer is very clear – declare a state of emergency – in the same way it was declared at the start of WW2 or the OPEC oil crisis in the 1970’s or even in the same way pharmaceutical companies responded to the Covid crisis with a total reorientation of priorities, supported by new rules and government legislation.

But this will also require a change in mindset about society values, aspirations and sacrifices required to adapt and survive, and the value placed on the future of our children and future generations. It is a mindset that must be driven by the broader community that forces our political leaders to respond. It must be a mindset that understands the environmental imperative and accepts the fundamental need to stop poisoning our planet with greenhouse gases and reduce the demands made on it by not polluting and consuming less of everything including transport by travelling and transporting less,

less often, and more efficiently. Every trip made by a fossil fuel powered vehicle is poisoning our planet and the sooner these are removed the better.

Once the message is clear, use all of the other levers outlined in Meadow's paper – alone or in combination to do whatever is necessary to force system change, starting with the most powerful. ¹

I would like to summarise as follows:

Firstly it is critical we change the current mindset. Business as usual must be abandoned and the thinking that underpins it. We need to change the social, and political culture that promotes business as usual, and create a new culture, values and expectations driven by a mindset that supports the need for change and the outcomes required. More specifically we need to find a new model for our city that will survive in a zero-emission world.

This is a huge challenge but success will ultimately depend on the extent to which this is accepted. In fact without it the prospects for achieving our environmental goals and achieving emission reduction and zero emission deadlines are zero.

The place to start is declare a state of emergency – a climate emergency that overrides all other concerns and priorities and turbo charges the rate of change

Secondly, "transport solutions" must be based on an understanding of the "transport system" itself, how it works, to identify levers for change that can be used to meet our environmental goals and targets. We know what a lot of these are so we need to implement them now

Thirdly vehicles are only part of the "solution" and reliance on technology alone will result in failure

Fourthly all changes must be deliverable with measurable outcomes that can be verified and monitored – not just be us but by international agencies who will be monitoring Australia's progress, compliance with international obligations and penalties, even legal actions, that may be imposed if we fail to meet them.

¹ Levers outlined in her paper in increasing order of effectiveness are as follows:

9. Numbers (subsidies, taxes, standards).
8. Material stocks and flows.
7. Regulating negative feedback loops.
6. Driving positive feedback loops.
5. Information flows.
4. The rules of the system (incentives, punishment, constraints).
3. The power of self-organization.
2. The goals of the system.
1. The mindset or paradigm out of which the goals, rules, feedback structure arise.

It is interesting that the levers most people in government talk about – subsidies, taxes involving government numbers and spending are least effective, but system change will require all of the above and this in turn will require major change within government and institutions that support it at all levels. The mindset established in all of these must be dominated by the same objective – made top priority that overrides all other goals, supported by a framework and plan with clearly defined objectives and measurable targets; all pulling or pushing in the same direction.

Fifthly, success will require fundamental system change and a new mindset with a willingness to learn and apply lessons from the past and others who have been successful. This will require a ruthless approach that does not tolerate failure or compromise.

Sixthly, the role of government at every level to create the environment for change and apply the levers that will force and accelerate change is critical. But this will require political leadership and intervention from all levels of government supported by the bureaucracy that must provide independent expertise and frank and fearless advice, pursued on the basis that the threat of extinction must be avoided at any price.