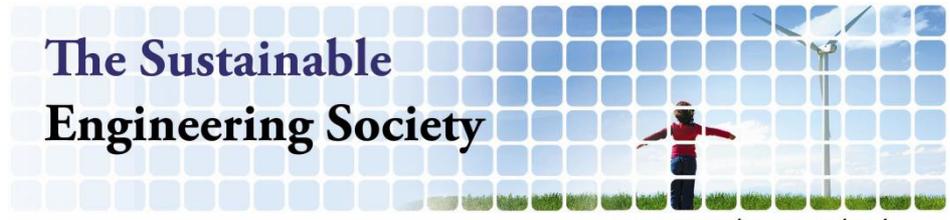




The Sustainable Engineering Society



...engineering in harmony with ecology

Attention: Jonathan Russell – National Manager, Public Affairs and Policy Advocacy

Engineering House
11 National Circuit
Barton ACT 2600

Mail to: policy@engineersaustralia.org.au

Dear Jonathan,

Re: Climate change updated position statement

The following has been compiled from input provided by SENG Board members.

Preamble:

This is an attempt to summarize recent history.

EA members were advised by newsletter about the climate change position statements with this link: <https://engineersaustralia.org.au/news/2021/08/engineers-australia-updates-climate-change-action-platform>

The link has links to “The new Draft Engineers Australia Position on Climate Change (PDF) updates and extends the 2014 Engineers Australia Climate Change Policy (PDF).”

The first of these links has the word “update” but does not mention the position statement prepared by Jonathan Russell for Peter McIntyre over some months in 2019 although the CEO states in the newsletter link “The development of this draft position has been informed by membership-wide consultation in 2019, Engineers Australia’s 2020 Engineering Responses to Climate Change Roundtable and 2021 discussions with office bearers including the Chairs of the Sustainable Engineering Society and the Environmental College.”

That document had been the subject of extensive discussion and input from member groups such as SENG and the Environmental College, but with the resignation of the CEO work stopped and submissions after June 2019 were not added, or if they were they were not seen by the membership. Subsequent requests by members for an updated climate policy saw no action until the newsletter announcement on 24th August 2021, some two years later. The new documents have been prepared by staff with a week for members to comment – if they saw the invitation. There is little evidence that the submission by SENG and CEEB to the president earlier in August has been taken into account and it is difficult to find any inclusion of the work done in 2019. Only one significant reference could be found by our reviewers.

The next paragraph has the link to the supporting documentation: “The draft position is supplemented by its companion document with further detail, Position on Climate Change: Supporting Information (PDF).”

Attachments:

Attached to this email are

- The position statement from 2019 calling for submissions
- The draft policy document produced by SENG and CEEB in July 2021

General Comments:

1. The two new documents are confusing and repetitive. They seem to be too much about engineers rather than a statement on climate change by Engineers Australia. This contributes to making the documents too long, and for the lack of being concise may not get read in full. Comments received are that they are written a bit like a debate or an oration.
2. Members have requested a “policy” and it appears that an executive decision has been made not to have one and to have these two documents.
3. In the past, member leaders such as chairs of colleges or societies have been involved in the preparation of policies. This has the following benefits:
 - a) When the policy comes out for general review it already has the endorsement of volunteers who can help explain it to general membership
 - b) The cost of this is zero
 - c) It is likely to reflect the views of the majority of members
 - d) Member leaders are more likely to be aware of current engineering surrounding that policy.
4. Although many members had conversations with Thomas Mortimer, none of the comments made by CEEB or SENG representatives seem to have been addressed adequately in the document in that all persons expressed dissatisfaction with the new documents.
5. For feedback there is a Survey Monkey link. That survey is poorly constructed as evidenced by Q6 which asks, “Do you agree with the draft statement's position that the Australian Government should commit to Australia achieving net zero emissions by 2050 or sooner?” There is no consideration that respondents may answer “No” on the basis that 2050 is totally inadequate.
6. There is no discussion on how rapid reduction of greenhouse gas emissions might be best tackled. Methane is approximately 84-87 times more powerful than CO₂ over 20 years (IPCC AR5 2014). It will be critical to rapid reduction of the effects of greenhouse gases. Methane emissions come from:
 - 35% Fossil fuel production (called fugitive emissions)
 - 20% Waste – industrial, commercial and domestic
 - 40% Agriculture – primarily beef and dairyClearly any new fossil fuel extraction, especially gas, is incompatible with limiting warming, agriculture requires urgent attention and there are many areas in the waste industry that should be targeted. All of this should be addressed if the documents are to demonstrate leadership
7. There is no leadership displayed anywhere in the document. It is more a nod to government policy. This is despite EA website homepage stating, “Engineers Australia is the trusted voice of the profession. We are the global home for engineering professionals renowned as leaders in shaping a sustainable world.”

8. The statement that exports be included in emissions that was included in the position statement of 2019 is not even discussed in either the new position statement or its supposedly supporting information.
9. There is no acknowledgement of risks as set out in IPCC AR6. Many recommendations have a 66% or 50% chance of success, which compares with engineering standards of 99.99% minimum if there is potential for loss of life. Table SPM.2 IPCC AR6 WGI uses likelihoods of success ranging from 17% to 83% with 50% being the centre of the table. How many engineers would allow a building to be constructed with any of those likelihoods of standing? A probability of 17% chance that a building will not fall down should be an anathema to all engineers, and that is the highest chance of success that the IPCC comments on. This should at least be recognized.
10. The documents assume that government policy is an important part of the position statement. This does not seem appropriate in a position advocacy for an engineering organisation that purports to demonstrate leadership.

Comments on Draft Engineers Australia Position on Climate Change

The opening statement is a bit misleading because the engineering profession has played on both sides.

Scientific Consensus

It should be acknowledged that IPCC is the net consensus of thousands of climate scientists around the world and that its finding in AR6 2021 is that the equilibrium climate sensitivity “best estimate is 3°C with a *likely* range of 2.5°C to 4°C (*high confidence*),” which are all much higher than the COP21 goal of limiting warming to much less than 2°C.

Global Framework for Action

The reference to net zero by 2050 or sooner is very misleading in that IPCC AR6 budgets for even an 83% chance of success based on the most optimistic scenarios are used up by 2036

Australia’s Role

The reference to Australia playing a leading role is commendable but should be backed by something more substantial than a motherhood statement. Other countries are already substantially ahead of Australia and maybe benchmarking against these should be a goal.

“All countries must play a proportionate role in responding to climate change” statement is fraught with difficulties and could be taken as an excuse to not implement sentence two which calls on developed countries to lead efforts, plus there is also the consideration to take responsibility for historical emissions, which would require Australia also to take significant action to reduce emissions.

Shared Responsibility

Again these are commendable words especially advocating for a carbon pricing mechanism, but words like “highly ambitious” are not quantitative. Engineers especially should refer to real numbers.

The Role of Engineers

There is no acknowledgement that engineers have inadvertently contributed in major ways to the climate emergency that we now face, nor that current engineering practices are, in the main, destructive. This is despite magnificent achievements in sustainable engineering on some fronts.

Playing Our Part

It is not definite that engineers will play a progressive, positive etc role. It should be stated that they will need to do this.

Positions and Recommendations

The IPCC is a combination of the best available science with recommendations based on consensus which lowers the recommendations to chances of success at least two orders of magnitude less than that acceptable to engineers. Its risk analysis is for risks dictated by governmental advisers, not the risks chosen by the scientists. This has been acknowledged by authors

Comments on Position on Climate Change Supporting Information

Overview

What would be wrong with a statement like “the threat of global warming requires a dramatic reset of assumptions about the pace of change, the type of actions needed and the economic disruption that will result.” It is not over dramatic. It is real. It demonstrates a determination to lead.

The measures sufficient and appropriate to achieving net zero emissions by 2050 have a high risk of not limiting global warming to 2°C; hence, the language of “sufficient and appropriate” gives the impression that this is a responsible rather than a high-risk approach to take. Therefore, consider deleting para 2.

In case it is not clear to some, and since the meaning is not diluted by omitting the words, it is suggested to omit the words “It is clear that”.

A Scientific Reality

This section needs to be rewritten to reflect the urgency and the risks in relation to engineering acceptability

Global Framework for Action

Mid-century implies 2050 or thereabouts, one to three decades equated to 2030 to 2050. There is a big difference between 2030 and 2050 and this needs clarification

Australia’s Role

This does not seem to add much to the position statement

The Role of Government

Although the Federal Government is appealing a court decision that it has a duty of care to children this is probably unacceptable to most Australians.

Perhaps some argument that Governments have a role in protecting its citizens would be appropriate here.

Mitigation

Australia is the largest exporter of coal and gas. Exports were included in emissions in the 2019 position statement. There should at least be an acknowledgement that Australia is currently dependent on exporting fossil fuels, is subsidising fossil fuels, and is in a commanding position to replace this with exporting renewable energy.

For net zero target, by any analysis using engineering risk 2050 is far too late and “or sooner” is aspirational only without any commitment.

Opportunity and Cost

There is no mention of the cost of not acting decisively. Warming of three degrees poses an existential, unquantifiable risk to human civilization which should be acknowledged. In engineering terms the risk of tipping points occurring at 1.5 degrees and above and pushing to three degrees and above are not acceptable

A just transition mentions the multiplier effect but the multiplier effect applies everywhere. Creation of jobs in renewables also creates a multiplier. Even if you give money to an unemployed person it gets spent, thus creating a multiplier.

Adaptation and Resilience

This is a critical section and needs to be dealt with more thoroughly. What is to be done about the infrastructure that is no longer fit for purpose under new codes?

Playing Our Part

This is probably not necessary in the document but if it is there it should not have any reliance on offsets.

Recommendations:

1. That the two documents be scrapped and a policy be drafted that is succinct, easily understood, is unambiguous and demonstrates engineering leadership
2. If this does not occur that leadership aspirations be removed from EA website homepage.
3. That a policy statement contain bold words along the lines of “requires a dramatic reset of assumptions about the pace of change, the type of actions needed and the economic disruption that will result.” This would be in line with IPCC AR6 findings
4. That the old processes of using free member resources be utilised rather than expensive non-engineer staff.
5. That a policy reflective of engineering expertise and the level of risk accepted by engineers, be produced.

Summary:

The process of producing a replacement policy to that of 2014 has been deeply flawed with very disappointing results. The new documents are not suitable for distribution as a reflection of the views of informed members of Engineers Australia.

Yours Faithfully,

Benjamin Hanley
Chair, Sustainable Engineering Society