ENGINEERS
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Engineers Australia's Response to the Intergovernmental Negotiating Committee (INC-5.2) Chair's Text on Plastic Pollution

About Engineers Australia

As Australia's national body for engineering, Engineers Australia is the voice and champion of our 130,000-plus members. We provide them with the resources, connections, and growth they need to do ethical, competent and high-value work in our communities. A mission-based, not-for-profit professional association, Engineers Australia is constituted by Royal Charter to advance the science and practice of engineering for the benefit of the community.

Engineers Australia is formally accredited as an observer to the business of the United Nations Framework Convention on Climate Change (UNFCCC), United Nations Environment Assembly (UNEA) and United Nations Environment Programme (UNEP).

Response

Engineers Australia has reviewed the proposed treaty articles aimed at addressing plastic pollution and its wide-ranging impacts. We commend the comprehensive and detailed approach taken in drafting these articles and recognise the critical importance of this treaty in promoting sustainable production, consumption, and management of plastics. Our review provides specific feedback and, recommendations on the text, especially those most relevant to engineers, emphasising the need for clarity, technical feasibility, innovation, and robust monitoring mechanisms. We believe our recommendations will significantly strengthen the treaty and ensure its successful implementation. In general Engineers Australia recommends that the treaty:

1. Adopt a Full Lifecycle Approach - The treaty should explicitly recognise plastic pollution as a physical, chemical, and biological issue, and address impacts across the entire lifecycle—from production to disposal.
2. Ensure Transparency and Public Access to Data - Publicly available databases, digital product passports, and traceable chemical disclosures are essential for accountability, safe design, traceability, trackability and informed decision-making.
3. Promote Harmonised Global Standards and Definitions - Clear, consistent definitions and globally aligned standards will prevent loopholes and enable effective implementation across jurisdictions.
4. Leverage Engineering Innovation and Technology - Engineers can contribute through best available technologies, systems engineering, IoT-enabled monitoring, modelling, development of centralised information platforms, alternative materials and green chemistry to address problematic plastics and improve waste management. Ensure treaty measures support climate change mitigation and adaptation, especially in infrastructure and materials innovation.

5. Set Binding and Measurable Global Targets and Adaptive Annexes - Include specific, enforceable, time-bound targets for plastic production and waste reduction - supported by dynamic annexes that can be updated with scientific consensus – aligned with environmental and health objectives.
6. Support Capacity Building and Technology Transfer - Engineers Australia advocates for technical training, partnerships with academia and industry, and the dissemination of innovative solutions.
7. Strengthen Compliance, Evaluation, and Reporting Mechanisms - Periodic reviews, independent assessments by a dedicated body free of conflict of interest, and standardised reporting formats will ensure transparency and continuous improvement.
8. Promote Circular Economy and Safer Product Design - Encourage collaboration across sectors to design durable, reusable, and recyclable products, while phasing out hazardous chemicals at the design stage. Ban or restrict polymers and additives that pose significant risks to human health and ecosystems.
9. Ensure Equitable Finance, Governance and Participation - A robust, innovative, sustainable and transparent financial mechanism should be established to support implementation of the treaty, ensuring equitable access to resources. Apply inclusive voting models (e.g. two-thirds majority), remove restrictive provisions, and prohibit reservations to maintain treaty integrity and universal applicability.
10. Address Health and Just Transition - Include standalone provisions on health impacts and support mechanisms for workers transitioning to sustainable sectors, with engineering solutions that prioritise safety and wellbeing. Address the full lifecycle of plastics, including microplastics and toxic exposure, with strong safeguards for human health.

Presented below is targeted feedback on the individual articles of the draft treaty text:

Preamble

The preamble effectively highlights the urgency and global nature of plastic pollution. It acknowledges the role of plastics in society and the need for a lifecycle approach. It is recommended that the preamble explicitly recognise plastic pollution as a physical, chemical, and biological issue. Consequently, the inclusion of Principle on the Precautionary Approach and Principle on the importance of environmental impact assessments for proposed activities will strengthen the text.

Article 1: Objective

The objective is clear. Recommend reference to the full life cycle of plastics.

Article 1bis: Principles and Approaches

Option 0 (no article) is not recommended especially if the principles in Option 1 and 2 are not included in the Preamble. The well-rounded principles, covering various aspects of international law and environmental responsibility should be included in the Treaty text.

Article 2: Definitions

Clear and consistent definitions are essential to ensure a shared understanding among all stakeholders and to prevent the exploitation of ambiguities or loopholes.

Article 3: Plastic Products

This article emphasises the need for regulations and traceability of chemicals, particularly chemicals of concern used in plastic products. Engineers can contribute significantly by utilising criteria developed for the identification of polymers of concern, and implementing technologies such as blockchain for secure and transparent tracking of chemicals throughout the supply chain. Digital passports for plastic products can also be used to store and share information about the chemical composition, recycling instructions, and

lifecycle data. These technologies can ensure that all stakeholders have access to reliable information, enhancing the traceability and management of plastic products.

To ensure that the criteria on transparency for problematic products are well considered, the Article should retain sub-article 8 bis. Additionally, Engineers Australia recommends global harmonisation over national standards to eliminate multiple standards and ensure an effective approach, as stated in sub-article 8 bis. The identified chemicals, and polymers, of concern in Annex Y are currently very limited and should be in a dynamic global list that remains adaptable and responsive as new information and scientific knowledge emerge.

The database referenced in sub-article 5 of Article 3 should be a publicly available to ensure transparency, allow trackability and foster accountability. Disclosure of chemical composition and associated harms is critical for phasing out manufacturing and trade of plastic products with hazardous chemicals.

Article 4: Exemptions

A periodic review of exemptions by an independent scientific body should be included to ensure they remain justified and do not undermine the convention's objectives.

Article 5: Plastic Product Design

This article is crucial for promoting a circular economy. It emphasises improving plastic product design to enhance durability, reusability, and recyclability. From an engineering perspective, it would be beneficial to include the need for specific guidelines or standards for product design that can be universally adopted. Additionally, fostering innovation in sustainable materials and safe additives is essential.

Encouraging collaboration between engineers, designers, and manufacturers can lead to more effective solutions. Reference to chemicals should be included in the Article. Phasing out hazardous chemicals in the design stage will reduce the adverse impacts of plastics on the environment and human health.

Article 6: Sustainable Production

Option 1 (no article) is not a viable option for this treaty. Suggest removal of parentheses in Option 2.

Setting global targets for plastic production is essential. Engineers can play a key role in developing and implementing technologies to reduce primary plastic production and promote sustainable alternatives. Including specific, measurable targets and timelines would provide clearer guidance and accountability.

Encouraging the use of life cycle assessments to evaluate the environmental impact of plastic production can help identify areas for improvement. A global live Annex that is regularly updated without the need of consensus, as found in the Agreement under the United Nations Convention on the Law of the Sea on the Conservation and Sustainable Use of Marine Biological Diversity of Areas Beyond National Jurisdiction (BBNJ Agreement) - with a vote of two-thirds of COP Parties at meetings could be considered.

Article 7: Releases and Leakages

This article addresses the prevention of plastic releases and leakages into the environment. Engineers can contribute by developing and implementing best available technologies and practices to minimise plastic pollution.

The article should incorporate concrete provisions for monitoring and reporting plastic leakages to enhance transparency and accountability.

Encouraging the development of new technologies to capture and recycle plastic waste will further support the article’s objectives and drive long-term solutions.

The use of Internet of Things (IoT) sensors and real-time data analytics can significantly improve the detection and response to plastic releases and leakages.

Additionally, implementing mass balance and waste flow tracking systems can help quantify and manage plastic waste more effectively, ensuring that all inputs, outputs, and losses are accounted for throughout the lifecycle of plastic products.

The article should include specific reference to chemicals associated with plastics to ensure comprehensive coverage of environmental and health impacts.

Article 8: Plastic Waste Management

The focus on disaster-resilient infrastructure is commendable. Engineers can design and implement systems for the safe handling, sorting, collection, transportation, storage, recycling, and disposal of plastic waste. Including incentives for private sector participation in waste management could further strengthen this article.

As plastic pollution and climate change are fundamentally interconnected issues, excluding climate and chemical intensive technologies such as incineration and chemical recycling should be included. Refuse and reuse would be worth including to promote circularity. Promoting circular economy approaches and setting national targets for recycling rates can drive progress in plastic waste management.

Article 9: Existing Plastic Pollution

Encouraging international cooperation and sharing best practices for plastic pollution cleanup would be beneficial. Including provisions for monitoring and evaluating the effectiveness of cleanup efforts will ensure continuous improvement.

Article 10: Just Transition

Including specific support mechanisms for workers transitioning from the plastic industry to sustainable sectors would enhance this article.

Article 11: Financial Resources and Mechanism

The financial mechanism is crucial for supporting developing countries. Ensuring transparent and efficient allocation of funds that considers the full life cycle of plastics will be key to its success. In alignment with the polluter pays principle, global funding could be supported through the imposition of fees, taxes, or levies on the production of virgin plastic polymers.

Article 12: Capacity Building, Technical Assistance, and Technology Transfer

This article is comprehensive and highlights the importance of capacity building and technology transfer. Engineers can play a key role in providing technical assistance and training to developing countries. Emphasising partnerships with the private sector and academia for technology transfer and capacity building could enhance its impact. Encouraging the development and dissemination of innovative technologies for plastic pollution management can drive global progress.

Article 13: Implementation and Compliance

Including periodic reviews and updates based on technological advancements and new scientific data would ensure continued relevance of the compliance mechanism

Article 14: National Plans

National plans are essential for localised action. Engineers can contribute to the development and implementation of these plans by providing technical expertise and innovative solutions. Encouraging public participation in the development and implementation of these plans would enhance their

effectiveness. Including specific guidelines for the development of national plans can ensure consistency and comprehensiveness.

Article 15: Reporting

Regular reporting is crucial for transparency. Engineers can assist in developing metrics and indicators for reporting on plastic pollution management. Including specific metrics and indicators for reporting would provide clearer guidance for Parties. Encouraging the use of standardised reporting formats can facilitate comparison and analysis of progress across different countries.

Article 16: Effectiveness Evaluation

Regular evaluations are important to assess the effectiveness of the convention. Engineers can contribute by providing technical assessments and data analysis to support the evaluation process. Including independent assessments by third-party organisations could enhance the credibility of the evaluations. Encouraging continuous improvement based on evaluation findings can drive progress in plastic pollution management.

Article 17: Information Exchange

Facilitating information exchange is vital for sharing best practices and innovations. Engineers can contribute by developing and maintaining centralised online platforms for information exchange. Establishing a centralised online platform for sharing best practices and innovations could improve accessibility and collaboration. Encouraging the use of existing networks and initiatives for knowledge sharing can enhance the effectiveness of information exchange. Integrating Internet of Things (IoT) and other digital technologies can enable real-time data sharing and collaboration, fostering a more dynamic and responsive approach to plastic pollution management.

Article 18: Public Information, Awareness, Education, and Research

Promoting public awareness and education is key to addressing plastic pollution. Engineers can contribute by developing educational materials and conducting outreach activities. Including specific initiatives for engaging youth and educational institutions could enhance this article. Encouraging research and development of new technologies for plastic pollution management can drive innovation and progress.

Article 19: Health

Including a standalone article on health is important. Engineers can contribute by developing technologies and processes that minimise the health impacts of plastic pollution. This includes innovations in green chemistry, materials science and engineering to create safer alternatives to harmful chemicals used in plastics. Promoting research on the health impacts of plastic pollution and developing mitigation strategies can enhance public health protection.

Article 20: Conference of the Parties

The structure and functions of the Conference of the Parties are well-defined. Ensuring regular updates and reviews based on new scientific data and technological advancements would be beneficial.

Article 20bis: Subsidiary Bodies

Establishing subsidiary bodies for scientific and technical support is crucial. Including clear terms of reference and ensuring diverse representation would enhance their effectiveness.

Article 21: Secretariat

The functions of the Secretariat are well-defined. Ensuring adequate resources and support for the Secretariat will be key to its effectiveness.

Article 22: Settlement of Disputes

The dispute settlement mechanism is clear. Including provisions for mediation and arbitration by independent third parties could enhance its effectiveness.

Article 23: Amendments to the Convention

The amendment process is well-defined. Ensuring flexibility to adapt to new scientific data and technological advancements will be important.

Article 24: Adoption and Amendment of Annexes

The process for adopting and amending annexes is clear. Including provisions for regular reviews by independent scientific bodies and updates based on new data would be beneficial.

Article 25: Right to Vote

The voting rights are well-defined. Ensuring equitable representation and participation of all Parties will be important.

Article 26: Signature

The provisions for signature are clear. Encouraging widespread participation and commitment from all countries will be key to the convention's success.

Article 27: Ratification, Acceptance, Approval, or Accession

The process for ratification and accession is well-defined. Ensuring timely ratification by all Parties will be important for the convention's effectiveness. Sub article 4 in Article 27 should be removed to ensure universal applicability. Ensure that the need for consensus, as found in the BBNJ Agreement - with a vote of two-thirds of COP Parties at meetings, is applied to avoid conflicts of interests preventing progress.

Article 28: Entry into Force

The provisions for entry into force are clear. Ensuring a sufficient number of ratifications to bring the convention into force will be crucial.

Article 29: Reservations

Prohibiting reservations ensures the integrity of the convention. This is a strong provision that should be maintained.

Article 30: Withdrawal

The withdrawal process is clear. Including provisions for re-engagement of Parties that withdraw could be beneficial.

Article 31: Depositary

The designation of the Depositary is clear. Ensuring efficient and transparent management of the convention's documents will be important.

Article 32: Authentic Texts

The provision for authentic texts in multiple languages ensures accessibility. This is a strong provision that should be maintained.

Conclusion

Engineers Australia supports the overarching goals of the proposed treaty and acknowledges the significant progress made in addressing plastic pollution. We emphasise the need for clear definitions, technical

guidance, and standardised methods to ensure consistency and effectiveness across all articles. Additionally, the active involvement of the private sector, robust monitoring and reporting frameworks, and the integration of engineering solutions are crucial for the treaty's success to meet environmental and health objectives.

Engineers Australia highlights the importance of incorporating technical expertise into the development and implementation of the treaty to address complex engineering and environmental challenges effectively. By addressing these key areas, we can enhance the treaty's impact and pave the way for a sustainable and circular economy that effectively mitigates the adverse effects of plastic pollution on our environment and health. Engineers Australia remains committed to contributing our expertise and supporting the implementation of this vital treaty.

The above response was led by Dr Kala Senathirajah, Chair – Environmental College (Engineers Australia).