



# **NEC4 contracts:** a 'shovel-ready' solution to reforming Australia's national infrastructure delivery

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## Introduction

Infrastructure Australia, the Australian government's independent infrastructure adviser, published its latest national infrastructure plan in September 2021 (Infrastructure Australia, 2021). Entitled Reforms to meet Australia's future infrastructure needs: 2021 Australian Infrastructure Plan, the 327-page document was produced after consultation with more than 5,500 industry stakeholders, ensuring there was consensus on the necessary reforms.

The plan and its accompanying documents provide Australia's infrastructure sector with a 15-year roadmap to drive economic growth, enhance living standards and improve infrastructure resilience and sustainability. A key aim of the targeted reforms is to ensure the government gets best value from its AU\$110 billion 10-year rolling infrastructure investment pipeline – especially during the post-Covid-19 economic recovery.

This briefing document introduces some of the key recommendations of the plan and explains how the existing range of NEC4 contracts are 'shovel ready' to help bring much-needed reform to the Australian infrastructure sector and wider construction market.

## Standard form contracts

The plan says an immediate opportunity for reform is to enhance project outcomes through, 'Consistently using standard form contracts that support more collaborative behaviours and allocate risk to those best able to manage it.' A University of Melbourne-led research report in 2020 entitled The Health of the Australian Construction Industry found the sector was, 'plagued by an adversarial culture', worse than other countries, and contracts were, 'not collaborative in style' (Sharkey et al., 2020).

In the same year the Australia Constructors Association made a heartfelt plea for greater collaboration in its report Constructing the Future: A new framework for a more sustainable construction industry (ACA, 2020). It said, 'For too long, construction has been treated as a zero-sum game, a game where there can only be one winner. Contracts are drafted accordingly, and more time is spent negotiating the clauses that address what happens when things go wrong than the clauses that deal with ensuring value outcomes. All stakeholders involved in construction and delivery of infrastructure projects need to work together to ensure their mutual success as, in reality, there is rarely a real winner in the construction zero-sum game.'

Section 3.2b of the 2021 Australian Infrastructure Plan recommends that, over the next five years, government agencies and state and territorial governments should, 'Reduce risk and improve value for money by using common and best practice commercial arrangements, standard contract forms and delivery approaches to infrastructure.' It goes on to say government clients should, 'Improve consistency, certainty and value for money by developing and implementing a new nationally consistent contract suite to support a spectrum of procurement models,' citing NEC4 publisher the Institution of Civil Engineers as a supporting organisation. It then sets a 10–15 year target for over 80% of all projects and programmes over AU\$250 million to use, 'a nationally standard contract suite with the integrity maintained.'

The plan points out that, 'Procurement contracts and processes present a major opportunity for reform to address industry-wide grievances. Frequently, governments use contracts that are labelled "standard", however are actually bespoke. Contract uniqueness can lead to interpretation issues and contract management failures.'

## Openness and fairness on project risks

Infrastructure Australia also advises government clients to be more open and fair on project risks. ‘The practice of forcing industry to accept risks they cannot reasonably control or bear increases the likelihood of variations and inflated budgets, including excessive contingencies. It increases the risk of default and can drive negative behaviour.’ It calls on governments to be ‘model clients’ that create positive outcomes by being transparent, highlighting risk and implementing management best practices. ‘Project risk can be reduced through the use of standard form contracts, reviewing onerous clauses in contracts, and moving towards more “collaborative” arrangements’.

There then follows a unique section on NEC4 entitled The UK is leading the way. The plan says, ‘The NEC is a family of standard contracts, so it promotes a range of options for use in a variety of commercial situations, project types, scenarios and locations. Beyond project implementation, the system includes supply contracts, framework agreements, professional services arrangements and design, build and operation contracts.’ It goes on to say, ‘NEC is attracting global support and accolades from practitioners, owners and all parts of the supply chain. The NEC simplicity, collaborative focus, and effectiveness at sharing risk and reward has seen it adopted internationally, supporting the United Kingdom’s access to international markets for exporting services and attracting investment’.

The last point is important because Infrastructure Australia is keen to ensure that the Australian infrastructure sector remains attractive to foreign organisations and investment. It warns, ‘Organisations participating in the sector, both domestic and international, are increasingly likely to look for opportunities elsewhere if local infrastructure projects and contracts are comparatively risky, or offer lower and less predictable margins than other countries.’

In a further endorsement of NEC4, the accompanying Reform Priority List for section 3.2b says that governments which apply innovative contract models such NEC will have a ‘high degree of confidence in reform success and acceptance by industry stakeholders’.

## NEC track record in Australia

NEC4 is already well-established in Australia. The contracts’ adoption is being led by Sydney Water, which started three 10-year NEC4-based frameworks worth AU\$4 billion in 2020. Called Partnering for Success, the water company’s new NEC4-based procurement model involved replacing the traditional transaction-based supply chain with three regional delivery consortia. It is expected to lead to 5–10% annual programme savings.

Elsewhere five new NEC4 contracts worth over AU\$130 million were let in 2021 and four more worth AU\$190 million are due in early 2022. The largest new contract is a AU\$86 million NEC4 Engineering and Construction Contract (ECC) Option C (target contract with activity schedule) awarded in Perth by Main Roads Western Australia (MRWA). It follows MRWA’s successful trial in 2018–19 of a AU\$25 million ECC Option D (target contract with bill of quantities) on part of the Great Northern Highway upgrade. The new contract, which involves upgrading a section of the Mitchell Freeway, was let in February 2021 to the H2H joint venture of WBHO Infrastructure and NRW Contracting. Completion is due in October 2023.

The other new contracts were all let by Square Kilometre Array Observatory (SKAO), an intergovernmental organisation which is using NEC4 contracts to build the world’s largest radio telescope at sites in Murchison, Western Australia and in South Africa. Three NEC4 Framework Contracts (FC) for software development worth AU\$15 million were let in autumn 2021 to the International Centre for Radio Astronomy and Research in Western Australia, the Commonwealth Scientific and Industrial

Research Organisation (CSIRO) in Canberra, and Fourier Space in Victoria. Work orders are being let under NEC4 Professional Service Short Contracts (PSSC) to keep scopes as flexible as possible.

CSIRO has also won an AU\$30 million (£16 million) NEC4 PSC for assisting with assembly, integration and verification of SKAO's planned low-frequency telescope, for which SKAO is about to let four NEC4 infrastructure contracts worth AU\$190 (£100 million). These include an NEC4 Design Build and Operate (DBO) contract for the site camp. There will also be an NEC4 PSC for supervision of the works.

In 2021, NEC further consolidated its suitability for the Australian market by publishing a Y(AUS)1 clause. This aligns its core payment clauses with the various security-of-payment laws in each of Australia's states and territories without modifying the contracts. There is currently no comparable standard form of contract in the Australian market which is both collaborative in style and compliant with local legislation.

## **Key features of NEC**

The NEC4 contract suite is a comprehensive set of tried-and-tested collaborative procurement contracts for works, services and supplies. The contracts have been used for nearly 30 years in the UK and more recently in Antarctica, Australia, Belgium, China, New Zealand, Peru and South Africa. They have proved that through collaboration, fair dealing and good management, even the most high-risk and complex projects and programmes can be delivered on time, within budget and without litigation.

At the start of each contract is a requirement for the parties to, 'act in a spirit of mutual trust and co-operation', which ensures they work towards achieving the best possible project outcome. Risk management is at the heart of every contract, with all newly emerging risks and problems having to be flagged as soon as they become apparent through early warnings, ensuring no surprises. They are discussed at an early warning meeting and resolved through agreed compensation events as work progresses, rather being swept under the carpet for a later dispute. This real-time approach to change management is underlined by the importance NEC contracts put on the programme, with all parties obliged to ensure the programme is continually updated to reflect reality.

Each contract allows for incentivising contractors and suppliers through target cost arrangements, key performance indicators and bonuses for early completion, without the need for amendment. Specific optional clauses allow for value management, multi-party collaboration, early contractor involvement, building information modelling and project bank accounts. There is also an international NEC Users' Group which provides support, guidance and training and accreditation to users worldwide.

Finally, NEC4 contracts also provide comprehensive mechanisms to avoid and resolve disputes, with option W1 providing for resolution by senior representative and then adjudication, and option W3 providing for a dispute avoidance board.

## Conclusions

The globally successful NEC4 contract suite fully meets the requirements for enhancing project outcomes as set out in section 3.2 of the 2021 Australian Infrastructure Plan (see Table 1).

The 'off-the-shelf' suite is already providing Australian government agencies with a comprehensive, consistent and collaborative approach to procurement of works, services and supplies. The contracts focus on identifying, appropriately allocating and managing risk at all stages of every project, and provide transparency and fairness for all parties.

NEC4 covers all procurement routes, from alliances and design–build–operate arrangements to term service and framework contracts. There are specific standard and short contracts for consultants, subcontractors, suppliers and facilities managers, all of which work on their own or back-to-back with the main project or programme contract.

The 2021 Australian Infrastructure Plan set a target of 10–15 years for over 80% adoption of a nationally standard contract suite for projects over AU\$250 million. If state and territory governments follow the lead set by Sydney Water and Main Roads Western Australia, this target could be achieved across all infrastructure projects in Australia within the next five years.

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## References

ACA (2020) *Constructing the Future*, <https://www.constructors.com.au/wp-content/uploads/2020/10/ACA-Constructing-the-Future-09102020.pdf> (accessed 24 January 2022).

Sharkey J, Greenham P, Bell M, Jovic W and Korolkova J, Hu D (2020) *The Health of the Australian Construction Industry*, University of Melbourne, [https://law.unimelb.edu.au/\\_\\_data/assets/pdf\\_file/0005/3501086/Health-of-the-Australian-Construction-Industry-Research-Report.pdf](https://law.unimelb.edu.au/__data/assets/pdf_file/0005/3501086/Health-of-the-Australian-Construction-Industry-Research-Report.pdf)

Infrastructure Australia (2021) *Reforms to meet Australia's future infrastructure needs: 2021 Australian Infrastructure Plan*, <https://www.infrastructureaustralia.gov.au/publications/2021-australian-infrastructure-plan>

**Table 1:** How NEC4 meets the 2021 Australian Infrastructure Plan recommendations for enhancing project outcomes

2021 Australian Infrastructure Plan recommendation	How NEC4 can help
3.2a.1 Ensure a strategic view of risk is appropriately translated to project procurement by developing and applying mature risk allocation processes that comprehensively assess and validate risk and uncertainty and fairly apportion them to the parties best-placed to manage them.	NEC4 contracts require identification, mitigation and fair allocation of risk from the outset and throughout each contract in the early warning register. Client and supplier liabilities are also clearly stated.
3.2a.2 Improve consistency, efficiency and transparency of project decision-making by developing and promoting nationally consistent project information structures.	NEC4 contracts require consistent, efficient and transparent communications and information exchange between the parties to ensure projects are completed on time and budget.
3.2b.1 Unlock market equality and lower risk by using more collaborative commercial models that facilitate value for money and smaller engagements directly with contractors and consultants.	NEC4 clause 10.2 requires parties to contract to, 'act in a spirit of mutual trust and co-operation', and option X12 provides for multi-party collaboration between contractors on the same project. NEC4 suite includes shorter forms for smaller engagements with contractors and consultants.
3.2b.1 (cont.) Apply appropriate consistency and improve certainty in procurement by developing a procurement decision-making tool to more effectively understand and allocate scope in line with project fundamentals.	NEC4 contracts provide a detailed and consistent way of defining the scope through the contract data and schedules of cost components. The contracts use plain and simple English to ensure clarity and avoid misunderstanding.
3.2b.1 (cont.) Improve consistency and value for money by developing and implementing a new nationally consistent contract suite to support a spectrum of procurement models.	NEC4 provides a comprehensive and consistent suite of contracts to procure works, services and supplies, with payment options ranging from fixed price to cost-reimbursable. There are also specific contracts for alliances, design–build–operate, frameworks, term services and facilities management.
3.2b.1 (cont.) Maintain a viable, competitive industry and supply chain by ensuring insurance is available for consultants, contractors and sub-contractors involved in major projects.	NEC4 contracts provide detailed requirements for insuring the liabilities of clients, consultants, contractors and sub-contractors. Option X13 also provides for the use of a performance bond.
3.2b.1 (cont.) Increase competition in the industry by developing guidelines and training programs on market engagement best practices that are accessible to all project practitioners.	NEC Users' Group provides support, guidance, training and accreditation to NEC users worldwide on best practice collaborative procurement, including option X22 on early contractor involvement.
3.2b.1 (cont.) Maintain the financial health of the supply chain by reviewing payment certainty and payment security legislation in light of current practice. Focus on compliance with requirements and consider whether the scope of these frameworks sufficiently addresses poor practices.	All NEC4 contracts, including framework contracts, require fair and prompt payments to suppliers. There is also the option to use a project bank account, and the Y(AUS)1 clause ensure compliance with local security-of-payment legislation.
3.2b.2 Create a culture of genuine innovation by clarifying the desired project outcome innovation criteria in bid requirements, including outcomes, value for money, risks and embedding innovation in future projects.	NEC4 contracts incentivise parties to use innovation to improve project outcomes, including Option C and D pain/gain shares, option X6 bonus for early completion, option X10 on building information modelling, and option X20 on key performance indicators.