
Australian Energy Market Commission

OPTIONS PAPER

TRANSMISSION PLANNING AND INVESTMENT - CONTESTABILITY

07 JULY 2022

REVIEW

INQUIRIES

Australian Energy Market Commission
GPO Box 2603
Sydney NSW 2000

E aemc@aemc.gov.au
T (02) 8296 7800

Reference: EPR0087

CITATION

AEMC, Transmission planning and investment - Contestability , 07 July 2022

ABOUT THE AEMC

The AEMC reports to the Energy Ministers' Meeting (formerly the Council of Australian Governments Energy Council). We have two functions. We make and amend the national electricity, gas and energy retail rules and conduct independent reviews for the Energy Ministers' Meeting.

This work is copyright. The Copyright Act 1968 permits fair dealing for study, research, news reporting, criticism and review. Selected passages, tables or diagrams may be reproduced for such purposes provided acknowledgement of the source is included.

SUMMARY

The Review is exploring options to support the timely and efficient delivery of major transmission projects

- 1 Australia is undergoing a transformational shift to net zero. The electricity grid, which has traditionally been underpinned by centralised thermal generation, will soon be dominated by decentralised renewable generation.
- 2 There is broad consensus that transmission is a critical enabler for the transition to net zero, both in the national electricity market (NEM) and the economy more broadly. However, this transition will require unprecedented level of investment in, and build of, transmission infrastructure to deliver power from renewable generation and energy storage to consumers, and to deliver it quickly.
- 3 The scale of transmission investment required, coupled with the speed of the energy transition, presents unique opportunities and challenges for the existing regulatory framework. This framework was developed to support incremental growth of the grid, not the current level of step-change growth set out in the Australian Energy Market Operator's Integrated System Plan.
- 4 It is therefore essential that the regulatory framework is sufficiently flexible to support the timely and efficient delivery of major transmission projects, while ensuring investment in these projects are in the long-term interests of consumers.
- 5 In this context, the Australian Energy Market Commission (AEMC or Commission) commenced its Transmission planning and investment review (the Review) with the objective of making sure that the regulatory framework is striking an appropriate balance between requiring rigorous assessment of major transmission projects — to mitigate the risk of inefficient transmission investment — and the need to facilitate timely investment in these projects to deliver beneficial outcomes to consumers.
- 6 As part of the Review, the AEMC committed to examining whether contestability could provide a potential and proportionate response to the risk of late or non-delivery of major transmission projects. This risk arises from primary transmission network service providers (TNSPs) having an exclusive right, but no corresponding obligation, to invest in transmission infrastructure, including major transmission projects required to underpin the transition to net zero.
- 7 Based on stakeholder feedback to the consultation paper for the Review, the AEMC now intends to examine contestability more broadly, to assess whether it could be a more efficient alternative to the delivery of major transmission projects by monopoly TNSPs under the existing ex-ante incentive based regulatory framework.
- 8 This expanded scope will enable us to explore contestability as a potential solution to multiple issues that have been uncovered throughout the course of the Review to date. It will also enable the Commission to consider the potential benefits and costs associated with introducing contestability at the different stages of, and for different activities/functions

involved in, the transmission planning and investment lifecycle.

- 9 We note that several jurisdictions consider that there is merit in contestable frameworks and have already adopted them for certain major transmission projects. The Commission therefore considers there is also value in exploring whether a more consistent national approach to contestability would have benefits.

We will undertake a two-part approach to the contestability workstream

- 10 The AEMC's consideration of contestability was originally included within Stage 3 of the AEMC's Review, focussed on longer-term reforms. However, having considered stakeholder submissions to the consultation paper in detail, the AEMC has decided to establish a separate workstream for this matter. The 'contestability workstream' of the Review will be undertaken in two parts:

11 Part 1 – contestability workstream of the Review:

The contestability workstream will be used to deliver recommendations on:

- whether arrangements to support increased contestability in the provision of major transmission projects in the NEM should be explored in detail as a proportionate alternative to provision by primary TNSPs (PTNSPs) under the current ex-ante incentive-based regulatory framework and,
- if so, which broad model of contestability is likely to deliver net benefits to consumers relative to other models considered and the counterfactual (that is, which broad model is the preferred model of contestability).

Part 1 involves publication of an options paper in July 2022, a draft report in December 2022 and a final report in the first half of 2023.

12 Part 2 – new contestability implementation review:

If the final report for the contestability workstream concludes that it is likely to be beneficial to explore contestability in detail, the AEMC will commence a new piece of work in mid-2023 to:

- design and assess the commercial and regulatory model in detail
- where necessary, commence work to develop the law and rule changes needed to implement it.

Part 2 would likely take 12-24 months and could run in parallel with the 2025 ISP review.

- 13 Taking a two-part approach to the matter of contestability will enable the Commission to continue to work collaboratively with stakeholders to identify a common starting point for discussion, and to gather a greater fact base regarding the potential benefits of increased contestability in the provision of major transmission in the NEM.

- 14 This early work will help to structure future discussions between the AEMC and stakeholders regarding the costs and benefits of increased contestability in the NEM, to inform our future analysis and subsequent decisions regarding this potential reform.

The purpose of this options paper is to seek feedback on several matters relevant

to our early analysis

15 To help us progress our work on contestability, we are seeking feedback from stakeholders on several matters relevant to the AEMC's analysis and subsequent decision on whether there is benefit in exploring contestability in detail and, if so, in what form.

16 Specifically, we are seeking feedback on:

- a spectrum of **four contestability strawperson options**, so that we can narrow these down to one or two to take through our initial high-level assessment later this year
- our proposed **assessment framework for this workstream**, so that we can refine and weight the assessment criteria to assist our choice of options and initial high-level assessment later this year
- some of the key considerations for thinking about how to **identify projects suitable to contestable delivery**.

We are seeking feedback on four strawperson contestability models

17 We have identified four strawperson contestability models that we consider are potentially workable in the NEM and which we want to test with stakeholders.¹ The strawperson models include different versions of the two broad competition models – that is, late and early competition. All are based on designs that currently exist or are being progressed in jurisdictions both within and outside of Australia.

18 The following models, along with the counterfactual, are presented in the options paper:

- **Counterfactual:** Current transmission planning and investment arrangements under NEL and NER (excluding Victoria)
- **Strawperson model 1:** Contestability for construction and ownership
- **Strawperson model 2:** Contestability for delivery of solutions identified through the ISP or RIT-T process plus a jurisdictional body having increased responsibility for planning, engagement and early works
- **Strawperson model 3:** Contestability for the delivery of solutions identified through the ISP or RIT-T process plus AEMO's declared network functions (ie the current Victorian arrangements)
- **Strawperson model 4:** Competition for the development and delivery of solutions to meet a need identified in the ISP process.

Importantly, there are challenges and opportunities, advantages and disadvantages associated with each of the strawperson models. We are therefore seeking feedback from stakeholders on which strawperson model(s) are likely to be workable in the NEM and most likely to deliver net benefits to consumers.

We will use this feedback to inform the decision on which model(s) should progress through to the AEMC's high-level cost-benefit assessment. Ideally, only one or two of the

¹ The AEMC engaged farrierswier consulting to assist in the preparation of the four strawperson contestability models and the counterfactual.

strawperson models (including possible hybrid models) will proceed to the assessment phase.

We are seeking feedback on the assessment framework for this workstream

- 19 The assessment framework for the contestability workstream is consistent with the assessment framework for the broader Review.
- 20 In considering potential changes to the regulatory framework supporting the planning and delivery of major transmission projects in the NEM, we will consider whether a particular change is likely to promote the national electricity objective (NEO). To guide this assessment, we will have regard to the following criterion: timeliness, efficiency, flexibility, accountability, decarbonisation and implementation.
- 21 Importantly, throughout the course of this workstream, the Commission may need to exercise its judgement in relation to trade-offs between several of these criteria. For example, between:
- **timeliness vs efficiency:** arrangements that support the timely delivery of major transmission projects versus opportunities to capture the fullest range of potential economic efficiencies associated with competitive provision of these projects, and
 - **efficiency vs accountability:** arrangements that capture the potential economic efficiency benefits of contestability versus ensuring clear accountability for security, reliability, safety and managing social licence.
- 22 To inform the Commission's assessment, we are seeking feedback from stakeholders on these trade-offs including which criterion are most important and critical in making decisions in the context of this workstream that will promote the long terms interests of consumers.

We are seeking feedback on key considerations when thinking about how to identify projects suitable for competitive delivery

- 23 Consistent with the broader Review, the Commission is investigating the case for increased contestability in the provision of major transmission projects, as distinct from business-as-usual (BAU) transmission investment. For the purposes of the Review, major transmission projects are those projects of a significant size, scale and scope such that they are associated with greater uncertainty relative to BAU investments. These can be ISP or non-ISP projects.
- 24 However, not all major transmission projects will be suitable to competitive delivery. Further, once a project has been identified as suitable to competitive provision, it is not necessarily the case that a competitive tender process will always be feasible or likely to attract sufficient competition to deliver benefits.
- 25 For these reasons, arrangements to support increased contestability in the provision of transmission services must include mechanisms, processes and decision points for identifying which major transmission projects are suitable to contestable delivery, and for testing whether proceeding with a competitive procurement process for a specific project is feasible and likely to deliver timely and efficient outcomes relative to provision under a non-contestable process.

- 26 To inform the Commission’s thinking, we are seeking feedback on criteria or principles that may provide a useful starting point to identify the subset of major transmission projects likely to be suitable to competitive delivery, and whether a prescriptive or flexible approach to decision making is preferred.

CONTENTS

1	Introduction	1
1.1	The Review is exploring options to support the timely and efficient delivery of major transmission projects	1
1.2	The purpose of this options paper is to seek feedback on several matters relevant to our early analysis	2
1.3	A report on international and domestic experiences of transmission contestability is published with this options paper	3
1.4	Structure of this options paper	3
1.5	How you can Lodge a submission to this options paper	4
2	Approach to considering contestability	5
2.1	We will undertake a two-part approach to the contestability workstream	5
2.2	Stakeholder views on the merits, costs and benefits of increased contestability vary widely	6
2.3	We have reframed the problem identified in the consultation paper for the review	7
2.4	Our first step is to work with stakeholders to identify a starting point from which to build a common fact base	8
2.5	We will continue to engage with stakeholders throughout the contestability workstream	9
2.6	The counterfactual arrangements will be adjusted as necessary to reflect other Review recommendations	10
2.7	Request for feedback	11
3	Contestability strawperson models	12
3.1	Approach to developing the strawmen	12
3.2	Counterfactual Arrangements	14
3.3	Strawperson model 1	15
3.4	Strawperson Model 2	16
3.5	Strawperson model 3	17
3.6	Strawperson Model 4	19
3.7	Request for feedback	20
4	Assessment framework	22
4.1	The National Electricity Objective guides the Commission's work	22
4.2	Assessment criteria will inform the commission's decision-making	22
4.3	We will use the assessment criteria to guide various aspects of this work	25
4.4	There are Trade-offs between the criteria	26
4.5	There are additional factors relevant to the Commission's high-level assessment of increased contestability in the NEM	26
4.6	Request for feedback	27
5	Identifying projects suitable for contestable delivery	29
5.1	Not all major transmission projects are suited to contestable delivery	29
5.2	Arrangements must identify major transmission projects suitable to competitive delivery	30
5.3	Arrangements must enable a decision on whether to proceed with a contestable tender process for suitable projects	32
5.4	There are several factors to consider for this workstream	32
5.5	Request for feedback	33

Abbreviations

35

APPENDICES

A	Detailed description of the counterfactual	36
A.1	Description of responsibility for key steps in the transmission planning and investment process	36
B	Detailed description of strawperson 1	44
B.1	Description of responsibility for key steps in the transmission planning and investment process	44
B.2	Summary of the key advantages and disadvantages of the strawperson 1	50
C	Detailed description of strawperson 2	54
C.1	Description of responsibility for key steps in the transmission planning and investment process	54
C.2	Summary of the key advantages and disadvantages of the strawperson 2	61
D	Detailed description of strawperson 3	65
D.1	Description of responsibility for key steps in the transmission planning and investment process	65
D.2	Summary of the key advantages and disadvantages of the strawperson 3	71
E	Detailed description of strawperson 4	74
E.1	Description of responsibility for key steps in the transmission planning and investment process	74
E.2	Summary of the key advantages and disadvantages of the strawperson 4	86
F	Options for approaches to identifying projects suitable to competitive delivery	91
F.1	Prescriptive approach - Competition criteria	91
F.2	Flexible approach - Decision-maker discretion	91
F.3	Hybrid approach - Decision-maker discretion guided by criteria/principles	92
F.4	Case studies	92

TABLES

Table 1.1:	Key milestones for Stages 2, Stage 3 and the Contestability workstream	2
Table 4.1:	Proposed assessment criteria for the contestability workstream of the Review	22
Table B.1:	Strawperson 1: Contestability for construction and ownership	51
Table C.1:	Strawperson 2: Contestability for the delivery of solutions identified through the ISP or RIT-T process plus a jurisdictional body having increased responsibility for planning, engagement and preparatory activities	61
Table D.1:	Strawperson 3: Contestability for the delivery of solutions identified through the ISP or RIT-T process	71
Table E.1:	Strawperson 4: Contestability for the development and delivery of solutions to meet a need identified in the ISP process	87

FIGURES

Figure A.1:	Plan	36
Figure A.2:	Undertake preparatory activities	38
Figure A.3:	Engage	39
Figure A.4:	Construct	40
Figure A.5:	Finance and own	40
Figure A.6:	Operate and maintain	41
Figure A.7:	Control	42
Figure A.8:	Price	43
Figure B.1:	Description of responsibility for key steps in the transmission planning and investment process	44

Figure B.2:	Undertake preparatory activities	45
Figure B.3:	Engage	46
Figure B.4:	Undertake a competitive tender process	46
Figure B.5:	Construct	47
Figure B.6:	Finance an own	48
Figure B.7:	Operate and maintain	48
Figure B.8:	Control	49
Figure B.9:	Price	49
Figure C.1:	Plan	54
Figure C.2:	Undertake preparatory activities	55
Figure C.3:	Engage	55
Figure C.4:	Undertake a competitive tender process	56
Figure C.5:	Construct	57
Figure C.6:	Finance and own	57
Figure C.7:	Operate and maintain	58
Figure C.8:	Control	60
Figure C.9:	Price	60
Figure D.1:	Plan	65
Figure D.2:	Undertake preparatory activities	66
Figure D.3:	Engage	67
Figure D.4:	Undertake competitive tender process	67
Figure D.5:	Construct	69
Figure D.6:	Finance and own	69
Figure D.7:	Operate and maintain	69
Figure D.8:	Control	70
Figure D.9:	Price	70
Figure E.1:	Plan	74
Figure E.2:	HoustonKemp sponsor-based model	75
Figure E.3:	Ofgem's competition model comparison	80
Figure E.4:	Undertake preparatory activities	81
Figure E.5:	Engage	81
Figure E.6:	Undertake competitive tender process	82
Figure E.7:	Construct	83
Figure E.8:	Finance and own	84
Figure E.9:	Operate and maintain	84
Figure E.10:	Control	85
Figure E.11:	Price	86

1 INTRODUCTION

This chapter provides a brief overview of the Transmission Planning and Investment Review. It describes the different stages and associated milestones and timeframes. It also briefly describes the purpose and structure of this options paper and provides details on how stakeholders can lodge a submission.

1.1 The Review is exploring options to support the timely and efficient delivery of major transmission projects

Australia is undergoing a transformation to net zero. In the national electricity market (NEM), we are experiencing a significant transition away from reliance on thermal generation to meet demand, toward a world where demand is principally met by geographically dispersed renewable generation. There is broad consensus that transmission is a critical enabler of the transition to net zero, both in the NEM and the economy more broadly.

To underpin this transition, substantial investment in transmission infrastructure is required to bring power from renewable generation and storage to consumers, and to do so in a timely way. Given consumers will be paying for these projects for decades into the future, it is also essential that they are in the long term interests of consumers.

The scale of transmission investment required, coupled with the speed of the energy transition, presents unique opportunities and challenges for the existing regulatory framework. This framework was developed to support incremental growth of the grid, not the current level of step-change growth set out in the Australian Energy Market Operator's (AEMO's) Integrated System Plan (ISP).

It is therefore essential that the regulatory framework is sufficiently flexible to support the timely and efficient delivery of major transmission projects,² while ensuring these investments are in the long-term interests of consumers.

In this context, the Australian Energy Market Commission (AEMC) commenced a review of the transmission planning and investment framework as it applies to major transmission projects in the NEM.³ The purpose of the review is to ensure that the regulatory framework can effectively manage the increased uncertainty associated with these projects and so can continue to facilitate their timely and efficient delivery for the benefit of consumers.

As part of Stage 1 of the Review, the AEMC published a consultation paper seeking feedback from stakeholders on several issues associated with the frameworks for planning, funding and delivery of major transmission projects.⁴ It also sought feedback from stakeholders on the materiality of each issue to inform the AEMC in identifying the issues with the greatest potential to materially impact the timely and efficient delivery of major projects.

2 For the purposes of this review, the Commission considers major transmission projects to be projects of a significant size, scale and scope such that they are associated with greater uncertainty relative to BAU investments. These can be integrated system plan (ISP) or non-ISP projects. This matter is discussed further in chapter 5 of this options paper.

3 See project webpage [here](#).

4 AEMC, Transmission Planning and Investment Review, Consultation paper, 19 August 2021.

The AEMC subsequently separated the priority issues for the review into two areas:

- **Stage 2: Near-term reforms** - This stage focuses on both reducing uncertainty and near-term solutions, including recommendations to address any foreseeable financeability issues which may arise. A draft report for stage 2 of the Review was published on 2 June 2022.⁵
- **Stage 3: Longer-term reforms** - This stage focuses on priority issues that are of considerable complexity and are longer-term reforms. The key area of focus for Stage 3 is whether there are potential opportunities to improve the balance of timeliness and rigour in the economic assessment process. A draft report for Stage 3 of the Review is due to be published in September 2022.
- **Contestability workstream** - This workstream focuses on delivering a recommendation on whether contestability should be explored in more detail, and if so, in what form. This is the subject of this options paper.

The AEMC's consideration of contestability as a potential solution to the risk of non-delivery of major transmission projects was originally included within Stage 3 of the Review (longer-term reforms). However, for the reasons set out in chapter 2 of this options paper, a separate contestability workstream has now been established.

The key milestones for Stage 2, Stage 3 and the contestability workstream are outlined in Table 1.1

Table 1.1: Key milestones for Stages 2, Stage 3 and the Contestability workstream

MILESTONE	STAGE 2	STAGE 3	CONTESTABILITY WORKSTREAM
Options paper	N/A	N/A	07 July 2022
Submissions on options paper due	N/A	N/A	18 August 2022
Publish draft report	2 June 2022	September 2022	December 2022
Submissions on draft report due	14 July 2022	TBC	February 2023
Publish final report	27 October 2022	Early 2023	Mid 2023

1.2

The purpose of this options paper is to seek feedback on several matters relevant to our early analysis

We are seeking stakeholder feedback on several matters relevant to the AEMC's analysis and subsequent decision on whether there is benefit in exploring contestability in detail and, if so, in what form. Specifically, we are seeking feedback on:

⁵ AEMC, Transmission planning and investment Review – Stage 2, Draft report, 2 June 2022.

- our spectrum of **four contestability strawperson options**, so that we can narrow these down to one or two to take through our initial high-level assessment later this year
- our proposed **assessment framework for this workstream**, so that we can refine and weight the assessment criteria to assist our choice of options and initial high-level assessment later this year
- some of the key considerations for thinking about how to **identify projects suitable to contestable delivery**.

As noted in section 1.5, submissions to this options paper are due by **18 August 2022**.

1.3 A report on international and domestic experiences of transmission contestability is published with this options paper

A report titled *Contestability in transmission - International and Domestic examples* prepared by KPMG for the AEMC and Australian Energy Regulator (AER) is published in tandem with this options paper.⁶ This report provides an overview of international and domestic experiences of transmission contestability, focusing on matters including:

- the drivers behind the competitive provision of transmission
- the different models of competition including their successes and challenges
- the nature and characteristics of projects subject to competition, and
- some of the real-world implications of making certain trade-offs when designing and implementing contestability.

It also includes observations on key lessons for the NEM.

Stakeholders are encouraged to consider the content of this report when providing feedback on the matters outlined in this options paper.

1.4 Structure of this options paper

This options paper is structured as follows:

- **Chapter 2:** sets out our revised approach to considering contestability and the reasons for our change in approach.
- **Chapter 3:** sets out an overview of the four contestability strawperson options and the counterfactual arrangements against which these will be considered.
- **Chapter 4:** sets out our proposed assessment framework for the contestability workstream, including how we intend to use the assessment criteria and the trade-offs involved in applying the criteria.
- **Chapter 5:** sets out several key considerations for thinking about how to identify projects suitable to contestable delivery, including examples of the approaches used in jurisdictions who have implemented contestable arrangements for transmission delivery.

Key to the matters set out in this paper are appendices A to G:

⁶ KPMG, *Contestability in transmission - International and Domestic examples*, a Report prepared for the AEMC and AER, 7 July 2022.

- **Appendices A-E:** set out in detail the four contestability strawperson models and the counterfactual arrangements. Each appendix includes a description of the key advantages and disadvantages of each option, for consideration by stakeholders.
- **Appendix F:** provides some additional information to supplement the discussion in chapter 5 around key considerations for decision-making regarding which projects are suitable to contestable delivery.
- **Appendix G:** provides a detailed comparison of the contestability strawperson options and counterfactual, breaking down each key stage of the transmission planning and investment lifecycle into the key functions and activities within each stage.

1.5

How you can Lodge a submission to this options paper

Written submissions on this options paper must be lodged with the Commission by 18 August 2022 online via the Commission's website, www.aemc.gov.au, using the 'lodge a submission' function and selecting the project reference code EPR0087.

The submission must be on letterhead (if submitted on behalf of an organisation), signed and dated.

We intend to hold a public forum on the options paper on 26 July 2022. Stakeholders are encouraged to attend and participate in that discussion. Details are on the Commission's website.

2 APPROACH TO CONSIDERING CONTESTABILITY

This chapter sets out our intention to undertake a two-part approach to the contestability workstream. It explains why the Commission has decided to take a two-part approach to considering contestability, including expanding the scope of the workstream to consider the potential for contestability to provide a more efficient and timelier route to delivery for major transmission projects compared to delivery by monopoly transmission network service providers (TNSPs) under the existing regulatory framework.

As part of this, we highlight the importance of working with stakeholders to identify a common starting point from which to start the conversation and develop a common fact base to inform our future analysis and decisions. This options paper is the first step in that process as it seeks feedback from stakeholders on four strawperson contestability models that are potentially workable in the NEM.

This chapter also sets out how we have and will continue to engage with stakeholders and explains how the Commission will consider recommendations made in other stages of the Review within this workstream.

2.1 We will undertake a two-part approach to the contestability workstream

We intend to undertake a two-part approach to examining contestability:

Part 1 – contestability workstream of the Review: The contestability workstream will be used to deliver recommendations on:

- whether arrangements to support increased contestability in the provision of major transmission projects in the NEM should be explored in detail as a proportionate alternative to provision by primary TNSPs (PTNSPs) under the current ex-ante incentive-based regulatory framework, and
- which broad model of contestability is likely to deliver net benefits to consumers relative to other models considered and the counterfactual – that is, which broad model is the preferred model of contestability.

Part 1 involves publication of an options paper in July 2022, a draft report in December 2022 and a final report in the first half of 2023.

Part 2 – new contestability implementation review: If the final report for the contestability workstream concludes that it is likely to be beneficial to explore contestability in detail, the AEMC will commence a new piece of work in mid-2023 to design and assess the commercial and regulatory model in detail. Where appropriate, the AEMC will also commence work to develop the law and rule changes needed to implement it. Part 2 would likely take 12-24 months and could run in parallel with the 2025 ISP review.

The reasons for separating contestability from the Review's Stage 3 work and running a two part contestability workstream are described in the next sections.

2.2 Stakeholder views on the merits, costs and benefits of increased contestability vary widely

As part of its consultation paper for the Review, the AEMC committed to examining whether contestability could provide a potential and proportionate response to the risk of late or non-delivery of major transmission projects. This risk arises from primary TNSPs having an exclusive right, but no corresponding obligation, to invest in transmission infrastructure. The Commission identified these issues during the *Participant derogation – Financeability of ISP projects (TransGrid and ElectraNet)* rule changes but considered them too broad in scope to be addressed by the Commission in the rule changes. Instead, the Commission committed to exploring this matter as part of this Review.⁷

In submissions to the Review consultation paper, stakeholders expressed a range of views on the suitability of contestability as a solution to delivery risk and, more generally, on the potential benefits and costs associated with introducing increased contestability in the provision of transmission services in the NEM.⁸

For example, several stakeholders expressed the view that increased contestability in the provision of transmission services has the potential to provide various benefits to consumers, in addition to mitigating the risk of late or non-delivery.⁹ Several other stakeholders expressed concern that increased contestability is not a proportionate response to the issue of delivery risk,¹⁰ and that the purported benefits of competition are uncertain, largely unproven and, in any case, required further investigation.¹¹

Having considered the comments shared by stakeholders in submissions, the Commission makes the following observations:

- The problem as it was framed in the consultation paper — that is, contestability as a possible solution to the key impediments to the timely delivery of major transmission projects — is unlikely to be broad enough to capture the full range of benefits potentially available from increased contestability in the provision of transmission in the NEM.
- Stakeholder views on the costs and benefits of introducing contestability in the NEM vary widely and are provided with reference to a variety of potential contestability models.
- There is a general view from stakeholders on both sides of the debate that the potential benefits and costs associated with increased contestability require further investigation and should be considered a priority issue for the Review.
- We also note that some jurisdictions consider that there is merit in contestable frameworks and have already adopted them for certain major transmission projects. As a result, there is likely to be value in exploring whether a more consistent national approach to contestability would have benefits.

⁷ AEMC, Transmission Planning and Investment Review, Consultation paper, 19 August 2021, p. 3.

⁸ Submissions are available on the AEMC project webpage [here](#).

⁹ Submissions to the consultation paper: CitiPower Powercor & United Energy p. 3, AER p. 28, AGL p. 3, APA pp. 11-12, CEC pp. 4-5, CEIG p. 7, MEU pp. 10-11, Origin p. 2, Snowy Hydro p. 6, RE-Alliance p. 9, ATCO pp. 1-2.

¹⁰ Submissions to the consultation paper: ENA pp. 4-5, IPA p.2, NSG pp. 2 10, AEMO p. 18.

¹¹ Submissions to the Review consultation paper: CEFC pp. 6-7, ENA p. 5, TransGrid p. 3, CS Energy pp. 10-11, Energy Australia p. 10.

2.3 We have reframed the problem identified in the consultation paper for the review

In this context, the AEMC has decided to expand the scope of its work and to consider contestability more broadly, including assessing whether it is likely to be a more efficient and timelier route to delivery for major transmission projects in the NEM compared to provision by monopoly TNSPs under the existing regulatory framework.

This expanded scope will enable us to explore contestability as a potential solution to multiple issues that have been uncovered throughout the course of the Review to date. As noted by the AER:¹²

“The AER considers that increased contestability in the provision of transmission services has the potential to solve a number of issues identified with both the planning and investment stages. These include driving efficient project delivery, enhancing innovation and value add in the identification and delivery of solutions, reducing information asymmetries by revealing efficient costs and addressing the perceived barriers to the equal assessment of non-network options at the planning stage.”

It will also enable the Commission to consider the potential net benefits available from:

- introducing contestability at the different stages of, and for different activities/functions involved in, the transmission planning and investment lifecycle, and
- a more consistent national approach to the delivery of major transmission projects in the NEM, given contestable approaches have already been adopted in some jurisdictions.

The expanded scope will allow the Commission to focus on both the timely and efficient delivery of major transmission projects in the NEM. In doing so, this workstream will explore whether increased contestability in the NEM could reduce the risks that customers may pay more than necessary for solutions to an identified need and/or may not receive the full benefits from timely delivery of major transmission projects.

The AEMC has considered contestability in the provision of transmission services in detail on several occasions over the last ten years. Box 1 outlines this work at a high level.

BOX 1: PREVIOUS WORK ON CONTESTABILITY BY THE AEMC

Transmission contestability has been considered by the AEMC in several reviews and rule changes over the past decade, predominantly in the context of transmission services and assets that are required to facilitate connections.

In particular, contestability in the provision of transmission services was considered in detail by the AEMC as part of:*

- its rule change on Connection to dedicated connection assets considered in 2020-2021**

¹² AER submission to the consultation paper, p. 3.

- its rule change on Transmission connection and planning arrangements considered in 2015-2018,^{***} and
- its 2018 Coordination of Generation and Transmission Investment (COGATI) review in 2016-2018.^{****}

A key theme running through all the AEMC's previous work has been the careful trade-offs involved in capturing the potential benefits from introducing contestability in transmission, and the risks that contestable provision can present in terms of accountability for security, reliability and safety of the transmission network. In this context, contestability has only been seen as appropriate for various functions related to connections and for the construction and ownership of certain network augmentations to facilitate connections.

However, considering the unprecedented level of investment in, and build of, transmission infrastructure required to transition the NEM (and economy more broadly) to net zero, the Commission considers it is appropriate to examine the potential benefits to be gained from increased contestability in the NEM, specifically for major transmission projects. Given the size and scale of these projects relative to traditional BAU investments, the trade-offs involved between the benefits of contestability in terms of timely and efficient delivery, versus the costs/risks associated with accountability for security, reliability and safety of the transmission network, warrant fresh examination in close consultation with stakeholders.

Source: *The ESB also considered a range of potential different planning and contestability models as part of its advice to governments and rules for actioning the ISP in 2020.

Source: **<https://www.aemc.gov.au/rule-changes/connection-dedicated-connection-assets>

Source: ***<https://www.aemc.gov.au/rule-changes/transmission-connection-and-planning-arrangements>

Source: ****<https://www.aemc.gov.au/markets-reviews-advice/reporting-on-drivers-of-change-that-impact-transmi>

2.4

Our first step is to work with stakeholders to identify a starting point from which to build a common fact base

As a first step, the Commission will work closely with stakeholders to identify a common starting point for discussion, and to gather a greater fact base regarding the potential costs and benefits of introducing contestability at different stages (and/or for different functions/activities within the different stages) involved in the provision of major transmission in the NEM. This early work will help to structure future discussions between the AEMC and stakeholders regarding the costs and benefits of increased contestability in the NEM, to inform our future analysis and subsequent decisions regarding this potential reform.

To do this, we are seeking feedback on the challenges, opportunities and trade-offs associated with four contestability strawperson models which we believe are potentially workable in the NEM.¹³ The aim is to identify and agree a preferred strawperson model(s) to take through to the AEMC's initial high-level assessment later this year. The outcomes of this high-level assessment will then be shared with stakeholders in the draft report for this workstream (due to be published in December 2022) and used to inform the Commission's

¹³ The AEMC engaged farrierswier consulting to assist in the preparation of the four strawperson contestability models and the counterfactual.

draft decision on whether there is likely to be benefit in exploring increased contestability in detail. This is a key decision point needed before committing AEMC and industry time and resources to undertaking a detailed work program to develop and assess a commercial and regulatory model of contestability in detail.

Presenting the broad spectrum of strawperson contestable models to stakeholders early in the process provides an opportunity for us to:

- consider a wide range of contestability models objectively and in equal measure as a starting point
- incorporate feedback from stakeholders who have already expressed views on either their preferred model of contestability, and/or the costs/benefits of increasing contestable provision of transmission in the NEM, and
- request and receive additional feedback from stakeholders on key learnings (what has worked well and not so well) in Australian and international jurisdictions that have implemented contestable frameworks, to feed into our analysis.

The four strawperson contestability models are summarised in chapter 3 and described in detail in appendices B-E of this options paper. We have set out questions at the end of chapter 3 (and each of the other chapters) to help guide stakeholder feedback.

2.5 We will continue to engage with stakeholders throughout the contestability workstream

To prepare the four strawperson contestability models and counterfactual for inclusion in this options paper, we presented these to the market bodies, and to jurisdictional representatives, through the dedicated working, advisory and reference groups set up for the purpose of this Review. The models were also presented to a dedicated group of consumer representatives where early views on the workability of the models, and the Commission's new approach to the review, were sought.

We are also working closely with jurisdictional governments to understand the interactions between this Review and jurisdictional models that are currently under development for the regulation of Renewable Energy Zones (REZs) and other major transmission projects. In particular, as part of the development of this paper we have taken into account:

- the new arrangements that are currently being implemented in NSW for REZ network infrastructure projects and priority transmission infrastructure projects under the Electricity Infrastructure Investment Act 2020 (NSW);¹⁴ and
- the proposed new Victorian Transmission Investment Framework that is currently under consultation in Victoria.¹⁵

¹⁴ See the Office of Energy and Climate Change policy summary published on 6 May 2022 and the AER's draft guidelines for NSW REZ contestable network infrastructure projects published on 6 May 2022 for an overview of the aspects of this framework that relate to contestability.

¹⁵ See the Department of Environment, Land, Water and Planning's Victorian Transmission Investment Framework Preliminary Design Consultation Paper published on 4 July 2022.

As we progress with Part 1 of the contestability workstream, we will continue to engage with the market bodies, jurisdictional and consumer representatives and investors through the formal channels established, and with other key and interested stakeholders through bilateral and multilateral discussions.

Additional public workshops, forums and roundtables may also be undertaken as the Commission finalises its draft recommendation for Part 1 of the workstream.

The Commission welcomes opportunities to engage with stakeholders on any aspect of the Review.

As noted in section 1.5, we intend to hold a public forum on the options paper on **26 July 2022**. Stakeholders are encouraged to attend and participate in that discussion.

2.6

The counterfactual arrangements will be adjusted as necessary to reflect other Review recommendations

In addition to providing an overview of the four strawperson models of contestability, chapter 3 of this paper provides an overview of the current counterfactual arrangements against which these models have been considered, and against which the preferred model(s) will be assessed later this year.

The current counterfactual arrangements are based on the current national arrangements under the NER except that they have been adjusted to incorporate the draft recommendations made by the AEMC as part of Stage 2 of the Review, published on 2 June 2022. These draft recommendations relate to:

- Financeability - Introducing greater flexibility to mitigate the foreseeable risk that financeability concerns may arise in the future
- Social licence - Providing greater clarity around social licence outcomes in the national framework
- Cost recovery for planning activities - Providing greater clarity on the cost recovery of different types of planning activities
- Feedback loop - Improving the workability of the ISP feedback loop.

We anticipate that additional adjustments will need to be made to the counterfactual arrangements to incorporate any recommendations made by the AEMC as part of Stage 3 of the Review. As noted previously, the AEMC is progressing the contestability workstream in parallel to the issues being examined as part of Stage 3 of the Review. These issues include:

- whether TNSPs face suitable incentives and obligations to invest in major transmission projects. The Commission is exploring the potential for a power to direct or delivery incentive mechanism to address the risk that major transmission projects are not delivered.
- whether there are potential opportunities to improve the balance of timeliness and rigour in the economic assessment process. The Commission is exploring whether it is possible to streamline the economic assessment process without compromising its rigour. Issues

related to the types of benefits incorporated into the cost-benefit tests that underpin the economic assessment process will also be considered in Stage 3. These include:

- the existing treatment of emissions abatement in transmission planning and how major strategic investments are assessed and selected with reference to decarbonisation objectives, and
- whether and how to include wider benefits in the RIT-T and ISP assessment.
- whether the ex-ante regulatory framework is fit for purpose to promote timely and efficient expenditure on major transmission projects and the appropriate allocation of risks to parties best able to manage them.

A draft report for Stage 3 of the Review will be published in September 2022, in time to be incorporated into the high-level assessment of the preferred strawperson model(s) later this year.

Importantly, the Commission remains cognisant of the interrelationships between issues explored across the Review. For example, outcomes of the work being undertaken as part of Stage 3 of the Review in relation to the ability of the ex-ante regulatory framework to promote timely and efficient expenditure on major transmission projects will help inform thinking on whether there is a case for introducing contestability as an alternative to delivery of major transmission projects by monopoly TNSPs under the current ex-ante based regulatory framework.

2.7 Request for feedback

We welcome stakeholder views on our proposed approach to the contestability workstream.

We further welcome stakeholder views on whether there are any other matters that we should have regard to as we prepare the counterfactual arrangements for assessment later this year.

3 CONTESTABILITY STRAWPERSON MODELS

This chapter provides an overview of the approach we have taken to identify four strawperson contestability models that we consider are potentially workable in the NEM and which we want to test with stakeholders.

It then provides a summary of each of the models and the counterfactual arrangements against which these models will be considered, in the following order:

- **Counterfactual:** Current transmission planning and investment arrangements under NEL and NER (excluding Victoria)
- **Strawperson model 1:** Contestability for construction and ownership
- **Strawperson model 2:** Contestability for delivery of solutions identified through the ISP or RIT-T process plus a jurisdictional body having increased responsibility for planning, engagement and early works
- **Strawperson model 3:** Contestability for the delivery of solutions identified through the ISP or RIT-T process plus AEMO's declared network functions (ie the current Victorian arrangements under the NEL and the NER)
- **Strawperson model 4:** Competition for the development and delivery of solutions to meet a need identified in the ISP process

Detailed descriptions of each model and the counterfactual arrangements are then provided in appendices A to E.

3.1 Approach to developing the strawmen

We have developed four strawperson models of contestability for consideration by stakeholders.

To identify and develop these models, we used the following approach:

1. Define key stages of the transmission planning and investment lifecycle
2. Define key functions/activities within each stage
3. Identify NEM or international precedents in contestable electricity transmission delivery to understand:
 - a. Division of roles and responsibilities in each model
 - b. Location of the tender point
 - c. Opportunities to introduce competitive tension at each stage
4. Develop a spectrum of options progressing from limited to greater contestability
5. Where needed, develop draft criteria for the circumstances when contestability would apply, ie what types of major transmission projects are suitable for contestable delivery, and arrangements to identify when these projects should proceed through a contestable procurement process.

The four strawperson models and the counterfactual are summarised in Box 3.1 below. The models include different versions of the two broad competition models – that is, late and

early competition. All are based on designs that currently exist or are being progressed in jurisdictions both within and outside of Australia.

BOX 2: COMPARISON OF LEVEL OF CONTESTABILITY FOR MAJOR TRANSMISSION PROJECTS

Counterfactual | Current arrangements under NEL and NER (excluding VIC)

Plan	Preparatory activities	Engage	Construct	Finance and own	Operate and maintain	Control	Price
------	------------------------	--------	-----------	-----------------	----------------------	---------	-------

Strawperson 1 | Contestability for construction and ownership

Based on various precedents including key features of the NER arrangements for **Designated Network Assets and Identified User Shared Assets**, but with a jurisdictional body and the PTNSP having shared responsibility for planning, engagement and preparatory activities

Plan	Preparatory activities	Engage	Construct	Finance and own	Operate and maintain	Control	Price
------	------------------------	--------	-----------	-----------------	----------------------	---------	-------

Strawperson 2 | Contestability for the delivery of solutions identified through the ISP or RIT-T process plus a jurisdictional body having increased responsibility for planning, engagement and preparatory activities

Based on key features of the current **NSW Electricity Infrastructure Act (EII Act)** model for REZs and elements of the proposed role of **VicGrid** in Victoria

Plan	Preparatory activities	Engage	Construct	Finance and own	Operate and maintain	Control	Price
------	------------------------	--------	-----------	-----------------	----------------------	---------	-------

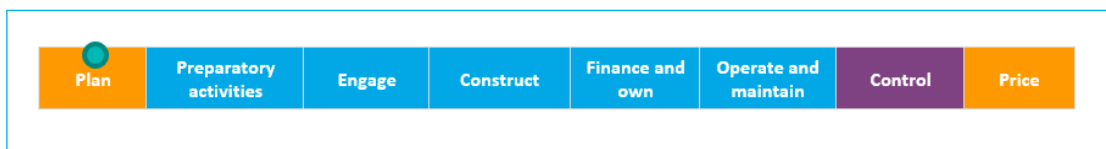
Strawperson 3 | Contestability for the delivery of solutions identified through the ISP or RIT-T process plus AEMO declared network functions

Based on key features of current **Victorian transmission contestability arrangements** under the NEL and the NER

Plan	Preparatory activities	Engage	Construct	Finance and own	Operate and maintain	Control	Price
------	------------------------	--------	-----------	-----------------	----------------------	---------	-------

Strawperson 4 | Competition for the development and delivery of solutions to meet a need identified in the ISP process

Based on **early competition model proposed by Ofgem** for onshore electricity transmission networks, the **sponsor-based model** in the HoustonKemp report for the Australian Energy Regulator (AER) and several current **US electricity transmission contestability models**.



Note: The colours in Box 1 indicate which key stages of the transmission planning and investment lifecycle would be subject to competition provision under each strawperson model. Blue indicates competitive provision of the related functions/activities. Orange indicates some degree (or the option) of competitive provision of the related functions/activities. Purple indicates no competition in the provision of the related functions/activities. The circle indicates the tender point.

3.2 Counterfactual Arrangements

Current transmission planning and investment arrangements under NEL and NER



The counterfactual model is based on the current regulatory framework under the National Electricity Law (NEL) and National Electricity Rules (NER). This framework includes the power system security responsibilities under Chapter 4, the network planning arrangements in Chapter 5 and the economic regulation arrangements in Chapter 6A of the NER.

The NEL and NER do not expressly provide that the primary TNSP (PTNSP) has the exclusive right to implement major transmission projects in its region. There are several examples of transmission projects in the NEM that have been undertaken by a person other than the PTNSP, such as BassLink, MurrayLink, DirectLink and the proposed CopperString 2.0 project. However, there is currently no regulatory process to facilitate the contestable procurement of transmission projects, and the proponent of a contestable project would face considerable regulatory uncertainty.

Once the PTNSP has completed the regulatory investment test for transmission (RIT-T) process and obtained funding for the project through its AER revenue determination or a contingent project application (CPA), the PTNSP effectively has an exclusive right to undertake the project and recover regulated revenue for it.

Currently, the PTNSP is responsible under the NER for all aspects of the operation, maintenance and control of the relevant assets, including connections and pricing. The AER determines the maximum allowable revenue the PTNSP can recover from customers based on an assessment of prudent and efficient costs. Detailed design, construction and debt financing are currently contestably procured by the PTNSP in practice, but there is no regulatory requirement to do so and no regulatory oversight of the procurement process.

The counterfactual model incorporates relevant draft recommendations from the TPIR Stage 2 draft report, in particular in relation to the scope of preparatory activities.

As outlined in section 4.5, the assessment framework and cost-benefit assessment will need to account for the fact that this counterfactual only applies to major transmission projects in certain jurisdictions. Most relevant projects in Victoria (that is, separable projects valued at over \$10 million) or New South Wales (REZ network infrastructure projects or priority

transmission infrastructure projects under the EII Act) are already contestable under versions of options 2 and 3 below.

3.3 Strawperson model 1



Strawperson model 1 involves establishing a process to support contestable provision of construction and ownership of major transmission projects. It is a model of late competition where bidders may compete for the right to construct and own the assets that are required to deliver a solution that is identified and selected through the current planning process.

This option is based on key features of several Australian and international precedents, including the NER arrangements for Designated Network Assets (DNAs) and Identified User Shared Assets (IUSAs). However, a key difference is that a jurisdictional body and the PTNSP would have shared responsibility for the planning, engagement and preparatory activities involved in delivering a major transmission project. This will help promote and manage local social licence considerations. The tender process would also need to carefully manage information flows and contact between the jurisdictional body, potential tenderers and affected local communities.

This option does not involve contestability for operation, maintenance or control of the assets once they are constructed; these functions would be performed by the PTNSP on a regulated basis as prescribed transmission services. The PTNSP would remain responsible for connections and pricing.

The AER would be responsible for setting the maximum allowable revenues for the contestable provider. To do this, it would largely rely on the competitive tender process to be satisfied that the proposed costs represent efficient and prudent costs, rather than applying its usual rate of return instrument and expenditure assessment models and tools.

The current ISP and RIT-T arrangements would continue to apply in this option. However, to create a more level playing field between the PTNSP and other contestable bidders, this option modifies the current planning process so that a jurisdictional body – like EnergyCo in New South Wales or VicGrid in Victoria – and the PTNSP share responsibility for planning, engagement and preparatory activities. The jurisdictional body would have the discretion, based on relevant considerations, to adopt the competitive procurement process for a major transmission project, or it could decide that it is more appropriate to have the project delivered by the PTNSP under the current non-contestable arrangements.

The main objective of this option would be to capture the opportunity to increase pressures for efficiency and reduced costs related to the detailed design, construction and financing of major transmission projects. These pressures should arise where the project is awarded through competition or, if a project is not delivered contestably, where there is a real threat to the PTNSP that it may be opened to competition.

The objective is also to reduce delays in the delivery of major transmission projects on the basis that it includes new obligations on the PTNSP to address the current ‘exclusive right but no obligation’ issue. These obligations would also help to mitigate against the possibility of investment decision delay. However, the new contestable procurement process could add to the end-to-end delivery timeframe for a project and could create additional transaction costs due to increased complexity.

This option could apply in every NEM jurisdiction, or it could apply on an opt-in basis where each jurisdictional government would determine whether it will be adopted in their jurisdiction (and if not adopted immediately, the jurisdiction could make this determination at a later time).

3.4 Strawperson Model 2

Contestability for the delivery of solutions identified through the ISP or RIT-T process plus a jurisdictional body having increased responsibility for planning,



Strawperson model 2 involves competition for the delivery of the solution that is identified and selected through the ISP and RIT-T. It is a model of late competition where bidders would compete for the right to construct, own, operate and maintain a major transmission project that is identified through the current national planning process — that is, the current ISP and RIT-T processes. Bidders would be responding to a reasonably detailed specification of the solution — which could include network assets and/or non-network solutions — developed through that process.

This option is based on our current understanding of key features of:

- the NSW EII Act model for REZ network infrastructure projects and priority transmission infrastructure projects,¹⁶ and
- the role of VicGrid under the proposed Victorian Transmission Investment Framework. Reforms to implement VicGrid are currently in progress. Our understanding of the proposed reforms is based on the Department of Environment, Land, Water and Planning’s (DELWP) Victorian Transmission Investment Framework Preliminary Design Consultation Paper published on 4 July 2022.

To create a level playing field between the PTNSP and other contestable bidders, a jurisdictional body would have overall responsibility for the planning, engagement and preparatory activities needed to deliver a major transmission project, rather than the PTNSP. This includes activities related to building and maintaining social licence. If a competitive tender is undertaken, the selected tenderer would assume detailed responsibility for engagement once it is appointed, including community and consumer engagement during the

¹⁶ Aspects of this model are still under development, with the first contestable procurement process currently underway for the Central West Orana REZ. Our understanding of this model is based on the contents of the EII Act, the Office of Energy and Climate Change (OECC) policy summary dated 6 May 2022, the AER’s draft guidelines for NSW REZ contestable network infrastructure projects dated 6 May 2022 and discussions with OECC staff.

construction and operation phase (although the jurisdictional body may continue to have an oversight role in relation to the engagement process).

As in option 1, the jurisdictional body would have the discretion to adopt a competitive procurement process or have the project delivered by the PTNSP under the current non-contestable arrangements.

The successful tenderer would be responsible for the detailed design, construction, ownership, operation and maintenance involved with the major transmission project, including connections to its network assets. It would not be responsible for control of the system, which would remain the responsibility of AEMO and the PTNSP.¹⁸

The PTNSP would also be responsible for providing interface works to enable the connection of the new assets to its existing network and would do so as a regulated service.

This separation of responsibility for operation of different parts of the network, and the separation between operation and control, would require the NER to establish a clear distinction between the respective roles of the successful tenderer, the PTNSP and AEMO.

The AER would regulate the successful tenderer's revenues as in option 1, largely based on the tender outcomes.

The main objective of this option is to increase pressures for efficiency and reduced costs related to the detailed design, construction, financing, ownership, operation and maintenance of major transmission projects. The intent is also for this option reduce delays in the delivery of major transmission projects by addressing the current 'exclusive right but no obligation' issue. That said, the contestable procurement process and the impacts of increased contractual complexity could increase the time required for other parts of the process, so the overall impact on timing is unclear.

This option could apply in every NEM jurisdiction, or it could apply on a jurisdictional opt-in basis.

3.5

Strawperson model 3

Contestability for the delivery of solutions identified through the ISP or RIT-T



Strawperson model 3 involves competition for the delivery of the solution that is identified and selected by AEMO through the ISP and RIT-T. Like option 2, it is a model of late competition where the bidders compete for the right to construct, own, operate and maintain a major transmission project that is identified through the current planning process.

While similar to option 2, this option is based on AEMO's current declared network functions in an adoptive jurisdiction under the NEL and NER – that is, the current arrangements in Victoria.

¹⁸ See section A.1 of appendix A for a more fulsome discussion around the distinction between 'operation' and 'control' which has been assumed for the purposes of the strawperson contestability models.

The Victorian government is currently consulting on potential changes to these arrangements as part of its Victorian Transmission Investment Framework.¹⁹ Those proposed changes are not currently included in this option, but this option may be amended as the Review progresses if the proposed changes proceed.

Under this model, competitive bidders would be responding to a reasonably detailed 'output' or 'functional' specification of the solution that is developed by AEMO through the planning process including the current ISP and RIT-T processes. However, bidders would be able to propose alternative solutions that meet or exceed the requirements of AEMO's specification, including non-network solutions.

Under its declared network functions, AEMO would have a significant role in the planning process as both the jurisdictional planning body and a TNSP. While the successful tenderer would be responsible for all engagement activities once it has been appointed, including building and maintaining social licence, AEMO would be responsible for planning and engagement activities prior to the appointment of the successful tenderer.

AEMO would also be responsible for the contestable procurement process and for contracting with successful tenderers, rather than a separate jurisdictional body performing those functions as in option 2. Compared with the counterfactual and options 1 and 2, AEMO would also have a much greater role in operation, control, connection services and pricing. Operation and maintenance responsibilities would be split between AEMO, the successful tenderer (for the new assets) and an incumbent TNSP (for its existing network). The extent of each party's responsibilities would be set out in contracts with AEMO.

The regulation of the successful bidder's revenues is different in this option, compared to the counterfactual and options 1 and 2. Under this model, the AER would not have any role in regulating the contestable provider's or AEMO's costs and revenues, with neither AEMO nor the contestable provider having an AER revenue determination. The successful bidder would recover its costs under its agreement with AEMO. AEMO's maximum allowed revenues related to its declared network functions would be determined in accordance with the NER and a revenue methodology developed by AEMO.

This option would apply on an opt-in basis by jurisdiction. Any jurisdiction could elect to apply this model by becoming an adoptive jurisdiction for AEMO's declared network functions under the current arrangements in the NEL.

The objectives of this option are similar to option 2. It could increase pressures for efficiency and reduced costs related to the detailed design, construction, financing, ownership, operation and maintenance of major transmission projects. It could also potentially reduce delivery delays by addressing the 'exclusive right but no obligation' issue, but the contestable procurement process and the impacts of increased contractual complexity could increase the time required for other parts of the process, so the overall impact on timing is unclear.

¹⁹ See the Department of Environment, Land, Water and Planning (DELWP) Victorian Transmission Investment Framework Preliminary Design Consultation Paper published on 4 July 2022.

3.6

Strawperson Model 4

Competition for the development and delivery of solutions to meet a need identified in the



Strawperson model 4 involves competition for the development and delivery of solutions to meet a need that is identified through the ISP process. It is a model of early competition where the bidders compete for the right to develop, design, construct, own, operate, maintain and control a solution that meets a need that is identified through the planning process.

It is based on key features of:

- the early competition model that is currently under development by Ofgem for onshore electricity transmission networks in Great Britain
- competition models used by system operators in the PJM, New York and California transmission systems in the United States to implement competition for certain transmission projects under FERC Order 1000, and
- the sponsor-based model of competition set out in the HoustonKemp report for the AER on the regulatory treatment of large, discrete electricity transmission investments, which is in turn based on key features of the above US models.

The main difference between this model and all other strawperson models (and the counterfactual) is that bidders would be responding to an identified need that is described at a high level, rather than a reasonably detailed specification of a selected solution to that identified need. This approach would allow bidders to propose markedly different solutions to meet that identified need. The implication of this is that significant changes would be required to the current planning process, including the ISP and RIT-T (this is because the outcome of the current planning process is a specified solution to an identified need).

This option would need to apply in every NEM jurisdiction. This would allow AEMO to run contestable procurement processes across the NEM and assess tender responses that propose a range of different solutions available to meet the identified needs of the integrated system, including solutions in different regions or interconnectors that cross regional boundaries.

This would require AEMO to continue to undertake a modified version of the current ISP process, for example through a regular process where AEMO:

- develops scenarios, inputs and assumptions, and uses them to identify needs for the development of the transmission system, as in the current ISP
- solicits competitive tenders for solutions to meet the identified needs, and
- assesses the costs and benefits of each tendered solution, including comparing solutions against each other to select the solution with the highest net benefit and assess interdependencies and sequencing between different tendered solutions in different NEM regions to develop an integrated plan.

Inclusion of jurisdictional opt-in provisions would make it very challenging to retain integrated planning across the NEM and a version of the ISP process. Under an opt-in model that only applied in some jurisdictions or had different jurisdictional bodies running the tender process in each jurisdiction, it would not appear possible to assess the relative benefits of solutions located in different regions or that cross regional boundaries, or effectively assess the interactions and sequencing between solutions located in different regions.

Responsibility for engagement and preparatory activities would be more complex in this option. The successful bidder would be responsible for all engagement activities (including building and maintaining social licence) once it has been appointed. However, opportunities for engagement and preparatory activities prior to its appointment would likely be more limited than under the counterfactual and other options. This is because only a high-level 'identified need' will have been specified and different tenderers may develop and propose options located in different areas and involving very different impacts on local communities.

Responsibility for operation, maintenance, connections and control would be allocated as under option 2, with a need for increased clarity as to the division of responsibilities.

Revenue regulation would be as in option 3, with each successful bidder recovering its costs in accordance with its agreement with AEMO. Other aspects of pricing, eg setting connection and use of system prices, would be split between the successful bidder and PTNSP as in option 2.

This option aims to encourage competition, innovation and increased efficiency in the identification and design of solutions, including potentially increased use of non-network solutions. It also aims to increase pressures for efficiency and reduced costs related to design, construction, financing, ownership, operation, maintenance and control. The intent is that this option also speeds up the delivery of projects, although the overall impact on timeframes would depend on how long the contestable procurement process and revised planning process takes compared with current planning and investment processes and whether increased innovation may also increase the delivery timing or operating risks.

3.7 Request for feedback

QUESTION 1: CONTESTABILITY STRAWPERSON MODELS

1. Have we captured the key stages of the transmission planning and investment life-cycle, and the key activities and functions involved within each stage, in a useful way and are these reflective of what happens in practice?
2. Do these four strawperson models of contestability represent the broad spectrum of options that the Commission should consider? Do you consider that each of these strawperson models is likely to be workable in the NEM? Are there any additional models that the AEMC should consider, including a hybrid of some of these strawperson models?

3. Which strawperson model(s) do you consider is most likely to deliver net benefits to consumers and should proceed through to the AEMC's high-level assessment? Which feature(s) of this model is particularly attractive to you and why? Is there a feature(s) of this model that is problematic to you and why?
4. Is there a strawperson model that you consider is unlikely to be workable in the NEM or unlikely to deliver net benefits to consumers and therefore should not proceed to the AEMC's high-level assessment? Which feature(s) of this model is particularly problematic to you and why?
5. Appendices B-E set out the detailed descriptions of the strawperson models and the key advantages and disadvantages of each. Do you agree with the advantages and disadvantages as presented in those appendices, or are there points that you would add or remove?

4 ASSESSMENT FRAMEWORK

This chapter sets out the proposed assessment framework for the contestability workstream of the Review. It describes the overarching objective that guides all the Commission's work and outlines the criteria that we propose to use to inform our decision-making, including some of the key trade-offs associated with the criteria. It then briefly explains how else we may use the assessment criteria throughout the course of our work on contestability. This chapter also highlights several additional factors that will be relevant to the Commission's high-level assessment of the costs and benefits of increased contestability in the NEM, to be undertaken later this year.

4.1 The National Electricity Objective guides the Commission's work

This Review is considering potential changes to the NER. As such, the national energy objective relevant to this Review is the National Electricity Objective (NEO):²⁰

"to promote efficient investment in, and efficient operation and use of, electricity services for the long term interests of consumers of electricity with respect to:

- (a) price, quality, safety, reliability and security of supply of electricity and
- (b) the reliability, safety and security of the national electricity system."

Consistent with the terms of reference for the Review,²¹ the Commission considers that the relevant aspects of the NEO are the promotion of efficient investment in, and efficient operation and use of, electricity services for the long term interests of consumers of electricity with respect to price, quality, safety, security and reliability. In considering the potential for changes to the regulatory framework currently supporting the planning and delivery of major transmission projects in the NEM, we will consider whether a particular change is likely to promote more efficient decisions across these activities. Ultimately, this would promote the long term interests of consumers.

4.2 Assessment criteria will inform the commission's decision-making

We will use the criteria set out in Table 4.1 to guide our assessment of whether potential changes to the regulatory framework supporting the planning and delivery of major transmission projects in the NEM are likely to promote the NEO.

Table 4.1: Proposed assessment criteria for the contestability workstream of the Review

CRITERIA	EXPLANATION
Timeliness	<ul style="list-style-type: none"> Do the arrangements promote and appropriately balance the timely and

²⁰ Section 7 of the NEL.

²¹ Available on the project webpage [here](#).

CRITERIA	EXPLANATION
	<p>efficient delivery of major transmission projects (eg delivery at the optimal time identified in the ISP and avoiding delays that are likely to reduce the net benefits of the project for consumers)?</p> <ul style="list-style-type: none"> Do the arrangements risk creating additional complexity and coordination challenges and, if so, are there appropriate mechanisms in place to manage those risks and avoid inefficient delays?
Efficiency	<p>Do the arrangements promote efficient investment in, and use of, electricity services in the long term interests of consumers with regard to:</p> <ul style="list-style-type: none"> Cost – incentivising productive efficiency so that regulated revenues for transmission services reflect the efficient costs of providing the services Innovation – enabling and incentivising innovative solutions and delivery methods that can reduce costs and/or increase benefits, including non-network alternatives Risk allocation – allocating risks to the parties who are best placed to manage them and have the incentives to do so efficiently Incentives – providing effective incentives for all parties involved in the transmission planning and investment process to make efficient decisions Materiality of benefits – focussing on those functions and types of projects where the benefits of competition are likely to be the most material Wholesale market outcomes – facilitating efficient generation investment, connection process and wholesale market competition
Flexibility	<ul style="list-style-type: none"> Are the arrangements consistent with the long term direction of energy market reform? Are the arrangements flexible enough to accommodate uncertainty regarding future technological, policy and other changes?

CRITERIA	EXPLANATION
	<ul style="list-style-type: none"> Do the arrangements facilitate consistency between jurisdictions, including accommodating existing jurisdictional differences where appropriate?
Accountability and transparency	<ul style="list-style-type: none"> Do the arrangements promote clear accountability for security, reliability and safety of the operation of the transmission system? Do the arrangements promote clear allocation of responsibilities for each stage of the planning and investment process, with responsibility for each stage assigned to the entity who is best placed to perform it effectively? Is there clear overall accountability for the transmission system in each region, including clear responsibility and coordination on related matters such as pricing and connections? Do the arrangements facilitate effective consumer and local community engagement and appropriate transparency in the planning and investment processes?
Implementation	<ul style="list-style-type: none"> Are the arrangements clear and predictable? What are the expected costs of implementing the changes and compliance costs? How complex will changes be to implement? Is implementation dependent on agreement to changes to legislation or jurisdictional instruments? How long will implementation take and what does that mean for the timeframe to realise the benefits?
Decarbonisation	<ul style="list-style-type: none"> Will the arrangements enable decarbonisation of the energy market? How will the arrangements impact the pace of decarbonisation of the energy market?

The assessment criteria outlined in this table are consistent with the assessment criteria proposed for the broader Review, but we have made some minor adjustments to emphasise the issues likely to be most relevant to the contestability workstream.²² The criteria for the broader review are: outcomes for consumers; economic efficiency; implementation; flexibility; and decarbonisation. There are two differences worth highlighting:

1. **The “timeliness” criterion covers “outcomes for consumers”.** The “outcomes for consumers” criterion for the broader Review is intended to assess whether the regulatory arrangements promote and appropriately balance the timely and efficient delivery of transmission projects. We have placed the emphasis on timely delivery, to recognise that the ability of contestability to improve outcomes for consumers is contingent on its ability to enable timely delivery of major transmission projects. This focus on timeliness also recognises that the original issue driving consideration of increased contestability was the risk of late or non-delivery of these projects by primary TNSPs. Efficient delivery will be considered in the context of the “efficiency” criterion.
2. **We have included an additional criterion related to “accountability and transparency”.** The existing regulatory framework established by the NEL, NER and jurisdictional licensing regimes does not contemplate an approach where responsibility for the shared network is split between multiple owners or operators. Therefore, the introduction of arrangements which allow responsibility for the operation of the shared network to be shared between multiple parties (that is, between the primary TNSP and contestable service providers) requires careful consideration and assessment to ensure the safe, reliable and secure supply of electricity across the shared network is not put at risk. Transparency, and clear responsibility for, managing social licence issues and engaging with consumer and community stakeholders is also critical for the effective delivery of major transmission projects and is an important aspect of this criterion. We consider these issues are key considerations for this workstream, and worthy of a separate criterion.

4.3

We will use the assessment criteria to guide various aspects of this work

As noted above, we propose to use this assessment criteria when undertaking our high-level qualitative assessment of the costs and benefits associated with the preferred strawperson option(s). This assessment will inform our decision on whether there is merit in proceeding with a detailed program of work to develop the preferred regulatory and commercial model of contestability and assess in detail whether this model is likely to promote the NEO when compared against the counterfactual arrangements.

Ahead of then, this assessment criteria will provide a useful reference point to inform the Commission’s decision on which strawperson model(s) of contestability should progress through to that high-level assessment.

²² AEMC, Transmission Planning and Investment Review, consultation paper, 19 August 2021, pp. 4-6.

Further, the assessment criteria will provide a useful guide to enable us to focus on and refine various functions and activities within the preferred model(s) later in the process, to ensure we are able to put forward a design at the conclusion of Part 1 of this workstream (if we conclude there is benefit in doing so), that will achieve the most efficient outcomes possible.

4.4 There are Trade-offs between the criteria

Throughout the course of this workstream, the Commission will need to make judgements in relation to trade-offs between several of the assessment criteria. We have identified four key trade-offs in respect of which the Commission may need to exercise its judgement when thinking about whether a potential change to the regulatory framework supporting the planning and delivery of major transmission projects in the NEM meets the NEO:

- **timeliness vs efficiency:** arrangements that support the timely delivery of major transmission projects, vs opportunities to capture the fullest range of potential economic efficiencies associated with competitive provision of these projects
- **efficiency vs accountability:** arrangements that capture the potential economic efficiency benefits of contestability, vs ensuring clear accountability for security, reliability, safety and managing social licence
- **implementation vs flexibility:** developing clear and predictable regulatory frameworks that are, nevertheless, capable of adjusting to changing market circumstances
- **efficiency vs implementation:** the more complex the reforms, the more time will be required to implement them and the greater the risk they will not be able to apply to major projects in the 2022 or 2024 ISPs.

To inform the Commission's thinking, we are seeking feedback from stakeholders on these and other trade-offs. In particular, we are interested in views on which criteria are most important and critical in making decisions in the context of this workstream that will promote the long terms interests of consumers and whether the criteria should be weighted in any cost-benefit assessment.

The aim is to develop a transparent, robust and consistent basis for making sensible trade-offs between the criterion to assist our choice of options and initial high-level assessment later this year.

4.5 There are additional factors relevant to the Commission's high-level assessment of increased contestability in the NEM

As explained in section 3.2, the counterfactual arrangements identified in this paper are based on the current regulatory framework under the NEL and NER. They exclude:

- the current Victorian transmission planning and investment arrangements under the NEL and NER, or the proposed new Victorian Transmission Investment Framework, which both provide for contestable provision of transmission infrastructure in Victoria.

- the NSW EII Act model for REZ network infrastructure projects and priority transmission infrastructure projects, which support contestable provision of major transmission projects in NSW.

The current NSW EII Act arrangements are reflected in strawperson model 2 and the current Victorian arrangements are the basis of strawperson model 3. The proposed Victorian Transmission Investment Framework incorporates some elements of each of models 2 and 3, plus some new features.

In carrying out its qualitative assessment of the costs and benefits of the preferred strawperson model(s) against the counterfactual arrangements, the Commission will need to account for the fact that contestable arrangements are already in place (or will soon be in place) in Victoria and New South Wales. This could have a potentially material impact on the magnitude of costs and benefits available from introducing increased contestability in the NEM.

This workstream will also consider the extent to which a more consistent national approach to contestability would have benefits, noting that the details of the NSW arrangements are still being developed and aspects of the Victorian arrangements are currently being consulted on by the Victorian government as part of the design of the proposed Victorian Transmission Investment Framework.

Several of the strawperson models could also be applied by jurisdictions on an opt-in basis rather than automatically applying in every NEM jurisdiction. The extent of the costs and benefits will therefore partly depend on whether jurisdictions opt into the model, and how many jurisdictions do so.

The Commission is also mindful that the new rules for actioning the ISP have only recently been implemented and that a review of the ISP is scheduled to commence prior to 2025. Each of the strawperson models have been developed so that some form of ISP led by AEMO continues to apply to guide the integrated development and decarbonisation of the NEM, which the Commission considers is a prerequisite for contestability to provide net benefits for consumers. However, some of the strawperson models – in particular, strawperson model 4 – involve more substantial changes to the ISP than other models. If this workstream proceeds to Stage 2, the detailed assessment and assessment of contestability may be undertaken in parallel with the 2025 review of the ISP.

4.6 Request for feedback

QUESTION 2: ASSESSMENT FRAMEWORK

1. Are the assessment criteria appropriate for guiding the Commission's consideration of the strawperson models of contestability? Are there any other relevant criteria that have not already been captured?

2. How should the Commission approach the key trade-offs inherent in the different assessment criteria? How would you weight the different criteria against each other?

5 IDENTIFYING PROJECTS SUITABLE FOR CONTESTABLE DELIVERY

This Chapter considers several key matters relevant to the identification of major transmission projects likely to be suitable to contestable provision. It clarifies that, while the contestability workstream is focused only on major transmission projects, not all major transmission projects will be suitable to competitive delivery. In addition, it may not always be appropriate to proceed with a competitive procurement process for projects which have been identified as potentially suitable to competitive delivery. In this context, this chapter outlines some options for how the identification of a suitable sub-set of major projects could be approached, and how the decision on whether to proceed with a contestable procurement approach could be made. Finally, it sets out a few key considerations for this workstream.

5.1 Not all major transmission projects are suited to contestable delivery

The objective of the AEMC's Review is to make sure that the regulatory framework is sufficiently flexible to effectively accommodate the substantial investment requirements and heightened uncertainty associated with major transmission projects, relative to BAU investment. In this context, the Commission is investigating the case for increased contestability in the provision of major transmission projects, as distinct from BAU transmission investment.

As noted earlier in this paper, for the purposes of the Review, major transmission projects are considered to be those projects of a significant size, scale and scope such that they are associated with greater uncertainty relative to BAU investments. These can be ISP or non-ISP projects.²³ As the contestability workstream progresses, the AEMC will consider whether this description of 'major transmission projects' is appropriate for the purposes of this workstream and whether a more specific test or criteria are required as discussed in this chapter.

Not all major transmission projects will be suitable to competitive delivery. For example, major transmission projects that are highly meshed with the existing network or which involve replacement or refurbishment of existing assets are unlikely to be able to be made contestable without significant accountability challenges and risks. The Primary TNSP is likely to have advantages in delivering these projects and they are therefore unlikely to be attractive to potential investors and may not create the competitive tension required to drive efficient bids. In addition, major transmission projects that are not of a sufficiently high value may be unlikely to drive savings for consumers if a contestable procurement process is applied to them.²⁴

²³ Importantly, the Commission considers that the existing ex-ante incentive based regulatory framework remains appropriate to promote timely and efficient investment of business-as-usual projects in the NEM.

²⁴ As noted in the KPMG report accompanying this options paper, the cost and time required to run competitive tenders can be significant, particularly for early models. Commonly multiple rounds of tendering and negotiations are required under contestability. Larger projects are also likely to attract greater competition for ownership and financing with the potential to reduce the cost of capital.

Further, once a project has been identified as suitable to competitive provision, it is not necessarily the case that a competitive tender process will always be feasible or beneficial. For example, if there is an insufficient market of appropriately qualified and resourced potential providers available, it will also be difficult to create the competitive tension required to deliver the desired competitive outcomes.²⁵

For these reasons, arrangements to support increased contestability in the provision of transmission services must include mechanisms, processes and decision points for identifying which major transmission projects are suitable to contestable delivery, and for testing whether proceeding with a competitive procurement process for a specific project is feasible and likely to deliver efficient outcomes relative to provision under a non-contestable process.

These matters are discussed in the next sections.

5.2 Arrangements must identify major transmission projects suitable to competitive delivery

There are several ways to identify projects that are suitable to competitive delivery and hence within scope of the alternative transmission delivery arrangements being contemplated by the AEMC. The options range from the development of prescriptive criteria applied to all (or a subset of) major transmission projects, to a fully flexible approach which provides full discretion to an appropriate body to decide which major transmission projects should be considered for competitive provision. In many jurisdictions that apply contestable arrangements, a hybrid approach is used whereby flexibility is provided to a decision-maker to make case-by-case assessments on whether a project should proceed down a contestable or non-contestable delivery route, guided by criteria or principles.

The decision around which subset of major transmission projects are likely to be suitable to contestable delivery will be informed by the characteristics of major transmission projects in the NEM - for example, the size and scale of these projects, and the driver/nature of the identified need that these projects have been designed to address. The approach to how and when this decision is made will then be informed by matters such as the number of projects in the pipeline (and hence future opportunities for investors), the model of contestability to be implemented, whether it is applied on an opt-in or NEM wide basis and the role of and incentives on key decision-makers participating in the process.

An overview of the different approaches used in jurisdictions where contestable arrangements for transmission have been implemented is provided in Box 5.1 below. A more detailed overview which includes advantages and disadvantages of each approach is set out in appendix F. This appendix includes several case studies prepared by KPMG exploring different approaches to identifying which projects are suitable to contestable provision used in other NEM and international jurisdictions. That report is published with this options paper.

²⁵ The lack of workable competition may be an issue in the early stages of implementing a competitive process in the NEM and/or at other times, in response to market conditions. The level of competition may also vary depending on the size of the project and its location.

BOX 3: BROAD APPROACHES TO IDENTIFYING PROJECTS SUITABLE TO COMPETITIVE DELIVERY

Prescriptive approach - Competition criteria

In many jurisdictions where competition in the delivery of transmission has been introduced, the identification of projects suitable to competitive delivery are often determined by a set of criteria ('competition criteria') that broadly reflect the characteristics of those projects. Generally, these criteria seek to ensure that competitive tendering is only used for projects:

- that can be easily scoped for tendering and likely to attract significant market interest (which will support sufficient depth of competition being achieved) and
- where the potential value to consumers from competition is likely to (significantly) outweigh the costs of running a competitive tender.

Competitive criteria can be framed to identify projects that are suitable to competition or, alternatively, they can be articulated as exclusions or exemptions to the competitive process where provision by a primary TNSP is likely to remain the most appropriate route to delivery. 'New', 'separable' and 'high value' are three criteria often cited as examples of criteria that can be used to identify transmission projects suitable to competitive provision. Other key criteria can include the 'likely timeliness of delivering the investment through competition (compared to delivery by a TNSP under the current framework)' and 'location of the asset' (for example, whether an asset is located within a region or across multiple regions).

Flexible approach - Decision-maker discretion

At the extreme, a decision-maker could be provided with complete discretion to determine whether a project is suitable for competitive delivery. Under this approach, a decision-maker would have the right, but not the obligation, to go to tender. This approach may enable the benefits associated with the threat of contestability, as distinct from contestability/competition itself, to be captured and delivered to consumers through more timely and efficiently delivery of transmission under the existing regime. This discretion could be guided by an objective and/or principles (like the competition criteria) and would still require the decision-maker to form a view on the potential value to consumers from a project proceeding down a competitive delivery route.

Hybrid approach - Decision-maker discretion guided by criteria/principles

In some jurisdictions, a degree of flexibility is often built into these arrangements to provide decision-makers with the ability to make case-by-case assessments, recognising that there may be circumstances where a project that meets the competition criteria may, for other reasons, be better delivered by a primary TNSP under the existing regulatory regime. This discretion allows the decision-maker to trade-off other factors, for example, need for timely delivery, complexity or system security considerations, when deciding whether to proceed with competitive delivery.

5.3 Arrangements must enable a decision on whether to proceed with a contestable tender process for suitable projects

As noted above, once a decision has been made on which projects are suitable to competitive delivery, an additional decision(s) will also be needed on whether proceeding with a competitive procurement process for the functions and activities which would be sourced from external parties, is feasible. For example, in the absence of a sufficiently competitive field of bidders, a PTNSP or another bidder may be able to submit a price that would otherwise be higher than the regulated outcome and win the tender. This would not be consistent with the purpose of proceeding with a contestable process, which is to create the competitive tension required to drive efficient bids. In this context, it will be necessary for an appropriate body to have responsibility for deciding whether to proceed with a contestable procurement process for a specific project, or whether a non-contestable process is likely to deliver better outcomes.

In jurisdictions where contestable arrangements have been implemented, there is generally a two or more stage process that allows a decision-maker to form a view on whether to proceed with a competitive or non-competitive approach. These processes generally include an expression of interest, and various decision points. In New South Wales, the Infrastructure Planner can conduct market sounding and EOIs to test the feasibility of a contestable process for a specific project. It can undertake these processes at multiple stages of network design, as the scope and interest of providers is refined.

The approach to how and when this decision is made will be informed by matters such as the number of projects in the pipeline (and hence future opportunities for investors), the model of contestability to be implemented, whether it is applied on an opt-in or NEM wide basis and the role of and incentives on key decision-makers participating in the process.

5.4 There are several factors to consider for this workstream

We will undertake further work to determine the following:

1. The subset of major transmission projects that are likely to be suitable to contestable delivery, and the subset better left to delivery by the relevant primary TNSP under the current arrangements. As part of this work, the AEMC will provide a more detailed description of what constitutes a 'major transmission project' for the purposes of this workstream.
2. The approach to how and when a major transmission project would be identified as being suitable to competitive provision.
3. The approach to how and when the subsequent decision on whether to proceed with a contestable procurement process for a major transmission project identified as suitable for contestable provision would be made.

While the strawperson models in this paper do not specify criteria or principles for identifying which major transmission projects would be suitable to competitive delivery, we are interested in stakeholder views on which criteria or principles may provide a useful starting

point for this work. Stakeholders are encouraged to draw on the work undertaken by KPMG for the AER/AEMC to inform any feedback on this matter.

In respect of the second and third decisions above, the strawperson models do include an overview of how these decisions could be made in the context of the specific models:

- **Strawperson 1 and 2:** The jurisdictional body would determine which subset of major transmission projects are suitable to competitive delivery. This decision could be based on a broad discretion (as under the NSW EII Act model for REZs) or based on criteria set out in the NER. The jurisdictional body would then decide whether to proceed with a competitive tender process for a specific project, having formed a view on the likely degree of competitive tension (based on broad discretion, criteria or other eg, requirement for an early EOI)
- **Strawperson 3:** AEMO would determine which major transmission projects are suitable to competitive delivery based on criteria in the NER. These criteria currently include that a project must be separable and greater than \$10 million. This value threshold would need to be amended to ensure that only “major” transmission projects are captured.²⁶ AEMO would then have the discretion to decide not to proceed with a competitive tender process if that is unlikely to be practical or economic. This is in line with the existing process in Victoria.
- **Strawperson 4:** Models of early competition used in other jurisdictions use a mix of prescriptive criteria and flexible approaches to identify projects suitable for competition. AEMO would be the body responsible for making these decisions but given the complexity of this model and the possibility of having different stages (ie. competition for design, competition for delivery etc), more analysis is needed on the appropriate approach to making these decisions.

A range of approaches could be used and applied under any of the above models. However, a prescriptive approach is likely to be less suitable than the other approaches in the context of the NEM, given the differences between jurisdictions and different types of transmission projects that could impact the expected level of competition. In the context of the NEM, some flexibility is likely to be desirable.

5.5 Request for feedback

QUESTION 3: IDENTIFYING PROJECTS SUITABLE FOR CONTESTABLE DELIVERY

1. What criteria or principles should be used to identify the subset of major transmission projects likely to be suitable to competitive delivery?

²⁶ DELWP has proposed an increase to this threshold in the Victorian Transmission Investment Framework Preliminary Design Consultation Paper published on 4 July 2022. DELWP has sought feedback on two options for increasing this threshold. One option is to increase it to a higher value such as \$50 million or \$100 million. An alternative is a tiered approach with value bands, eg non-contestable for low value projects less than \$10m, a closed contestable tender for \$10-100m and the existing open tender for projects valued at over \$100m.

2. Which approach to decision-making regarding identifying projects suitable to competitive delivery and whether to proceed with a competitive procurement process for a specific project, is preferred and why (eg, prescriptive versus discretionary approach)?

ABBREVIATIONS

AEMC	Australian Energy Market Commission
AEMO	Australian Energy Market Operator
AER	Australian Energy Regulator
BAU	Business-as-usual
Commission	See AEMC
CPA	Contingent project application
DNA	Designated Network Asset
DTSO	Declared transmission system operator
ESB	Energy security board
IIO	Infrastructure investment objectives
ISP	Integrated system plan
IUSA	Identified user shared asset
MCE	Ministerial Council on Energy
NEL	National Electricity Law
NEO	National electricity objective
NERL	National Energy Retail Law
NERO	National energy retail objective
NGL	National Gas Law
NGO	National gas objective
PTNSP	Primary transmission network service provider
REZ	Renewable energy zone
RIT-T	Regulatory investment test for transmission
SSSP	System strength service provider
STPIS	Service target performance incentive scheme
TAPR	Transmission annual planning report
TNSP	Transmission network service provider

A DETAILED DESCRIPTION OF THE COUNTERFACTUAL

Current arrangements under NEL and NER (excluding VIC)

Plan	Preparatory activities	Engage	Construct	Finance and own	Operate and maintain	Control	Price
------	------------------------	--------	-----------	-----------------	----------------------	---------	-------

A.1 Description of responsibility for key steps in the transmission planning and investment process

Figure A.1: Plan

1: Planning functions	Responsible party
1a: Develop planning scenarios, <u>inputs</u> and assumptions	AEMO (ISP)
1b: Identify needs	AEMO (ISP)
1c: Identify credible options to address the needs	AEMO (ISP) and PTNSP based on RIT-T
1d: Assess costs and benefits of credible options	AEMO (ISP) and PTNSP based on RIT-T
1e: Determine the 'best' option*	AEMO (ISP) and PTNSP based on RIT-T
1f: Make decision to implement 'best' option	PTNSP**

Note: *The 'best' option is the option that maximises net benefits based on the cost-benefit assessment.

Note: **The PTNSP's decision to implement the option is subject to approval of revenues at function 9a.

Chapter 5 of the NER sets out the framework governing the planning of transmission networks in the NEM. It includes the rules for AEMO's Integrated System Plan, which were introduced as part of the ESB's Actionable ISP rule changes in 2020. It is prepared by AEMO every two years and sets out an integrated whole of system plan for the development of the NEM. An overview of the ISP process is provided in Box 4.

The primary TNSP in a jurisdiction must undertake a RIT-T for all actionable ISP projects. The PTNSP must also undertake a RIT-T before undertaking other projects above a specified cost threshold (\$7 million) unless they meet the RIT-T exemption criteria set out in the NER.²⁷

For actional ISP projects, the RIT-T process utilises several of the key outputs from the ISP process including the scenarios, inputs, assumptions and identified needs. The RIT-T process involves the PTNSP undertaking a more detailed cost-benefit assessment of candidate options

²⁷ Rules 5.16 and 5.16A of the NER set out the rules relevant to the application of the RIT-T to projects which are not, and are, actional ISP projects (respectively).

and identifying the option with the highest net benefit, including a more comprehensive assessment of potential non-network options. The ISP and RIT-T must be undertaken in accordance with the requirements of the NER and relevant AER guidelines.

The 'best' option is the option that maximises net benefits based on the cost-benefit assessment.

The PTNSP's decision to implement the option is subject to approval of revenues at function 9a.

Each TNSP must prepare a Transmission Annual Planning Report (TAPR).²⁸ The TAPR analyses the expected future operation and development of the TNSP's network over a 10 year planning period and must include the matters set out in the NER. TNSPs also undertake joint planning with AEMO, other TNSPs and DNSPs.

BOX 4: OVERVIEW OF THE INTEGRATED SYSTEM PLAN PROCESS

The ISP is prepared by AEMO every two years and sets out an integrated whole of system plan for the development of the NEM. It includes an optimal development path of network, generation and storage investment to meet the needs of the NEM over a planning period of at least 20 years (the draft 2022 ISP uses a planning period from 2022 to 2050).

The ISP:

- develops scenarios, inputs and assumptions that are used in the ISP, RIT-T and other planning processes
- identifies the power system needs over the planning period based on those scenarios, inputs and assumptions
- identifies hundreds of 'candidate development paths', which are comprised of different combinations and timing of network, generation and storage investments to meet the power system needs
- assesses the costs and benefits of each candidate development path
- identifies the 'optimal development path', which is the candidate development path assessed as having the maximum net benefit
- identifies 'actionable ISP projects', which are transmission network projects that form part of the optimal development path and where the relevant TNSP is required to commence a RIT-T process within the next two years
- identifies 'future ISP projects', which are transmission network projects that form part of the optimal development path but are not currently actionable ISP projects, and
- identifies 'REZ design reports' that are to be undertaken by the jurisdictional planning body for identified REZs and 'preparatory activities' that are to be undertaken by the relevant TNSP for actionable ISP projects and specified future ISP projects.

28 Rule 5.12 of the NER.

Chapter 5 of the NER also allocates certain planning responsibilities to the jurisdictional planning body in each jurisdiction.²⁹ At present, all PTNSPs are also the jurisdictional planning body for their jurisdiction (AEMO is the jurisdictional planning body in Victoria).

Once a transmission project is selected as the preferred option following the ISP and RIT-T process, the TNSP can apply to the AER for funding to recover its efficient costs of providing the project. For ISP projects and other major transmission projects, this usually occurs through a contingent project application (CPA).³⁰ The decision whether to undertake the project rests with the TNSP, with nothing in the NER requiring a TNSP to implement a project that has passed a RIT-T.

Figure A.2: Undertake preparatory activities

2: Preparatory activities functions	Responsible party
2a: Undertake or direct preparatory activities for future ISP projects and actionable ISP projects	PTNSP
2b: Develop REZ design reports	PTNSP (as jurisdictional planning body)

The NER provisions related to the ISP contains two mechanisms that are relevant to various forms of preparatory activities and other preliminary work related to major transmission projects. These relate to REZ design reports³¹ and the ability for AEMO to require preparatory activities be undertaken for future ISP projects.³² These tools aim to inform the selection of a preferred option, including by helping manage engagement and social licence issues and enabling more accurate route and cost information to be obtained so AEMO can make a more informed decision on the costs and benefits of the project in the next ISP. They can also help accelerate the delivery of major transmission projects:

- **REZ design reports:** Recent amendments to the NER made by the ESB introduced REZ design reports as a new tool for planning REZs. REZ design reports are prepared by the relevant jurisdictional planning body, which in practice is currently the PTNSP. The ISP will set out which REZs require a REZ design report.
- **Preparatory activities for future ISP projects:** In the ISP, AEMO may also require a TNSP to undertake preparatory activities for a future ISP project. The ISP will set out the relevant future ISP projects for which preparatory activities are required and the TNSP that is required to undertake those activities – in practice, this will be the relevant PTNSP. The relevant PTNSP must also undertake preparatory activities for all actionable ISP projects.

²⁹ "Jurisdictional planning body" is defined in Chapter 10 of the NER as: "The entity nominated by the relevant Minister as having transmission system planning responsibility in that participating jurisdiction."

³⁰ Rule 6.6A of the NER set out the rules relevant to application of the CPA process.

³¹ Clause 5.24.1 of the NER.

³² Clause 5.22.6(c)-(d) of the NER.

Preparatory activities are defined in the NER as:³³

"activities to design and investigate the costs and benefits of actionable ISP projects, future ISP projects and REZ stages (as applicable), including:

1. *detailed engineering design;*
2. *route selection and easement assessment work;*
3. *cost estimation based on engineering design and route selection;*
4. *preliminary assessment of environmental and planning approvals; and*
5. *council and stakeholder engagement."*

In other parts of this review, the Commission is considering the appropriate scope of preparatory activities and the related concept of 'early works' that is used by AEMO in the 2022 Draft ISP. In the Stage 2 draft report, the Commission recommended amending the preparatory activities definition to clarify that these activities must be undertaken for the purpose of informing the *selection* of a preferred option, rather than the *delivery* of that option once it has been selected.

Figure A.3: Engage

3: Engagement functions	Responsible party
3a: Undertake stakeholder engagement activities at the planning stage	PTNSP
3b: Undertake stakeholder engagement activities during construction and operation	PTNSP

The NER places a range of obligations on AEMO, TNSPs, and the AER to support stakeholder consultation as part of the identification and delivery of major transmission projects. The rules are largely non-prescriptive in how each of these parties meets their obligations.

The NER does not impose express obligations related to engagement with local communities, consumers or other stakeholders as part of the planning, construction or operation of transmission projects, except for consumer engagement as part of the AER revenue determination process and general stakeholder consultation as part of the RIT-T process. A range of consultation and engagement obligations are imposed under jurisdictional requirements related to issues such as land access, planning and environmental consents. In practice, the PTNSP is responsible for all engagement activities.

The Draft 2022 ISP³⁴ includes a greater focus on the importance of engagement and social licence issues as part of the planning and project selection process.

³³ Clause 5.10.2 of the NER.

³⁴ See [here](#)

Issues related to social licence and building community acceptance are being considered by the Commission in other parts of this review.

Figure A.4: Construct

5: Construction functions*	Responsible party
5a: Undertake detailed design and route selection	PTNSP (contestably procured in practice)
5b: Acquire land, <u>consents</u> and approvals	PTNSP
5c: Construct assets	PTNSP (contestably procured in practice)
5d: Contract with non-network providers	PTNSP (non-network services are contestably procured)
5e: Construct network interface works	N/A

Note: *There is no function 4 in the counterfactual. In each of the contestability options, function 4 relates to undertaking the contestable tender process.

The PTNSP is responsible for all issues related to the design and construction of the project. This includes entering into contracts with providers of any non-network options.

In practice, the PTNSP undertakes a contestable procurement process for design and construction services. Stakeholders have submitted that these design and construction functions account for the majority of the costs of a major transmission project.

Figure A.5: Finance and own

6: Ownership functions	Responsible party
6a: Own network assets	PTNSP
6b: Finance network assets	PTNSP (contestably procured in practice)

The PTNSP is responsible for owning and financing the project. In practice, the PTNSP obtains debt financing on a contestable basis.

Figure A.6: Operate and maintain

7: Operation and maintenance functions	Responsible party
7a: Operate network	PTNSP
7b: Provide connection services	PTNSP (some connection services are contestable)
7c: Maintain network	PTNSP
7d: Replace and augment network	PTNSP
7e: Operate and maintain interface works	N/A

Each TNSP is responsible for operating and maintaining its transmission network in accordance with the requirements of the NER. In particular, Chapter 4 of the NER sets out TNSPs' obligations related to power system security and Schedules 5.1a and 5.1 set out system standards and network performance requirements. TNSPs are also subject to jurisdictional reliability standards and the AER's service target performance incentive scheme (STPIS).

In practice, some TNSPs contestably procure aspects of their operation and maintenance functions.

AEMO also has an important role in aspects of the operation of the power system under Chapters 3 and 4 of the NER. For example, clause 3.2.3 provides that AEMO must manage the day-to-day operation of the power system, using its reasonable endeavours to maintain power system security in accordance with the NER. Chapter 4 of the NER sets out AEMO's roles, obligations and intervention powers in relation to power system security.

The PTNSP in each region is also the System Strength Service Provider (SSSP) and is responsible for providing system strength services.³⁵

The PTNSP is responsible for the connections process in accordance with Chapter 5 of the NER, with AEMO also having a role in relation to certain connection issues related to power system security. The NER sets out which aspects of the transmission services relevant to connections must be provided by the PTNSP as a prescribed transmission service and which aspects are subject to contestable provision.³⁶ In particular, Identified User Shared Assets (IUSAs) and Designated Network Assets (DNAs) may be designed, constructed and owned by a person other than the PTNSP. A third party IUSA or DNA not owned or leased by a PTNSP

³⁵ The system strength aspects of the counterfactual are based on the NER as amended by the National Electricity Amendment (Efficient management of system strength on the power system) Rule 2021, which has not yet commenced other than the transitional provisions. If there is more than one TNSP in a region, the SSSP is the jurisdictional planning body for the region if that entity is also a TNSP, or otherwise is the Coordinating NSP for the region – see NER clause 5.20C.3. All PTNSPs are currently also the jurisdictional planning body and Coordinating NSP. AEMO is the jurisdictional planning body, Coordinating NSP and SSSP in Victoria.

³⁶ See clause 5.2A.4 of the NER.

must be operated, maintained and controlled by the PTNSP under a network operating agreement.³⁷

The PTNSP is also responsible for augmenting and replacing its network as required to meet jurisdictional reliability standards and the network performance requirements in Schedule 5.1 of the NER. Augmentations and replacements are planned through the TAPR and RIT-T processes.

Figure A.7: Control

8: Control functions	Responsible party
8a: Control transmission system	PTNSP and AEMO

Control of the transmission system is currently the responsibility of AEMO and PTNSPs.

As discussed above, AEMO and TNSPs have a range of power system security obligations under Chapter 4 of the NER. AEMO acts as the overall system controller of the power system and delegates control of certain parts of the power system to different parties including TNSPs in accordance with the NER.

AEMO has appointed each of the PTNSPs as a System Operator under clause 4.3.3 of the NER to assist with the management of power system security. This involves AEMO delegating specified power system security responsibilities to the PTNSP under an instrument of delegation.³⁸ TNSPs also have a range of power system security obligations under Chapter 4, including obligations related to maintaining and restoring power system security in an emergency, eg obligations related to emergency frequency control schemes, load shedding and system restart services.

The NER does not draw an express distinction between the 'operation' functions discussed above and 'control' of the transmission system. However, we consider it useful to separate out these functions as there is likely to be significant benefit in maintaining clear singular accountability for control of the overall transmission system even where the operation and maintenance of certain parts of the network are contestable under some of the contestability options.

For the purposes of this paper, we define 'control' as the activities and functions undertaken remotely and immediately to ensure that the power system continues to operate safely and securely within its defined technical limits. Many of these activities and functions involve automatic actions delivered through devices such as transformer tap changers, SVCs and special protection schemes. Automatic load shedding and emergency frequency control schemes are part of this control function. AEMO has overall responsibility for control of the

³⁷ See clauses 5.2A.4 and 5.2A.7 of the NER.

³⁸ See "Instruments of Delegation for TNSPs" [here](#).

power system and it coordinates and delegates responsibility for control of parts of the power system to different parties such as TNSPs and generators.

'Control' differs from 'operation', which we define as the activities and functions undertaken by people on the ground and involving physical assets to ensure that those assets continue to operate safely and securely within their defined technical limits. Together with 'maintenance', 'operation' activities form part of a business's asset management processes, as they can significantly impact asset lifecycle costs, management of risk, and service delivery performance.

Figure A.8: Price

9: Pricing functions	Responsible party
9a: Set overall revenue or price cap	AER based on Chapter 6A assessment of efficient costs
9b: Set connection prices	PTNSP
9c: Set use of system prices	PTNSP

Major transmission projects are regulated as prescribed transmission services under Chapter 6A of the NER.

The AER is responsible for determining the maximum allowable revenue that the TNSP can recover from customers for the provision of prescribed transmission services. The AER makes a revenue determination for each TSNP that covers a regulatory control period, which is usually five years. The recovery of revenues for major transmission projects are generally approved by the AER as part of a contingent project application following completion of the RIT-T process rather than as part of the five- yearly revenue determination.

The TNSP is responsible for developing prices for its prescribed transmission services in accordance with the transmission pricing provisions in Chapter 6A of the NER, the AER's transmission pricing methodology guidelines and a pricing methodology that is approved by the AER. Where there is more than one TNSP in a region, the PTNSP acts as the coordinating NSP for certain aspects of pricing under Chapter 6A.

B DETAILED DESCRIPTION OF STRAWPERSON 1

Contestability for construction and ownership



B.1 Description of responsibility for key steps in the transmission planning and investment process

Figure B.1: Description of responsibility for key steps in the transmission planning and investment process

1: Planning functions	Responsible party
1a: Develop planning scenarios, inputs and assumptions	AEMO (ISP)
1b: Identify needs	AEMO (ISP) and jurisdictional body with input from PTNSP
1c: Identify credible options to address the needs	AEMO (ISP) and jurisdictional body with input from PTNSP based on RIT-T
1d: Assess costs and benefits of credible options	AEMO (ISP) and jurisdictional body with input from PTNSP based on RIT-T
1e: Determine the 'best' option	AEMO (ISP) and jurisdictional body with input from PTNSP based on RIT-T
1f: Make decision to implement 'best' option	Jurisdictional body

This option does not involve any changes to AEMO's planning functions, including the ISP.

The current RIT-T arrangements would continue to apply, but a jurisdictional body would undertake RIT-Ts for major transmission projects that may become subject to contestability. The role of this jurisdictional body is based on elements of the roles of EnergyCo and the Consumer Trustee in NSW and VicGrid in Victoria. This role could be performed by those existing bodies in those jurisdictions, and by a new body or existing government department or other existing body in other jurisdictions.

The jurisdictional body would make the decision to implement the option that was selected in the planning process, rather than the PTNSP making that decision as under the current arrangements. As discussed below, the jurisdictional body would undertake a competitive tender for design, construction and ownership of the project but the PTNSP would operate, maintain and control the assets once constructed. This would require an obligation on the

PTNSP to perform those operation, maintenance and control functions to avoid the current problem where it has an exclusive right but not obligation.

Having a different jurisdictional body responsible for parts of the planning process in each NEM jurisdiction or region would create complications for projects that involve multiple jurisdictions, eg interconnectors. Coordination between the relevant bodies would be required, as is currently the case for coordination between PTNSPs in different jurisdictions.

The PTNSP would provide input to assist the jurisdictional body in undertaking its planning functions but would not be responsible for the RIT-T for these projects. All information and intellectual property produced by the PTNSP through the planning of a project would be the property of the jurisdictional body. These arrangements seek to avoid the PTNSP obtaining an unfair competitive advantage in a subsequent competitive procurement process.

This change would only apply to certain types of major transmission projects (see appendix A) with the PTNSP remaining responsible for RIT-Ts for all other projects.

The PTNSP would remain responsible for TAPRs. The jurisdictional body may also choose to develop longer term planning documents to complement the ISP and TAPRs, eg similar to the roles of the Consumer Trustee in NSW and VicGrid in Victoria.

Figure B.2: Undertake preparatory activities

2: Preparatory activities functions	Responsible party
2a: Undertake or direct preparatory activities for future ISP projects and actionable ISP projects	Jurisdictional body with input from PTNSP
2b: Develop REZ design reports	Jurisdictional body or PTNSP (as jurisdictional planning body)

As described in the counterfactual, the NER provisions related to the ISP contain mechanisms for preparatory activities and REZ design reports.

Preparatory activities would be the responsibility of the jurisdictional body. These preparatory activities would help inform the selection of the preferred option, as well as future RIT-Ts and the contestable tender process by the jurisdictional body. Should the PTNSP undertake some of these preparatory activities for the jurisdictional body, they would need to be undertaken in a way that does not provide the PTNSP with an unfair competitive advantage.

REZ design reports are the responsibility of the jurisdictional planning body under the NER ie. currently the PTNSPs. However, to create a level playing field for future tenders for construction and ownership of the REZ, this role would best be transferred to the jurisdictional body that is responsible for other planning functions for major transmission projects. That said, the PTNSP remains responsible for construction and ownership of most

of the transmission network, and responsible for operation and maintenance of the entire network, so there could be benefits in leaving this role with the PTNSP.

Figure B.3: Engage

3: Engagement functions	Responsible party
3a: Undertake stakeholder engagement activities at the planning stage	Jurisdictional body with input from the PTNSP
3b: Undertake stakeholder engagement activities during construction and operation	Selected tenderer and PTNSP

As with the PTNSP's current planning functions, responsibility for engagement during the planning stage would need to be transferred from the PTNSP to another body. The jurisdictional body would lead engagement activities during the planning stage for major transmission projects that could become contestable. It could obtain input from the PTNSP, drawing on the PTNSP's local knowledge of its network and customers. The jurisdictional body would use the outcomes of this engagement process to inform design, route selection and other matters that help it inform the RIT-T process and refine the details of the proposed project prior to issuing requests for tenders.

To promote and manage local social licence considerations, the tender process will need to carefully manage information flows and contact between the jurisdictional body, potential tenderers and affected local communities.

Once the selected tenderer has been appointed, the tenderer would be responsible for engagement during the construction phase. The PTNSP would be responsible for engagement during the operation stage. This fragmentation of responsibility for engagement at different stages of the lifecycle of the project would require coordination mechanisms between the relevant parties to mitigate the risks of poor outcomes.

Figure B.4: Undertake a competitive tender process

4: Contestable tender process functions	Responsible party
4a: Determine whether to utilise a contestable process and, if so, undertake the contestable tender	Jurisdictional body
4b: Develop functional specification for contestable assets/services	Jurisdictional body with input from PTNSP
4c: Contract with network operators for delivery and coordination of services	Jurisdictional body

The jurisdictional body would determine whether to conduct a contestable tender process. This could be a broad discretion (eg as in the NSW Electricity Infrastructure Act (EII Act) model), or it could be based on specified criteria (eg as in the current Victorian transmission contestability model and proposed Ofgem onshore transmission contestability model). In some cases, the threat of contestability may be sufficient to deliver improvements in efficiency and timeliness by the PTNSP even if there is not an actual competitive tender.

The contestable tender process would be conducted by the jurisdictional body. The jurisdictional body, with input from the PTNSP, would develop a functional specification for the services and assets that are subject to the tender. The jurisdictional body would contract with the successful tenderer to deliver the project.

As discussed below, the successful tenderer would only be responsible for design, construction and ownership of the new assets. The PTNSP would be responsible for ongoing operation and maintenance of those new assets, as well as the construction of interface works. To help coordinate their relevant functions, the jurisdictional body, PTNSP and successful tenderer would enter into a tripartite coordination agreement.

Under all four options, the contestable tender would be open to all parties who met certain qualification criteria. These criteria would include a requirement to be registered as a TNSP by AEMO under Chapter 3 of the NER and hold any necessary jurisdictional transmission licences. A ring-fenced affiliate of the PTNSP would be able to participate in the tender, but amended ring-fencing provisions would require separation between contestable and non-contestable services.

Figure B.5: Construct

5: Construction functions	Responsible party
5a: Undertake detailed design and route selection	Selected tenderer
5b: Acquire land, consents and approvals	PTNSP and selected tenderer
5c: Construct assets	Selected tenderer
5d: Contract with non-network providers	PTNSP (non-network services are contestably procured)
5e: Construct network interface works	PTNSP

If a competitive tender is undertaken, the detailed design and construction of the transmission project would be carried out by the successful tenderer. This would include responsibility for acquiring land, consents and approvals that are required for construction of the assets.

Some interface works will be required to connect the new transmission assets to the existing transmission network, eg cutting in or moving existing lines and making changes to

protection, control and monitoring systems. These interface works would be provided by the PTNSP as a prescribed transmission service.³⁹

Contestability would be limited to the design and construction of network assets under this option. As part of the development of the functional specification of the assets that are to be tendered, the jurisdictional body and PTNSP would consider the potential for non-network solutions to be used as a more efficient alternative to network assets. Where non-network solutions are adopted, the PTNSP would be responsible for contracting with non-network providers.

Figure B.6: Finance an own

6: Ownership functions	Responsible party
6a: Own network assets	Selected tenderer
6b: Finance network assets	Selected tenderer

The ownership and financing of major transmission projects would be contestable and would be the responsibility of the successful tenderer.

Figure B.7: Operate and maintain

7: Operation and maintenance functions	Responsible party
7a: Operate network	PTNSP (may contract some functions to selected tenderer)
7b: Provide connection services	PTNSP (some connection services are contestable)
7c: Maintain network	PTNSP (may contract some functions to selected tenderer)
7d: Replace and augment network	PTNSP (may contract some functions to selected tenderer)
7e: Operate and maintain interface works	PTNSP

Operation and maintenance would not be contestable. Once the assets have been constructed by the successful tenderer and successfully completed the connection and commissioning process, the PTNSP would be responsible for operating and maintaining those assets. This approach would ensure there continues to be clear singular accountability for operation, maintenance and control of the transmission system, with no limited changes

³⁹ The detailed design of each of the options would also need to consider the roles and responsibilities of any parties other than the PTNSP that own a third party IUSA or DNA, including in relation to cut-in works or upgrades to a DNA.

required to the PTNSP's obligations under Chapters 4 and 5 of the NER or jurisdictional reliability standards.

Under the IUSA and DNA arrangements in the NER, the PTNSP provides operation and maintenance services to the owner of the IUSA/DNA as a negotiated transmission service under a network operating agreement between the PTNSP and the IUSA/DNA owner. This means that the PTNSP's costs for providing those services are recovered from the IUSA/DNA owner based on negotiation, rather than regulated by the AER and recovered from customers. That model is appropriate for IUSAs and DNAs that are constructed at the request of, and primarily benefit, an individual connecting party or group of connecting parties.

Major transmission projects that are covered by this review are different to IUSAs/DNAs in that they will benefit all users and should be subject to revenue regulation by the AER and paid for by all transmission users. Treating operation and maintenance as a negotiated service would also mean that each tenderer would need to negotiate charges for operation and maintenance with the PTNSP, which would likely create a barrier to competition or an uneven playing field between the PTNSP and other bidders. Accordingly, under this option, operation and maintenance would be provided by the PTNSP as a prescribed transmission service.

The PTNSP would remain responsible for all issues related to connections.

Figure B.8: Control

8: Control functions	Responsible party
8a: Control transmission system	PTNSP and AEMO

Under all four contestability options, the PTNSP and AEMO would retain their current responsibilities for control of the transmission network

Figure B.9: Price

9: Pricing functions	Responsible party
9a: Set overall revenue or price cap	AER based on Chapter 6A assessment of efficient costs
9b: Set connection prices	PTNSP
9c: Set use of system prices	PTNSP (as coordinating NSP)*

Note: *The Coordinating NSP role is currently used in the Chapter 6A transmission pricing provisions where there is more than one TNSP in a jurisdiction. All Coordinating NSPs are currently also PTNSPs (AEMO performs this role in Victoria).

The tender process would involve competition between tenderers on the price they propose to be paid to construct and own the assets, and related risk sharing arrangements such as

variation mechanisms. There are several options for how those costs could be regulated and recovered.

For this option, we propose that the AER would have a role in regulating the successful tenderer's revenues. The AER would make a determination on the successful tenderer's maximum allowed revenues, as it currently does for other TNSPs. However, the AER would largely rely on the competitive tender process to be satisfied that the outcomes of the tender process represent efficient and prudent costs rather than applying its usual rate of return instrument and expenditure assessment models and tools. This would mean that the regulated revenues would generally be based on the outcomes of the tender process. The AER would also have a role in overseeing the tender process to be satisfied that the tender can produce efficient and prudent outcomes. The AER's role would be similar to its role for REZ network infrastructure projects under the NSW EII Act model⁴⁰ and its role for competitive tenders for gas pipelines under the NGR.⁴¹

An alternative to the above approach would be to establish a new mechanism for the payments made between the jurisdictional body and the successful tenderer under the contract to be recovered from consumers without an AER revenue determination. This could be similar to the approaches discussed in options 3 or 4 below.

The PTNSP would incur costs related to a range of functions under this option, including assisting with preparatory activities, constructing interface works, and providing operation, maintenance and control services. These costs would be recovered by the PTNSP as part of its revenue allowance for providing prescribed transmission services under its standard AER revenue determination process. They could also be recovered through a contingent project application or cost pass through application, where appropriate.

The PTNSP would remain responsible for all matters related to transmission pricing, including connections prices.

B.2 Summary of the key advantages and disadvantages of the strawperson 1

To aid discussion and comparison of the models at this early stage, we have undertaken a high-level assessment of the key advantages and disadvantages of each of the strawperson models, having regard to the key objectives that form the basis of the assessment framework (see Appendix B). The key advantages and disadvantages of strawperson 1 are set out in Table B.1 below.

40 See the AER's draft guidelines for NSW REZ contestable network infrastructure projects dated 6 May 2022, available [here](#).

41 See Part 5 of the NGR.

Table B.1: Strawperson 1: Contestability for construction and ownership

ASSESSMENT CRITERIA	ADVANTAGES	DISADVANTAGES
Timeliness	<ul style="list-style-type: none"> • Could avoid delivery delays in some projects by addressing the 'exclusive right but no obligation' issue • Maintains the current integrated approach to planning under the ISP • Less additional complexity and coordination challenges to resolve compared with the other options 	<ul style="list-style-type: none"> • Contestable procurement process could increase the time required to deliver projects unless it saves time elsewhere in the investment process • Increased complexity and coordination challenges in allocation of responsibilities could lead to some delays, but is a less significant risk than in the other options
Efficiency	<ul style="list-style-type: none"> • Could increase efficiency and reduce costs related to design, construction and financing • Less additional complexity in the connections process compared with the other options, so is least likely to lead to connections delays 	<ul style="list-style-type: none"> • Contestability is limited to functions that are already contestably procured by PTNSPs in practice, so not clear if it will deliver additional efficiency benefits compared with the counterfactual • Less scope for improvements in innovation or other aspects of efficiency than other options
Flexibility	<ul style="list-style-type: none"> • Contains flexibility to determine which projects are suitable for competitive delivery, and flexibility to make this decision at different stages in a project's planning process and adjust the approach over time • Could apply on an opt-in basis by jurisdiction to accommodate jurisdictional differences 	<ul style="list-style-type: none"> • Not as flexible as other options as the potential scope of contestability is constrained
Accountability	<ul style="list-style-type: none"> • Accountability is more complex than the 	<ul style="list-style-type: none"> • Split accountability for construction and ownership

ASSESSMENT CRITERIA	ADVANTAGES	DISADVANTAGES
	<p>counterfactual but less complex than the other options</p> <ul style="list-style-type: none"> A single TNSP remains responsible for reliability, security and safety of the transmission system No material changes to the ISP Clear accountability is maintained for engagement and preparatory activities Maintains clear AER oversight of revenue regulation and a single TNSP responsible for transmission pricing 	<p>vs operation and control</p> <ul style="list-style-type: none"> New jurisdictional body required to maintain clear accountability for engagement and preparatory activities Three different parties responsible for engagement at different stages of the project lifecycle
Implementation	<ul style="list-style-type: none"> Implementation would require less changes and take less time than options 2 or 4 Arrangements are relatively clear and predictable and are based on existing NEM precedents 	<ul style="list-style-type: none"> Would require changes to the NER and potentially the NEL Would require the establishment of new jurisdictional bodies (or conferring new functions on existing bodies) and funding for those bodies May require changes to jurisdictional licensing arrangements Would involve increased ongoing costs for new functions and increased coordination between parties
Decarbonisation	<ul style="list-style-type: none"> Could enable faster decarbonisation of the energy sector if it avoids delivery delays by addressing the 'exclusive right but no obligation' issue 	<ul style="list-style-type: none"> Could slow down the pace of decarbonisation if the contestable delivery process increases the time taken to deliver projects and time cannot be saved elsewhere

ASSESSMENT CRI- TERIA	ADVANTAGES	DISADVANTAGES
		<ul style="list-style-type: none"> Increased complexity and coordination challenges in allocation of responsibilities could lead to some delays to projects which could slow the pace of decarbonisation of the energy sector, although this is a less significant risk than under the other options.

C DETAILED DESCRIPTION OF STRAWPERSON 2

Contestability for the delivery of solutions identified through the ISP or RIT-T process plus a jurisdictional body having increased responsibility for planning,



C.1 Description of responsibility for key steps in the transmission planning and investment process

Figure C.1: Plan

1: Planning functions	Responsible party
1a: Develop planning scenarios, <u>inputs</u> and assumptions	AEMO (ISP)
1b: Identify needs	AEMO (ISP)
1c: Identify credible options to address the needs	AEMO (ISP) and jurisdictional body based on RIT-T
1d: Assess costs and benefits of credible options	AEMO (ISP) and jurisdictional body based on RIT-T
1e: Determine the 'best' option	AEMO (ISP and RIT-T)
1f: Make decision to implement 'best' option	Jurisdictional body

The planning arrangements under this option would be largely the same as in option 1. There would be no changes to the ISP. The current RIT-T arrangements would apply, but a jurisdictional body would undertake RIT-Ts for major transmission projects that may become subject to contestability. The PTNSP would remain responsible for TAPRs for its network.

While this option is based on many of the features of the arrangements for REZ network infrastructure projects under the NSW EII Act, there are some important features of that model that are not included in this option. In particular, under the NSW EII Act, the RIT-T does not apply to projects that are authorised or directed by the Consumer Trustee or Minister.⁴² In this strawperson model, the RIT-T would apply to all major transmission projects.

The jurisdictional body could choose to develop long term planning documents to complement the ISP and TAPRs, similar to the Consumer Trustee's Infrastructure Investment

⁴² Network infrastructure projects under the EII Act are governed by an alternative regulatory framework under the EII Act rather than the NER. This framework includes authorisations or directions by the Consumer Trustee or Minister rather than an equivalent to the RIT-T.

Objectives (IIO) Report and EnergyCo's Network Infrastructure Strategy. However, any such reports would not have any special status under the NER in terms of approving projects outside of the ISP and RIT-T processes.

Figure C.2: Undertake preparatory activities

2: Preparatory activities functions	Responsible party
2a: Undertake or direct preparatory activities for future ISP projects and actionable ISP projects	Jurisdictional body
2b: Develop REZ design reports	Jurisdictional body

The jurisdictional body would be responsible for all functions related to preparatory activities. This includes undertaking preparatory activities for actionable ISP projects and for any future ISP projects where preparatory activities are required in the ISP. It also includes developing REZ design reports (or a jurisdictional equivalent). This is like the role of EnergyCo for NSW REZs, except that, in the Draft 2022 ISP, AEMO does not propose to require REZ design reports to be undertaken for NSW REZs under the NER on the basis that equivalent reports are prepared as part of the EII Act arrangements.⁴³ It may be appropriate for the jurisdictional body to become the jurisdictional planning body instead of the PTNSP.

The jurisdictional body would recover its costs of undertaking preparatory activities from the successful tenderer once it is appointed, with the successful tenderer recovering those costs through its regulated revenues for undertaking the project. This is broadly consistent with the proposed arrangements for EnergyCo in NSW. A mechanism may be needed to oversee the efficiency of these costs.

A new mechanism would also be needed to allow the jurisdictional body to recover costs associated with planning, engagement and preparatory activities for projects that do not ultimately proceed after that work is undertaken.

Figure C.3: Engage

3: Engagement functions	Responsible party
3a: Undertake stakeholder engagement activities at the planning stage	Jurisdictional body
3b: Undertake stakeholder engagement activities during construction and operation	Selected tenderer

⁴³ See for example the Infrastructure Planner's role under section 30 of the EII Act.

The jurisdictional body would be responsible for all engagement activities during the planning stage for major transmission projects that could become contestable. This is similar to the role of EnergyCo as the Infrastructure Planner for REZs in NSW under the EII Act⁴⁴ and the proposed role of VicGrid for REZs in Victoria.

Assuming a competitive tender is undertaken, the selected tenderer would assume detailed responsibility for engagement including during the construction and operation phase. The jurisdictional body may continue to have an oversight role in relation to the engagement process.

Figure C.4: Undertake a competitive tender process

4: Contestable tender process functions	Responsible party
4a: Determine whether to utilise a contestable process and, if so, undertake the contestable tender	Jurisdictional body
4b: Develop functional specification for contestable assets/services	Jurisdictional body
4c: Contract with network operators for delivery and coordination of services	Jurisdictional body

The competitive tender process would be very similar to option 1, but with a broader scope. The jurisdictional body would determine whether to conduct a contestable tender process, either based on a broad discretion or specified principles (see Appendix A). The contestable tender process would be conducted by the jurisdictional body, who would develop a specification for the services and assets that are subject to the tender. The contestable tender would be open to all parties who met certain qualification criteria, with ring-fencing rules applying to the PTNSP.

The jurisdictional body would contract with the successful tenderer to design, own, operate and maintain the project. The jurisdictional body, PTNSP and successful tenderer would enter into a coordination agreement to coordinate their respective functions and works.

⁴⁴ The Minister appoints an Infrastructure Planner under section 63 of the EII Act. Under section 23 of the EII Act, the Minister must appoint EnergyCo as the Infrastructure Planner for five specified REZs.

Figure C.5: Construct

5: Construction functions	Responsible party
5a: Undertake detailed design and route selection	Selected tenderer
5b: Acquire land, <u>consents</u> and approvals	Jurisdictional body and selected tenderer
5c: Construct assets	Selected tenderer
5d: Contract with non-network providers	Selected tenderer
5e: Construct network interface works	PTNSP

As in option 1, the detailed design and construction services would be provided by the successful tenderer, including acquiring land, consents and approvals. The PTNSP would be responsible for providing interface works as a prescribed transmission service.

A difference from option 1 is that the specification for the services that are subject to the contestable tender should be prepared with sufficient flexibility to allow tenderers to propose non-network solutions. Where non-network solutions are utilised, the successful tenderer would be responsible for contracting with non-network providers.

Figure C.6: Finance and own

6: Ownership functions	Responsible party
6a: Own network assets	Selected tenderer
6b: Finance network assets	Selected tenderer

As for option 1, ownership and financing of major transmission projects would be the responsibility of the successful tenderer.

Figure C.7: Operate and maintain

7: Operation and maintenance functions	Responsible party
7a: Operate network	Selected tenderer*
7b: Provide connection services	Selected tenderer
7c: Maintain network	Selected tenderer
7d: Replace and augment network	Selected tenderer(s)
7e: Operate and maintain interface works	PTNSP

Note: *Under options 2 to 4, it would be possible for the successful tenderer to contract with the PTNSP for the PTNSP to provide some or all of the network operation and maintenance functions if the PTNSP agreed to do so

The NSW EII Act model is flexible in relation to the extent of the contestable network operator's role in the carrying out of a network infrastructure project. The extent of the contestable network operator's role for REZs authorised by the Consumer Trustee will be set out in the Consumer Trustee's authorisation for the project.⁴⁵ Its role could potentially be limited to construction and ownership or could potentially extend to some or all elements of ownership, operation or control.

For this strawperson option, we have taken the approach that the successful tenderer is responsible for operation and maintenance of the new transmission assets, but not control. The successful tenderer would be required to register as a TNSP and would be subject to all the obligations of a TNSP under Chapters 4 and 5 of the NER in relation to operation of its network. The successful tenderer would also be expected to be required to hold a jurisdictional transmission licence.

The successful tenderer would be subject to a service performance incentive scheme, which could be either the AER's transmission STPIS or a contractual incentive scheme under its contract with the jurisdictional body. These incentives would be more complex to design than under the counterfactual or option 1 as there would no longer be a single party responsible for reliability of the transmission network and it may be harder to apportion responsibility for outages.

The successful tenderer would provide operation and maintenance services as prescribed transmission services under the NER.

AEMO would retain its current responsibilities related to system operation and power system security.

This separation of responsibility for operation of different parts of the network, and the separation between operation and control, would require the NER to establish a clear distinction between the respective roles of:

⁴⁵ See section 31 of the EII Act and the Office of Energy and Climate Change (OECC) policy summary dated 6 May 2022.

- the successful tenderer in relation to operation and maintenance of its network assets, including its responsibilities as a TNSP under Chapters 4 and 5
- the PTNSP in relation to operation and maintenance of its network assets, and control of the overall transmission system, including its responsibilities as a TNSP under Chapters 4 and 5 and its functions as a delegated System Operator under Chapter 4
- AEMO in relation to its power system operations and wholesale market dispatch functions under Chapter 3 and its power system security functions under Chapter 4.

Allocation of responsibility for the provision of system strength services would also be required. For the purposes of this option, we propose that the PTNSP as the System Strength Service Provider (SSSP) would be responsible for providing and charging for system strength services in the region, including system strength services utilised by parties connected to the successful tenderer's network. This approach would be most consistent with the AEMC's recent system strength rule change. However, it would be difficult for the PTNSP as SSSP to provide system strength services on networks that it does not own or maintain, so this approach may be less efficient and more complex than under the counterfactual. Where the contestable transmission project is a new REZ, an alternative would be to make the successful tenderer responsible for providing system strength services to parties connected to the REZ, but that would require more significant changes to the system strength regime in the NER.

There are several options for how responsibility for connections could be allocated under this option. In the NSW EII Act model, flexibility is provided through the scope of functions covered by the Consumer Trustee's authorisation. Under this option, we propose that the successful tenderer would be responsible for managing connections by generators or loads to its network assets. AEMO would retain its current functions related to connections.

There would likely need to be new requirements for the successful tenderer to consult with (or obtain the approval of) the PTNSP in relation to connections and generator performance standards. This would be needed to ensure that connections to the new transmission network assets do not have an adverse impact on power system security or quality for the PTNSP's existing network, or existing users connected to the PTNSP's network.

This split in responsibility for connections and operation in different parts of the network would mean that there is not a single party that can contract with connecting generators and loads to provide them with a use of system service for the entire transmission network. This issue is addressed in the Victorian transmission contestability arrangements by connecting parties entering into a connection agreement with the contestable TNSP and a use of system agreement with AEMO, and AEMO entering into network agreements with every contestable TNSP to enable it to provide this end-to-end use of system service (see option 3). That approach would not be possible here unless the PTNSP was required to take on a similar role to AEMO in Victoria and entered into network agreements and use of system agreements with all contestable providers and connecting parties. Alternatively, it may be possible to amend the NER to clarify the obligations of the relevant parties and avoid the need for additional contracts.

The NER and/or the contract between the jurisdictional body and the successful tenderer would need to specify the extent of the tenderer's responsibility for augmentations or replacements to its network.

Under the current rules, the PTNSP is responsible for all augmentations and replacements and has obligations to augment and replace its network as necessary to continue to meet its obligations under the NER. This includes the network performance requirements in Schedule 5.1 and jurisdictional reliability standards. In order to promote future competition for major separable augmentations and replacements, it may be appropriate for the successful tenderer's obligations regarding augmentation of its network assets to be limited to minor augmentations to meet the original specification set out in the tender documents. Where a major augmentation is required, it may be most appropriate for that to be subject to a new contestable tender if it is separable from existing assets. The PTNSP would be responsible for non-separable replacements and augmentations to its existing network.

The NER and/or contracts would need to specify whether the successful tenderer's obligations continue in perpetuity and include replacing the assets, or whether they only apply for a specified period with the assets transferred to another party at the end of that period. For example, it is proposed that contestable NSW REZ network infrastructure projects under the EII Act would be contestably provided for a specified concession period and then transferred to EnergyCo or another party at the end of the concession period.

The PTNSP would be responsible for providing interface works, as in option 1.

Figure C.8: Control

8: Control functions	Responsible party
8a: Control transmission system	PTNSP and AEMO

The PTNSP and AEMO would retain their current responsibilities for control of the transmission network, as discussed above.

Figure C.9: Price

9: Pricing functions	Responsible party
9a: Set overall revenue or price cap	AER based on contestable tender outcomes
9b: Set connection prices	Selected tenderer
9c: Set use of system prices	PTNSP (as coordinating NSP)

The arrangements for regulating the successful tenderer's revenues would be the same as in option 1. The AER would make a revenue determination that would largely rely on the competitive tender process to demonstrate that the tenderer's costs are efficient and prudent. The AER would regulate the PTNSP's costs for interface works and its control functions under its standard revenue determination process.

The PTNSP would remain responsible for pricing of prescribed transmission use of system services and prescribed common services. The PTNSP would also act as the coordinating NSP for certain aspects of pricing under Chapter 6A. Pricing for connection services would be split between the PTNSP and the successful tenderer, with each party pricing connections to its network. The PTNSP and successful tenderer would both need to prepare transmission pricing methodologies that are approved by the AER.

This approach to pricing is different to the approach for NSW REZs under the EII Act. Under the EII Act, the Chapter 6A pricing provisions do not apply. Successful tenderers recover payments permitted under their AER revenue determination from the Scheme Financial Vehicle (SFV).⁴⁶ The SFV then recovers those payments through contributions from all NSW DNSPs, who pass the costs on to retailers and retail customers.⁴⁷

C.2 Summary of the key advantages and disadvantages of the strawperson 2

The key advantages and disadvantages of strawperson 2 are set out in Table C.1 below.

Table C.1: Strawperson 2: Contestability for the delivery of solutions identified through the ISP or RIT-T process plus a jurisdictional body having increased responsibility for planning, engagement and preparatory activities

ASSESSMENT CRITERIA	ADVANTAGES	DISADVANTAGES
Timeliness	<ul style="list-style-type: none"> Could avoid delivery delays in some projects by addressing the 'exclusive right but no obligation' issue Maintains the current integrated approach to planning under the ISP 	<ul style="list-style-type: none"> Contestable procurement process could increase the time required to deliver projects, unless it saves time elsewhere in the investment process Increased complexity and coordination challenges in allocation of responsibilities could lead to delays to projects and potentially increased disputes

⁴⁶ See sections 38 and 39 of the EII Act.

⁴⁷ See sections 54 to 58 of the EII Act and the AER's NSW Electricity Infrastructure Fund – Draft Contribution Determination Guideline, May 2022.

ASSESSMENT CRITERIA	ADVANTAGES	DISADVANTAGES
Efficiency	<ul style="list-style-type: none"> • Could increase efficiency and reduce costs related to design, construction, financing, operation and maintenance • Could lead to increased innovation in solution delivery • Could improve risk allocation and incentives as competing tenderers can propose different risk sharing models • Scope for improvements in innovation and use of non-network solutions is more than in the counterfactual and option 1 but less than in option 4 	<ul style="list-style-type: none"> • Scope of potential efficiency benefits is unclear given detailed design, construction and financing are already contestably procured by PTNSPs in practice and make up the majority of the costs of major projects • Service performance incentive arrangements could be more complex as there is not a single party responsible for reliability • Multiple parties responsible for connections could lead to longer connections processes and increased complexity of connection agreements for generators
Flexibility	<ul style="list-style-type: none"> • Contains flexibility to determine which projects are suitable for competitive delivery, and flexibility to make this decision at different stages in a project's planning process and adjust the approach over time • Could apply on an opt-in basis by jurisdiction to accommodate jurisdictional differences 	<ul style="list-style-type: none"> • Not as flexible as option 4
Accountability	<ul style="list-style-type: none"> • No material changes to the ISP • Clear accountability is maintained for engagement and preparatory activities 	<ul style="list-style-type: none"> • Split accountability for design, construction, operation and maintenance of different parts of the network, and a separation between operation of individual parts of the network and control of the overall system. Would require complex NER provisions and contractual

ASSESSMENT CRITERIA	ADVANTAGES	DISADVANTAGES
		<p>arrangements to allocate and coordinate responsibility</p> <ul style="list-style-type: none"> Split accountability for connections would lead to increased complexity. Would also no longer be a single party that can contract with connecting generators and loads to provide them with a connection and use of system service for the entire transmission network, which would need to be addressed through new NER or contractual mechanisms New jurisdictional body required to maintain clear accountability for engagement and preparatory activities
Implementation	<ul style="list-style-type: none"> Arrangements are more complex than the counterfactual and option 1, but less complex than option 4 and draw on existing Australian jurisdictional precedents 	<ul style="list-style-type: none"> Would require a lengthy consultation, design and implementation process – would likely be several years before the changes could commence Would require changes to the NEL and extensive changes to the NER Would require the establishment of new jurisdictional bodies (or conferring new functions on existing bodies) and funding for those bodies Likely to require changes to jurisdictional licensing arrangements in some jurisdictions

ASSESSMENT CRITERIA	ADVANTAGES	DISADVANTAGES
		<ul style="list-style-type: none"> • Would involve increased ongoing costs for new functions and increased coordination between parties
Decarbonisation	<ul style="list-style-type: none"> • Could enable faster decarbonisation of the energy sector if it avoids delivery delays by addressing the 'exclusive right but no obligation' issue 	<ul style="list-style-type: none"> • Could slow down the pace of decarbonisation if the contestable delivery process increases the time taken to deliver projects and time cannot be saved elsewhere • Increased complexity and coordination challenges in allocation of responsibilities could lead to some delays to transmission projects and/or generator connections, which could slow the pace of decarbonisation of the energy sector.

D DETAILED DESCRIPTION OF STRAWPERSON 3

Contestability for the delivery of solutions identified through the ISP or RIT-T



D.1 Description of responsibility for key steps in the transmission planning and investment process

Figure D.1: Plan

1: Planning functions	Responsible party
1a: Develop planning scenarios, <u>inputs</u> and assumptions	AEMO (ISP)
1b: Identify needs	AEMO (ISP)
1c: Identify credible options to address the needs	AEMO (ISP and RIT-T)
1d: Assess costs and benefits of credible options	AEMO (ISP and RIT-T)
1e: Determine the 'best' option	AEMO (ISP and RIT-T)
1f: Make decision to implement 'best' option	AEMO

AEMO has a dedicated Victorian planning team, which is separate from its national planning function. AEMO's national planning team is responsible for the ISP and other national planning activities, while the Victorian planning team is responsible for specific Victorian planning functions. Under this option, AEMO's national planning team would retain all its current responsibilities including the ISP, while a separate AEMO jurisdictional planning team would become the jurisdictional planning body and take on all or most of the PTNSP's planning functions in the relevant jurisdiction(s). This would include undertaking RIT-Ts and TAPRs instead of the PTNSP. There would be no changes to the ISP or RIT-T arrangements.

BOX 5: AEMO'S DECLARED NETWORK FUNCTIONS UNDER THE NEL

Under the current Victorian contestability arrangements, AEMO has certain declared network functions in an adoptive jurisdiction. Those functions are set out in section 50C of the NEL. Any jurisdiction can become an adoptive jurisdiction in accordance with the process in the NEL. Victoria is currently the only adoptive jurisdiction.

In exercising its declared network functions, AEMO is treated as a TNSP under the NEL. The successful tenderer for a contestable transmission project, and AusNet Services for its existing transmission network, are also TNSPs and are defined as 'declared transmission system operators' (DTSOs) under the NEL and NEL.

The NEL provides that certain references to a network service provider are construed as references to AEMO and certain other references are construed as references to the relevant DTSO. The arrangements for connections and augmentations to the declared transmission system of an adoptive jurisdiction also distinguish between the 'incumbent DTSO' (the owner and operator of the relevant part of the existing transmission network, eg AusNet Services) and other DTSOs. AEMO has also been appointed as the jurisdictional planning body for Victoria, meaning that it is responsible for any responsibilities allocated to the jurisdictional planning body under the NEL.

This approach creates considerable additional complexity compared with the counterfactual arrangements in other jurisdictions but enables AEMO to perform certain functions that would normally be performed by the PTNSP without the need for major changes to the substance of most of the relevant NEL or NEL provisions.

The Victorian government is currently consulting on changes to these arrangements as part of the development of the Victorian Transmission Investment Framework. Under the proposed changes, VicGrid would have a number of new responsibilities that would replace AEMO's current declared network functions. If adopted, those proposed changes would impact the plan, undertake preparatory activities, engage, and undertake competitive tender process stages of this strawperson model, and may have consequential impacts on other stages.

Extending AEMO's declared network functions to other adoptive jurisdictions would require increases to AEMO's resources and funding.

Figure D.2: Undertake preparatory activities

2: Preparatory activities functions	Responsible party
2a: Undertake or direct preparatory activities for future ISP projects and actionable ISP projects	AEMO
2b: Develop REZ design reports	AEMO (as jurisdictional planning body)

AEMO would undertake preparatory activities for actionable ISP projects and future ISP projects, as it currently does in Victoria. It would also develop REZ design reports in its role as the jurisdictional planning body.

Figure D.3: Engage

3: Engagement functions	Responsible party
3a: Undertake stakeholder engagement activities at the planning stage	AEMO and selected tenderer
3b: Undertake stakeholder engagement activities during construction and operation	Selected tenderer

The NEL and NER declared network functions provisions do not expressly address responsibility for engagement as part of the planning, construction or operation of transmission projects.

In practice, the successful tenderer is responsible for all engagement activities once it has been appointed. AEMO is responsible for engagement in the planning process prior to the appointment of the successful tenderer.⁴⁸

Figure D.4: Undertake competitive tender process

4: Contestable tender process functions	Responsible party
4a: Determine whether to utilise a contestable process and, if so, undertake the contestable tender	AEMO
4b: Develop functional specification for contestable assets/services	AEMO
4c: Contract with network operators for delivery and coordination of services	AEMO

The competitive tender process would be similar to option 2 but undertaken by AEMO.

AEMO would determine whether to undertake a contestable tender process or have the incumbent DTSO undertake the project on a non-contestable basis. This decision would be based on the contestable augmentation criteria in clause 8.11.6 of the NER, which provide that:

- an augmentation of a declared shared network is a contestable augmentation if:
 - the capital cost is reasonably expected to exceed \$10 million; and
 - the augmentation is separable from the existing declared shared network; but

⁴⁸ Under the proposed Victorian Transmission Investment Framework, VicGrid would take over these responsibilities from AEMO and have a significantly expanded role in community engagement.

- an augmentation is not a contestable augmentation if:
 - AEMO considers the delay in implementation that would necessarily result from treating the augmentation as a contestable augmentation would unduly prejudice power system security; or
 - AEMO does not consider it economical or practicable to treat the augmentation as a contestable augmentation.

This existing \$10 million threshold is significantly less than is contemplated in the types of 'major transmission projects' that are covered by this review. The threshold can be amended by a rule change, but only if the rule change is submitted by AEMO, a DTSO that is a party to a network agreement with AEMO, or a Minister of an adoptive jurisdiction.⁴⁹

AEMO would conduct the contestable tender process and contract with the successful tenderer to design, own, operate and maintain the project. The tender process and agreements would be subject to the requirements and principles set out in the NER.⁵⁰

Tenderers would respond to a reasonably detailed 'output' or 'functional' specification developed by AEMO as part of the RIT-T process. AEMO would prepare, in consultation with the incumbent DTSO, a tender specification setting out the scope of the contestable project, including details of the technical interface with the existing network.⁵¹ However, tenderers would be able to propose alternative solutions that meet or exceed the requirements of this specification, including non-network solutions.

AEMO would contract with the incumbent DTSO to undertake interface works and any non-separable augmentations. AEMO, the incumbent DTSO and the successful tenderer would enter into a tripartite agreement to coordinate their respective functions and works.

The successful tenderer and incumbent DTSOs would both also enter into network agreements with AEMO.⁵²

49 Section 91(7) of the NEL. DELWP has proposed an increase to this threshold in the Victorian Transmission Investment Framework Preliminary Design Consultation Paper. DELWP has sought feedback on two options for increasing this threshold. One option is to increase it to a higher value such as \$50 million or \$100 million. An alternative is a tiered approach with value bands, eg non-contestable for low value projects less than \$10m, a closed contestable tender for \$10-100m and the existing open tender for projects valued at over \$100m.

50 Clause 8.11 and Schedule 8.11 of the NER.

51 Clause 8.11(b) of the NER.

52 Section 50D of the NEL.

Figure D.5: Construct

5: Construction functions	Responsible party
5a: Undertake detailed design and route selection	Selected tenderer
5b: Acquire land, <u>consents</u> and approvals	Selected tenderer
5c: Construct assets	Selected tenderer
5d: Contract with non-network providers	AEMO and selected tenderer
5e: Construct network interface works	PTNSP (as incumbent DTSO)

As in options 1 and 2, the detailed design and construction services would be provided by the successful tenderer. The incumbent DTSO would provide interface works. AEMO could directly contract with non-network providers who participated in the tender process. The selected tenderer could also contract with non-network providers so that it provides a combination of network and non-network solutions as part of its tender response.

Figure D.6: Finance and own

6: Ownership functions	Responsible party
6a: Own network assets	Selected tenderer
6b: Finance network assets	Selected tenderer

As for all other options, ownership and financing of major transmission projects would be contestable and the responsibility of the successful tenderer.

Figure D.7: Operate and maintain

7: Operation and maintenance functions	Responsible party
7a: Operate network	Selected tenderer
7b: Provide connection services	AEMO and selected tenderer
7c: Maintain network	Selected tenderer
7d: Replace and augment network	AEMO and selected tenderer
7e: Operate and maintain interface works	PTNSP (as incumbent DTSO)

Operation and maintenance of the project would be contestable.

Operation and maintenance responsibilities would be split between AEMO, the successful tenderer (for the new assets) and the incumbent DTSO (for its existing network). The extent of each party's operation and maintenance responsibilities would be set out in its contracts with AEMO.

AEMO would be the SSSP, responsible for providing and pricing system strength services across the transmission network including for connections to new contestable assets. AEMO would procure system strength services from DTSOs or non-network providers through a contestable tender process.

AEMO would have primary responsibility for the connections process, with connection applications under the NER being submitted to AEMO. However, connecting parties would need to enter into agreements with both AEMO and the successful tenderer as the relevant DTSO.⁵³ In practice, we understand that connecting parties usually need to enter into multiple different agreements related to the connection process, compared with the counterfactual where usually only one connection agreement is required.

Figure D.8: Control

8: Control functions	Responsible party
8a: Control transmission system	PTNSP and AEMO

AEMO (in its role as system operator under the NER) and the incumbent DTSO would be responsible for control of the transmission network in a similar manner to under option 2.

Figure D.9: Price

9: Pricing functions	Responsible party
9a: Set overall revenue or price cap	AEMO
9b: Set connection prices	Selected tenderer
9c: Set use of system prices	AEMO

The regulation of the successful tenderer's revenues is different in this option to the counterfactual and options 1 and 2. The AER would not have any role in regulating the contestable provider's or AEMO's costs and revenues, with neither AEMO nor the contestable provider having an AER revenue determination under Chapter 6A of the NER.

⁵³ Section 50E of the NEL.

The successful tenderer would recover its costs under its agreement with AEMO.

Schedule 6A.4 of the NER modifies how Chapter 6A applies to AEMO and DTSOs. AEMO does not have an AER revenue determination. Instead, AEMO's maximum allowed revenues related to its declared network functions would be determined in accordance with Schedule 6A.4 of the NER and a revenue methodology developed by AEMO.⁵⁴ AEMO would recover the costs of payments to the successful tenderer from consumers through prescribed transmission service charges in accordance with its revenue methodology and pricing methodology.

AEMO would be responsible for pricing prescribed transmission use of system services and common transmission services. The successful tenderer(s) and incumbent DTSO would be responsible for pricing connection services. AEMO, the successful tenderer and the incumbent DTSO would all need to prepare transmission pricing methodologies that are approved by the AER.

D.2 Summary of the key advantages and disadvantages of the strawperson 3

The key advantages and disadvantages of strawperson 3 are set out in the table below.

Table D.1: Strawperson 3: Contestability for the delivery of solutions identified through the ISP or RIT-T process

ASSESSMENT CRITERIA	ADVANTAGES	DISADVANTAGES
Timeliness	<ul style="list-style-type: none"> • Could avoid delivery delays in some projects by addressing the 'exclusive right but no obligation' issue • Maintains the current integrated approach to planning under the ISP 	<ul style="list-style-type: none"> • Contestable procurement process could increase the time required to deliver projects unless it saves time elsewhere in the investment process (eg the procurement process would replace the current AER contingent project process) • Increased complexity and coordination challenges in allocation of responsibilities could lead to some delays to projects and potentially increased disputes
Efficiency	<ul style="list-style-type: none"> • Could increase efficiency and reduce costs related to design, construction, financing, 	<ul style="list-style-type: none"> • Scope of potential efficiency benefits is unclear given design, construction and

⁵⁴ Clause S6A.4.2(c) of the NER.

ASSESSMENT CRITERIA	ADVANTAGES	DISADVANTAGES
	<p>operation and maintenance</p> <ul style="list-style-type: none"> • Could lead to increased innovation in solution delivery • Could improve risk allocation and incentives as competing tenderers propose different risk sharing models • Scope for improvements in innovation and use of non-network solutions is more than in the counterfactual and option 1 but less than in option 4 	<p>financing are already contestably procured by PTNSPs in practice</p> <ul style="list-style-type: none"> • Less scope for financial incentives given AEMO's not-for-profit nature • Service performance incentive arrangements could be more complex as there is not a single party responsible for reliability • Multiple parties responsible for connections could lead to longer connections processes and increased complexity of connection agreements
Flexibility	<ul style="list-style-type: none"> • Would apply on an opt-in basis by jurisdiction to accommodate jurisdictional differences 	<ul style="list-style-type: none"> • Not as flexible as option 4 • Current \$10 million threshold in the NER for determining which projects are suitable for competition may be too low and inflexible if the aim of reforms is to focus competition on major projects
Accountability	<ul style="list-style-type: none"> • No material changes to the ISP • AEMO's increased role results in clearer accountability for several functions including operations and connections compared with options 2 or 4, but accountability is more complex than in the counterfactual 	<ul style="list-style-type: none"> • Split accountability for design, construction, operation and maintenance of different parts of the network, but risks are mitigated by AEMO's role • Accountability for engagement is split, but this risk could be minimised by combining this option with a new jurisdictional body that is responsible for aspects of these issues as Victoria is doing with VicGrid

ASSESSMENT CRITERIA	ADVANTAGES	DISADVANTAGES
		<ul style="list-style-type: none"> No AER role in regulating the revenues of TNSPs – is instead overseen by AEMO and the contestable tender process
Implementation	<ul style="list-style-type: none"> Can be implemented under the current NEL and NER arrangements without any changes Could be the quickest to implement of the options 	<ul style="list-style-type: none"> May require changes to jurisdictional licensing arrangements in some jurisdictions Would require increased funding for AEMO
Decarbonisation	<ul style="list-style-type: none"> Could enable faster decarbonisation of the energy sector if it avoids delivery delays by addressing the 'exclusive right but no obligation' issue 	<ul style="list-style-type: none"> Could slow down the pace of decarbonisation if the contestable delivery process increases the time taken to deliver projects and time cannot be saved elsewhere Increased complexity and coordination challenges in allocation of responsibilities could lead to some delays to transmission projects and/or generator connections, which could slow the pace of decarbonisation of the energy sector.

E DETAILED DESCRIPTION OF STRAWPERSON 4

Competition for the development and delivery of solutions to meet a need



E.1 Description of responsibility for key steps in the transmission planning and investment process

Figure E.1: Plan

1: Planning functions	Responsible party
1a: Develop planning scenarios, <u>inputs</u> and assumptions	AEMO (ISP or replacement)
1b: Identify needs	AEMO (ISP or replacement)
1c: Identify credible options to address the needs	Tenderers
1d: Assess costs and benefits of credible options	AEMO based on tenders and modified ISP or RIT-T
1e: Determine the 'best' option	AEMO based on tenders
1f: Make decision to implement 'best' option*	AEMO

Note: The decision to implement the option is subject to approval of revenues at function 9a.

The key distinguishing feature of this option is that bidders would have flexibility to develop and propose their own options for solutions to an 'identified need' that is described by AEMO in the ISP. This approach is described in HoustonKemp's proposed sponsor-based model, summarised in Box 6

BOX 6: HOUSTONKEMP'S PROPOSED SPONSOR-BASED MODEL

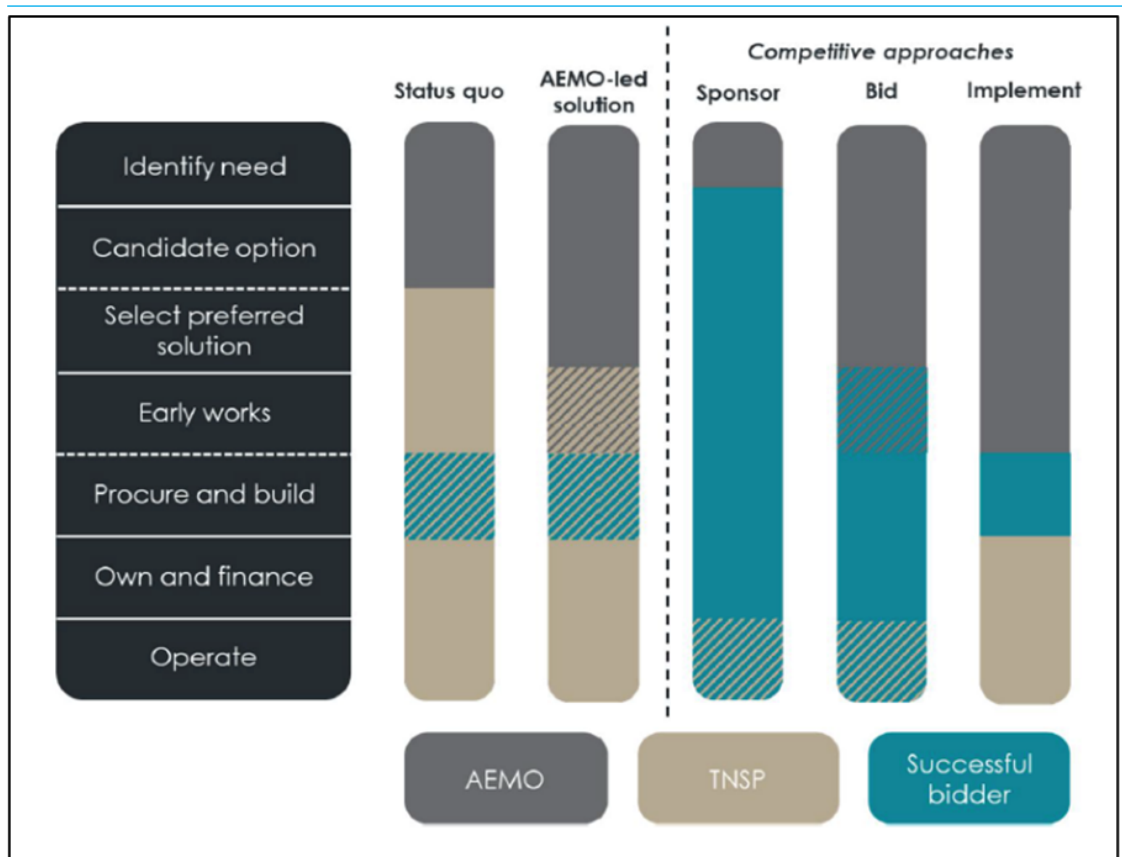
In its report for the AER, HoustonKemp proposed a model of early competition that they describe as 'sponsor-based' competition and define as follows:

"We define sponsor-based competitive processes as involving developers competing to provide and build innovative solutions to needs identified by the independent system planner. Although not yet a term of art in the regulatory economics field, this model of competition for transmission infrastructure has gained prominence in the United States. Such a model of competition is one of two main ways by which regional transmission organisations in the United States have sought to comply with FERC Order 1000, which mandated competitive solicitation be used for transmission infrastructure."

HoustonKemp's proposed sponsor-based model is illustrated in Figure E.2

Source: HoustonKemp, *Regulatory treatment of large, discrete electricity transmission investments, A report for the Australian Energy Regulator*, pp. 67-68.

Figure E.2: HoustonKemp sponsor-based model



Source: HoustonKemp, *Regulatory treatment of large, discrete electricity transmission investments, A report for the Australian Energy Regulator*, p4. In this diagram, 'implement' shares some key features with our option 1, 'bid' shares some key features with our option 2, 'AEMO-led solution' is similar to our option 3, and 'sponsor' is similar to our option 4.

This contrasts with all other options in this paper, where the current ISP and RIT-T process is used to identify and assess credible options to the identified need and select the solution with the highest net benefit, with bidders competing to deliver that chosen solution. Project Energy Connect (PEC) provides a clear example of the current process. For PEC, the identified need was described by AEMO in the 2020 ISP as:⁵⁵

**"To deliver net market benefits and support energy market transition through:
Lowering dispatch costs, initially in South Australia, through increasing access to**

⁵⁵ AEMO, Final 2022 ISP, p. 86.

supply options across regions.

Facilitating the transition to a lower carbon emissions future and the adoption of new technologies, through improving access to high quality renewable resources across regions.

Enhancing security of electricity supply in South Australia.”

This broadly defined identified need contrasts with the preferred solution to the identified need that was set out in the RIT-T Project Assessment Conclusions Report for PEC. The preferred solution was summarised as:⁵⁶

“...a new 330 kV HVAC interconnector between Robertstown in South Australia and Wagga Wagga in NSW, via Buronga, together with a 220 kV augmentation between Buronga and Red Cliffs in Victoria.”

For the purposes of this strawperson option, the identified need would continue to be defined at a high level, as it currently is in the ISP and RIT-T processes. However, under this option, tenderers could propose any solution that meets that broadly defined identified need. The tendering party could also potentially contract with multiple tenderers who provide solutions that each meet part of the identified need.

Seeking proposals for solutions to meet an identified need could result in a wide range of proposals with very different scopes, costs and benefits. For example, FTI Consulting gives the example of the Artificial Island project in PJM, where:⁵⁷

“...seven potential developers submitted 26 separate proposals with cost estimates ranging from \$100mn to \$1.55bn. These proposals covered a wide range of potential solutions, including new overhead and underground lines, new or upgraded substations, circuit breakers, system reconfigurations and dynamic reactive devices.”

The level of detail in which the identified need is specified would be a key issue to determine as part of assessing and implementing this option. We note that some of the examples of early competition in the US and UK involve a more detailed specification than currently provided in the current processes, as discussed below.⁵⁸

This approach would require significant changes to the current ISP and RIT-T arrangements in the NER, although it may be possible to develop amended planning arrangements as discussed below that continue to deliver an integrated approach to planning.

The ISP would continue to be used to develop scenarios, inputs and assumptions, and to identify needs for the development of the transmission system in a similar way to the current ISP process. Those matters would then be used as inputs for the tender process.

56 ElectraNet and TransGrid, *SA Energy Transformation RIT-T, Project Assessment Conclusions Report*, p123. The solution was described in more detail in a page setting out the key components of the project.

57 FTI Consulting, *Case Studies of Early Competition, Memorandum to National Grid ESO*, p11.

58 A further challenge to consider will be the potential complexity in the evaluation process for assessing differing solutions given they are likely to involve differences in performance or risk, for example differences in reliability and resilience.

However, the ISP in its current form would no longer develop a series of candidate development paths of network and generation investment to meet the identified needs, assess the costs and benefits of each candidate development path, determine an optimal development path, and determine actionable ISP projects. Further, the current ISP and RIT-T processes could not be used to identify and assess the costs and benefits of credible options to meet the identified need, as these options would only be identified as part of the tender process.

An amended process would be needed to undertake these steps based on the outcomes of the tender process. For the purposes of this strawperson option, we propose that an amended ISP process would evaluate tenders and assess whether one or more of the solutions proposed in tenders have a net benefit and should be implemented. This would include a coordinated process led by AEMO for identifying needs, conducting tenders and selecting solutions on a regular basis, including considering interdependencies between various needs and potential solutions.

A multi-phase process would likely be required where there would be a regular cycle involving three sequential steps by AEMO:

AEMO would develop scenarios, inputs and assumptions, and use them to identify needs for the development of the transmission system, largely in the same way as it does in the current ISP process.

AEMO would then solicit competitive tenders for solutions to meet the identified needs as part of a tender window.

AEMO would assess the costs and benefits of each tendered solution. This process would compare solutions against each other to select the solution with the highest net benefit and ensure that solution has a positive net benefit (eg by applying a modified version of the RIT-T process). This process would also need to consider interdependencies and sequencing between different tendered solutions (including solutions in different NEM regions) to develop an integrated plan for the development of the transmission system.

Box E.2 provides a brief overview of the planning processes incorporated into the early competition models in use in several US jurisdictions and currently proposed in Great Britain, which provide potential precedents for elements of this process.

BOX 7: PLANNING ACTIVITIES IN EARLY COMPETITION MODELS IN THE US AND GB

PJM

The US models generally involve regular 'solicitation windows' where parties can submit proposals to meet a need that is identified as part of the ISO's regular planning process. For example, FTI Consulting notes that under the PJM approach to competitive procurement in the US:*

"Once the need is identified, PJM solicits proposals from Transmission Operators (TOs) and non-incumbent bidders during 'proposal windows'. 'Proposal windows' are conducted on overlapping 18- and 24-month cycles, with the length varying based on the type of system reinforcement'.

However, the examples where early competition has been implemented in the US have only involved a small number of discrete projects rather than an ongoing integrated planning process for major projects across the network. Current examples of early competition under these models have also generally only been used to address reliability needs, rather than the more complex 'market benefits' investments that make up most of the projects identified in the 2020 and draft 2022 ISPs.

CAISO

CAISO in California adopts a recurring 2 year planning and procurement cycle, with CAISO develops planning assumptions in phase 1, identifies needs and preferred solutions in phase 2 and tenders for solutions in phase 3.** However, the CAISO model is a hybrid of early and late competition where CAISO seeks proposals for solutions from a range of competitive network and non-network providers in stage 2, but CAISO then uses those proposals to develop a transmission plan with CAISO's views on the preferred solutions and in stage 3 it seeks tenders to build and own the assets specified in the transmission plan.

Ofgem in Great Britain

Ofgem's proposed approach to early competition for onshore transmission projects is more ambitious in its scope but is still in development after around 6 years of analysis and consultation. Ofgem defines early competition as:***

"Early competition refers to a competitive tender that takes place ahead of detailed design work for the preferred solution. In the context of this consultation, in an early competition bidders would compete to design, build and own a solution that addresses a specific requirement on the electricity transmission network. This differs from 'late competition', where bidders compete to deliver and own a specific project that has already been designed in sufficient detail necessary to secure major planning consents. As such, early competition should allow for a wider range of solutions and bidders to compete (for example, proposed solutions do not need to be limited to electricity transmission assets)."

Ofgem's proposed approach is arguably a hybrid of options 2 and 4 where tenderers bid to provide a solution to a specification that is significantly more detailed than how an identified need is currently expressed in the ISP and RIT-T, but significantly less detailed than how a preferred solution is currently expressed in the RIT-T. Ofgem contrasts its proposed model of 'early competition' with 'late competition' and 'very early competition' in Figure E.3

Ofgem expresses the view that:

"We consider that there are both advantages and disadvantages to very early competition when compared to early competition. In principle, a standalone tender process that takes

place before an indicative solution has been identified, via a very early competition, can in theory allow for a wider range of solutions to compete, with the market determining the optimum solution. All else being equal, this approach could be considered beneficial relative to a later tender with a more restricted scope. However, the later tender under an early competition could be beneficial in other ways. Specifically, a more defined scoping of the network need, based on an indicative solution should reduce uncertainty from the design of the rest of the network planning process. It should also significantly reduce the complexity of the bid assessment process during the competitive tender... It is difficult to see how a very early competition model could be implemented without introducing a significant level of uncertainty and complexity to wider network planning and the tender evaluation process. We therefore consider that early competition would be likely to deliver greater benefit to consumers than very early competition."

Under Ofgem's proposed early competition model, planning and procurement responsibilities would be split between the national Electricity System Operator (ESO), the relevant incumbent transmission owners and Ofgem as follows:

- The ESO would undertake the role of the network planning body (with input from transmission owners) and would be responsible for developing options for investment through the network planning process, assessing the suitability of projects for competition and some technical assessment of bids.
- The ESO would be the procurement body, contract counterparty and payment counterparty, responsible for managing the procurement process, managing the contract with the successful tenderer and paying the successful tenderer.
- Ofgem would be the approver and licence issuer, responsible for making a formal decision to progress the project at various stage gates.****

Ofgem's proposed early competition model builds on an existing annual Network Operations Assessment (NOA) process where the ESO identifies existing network capabilities and potential future requirements and gaps in capabilities, transmission owners and other interested developers develop and propose potential options to address those future requirements and the ESO undertakes a cost-benefit assessment of potential solutions.

Under early competition, Ofgem and the ESO propose that this NOA process would be used by the ESO to develop an 'indicative solution' that will set the scope of the competitive tender. Ofgem and the ESO propose that contestability 'would not be for the delivery of the specific indicative solution but, rather, that indicative solution would be used to set high-level technical and locational limits within the tender that bids would need to adhere to'.*****

Source: *FTI Consulting, *Case Studies of Early Competition, Memorandum to National Grid ESO*, p. 9.

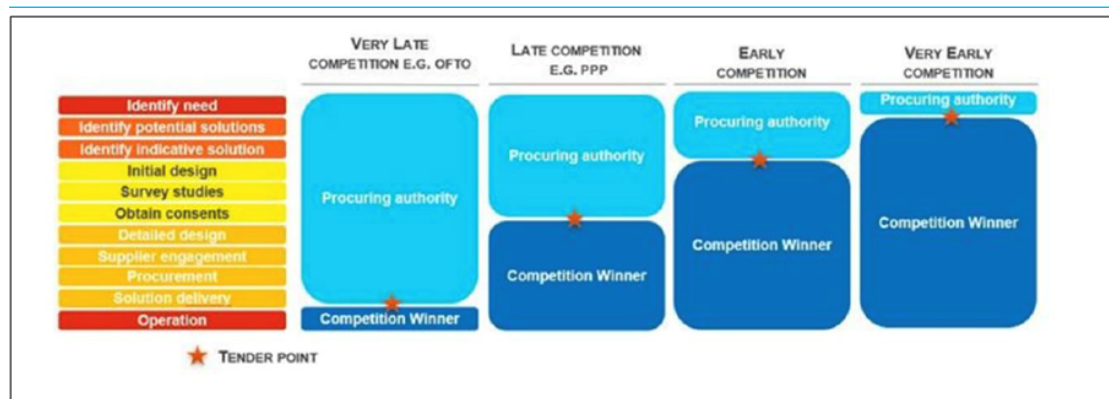
Source: **Ibid, p. 20.

Source: ***Ofgem, *Consultation on our views on Early Competition in onshore electricity transmission networks*, p. 14.

Source: ****Ibid, p. 36-37.

Source: *****Ibid, p. 28.

Figure E.3: Ofgem’s competition model comparison



Source: Ofgem, *Consultation on our views on Early Competition in onshore electricity transmission networks*, p. 14.

Consideration would also need to be given as to who is the jurisdictional planning body and who undertakes TAPRs in each jurisdiction. Both roles could be allocated to AEMO, consistent with the current Victorian arrangements to enable more coordinated planning of the transmission system. Alternatively, the PTNSP could remain as the jurisdictional planning body, and the PTNSP and successful tenderers could each be responsible for preparing TAPRs for their respective networks as in option 2. However, this approach would likely result in less coordinated and efficient planning and investment.

This option would be most effective if it was adopted across the NEM rather than on a jurisdictional opt-in basis. That would allow AEMO to undertake the amended ISP functions discussed above and develop a consistent integrated plan across the NEM. It would also allow AEMO to undertake the contestable tender processes and assess interactions between identified needs and proposed solutions in different NEM regions.

The alternative would be for each jurisdiction to appoint a jurisdictional body to undertake the planning and tendering functions, but that would result in less coordination across jurisdictions and unwind many of the benefits of the integrated approach to planning under the ISP.

AEMO adopting these planning and tendering roles is consistent with the US early competition models where planning and tendering are undertaken by the relevant Independent System Operator (ISO) and Ofgem’s proposed early competition model where these roles are primarily undertaken by the national ESO.

Figure E.4: Undertake preparatory activities

2: Preparatory activities functions	Responsible party
2a: Undertake or direct preparatory activities for future ISP projects and actionable ISP projects	Selected tenderer
2b: Develop REZ design reports	Jurisdictional planning body

REZ design reports would be undertaken by the jurisdictional planning body. As discussed above, consideration would need to be given to whether the PTNSP should remain as the jurisdictional planning body or whether this role should be transferred to AEMO.

New arrangements would be needed in relation to preparatory activities for future ISP projects and actionable ISP projects. Currently, preparatory activities apply to all actionable ISP projects and those future ISP projects where AEMO has determined that a specified TNSP be required to undertake those activities. Under this option, AEMO will only develop identified needs, with detailed project solutions only being revealed through the tender process. It is therefore difficult to see how preparatory activities (and a party responsible for these) could be identified as part of the ISP process. It would also be difficult for preparatory activities for an actionable ISP project to be undertaken prior to the award of the tender for that project.

A more limited scope of preparatory activities (and engagement as discussed below), is likely to result in more complex contractual arrangements that involve greater sharing of risks between consumers and the tenderer, as well as 'stage gates' as in the Ofgem example. This is likely to be necessary given that tenders will be submitted prior to having undertaken detailed engagement, geotechnical surveys, planning approvals and land acquisition processes.

Figure E.5: Engage

3: Engagement functions	Responsible party
3a: Undertake stakeholder engagement activities at the planning stage	Selected tenderer
3b: Undertake stakeholder engagement activities during construction and operation	Selected tenderer

Responsibility for engagement under this option would be more complex than in the counterfactual or other options.

The successful tenderer would be responsible for all engagement activities once it has been appointed. However, meaningful engagement by the successful tenderer could not occur until after it has won the tender process.

It is unclear who, if anyone, could be responsible for engagement in the planning process prior to the appointment of the successful tenderer. AEMO could do some preliminary engagement as part of developing the identified need. However, because AEMO is not developing detailed solutions to the identified need and those solutions are only proposed at the tender stage, it could not undertake significant engagement with local communities or consumers on potential solutions.

Potential tenderers would need to undertake some engagement as part of developing their tenders, otherwise they risk proposing a solution that will face major social licence or environmental and planning approval issues that may prevent it being implemented or significantly increase its costs. However, tenderers are unlikely to be able or willing to expend significant amounts of time and money on engagement prior to having won the tender and having a right to recover their costs. Local communities are also unlikely to appreciate being engaged by multiple different proponents of different projects that may or may not proceed.

This means that meaningful early engagement under this option on issues like route selection and design are likely to be much more limited than under the counterfactual or other options. This could have an adverse impact on managing social licence issues and could lead to a greater risk of cost increases as well as requiring more complex contractual arrangements to address these risks.

Figure E.6: Undertake competitive tender process

4: Contestable tender process functions	Responsible party
4a: Determine whether to utilise a contestable process and, if so, undertake the contestable tender	AEMO
4b: Develop functional specification for contestable assets/services	AEMO
4c: Contract with network operators for delivery and coordination of services	AEMO

As discussed above, this option would be most effective if AEMO was responsible for undertaking the competitive tender process for major transmission projects across the NEM, rather than each jurisdiction appointing a separate jurisdictional body to do so.

The competitive tender process would be like option 2, with AEMO determining to conduct a contestable tender process, either based on a broad discretion or specified principles. The main difference between this option and options 1 to 3 is that here, AEMO would not develop

a detailed specification for the project. Instead, AEMO would invite tenderers to develop their own proposed solutions to a high-level identified need as discussed above.

Another significant difference is that AEMO could potentially procure a portfolio of network and non-network solutions that collectively meet the identified need rather than appointing a single successful tenderer. However, this would add even more complexity to the allocation of responsibilities for operation, maintenance and control, discussed below.

AEMO would contract with the successful tenderer(s) to design, own, operate and maintain their proposed solution to the identified need. AEMO, the PTNSP and the successful tenderer(s) would enter into a coordination agreement to coordinate their respective functions and works.

As in our other options, a ring-fenced affiliate of the PTNSP would be able to participate in the tender, but the regulated PTNSP could not. We understand that this differs from the arrangements in US markets that have adopted early competition where the incumbent TNSP can participate in competitive tenders. Ofgem's proposed early competition model would allow incumbent TNSPs to submit bids, but Ofgem has proposed options for ring-fencing arrangements.⁵⁹ We consider that appropriate ring-fencing arrangements are important to maintain competitive neutrality and avoid risks of discrimination or cross-subsidisation.

Figure E.7: Construct

5: Construction functions	Responsible party
5a: Undertake detailed design and route selection	Selected tenderer
5b: Acquire land, <u>consents</u> and approvals	Selected tenderer
5c: Construct assets	Selected tenderer
5d: Contract with non-network providers	Selected tenderer
5e: Construct network interface works	PTNSP

As in all other options, design and construction would be provided by the successful tenderer(s), including acquiring land, consents and approvals. The PTNSP would be responsible for providing interface works as a prescribed transmission service.

The main difference between this option and all other options is that tenderers would compete not just on price and technical expertise but could also provide very different designs to meet the identified need. Where the successful tenderer's solution includes non-network options, the successful tenderer would be responsible for contracting with non-network providers.

⁵⁹ Ofgem, *Consultation on our views on Early Competition in onshore electricity transmission networks*, p. 53.

Figure E.8: Finance and own

6: Ownership functions	Responsible party
6a: Own network assets	Selected tenderer
6b: Finance network assets	Selected tenderer

As for all other options, ownership and financing of major transmission projects would be the responsibility of the successful tenderer(s).

Figure E.9: Operate and maintain

7: Operation and maintenance functions	Responsible party
7a: Operate network	Selected tenderer
7b: Provide connection services	Selected tenderer
7c: Maintain network	Selected tenderer
7d: Replace and augment network	Selected tenderer(s)
7e: Operate and maintain interface works	PTNSP

Operation and maintenance under this option could be the same as under either option 2 or option 3. If an approach similar to option 3 was adopted, that would effectively result in AEMO taking on a much greater role across the NEM and becoming more like an independent system operator for the NEM (eg like ISOs in the US or the ESO in Great Britain), with a corresponding significant reduction in the roles and responsibilities of the PTNSPs. For this strawperson option, we have adopted a model similar to option 2 that does not involve AEMO taking on additional system operation responsibilities.

Successful tenderers would be responsible for operation and maintenance of their new transmission assets. Each successful tenderer would register as a TNSP and be subject to the obligations of a TNSP under the NER and any jurisdictional transmission licence requirements. Each successful tenderer would be subject to either a contractual service performance incentive scheme or the AER's transmission STPIS. As with option 2, these incentives would be more complex to design as there would no longer be a single party responsible for reliability of the transmission network and it may be harder to apportion responsibility for outages.

As with option 2, this separation of roles would raise a number of complex questions about allocation of the respective roles and responsibilities of AEMO, each successful tenderer and the PTNSP for operation, maintenance and control. This includes clarity regarding

responsibilities for power system security, including the emergency functions allocated to TNSPs under Chapter 4 of the NER, and responsibility for system strength services under chapter 5 of the NER. Amendments to the NER would be required to clearly allocate each of these roles and endeavour to achieve coordination between the respective parties and minimise risks to power system security.

The successful tenderer would be responsible for connections by generators or loads to its network assets. AEMO would retain its current functions related to connections. As with option 2, this split in responsibility for connections and operation in different parts of the network would mean that there is not a single party that can contract with connecting generators and loads to provide them with a use of system service for the entire transmission network. A contractual or regulatory solution would be needed to this issue as discussed in relation to option 2. As in option 2, there would also likely need to be new requirements for the successful tenderer to consult with the PTNSP in relation to connections and generator performance standards.

As for option 2, there would need to be clarity in the NER and contracts as to the extent of the tenderer's responsibility for augmentations or replacements to its network. The successful tenderer would only be responsible for minor or non-separable augmentations. Any major separable augmentations would be subject to a new contestable tender process and the PTNSP would be responsible for non-separable replacements of its existing network. The successful tenderers could either own, operate and maintain the assets in perpetuity, or only have the right to do so for a specified concession period and then transfer them to another body at the end of that period.

The PTNSP would be responsible for providing interface works, as in all other options.

Figure E.10: Control

8: Control functions	Responsible party
8a: Control transmission system	PTNSP and AEMO

The PTNSP and AEMO would retain their current responsibilities for control of the transmission network. As with option 2, the separation of responsibility for ownership from control would require a much clearer distinction between these functions and the respective roles of the successful tenderers, PTNSP and AEMO.

Figure E.11: Price

9: Pricing functions	Responsible party
9a: Set overall revenue or price cap	AEMO
9b: Set connection prices	Selected tenderer
9c: Set use of system prices	PTNSP (as coordinating NSP)

Regulation of revenue and pricing under this option could be based on the approach in either option 2 or option 3, or a combination of those approaches.

Given AEMO's increased role in the planning and procurement process as discussed above, we have based this option on a similar approach to revenue regulation as applies in option 3 ie. AEMO's current role in Victoria. The AER would not have any role in regulating the contestable provider's or AEMO's costs and revenues. Each successful tenderer would recover its costs under its agreement with AEMO. AEMO's allowed revenues would be based on the amounts it pays to tenderers and its internal costs and determined under a revenue methodology developed by AEMO.

Unlike option 3, AEMO would not be a TNSP under this option and would not have an increased role in operation of the network and providing use of system services. Accordingly, this option would adopt the same approach to pricing as option 2. The PTNSP would remain responsible for pricing prescribed transmission use of system services and prescribed common services and would act as the coordinating NSP for pricing purposes. Pricing for connection services would be split between the PTNSP and the successful tenderer(s), with each party pricing connections to its network. The PTNSP and successful tenderer would both need to prepare transmission pricing methodologies that are approved by the AER.

Because AEMO is not a TNSP under this option, it would not provide prescribed transmission services and would not have an AER-approved transmission pricing methodology. A new mechanism would therefore be needed for the recovery of AEMO's costs from consumers and the current approach in Victoria could not be used. This could involve amendments to the revenue and pricing provisions in Chapter 6A of the NER or the establishment of a new revenue recovery mechanism as in the NSW EII Act model discussed under option 2.

E.2 Summary of the key advantages and disadvantages of the strawperson 4

The key advantages and disadvantages of strawperson 4 are set out in Table E.1.

Table E.1: Strawperson 4: Contestability for the development and delivery of solutions to meet a need identified in the ISP process

ASSESSMENT CRITERIA	ADVANTAGES	DISADVANTAGES
Timeliness	<ul style="list-style-type: none"> • Could avoid delivery delays in some projects by addressing the 'exclusive right but no obligation' issue • Could result in the identification of innovative solutions that can be delivered more quickly than solutions developed through the current planning process under the counterfactual or all other options 	<ul style="list-style-type: none"> • Contestable procurement process could increase the time required to deliver projects unless it saves time elsewhere in the investment process (eg the procurement process would replace the current AER contingent project process) • Increased complexity and coordination challenges in allocation of responsibilities could lead to delays to projects and potentially increased disputes • Would require significant changes to the planning process including the ISP, which could make timely delivery of integrated network and generation solutions across the NEM more challenging
Efficiency	<ul style="list-style-type: none"> • Has the greatest scope out of the options for increased efficiency and reduced costs related to choice of network and non-network elements, design, construction, financing, operation and maintenance • Has the greatest scope out of the options for increased innovation in solution delivery • Could lead to increased innovation in the identification of solutions, including use of non-network solutions – this is a key difference vs all other options 	<ul style="list-style-type: none"> • Scope of additional potential efficiency benefits in solution delivery is unclear given detailed design, construction and financing are already contestably procured by PTNSPs in practice • Service performance incentive arrangements could be more complex as there is not a single party responsible for reliability • Changes to the planning process could make the integrated planning of

ASSESSMENT CRITERIA	ADVANTAGES	DISADVANTAGES
	<p>that focus on efficient <i>delivery</i> of solutions rather than innovation in <i>identification</i> of solutions</p> <ul style="list-style-type: none"> • Could improve risk allocation and incentives as competing tenderers propose different risk sharing models and some risks related to uncertainty may be transferred to tenderers 	<p>efficient network and generation solutions more challenging</p> <ul style="list-style-type: none"> • Multiple parties responsible for connections could lead to longer connections processes and increased complexity of connection agreements for generators • A possible consequence of the desired increase in innovation is an increase in delivery timing or operating risks • Likely increase in the bid costs and risks for proponents participating in this model compared to other options
Flexibility	<ul style="list-style-type: none"> • Arrangements are very flexible and may be better at accommodating uncertainty • Contains flexibility to determine which projects are suitable for competitive delivery, and flexibility to make this decision at different stages in a project's planning process and adjust the approach over time • More consistency between jurisdictions than in options 2 and 4 	<ul style="list-style-type: none"> • Would need to apply in all NEM jurisdictions in order to maintain an integrated approach to planning
Accountability		<ul style="list-style-type: none"> • Accountability for many parts of the planning and investment process becomes very complex and is split between multiple parties. • Would require significant changes to the planning process including the ISP and

ASSESSMENT CRITERIA	ADVANTAGES	DISADVANTAGES
		<p>RIT-T</p> <ul style="list-style-type: none"> Responsibility for engagement and social licence issues would be much more challenging and early engagement is likely to be more limited Assigning responsibility for preparatory activities would be challenging Split accountability for design, construction, operation and maintenance of different parts of the network, and a separation between operation of individual parts of the network and control of the overall system, which would require complex NER provisions and contractual arrangements to manage the risks Split accountability for connections would lead to increased complexity and no single party that can contract with connecting parties to provide a use of system service for the entire network, which would need to be addressed through new NER or contractual mechanisms No AER role in regulating the revenues of TNSPs – is instead overseen by AEMO and the contestable tender process
Implementation		

ASSESSMENT CRITERIA	ADVANTAGES	DISADVANTAGES
		<ul style="list-style-type: none"> • Would require the longest consultation, design and implementation process out of the options – would likely be several years before the changes could commence • Would require changes to the NEL and extensive changes to the NER • Would require significant changes to the process for making the ISP • Likely to require changes to jurisdictional licensing arrangements in some jurisdictions • Would involve increased ongoing costs for new functions and increased coordination between parties, including increased funding for AEMO
Decarbonisation	<ul style="list-style-type: none"> • Could enable faster decarbonisation of the energy sector if it avoids delivery delays by addressing the 'exclusive right but no obligation' issue • The identification of innovative solutions that can be delivered more quickly than solutions developed through the current planning process under the counterfactual or all other options could also increase the pace of decarbonisation. 	<ul style="list-style-type: none"> • Could slow down the pace of decarbonisation if the contestable delivery process increases the time taken to deliver projects and time cannot be saved elsewhere • If increased complexity and coordination challenges in allocation of responsibilities leads to delays to transmission projects and/or generator connections, and potentially increased disputes, the pace of decarbonisation could also be slowed.

F OPTIONS FOR APPROACHES TO IDENTIFYING PROJECTS SUITABLE TO COMPETITIVE DELIVERY

F.1 Prescriptive approach - Competition criteria

In many jurisdictions where competition in the delivery of transmission has been introduced, the identification of projects suitable to competitive delivery are often determined by a set of criteria ('competition criteria') that broadly reflect the characteristics of those projects. Generally, these criteria seek to ensure that competitive tendering is only used for projects:

- that can be easily scoped for tendering and likely to attract significant market interest (which will support sufficient depth of competition being achieved) and
- where the potential value to consumers from competition is likely to (significantly) outweigh the costs of running a competitive tender.

Competitive criteria can be framed to identify projects that are suitable to competition or, alternatively, they can be articulated as exclusions or exemptions to the competitive process where provision by a primary TNSP is likely to remain the most appropriate route to delivery.

'New', 'separable' and 'high value' are three criteria often cited as examples of criteria that can be used to identify transmission projects suitable to competitive provision. 'New and separable' are important to ensure accountability and clear ownership arrangements. 'High value' criteria are important to identify projects that are likely to drive savings for consumers if competition is applied to them. Generally, value criteria are accompanied by a dollar threshold that reflects the point at which the potential benefits from competition will significantly outweigh the potential costs of running a tender process. However, case-by-case competition assessments (CBAs) can also be used to achieve the same outcome.

Other key criteria can include the 'likely timeliness of delivering the investment through competition (compared to delivery by a TNSP under the current framework)' and 'location of the asset' (for example, whether an asset is located within a region or across multiple regions). Like the 'high value' criterion, key considerations like timeliness and location can be considered as explicit criteria or can be considered alongside other costs and benefits as part of a competition CBA, if not included as explicit criteria.

Prescribing explicit criteria would provide greater clarity on the delivery approach for specific projects which could improve investor confidence and avoid unnecessary resource costs, disputes and delays by confirming approach from the outset. However, this approach may be less flexible to specific project circumstances and may limit the opportunities for learning by doing. In addition, it is likely that the criteria would need to be reviewed from time to time, following consultation, to ensure that they are continuing to provide value for consumers.

F.2 Flexible approach - Decision-maker discretion

At the extreme, a decision-maker could be provided with complete discretion to determine whether a project is suitable for competitive delivery. Under this approach, a decision-maker would have the right, but not the obligation, to go to tender. This approach may enable the benefits associated with the threat of contestability, as distinct from

contestability/competition itself, to be captured and delivered to consumers through more timely and efficiently delivery of transmission under the existing regime. This discretion could be guided by an objective and/or principles (like the competition criteria) and would still require the decision-maker to form a view on the potential value to consumers from a project proceeding down a competitive delivery route.

A fully flexible approach creates opportunities to take greater account of case-specific circumstances and different trade-offs, which cannot be captured well by strict criteria. It also creates opportunities for learning-by-doing regarding the suitability of different types of transmission activities for competitive or primary TNSP delivery. Further, this approach could be beneficial where significant benefits could flow to consumers from the threat of contestability. In contrast, given the discretionary nature of this approach, the absence of clear guiding principles or requirements to report on how the discretion will be exercised could risk undermining investor confidence. This could have significant implications on the success of a competition regime where there are a significant number of projects in the pipeline and investor certainty around future opportunities is key to that success. A key consideration is likely to be the role of and incentives on the decision-maker.

F.3 Hybrid approach - Decision-maker discretion guided by criteria/principles

In some jurisdictions, a degree of flexibility is often built into these arrangements to provide decision-makers with the ability to make case-by-case assessments, recognising that there may be circumstances where a project that meets the competition criteria may, for other reasons, be better delivered by a primary TNSP under the existing regulatory regime. This discretion allows the decision-maker to trade-off other factors, for example, need for timely delivery, complexity or system security considerations, when deciding whether to proceed with competitive delivery.

As outlined in Box 8 below, this is the case in Victoria where the Rules set out clear criteria to identify which projects are eligible for competitive provision (these include a 'separable' and 'high value' criterion), while also providing AEMO with flexibility to decide that a project is not contestable having regard to several factors (these include timeliness of implementation, system security and the economics of contestable delivery). It is also the case in New South Wales, where the Infrastructure Planner can decide whether a contestable process for the identification of a Network Operator for an REZ network infrastructure project is feasible, having regard to a list of factors set out in the Network Authorisation Guidelines.⁶⁰

F.4 Case studies

Box 8 below sets out the process for how decisions regarding which projects are eligible for contestable provision, and whether a contestable procurement process should be pursued for specific eligible projects, are made within the current contestable transmission arrangements

⁶⁰ EnergyCo and AEMO Services Limited, Draft Network Authorisation Guidelines, May 2022.

in Victoria, and the arrangements for REZ network infrastructure project under the EII Act in New South Wales. Both jurisdictions use a hybrid approach to make these decisions.

BOX 8: IDENTIFYING PROJECTS SUITABLE TO COMPETITIVE DELIVERY

In **Victoria**, the Rules* require that an augmentation of the declared shared network is contestable if:

- the capital cost of the augmentation is reasonably expected to exceed the relevant limit of \$10 million; and
- the augmentation is a separable augmentation.

The Rules also provide AEMO with the ability to classify an augmentation as non-contestable where:

- the delay in implementation that would necessarily result from treating the augmentation as contestable would unduly prejudice power system security; or
- it does not consider it economical or practicable to treat the augmentation as a contestable augmentation.

In **New South Wales**, any project identified as a "Network Infrastructure Project" under the NSW EII Act will be progressed on a contestable basis, unless the Infrastructure Planner determines that contestability is not feasible. A Network Infrastructure Project could be either:

- A REZ network infrastructure project authorised or directed by the Consumer Trustee or Minister
- A priority transmission infrastructure project, which is a project within the Integrated System Plan that is identified by the Minister as an appropriate response to address forecast breaches of the NSW Energy Security Target.

Under the draft Network Authorisation Guidelines**recently published by OECC, the Infrastructure Planner's consideration of contestable process feasibility must include:

- whether the required network infrastructure is readily separable from the existing transmission system, distribution systems or other REZ network infrastructure projects
- whether there is a sufficient market of appropriately qualified and resourced potential providers, for example, to create the competitive tension required to drive efficient bids
- whether the incumbent Network Service Provider can deliver the REZ network infrastructure project within the required timeframe and within reasonable cost estimates
- the cost of the network infrastructure project relative to the cost of running a contestable procurement process (particularly in the case of relatively low value projects) and
- any timing constraints that a contestable process may place on project delivery timeframes.

The Infrastructure Planner may conduct market sounding, Expression of Interest processes or similar tests for the feasibility of contestable Network Operator selection. This may also occur

at multiple stages of network design as the scope and interest of providers is refined.

Source: *NER clause 8.11.6.

Source: **EnergyCo and AEMO Services Limited, Draft Network Authorisation Guidelines, May 2022.