



Department of Energy, Mines,
Industry Regulation and Safety
Energy Policy WA

Pilbara Energy Transition

Evolution of the Pilbara Electricity Access Regime

Consultation Paper

4 February 2025



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Abbreviations

Term	Definition
AEMO	Australian Energy Market Operator
BBCOS	Building Block Cost of Service
CEFC	Clean Energy Finance Corporation
EBAS	Energy Balancing and Settlement
ENAC	Electricity Networks Access Code
EOI	Expression of Interest
EPNR	Evolution of the Pilbara Networks Rules
EPWA	Energy Policy WA
ERA	Economic Regulation Authority
EU	European Union
HTR	Harmonised Technical Rules
ISO	Independent System Operator
ISOC_o	Refers to Pilbara ISOC _o Ltd currently appointed to ISO role
NEM	National Electricity Market
NER	National Electricity Rules
NSP	Network Service Provider
NWIS	North West Interconnected System
PAC	Pilbara Advisory Committee
PET	Pilbara Energy Transition
PNAC	Pilbara Networks Access Code
PNR	Pilbara Networks Rules
RAB	Regulated Asset Base
RTN	Rewiring the Nation
SIA	Strategic Industrial Areas
TUOS	Transmission Use of System, the right to transport electricity through a grid from one connection (or interconnection) point to another
UK	United Kingdom
SWIS	South West Interconnected System
WEM	Wholesale Electricity Market

Executive summary

Evolution of the Pilbara third party electricity access regime

Over the next two decades, the North-West Interconnected System (NWIS) will evolve significantly, with more and larger common use transmission lines, substantially more variable renewable energy supplies and potentially more industry participants inhabiting an increasingly meshed network.

Under the Pilbara Energy Transition Plan, Energy Policy WA (EPWA) has undertaken a comprehensive review of the relevant regulatory instruments, being the Pilbara Networks Access Code (PNAC) and Pilbara Networks Rules (PNR), to identify gaps and develop options to ensure the regime remains fit for purpose as the NWIS develops through the energy transition.

The PNAC governs access to regulated electricity networks in the Pilbara while the Pilbara Networks Rules establish rules for the operation, management, security and reliability of Pilbara networks and the functions of the Pilbara independent system operator. The evolving PNAC and PNR regime must balance several objectives including:

- the need to attract substantial private investment in new transmission lines;
- the need to ensure that network access seekers can achieve access on reasonable prices and terms within a reasonable timeframe; and
- the need to maintain energy supply security and reliability.

This paper discusses proposals to reform the PNAC grouped into the following themes:

- creating the new common use Pilbara grid, which covers issues relating to coverage of Pilbara networks and managing the risks of vertical integration (Chapter 2);
- managing access across multiple networks with a variety of owners, in particular simplifying how access seekers contract for services (Chapter 3);
- better regulation for network tariffs, which covers models to provide greater up-front certainty for greenfields projects and tighter overall tariff regulation in the form of revenue control (Chapter 4);
- better regulation for terms and conditions, which covers model terms and conditions and managing foundation user contracts (Chapter 5); and
- other improvements to access regulation, covering improved accountability measures and a mechanism to enable fixed principles (Chapter 6).

A separate consultation paper, *Evolution of the Pilbara Networks Rules*, outlines proposed changes to the PNR and its Harmonised Technical Rules. Stakeholders are encouraged to review and respond to both papers.

Call for submissions

EPWA invites written submissions on this consultation paper. Submissions must be provided by **5:00pm WST on Tuesday, 15 April 2025**. Any submissions not marked as confidential will be published on EPWA's website at www.energy.wa.gov.au.

Submissions should be emailed to pet.secretariat@demirs.wa.gov.au.

If the Western Australian Government decides to proceed with the recommendations set out in this consultation paper, detailed design proposals will be developed in the form of proposed amendments to the PNAC which will be subject to further public consultation, consistent with the formal processes set out in the *Electricity Industry Act 2004*.

Summary of Design Proposals and Rationale

The following table lists the proposals arising from the review of the current Pilbara electricity access regime, along with a summary of the rationale for each proposal.

Proposal	Rationale
Creating the new common-user Pilbara grid	
Proposal 1. Coverage 1.1 All new Pilbara transmission assets will be automatically covered, with the exception of certain connection assets. There will be no revocation of coverage for these assets. 1.2 Regulation of these assets will be 'PNAC-style' unless the Minister separately imposes ENAC-style regulation by way of a form of regulation decision, or an NSP opts in to ENAC-style regulation. 1.3 Certain small single user connection assets (still to be defined) may be exempted from automatic coverage until their circumstances change. 1.4 Transition for early projects: Early projects will be expected to opt in to PNAC-style regulation. 1.5 Legacy for existing networks: (a) Existing covered networks will be subject to the above arrangements. They will stay covered and, like new networks, will not be able to seek revocation. (b) Existing uncovered networks will continue with the status quo, i.e. will be exempted from automatic coverage but, as now, may be subject to a coverage application. Any such coverage application will be assessed against the ENAC's general coverage criteria, and not any special coverage criteria (if any) which may be prescribed for new PET networks.	Having all new build transmission infrastructure open to third party access is a core PET objective. The current ENAC coverage process is cumbersome and uncertain, and its coverage criteria are outdated. It will be simpler, and more certain approach, for both transmission investors and access seekers, to provide durable automatic coverage for all new infrastructure. Smaller connection assets may be treated differently.
Proposal 2. Managing Vertical Integration 2.1 It is proposed to reframe the objectives of PNAC Chapter 8 to include a recognition of the role of incentives. To the extent any proposed measure does not eliminate an NSP's ability to engage in harmful behaviour, it must effectively remove or negate any incentive to do so. 2.2 It is proposed to establish the measures and benchmark (as set out in Box 5, page 28) as a way of evaluating outcomes in managing vertical integration. 2.3 Feedback is sought on three possible options	The conflicts of interest and adverse incentives built into vertical integration pose a serious threat both to effective third party access, and to the efficient operation of electricity markets. In the Pilbara, vertical integration places the PET Plan objectives at risk including the overarching goal of Pilbara decarbonisation. On the other hand, the commercial reality in the Pilbara is that many existing or proposed transmission operators are, or propose to be, vertically integrated. The two methods of managing vertical

Proposal	Rationale
<p>for managing vertical integration:</p> <ul style="list-style-type: none"> • Option A: Require either ownership separation or full operational separation. • Option B (preferred): Permit vertical integration to remain, but implement a granular and possibly staged process in which 'sensitive functions' are either transferred from the NSP to the ISO, or left with the NSP but placed under the ISO's supervision or approval, with the outcomes evaluated against the benchmark set out in Box 5 (page 28). (This assumes the ISO has been reconfigured to be truly independent and is adequately resourced.) • Option C: Expand existing PNAC requirements regarding administrative separation, with likely addition of legal separation, with measures and outcomes once again evaluated against the benchmark set out in Box 5 (page 28). <p>2.4 It is planned, wherever possible, to use transparency as a supplementary measure to mitigate vertical integration risks.</p> <p>2.5 The revised regime will include sanctions for non-compliance by way of civil penalties and other remedies.</p> <p>2.6 If transmission operators are required or permitted to operate energy storage or energy producing equipment to provide system strength, security and reliability services, the measures to manage vertical integration may need to specify certain limited exceptions.</p> <p>2.7 Transition for early projects: Early projects will be regulated under the existing PNAC regime, supplemented by any commitments made to the State in the course of contractual negotiations.</p> <p>2.8 Legacy arrangements for existing networks:</p> <ul style="list-style-type: none"> • Existing covered networks: Consideration is still being given as to whether to provide any legacy protection from the above measures, and if so in what form. Any such protection would only apply to existing assets. • Existing non-covered networks: The PNAC imposes no ringfencing obligations on these networks and, with one qualification, there is no plan to change this. The qualification is that this position may need to be revisited if a non-covered network were to propose to materially change the nature of its interconnection with the shared grid, such that it became materially meshed or looped. It is proposed to address any such situation at that later time, in close consultation with the relevant NSP and recognising that the PNR rule 5 principles may require a bespoke solution. 	<p>integration described in Option A (full ownership separation or full operational outsourcing) are the most effective ways of eliminating its risks, and so will be adopted as the benchmark to measure alternative approaches.</p> <p>However, to recognise the Pilbara's particular circumstances other options will be considered, of which Option B is presently preferred.</p>

Proposal	Rationale
Managing access across multiple networks	
<p>Proposal 3. Managing multiplicity of contracts – splitting access in two</p> <p>3.1 The right to access a network will be split into:</p> <ul style="list-style-type: none"> (a) First, a right to connect (or interconnect) to a network, and a right to inject or withdraw electricity at the connection/interconnection point. This right will be governed by contract, with the contract to be negotiated or arbitrated under the PNAC (or ENAC if applicable) in the usual way. This service will only be available as an enforceable statutory right in covered networks, as is now the case. (b) Second, a transmission use of system (TUOS) right to have electricity pass through a network from one connection/interconnection point to another. This right will be enshrined in the PNR and will apply to all networks, covered and non-covered, new and existing. See below for the transitional implications of this. <p>3.2 Transition for early projects:</p> <ul style="list-style-type: none"> (a) Early project NSPs and their users will negotiate access contracts as usual under the current PNAC and PNR, including TUOS components as required. (b) The contracts must be able to transition into the new regime whereby TUOS matters are managed under the PNR. (c) EPWA will work with each early project proponent and its access seekers to establish the best way to achieve this, without hindering the reforms or disrupting commercial certainty for either party. <p>3.3 Legacy arrangements for existing networks:</p> <ul style="list-style-type: none"> (a) These measures will be developed in consultation with the affected parties, with treatments different for covered and non-covered networks. (b) Covered networks: Endeavours will be made to protect core financial aspects of these contracts (revenue streams, overall risk parameters), but otherwise require all access contracts to be amended to incorporate the new split, with TUOS matters transitioning to be regulated by the PNR rather than the contract. (c) Uncovered networks: EPWA will discuss this individually with each non-covered NSP. 	<p>As the Pilbara grid expands, it will most likely involve multiple interconnected covered networks with a variety of owners.</p> <p>The current access model requires an access seeker to negotiate an access contract with the NSP for every network its electricity will transit. As the grid grows, this will require a user to have more and more contracts. Further, as the grid becomes increasingly 'meshed' each user's electricity may follow multiple paths between the injection and withdrawal points. In theory, this could require every user to have an access contract in place with almost every NSP, which would quickly become unworkable.</p> <p>The proposed measures reduce each project's contracting requirements to just two – one each for the injection and withdrawal points. All other aspects, including transfer of electricity between those points under a TUOS service, will be governed by the PNR rather than by contract.</p>

Proposal	Rationale
<p>Proposal 4. Managing how interconnection agreements affect users' access contracts</p> <p>4.1 The PNAC or PNR will impose boundaries on matters which can be addressed by an interconnection agreement, and specifically will prohibit an interconnection agreement from seeking directly or indirectly to impose obligations or restrictions on other network users.</p> <p>4.2 Any matters currently dealt with (or proposed to be dealt with) by an NSP-NSP interconnection agreement which would be precluded by proposal 4.1, should be incorporated in the PNR or HTR. (Possible limited exception: if there are specific matters regarding the interconnection point which are particular to one user, they could be negotiated into the user's access contract as primary obligations).</p> <p>4.3 Each NSP must review its current and proposed interconnection agreements for compliance with proposal 4.1, and identify any matters which should be considered for inclusion in the PNR under proposal 4.2.</p> <p>4.4 Subject to limited exceptions relating to purely commercial matters, each interconnection agreement will be transparently visible, at least to the ISO and all network users, but ideally publicly.</p> <p>4.5 Transition for early projects: Early project NSPs will be free to negotiate interconnection agreements as usual under the current PNAC and PNR, pending these reforms. They should prudently design contracts to accommodate, and be displaced by, the reforms referred to in proposals 4.1 and 4.2, as they come online.</p> <p>4.6 Legacy for existing networks: It will be discussed with the parties to the two existing interconnection agreements how best to implement the above proposals, with a view to disrupting existing arrangements as little as possible, and recognising that one of the existing arrangements involves an uncovered integrated mining network.</p>	<p>Network-to-network interconnections must be governed by contractual arrangements between the two NSPs. At present, there is little regulation of the content of these agreements and NSPs are free to agree operational and even commercial matters, requiring obligations to be imposed on other network users.</p> <p>This means each user's access contract must integrate with a growing number of interconnection agreements, and a user can be asked to accept operational or commercial arrangements which have been pre-agreed between the NSPs and over which the user has no control.</p> <p>NSPs will still need interconnection agreements to regulate purely bilateral matters, such as physical site access and ownership boundaries, however the proposed measures will ensure any matters regarding the interconnection which need to bind other network users will be placed in the PNR.</p>
<p>Proposal 5. Managing tariffs across multiple networks</p> <p>5.1 There is no proposal to change the PNAC at this stage. Further work is being undertaken by EPWA to determine the best approach to address this matter.</p>	<p>EPWA is still considering how best to approach this problem. Among other challenges, not all solutions fit comfortably with the PNAC-style regulation model for network tariffs. Work will continue on this and, in the meantime, stakeholder suggestions will be welcome, especially regarding what has worked well in other multi-network jurisdictions.</p>

Proposal	Rationale
Better regulation for network tariffs	
<p>Proposal 6. Expanded powers to seek pre-approval of tariff and non-tariff elements</p> <p>6.1 The PNAC will be amended to allow an NSP to seek pre-approval from the ERA of more elements than just new facilities investment.</p> <p>6.2 At present, it is proposed to extend the right to seek pre-approval to:</p> <ul style="list-style-type: none"> (a) the Regulated Asset Base (RAB); (b) forecast operating and maintenance costs; (c) rate of return; (d) depreciation schedule; (e) reference service terms and conditions; and (f) tariff setting methodology. <p>6.3 Consideration is still being given as to what safeguards (e.g. a reopener on certain trigger events) might be needed in respect of pre-approvals, with stakeholder feedback sought on this point.</p> <p>6.4 Transition for early projects: Early projects may achieve a similar effect by pre agreeing certain key elements with the State (if the State is willing to do so) as discussed in section 6.2 below.</p> <p>6.5 Legacy for existing networks: Consideration is being given to also making the expanded pre-approval right available to existing networks.</p>	<p>The 'PNAC-style' regulation model avoids the cost and delay associated with the ERA's up-front approval of an ENAC-style access arrangement. For greenfields projects, this saving comes at the cost of the NSP being exposed to after-the-event arbitrator decisions which could undermine tariff and other assumptions embedded in its investment decision.</p> <p>The PNAC already includes a mechanism by which the NSP can mitigate this risk for new capital expenditure, by seeking ERA pre-approval which prevents an arbitrator from later challenging that investment.</p> <p>The proposed reforms would extend this pre-approval to other critical elements, to give greater certainty to greenfields investors and their users.</p>
<p>Proposal 7. Tariffs – Making provision for possible revenue control</p> <p>7.1 The PNAC will be amended to allow a covered NSP to be made subject to revenue control. While the detail of this is still to be developed, it may include a form of revenue cap with provision for incentives.</p> <p>7.2 If revenue control is implemented on a network, negotiated outcomes should not result in an NSP earning more than an appropriate risk-reflective rate of return, subject to any incentive mechanisms specified in the revenue control.</p> <p>7.3 The revenue control model should incentivise efficient growth in network utilisation, and share the benefits of utilisation growth appropriately between the NSP, existing users and new users.</p> <p>7.4 Revenue control will not necessarily apply automatically to all new networks. It may apply to a network only if the NSP opts in, or only after a trigger event occurs.</p> <p>7.5 Transition for early projects: Early projects may be required to commit to revenue control as part of their development agreement with the State.</p>	<p>Tariff regulation is designed to give the NSP an opportunity to earn a fair, but not excessive, level of revenue. It is in the long-term interests of electricity consumers for the NSP's business to be sufficiently profitable (and efficient) to be sustainable, but not for the NSP to be able to leverage its monopoly power to earn super profits.</p> <p>The current 'PNAC-style' regulatory model contains little scrutiny of NSP revenues, and limited opportunity for intervention if an NSP is earning more than a reasonable risk-reflective return on its investment.</p> <p>Revenue control measures allow for such intervention. They can be designed to ensure that beneficial incentives remain, e.g. to ensure that the NSP is incentivised to attract more users to share the network cost, lowering tariffs for all.</p>

Proposal	Rationale
<p>The model chosen should accommodate future-ready uncontracted capacity.</p> <p>7.6 Legacy arrangements for existing networks: Revenue control will not apply to existing covered networks unless a specified trigger event occurs.</p>	
<p>Proposal 8. Managing tariffs for future-ready capacity</p> <p>8.1 It is proposed that the PNAC will remain unchanged in relation to this matter until a case for change emerges.</p>	<p>It is quite likely that no amendments will be needed for the PNAC to accommodate the tariff models that proponents develop to accommodate future-ready uncontracted capacity. If it emerges that the PNAC cannot do so, the merits of any possible amendment, and the need for and appropriateness of any transitional measures, will be considered at the time.</p>
Better regulation for terms and conditions	
<p>Proposal 9. Model access terms and conditions</p> <p>9.1 The PNAC will be amended to set out a set of model terms and conditions for access contracts, as is done with Appendix 3 to the ENAC.</p> <p>9.2 The NSP's published services and pricing policy will be encouraged, but not compelled, to adopt these model terms. The NSP will be required to identify and explain any departures.</p> <p>9.3 In an access dispute, the arbitrator would apply the model terms as a benchmark.</p> <p>9.4 Transition for early projects: The development agreement between the proponent and the State may append a set of model terms, to be used in the above manner pending PNAC reforms. The agreement will specify what happens to any such appended model terms, once the PNAC is amended to prescribe a set of model terms.</p> <p>9.5 Legacy arrangements for existing networks: The PNAC model terms will apply to existing covered networks in the same way as new covered networks. Existing contracts will be unaffected and continue on their negotiated terms. This reform will have no impact on non-covered networks.</p>	<p>Access terms are important – whether a given tariff represents good or poor value depends on the risk allocation and other matters set out in the accompanying contract.</p> <p>An inability to agree access terms can be as much of an obstacle to access as an inability to agree a tariff. The proposed reforms will increase the level of assistance given to NSPs and access seekers in this regard, by providing a balanced set of model terms and conditions which is reasonably fair to both parties, which can be used as a guide.</p> <p>Providing a set of model terms and conditions is intended to maximise both parties' chances of reaching a commercially appropriate outcome without having to resort to arbitration. If arbitration cannot be avoided, these model terms and conditions should simplify the process.</p>

Proposal	Rationale
<p>Proposal 10. Dealing with foundation user requirements</p> <p>10.1 The paper proposes to supplement the Act's "purpose" test, to better regulate foundation user and other contractual rights which have the effect of preventing or hindering access by others.</p> <p>10.2 Suitable transparency measures will be introduced, to ensure that any breaches of these prohibitions can be detected.</p> <p>10.3 Transition for early projects: These matters may be managed by a development agreement between the proponent and the State.</p> <p>10.4 Legacy for existing networks: No general legacy is planned. All future access contracts on existing covered networks will be expected to comply. The State will work with each covered NSP to determine which (if any) specific legacy treatment for pre-existing contracts is needed and appropriate.</p>	<p>Foundation users in effect underwrite the greenfields development risk on new transmission lines. In return, they typically require special benefits to mitigate this risk and to reward them for taking it. Within reason, this can be appropriate, but excessive foundation user rights can be a barrier to access by other users.</p> <p>The PET Project wishes to ensure the necessary transmission infrastructure gets built. This means that proponents must be able to attract finance, for which they will likely need to attract foundation users, and so they must be able to offer foundation users sufficiently attractive rights.</p> <p>On the other hand, the regime will seek to ensure that it remains viable for subsequent access seekers, by placing some limits on foundation user benefits.</p>
Other improvements to access regulation	
<p>Proposal 11. Improved accountability</p> <p>11.1 It is proposed to supplement arbitration of access disputes with other accountability measures, which may have a lower threshold of activation and so improve accountability generally.</p> <p>11.2 Measures under consideration include:</p> <ul style="list-style-type: none"> (a) Activating the Electricity Industry Act 2004's civil penalty and other enforcement regimes for both the PNAC and PNR. (b) A form of rapid (likely binding) expert determination for technical matters. (c) Formal published advisory opinions by an agency or independent expert. (d) Triggers which activate more stringent regulation, including possible triggers to switch a network from PNAC-style to ENAC-style regulation. 	<p>The PNAC-style regulation model relies on an access seeker having the necessary time, resources, will and risk appetite to progress an access dispute arbitration.</p> <p>If access seekers are reluctant or unable to start access disputes, the NSP may not be held properly accountable to comply with the PNAC.</p> <p>The contemplated reforms would add easier and faster accountability measures, to supplement arbitration, which would remain as a back-stop.</p>

Proposal	Rationale
<p>Proposal 12. A transitional “fixed principles” mechanism</p> <p>12.1 Consideration is being given to implementing a transitional mechanism in the form described under “Option under consideration” in section 6.2.2.</p>	<p>The State is negotiating development agreements with the proponents of early priority transmission projects.</p> <p>In a perfect world, the contemplated reforms would all be completed before these development agreements needed to be finalised, but this is not possible.</p> <p>As a result, the State and a proponent may wish to agree certain matters about access to the new infrastructure, before regulatory mechanisms for those matters are in place.</p> <p>A “fixed principles” mechanism will, with suitable safeguards, allow the revised PNAC (and perhaps PNR) to recognise and accommodate any such pre-agreed matters.</p>

1. Introduction

1.1 Background

The Western Australian (WA) Government is embracing the growing momentum of decarbonisation and is committed to taking responsible, effective, and enduring action to transform the Pilbara into a renewable powerhouse and future-proof our economy, communities and environment.

Acknowledged as a major global hub for mineral and energy resources, the Pilbara drives the State's economy, contributing nearly 20 per cent of Western Australia's total economic output¹. Additionally, the Pilbara is renowned for its environmental and cultural significance, boasting one of the largest and most diverse collections of rock art worldwide.

The Pilbara accounts for more than 40 per cent of the State's emissions, primarily from major industrial producers, and utilises less than 2 per cent of renewable energy generation. Because of this, the Pilbara will play a central role in meeting Western Australia's emissions reductions targets.

Private sector investment in electricity generation and transmission infrastructure is expected to significantly increase with decarbonisation activities and as new industries expand in the region.

The Pilbara Industry Roundtable (Roundtable) process was established in August 2022 to discuss the unique opportunities and challenges of a clean energy transformation in the Pilbara.

The Roundtable's work program reached its goal in July 2023 with consensus among participants that: new common use infrastructure has an important role to play in supporting increased levels of renewable energy and decarbonisation in the Pilbara; there was support for the Pilbara electricity regulatory regime to evolve to support the energy transition; and any electricity development should support rights to self-determination and empower Aboriginal people to realise opportunities from the clean energy transformation.

In August 2023, the Australian and WA Governments announced that up to \$3 billion of Rewiring the Nation (RTN) funds would be made available as concessional finance through the Clean Energy Finance Corporation (CEFC) to support investment in transmission infrastructure in Western Australia.

1.2 The Pilbara Energy Transition (PET) Plan

In late 2023, the WA Government approved a work program to support a green energy transformation in the Pilbara, known as the Pilbara Energy Transition (PET) Plan, based on the outcomes agreed to by Pilbara Industry Roundtable members.

The PET Plan is being overseen by a reinvigorated Pilbara Roundtable which brings together Traditional Owners, industry and the WA Government as equals, and is chaired by the Minister for Energy, Hon. Reece Whitby MLA.

The PET Plan seeks to facilitate the development of new common use transmission infrastructure to minimise the environmental footprint and support a more robust and interconnected electricity system. The PET Plan objectives are set out in Figure 1.

¹ [PDC - Economic Snapshot 2024 FINAL SCREEN V3.pdf](#)

Figure 1 - The State's Pilbara objectives

Pilbara decarbonisation	Coordinate a responsible and timely approach to decarbonisation of the Pilbara that supports industry achieving emissions reduction targets.
Aboriginal participation and community engagement	Collaborate with Traditional Owner groups and local communities to ensure meaningful and lasting benefit from the energy transition.
Common Use Infrastructure	Facilitate the development of common use transmission infrastructure to minimise environmental footprint and support a more robust and interconnected electricity system.
Reliability and security	Support greater access to a diverse range of high-quality renewable resources, underpinned by a fit-for-purpose regulatory framework.
Private Investment	Drive private sector investment in transmission infrastructure by facilitating access to WA's \$3 billion allocation from Rewiring the Nation.

Under the PET Plan, four priority transmission corridors were identified, being:

- the Great Sandy Desert corridor, to connect the Boodarie Strategic Industrial Area (SIA) and Port Hedland with proposed renewable generation projects further east near the Great Sandy Desert;
- the Hamersley Range corridor, a transmission solution that will connect the Boodarie SIA and Port Hedland with the eastern edge of the Hamersley Range, home to the State's iron ore mining industry;
- the Chichester Range corridor, connecting the Maitland SIA with the high-quality wind zone around 50 to 100 kilometres further south, proximate to the Chichester Range; and
- the Burrup, or Murujuga, corridor, linking the Maitland SIA, with Karratha and the Burrup SIA.

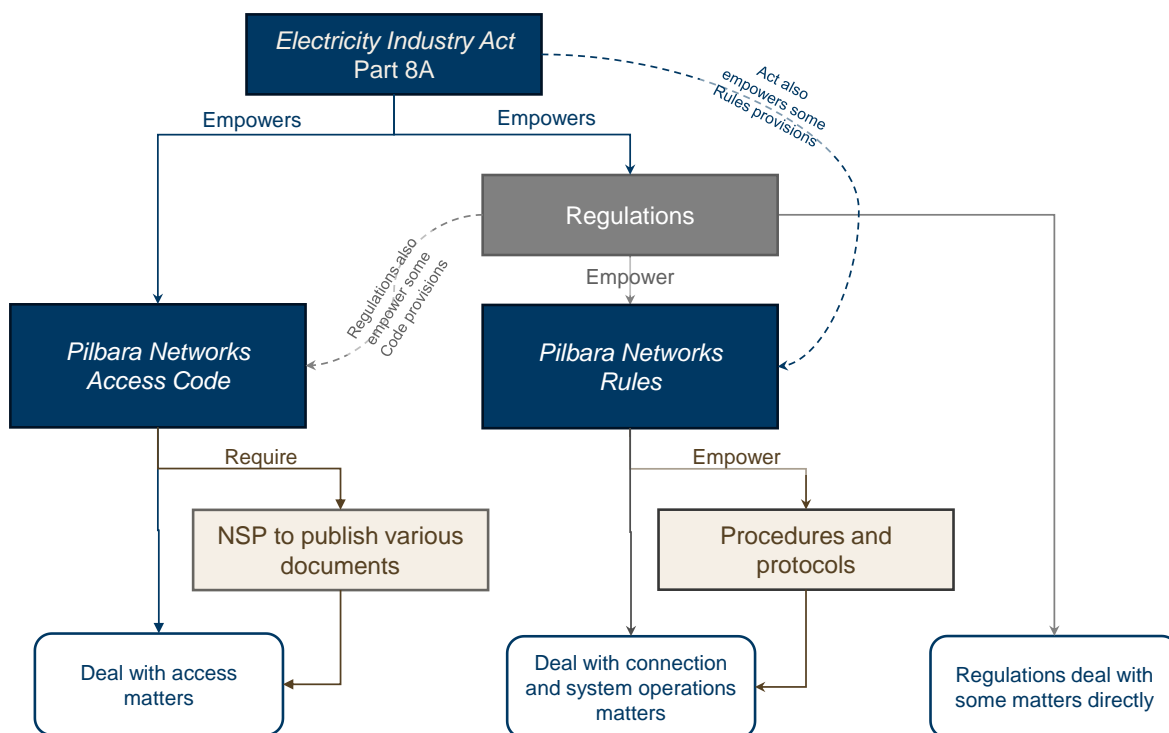
A Request for Expression of Interest (EOI) process was conducted during 2024 to identify preferred proponents to develop transmission lines to service each of those corridors.

1.3 Overview of the current regime

1.3.1 Legislative instruments

In the Pilbara, third party access is regulated under Part 8A of the *Electricity Industry Act 2004* (Industry Act), as shown in below.

Figure 2 - Pilbara regulatory instruments



The two primary instruments are:

- The PNAC,² which creates and administers the access right itself, i.e. the enforceable right to connect to and use the network on reasonable prices and terms. The prices and terms are to be negotiated between the NSP and the access seeker, and failing agreement can be determined by an arbitrator; and
- The PNR, which regulate the operational and technical matters necessary to support this access right and ensure that electricity supply remains reliable and secure. The PNR include the Harmonised Technical Rules (HTR) which set the technical standards for grid connection and operation.

The PNAC and PNR are supported by the Electricity Industry (Pilbara Networks) Regulations 2021.

1.3.2 The Pilbara electricity objective

Everything done under Part 8A of the Industry Act is guided by the Pilbara electricity objective.

At the time of publication this is a stand-alone objective for the Pilbara,³ but it will shortly be replaced by the State electricity objective applying in the Pilbara region.⁴ The State electricity objective is set out in Box 1.

² If a Pilbara network is ever 'full' regulated, access will be regulated under the ENAC rather than the PNAC. See discussion of 'full' and 'light' regulation in Box 3.

³ Under Electricity Industry Act 2004 section 119(2), the objective is:
 "... to promote efficient investment in, and efficient operation and use of, services of Pilbara networks for the long-term interests of consumers of electricity in the Pilbara region in relation to —
 (a) price, quality, safety, reliability and security of supply of electricity; and
 (b) the reliability, safety and security of any interconnected Pilbara system."

Box 1 – The State electricity objective⁵

The **State electricity objective** is to promote efficient investment in, and efficient operation and use of, electricity services for the long-term interests of consumers of electricity in relation to —

- (a) the quality, safety, security and reliability of supply of electricity; and
- (b) the price of electricity; and
- (c) the environment, including reducing greenhouse gas emissions.

1.3.3 Recognising Pilbara circumstances

The Pilbara grid is unusual in several respects. At present it is a relatively small,⁶ ‘radial’⁷ system with few connected customers and no regulated wholesale market, but it nonetheless supports nationally and globally significant industry and exports.

The Industry Act recognises this, by requiring a person performing a function to have regard to the Pilbara’s unique circumstances when considering whether its performance of the function meets the Pilbara electricity objective.⁸

These circumstances are presently prescribed in the Electricity Industry (Pilbara Networks) Regulations 2021 as:⁹

- (a) *the contribution of the Pilbara resources industry to the State’s economy;*
- (b) *the nature and scale of investment in the Pilbara resources industry;*
- (c) *the importance to the Pilbara resources industry of a secure and reliable electricity supply;*
- (d) *the nature of electricity supply in the Pilbara region, including whether or not regulatory approaches used outside the Pilbara region are appropriate for the region, Pilbara network users and Pilbara networks*

This consultation paper cites various examples from other networks and jurisdictions, especially SWIS, the eastern states’ National Electricity Market (NEM) and the European Union (EU). These examples are useful to see how other regimes have addressed often similar challenges.

⁴ Electricity Industry Act 2004 section 119(2) will be amended by section 12 (yet to commence) of the *Electricity Industry Amendment (Distributed Energy Resources) Act 2024*.

⁵ New section 3A(1) of the *Electricity Industry Act 2004*, to be inserted by section 5 (yet to commence) of the *Electricity Industry Amendment (Distributed Energy Resources) Act 2024*.

⁶ Current capacity connected to the NWIS is around 1GW, of which around half is directly connected to the coastal network subject to the access code. There is around 2.5 GW of additional generating capacity in the Pilbara.

⁷ In a “**radial**” electricity system, there is generally only a single electrical path between any two points on the grid, i.e. between a given generator and a given load. In a more complex “**meshed**” system, electricity can travel from one point to another along several pathways.

⁸ *Electricity Industry Act 2004* section 119(3)

⁹ *Electricity Industry (Pilbara Networks) Regulations 2021*, regulation 4

These examples will not always be suitable for the Pilbara. But even where it is proposed to base Pilbara reforms on one of these examples, it does not follow that the other regime's treatment will be copied in full, or with equivalent complexity. Rather, if it is decided to follow another regime's example, then during the detailed design phase that solution will be adapted and where possible simplified, to better fit the Pilbara's characteristics.

1.4 Purpose of this paper

This consultation paper seeks feedback from stakeholders on a high-level summary of proposed regulatory changes to the PNAC. The paper makes 10 key proposals (12 in total) across five different issue areas being:

- creating the new common use Pilbara;
- managing access across multiple networks;
- better regulation for network tariffs;
- better regulation for terms and conditions; and
- other improvements to access regulation.

Stakeholder feedback on this paper will inform the development of a Design Report to Government, which, if accepted, will result in the development of detailed PNAC change proposals for further formal consultation as required by sections 120H and 120J of the Industry Act.

Where relevant, the proposals outlined in this paper includes a discussion of how early projects will be managed and whether existing networks will be included or alternatively receive some form of legacy protection.

A second consultation paper, *Evolution of the Pilbara Networks Rules*, outlines proposed changes to many aspects of the PNR to ensure it enables and support efficient decarbonisation of the Pilbara electricity system.

2. Creating the new common user Pilbara grid

The first suite of reforms being considered deal with how the new grid is to be regulated for third party access, and how vertical integration will be managed.

2.1 Deciding which networks to regulate (coverage)

The PET Plan envisages a new common use electricity transmission grid for the Pilbara.

This raises the question of which networks are to be ‘covered’, in the sense of being compelled to provide third party access. The present ‘coverage criteria’ in the ENAC lag national best practice and may not be appropriate for the Pilbara.

Terminology – Connection versus interconnection

The PNAC and PNR often combine, but sometimes differentiate between, two similar concepts:

- “connection” which describes a facility such as a generator or load being attached to a network; and
- “interconnection” which describes another network being attached to a network.

There are important differences. For example, the technical requirements and processes for network interconnection can be different to those for connecting facilities, so the HTR deal with the concepts separately. This subject is discussed in the *Evolution of the Pilbara Networks Rules* consultation paper.

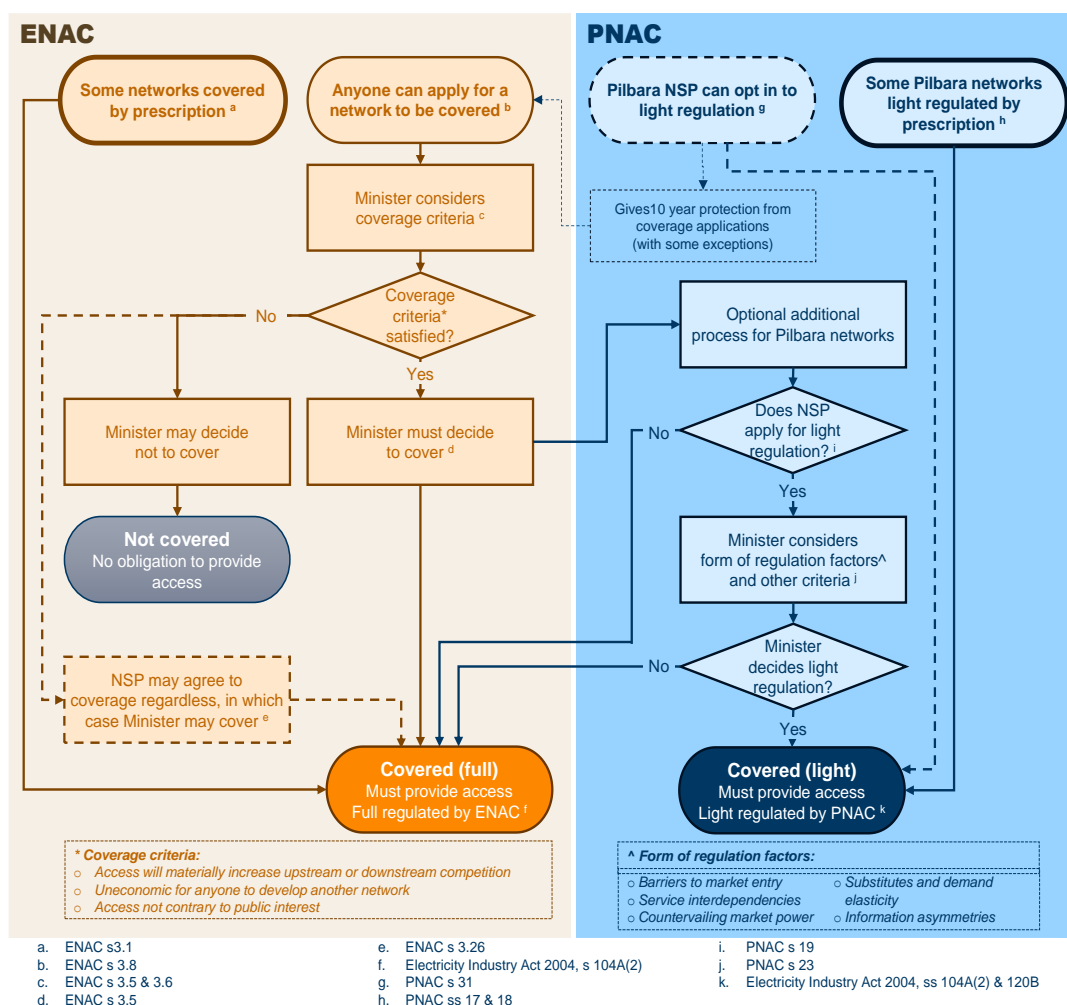
Likewise, some of the commercial arrangements may differ. But for many purposes, a reference to “connection” can be taken to include interconnection.

In terms of legal rights, connection and interconnection are very similar. Coverage relates equally to both rights – a covered network must permit and facilitate interconnection just as much as it does connection. Both connection and interconnection are access services provided by the NSP to the user and both will be governed by an access contract (although for an interconnection this will usually have a different name).

For brevity, this paper often uses “connection”, “connection point” etc in a general sense, to include interconnection.

Current arrangements

Operators of electricity networks in Western Australia have no general obligation to provide third party access until they are ‘covered’ under the ENAC or the PNAC. The process is summarised in Figure 3:

Figure 3 - Coverage and form of regulation process¹⁰

Some networks have been covered by prescription – i.e. being named in the ENAC or PNAC.¹¹

Otherwise, a network becomes covered if the Minister makes a 'coverage decision'. To do this, the Minister must be satisfied that the 'coverage criteria' set out in Box 2 are fulfilled:

¹⁰ This schematic shows only the main permutations and steps.

¹¹ Western Power's SWIS network is covered by ENAC section 3.1. Horizon Power's coastal Pilbara network and APA's Port Hedland system are covered by PNAC sections 17 and 18 respectively.

Box 2 – The current coverage criteria¹²

The Minister must decide to cover the network if the answer is ‘yes’ to each of the following questions:

- a) Would access (or increased access) to the network’s services promote a material increase in competition in at least one upstream or downstream market?
- b) Would it be uneconomic for anyone to develop another network to provide the services?
- c) Would access (or increased access) to the services not be contrary to the public interest?

A network can also opt in to coverage.¹³

For networks outside the Pilbara, coverage means that the network is subject to ‘ENAC-style’ up-front regulation under the ENAC. There is no other option.

For Pilbara networks, there are two options – either ‘ENAC-style’ regulation under the ENAC or ‘PNAC-style’ regulation under the PNAC (see Box 3 for a summary of the difference). A covered Pilbara NSP can apply to the Minister for a ‘form of regulation’ decision that will impose PNAC-style regulation in place of ENAC-style.¹⁴ The Minister must consider several “form of regulation factors”,¹⁵ which are intended to help the Minister assess market conditions, the NSP’s market power, and the like, to decide whether the less intrusive but potentially less effective PNAC-style regulation will be sufficient, or alternatively whether the greater intrusion of ENAC-style regulation is justified.

¹² ENAC, section 3.5 (summarised)

¹³ Under PNAC section 31 an NSP can opt in to light regulation coverage. The ENAC does not have an explicit opting-in mechanism, but an NSP can apply for coverage under ENAC section 3.2, then promptly consent to that coverage under ENAC section 3.26.

¹⁴ PNAC Subchapter 3.2. See the right-hand side of Figure 3.

¹⁵ PNAC section 23. The form of regulation factors are set out in PNAC section 7.

Box 3 – ‘ENAC-style’ and ‘PNAC-style’ regulation¹⁶

In **‘ENAC-style’ regulation**, the NSP prepares a comprehensive document (an “access arrangement”) setting out its tariffs, access terms, the application process including a queuing policy, and related matters. The NSP submits this document to the ERA for up-front approval through a public consultation process. The ERA determines whether the proposal is consistent with the ENAC’s various requirements and can impose changes before approving it. The approved access arrangement then governs access to the network. It is reviewed periodically, typically every five years (called an “access reset”).

In **‘PNAC-style’ regulation**, there is no up-front approval process. The NSP prepares and publishes its own access documents, after consulting publicly. As with the access arrangement in ENAC-style regulation, these documents set out tariffs, access terms, an application and queuing policy and related matters. The PNAC sets out requirements for these documents, and the NSP can be held accountable to these requirements if an access seeker challenges the NSP’s documents when arbitrating an access dispute.

PNAC-style regulation thus moves regulatory accountability from the ‘front end’ to the ‘back end’ and makes it conditional. In ENAC-style regulation, accountability occurs up-front, as a matter of course, and involves everyone. In PNAC-style regulation, other than up-front non-binding public consultation, accountability occurs after the event, only if an access seeker chooses to bring an access dispute and involves only the parties to that dispute.¹⁷

In both models, the actual terms and prices to be applied to a given access seeker are a matter for negotiation between the NSP and the individual access seeker. The NSP’s published proposal (pre-approved by the ERA or self-determined by the NSP, as applicable) can be a reference point for these negotiations, but generally will not constrain them.

If the parties cannot agree terms, an arbitrator can impose them. In ENAC-style regulation, the arbitrator will be constrained by whatever the ERA has approved. In PNAC-style regulation, the arbitrator is largely free to overturn the NSP’s published proposal.

Once a network is covered, Figure 4 shows how a network’s coverage and form of regulation can change. If a Pilbara network is PNAC-style regulated, a person can apply to have the network converted to ENAC-style up-front regulation.¹⁸ This normally cannot be done in the first five years of coverage, or ten years if the network opted-in to PNAC-style regulation.¹⁹

All covered networks (whether by prescription, by coverage decision or by opting-in) can apply to have coverage revoked.²⁰ A Pilbara network which opted in to PNAC-style regulation can opt out again.²¹

¹⁶ The Industry Act refers to ENAC-style regulation under Part 8 as “full” regulation, and PNAC-style regulation under Part 8A as “light” regulation, see section 104A(2).

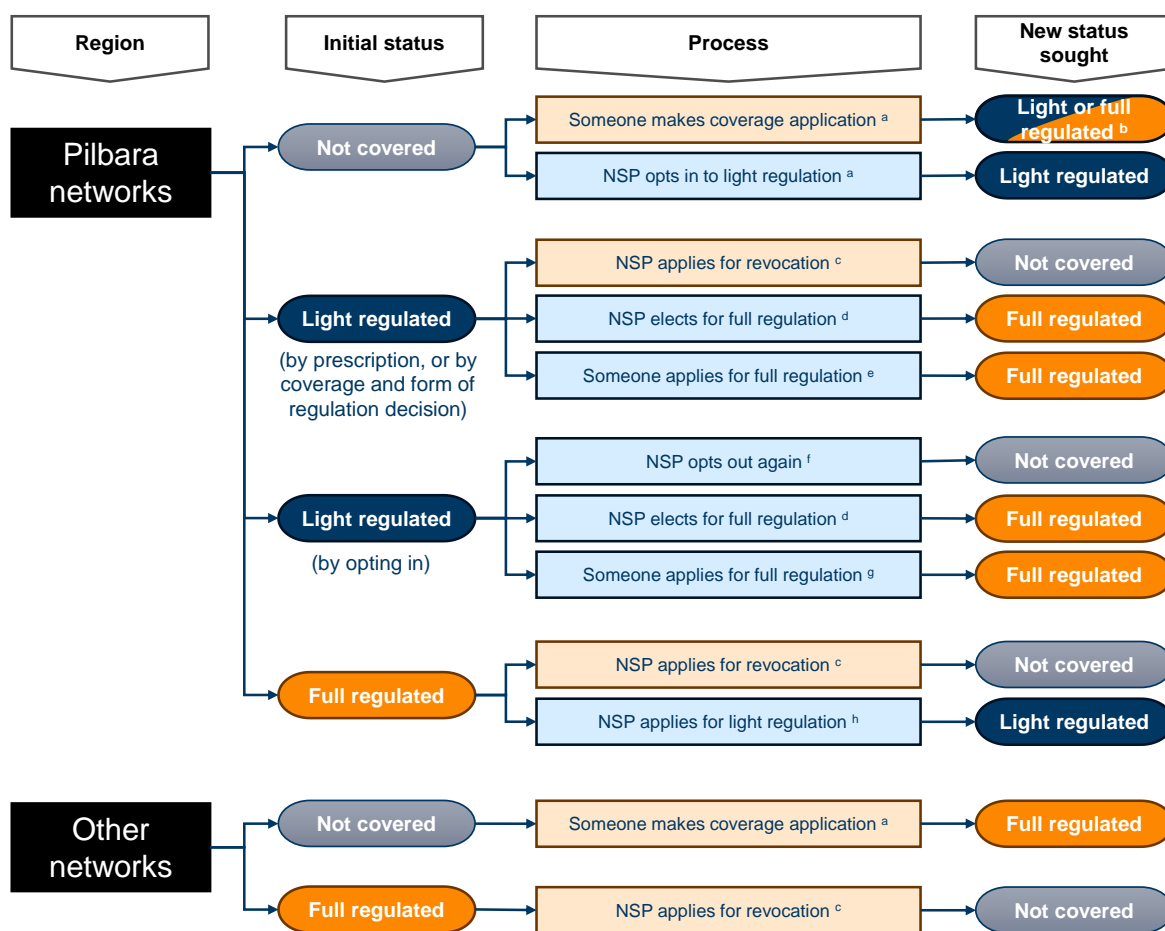
¹⁷ There are mechanisms for other parties to join the arbitration, but it is not a public process open to all. However, a redacted version of the arbitrator’s decisions is published (PNAC sections 77(1)(a)(v) and 120(6) to (9)) and can have effect as a persuasive precedent in other access disputes (PNAC section 101).

¹⁸ PNAC section 20

¹⁹ PNAC section 20(2). Section 20(3) provides exceptions to this time limit, including for material change in circumstances and serious or recurring Code breaches.

²⁰ ENAC section 3.30

Figure 4 - How coverage and form of regulation can change



a. See Figure 3 above.

b. Depends on form of regulation decision

c. ENAC Subchapter 3.4. This applies the same process as coverage, see Figure 3 above.

d. PNAC section 30

e. PNAC section 20. Normally an application cannot be made in the first 5 years: section 20(2)(a) and (b).

f. PNAC section 32

g. PNAC section 20. Normally an application cannot be made in the first 10 years: section 20(2)(c).

h. PNAC section 19. See Figure 3 above

Issues and options

The coverage and form of regulation processes can be cumbersome and time-consuming. The uncertainty associated with both the coverage and revocation processes can deter investment by both transmission operators and prospective users (generators and loads).

Further, the ENAC's coverage criteria are obsolete in two respects.

²¹ PNAC section 32

- First, the criteria's drafting lags national best practice. In particular, the "uneconomic to develop" limb has proved problematic in practice.^{22,23} It was designed to capture the 'natural monopoly' concept underpinning infrastructure regulation,²⁴ but the language used to capture that concept has elsewhere been completely reframed.²⁵
- Second, the core objectives of third-party access regulation have evolved. When modern access regimes were created in the 1990s, their objective was framed as being to promote competition in upstream and downstream markets. As regulatory regimes have evolved, their objectives have been refined and expanded, so that they now focus on the long-term interests of consumers, including in relation to decarbonisation and other environmental outcomes. This evolution is reflected in the National energy objectives²⁶ and the recently enacted State electricity objective,²⁷ but not in the ENAC coverage criteria.

Stepping back from the coverage criteria to the concept of coverage itself, this approach is in decline nationally in both gas and electricity. Coverage has been replaced by an approach in which virtually all transmission infrastructure is required by default to provide third party access, subject to certain limited exceptions and exemptions.²⁸

Finally, although third party access is central to the State's Pilbara objectives, the current ENAC coverage criteria focus exclusively on competition outcomes. They do not permit the Minister to consider other PET objectives such as decarbonisation, Traditional Owner participation, or minimising environmental and community impact.

²² Among other places, the subject was discussed extensively in the Harper Committee's 2015 *Competition Policy Review* (available [here](#)), and in the Commonwealth Government's response to that review (available [here](#)).

²³ Expressing this concept in legislative form has not proven easy. The Hilmer committee which gave birth to modern third party access regulation themselves observed: "it is difficult to define precisely the term "natural monopoly", [although] electricity transmission grids, ... major pipelines ... [etc] are often given as examples.". Hilmer Committee, 1993, *National Competition Policy* (available in Commonwealth Treasury's archive [here](#), and in various other web locations), page 240.

²⁴ The ENAC's "uneconomic to develop" formulation was copied from other access regimes of the time (see clause 1.9 of the National Third Party Access Code for Natural Gas Pipeline Systems, implemented in Western Australia under the *Gas Pipelines Access (Western Australia) Act 1998*, and the then *Trade Practices Act 1974* sections 44G(2) and 44H(4)). Note on terminology: In the *Trade Practices Act 1974* and its successor the *Competition and Consumer Act 2010*, coverage is called "declaration".

²⁵ The test which in the ENAC section 3.5(b) is expressed as "[it would] be uneconomic for anyone to develop another network to provide the covered services" is now expressed in the *Competition and Consumer Act 2010* section 44CA(1)(b) as:

"(b) that the facility that is used (or will be used) to provide the service could meet the total foreseeable demand in the market:

(i) over the period for which the service would be declared; and

(ii) at the least cost compared to any 2 or more facilities (which could include the first-mentioned facility)".

²⁶ For example see paragraph (c) of the National Electricity Objective in section 7 of the *National Electricity Law*, scheduled to the *National Electricity (South Australia) Act 1996*.

²⁷ Paragraph (c) of new section 3A in the *Electricity Industry Act 2004*, to be inserted by amending section 5 of the *Electricity Industry Amendment (Distributed Energy Resources) Act 2024 (DER Act)*. The current Pilbara electricity objective in section 119(2) of the *Electricity Industry Act 2004* does not have this paragraph (c) but will be replaced with the State electricity objective by amending section 12 of the *DER Act*.

²⁸ The rationale for, and details of, these reforms in gas can be found in *Options to improve gas pipeline regulation - Regulation Impact Statement for Decision 2021*, available [here](#).

Coverage will relate only to connection, injection and withdrawal at a point (not transporting electricity between points)

As discussed in section 3 below, it is proposed to amend the PNAC to differentiate between two aspects of access:

- the right to connect (or interconnect) to a network, and to inject or withdraw electricity at that connection point; versus
- the right to have electricity transported between connection points, across one or more networks.

The following discussion of coverage relates only to the first of these. The effect of coverage on an NSP is that it must negotiate, and failing agreement arbitrate, contracts with access seekers for connection (including interconnection), injection and withdrawal.

Once a user is connected (or interconnected) at a point and is injecting or withdrawing electricity at the point, the reforms proposed in section 3 will mean that the flow of electricity through the grid from or to that point will occur as of right, and be regulated, under the PNR. It will not be a matter for contract negotiation or arbitration.

Options considered

Maintaining the **status quo** would leave the ENAC's coverage criteria and process, and the PNAC's form of regulation criteria and process unchanged. Therefore, third party access in the Pilbara would continue to be subject to the uncertainty and delay of the coverage process. This may not produce outcomes in line with the PET Plan objectives, and the associated uncertainty will not encourage investment. Further, as noted, the current coverage criteria are outdated.

As a result, two key options were considered in relation to this issue,

Option A: Retain the coverage process but update coverage criteria

It would be possible to reframe the ENAC coverage criteria to better align with the modern declaration criteria in the *Competition and Consumer Act 2010*. This on its own would not improve certainty for investors and or address the fact that none of the criteria, even the modern *Competition and Consumer Act* version, reflect the broader policy objectives of modern energy reform generally or the PET objectives.

Option B: Automatic coverage for all new Pilbara networks (preferred)

As third party access is central to the State's Pilbara objectives, it is proposed to impose automatic coverage for all **new** transmission assets in the Pilbara, except for a limited class of short single-user connection assets (discussed below).

This approach would largely mirror the 'shared transmission network' approach adopted for the NEM,²⁹ and the approach adopted across Australia for gas pipelines.³⁰

The resulting regulation would be 'PNAC-style' unless Minister imposes ENAC-style regulation after going through the PNAC's form of regulation process, or an NSP opts in to ENAC-style regulation, as shown in Figure 4.

²⁹ The NEM's transmission access regime is described in AEMC (2024) *Final Report: Transmission access reform: Volume 3 of 3: Access and pricing in the NEM* (available [here](#)).

³⁰ See Energy Ministers' 2022 *Information Paper* on the pipeline access reforms [here](#).

The mechanism to be used to achieve this result is still being considered, but one option will be to establish new dedicated coverage criteria for Pilbara networks. Further consultation will be carried on the exact Pilbara-specific coverage criteria during detailed design, but the criteria would likely be that the Minister may declare a new Pilbara network covered if:

- it is a priority project network under an EOI process such as the recent EOI for Priority Projects process; or
- the Minister otherwise considers coverage to be appropriate in light of the State's PET objectives.

For clarity, it is not proposed that automatic coverage be imposed for all Pilbara networks because it would present an unacceptable level of sovereign risk to the owners of existing networks. As discussed in section 2.1.2 below, the policy intention is to preserve the coverage status of existing un-covered transmission assets unless they materially change the nature of their interconnection.

Small single user connection assets

Imposition of third-party access obligations brings financial and other compliance costs and operational risk and can be a barrier to investment for generators and loads seeking to connect to the shared network. There is a point below which these costs outweigh any actual or potential benefits which might flow from coverage.

A related question is who has operational responsibility for the connection asset – the generator or load it connects, or the NSP of the shared network it is connected to.

Over the years, various regimes have attempted to reflect an appropriate balance on these subjects.

EPWA considers that the 'designated network asset' model which has applied in the NEM since 2021³¹ provides useful guidance because it contemplates that:

- even single-user connection assets should generally be subject to at least some form of third-party access, except possibly if they are very small;
- some classes of connection assets (e.g. substations) need to be treated differently, having a higher level of integration and probably third-party access than the poles-and-wires components; and
- demand for access to connection assets can change over time.

Stakeholder feedback on the NEM connection asset regime or an alternative is welcome. During detailed design there will be further consultation on how best to address connection assets.

³¹ AEMC, (2021) *Rule Determination: National Electricity Amendment (Connection to Dedicated Connection Assets)* (available [here](#)). This rule determination replaced the concept of 'large DCAs' (Dedicated Connection Assets) over 30 km, with a framework for Designated Network Assets (DNAs). DNAs are treated as part of the transmission network, rather than as connection assets. They are operated by the host NSP and are subject to a form of 'light' access regulation, but they can be owned by the relevant generator or load.

A limited right to revoke coverage

Consistent with the State's emphasis on common use infrastructure, new transmission assets which have been automatically covered as described above will not be permitted to apply for revocation.

Given their strategic locations, and likely growing strategic importance in future years, this removal of the right to apply for revocation will be extended to the two existing covered networks operated by Horizon Power and APA.

For connection assets, the question of whether the operators of these assets should be able to apply for revocation of their obligation to provide third-party access will be considered as part of the broader question of how connection assets are to be treated.

2.1.2 Transition

Transition for early projects

Implementing automatic coverage as described above will require changes to the PNAC and ENAC. In the near term, pending those changes, each NSP awarded Priority Project status through the EOI process will be required to voluntarily opt-in to coverage and PNAC-style regulation.³² The commitment to do so (and to not opt out again) will be reflected in a contract between the proponent and the State (see above).

Legacy arrangements for existing networks

Existing covered networks

These networks³³ will continue to be covered. As noted above, to maintain consistency with new networks, they will lose the right to apply for revocation.

Existing non-covered networks

These networks³⁴ will continue to be non-covered, i.e., they will be exempted from the automatic coverage arrangements described above.

Today, any person can apply to have one of these non-covered networks covered and, if an application was made, the Minister will weigh the pros and cons of coverage as required by the ENAC, applying the ENAC's coverage criteria as prescribed from time to time. This will continue to be the case, i.e., anyone will be able to apply to have one of these assets covered.

The coverage criteria to be applied in such an instance will be whatever is prescribed in the ENAC as the State's general coverage criteria at the time, not any alternative coverage criteria which may be adopted for PET networks, if this is chosen as a way of implementing automatic coverage.

³² PNAC section 31

³³ Horizon Power's coastal network and APA's Port Hedland network.

³⁴ That is, all other present NWIS and non-NWIS networks including integrated mining networks.

2.1.3 Proposal

Proposal 1. Coverage

- 1.1 All new Pilbara transmission assets will be automatically covered, with the exception of certain connection assets. There will be no revocation of coverage for these assets.
- 1.2 Regulation of these assets will be 'PNAC-style' unless the Minister separately imposes ENAC-style regulation by way of a form of regulation decision, or an NSP opts in to ENAC-style regulation.
- 1.3 Certain small single user connection assets (still to be defined) may be exempted from automatic coverage until their circumstances change.
- 1.4 Transition for early projects: Early projects will be expected to opt in to PNAC-style regulation.
- 1.5 Legacy for existing networks:
 - (a) Existing covered networks will be subject to the above arrangements. They will stay covered and, like new networks, will not be able to seek revocation.
 - (b) Existing uncovered networks will continue with the status quo, i.e. will be exempted from automatic coverage but, as now, may be subject to a coverage application. Any such coverage application will be assessed against the ENAC's general coverage criteria, and not any special coverage criteria (if any) which may be prescribed for new PET networks.

Consultation Questions:

- (1)(a) Do you support the proposal that almost all transmission assets (barring small single user connection assets) should be covered, with no ability to revoke coverage?
- (1)(b) How should access to connection assets be managed? Do you have any comment on the NEM's 2023 reforms in this respect?
- (1)(c) Do you support the proposed legacy treatment for existing networks?

2.2 Managing vertical integration

An NSP providing network access services is said to be '**vertically integrated**' if it also has a related business which competes in one or more upstream or downstream markets, for example, if the NSP or a related body corporate owns or operates generation assets, retails electricity or consumes electricity as a material load. The upstream or downstream operations are referred to as the NSP's '**related business**' or sometimes as the NSP's '**associates**'.

A vertically integrated NSP is able to, and is incentivised to, make decisions and otherwise act in a way which favours its own related business or disadvantages its related business's competitors, for example through:

- **discriminatory decision-making:** A vertically integrated NSP may be tempted to make discriminatory decisions or behave in a discriminatory fashion during the access application process, in ways which make it slower or more difficult for a competitor to connect (e.g. administering the queue, processing applications, modelling, determining connection standards and exemptions). It could also discriminate in general operational decisions (e.g. regarding outage scheduling, constraint management, UFLS settings and technical compliance standards generally³⁵);

³⁵ E.g. if the NSP's related generation business uses only machines from manufacturer A, and its competitor uses machines from manufacturer B, the NSP could establish network technical requirements which are ostensibly objective, but which manufacturer A could meet easily, and manufacturer B could not, or couldn't without additional expense.

- **discriminatory contracting:** A vertically integrated NSP may seek to set network tariffs or contract terms which favour its own related business or disadvantage a competing third party;
- **leakage or misuse of commercially sensitive information:** A vertically integrated NSP who receives commercially sensitive information (e.g. regarding a competitor's intentions or operations) may be tempted to share that information with its related business or use it for that business' benefit; and/or
- **cross-subsidy:** A vertically integrated NSP might be tempted to move costs from its related business to its regulated network business, so that those costs can be recovered across other network users. This can simultaneously make its related business more cost competitive and its competitors less so.

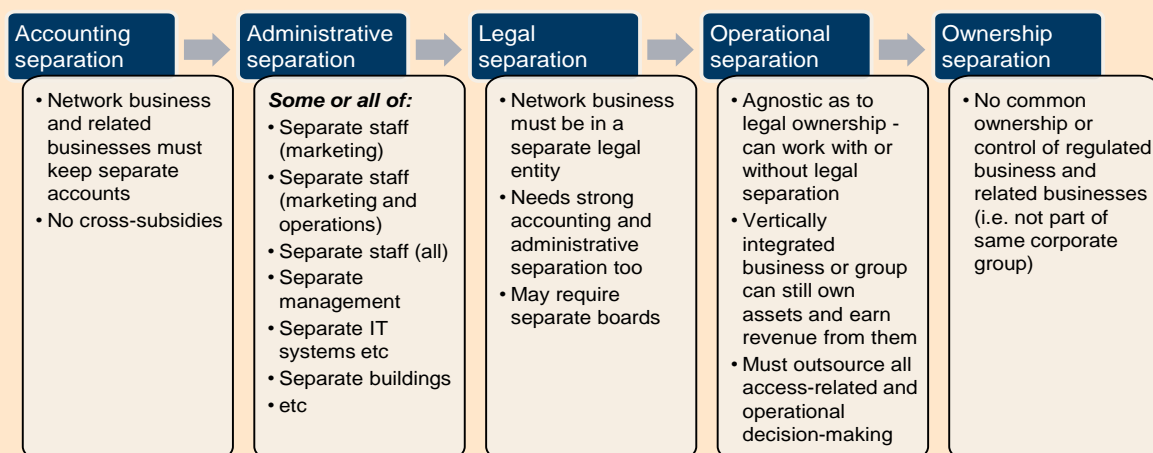
As outlined in the EOI Application Guidelines, the WA Government recognises the commercial reality of the Pilbara market in which many current and presently proposed transmission operators are, or propose to be, vertically integrated. However, given the risks raised by vertical integration, clear and effective protections must be in place.

To give context to the following discussion, Box 4 summarises the main measures usually called on to manage vertical integration.

Box 4 - Measures to manage vertical integration

The measures implemented to mitigate the risks posed by vertical integration can encompass everything from separate accounting, through information barriers and administrative arrangements, up to restrictions on corporate structure and ownership. These form a rough hierarchy, as shown in Figure 5.

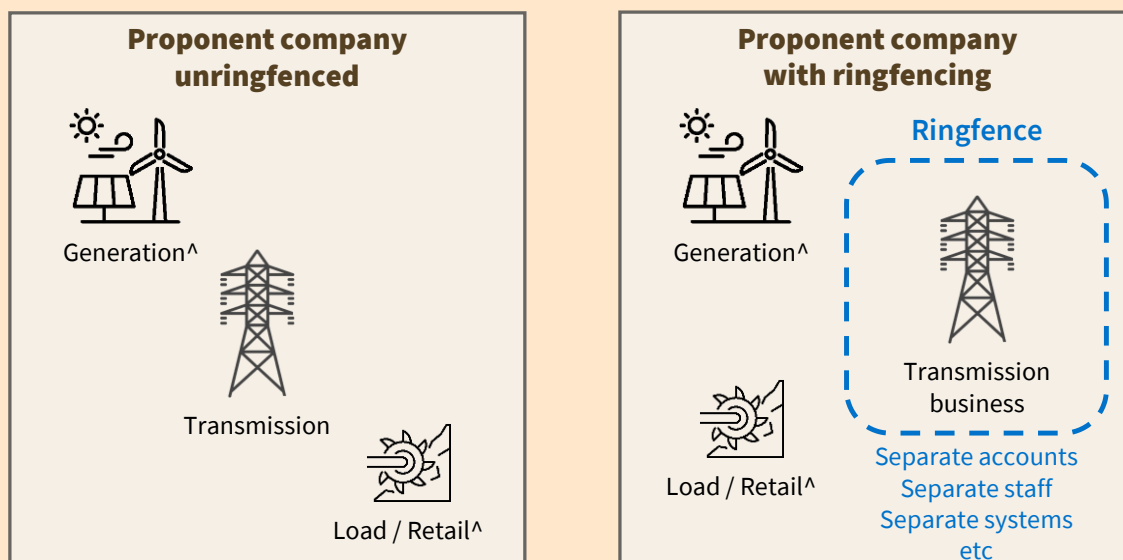
Figure 5 – Measures to manage vertical integration, a rough hierarchy



Probably the simplest and easiest measure to introduce is **accounting separation**, which if paired with suitable audit or transparency requirements can be effective in preventing cross-subsidies.³⁶ Next is a wide range of **administrative separations**, having to do with staff, systems, decision-making and even physical locations. These are aimed at preventing discriminatory decision making and stopping the leakage of commercially sensitive information. The combination of accounting and administrative separation is what is usually contemplated by the expression '**ringfencing**', and is shown in Figure 6. At the upper end, such measures can be highly burdensome on the regulated business.

³⁶ The harms caused by vertical integration mentioned here, are explained in section 2.2.2.

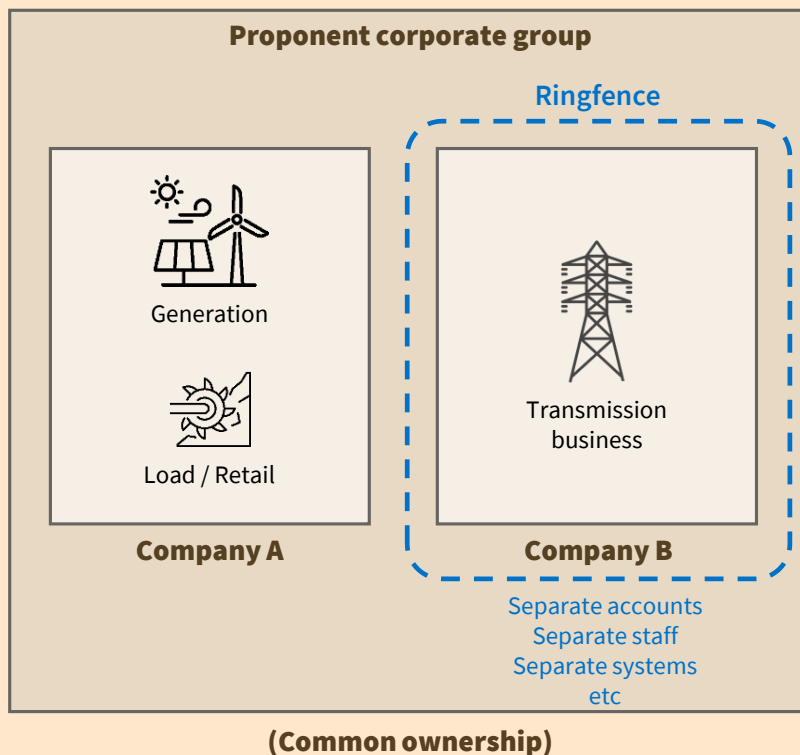
Figure 6 - A vertically integrated company without and with ringfencing



[^] The business may not have all three components. Vertical integration is a problem even if the transmission business is paired with only generation or only load/retail.

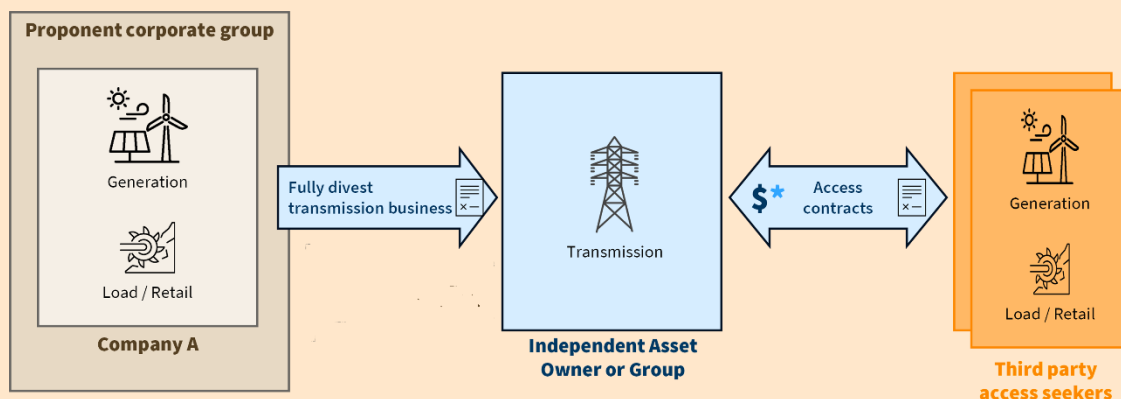
A common further measure in many markets is **legal separation**, which can enable the creation of separate governance structures, but which will be of little benefit if not paired with stringent administrative separation as well, as shown in Figure 7.

Figure 7 - Legal separation (with ringfencing)



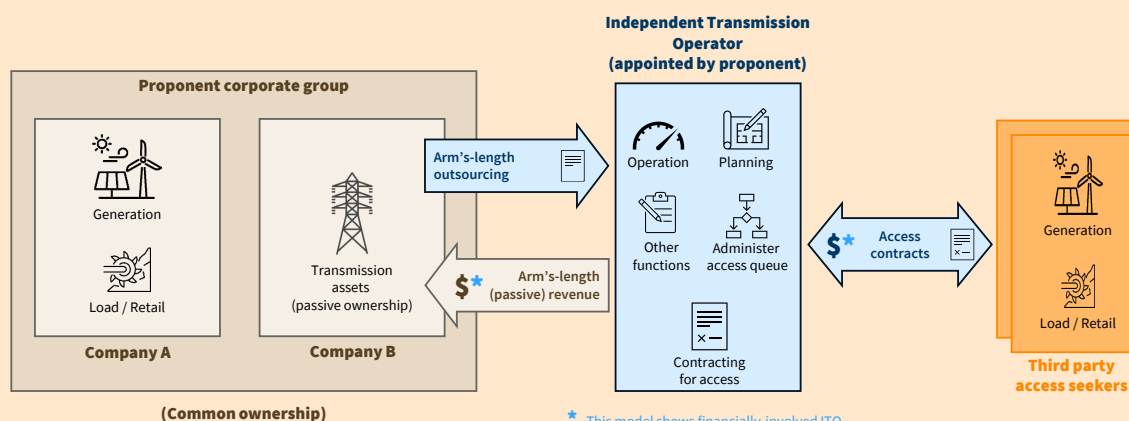
The final step on this continuum is **ownership separation**, in which the transmission business cannot be under any common ownership with upstream or downstream businesses. This is shown in Figure 8. This is the 'gold standard' in the management of vertical integration because it ensures that neither the business itself nor anyone in a position to influence its conduct has any of the conflicts of interest or harmful incentives which make vertical integration a problem.

Figure 8 - Ownership separation



In a separate category, and potentially very nearly as effective as full ownership separation, sits **operational separation**, in which the vertically integrated entity is permitted still to own the network business, but must wholly delegate operation and management to a fully independent third party. This is shown in Figure 9 and discussed more fully below.

Figure 9 - Operational separation



* This model shows financially-involved ITO.
Model can also be designed with access revenue bypassing ITO.

2.2.1 Current arrangements

The 2021 design approach

The current PNAC regime was designed to give the market confidence that the harms from vertical integration would be managed, but at the same time “*provide a ‘fit-for-purpose’ approach that recognises the costs and benefits of some measures may differ between networks*”.³⁷ The regime was also designed to accommodate future networks with different circumstances.³⁸

To meet these two objectives, it was decided that the regime would allow each covered NSP to design its own ringfencing solutions (subject to approval by the ERA), rather than having the regulator develop them generically as happens in the NEM.³⁹

The PNAC regime is generally less prescriptive than the corresponding ENAC regime. This permits flexibility and tailored solutions, but increases the complexity for compliance monitoring, enforcement, and for access seekers who must deal with multiple NSPs.

As a result of this design approach, Chapter 8 of the PNAC sets out:

- ringfencing policy objectives;
- some core standards which apply to all covered networks; and
- a mechanism for each NSP to adopt its own ringfencing rules to supplement these core standards and put in place measures to address the ringfencing policy objectives.

Ringfencing objectives

The PNAC specifies the ringfencing regime’s primary objectives as:⁴⁰

- prevent the misuse of commercially sensitive information;
- prevent cross-subsidy; and
- prevent discrimination in favour of the covered NSP’s related business or against its competitors.

The regime’s secondary objectives are to be flexible, recognising that network businesses differ, to balance the primary objectives against the cost and disruption involved in achieving them and to be flexible to deal with changing circumstances over time.⁴¹

Core standards prescribed in the PNAC itself

The core standards prescribed in the PNAC in relation to ringfencing include:

³⁷ Public Utilities Office, *Regulatory framework for the Pilbara electricity networks: Light handed access regime: Detailed Design Consultation Paper*, 15 March 2019, available [here](#) (“Access DDCP”), section 7.3.

³⁸ Ibid.

³⁹ See the AER’s *Transmission Ring-fencing Guideline 2023* homepage, [here](#).

⁴⁰ PNAC section 127(1)

⁴¹ PNAC section 127(2)

- **General prohibition on conduct which violates objectives:** The covered NSP must not knowingly engage in conduct that is inconsistent with the above primary objectives.⁴²
- **Regulating associate contracts:** The NSP must document all associate contracts in writing⁴³ and associated contracts must:
 - be consistent with the ringfencing objectives set out above;
 - not be contrary to the Pilbara electricity objective;
 - not have the purpose, effect or likely effect of substantially lessening competition (SLOC) in the market for network services (but this limited SLOC test does not consider competition in upstream and downstream markets); and
 - be consistent with what NSP would offer an arms-length party;
- **Prohibition on disadvantageous contracts with competitors:** When the NSP supplies goods or services to a competitor of the NSP's other business, or acquires goods or services from such a competitor, the NSP must not offer terms which competitively or financially disadvantage the competitor compared with the NSP's associate⁴⁴ and
- **Accounting requirements:** While the PNAC does not prescribe accounting requirements, leaving this to be set out in the ringfencing rules for each network, it does set out relatively detailed requirements for the things accounting arrangements should achieve⁴⁵ (e.g. allow revenue from the associated business to be clearly identified)⁴⁶.

The PNAC does not require legal separation.

Matters to be set out in NSP-specific ringfencing rules

The PNAC requires that each NSP must also have its own set of ringfencing rules:

- The NSP must prepare and publish these rules⁴⁷ and must seek the ERA's approval to those rules.⁴⁸ The ERA can propose changes,⁴⁹ and can draft its own version of the rules if necessary;⁵⁰
- The ringfencing rules for each network must detail accounting measures to **prevent cross subsidies**, in accordance with the PNAC's requirements;⁵¹

⁴² PNAC section 128(1)

⁴³ PNAC section 130, including if it's an internal arrangement within a vertically integrated NSP: section 131

⁴⁴ PNAC section 132(5).

⁴⁵ PNAC section 134(1)(b)

⁴⁶ PNAC section 134(1)(b)(ii)

⁴⁷ PNAC section 133 and 134

⁴⁸ PNAC section 135

⁴⁹ PNAC section 135(4)(b)(ii)

⁵⁰ PNAC section 135(6)(b)(ii)

⁵¹ PNAC section 134(1)(b)

- The NSP's ringfencing rules are to include measures, processes and procedures to ensure that any **commercially sensitive information** the NSP receives in performing any function under the PNR is kept confidential, used only within the network business, and used only for the purpose for which it was acquired or developed;⁵² and
- In addition to the core standards, the NSP's ringfencing rules are to include measures, processes and procedures to "ameliorate the potential for **discriminatory treatment**" in favour of the NSP's related businesses, or against its competitors, through operational decision making, contracting or otherwise.⁵³

Compliance monitoring and enforcement

Compliance

The PNAC, like the ENAC⁵⁴, relies on the NSP designing and implementing its own compliance regime. In the Pilbara the ERA has no role in this process, cf. the ENAC where the NSP must submit its ringfencing compliance procedures to the ERA.⁵⁵

The PNAC's ringfencing regime relies on self-reporting to the ERA of any breach of the ringfencing rules.⁵⁶ Whether the ERA or another entity might have a larger role here, e.g. selecting and instructing the compliance auditor, or a broader compliance monitoring and enforcement role is still under consideration.

The PNAC lacks a provision, present in the ENAC⁵⁷, under which the ERA can examine associate contracts for compliance with the code's ringfencing requirements and direct remedial amendments.

Enforcement

There are presently no civil penalties and no conduct provisions for which injunctions can be obtained – this is true for the whole Pilbara regime, not just the ringfencing provisions. This is being considered in the current reforms.

The ERA can publish the nature of any self-reported non-compliance.⁵⁸ A dispute about whether the NSP was complying with its ringfencing obligations is an "access dispute" capable of arbitration under the PNAC (although the arbitrator has "limited discretion" in such a dispute, which means the arbitrator cannot require changes to the ringfencing rules and can only determine whether the NSP has or has not complied).⁵⁹

⁵² PNAC section 134(1)(a)

⁵³ PNAC section 134(1)(c)

⁵⁴ ENAC section 13.37

⁵⁵ ENAC section 13.37. Although the ERA has no formal approval role for the submitted measures, its general power to intervene to impose and amend ringfencing rules (ENAC section 13.14(b)) gives it de facto powers here – as the {note} under section 13.37 reminds us.

⁵⁶ PNAC section 141

⁵⁷ ENAC ss 13.6 to 13.10.

⁵⁸ For example, on 3 October 2024 the ERA published a notice regarding non-compliances by Horizon Power (available [here](#)).

⁵⁹ Para (b) of the definition of "access dispute", PNAC section 5 and PNAC section 133(3).

Ringfencing in the PNR

The PNR have less to say on vertical integration than the PNAC. There is no ringfencing regime as such, but there is a prohibition on a vertically integrated NSP unfairly discriminating in favour of its related generation or consumption businesses or against any other generator or consumer.⁶⁰

2.2.2 Issues and options

Introduction

The problem of vertical integration, and the pros and cons of various measures to manage it, have been exhaustively discussed throughout Australia and in many other jurisdictions for decades.⁶¹ It is recognised around the world as a serious threat both to effective third-party access, and to the efficient operation of electricity markets.⁶² The Pilbara is no exception – vertical integration places at risk the PET Plan objectives including the overarching goal of Pilbara decarbonisation.

On the other hand, many Pilbara businesses are and wish to remain vertically integrated, and in some cases see vertical integration as fundamental to their global competitiveness.

The new regime needs to strike a balance which allows participants as much freedom as possible in how they structure their business and operations, without compromising the PET Plan's objectives.

A case study – the evolution of unbundling in the EU

The history of the European Union's reforms to manage vertical integration in electricity transmission provides an informative case study. The chronology is shown in Figure 10.⁶³

⁶⁰ PNR rule 17(3)

⁶¹ There are many comprehensive discussions available of these matters going back many years. See for example:

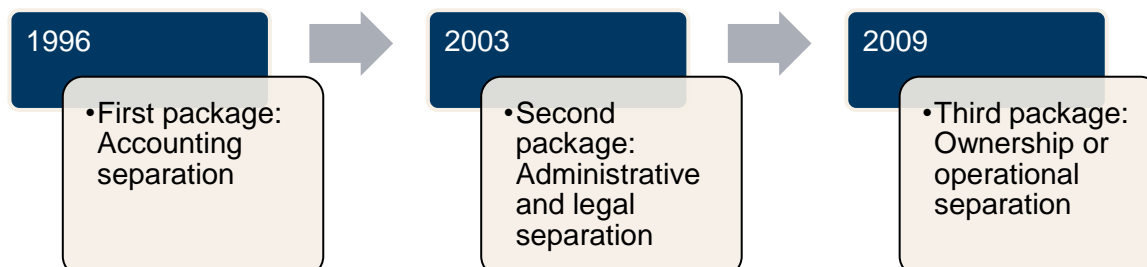
- the Australian Energy Markets Commission's 2024 *Final Determination on extending the transmission ringfencing framework to connection assets* (available [here](#))
- the Australian Energy Regulator's 2023 *Electricity Transmission Ringfencing Guideline* (available [here](#)) and Explanatory Statement (available [here](#)).
- consultation regarding the EU's 'third package' of unbundling reforms including:
 - the 2007 EU Proposal that led to the third package: European Union COD 2007/0195 *Proposal for a Directive of the European Parliament and of The Council amending Directive 2003/54/EC concerning common rules for the internal market in electricity*, 19 September 2007 (**EU Proposal**);
 - UK Ofgem's 2010 consultation (available [here](#)); and
 - the EU's 2011 FAQ (available [here](#)).

⁶² The EU proposal for its third package of unbundling reforms, see footnote 61 above, at page 4 describes the problem as follows: "Vertically integrated network operators have no incentive for developing the network in the overall interests of the market and hence for facilitating new entry at generation or supply levels; on the contrary, they have an inherent interest to limit new investment when [that investment] will benefit its competitors and bring new competition onto the incumbent's "home market". Instead, the investment decisions made by vertically integrated companies tend to be biased to the needs of supply affiliates. Such companies seem particularly disinclined to increase interconnection [with other networks]".

⁶³ The chronology is helpfully summarised in Meletiou et al (2018) "Regulatory and ownership determinants of unbundling regime choice for European electricity transmission utilities" *Utilities Policy* 50 (2018) page 13 at pages 14-16.

The first package of reforms in 1996 involved accounting separation to prevent cross-subsidy.⁶⁴ The second in 2003 involved legal separation (as shown in Figure 7 above).⁶⁵ The third in 2009 was introduced because the first two packages had not been sufficient, and involved ownership or operational separation (as shown in Figure 8 and Figure 9 above).^{66,67}

Figure 10 - A chronology of EU unbundling reforms



The role of incentives

The EU proposal summed up the need for the third package as follows:

*... a company that remains vertically integrated has **an in-built incentive** both to **under-invest** in new networks (fearing that such investments would help competitors to thrive in “its” home market) and - wherever possible - to **privilege its own sales companies** when it comes to network access. This damages the ... [overall market’s] competitiveness and its security of supply and prejudices the attainment of its climate change and environmental objectives.*⁶⁸

This “*in-built incentive*” to engage in anti-competitive conduct lies at the heart of the problem, but is a particular vulnerability of administrative separation as currently required under the PNAC. Decisions about major investments will typically be made at the highest levels of a company or group. However, these are precisely the levels of management at which, to prevent regulation becoming “*excessively burdensome and intrusive*”,⁶⁹ administrative separation rules tend not to apply.^{70,71}

⁶⁴ *ibid.*, See EU Directive 96/92/EC (available [here](#)).

⁶⁵ *ibid.* See EU Directives 2003/54/EC (electricity, available [here](#)) and 2003/55/EC (gas, available [here](#)).

⁶⁶ EU Directives 2009/72/EC (electricity, available [here](#)) and 2009/73/EC (gas, available [here](#)) (EU Third Package). The electricity rules were amended and restated by EU Directive 2019/944 (available [here](#)).

⁶⁷ In its final form, the EU Third Package also allowed a derogation from ownership and operational unbundling, called the ITO model, which permitted the network’s ownership and operation to remain vertically integrated, subject to detailed ringfencing requirements (in effect, a form of administrative separation, see Figure 6 above). The inclusion of an ITO option has been described as a “political compromise ... after a long period of negotiations” (Meletiou et al, footnote 63 above, page 15). The ITO model was not part of the original 2007 EU Proposal (see see footnote 61 above).

⁶⁸ EU Proposal, see footnote 61 above, page 4 (emphasis added).

⁶⁹ EU Proposal, see footnote 61 above, page 4, see passage quoted at footnote 68.

⁷⁰ Example 1: the ENAC ringfencing rules require the network business to ensure that commercially sensitive information is kept solely within its “marketing staff” (ENAC section 13.11(b)), but have an explicit exclusion which permits communication of that information to “senior staff” (ENAC section 13.11(d)), defined as staff “involved in strategic decision making, including directors and the executive officer” (ENAC section 1.3). The ENAC does attempt to place restrictions on disclosure to senior staff, but these involve subjective judgments and risk being porous: disclosure must be “to the minimum extent **necessary** ... for good corporate governance” (section 13.11(d)(i)) and “**where possible** only in summary or aggregated form ...” (section 13.11(d)(ii)) (emphasis added in both cases).

Some ringfencing regimes, having allowed senior staff members to receive sensitive information, seek to limit the use of the sensitive information.⁷² However, this may require a senior decision maker to “unknow” something highly relevant when making decisions about the upstream or downstream business. Even with the best of faith, this is a challenging task. Measures can be introduced to prevent this conflict occurring, such as wholly separate boards and management teams, but this adds further cost and inefficiency.

The very best mitigation measure recognises this. Ownership separation (Figure 8) requires the NSP and its owners to be completely free from any upstream or downstream interests. The NSP thus has no incentive to block or harm access seekers. On the contrary, its business depends upon them so it is incentivised to see them succeed (although it may still hope to recover monopoly rents from them).

Every other mitigation measure discussed in this paper permits the NSP or its owners to remain vertically integrated, and so retain the in-built incentive towards harmful conduct. In these circumstances, effective mitigation of this in-built incentive relies on some combination of two, or perhaps three, things:

- ideally, removing the NSP’s *ability* to engage in harmful conduct even if it wants to;
- otherwise, as far as possible negating the NSP’s incentive to engage in harmful conduct, by adding countervailing *disincentives* (including prohibitions, if there are effective sanctions for breach); and
- perhaps, at least in theory, adding *positive incentives* for the NSP to engage in beneficial conduct.

The first of these (removing the NSP’s *ability* to engage in harmful conduct) is the best. This is why operational separation in the EU (Figure 9), and the proposal in Option B below to remove sensitive functions from the NSP (Figure 12), are the next best alternatives to full ownership separation.

In contrast, leaving both the *incentive* and the *ability* to do harm in place, and instead relying solely on countervailing disincentives such as sanctions for breach, will likely be the least effective regulatory solution.

Options not being progressed

Every regulatory intervention must strike a balance between the quality of regulatory outcomes to be achieved, and the financial and other costs of compliance. This tension emerges starkly when it comes to managing vertical integration. All such measures cost the regulated business both money and efficiency. Unfortunately, this cost is not always proportionate to the level of confidence reposed in the measures by outside observers.

⁷¹ Example 2: the AER’s *Ring-fencing Guideline Electricity Transmission Version 4* (2023) (available [here](#)) restricts “marketing staff” of the ringfenced business from being staff of the related business, and vice versa (clause 4.3(a)). But “marketing staff” explicitly excludes “officers” (defined to include directors and senior decision-makers), thus permitting these individuals to be common across both businesses (clause 1.4).

⁷² e.g. ENAC section 13.11(d)(iii) requires the senior staff member to use the information only in relation to the network business.

Maintaining the status quo

One option considered was to preserve the **status quo**. As described in section 2.2.1 above, the Pilbara regime allows for flexible solutions to manage the vertical integration risk, tailored to an NSP's individual requirements. The recent public finding of non-compliance by Horizon Power,⁷³ while regrettable, is at least evidence that the regime can work, and may hopefully drive improved behaviour.

However, informal stakeholder feedback received by EPWA to date suggests that market participants have a low level of confidence in the current regime's effectiveness in preventing discrimination or other harmful conduct. Whatever measures a ringfenced business may put in place, and however diligently it may pursue them, the perception problem remains. Human factors (social gatherings, gossip, inadvertence) will always provide an opportunity for leakage, and observers will always be concerned that the "*in-built incentive*"⁷⁴ towards harmful behaviour may be enough to overcome regulatory prohibitions.

Further, some of the traditional ringfencing measures such as physical separation may be less meaningful, harder to implement and potentially less effective in a modern distributed, electronic workplace with flexible and fluid working arrangements, communications and staffing.

The European Commission's proposal for the third package of EU reforms expressed the view that, in practical terms, it is impossible to guarantee that administrative and accounting separation alone would be effective either in managing the NSP's conflict of interest in operational decision-making,⁷⁵ or in ensuring that commercially sensitive information will not leak from the NSP to its related businesses.⁷⁶

The ACCC's recent decision in respect of Brookfield's takeover of Neoen explicitly expressed scepticism about the effectiveness of regulation in mitigating vertical integration.⁷⁷ The ACCC instead required Brookfield to divest the vertically integrated Victorian assets which would result from the takeover – i.e. ownership separation.

Given scepticism by would-be investors, the ACCC and the EU, and because the current provisions do not address the question of incentives, the status quo is not considered to be an acceptable option.

Legal separation

Another option would be to go just one step further than the PNAC does at present, and introduce **legal separation** as a minimum requirement.

⁷³ See ERA notice dated 3 October 2024, [here](#).

⁷⁴ EU Proposal, see footnote 61 above, page 4, see passage quoted at footnote 68

⁷⁵ EU Proposal, see footnote 61 above, page 4 states that this conflict of interest is: "... *is almost impossible to control by ... [administrative separation, because] the [NSP's] independence ... is impossible to monitor without an excessively burdensome and intrusive regulation.*"

⁷⁶ EU Proposal, see footnote 61 above, page 4, observes that: "... *there is no effective means of preventing transmission system operators releasing market sensitive information to the generation or supply branch of the integrated company.*"

⁷⁷ At the time of writing the ACCC has not yet published its detailed analysis, but its public [announcement](#) stated (emphasis added):

"The ACCC has long-standing competition concerns with cross-ownership of monopoly energy network assets and energy generators, due to the potential for the monopoly provider to discriminate against rivals and favour its own operations ... The ACCC considers that, without the divestment, the acquisition would have increased Brookfield's incentives to delay or increase the cost of connections works on rival projects or operate the AusNet transmission network to benefit Brookfield's related assets ... While there are some regulatory protections to limit obvious and blatant conduct disadvantaging rivals, there is still a clear potential for anti-competitive tactics."

However, legal separation on its own achieves little. The incentives for the ultimate decision-makers are the same.

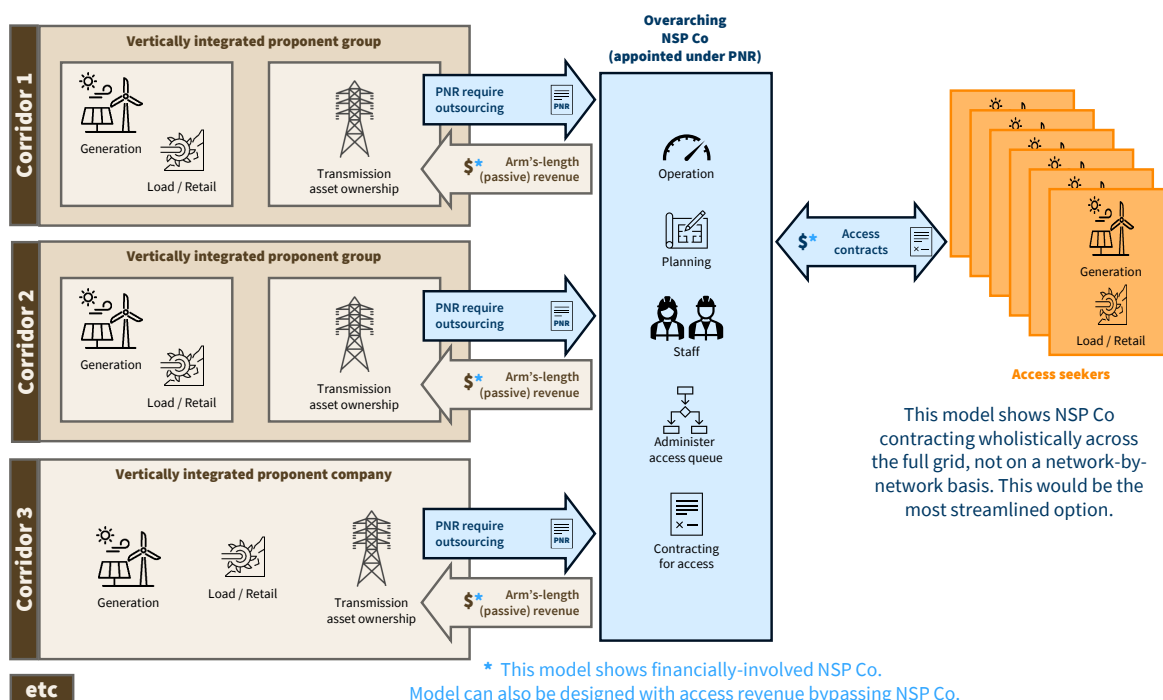
Experience from other markets and advice received by EPWA suggest that legal separation, to be effective, would need to be accompanied by deep and stringent administrative separation, potentially up to and including wholly separate staff, physically separated, and reporting to wholly independent boards. This is theoretically possible, but would be highly disruptive to the vertically integrated business and would undo many of the advantages of being in a corporate group. Further, it's not clear that this would be sufficient to win the trust of unrelated prospective investors in generation and loads.

NSP Co Model

A final option considered earlier in the PET Project but no longer being pursued, is a variant of operational separation known as the NSP Co model (Figure 11), which is summarised here and discussed more fully at page 40 below. This model would address both vertical integration, and the problem discussed in Section 3 below, of managing access over multiple networks.

The NSP Co model involved incorporating a new, independent special purpose vehicle which would take over management and operation of each component of the shared grid. Every covered network owner would contract with NSP Co, delegating to it all operational and access decision-making, and NSP Co would then manage the shared grid as a single integrated network, and contract for access to it. The reasons for not pursuing this option are discussed in Section 3.

Figure 11 - The NSP Co model (considered and rejected)



How to assess outcomes in managing vertical integration

The proposals below include as Option A the 'gold standard' for managing vertical integration, namely ownership or operational separation as adopted in the EU, but also contemplate other options. This raises the question of how any other regime to manage vertical integration is to be evaluated. What does 'good' look like? What dimensions are to be measured, and against what benchmark will outcomes be judged?

The first part of Box 5 below sets out a proposal for the **dimensions** on which outcomes in managing vertical integration can be measured.

The second part of Box 5 sets out a proposal for a **benchmark** against which outcomes might be judged, namely the outcomes which might be expected from the 'gold standard' structural measures in Option A. In effect, this benchmark defines what 'excellent' looks like in managing vertical integration.

This does not imply that Option A describes the only acceptable way to manage vertical integration in the Pilbara. As noted above, the State recognises the Pilbara's unique commercial circumstances and is considering other less intrusive solutions.

These other solutions may not be as effective as Option A but may be sufficiently effective to be acceptable as a compromise if other benefits justify the shortfall. The closer a solution can get to the adopted benchmark, the more likely it is to be acceptable in the long term. Conversely, if it emerges that a proposed or adopted solution is falling too far short of the benchmark, further interventions may be necessary.

Box 5 – Assessing outcomes in managing vertical integration: proposed dimensions and a proposed benchmark

Dimensions on which outcomes can be measured

The following dimensions could be used to measure the extent to which vertical integration is being successfully managed:

- the time and cost taken for an access seeker who is not related to the NSP to secure access;
- the extent to which the access terms and prices for users unrelated to the NSP differ without good justification from those for its related users’;
- the extent to which operational outcomes for, and in connection with, users unrelated to the NSP differ without good justification from those for its related users’;
- the degree of transparency in the access contracting process and in operational decision-making;
- the degree of protection afforded to unrelated users’ commercially sensitive information; and
- no cross-subsidy to a related business.

A benchmark against which outcomes can be judged

The benchmark against which a regime or suite of measures to manage vertical integration will be judged, will be the outcomes which would be expected or achieved under either:

- (a) full ownership separation; or
- (b) deep operational separation along the lines described in Option A below.

Stakeholder feedback on Box 5 is welcome.

Options being considered

For a broad range of stakeholders, one of the biggest issues in the PET project is vertical integration and the adequacy of measures to mitigate it. In managing vertical integration, perception is critical.

This paper seeks stakeholder feedback on three possible options.

There is no perfect answer. Every solution involves cost and inconvenience, and no solution can be guaranteed to perfectly eliminate all risk of discrimination or information leakage.

Supporting measure: Refine Chapter 8 objectives to recognise the role of incentives

It is proposed to reframe the objectives of PNAC Chapter 8 to recognise the role of incentives.

As noted above, only ownership separation (see Option A below) eliminates not only the ability to engage in harmful behaviour but also the incentive to do so. All other measures permit vertical integration to remain, and in doing so must recognise that they are permitting the incentive towards harmful behaviour to remain. Behind every regime there will be humans, and humans respond to incentives. The NSP's incentive to discriminate must be overcome either by removing an NSP's ability to act upon that incentive, or by adding adequate countervailing disincentives (and, ideally, positive incentives towards beneficial behaviour).

Option A: Require full ownership or operational separation

There can be little doubt that the best way to mitigate vertical integration risk is to eliminate or negate the conflict of interest entirely through structural measures. This is the approach adopted in the EU's third package of unbundling reforms,⁷⁸ and is what has been proposed above as the benchmark for excellence in mitigation.

As a result, Option A for the proposed reforms would require that each NSP must implement either ownership separation (see Figure 8 above) or operational separation/outsourcing (see Figure 9 above).

Ownership separation means that no-one can be in a position to exercise control, directly or indirectly, over both the network business and an upstream or downstream business. This includes being on a board, being able to appoint board members and any special voting rights.

Full and effective **operational separation** is a little more complex,⁷⁹ but will require appointing a fully independent operator with the necessary financial, technical and operational resources to operate the network, grant and manage third party access, plan investment, construction and commissioning of new infrastructure, and all other operational matters.

Ownership separation is a more serious intrusion in the relevant group's business, and is less flexible. It is a relatively binary mechanism, with little scope of staged or escalating implementation for any given network. It could in theory be implemented at any time in a network's life, but would no doubt be simpler to implement at the outset, before assets are constructed. Ownership separation will be disruptive, and could prove unworkable, for a business which relies on vertical integration for its financial viability, e.g. because the network owner needs to obtain revenue from the assets, or needs them as security for its financing.

The big advantage of ownership separation is that it's the only measure which eliminates the *"in-built incentive"* towards harmful behaviour.

Operational separation (outsourcing) does not remove this incentive. The NSP, or its owners, remain vertically integrated, and so will still be incentivised to harm competitors and benefit their related business. But operational separation can achieve roughly the same practical result as ownership separation because it removes the NSP's ability to act on this incentive.

⁷⁸ As discussed in footnote 67, the EU Third Package also permitted the "ITO" model (a form of administrative separation, see Figure 6 on page 17). This would form part of Option C below.

⁷⁹ See for example Article 44 of EU Directive 2019/944 (available [here](#)).

Compared with ownership separation, operational separation can be more flexible. For example, it can, at least in theory, allow some granularity (at least at the margin) in which roles must be outsourced, and the extent to which the independent operator can direct the asset owner's work and expenditure. This opens the possibility of a degree of staged implementation.

Operational separation may also be easier to implement at a later stage in a network's life than ownership separation. Thus, it may be possible to defer implementation pending some trigger event.

Operational separation is likely less disruptive to the NSP's overall business model – it can likely be implemented even in those businesses which rely on vertical integration for their financial viability, because the network owner can still obtain revenue from the assets and can still use the assets as security for financing purposes. It may even be possible for the asset owner to retain a role (supervised and directed by the outsourced delegate) in maintenance and expansion works, allowing it to leverage its expertise and resources in network operations.

Both ownership separation and operational separation could be implemented on a network-by-network basis, if appropriate.

There is a degree of convergence between operational separation and the 'NSP Co' model previously considered for managing access across multiple networks (see Figure 11 above and more complete discussion at page 40 below).⁸⁰

Option B: Reallocate sensitive functions to independent ISO (preferred,)

Although Option A can be considered the gold standard in managing vertical integration, and although the operational separation can likely be implemented without serious disruption to new projects' viability or ability to attract finance, it does nonetheless represent a challenge for existing and proposed Pilbara operators for whom vertical integration is common and preferred.

Also, in addition to cost burdens and risks of inefficiency, measures to mitigate vertical integration can increase the risk to system security if they result in fragmented or uncoordinated grid operations.⁸¹

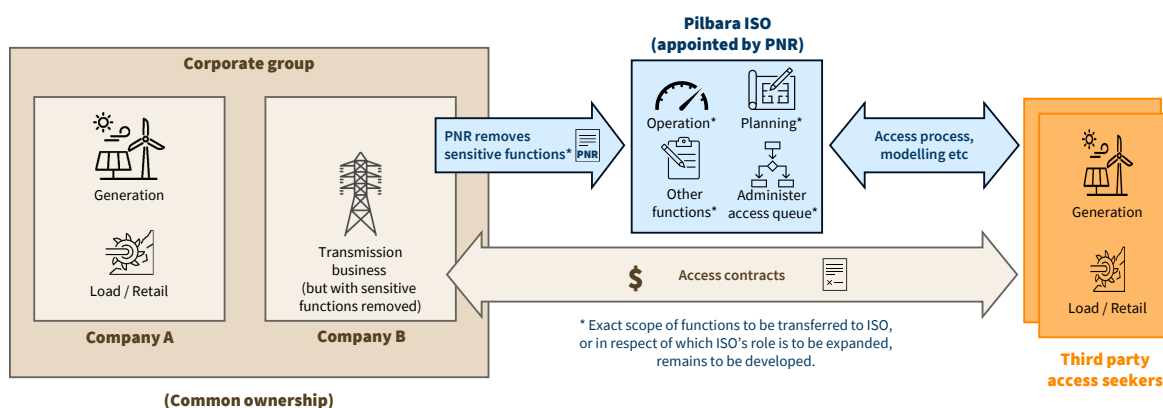
Under Option B, vertical integration would be tolerated without requiring full operational separation, but the PNR and PNAC will be amended to minimise the NSP's ability to make discriminatory decisions or otherwise disadvantage its upstream or downstream competitors. These mitigation measures would also be designed to minimise any threat to system coordination.

⁸⁰ Both involve the asset owner outsourcing day-to-day control and contracting to an independent third party. In operational outsourcing discussed here, the NSP will be free to choose its delegate, so that the Pilbara grid would end up being operated by multiple outsourced delegates. This could be managed perfectly well, using measures described throughout this paper. But as noted in section 3, if every NSP chose the same entity as its delegate, the grid would by another path have arrived at the NSP Co model, making possible various potential simplifications.

⁸¹ Brunekreeft, (2015) "Network unbundling and flawed coordination: Experience from the electricity sector", *Utilities Policy* 34 (2015) page 11 (abstract available [here](#), article behind paywall).

Like operational separation, Option B would allow an NSP to retain its “in-built incentive”⁸² to discriminate, but would seek to remove or limit its ability to act on this incentive. Operational separation under Option A does this structurally, by requiring the network owner to wholly outsource the operational role. Option B does it through regulation, by identifying areas in the PNAC and PNR in which NSPs are called on to take actions or make decisions which could create a risk of discrimination or similar misbehaviour, and revising the regime to ensure that wherever possible, these “sensitive functions” are either performed by, or overseen by, the independent ISO rather than the NSP, as shown in Figure 12.

Figure 12 - Option B: Transfer sensitive functions to ISO



This option is predicated on the ISO being restructured to be wholly and credibly independent from all NSPs, and adequately resourced. This is proposed to be part of the PET reforms in any event, see discussion in the *Evolution of the Pilbara Networks Rules* consultation paper.

During detailed design, the PNAC and PNR will be examined to identify functions currently performed wholly or partially by the NSP, which can be transferred to the ISO or for which the ISO's role can be expanded or strengthened.

There is considerable overlap here with reforms already being considered under the *Evolution of the Pilbara Networks Rules*. A preliminary list of possible “sensitive functions” is set out in Box 6 below. Treatment of non-covered networks is discussed in section 2.2.3.

⁸² EU Proposal, see footnote 61 above, page 4, see passage quoted at footnote 68.

Box 6 – Possible 'sensitive functions' to receive increased ISO control or oversight

Examples of how 'sensitive functions' may be managed

The ISO's role will be expanded or strengthened in respect of functions which may be sensitive to a vertically integrated NSP's conflict of interest. For example, this may include:

- Ending the delegated 'admin ISO' role, by having the ISO bring inhouse the ISO control desk function (real time system operation, ESS dispatch and contingency response) currently being performed by Horizon Power
- Increasing the ISO's role in and control over system-wide outage and commissioning scheduling and coordination for both network elements and generation⁸³
- Expanding the ISO's role in the connection and interconnection process (modelling, assessment and approval)
- Managing the queue for access applications
- Monitoring, or perhaps even determining or approving, access contract terms to ensure they do not constitute a barrier to access, e.g. scrutinizing the NSP's related business' associate contracts or foundation user contracts

Other matters may be identified during detailed design.

An attraction of Option B is that, unlike Option A, it can readily accommodate staged or flexible introduction. It does not need to be implemented all at once for all NSP functions, or perhaps even for all NSPs. Some functions can be flagged for later intervention if problems emerge or certain triggers occur (such as outcomes failing to perform adequately against the benchmark set out in Box 5).

Option C: Deep administrative separation, probably with legal separation

In theory, it would be possible to modify and adapt the existing PNAC ringfencing regime, so that the combined effect of prescribed core standards and NSP-specific ringfencing rules prepared by the NSP and approved by the ERA produced outcomes capable of performing adequately against the benchmark set out in Box 5.

For the reasons discussed above, this will not simply be a continuation of the status quo. It will likely require a step change from current measures, and the new measures would likely need to be considerably more intrusive than has been implemented to date. It would likely also need to be accompanied by legal separation, to provide a legal framework within which an NSP could implement full administrative and decision-making separation.

Importantly, any approach under this Option C would need credibly to address the question of incentives and disincentives, discussed above. A regime which leaves an NSP both able to discriminate and incentivised to do so, and instead relies on prohibitions to create a disincentive against harmful behaviour, must ensure that such behaviour can be detected, and that the sanctions are sufficient to be an effective deterrent.

⁸³ See also Pilbara ISOCO review of PNR Subchapters 7.3 and 7.4 (available [here](#)).

Based on stakeholder feedback to date, reinforced by the EU's observations cited above⁸⁴ and the ACCC's more recent expression of scepticism,⁸⁵ it is unlikely that this option could in practice be effective enough to perform adequately against the benchmark set out in Box 5. More importantly, it is unlikely that this option could earn the confidence of potential access seekers and their associated investors. Failing to win that confidence could jeopardise the entire PET Project.

Facilitative measure: Transparency

In both this review and the *Evolution of the Pilbara Networks Rules*, a key principle is to, wherever possible, increase transparency in the Pilbara's electricity market and system operations.

Although greater transparency will not fully eliminate the risks associated with vertical integration, it will help. Discriminatory conduct will be more easily detected, and will likely be deterred, if the relevant conduct is clearly visible. Also, the risk of misuse of commercially sensitive information will be diminished if the information is freely available to all (for example, if outage management plans are generally available, as discussed in the *Evolution of the Pilbara Networks Rules* consultation paper, there is no benefit in the NSP business leaking a competitor's planned outage schedule to its related business).

Facilitative measure: Compliance and enforcement

It is proposed to review the PNAC's and PNR's current compliance and enforcement regimes generally, and to provide sanctions for non-compliance by way of civil penalties and other remedies. These will extend to ringfencing breaches.

Possible exception – transmission businesses assisting with power system strength, security and reliability

As the Pilbara grid decarbonises, and the penetration of variable renewable energy grows, grid stabilisation and system strength services will become increasingly important and valuable – this is discussed more fully in the *Evolution of the Pilbara Networks Rules* consultation paper.

The best way in which to allocate responsibility in this regard between NSPs and the ISO is still being considered, but it is possible that NSPs may be required or permitted to provide or procure such services for their own networks. One way of doing this would be for NSPs to own and operate their own batteries and other equipment. This will be considered further during detailed design, but if it is to be permitted it will need to be an exception to the measures discussed here to manage vertical integration.

This issue has been extensively discussed in the NEM and elsewhere over many years. Those discussions have highlighted the potential unintended consequences of permitting NSPs to enter the markets for these services, so any exceptions which allow them to do so in the Pilbara will likely be both narrow and conditional.

⁸⁴ See text accompanying footnotes 63 to 69.

⁸⁵ See footnote 77 and the accompanying text.

2.2.3 Transition

Transition for early projects

Pending rule changes, all new projects will be governed by the current PNAC⁸⁶ ringfencing regime, supplemented by any commitments the proponent may make to the State in addition to those requirements.

The recent EOI process asked proponents to outline their own proposals for managing vertical integration.

Any existing or proposed NSP can opt to implement ownership or operational separation as described in Option A at any time, without waiting for regulatory reform.

Legacy arrangements for existing networks

The treatment for existing networks will differ, depending on whether they are covered or not.

Existing covered networks

EPWA is still considering the extent, if any, to which existing covered networks may receive legacy protection from the above regime.

These networks are already subject to PNAC ringfencing regulation, including any changes which may be made to the PNAC over time to add more stringent measures to manage vertical integration.

If any legacy protection is provided, it will likely be limited to the NSP's existing operations.

Existing non-covered networks

At present, the PNAC's ringfencing requirements apply only to covered networks. With one qualification, discussed shortly, it is not proposed to change this. Existing non-covered networks will be legacied, so that they can continue to exercise operational autonomy over their own systems and be regulated under the PNR only to the extent necessary under PNR rule 5.

To be clear, this statement applies despite the discussion in section 3 of splitting the concept of "access" in two. The two proposals can coexist.

However, section 3.2.3 discusses the fact that the treatment of non-covered networks, even integrated mining networks, may need to be revisited if there is a material change in how such a network interconnects to the shared grid, such that material quantities of third party energy may flow through the non-covered network. The same is true here: depending on network configuration and operation, a vertically integrated operator of a meshed or looped non-covered network may be able to disrupt its competitors' access to the shared grid. As such, its legacy protection from ringfencing measures may need to be revisited.

Should this ever arise, it will be done with full consultation with the affected NSPs, and will also take account of their particular circumstances.

⁸⁶ Or the ENAC, if a Pilbara network is ever full regulated. See discussion of 'full' and 'light' regulation in Box 3.

This problem does not need to be solved immediately. At present, the NWIS's non-covered networks are all either largely or entirely radially connected, and their operators' vertical integration does not present a threat in the same way as for covered networks. Hence, as noted, for the time being, it is proposed to preserve the current position in which ringfencing requirements apply only to covered networks.

2.2.4 Proposal

Proposal 2. Managing vertical integration

- 2.1 It is proposed to reframe the objectives of PNAC Chapter 8 to include a recognition of the role of incentives. To the extent any proposed measure does not eliminate an NSP's *ability* to engage in harmful behaviour, it must effectively remove or negate any *incentive* to do so.
- 2.2 It is proposed to establish the measures and benchmark (as set out in Box 5) as a way of evaluating outcomes in managing vertical integration.
- 2.3 Feedback is sought on three possible options for managing vertical integration:
 - **Option A:** Require either ownership separation or full operational separation, as described above.
 - **Option B (preferred):** Permit vertical integration to remain, but implement a granular and possibly staged process in which 'sensitive functions' (see preliminary list in Box 6) are either transferred from the NSP to the ISO, or left with the NSP but placed under the ISO's supervision or approval, with the outcomes evaluated against the benchmark set out in Box 5. (This assumes the ISO has been reconfigured to be truly independent and is adequately resourced, as discussed in the *Evolution of the Pilbara Networks Rules* consultation paper.)
 - **Option C:** Expand existing PNAC requirements regarding administrative separation, with likely addition of legal separation, with measures and outcomes once again evaluated against the benchmark set out in Box 5.
- 2.4 It is planned, wherever possible, to use transparency as a supplementary measure to mitigate vertical integration risks.
- 2.5 The revised regime will include sanctions for non-compliance by way of civil penalties and other remedies.
- 2.6 If transmission operators are required or permitted to operate energy storage or energy producing equipment to provide system strength, security and reliability services, the measures to manage vertical integration may need to specify certain limited exceptions.
- 2.7 Transition for early projects: Early projects will be regulated under the existing PNAC regime, supplemented by any commitments made to the State in the course of contractual negotiations.
- 2.8 Legacy for existing networks:
 - Existing covered networks: Consideration is still being given as to whether to provide any legacy protection from the above measures, and if so in what form. Any such protection would only apply to existing assets.
 - Existing non-covered networks: The PNAC imposes no ringfencing obligations on these networks and, with one qualification, there is no plan to change this. The qualification is that this position may need to be revisited if a non-covered network were to propose to materially change the nature of its interconnection with the shared grid, such that it became materially meshed or looped. It is proposed to address any such situation at that later time, in close consultation with the relevant NSP and recognising that the PNR rule 5 principles may require a bespoke solution.

Consultation Questions:

- (2)(a) Are the measures and benchmark set out in Box 5 an appropriate way to judge outcomes in managing vertical integration?
- (2)(b) Should the regime prescribe the measures and benchmark set out in Box 5 as a formal tool for use by the ERA or an arbitrator to evaluate measures to manage vertical integration proposed by an NSP, and the outcomes from those measures?
- (2)(c) Do you favour Option A, Option B or Option C?

- (2)(d) If you favour Option B, how could it best be implemented in a way which comes closest to the benchmark set out in Box 5, and which maximises the benefit offered by its flexibility, without becoming too complex or compromising the quality of outcomes in managing vertical integration?
- (2)(e) If you favour Option B, please comment on the preliminary list of sensitive functions in Box 6. What else might need to be removed from a vertically integrated NSP's control or influence, to ensure that its vertical integration does not jeopardise effective third-party access? Is the ISO (suitably independent and resourced) the appropriate entity to take on these functions?
- (2)(f) Option B envisages that interventions might be assessed on a granular basis, with different levels of transfer or supervision being applied to each sensitive function. Would you see benefit in implementing Option B even more flexibly, such that some interventions might also differ between networks, or would the associated complexity outweigh the benefit?
- (2)(g) If you favour Option C, please describe how it could be implemented in a way which materially advances from the status quo, and which comes closest to the benchmark set out in Box 5. If you are a prospective access seeker, what would be required under Option C to give you confidence that an NSP's vertical integration was being effectively mitigated? If you are a prospective NSP, how would you ensure that prospective access-seekers will consider your measures credible?
- (2)(h) You are welcome to comment of the convergence between operational separation under Option A, the more interventionist end of sensitive function transfer under Option B, and the (shelved) 'NSP Co' model discussed at page 40 below. In particular, do you see advantages or disadvantages in the outsourced delegate role under operational separation being either separate from, or combined with, the broader ISO role under the PNR?
- (2)(i) Early project proponents, please comment on the matters set out in proposal 2.7, or contact EPWA to discuss them further.
- (2)(j) Existing NSPs, please comment on the matters set out in proposal 2.8, or contact EPWA to discuss them further.

3. Managing access across multiple networks

The PET Plan seeks to promote private investment in new Pilbara transmission infrastructure. The recent EOI process was designed to encourage competition between proponents. The most likely scenario from the resulting negotiations will be an expanded Pilbara network in which there are multiple interconnected covered networks with a variety of owners. This section describes how access will be managed across such a grid.

As more networks are built, each with different ownership, access will become more complex. This will especially be the case as the system becomes increasingly ‘meshed’ or ‘looped’ (i.e. offers electricity multiple paths between two points), because electricity will no longer follow predictable, simple paths. In a meshed or looped system, electricity flows can vary in complex ways depending on how other users are using the grid. Electricity flows on one network may benefit from, or cause congestion in, neighbouring networks.

The access regime for the Pilbara grid must provide effective access across multiple interconnected networks, each with different owners. To deal with this, the PNR and PNAC regime will need to deal with four issues:

- mechanisms to make it as simple as possible for access seekers to contract for access, even if their electricity will be traversing multiple networks (see section 3.2);
- mechanisms to ensure that NSP-NSP interconnection agreements do not unduly hinder access seekers’ ability to use the various covered networks (see section 3.3);
- mechanisms to manage situations in which users of one network benefit from, or cause congestion for, another network (see brief comments in section 3.4, and also the *Evolution of the Pilbara Networks Rules* consultation paper); and
- mechanisms to appropriately share network tariffs between users connected to a network and other users whose electricity is simply transiting the network on its way somewhere else, and equally to share revenue between neighbouring NSPs (see introductory comments in section 3.5).

3.1 Current arrangements

The NWIS already comprises three interconnected separately owned networks,⁸⁷ so to some extent the PNAC and PNR were designed from the outset to accommodate a network with multiple ownership.

However, the 2021 regime was deliberately designed in close consultation with the existing NSPs and stakeholders in mind and left most matters of system integration to be managed by the NSPs either through collaboration under the PNR with an oversight role by the ISO, or through bilateral contracts.

⁸⁷ In fact, there are 6 networks, but three of them (BHP’s, Fortescue’s and Roy Hills’ networks in Port Hedland) are small ‘excluded networks’ which are treated as consumer facilities: PNR rule 21(2) and see PNR Subchapter 1.5 generally.

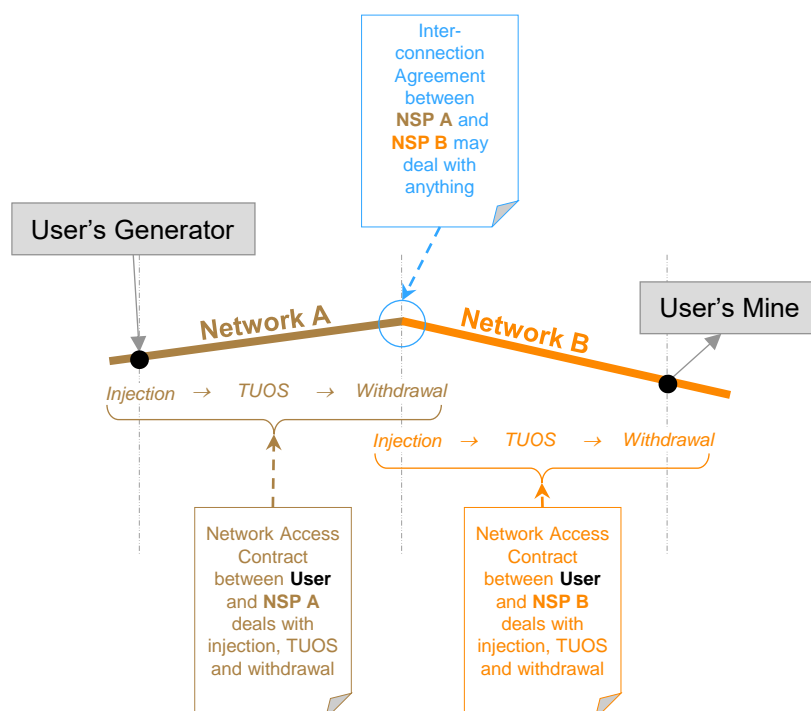
Thus, an access seeker must contract with each NSP for, as applicable, the right to connect (or interconnect), the right to inject and withdraw electricity at a connection/interconnection point, and the right to transport electricity through the network (the latter sometimes called a ‘transmission use of system’ (**TUOS**) service).

The PNAC creates the framework within which the necessary access contracts will be negotiated or arbitrated. The PNR provide a technical underpinning and context for these contracts and empower the ISO and NSPs to manage the resulting electricity flows. However, neither the PNAC nor the PNR of themselves create a right for the access seeker to connect, inject, withdraw or transport electricity. Those rights derive from the access contract.

A similar situation applies at the point of interconnection between any two networks. The PNAC governs the right to seek an interconnection, and the PNR provide technical requirements and standards, but the respective rights and obligations of the two NSPs vis-à-vis each other will be set out in an interconnection agreement, which is in fact just a special type of network access contract. The interrelationship between the NSP-NSP interconnection agreement and network users’ access contracts is discussed below in section 3.3.

Consider Figure 13 – a user generates electricity and injects it into network A, the electricity then passes through network A and on into network B, where the user withdraws the electricity to supply a mine connected to network B. Under the current model, someone (for simplicity assume this will be the same person) will need an access contract with NSP A to inject electricity at its power station, have it transported through A’s network, and withdraw it at the A-B interconnector, and with NSP B to inject electricity at the A-B interconnector, have it transported through B’s network and withdraw it at the minesite. These two contracts will each need to integrate with each other, and with the interconnection agreement between NSP A and NSP B.

Figure 13 - Transporting electricity across two networks



3.2 Avoiding a multiplicity of contracts (splitting access in two)

The first issue to be addressed is that the current model can result in a proliferation of contracts, which could become a barrier to entry.

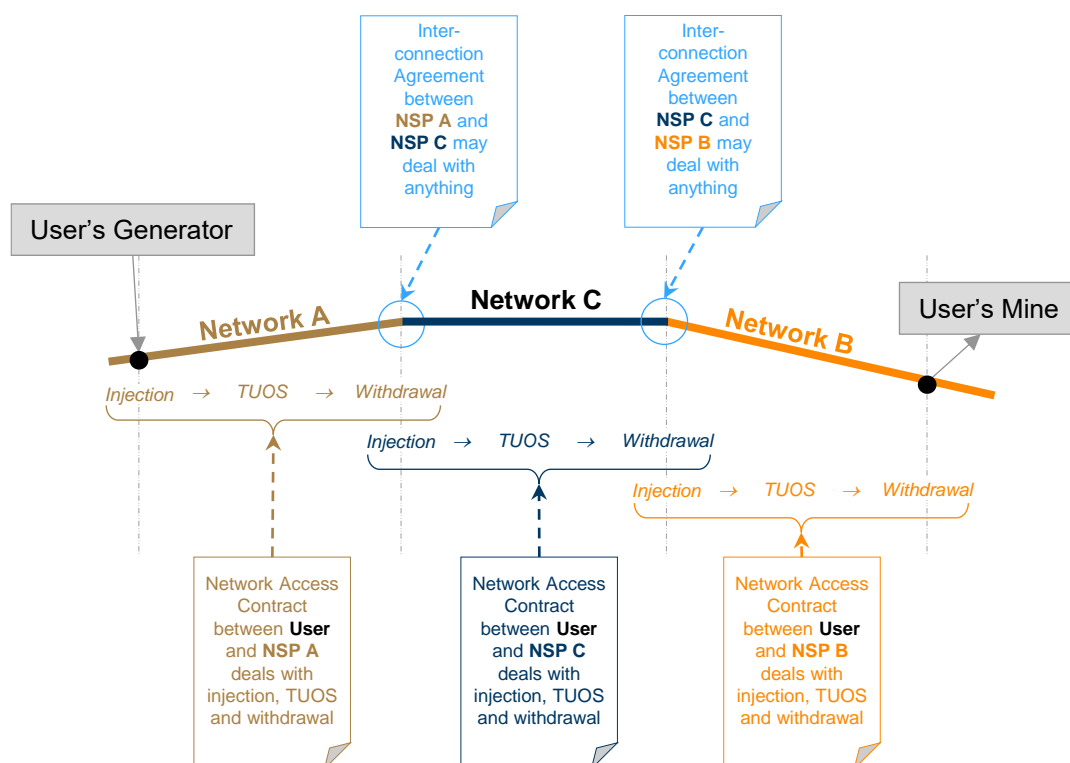
3.2.1 Current arrangements

See section 3.1 above. At present the right to access is managed entirely by contract.

3.2.2 Issues and options

At present, under the PNAC, a network user needs to negotiate with each NSP through which its electricity will flow. Considering the scenario shown in Figure 13, but interposing a third network C between networks A and B, a contractual outcome as shown in Figure 14 would be created.

Figure 14 - Transporting electricity across three networks (contracts proliferate)



The user will now need three separate contracts with three different NSPs, and each of those contracts will need to interface with each other and with either or both of the interconnection agreements. That means that for the user to achieve this relatively simple linear transfer of electricity, there must be five contracts in place and working together, over two of which the user has no control.

This is cumbersome, and a barrier to entry.

In the short term it is possible that the Pilbara grid may remain radial, but it is probable that, in the future, the network will become meshed. At this point, the problem could expand exponentially. In a meshed or looped network, electricity will choose its own path in accordance with physical laws known as Kirchhoff's Laws, depending on momentary electricity flows, network configuration and congestion across the grid. In theory, since each user's electricity could flow almost everywhere, every user may need have contracts with every NSP, each of which should integrate with all the others and with all relevant interconnection agreements. This would quickly become unworkable.

Options considered

While possible to preserve to the **status quo**, as the number of NSPs involved increases, the number of required contracts proliferates. Negotiating a single access contract can be time-consuming and expensive. The task would grow exponentially with the number of NSPs.

Further, as soon as the grid becomes significantly meshed, the task of identifying where contracts are needed may become almost impossible, unless every user contracts with every NSP – a hopelessly cumbersome outcome. Complex multi-party relationships are not best managed by a web of bilateral contracts, especially when group members will be entering and leaving over time.

To address this weakness, the web of bilateral contracts could be replaced with a small number of **overarching multilateral contracts** – in effect a 'club constitution' negotiated and agreed between all participants, i.e. all NSPs and all users. Contractual access regimes have been created in the past in certain contexts, but generally work best when there are a small number of participants with stable membership, dealing with a simple unified asset. They are generally only used when a regulated option is not available.

For the Pilbara grid, there is already a regulatory regime in place, and it is considered that negotiating multilateral contracts to manage access would be harder, take longer, and require more resources from all concerned, than adapting the regulatory regime to accommodate the new circumstances. In addition, any multilateral contractual regime would need centralised governance, member entry and exit and rule change mechanisms to be workable, and so would likely end up looking quite similar to a regulated model anyway.

Two key options to address this issue are outlined below.

Option A: An independent NSP Co model

An option for simplifying access to multiple networks, considered earlier in the PET project, was labelled the "**NSP Co model**". In this model, as mentioned briefly above and shown in Figure 11, the problem of multiple NSPs would be solved by incorporating a new, independent special purpose vehicle which would take over management and operation of each component of the shared grid.

Every covered network owner would contract with NSP Co, delegating to it all operational and access decision-making, and NSP Co would then manage the shared grid as a single integrated network. Each access seeker would need to deal only with NSP Co, which would have full delegated authority to negotiate and enter into access contracts on behalf of the various network owners.

It can be seen that the NSP Co model (Figure 11 above) is quite similar to the operational separation solution for vertical integration (Figure 9 above). The main difference being that in the latter, each NSP may choose its own delegate.

The NSP Co model considered two variants. In one, NSP Co had a financial role, receiving tariff payments and redirecting them to the various grid owners. In the other, NSP Co would have a non-financial role, calculating payment obligations and entitlements, and issuing contract notes linking payers with payees, but not itself receiving and making payments.

A precedent for this non-financial model already exists in the PNR on a smaller scale – in the Energy Balancing and Settlement (EBAS) regime, the ISO calculates payment obligations for ESS and balancing energy, and issues payment notes linking payers and payees.⁸⁸ This model would have its own complexities when applied to larger amounts, because the question of prudential risk must be managed.

In both models, there would need to be a suite of “revenue allocation rules” which determined how much each network user paid, and how much each asset owner was to be paid. Although these would be complex, having a single set of revenue allocation rules to cover the entire grid would have enabled an integrated solution to the complexities around tariff design on a shared multi-owner network (see introductory comments in section 3.5 below).

The revenue allocation rules would have worked with both the financial and non-financial NSP Co models. In the financial model, they would have determined how much each user paid NSP Co, and how much NSP Co paid each asset owner. In the non-financial model, NSP Co would act as a broker, using the revenue allocation rules to calculate how much each participant owed or was owed, then issuing payment notes linking payers and payees in order to settle those amounts.

The NSP Co model offered several advantages:

- it allowed for simplified, streamlined access contracting;
- it eliminated the need for interconnection agreements to influence user access (see section 3.3 below). Because the grid would be operated as an integrated whole, interconnection agreements would be relegated to dealing purely with the physical aspects of the bilateral NSP-NSP relationship; and
- it largely eliminated the problems associated with vertical integration (see section 2.2 above).

However, early stakeholder engagement revealed limited appetite for the NSP Co model among potential proponents, whose concerns can be broadly grouped into three classes.

- First, proponents were not keen to outsource commercial and operational decisions to an independent third party. Understandably, they would have wanted to retain ultimate control over critical decisions, but this would probably have undermined the entire solution and returned to a fragmented contracting and operational structure in which vertical integration issues resurfaced.

⁸⁸ PNR rules 239 to 241.

- Second, proponents were concerned about the increased operational and liability risks associated with the insertion of an additional player. If NSP Co caused someone loss, would the asset owners be expected to indemnify that person? If NSP Co damaged the network, could the owners hold it liable? What financial substance would NSP Co have, to cover these liabilities? If NSP Co was to enjoy the normal statutory immunity extended to Pilbara NSPs,⁸⁹ how would that influence all these matters?
- Third, potential proponents were concerned about how prudential risk would be managed. With a financial NSP Co, the question was how NSP Co's insolvency would be managed without leaving asset owners out of pocket. With a non-financial NSP Co, the question was how prudential risk would be assessed and managed in respect of whichever entity was chosen as their particular payer.

Each of these questions could likely have been addressed, but the NSP Co model was novel and complex, and its risk profile was beginning to emerge as a concern for potential proponents and their investors.

Option B: Splitting 'access' in two

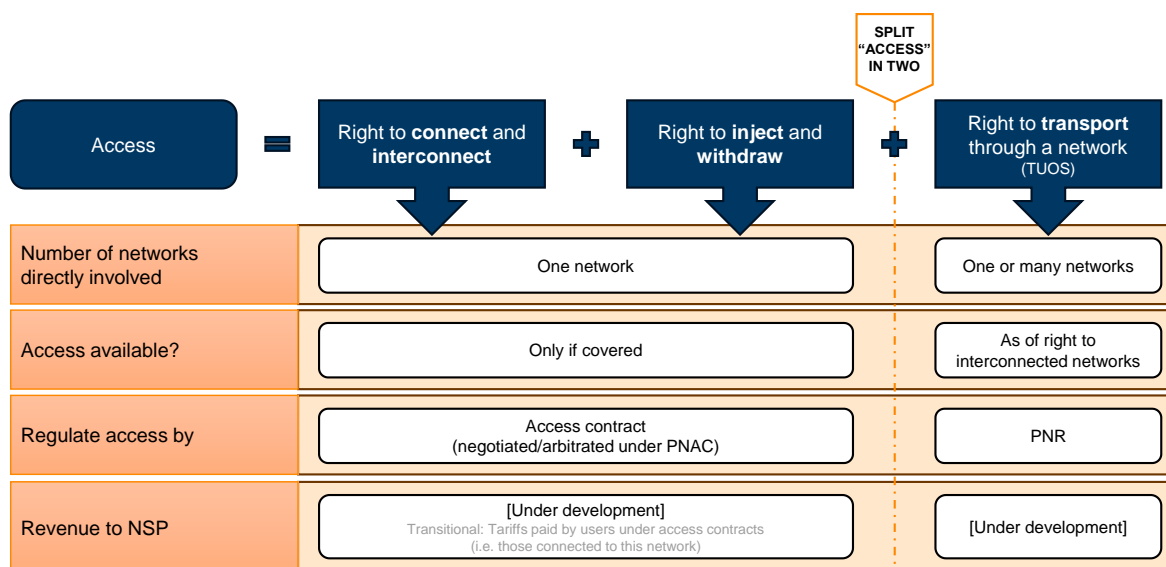
It is proposed to address the problem of multiple access contracts by splitting "access" into two streams, managed differently, as follows:

- The right to connect, inject and withdraw – this will apply only to "covered" networks, and as now will regulated by way of negotiated or arbitrated access contract under the PNAC; and
- The right to have electricity transported between connection points through the interconnected grid in accordance with the laws of physics – this will apply to all networks which choose to be interconnected, whether covered or not. This will be regulated through the PNR administered by the ISO. This second limb would encompass what's normally considered the TUOS component of a conventional contract.

The high-level concept is summarised in Figure 15. Its implications for existing uncovered networks will need careful development and are discussed in section 3.2.3.

⁸⁹ *Electricity Industry Act 2004* section 120ZB

Figure 15 - Split access into two streams

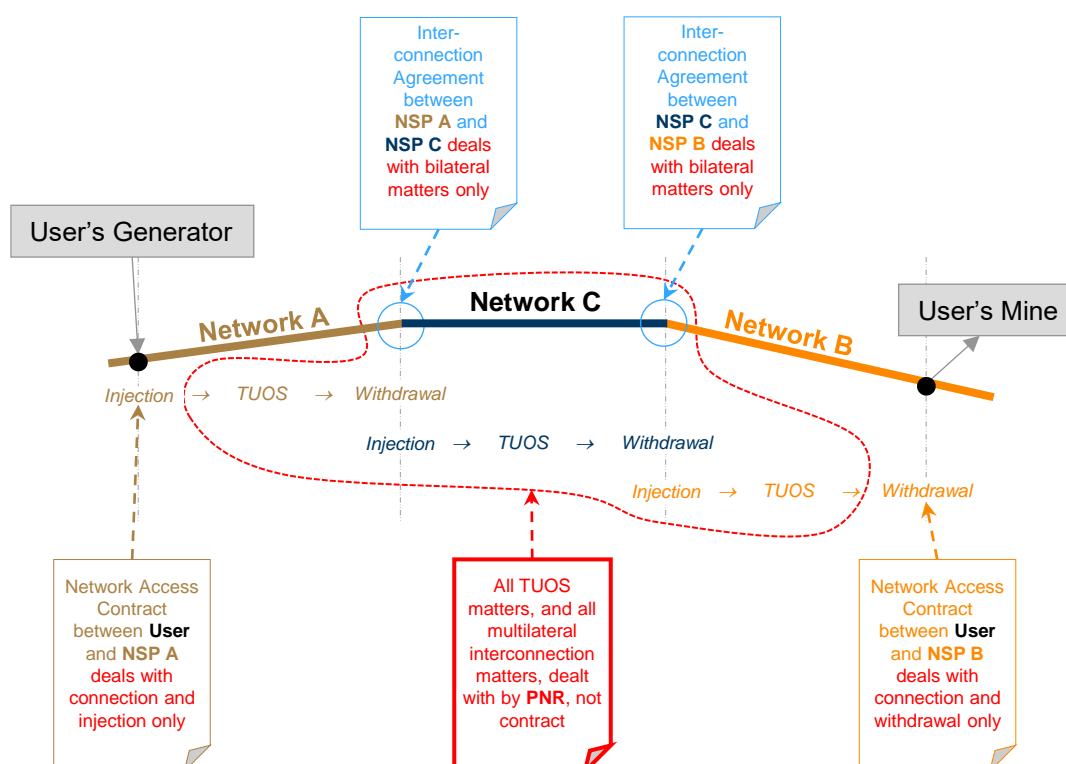


On this approach, a person whose electricity is being transported through an NSP's network but who does not wish to establish a connection point on that network, will not need an access contract.

The *right* to have that electricity transported will be created by the PNR and will apply to all networks including uncovered ones in order to deal with electricity flowing under Kirchoff's laws. The *obligations* which are associated with that right will also be specified in the PNR.

Figure 16 below re-presents the scenario from Figure 14, to show how splitting access in two as discussed here, together with reducing the role of the interconnection agreement as discussed in section 3.3 below – substantially simplifies the user's contracting task:

Figure 16 – Simplifying the contracting model



As the changes highlighted in red in Figure 16 show, under this approach each bilateral energy trade between a generator and a load would need only two network access contracts, one for the injection point and one for the withdrawal point.

This approach has important implications for all market participants:

- Everyone is electing to give ‘access’ to at least some extent: Everyone who chooses to be interconnected with the shared network is accepting that energy might flow through their network whether it is covered or not, simply as a result of physical laws. This is already the case of course, but the regime will now be acknowledging it explicitly. We discuss the implications of this for existing non-covered networks in section 3.4.3 below;
- Everyone will rely on the PNR and ISO to manage the operational consequences: In the absence of a regulatory regime, an NSP’s primary control mechanism to ensure that users do not disrupt its network or other network users, is its access contracts including its interconnection agreements. In this proposal, these matters will be managed by the PNR and the ISO – the NSP will no longer have direct contractual control over any operational or commercial matters involved;
- As a potential example of this, a network which only provides transit services (for example Network C in Figure 16) would have no contractual ‘levers’ to pull to manage power flows, and ensure that users contracted to NSP A and NSP B do not cause unmanageable congestion or power quality issues on its line; and
- The regime will need to provide or enable an answer as to how TUOS services are paid for: Looking again at Network C in Figure 16, and assuming that the two NSP-NSP interconnection agreements are limited to operational matters as proposed in section 3.3 below, and assuming (unrealistically) that there were no other users contracted with Network C, then NSP C will have no users on which to levy its tariffs. This is discussed briefly in section 3.5 below.

3.2.3 Transition

Transition for early projects

The current PNR and PNAC regime was designed to work across multiple networks with separate ownership. As a result, early projects will be able to negotiate all necessary interconnection agreements and other access contracts under the regime as it stands today.

Until reforms can be implemented, the multiple contracts problem will be a reality for early projects, but it is hoped that the number of contracts will be manageable.

Likewise, until reforms splitting access between contracted connection point rights and regulated TUOS rights can be implemented, each new project will need to negotiate or arbitrate whatever terms it requires for each access contract, including whatever TUOS rights it needs to accommodate full end-to-end transportation of electricity. This is readily accommodated under the current PNAC regime.

However, these contracts should anticipate the proposed reforms, in which much of the TUOS component will be replaced by regulated rights under the PNR. Wherever possible, these early access contracts should permit the contractual treatment of these matters to be displaced by the new regulated rights.

During detailed design, EPWA will work with the proponents of early projects on how this is to be implemented, to achieve the dual objectives of:

- ensuring that early contracts can operate within, and do not hinder, the new regulated regime; but
- all parties to those contracts can nonetheless obtain adequately certain access rights both before and after the reforms commence, to make their various projects bankable.

Legacy arrangements for existing networks

Existing access contracts negotiated under the current regime will contain TUOS elements. The proposed reforms will likely impact how these contracts operate.

During detailed design, EPWA will work with each existing NSP to determine how best to implement the required reforms, causing the minimum possible disruption to its existing arrangements.

The approach will be different depending on whether the network is covered or non-covered.

Covered existing networks

For covered existing networks (i.e. Horizon Power's and APA's), the evolved regime will endeavour to protect the core financial aspects of these prior contracts (i.e. protecting the underlying revenue stream and overall risk parameters for both parties), but otherwise generally does not consider it necessary to protect these networks or their users from changes which move the TUOS components of these contracts from the contract to the PNR. This is because:

- these networks are already obliged to provide third party access in accordance with the Pilbara electricity objective;⁹⁰ and
- these networks are already governed by the PNR regime, which includes being exposed to potential PNR rule changes of all types; and
- of necessity these networks must have already agreed, explicitly or implicitly, to provide TUOS services to or from every contracted connection point, because that's why users will have contracted to connect to their network.⁹¹

Non-covered existing networks

For non-covered existing networks, EPWA will work with each network operator individually with a view to ensuring that these proposed reforms can enable effective access to covered networks, without presenting an unacceptable commercial risk or violating the principle that these reforms should cause as little disruption as possible to existing operations on existing networks, especially integrated mining networks.

⁹⁰ Strictly speaking the obligation is to use *all reasonable endeavours* to provide access, by accommodating a user's request for access (PNAC section 15). In the State's opinion, this encompasses permitting electricity to flow in accordance with physical laws from or to the connection point at which a user has an access contract, subject to reasonable technical and operational requirements and constraints, which will be set out in the PNR.

⁹¹ This is not the same thing as saying every access contract necessarily includes a TUOS component. It's possible that one business (e.g. a consumer) might have contracted for connection, and another (e.g. its retailer) may have contracted to deliver electricity to it there.

3.2.4 Proposal

Proposal 3. Managing multiplicity of contracts - splitting access in two

- 3.1 The right to access a network will be split into:
- (a) First, a right to connect (or interconnect) to a network, and a right to inject or withdraw electricity at the connection/interconnection point. This right will be governed by contract, with the contract to be negotiated or arbitrated under the PNAC (or ENAC if applicable) in the usual way. This service will only be available as an enforceable statutory right⁹² in covered networks, as is now the case.
 - (b) Second, a TUOS right to have electricity pass through a network from one connection/interconnection point to another. This right will be enshrined in the PNR and will apply to all networks, covered and non-covered, new and existing. See below for the transitional implications of this.
- 3.2 Transition for early projects:
- (a) Early project NSPs and their users will negotiate access contracts as usual under the current PNAC and PNR, including TUOS components as required.
 - (b) The contracts must be able to transition into the new regime whereby TUOS matters are managed under the PNR.
 - (c) EPWA will work with each early project proponent and its access seekers to establish the best way to achieve this without hindering the reforms or disrupting commercial certainty for either party.
- 3.3 Legacy arrangements for existing networks:
- (a) These measures will be developed in consultation with the affected parties, with the treatments different for covered and non-covered networks.
 - (b) Covered networks: Endeavours will be made to protect core financial aspects of these contracts (revenue streams, overall risk parameters), but otherwise require all access contracts to be amended to incorporate the new split, with TUOS matters transitioning to be regulated by the PNR rather than the contract.
 - (c) Uncovered networks: EPWA will discuss this individually with each non-covered NSP.

Consultation Questions:

- (3)(a) Please comment on the proposal to split access, with connection/ interconnection, injection and withdrawal managed by contract as now, and TUOS managed by the PNR.
- (3)(b) Having regard to the current content of the PNR and HTR, and the reforms being proposed concurrently under the *Evolution of the Pilbara Networks Rules* review, are there any matters which might have been regulated by a TUOS contract which could not be adequately regulated by the amended PNR/HTR? If so, for any such matters would it be inappropriate or unworkable to appoint the ISO to manage them, rather than the NSP under an access contract?
- (3)(c) Splitting access in two (Option B) is being preferred over the NSP Co model (Option A). However, there is some convergence between the NSP Co model and two of the models discussed in section 2.2, namely the operational separation model (Figure 9, and part of section 2.2's Option A) and the 'sensitive decisions' model (Box 6, and section 2.2's Option B). There may be scope to combine elements of more than one model, to address the matters discussed in section 2.2 and this section 3.2. Do you have any observations on this?
- (3)(d) Early project proponents, please comment on the matters set out in proposal 3.2, or contact EPWA to discuss them further.
- (3)(e) Existing NSPs, please comment on the matters set out in proposal 3.3, or contact EPWA to discuss them further.

⁹² Non-covered networks will be free to negotiate to provide this form of access if they wish and on whatever terms they wish, as now.

3.3 Managing interconnection points and interconnection agreements

The next issue to arise as the number of networks increases, will be the role of interconnection agreements, and specifically the fact that at present these agreements can create obligations which must be passed on to network users.

3.3.1 Current arrangements

See section 3.1 above. At present these matters are managed entirely by contract between the relevant NSPs, and between NSPs and their users.

3.3.2 Issues and options

Whenever two networks interconnect, there must be an NSP-NSP interconnection contract.

The scope of this contract depends on the surrounding circumstances including the regulatory regime, but the range of matters which must be dealt with in respect of every network interconnection, and so which might fall to be regulated by an interconnection agreement, includes the following:

- At a minimum, the two NSPs must agree practical physical matters dealing with establishing and maintaining the physical interconnection, such as site access, who designs and builds the connection facilities, who owns and operates them, where ownership boundaries lie, and the like.
- Next, if such matters are not otherwise adequately regulated, the parties need to agree technical standards for operating their two systems to preserve security and reliability in both. This will include matters such as voltage, frequency, reactive power flows, harmonic disturbances and the like, as well as any operational limitations/constraints on the interconnector itself such as thermal loading limits.
- Finally, and again if such matters are not otherwise adequately regulated, will come commercial matters such as compensation for energy imbalances and any ESS benefits provided by one network to another.
- Somewhere in the last two categories will sit rules designed to prevent or manage a situation in which one network causes congestion or power quality disturbances on the other.

Some of the things which might be regulated by an interconnection contract can have implications for third party network users. These could involve operational matters such as energy balancing, power quality or energy flow constraints on the interconnect, or it could involve commercial matters such as payments for energy imbalances or ESS. Box 7 gives a simple example of how this might play out.

This presents a challenge for regulated access because it means that would-be access seekers might be asked to sign on to obligations set out in a bespoke bilateral interconnection agreement to which they are not a party, and over which they may have limited control or even visibility. This is unsatisfactory for all concerned.

Box 7 - How an interconnection agreement might impact a third party

How an interconnection agreement might impact a user's access contract

Consider Figure 13 above, but suppose that User A is contracting to use network A and User B is contracting to use network B.

Suppose that NSP A and NSP B have agreed in their interconnection agreement that:

- electricity flows at the interconnection point are not to exceed 50 MW; and
- energy imbalances across the interconnect are to be priced at \$75/MWh.

For the interconnection agreement between the two NSPs to work, NSP A must persuade User A to include corresponding provisions in User A's access contract, and NSP B will need to do the same with User B, because it is the two users who will cause (and benefit from) the relevant energy flows.

This produces an unsatisfactory outcome for everyone. If either of the two NSP's cannot persuade the user or an arbitrator to include corresponding provisions in the relevant access contract, the interconnection agreement will break down. Each user or an arbitrator will thus be confronted with pressure to agree to arrangements over which the user has had no say, and which may be designed to benefit the two NSPs and not the users.

Options considered

The current Pilbara regime does not seek to regulate interconnection points and interconnection agreements – it leaves it to the NSPs and users to negotiate, or if necessary, the arbitrator to determine, suitable contract terms to integrate the requirements of interconnection agreements, other access contracts and the PNR.

Option A: Maintaining the status quo

Maintaining the **status quo** would leave matters as they stand. If NSPs agree between themselves additional operational or commercial matters not included in the PNR, and then seek to impose these on users, it will be up to the NSPs to persuade the users or an arbitrator that these requirements should be included in the relevant access contracts. If the user or arbitrator determine that the additional requirement is unfair or inappropriate, for example because it seeks unnecessarily to supplement or modify the PNR regime, they can refuse.

The advantage of this approach is that it allows NSPs to fill gaps in the PNR regime, or to deal with bespoke situations. The disadvantage is that it leaves it to the user or arbitrator to push back against such measures, in an invidious situation in which they must choose between accepting the requirement, or potentially forcing the NSP to be in breach of a prior contractual commitment in its interconnection agreement.

Also, as the number of interconnections grows, the status quo approach can create a situation in which there is a growing patchwork of opaque private interconnection agreements setting boundaries on what access seekers can negotiate or arbitrate.

The status quo is not considered to be desirable or sustainable, as the network grows.

Option B: Reducing the interconnection agreement's role

It is proposed to address this problem by establishing limits on the range of matters interconnection agreements may deal with. In simple terms, it is proposed that interconnection agreements should not contain anything which requires obligations to be imposed on network users.

Under this approach, the interconnection agreement would deal only with physical operational matters that affect only the two NSPs, and purely bilateral commercial matters between those NSPs. Any matters that need to affect network users would be implemented transparently in the PNR or HTR.

A possible limited exception to this might arise if there are specific matters which are particular to one user. These matters might reasonably be implemented in the user's access contract, but if so, they should be negotiated or arbitrated as a primary obligation⁹³ in that contract, and not as a secondary reflection of something separately pre-agreed between the two NSPs.

This approach will mean that third party access seekers' obligations are managed transparently, uniformly and in a way where they can, through the rule change process, have some influence over the obligations' content.

The PNR already regulate many such matters, such as technical standards, ESS procurement and payment, energy balancing, and constraints. From an access regime's perspective, all that will be required is to make sure that NSPs do not seek to use the bilateral NSP-NSP interconnection agreement to impose additional or different standards on each other or each other's users.

The reforms will comprise three parts:

- A mechanism in the PNAC to ensure that NSP-NSP interconnection agreements cannot seek, directly or indirectly, to impose obligations on access seekers or to constrain the terms of an access contract;
- As the PNR and HTR evolve, any matters which need to be regulated in relation to network-network interconnections and are not already dealt with, can be built into the PNR and HTR by way of the normal rule change process. This may or may not involve new functions or powers for the ISO or NSPs. Some of these matters are already under consideration in the *Evolution of the Pilbara Networks Rules* project; and
- Each NSP will need to review its existing and proposed interconnection agreements, to identify and remove any provisions which may fall foul of the proposed prohibition, and may propose amendments to the PNR and HTR to address any gaps.

The long-term vision is that (subject to legacy treatment for existing networks, see section 3.4.3 below) the ISO will operate the whole shared Pilbara grid as a single entity. Network interconnection agreements will need to permit and facilitate this, and not seek to hinder or supplement it, and so may need to evolve as the regime evolves.

⁹³ By "primary" obligation, we mean that the obligation arises directly from negotiation or arbitration between the NSP and the user. It is not presented to the user as a *fait accompli* over which the user or arbitrator effectively has no choice or control because the NSP must honour it as a prior contractual commitment to the other NSP. This will ensure that the user or arbitrator have genuine freedom to agree to the proposed requirement, or reject it, as they see fit within the PNAC's access framework.

Supporting measure – Transparency of interconnection arrangements

A practical difficulty sometimes emerges, in which the bilateral nature of interconnection agreements can create confidentiality restrictions which hamper other negotiations and discussions. These restrictions can prevent network users or the ISO from obtaining details of what an interconnection agreement contains, sometimes even when an NSP is seeking to impose those requirements on the access seeker, and sometimes if one of the interconnected NSPs would be willing to provide the details.

To address this, consideration is being given to a requirement that all or most of an interconnection agreement's terms should be transparently available to all network users. As a minimum, this should extend to all technical and operational matters. An exception could be permitted for purely bilateral commercial arrangements.

3.3.3 Transition

Transition for early projects

Pending the reforms, interconnection agreements will be negotiated or arbitrated under the current PNAC⁹⁴ just like any other access contract.

However, the NSPs negotiating these new interconnection agreements should prudently have regard to the proposed reforms, and seek to avoid agreeing arrangements between themselves which would require either or both of them to impose restrictions or obligations on network users in a way which is proposed to become unlawful.

Where possible, any such matters should instead be addressed by way of rule changes, or by direct (primary) negotiations with the relevant users.

Where this is not possible, and the NSPs feel that the matter must be regulated by the interconnection agreement, they should do so in a way which allows the matter to be absorbed into, and displaced by, subsequent changes to the PNR.

Parties negotiating new interconnection agreements should be mindful of the proposal that most of the agreements will be made transparently available to all network users.

As with section 3.2, during detailed design, EPWA will work with the proponents of early projects on how the reforms discussed here are to be implemented, to achieve the dual objectives of enabling reform but not undermining bankability.

Legacy arrangements for existing networks

At present, for the purposes of the current access reforms only two interconnection agreements⁹⁵ need to be considered, those governing the Rio Tinto-Horizon Power interconnect and the Horizon Power-APA interconnect.

Where possible, it would be preferable not to disrupt the existing negotiated arrangements, provided they do not hamper third party access or the evolving operation of the shared network. During detailed design, EPWA will work with the parties to these arrangements to see what legacy protection is required or appropriate, especially since one of them involves an existing non-covered integrated mining network.

⁹⁴ Or the ENAC, if a Pilbara network is ever full regulated.

⁹⁵ The State does not have visibility of these existing private arrangements. The expression "interconnection agreement" is used generically, to describe the totality of whatever arrangements the parties have in place, formal or informal and documented or otherwise.

3.3.4 Proposal

Proposal 4. Managing how interconnection agreements affect users' access contracts

- 4.1 The PNAC or PNR will impose boundaries on matters which can be addressed by an interconnection agreement, and specifically will prohibit an interconnection agreement from seeking directly or indirectly to impose obligations or restrictions on other network users.
- 4.2 Any matters currently dealt with (or proposed to be dealt with) by an NSP-NSP interconnection agreement which would be precluded by proposal 4.1, should be incorporated in the PNR or HTR. (Possible limited exception: if there are specific matters regarding the interconnection point which are particular to one user, they could be negotiated into the user's access contract as primary⁹⁶ obligations).
- 4.3 Each NSP must review its current and proposed interconnection agreements for compliance with proposal 4.1, and identify any matters which should be considered for inclusion in the PNR under proposal 4.2.
- 4.4 Subject to limited exceptions relating to purely commercial matters, each interconnection agreement will be transparently visible, at least to the ISO and all network users, but ideally publicly.
- 4.5 Transition for early projects: Early project NSPs will be free to negotiate interconnection agreements as usual under the current PNAC and PNR, pending these reforms. They should prudently design contracts to accommodate, and be displaced by, the reforms referred to in proposals 4.1, and 4.2 as they come online.
- 4.6 Legacy for existing networks: It will be discussed with the parties to the two existing interconnection agreements how best to implement the above proposals, with a view to disrupting existing arrangements as little as possible and recognising that one of the existing arrangements involves an uncovered integrated mining network.

Consultation Questions:

- (4)(a) Are there any circumstances in which it is necessary for an NSP-NSP interconnection agreement to prescribe matters which result directly or indirectly in restrictions on network users' rights, which cannot be managed through the PNR or PNAC?
- (4)(b) Are there any disadvantages to requiring interconnection agreements to be made public? Do interconnection agreements include commercially sensitive matters that need to be kept confidential, and if so why?

3.4 Managing user impacts on neighbouring networks

3.4.1 Current arrangements

See section 3.1 above.

3.4.2 Issues and options

As a network becomes meshed or looped, electricity flows on interconnected networks begin to interact. One network may gain support from another but may in so doing contribute to flows and hence congestion on the other.

⁹⁶ See footnote 93 for the meaning of "primary" obligation.

This issue will emerge over time as meshing or looping increases. It is planned to evolve the Pilbara regime accordingly.

This issue has operational and commercial aspects. Operational matters including power quality, energy balancing and constraint management are already under consideration as part of the *Evolution of the Pilbara Networks Rules*.

Commercial aspects, such as the economic impacts of constraints caused by flows from neighbouring networks will be managed as part of the emerging tariff design, see introductory comments in section 3.5 below.

3.4.3 Transition

Transition for early projects

Please see discussion of proposed reforms and transitional arrangements in the *Evolution of the Pilbara Networks Rules* consultation paper.

3.4.4 Proposal

Please see the *Evolution of the Pilbara Networks Rules* consultation paper.

3.5 Managing tariffs across multiple networks

As the Pilbara grid evolves, and especially as meshing increases, the structure of network tariffs will also need to evolve. In section 3.2 above, it was proposed to separate connection point services from TUOS services, and to permit TUOS access to every interconnected network. In this new regime, it will be necessary to ensure that users pay their fair share, and that NSPs get fairly compensated.

3.5.1 Current arrangements

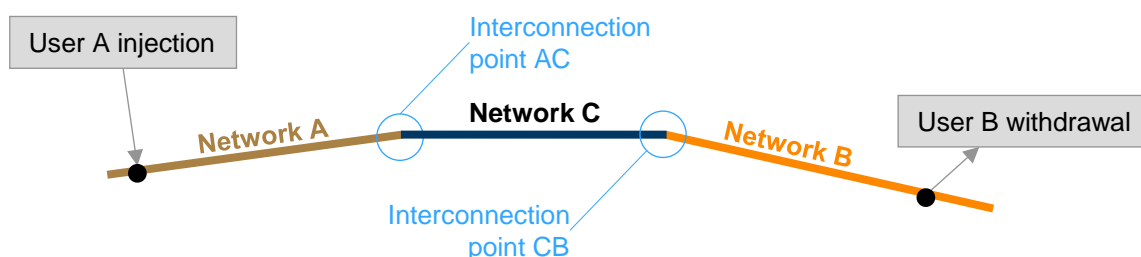
The PNAC does not presently include any mechanism for managing prices across multiple covered networks. It is left to each NSP to determine how it recovers its costs. Since costs are recovered through contractual tariffs, the NSP can only recover costs from entities with whom it has an access contract including, perhaps, an interconnection agreement.

3.5.2 Issues and options

Clearly, the regime must be able to produce an outcome in which all networks are fairly compensated for services they provide or inconvenience they suffer (e.g. congestion).

Figure 17 below shows another version of a simplified three network model. It assumes that Networks A and B only have one user each, being respectively a generator and a load, and for the sake of discussion it assumes (unrealistically) that no users are directly connected to Network C. If we assume that NSP-NSP interconnection agreements at points AC and CB are limited to operational matters as proposed in section 3.3 above, then NSP C will have no other users on which to levy its tariffs.

Figure 17 - Three networks, two users



Options considered

Option A: Maintaining the status quo

The **status quo** option would be to leave each NSP to resolve this matter, through contracts with access seekers and interconnected NSPs. On this approach, Network C would secure its revenue through charging some combination of NSP A, NSP B and their respective users for some combination of an injection service at point AC, a withdrawal service at point CB, or a TUOS service between those two points.

EPWA is not convinced that leaving NSPs to manage this on a network-by-network basis would be workable. Further, the resulting arrangements would likely be inconsistent with the reforms proposed in section 3.3 above in respect of interconnection agreements. Presumably, if NSP C sought to impose any charges on the other NSPs, they would in turn seek to pass those charges on to their users, and this would leave User A and User B being asked expected to pay charges derived from pre-agreed interconnection agreements over which they had no control.

Option B: Central body determining a fair apportionment of charges

Most other options involve a central body determining a fair apportionment of charges. A suitably-independent ISO could perform this function, or the ERA. There are several options. At one end of the spectrum, NSPs would still determine and recover their own costs as now, and the central agency would simply calculate an interconnection charge payable from an NSP (or its users) to a neighbouring NSP (or its users).

If the NSP was a payer it would then recover this charge from its network users as with any other operating cost. At the other end of the spectrum would be a fully-centralised approach in which the central entity determines all costs and tariffs for all common use assets in the system, and apportions them between NSPs on a suitably equitable basis.

3.5.3 Transition

Transition for early projects

Whether any project might need amendments to the PNAC will be evaluated on a case-by-case basis, and a decision made on the merits at the time.

Legacy arrangements for existing networks

If the PNAC is to be amended, the associated legacy arrangements will be determined at the time.

3.5.4 Proposal

Proposal 5. Managing tariffs across multiple networks

5.1 There is no proposal to change the PNAC at this stage. Further work is being undertaken by EPWA to determine the best approach to address this matter.

Consultation Questions:

(5)(a) Stakeholder feedback and proposals are invited on these matters.

4. Better regulation for network tariffs

Whenever a network is regulated for third party access, a mechanism is needed to ensure that it charges reasonable prices. The PNAC provides this in its 'PNAC-style' regulation model. See Box 3 on page 9 for a summary of the differences between 'ENAC-style' and 'PNAC-style' regulation.

In addition to the question of how tariffs should be implemented across multiple networks (under development, see section 3.5 above), the PET project is considering two, and if necessary three, other reforms:

- modifying the 'PNAC-style' regulation model to provide greater up-front certainty for greenfields projects (section 4.1);
- adding provision for revenue control (section 4.2); and
- if necessary, accommodating how project proponents plan to manage future-ready uncontracted capacity (section 7.2).

4.1 Greater up-front certainty

The main advantage of the 'PNAC-style' regulation model is that it avoids the cost and delay associated with the NSP having to get up-front approval from the ERA of an access arrangement including its tariff components.

However, it also exposes the NSP to after-the-event arbitrator decisions which could undermine the tariff assumptions embedded in its investment decision. It can also result in higher transaction costs for access seekers, who must bear the burden of holding the NSP accountable.

Changes to the regime are being considered to address these disadvantages.

4.1.1 Current arrangements

This proposed reform applies only to Pilbara networks which are 'PNAC-style' regulated under the PNAC. If a Pilbara network is 'ENAC-style' regulated,⁹⁷ it will be regulated under the ENAC with full up-front ERA approval of its access arrangement.

The NSP of a PNAC-style regulation network must prepare, publish and maintain a services and pricing policy.⁹⁸ This policy must set out a range of information, including the NSP's target revenue for the pricing period together with reasonable details of how it was calculated.⁹⁹

The NSP may adopt the conventional 'building block cost of service' (BBCOS) method to determine its target revenue,¹⁰⁰ or any other suitable method¹⁰¹. Box 8 gives a simplified example of the BBCOS method.

⁹⁷ This will be either because of a Ministerial 'form of regulation' decision PNAC section 22 following an application by someone other than the NSP under PNAC section 20, or because the NSP never applied under PNAC section 19 to be light regulated in the first place.

⁹⁸ PNAC section 36(1)(b)

⁹⁹ PNAC section 40(1)(c)

¹⁰⁰ PNAC section 47(1)

¹⁰¹ PNAC section 43(4)

Box 8 - The BBCOS method

The building block cost of service (BBCOS) method

Suppose Company A's network cost \$1 billion to build (this is the "regulated asset base", or RAB), will be depreciated over 50 years, and (applying regulatory principles set out in the PNAC) will be allowed a 7 per cent rate of return on its investment. Suppose it costs \$25m per annum to operate and maintain.

A simplistic application of the BBCOS model would determine Company A's required annual revenue as comprising the following three 'building blocks':

- a **return of capital**, which using straight line depreciation on a \$1 billion RAB over 50 years requires **\$20m per annum**
- a **return on capital**, which applying a 7 per cent rate of return to a \$1 billion RAB equals **\$70m per annum**.
- its **O&M costs of \$25m per annum**.

Ignoring other complexities, Company A should therefore be allowed to recover tariff revenue of:

- **\$20m + \$70m + \$25m = \$115m per annum.**

The PNAC sets out requirements for key inputs to the BBCOS calculation. These include how to determine¹⁰² and roll forward¹⁰³ the 'capital base' (a.k.a. the 'regulated asset base' or RAB), including the criteria for judging whether capital expenditure on new facilities may be added to the RAB (the 'new facilities investment test' or NFIT).¹⁰⁴ The PNAC also sets out requirements for rate of return,¹⁰⁵ depreciation¹⁰⁶ and non-capital costs.¹⁰⁷

The NSP's services and pricing policy must also include reference terms and conditions for each 'reference service' to be offered,¹⁰⁸ discussed in section 5.1 below.

¹⁰² PNAC section 53

¹⁰³ PNAC section 54

¹⁰⁴ PNAC section 55

¹⁰⁵ PNAC section 58

¹⁰⁶ PNAC section 59

¹⁰⁷ PNAC section 60

¹⁰⁸ PNAC section 40(1)(b)

As noted previously, the NSP must consult the public regarding its proposals on these matters, but is not otherwise subject to any up-front regulatory scrutiny or accountability.¹⁰⁹ Instead, the NSP's accountability comes in the form of an access seeker's ability to bring an access dispute,¹¹⁰ and the arbitrator's power (subject to certain situations where its discretion is limited)¹¹¹ to make any order it considers appropriate to resolve that dispute.¹¹² This will include orders which displace the NSP's published services and pricing policy.

Thus, for example, an access seeker would be free to challenge the NSP's adopted values for RAB or rate of return. Neither of these¹¹³ are matters on which the arbitrator's discretion is limited. Hence, the arbitrator will be free to overturn the NSP's values *even if those values were compliant with the PNAC*, if the arbitrator determines that a different (PNAC-compliant) value would be "preferable".¹¹⁴

Relevantly for the current reforms, the PNAC permits the NSP to mitigate this risk in respect of larger new facilities investment, by seeking pre-approval from the ERA as to whether it does or does not satisfy the NFIT before the NSP spends the money. If the ERA does pre-approve the expenditure, this decision binds the arbitrator in any future access dispute.¹¹⁵ This is a valuable de-risking mechanism for an NSP contemplating substantial new facilities investment.

4.1.2 Issues and options

In an 'ENAC-style' regulation regime such as the ENAC or the NER, once the initial regulatory pre-approval is completed, the NSP has certainty for at least the next regulatory period (typically five years) over many of the main tariff components and other risk factors, including:

- the RAB;
- any planned new facilities investment;
- its forecast operating and maintenance costs;
- its rate of return;
- its depreciation schedule;

¹⁰⁹ PNAC section 37. The NSP's only obligation is to "consider" submissions it receives during this consultation: PNAC section A1.9(a). (Exception: The rate of return for Horizon Power's and Alinta's (now APA's) first pricing periods were determined by the ERA: PNAC section 57.)

¹¹⁰ PNAC section 14(7) makes it explicit that "All things done or ... purported to be done or omitted to be done under this Code by an NSP ..., including any processes, inputs, terms or assumptions relating to [any of these] ... , or otherwise relating to access to services of a light regulation network, may be the subject of an access dispute."

¹¹¹ See the mechanism in PNAC section 10. See the {note} at the beginning of PNAC Chapter 7 for a list of the matters on which the arbitrator's discretion is limited. Footnote 118 identifies the tariff components on this list.

¹¹² PNAC section 115(1). However, the arbitrator cannot overturn new facilities investment which was committed to more than 5 years previously: PNAC section 54(5)(b)(ii). It's not obvious that this legacy protection would extend to a RAB determined under PNAC section 53.

¹¹³ PNAC section 53 for RAB; PNAC section 58 for rate of return

¹¹⁴ PNAC section 10(2)

¹¹⁵ PNAC section 56(5)

- its reference service terms and conditions, which contain import risk allocations; and
- its tariff setting methodology, by which the determined annual target revenue is converted into user tariffs.¹¹⁶

Some of these will be secured for longer than one regulatory period, e.g. in such regimes once the initial RAB is set it effectively stands for ever and is only adjusted up and down by the roll-forward rules (new capex in, depreciation and retired assets out, etc). Similarly, depreciation schedules often apply unchanged for the life of the asset.

Pre-approval such as this requires time and resources, not just of the NSP and the ERA, but also of all market participants who chose to participate in the ERA's public consultation on the subject. Ultimately, all of these costs will be borne by market participants.¹¹⁷ Leaving regulatory scrutiny until there is an access seeker is adversely impacted by a tariff (or other) element means that these process costs are not incurred until the NSP's conduct is actually causing alleged harm. It also means the debate will be assisted by a motivated contradictor, willing to invest its own expertise and resources to assist the decision-maker's scrutiny.

Further, the risk of retrospective reversal by an arbitrator creates a powerful incentive for an NSP to exercise self-restraint in its tariff design, or to be willing to voluntarily move away from its prior published position during an access negotiation. (Although there is also the opposite risk, in which a well-resourced access seeker may use the threat of prolonged, costly and risky arbitration to pressure an NSP into negotiating away from perfectly reasonable published tariff.)

Nonetheless, the current PNAC does not give the NSP or its financiers the same level of certainty over tariff components or other risk factors. Apart from pre-approved capex on new facilities, all of the above elements can be challenged in arbitration, if an access seeker raises a dispute after failing to agree access terms with the NSP.¹¹⁸

This can be a particular concern for investors in greenfields transmission assets, seeking to de-risk a revenue model spanning many decades. Box 9 gives an example of how a would-be investor in new transmission infrastructure might seek to use its proposed depreciation schedule to de-risk its investment.

This lack of up-front approval also reduces certainty for would-be access seekers, who must choose between accepting the NSP's published views, or disputing them in an arbitration with uncertain outcomes.

¹¹⁶ PNAC sections 62 and 63

¹¹⁷ The ERA's costs are recovered from light regulated NSPs under PNAC Subchapter 9.2 and Appendix 2. Unlike the costs of access disputes (which are not recoverable through tariffs – PNAC section 60(2)), the NSP's prudent and efficient costs of the ERA pre-approval process would normally be recoverable through tariffs under PNAC section 60 as 'non-capital costs'.

¹¹⁸ On some elements, the NSP's exposure is not total because the arbitrator's discretion is limited, meaning the arbitrator cannot intervene if the NSP's proposal complies with the PNAC, even if the arbitrator can see a better way of doing it: PNAC section 10. In terms of tariff inputs, the arbitrator's discretion is limited for the depreciation schedule (PNAC section 59(4)) and the tariff setting methodology (PNAC section 62(3)).

Box 9 - Example of how pre-approval of depreciation may help an investor

Example of how pre-approval of depreciation can help an investor¹¹⁹

Suppose Company B's proposed new transmission line has an expected asset life of 80 years, but its foundation customers are only willing to sign 20-year contracts (reflecting the project life of their mines). If Company B adopts straight-line 80-year depreciation, then after 20 years it will only have recovered $20 \div 80 = \frac{1}{4}$ of its capital. This means that at the time of making their investment decision, its financiers will have no clear visibility of how they might recover $\frac{3}{4}$ of their investment. This may not be bankable.

On the other hand, if Company B could depreciate the asset over (say) 30 years, then when the initial 20-year contracts expire it will be forecast to have recovered $20 \div 30 = \frac{2}{3}$ of its capital. This would mean that when taking the initial investment decision, the financiers can see how $\frac{2}{3}$ of their investment is expected to be recovered. There is still a risk that demand may dry up, leaving the remaining capital unrecovered, but this risk now relates to only $\frac{1}{3}$ of the capital rather than $\frac{3}{4}$. This level of residual demand risk may be bankable.

Faster depreciation means higher tariffs in the early years, because more capital is being recovered per year. Although the 'PNAC-style' regime may (in some circumstances) allow Company B to adopt a 30-year depreciation schedule, there is a risk that after it has committed to the investment, an arbitrator might overturn its 30-year schedule and impose an 80-year schedule to match the asset's operational life,¹²⁰ thus lowering tariffs in the early years (a good thing for access seekers) but retrospectively increasing project risk for the financiers.

The important point here is that this determination may come *after* the asset has been built, leaving the financiers' money trapped in an investment which, if this were known at the outset, might not have met their investment threshold.

The PNAC change proposed below would allow Company B to seek ERA pre-approval for a 30-year depreciation schedule. If pre-approval is granted, this will lock in that risk mitigation before it invests, so that an arbitrator cannot later overturn it.

Options considered

To address the issues outlined in this section, two key options have been considered.

¹¹⁹ This example is highly simplified and artificial, adopted only for illustrative purposes. It is not suggested that this approach necessarily would or should be approved under the PNAC.

¹²⁰ Although the arbitrator's discretion is limited (see footnote 118), such a stark divergence between the economic life assumed in the depreciation schedule (30 years) and the assets actual potential operational life (80 years) may cause the arbitrator to determine that the proposed schedule violated PNAC section 59(2)(b) which requires assets to be depreciated over their expected economic life. Having determined non-compliance in this fashion, the arbitrator would be free to make changes: PNAC section 10(1)(b) and its accompanying {note}.

Option A: NSP opt to be ENAC-style regulated

If the NSP is sufficiently concerned about the risks associated with PNAC-style regulation, it can always opt to be ENAC-style regulated.¹²¹ However, this is regarded as too blunt a solution because it would commit the NSP and all other stakeholders not only to the initial approvals, but also to periodic recurring resets. It does not offer the granular approach proposed below, in which the NSP can if it wishes only seek pre-approval on selected items.

Section 6 of this paper outlines some possibilities for alternative and additional accountability measures, to supplement arbitration and the ERA's currently limited role. It is possible that some of these could be used here as well as, or instead of, the pre-approval mechanism described below.

Option B: Modify PNAC to expand pre-approval mechanism (preferred)

For the reasons outlined above, there may be merit in allowing the NSP at least some expanded scope for securing increased regulatory certainty, without having to step all the way into ENAC-style regulation.

Therefore, it is proposed proposes to modify the PNAC so that, in addition to the NSP being permitted to seek ERA pre-approval of new facilities investment as now, it can also seek pre-approval for other tariff and non-tariff elements.

This paper seeks stakeholder feedback on which items might be included in this list, but presently considers that it might extend to:

- the RAB;
- forecast operating and maintenance costs;
- rate of return;
- depreciation schedule;
- reference service terms and conditions; and
- tariff setting methodology.

This proposed mechanism will need to be carefully designed to avoid unintended outcomes.

This will include 'no regrets' measures to ensure that a pre-approval under this regime does not get inappropriately locked-in for an extended period, even if changed circumstances render the pre-approved outcome materially inappropriate for network users. In ENAC-style regulation, most determinations are revisited every five years or so.

It may be necessary to include some mechanism by which the approver or another entity such as the arbitrator can re-open an approval in certain circumstances or to a certain extent – to provide at least some flexibility to counterbalance the NSP's certainty. This re-opener could be periodic, or alternatively could be tied to certain triggers. Clearly, a balance would need to be struck here, lest the risk of reopening completely negate any benefit of pre-approval.

¹²¹ PNAC section 30

It may also include a power for the approver to expand the scope of its assessment, if it feels it is being asked to lock in one aspect of the tariff model in a way which might later be exploited by varying other aspects.

4.1.3 Transition

Transition for early projects

For early projects, the question will be how to provide a similar degree of certainty before the relevant PNAC amendments take effect.

It may be possible, if the State agrees, for a development agreement between the proponent and the State to specify the relevant matters (e.g. the RAB) as ‘fixed principles’ which cannot later be overturned by arbitration (see section 6.2 below).

Legacy arrangements for existing networks

The impetus for pre-approval is lower for existing networks, which are not facing the same major capital investment decision. However, at present it is not ruled out including existing covered networks in this broader ability to seek pre-approval.

This reform relates to price regulation and so will not affect non-covered networks.

4.1.4 Proposal

Proposal 6. Expanded powers to seek pre-approval of tariff and non-tariff elements

- 6.1 The PNAC will be amended to allow an NSP to seek pre-approval from the ERA of more elements than just new facilities investment.
- 6.2 At present, it is proposed to extend the right to seek pre-approval to:
 - (a) the RAB;
 - (b) forecast operating and maintenance costs;
 - (c) rate of return;
 - (d) depreciation schedule;
 - (e) reference service terms and conditions; and
 - (f) tariff setting methodology.
- 6.3 Consideration is still being given as to what safeguards (e.g. a reopener on certain trigger events) might be needed in respect of pre-approvals, with stakeholder feedback sought on this point.
- 6.4 Transition for early projects: Early projects may achieve a similar effect by pre-agreeing certain key elements with the State (if the State is willing to do so) as discussed in section 6.2 below.
- 6.5 Legacy for existing networks: Consideration is being given to also making the expanded pre-approval right available to existing networks.

Consultation Questions:

- (6)(a) Do you support the proposed expansion of an NSP’s pre-approval options?
- (6)(b) Is the list of proposed pre-approval topics appropriate? What would you add or delete?
- (6)(c) Should the ERA’s costs of pre-approval be recovered from all covered NSPs through the fee PNAC mechanism, or in some other way?
- (6)(d) Considering the matters discussed in section 6 of this paper, should any other form of prior accountability be considered in this context, in addition to or instead of ERA pre-approval?
- (6)(e) What safeguards are needed to prevent pre-approvals having adverse unintended or unforeseen outcomes? Would it be appropriate for a pre-approved item on a PNAC-style regulation network to stand effectively in perpetuity, when a similar item on an ENAC-style regulation network would normally be re-examined at the next reset? If not, how might this be addressed without defeating the purpose of pre-approval? If there is

- to be a review, should it be periodic, or only on the occurrence of certain trigger events, or should this question have a flexible answer depending on the circumstances?
- (6)(f) Would you support this extended pre-approval option being available for existing assets, or should it only be available for greenfields networks? If the latter, for how long after construction should this expanded pre-approval option be available?

4.2 Provision for revenue control

Tariff regulation is designed to give the NSP an opportunity to earn a fair, but not excessive, level of revenue. It is in the long-term interests of electricity consumers for the NSP's business to be sufficiently profitable (and efficient) to be sustainable, but not for the NSP to be able to leverage its monopoly power to earn super profits.

Regulated tariff models determine how much revenue the NSP needs in a year to cover its efficient costs of running the network including a risk-reflective return on its investment. This revenue must then be recovered from network users through tariffs. One critical design question for any tariff model is who will bear the risk of shortfalls in demand. Some revenue models require the NSP to bear this risk, and some place this risk on network users. This decision affects revenue risk for the NSP and hence financing risk for its financiers, and it affects tariff certainty for the user.

For networks to be built under the PET Plan, this decision is complicated by the fact that NSPs are being required to build future-ready uncontracted capacity for which there is no present contracted demand, and to accept the risk of that demand not eventuating.

It is still being considered whether the PNAC should include additional mechanisms to better balance NSPs' and users' interests.

4.2.1 Current arrangements

The 'PNAC-style' regulatory regime does not directly regulate an NSP's revenue. It sets out a highly flexible framework for the publication of a reference price list, and some very high level guidance for negotiating and arbitrating tariffs.

Published reference tariffs and price list

The NSP must calculate and publish a price list which sets out reference tariffs for reference services.¹²² These reference tariffs must be calculated in a manner consistent with standard regulatory revenue and pricing principles and the Pilbara electricity objective.¹²³ The NSP may use the conventional BBCOS model¹²⁴ for determining its annual target revenue, but does not have to.¹²⁵

Reference tariffs should be calculated with the objective that reference tariff revenue reflects the NSP's efficient costs of providing reference services.¹²⁶

¹²² PNAC section 40(1)

¹²³ This requirement emerges from PNAC section 43(4). The revenue and pricing principles are set out in PNAC section 8. The Pilbara electricity objective is set out in *Electricity Industry Act 2004* section 119(2).

¹²⁴ PNAC Subchapter 5.2

¹²⁵ PNAC section 43(4)

¹²⁶ PNAC section 63(2)

Actual tariffs negotiated or arbitrated

The reference tariffs set out in the published price list do not determine what a user pays. The tariffs actually to be paid by a particular user are negotiated or arbitrated between the user and the NSP.¹²⁷ The reference price list serves only as a starting point for this negotiation/arbitration.¹²⁸

Published price lists have limited role

As the PNAC-style regulation model relies on the arbitrator to scrutinise the NSP's prices, a Pilbara NSP's published price list has a very different effect to the prices set out in an approved access arrangement in an ENAC-style regulation regime.

Under the ENAC-style regulation regime, an arbitrator cannot make a determination which is inconsistent with the ERA-approved access arrangement.¹²⁹ This provides a direct link between the BBCOS reference tariff determination and the prices payable by a user. The ERA applies BBCOS principles, and the arbitrator must follow the result. This knowledge guides negotiations.

The PNAC has no equivalent provision. In the Pilbara, because the arbitrator must be free to provide regulatory scrutiny, the NSP's published reference tariff price list, whether based on BBCOS or otherwise, has no binding effect. It is for reference only.

No direct regulatory oversight of overall revenue

In the ENAC-style regulatory regime, at each reset the ERA can examine the NSP's revenue over the last regulatory period (typically 5 years) and take that into account in setting the access arrangement for the coming period. Depending on the regulatory model adopted, i.e. price cap or revenue cap, future target revenue may or may not be adjusted to reflect unders and overs in the past period, but the possibility exists.

In contrast, the PNAC creates no link between the published target revenue (calculated by BBCOS or otherwise) and the NSP's actual revenue. The PNAC's only statements on the NSP's actual revenue are the very high-level statements in the revenue and pricing principles, for example that the NSP should be given a reasonable opportunity to recover at least its efficient costs, should be provided with effective incentives to promote efficiency, and should earn a fair return.¹³⁰

Consistent with the PNAC-style regulation model, the PNAC provides no general regulatory scrutiny of the NSP's compliance with even these high-level requirements. That scrutiny is left to the arbitrator when hearing a particular access seeker's access dispute. The arbitrator does have the power to scrutinise the NSP's actual revenue against the high-level principles referred to in the previous paragraph, and in so doing could scrutinise the NSP's published (BBCOS or other) revenue target or even calculate its own, but it has no direct power to address any general over-recovery. Its powers are largely confined to the parties to the dispute before it.¹³¹

¹²⁷ PNAC section 43(1)

¹²⁸ PNAC section 43(2)

¹²⁹ ENAC section 10.32(b)

¹³⁰ PNAC sections 8 and 63(2)

¹³¹ The arbitrator does have the power to make general regulatory recommendations (PNAC section 117), but that's an indirect measure at best. It would do little more than identify the problem, leaving it to others to devise and implement a solution. That's effectively what the State is already doing in this consultation paper.

Arbitration is primarily a bilateral, adversarial process, not a multi-party regulatory process. If an arbitrator determined that the NSP's revenue would exceed the total permitted by the PNAC's revenue and pricing principles, it would not be entirely powerless, but the solution would be cumbersome. There is no easy way for the arbitrator to address the situation in respect of users who were not party to the proceedings. It might in theory be possible for the arbitrator to undertake a multi-party process, in effect becoming an ad hoc regulator, but this is not how arbitrations normally work and would likely be less efficient than using normal regulatory processes.

4.2.2 Issues and options

The PNAC's revenue and pricing principles dictate that network tariffs should allow the NSP an opportunity to recover its efficient costs of operating the network, and to earn a fair, risk-reflective return on its investment.¹³² It is intended to preserve this principle, but is considering changes to the PNAC to ensure that the NSP does not inappropriately recover revenue in excess of this level.

The standard way to approach this question is to use the BBCOS method (Box 8, page 56) to determine the 'target revenue' the NSP should earn in a year. The PNAC also allows alternative methods to be used.¹³³

Once the target revenue has been calculated, a tariff-setting methodology determines how it is to be recovered. This involves converting the single annual revenue number into a series of fixed or variable tariffs payable by network users. This involves forecasting the mix of users and their demand. This introduces uncertainty, because if the actual mix of users and their demand differs from the forecast mix, then the actual revenue received by the NSP will be higher or lower than the BBCOS target. Box 10 illustrates this.

Box 10 - Example of under- and over-recovery depending on volumes

Example of how a tariff model can result in under-or over-recovery

Suppose an NSP's BBCOS target revenue for a year is \$100, and the forecast demand for that year is 100 units of network capacity. (For the purposes of this analysis it does not matter whether these units are denominated as MW of capacity, MWh of throughput, or anything else.)

The simplest possible tariff methodology would set tariffs at a uniform \$1 /unit.

If it turns out that the NSP actually manages to sell 120 units of capacity in the year, then it will have earned \$120 revenue rather than its BBCOS target of \$100. If its costs are unchanged, it will have earned \$20 of above-regulated profit for the year. It will have over-recovered.

Conversely, if the NSP only manages to sell 80 units of capacity in the year, then it will have earned \$80 revenue rather than its target of \$100. If its costs are unchanged, it will experience a \$20 revenue shortfall for the year. It will have under-recovered.

ENAC-style regulation regimes include measures to address this uncertainty. These measures fall into two broad classes, each of which has pros and cons:

¹³² PNAC section 8(2) and (4)

¹³³ PNAC section 43(4)

- In a **price-cap model**, the regulator will set network tariffs based on forecast volumes, and the NSP will be free to earn more (or at risk of earning less) than this if actual volumes turn out to be higher (or lower) than forecast. In the first case in **Box 10**, the NSP would likely be able to keep the additional \$20. On the other hand, in the second case where volumes turned out lower than forecast, the NSP would have to absorb the \$20 shortfall. In this model, the NSP bears demand risk and upside. Users are protected from this risk, and also benefit from stable tariffs.
- In a **revenue-cap model**, the regulator focusses on the NSP's overall revenue. Tariffs are initially set in the same way as in a price-cap, but they are then adjusted in subsequent years to remedy any over- or under-recovery. In the first case in **Box 10**, tariffs in later years would be adjusted downwards to 'claw back' the \$20. Conversely, if in the second case, user tariffs would be increased in later years to top up the NSP's revenue. In this model it is the users who bear demand risk. The NSP is kept whole – shielded from demand downside but deprived of demand upside. User tariffs can be more volatile.

Tariff design is complex and the above is an over-simplification, but it serves to illustrate the proposition that the choice of model has consequences for tariff stability and the NSP's project risk. The choice of model also changes an NSP's incentives. In a price cap model, the NSP is incentivised to increase sales because it gets to keep the additional revenue. In a simple revenue cap model, it gets no benefit from increasing sales – the additional revenue flows back to users through reduced tariffs.

EPWA is considering whether a modified revenue cap model may be appropriate for some or all of the priority projects. While a final decision has not been made on this subject, or on how any such cap may be designed, the PNAC should be ready to accommodate such a mechanism if one is chosen.

Options considered

It is not proposed to change the PNAC's core revenue and pricing principles,¹³⁴ which remain an appropriate statement of overarching regulatory objectives.

It is also noted that it is proposed to change the PNAC's emphasis on negotiated outcomes.

Except for the expansion of the pre-approval mechanism discussed in section 4.1 above, a general move from PNAC-style to ENAC-style regulation is not proposed, even though revenue control is more often a feature of ENAC-style regulation regimes.

Instead, the preferred option is to build into the PNAC a mechanism which permits some degree of regulatory (or possibly arbitral) oversight of NSP revenue, without otherwise departing from the PNAC-style regulation approach and emphasis on negotiated outcomes.

It is still being considered how this might best be achieved, and this paper seeks stakeholder feedback both on the proposal and on how it might best be implemented.

The revenue control would not necessarily apply to every covered network. It may apply conditionally, only activating if certain triggers occur.

How revenue control might be integrated into the PNAC-style regime in which scrutiny normally comes by way of arbitration rather than up-front ERA approval is under consideration.

¹³⁴ PNAC section 8

4.2.3 Transition

Transition for early projects

Early projects may be required to commit to a modified form of revenue cap model in their development agreement with the State (see discussion of possible ‘fixed principles’ mechanism in section 6.2 below). The model should accommodate the proponent’s commitment to building future-ready uncontracted capacity.

Legacy arrangements for existing networks

There are no present plans to impose revenue regulation on existing covered networks. The PNAC may provide triggers for this to occur in future.

This reform relates to price regulation and so will not affect non-covered networks.

4.2.4 Proposal

Proposal 7. Tariffs – Making provision for possible revenue control

- 7.1 The PNAC will be amended to allow a covered NSP to be made subject to revenue control. While the detail of this is still to be developed, it may include a form of revenue cap with provision for incentives.
- 7.2 If revenue control is implemented on a network, negotiated outcomes should not result in an NSP earning more than an appropriate risk-reflective rate of return, subject to any incentive mechanisms specified in the revenue control.
- 7.3 The revenue control model should incentivise efficient growth in network utilisation, and share the benefits of utilisation growth appropriately between the NSP, existing users and new users.
- 7.4 Revenue control will not necessarily apply automatically to all new networks. It may apply to a network only if the NSP opts in or only after a trigger event occurs.
- 7.5 Transition for early projects: Early projects may be required to commit to revenue control as part of their development agreement with the State. The model chosen should accommodate future-ready uncontracted capacity.
- 7.6 Legacy arrangements for existing networks: Revenue control will not apply to existing covered networks unless a specified trigger event occurs.

Consultation Questions:

- (7)(a) Please comment generally on the proposed reforms.
- (7)(b) Should revenue control apply automatically to all networks, or only if a network opts in or certain trigger events occur? If the latter, what might be suitable trigger events?
- (7)(c) Who should administer any revenue control – the ERA or an arbitrator?

4.3 Managing tariffs for future-ready capacity

A key criterion of the PET EOI required early project proponents to build in additional **“future-ready uncontracted capacity”**, above what is needed to service foundation users, and to take the risk of that capacity not being sold.¹³⁵

¹³⁵ DEMIRS, 2024, *Pilbara Energy Transition - Request for Expressions of Interest for Priority Projects - Application Guidelines* (available [here](#)), Appendix A,1,5(h)

Proponents were asked to show how their tariff models will deal with this capacity. These arrangements may be further negotiated between the State and a preferred proponent as the development agreement is finalised. If the State is willing, the parties may agree to specify some aspects of the resulting model as ‘fixed principles’ as discussed in section 6.2 below.

It remains to be seen how each project deals with this issue, and whether all proposed solutions can be accommodated within the PNAC in its current form.

4.3.1 Current arrangements

The PNAC allows the NSP great flexibility in how it determines its reference tariffs.

At the highest level, the NSP does not have to use the BBCOS method.¹³⁶ The NSP can adopt any pricing arrangement it likes, providing the result applies the high-level revenue and pricing principles,¹³⁷ and meets the Pilbara electricity objective¹³⁸.

No changes to any of these highest-level requirements are being contemplated at this stage.

If the NSP does choose to use a BBCOS model, then within that model:

- The initial capital base must normally fall between the usual regulatory boundaries of DAC (depreciated actual cost) and DORC (depreciated optimised replacement cost).¹³⁹
- The rate of return must be commensurate with the regulatory and commercial risks involved in providing covered services¹⁴⁰ and may have regard to the network’s unique circumstances together with the shopping list of ‘Pilbara specific’ factors set out in the regulations.¹⁴¹
- The depreciation schedule should be designed to promote efficient growth in demand¹⁴² and to allow for the NSP’s reasonable cashflow needs¹⁴³.

The PNAC does not contain an explicit mechanism to deal with ‘speculative’ investment, i.e. investment made in anticipation of future demand, such as appears in some ENAC-style regulation regimes.¹⁴⁴ Given the flexibility of the PNAC-style regulation regime as described above, the regime does not need to explicitly permit or regulate such measures. They will be open to the NSP if it wishes, provided it remains within the broad guidance described in the previous paragraphs.

¹³⁶ PNAC section 43(4).

¹³⁷ Set out in PNAC section 10

¹³⁸ Set out in *Electricity Industry Act 2004* section 119(2)

¹³⁹ PNAC section 53

¹⁴⁰ PNAC section 58(2)(a)

¹⁴¹ psx58(2)(b). The ‘Pilbara specific’ circumstances are set out in regulation 4 of the *Electricity Industry (Pilbara Networks) Regulations 2021*.

¹⁴² PNAC section 59(2)(a)

¹⁴³ PNAC section 59(2)(e)

¹⁴⁴ *National Gas Rules* rule 84; ENAC sections 6.58 to 6.60

4.3.2 Issues and options

Before the State enters into a development agreement with a PET preferred proponent, it will need to be satisfied with the proponent's intended pricing model. The State is unlikely to be satisfied with a pricing model unless it (at a minimum) is consistent with the revenue and pricing principles and meets the Pilbara electricity objective.

Since these are also the only real constraints on the NSP's pricing model under the PNAC, it is likely that whatever model the NSP agrees with the State, will also comply with the PNAC. Hence, on these high-level factors the PNAC's **status quo** will be sufficient.

If the NSP proposes to use the PNAC's BBCOS model, it is also quite likely that the existing provisions will provide sufficient flexibility to permit it to accommodate whatever measures it agrees with the State, to accommodate the future-ready capacity. For example, the PNAC permits considerable flexibility in each of RAB, rate of return and depreciation. It's thus likely that even on these more detailed measures, the **status quo** will be suitable.

However, if it emerges that a particular aspect of the PNAC causes a difficulty for a model which otherwise satisfies the PNAC's high level objectives and the State's PET objectives, the possibility of fine-tuning the PNAC's wording will be considered.

There is no preferred option at this stage. It is quite likely that no amendments will be needed for the PNAC to accommodate the tariff models that proponents develop to accommodate future-ready uncontracted capacity. If it emerges that the PNAC cannot do so, the merits of any possible amendment, and the need for and appropriateness of any transitional measures, will be considered at the time.

The PNAC will remain unchanged until a case for change emerges.

4.3.3 Transition

Transition for early projects

Whether any project might need amendments to the PNAC will be evaluated on a case-by-case basis, and a decision made on the merits at the time.

Legacy arrangements for existing networks

If the PNAC is to be amended, the appropriateness of legacy arrangements will be determined at the time.

This reform relates to price regulation and so will not affect non-covered networks.

4.3.4 Proposal

Proposal 8. Managing tariffs for future-ready capacity

8.1 It is proposed that the PNAC will remain unchanged in relation to this matter until a case for change emerges.

Consultation Questions:

(8)(a) Stakeholder feedback is invited on this matter.

5. Better regulation for terms and conditions

Access regimes typically seek to regulate not just access tariffs, but also the terms of access contracts, because whether a given tariff is good or poor value depends on the risk allocation and other matters set out in the accompanying contract.

Two issues arise for discussion. The first relates to how the regime can assist access negotiations by providing a suitable set of model terms and conditions. The second to how foundation user contracts may need to be regulated.

5.1 Model reference terms and conditions

An inability to agree access terms can be as much of an obstacle to access as an inability to agree a tariff. Different regulatory regimes give NSPs and access seekers different levels of assistance in this regard. It is intended to increase the assistance the PNAC provides, to maximise both parties' chances of reaching a commercially appropriate outcome without having to resort to arbitration.

5.1.1 Current arrangements

Under the PNAC, the NSP must publish a "services and pricing policy", which must among other things set out "reference terms and conditions" for every reference service the NSP proposes to offer.¹⁴⁵ The PNAC provides a non-exhaustive list of the matters these reference terms and conditions must address.¹⁴⁶

The NSP must consult the public on the services and pricing policy before publishing or amending it.¹⁴⁷ It must "consider" any public feedback on its proposed policy,¹⁴⁸ but under this PNAC-style regulation regime there is no regulatory approval or oversight on the proposed policy. The content of the policy, including the proposed reference terms and conditions, remains wholly in the NSP's control.

As a result of this, the PNAC allows an access seeker flexibility to adopt or not adopt the NSP's published reference terms.¹⁴⁹

Further, because the NSP's terms are self-determined and so may not reflect a fair commercial balance, the PNAC limits the extent to which the published terms can constrain the arbitrator:

- If the access seeker adopts the NSP's published reference terms, the arbitrator is to use the published terms as the starting position in the arbitration, but the access seeker remains free to seek departures from those terms.¹⁵⁰
- If the access seeker chooses not to adopt the NSP's published terms, they become irrelevant. The arbitrator then must not use the published terms as the basis for determining the access dispute.¹⁵¹

¹⁴⁵ PNAC section 40(1)(b)

¹⁴⁶ PNAC section 40(2)

¹⁴⁷ PNAC section 37(1)

¹⁴⁸ PNAC section A1.7(a) and A1.9(a)

¹⁴⁹ PNAC section 40(6)

¹⁵⁰ PNAC section 40(6)(a)

5.1.2 Issues and options

The non-price terms and conditions of an access contract can be as important as the tariff, in determining whether access occurs or is commercially viable. Box 11 gives some simple examples:

Box 11 – Examples of critical non-price access terms

Examples of how non-price access terms can render an access contract valuable or otherwise

- **Curtailment regime** – the terms related to the ability of the network operator to curtail or interrupt the transfer of electricity into or out of the grid. These terms are necessary for power system reliability, but also critically impact how valuable, or even useable, the service is for an access seeker. In the Pilbara, load curtailments can cost millions of dollars per hour.
- **Liability and Indemnities** – network service providers generally seek to limit or exclude their liability to the extent permissible by law, but users can also be required to provide extensive indemnities for any liability the network service provider may incur to a third party. Whilst there are legitimate reasons for these terms, it is important that such provisions do not go further than is necessary to protect the network service provider against legitimate risks or seek to impose unreasonable levels of liability on an access seeker. Excessive protection for the NSP can make it harder or impossible for an access seeker to finance its own project.
- **Duration** – An access seeker may wish to align its contract term with its project's projected life.

An access regime must ensure that the access contract terms provide a reasonable balance between the NSP's and access seeker's interests in terms of risk allocation and other commercial outcomes. If the risk balance is tilted too far in favour of the access seeker, access may become more expensive than it need be because the NSP will need to price in the increased risk, and in an extreme case the NSP's continuing viability may be threatened. If the balance is tilted too far in favour of the NSP, access may be hindered or the access seeker's project may become unviable.

Like most access regimes, the PNAC allows the NSP and access seeker to negotiate their own access contract. But like those other regimes, the PNAC recognises that an impasse in such negotiations will block access, and so permits an arbitrator to determine an access contract's terms.

Requiring the parties or the arbitrator to start from a blank page when negotiating or arbitrating access terms would be inefficient. Most access regimes, including the PNAC, aim to provide a starting point, in the form of a published suite of access terms.

In ENAC-style regulation regimes this comes in the form of access terms set out in the access arrangement and pre-approved by the regulator. This approach has its shortcomings but does have the advantage that the NSP and access seeker can base their negotiations on an opening form of contract that has been subject to at least some independent scrutiny. The arbitrator is then either guided or wholly constrained by the regulator's approved terms.

¹⁵¹ PNAC section 40(6)(b)

This approach cannot work in the PNAC-style regulation model, because the NSP determines its own published access terms. The NSP must consult the public, but there is no other independent scrutiny or approval. AS the NSP could propose standard access terms which are unreasonably tilted in its own favour on risk or other matters, the regime cannot provide that these terms bind a later arbitrator. This ensures that the NSP cannot 'stack the deck' in its own favour but has the disadvantage that access negotiation and arbitration lack any binding guidance on suitable terms. The scope for disagreement is increased, and the arbitrator's task made harder. Access becomes more difficult.

Ways to improve access outcomes are being considered, by providing an authoritative set of balanced access terms to guide negotiations and arbitration.

Options being considered

Two key options have been considered to address the issues identified.

Option A: Pre-approval of access contract terms

The PNAC already contains a mechanism which seeks to balance the NSP's and access seeker's interests, and which makes some attempt to overcome the lack of pre-approval mechanism. It maximises flexibility and minimises up-front compliance costs.

However, the measures currently included in the PNAC to protect the access seeker against the possibility that the NSP might publish unbalanced terms¹⁵² mean that the published terms and conditions may be less effective than they could be at reducing disagreement or disputation.

Alternatively, if the parties had access to a set of balanced access terms which had been independently developed or verified to guide or even constrain the process, access negotiations may be faster and easier, and arbitrations fewer and shorter. One way to achieve this would be to require the NSP to seek ERA pre-approval for a set of access contract terms, as would be the case in ENAC-style regulation.

Under this model, the NSP would prepare and propose a set of terms, the ERA would consult the public and may seek expert advice, and the ERA would be able to make changes to the proposed terms before approving them. The parties would be free to negotiate different terms, but the arbitrator would be required to either have regard to, or apply, the ERA's approved terms.

The difficulty here is that the set-piece to-and-fro of public consultation and regulatory determination is not ideally suited to the detail and complexity of developing a complex commercial contract in which every word can be significant.

In any industry, negotiating the terms of a substantial commercial contract is an iterative process, as the parties identify and seek to resolve points of commercial disagreement. There is usually a degree of co-design, in which parties discuss sticking points and seek to find a mutually acceptable solution. The exercise is wholistic – as negotiations conclude, the parties balance a host of small and large compromises and judge the totality of these compromises against the benefits to be obtained from the contract. In a successful negotiation, both parties find the balance sufficiently worthwhile, and the contract is signed.

Regulators can and do attempt to replicate this process through their approval processes, with varying levels of success, but another approach is being considered, described below.

¹⁵² See text at footnotes 150 and 151.

Option B: Non-binding advisory option

Another option considered would be to have a suitable expert or expert panel publish a set of model access contract terms by way of a non-binding advisory opinion, to guide negotiations and arbitrations. However, it is considered more efficient to give the model contract, substantive effect as described below.

Option C: Model set of access terms (preferred)

The preferred option is to adopt an approach in which a schedule to the PNAC will set out a model set of access terms, as the ENAC does.

In the ENAC, the NSP's access arrangement must set out the NSP's standard terms for access. These do not have to follow the published model terms,¹⁵³ but to the extent they do so, the ERA must approve them.¹⁵⁴ To the extent that NSP deviates from the model terms, the ERA will use the model terms as a benchmark in assessing the NSP's proposal.¹⁵⁵ The ENAC thus attempts to strike a balance between flexibility for the NSP, and providing clear guidance on what reasonable terms might look like.

In the PNAC, a similar result could be achieved with the arbitrator – if the parties have adopted terms from the model contract the arbitrator must approve them, and otherwise the arbitrator can use the model terms as a benchmark to guide its determination.

Consideration is still being given to the extent to which the NSP would be permitted to depart from the model terms in its published services and pricing policy and, if so, what weight the arbitrator should give to the NSP's approach.

Determination of the best way in which to develop a suitable model contract to be included in the PNAC is under consideration. One option would be for the Minister to convene a small expert working group. Once the working group had finalised a draft, the Minister would consult the public on its proposed inclusion as an appendix to the PNAC,¹⁵⁶ giving both NSPs and access seekers an opportunity to comment.

5.1.3 Transition

Transition for early projects

The development agreement to be negotiated between the State and an early project proponent may append a set of model access contract terms, which the proponent commits to adopt and publish, pending implementation of the above reforms.

The parties to the development agreement will consider whether the model terms appended to the agreement should fall away once the PNAC is amended, to be replaced by the PNAC model terms. A balance will need to be struck between the benefits to access of having consistent model terms across networks, versus the proponent's need for certainty to make its investment decision. This will be resolved on a case-by-case basis.

¹⁵³ ENAC section 5.4

¹⁵⁴ ENAC section 5.5(a)

¹⁵⁵ ENAC section 5.5(b)

¹⁵⁶ *Electricity Industry Act 2004* section 120H(2)

Legacy arrangements for existing networks

Legacy arrangements are not being considered for this issue. Once the PNAC sets out a set of model terms, they would guide access to covered networks in the manner described above for existing covered networks just as for new covered networks, including if an access seeker wishes to arbitrate an access dispute.

However, existing contracts would be unaffected by the addition of model terms to the PNAC – they would continue on the terms previously agreed or arbitrated.

This reform relates only to the access terms for covered networks. It will not apply to non-covered networks.

5.1.4 Proposal

Proposal 9. Model access terms and conditions

- 9.1 The PNAC will be amended to set out a set of model terms and conditions for access contracts, as is done with Appendix 3 to the ENAC.
- 9.2 The NSP's published services and pricing policy will be encouraged but not compelled to adopt these model terms. The NSP will be required to identify and explain any departures.
- 9.3 In an access dispute, the arbitrator will apply the model terms as a benchmark.
- 9.4 Transition for early projects: The development agreement between the proponent and the State may append a set of model terms, to be used in the above manner pending PNAC reforms. The agreement will specify what happens to any such appended model terms, once the PNAC is amended to prescribe a set of model terms.
- 9.5 Legacy arrangements for existing networks: The PNAC model terms will apply to existing covered networks in the same way as new covered networks. Existing contracts will be unaffected and continue on their negotiated terms. This reform will have no impact on non-covered networks.

Consultation Questions:

- (9)(a) Please comment on the above proposed reforms.

5.2 Managing foundation user terms

Foundation users in effect underwrite the greenfields development risk on new transmission lines. In return, they typically require special benefits both to mitigate this risk, and to reward them for taking the risk. Within reason, this can be appropriate. The problem is that excessive foundation user rights can be a barrier to access by other users.

The PET Project seeks to balance two competing objectives. The first is to get the necessary transmission infrastructure built. To do this, proponents must be able to attract finance, for which they will likely need to attract foundation users. Hence, the regime must permit proponents adequate room to move, in seeking to persuade foundation users to underwrite the transmission assets.

But the second objective, balanced against the first, is to ensure that the regime remains viable for subsequent access seekers.

5.2.1 Current arrangements

The PNAC prioritises negotiated outcomes.

The NSP and access seeker can define the access service however they choose,¹⁵⁷ subject only to:

- any ringfencing restrictions on the NSP;¹⁵⁸ and
- the PNR and HTR.¹⁵⁹

They can also agree almost any access terms and conditions they choose,¹⁶⁰ subject only to:

- any ringfencing restrictions on the NSP;¹⁶¹ and
- a prohibition on ‘gag’ clauses which seek to prevent a party to an access contract from raising matters with the regulator, an arbitrator or government officials.¹⁶²

Once an access contract has been signed it, and not the PNAC, determines the parties’ relationship with each other.¹⁶³

Thus, the PNAC imposes very few limitations on what a proponent may wish to negotiate with a foundation user.

The *Electricity Industry Act 2004* prohibits NSPs and network users from engaging in conduct which has the purpose of hindering or preventing another person from accessing the network’s services.¹⁶⁴ “Purpose” in this context is applied in a way similar to the *Competition and Consumer Act 2010* (Cth) – a person’s purpose can be inferred, and can be established even if the conduct was engaged in for multiple purposes, provided the prohibited purpose was a “substantial” purpose.¹⁶⁵

5.2.2 Issues and options

A blanket prohibition of foundation user rights is not proposed. Any such blanket prohibition may well be counterproductive.

Foundation users do take on material risk, when they agree to underwrite the transmission infrastructure, and it is appropriate for their contracts both to reward them for taking on this risk, and to include mechanisms which help them mitigate this risk. These can include things such as (among others):

- guaranteed priority in the event of constraints;
- ‘most favoured nation’ mechanisms on pricing and other terms – namely that if someone else gets a better price or better terms, the foundation user gets it too (see Example 1 in Box 12 below); and

¹⁵⁷ PNAC section 14(1)

¹⁵⁸ PNAC section 14(1)(a)

¹⁵⁹ PNAC section 14(1)(b)

¹⁶⁰ PNAC section 14(3)(d)

¹⁶¹ PNAC section 14(3)(a)

¹⁶² PNAC sections 14(3)(b) and 14(5)

¹⁶³ PNAC section 14(4). The exceptions are, once again, ringfencing requirements and a prohibition on ‘gag’ clauses. The arbitrator may also make a determination which overrides the contract: PNAC section 14(4)(c).

¹⁶⁴ *Electricity Industry Act 2004* section 120S(2) (for NSPs and their associates) and (3) (for users).

¹⁶⁵ *Electricity Industry Act 2004* section 120S(4)

- priority expansion rights to allow the foundation user to take extra capacity in the line to accommodate its own demand growth (see Example 2 in Box 12 below).

Without offering such terms, proponents may not be able to attract the necessary foundation user underwriting, and so may not be able to attract finance, and the transmission infrastructure may not get built, in which case everyone misses out.

However, while foundation user rights may be reasonable and commercially appropriate in the bilateral commercial context between the NSP and the underwriting foundation user, such measures individually or collectively can create barriers to entry for third parties or distort competition in upstream or downstream markets. Box 12 below contains two examples to illustrate this problem.

In extreme cases, such rights might be included deliberately with a view to blocking others from accessing the network. If so, they would fall foul of the statutory prohibition against conduct with the purpose of hindering access.¹⁶⁶ But as extensive experience with competition law generally has shown, a “purpose” test sets a high bar. Many things can have anti-competitive effects,¹⁶⁷ even if a prohibited purpose cannot be established or does not exist. As with recent amendments to add an “effects test” to the *Competition and Consumer Act 2010*,¹⁶⁸ more is needed.

Box 12 - Examples of problematic foundation user rights

Examples of foundation user rights which could hinder access

Example 1: One common foundation user right is a ‘**most favoured nation**’ (MFN) clause, which says that if the NSP offers anyone a lower price than the foundation user has agreed to pay, the foundation user must get that price too.

Assume that to make the original investment bankable, the foundation user needed to commit to tariffs which are higher than a regulated BBCOS reference tariff. Assume also that the contract contains an MFN clause.

This creates a dilemma. Normally, the PNAC would entitle a subsequent third-party access seeker to insist on paying no more than (roughly) a BBCOS tariff. But if the NSP charges the third party this lower tariff, it will trigger the MFN clause and lower the foundation user’s tariffs. The resulting fall in the NSP’s revenue from that foundation user might render its whole business unviable. The practical outworking of this is that the third party may have little choice but to agree to pay above-regulated tariffs, just to prevent the MFN clause from crashing the NSP’s business. If the access seeker decides to arbitrate an access dispute, the arbitrator will face the same dilemma.

Example 2: A foundation user may have secured highly **flexible expansion rights** for additional capacity, which have the effect of ‘sterilising’ spare capacity in the network—the NSP cannot sell the spare capacity to another user, because it needs to reserve it in case the foundation user later triggers its expansion rights.

¹⁶⁶ *Electricity Industry Act 2004* section 120S

¹⁶⁷ See discussion in the Harper Committee’s 2015 *Competition Policy Review* (available [here](#)).

¹⁶⁸ *Competition and Consumer Act 2010*, s46

Some foundation user rights are so broad and flexible that in practical terms they amount to a form of quasi-ownership. In these circumstances, the vertical integration problems discussed in section 2.2 above can arise, because the foundation user can leverage its contractual rights to prevent or discourage the NSP from providing access to the foundation user's competitors.¹⁶⁹

The above problems are not limited to foundation users. Any user's access contract can contain such provisions. This discussion focusses on foundation users because they typically have more negotiating leverage against the NSP than subsequent access seekers once the network is up and running, and so are in a better position to extract favourable terms. However, there is a strong argument that any rules implemented to address these issues should apply to all users, not just foundation users.

Options being considered

Consideration is being given to what measures could be added to the PNAC or PNR to ensure that foundation user contracts do not become inappropriate barriers to third party access. Any such measure must strike a careful balance between:

- respecting the right of NSPs and foundation users to negotiate whatever bargain suits their mutual interests.
- in the course of this, permitting the NSP to grant sufficient foundation user rights to enable it to attract the underwriting it needs to attract the investment it needs;
- protecting commercially sensitive information; and
- nonetheless, ensuring viable third-party access for subsequent access seekers.

Two key options were considered.

Option A: Prohibit contract conditions which prevent or substantially inhibit third party access (through addition of an "effects test")

Similar to the recent reforms to the *Competition and Consumer Act 2010*, adding an "effects test" to the PNAC would prohibit access contract conditions which have the effect of preventing or substantially hindering third party access to uncontracted network capacity.

Such a provision would need to be framed carefully. Whenever an NSP contracts with a user for access, that necessarily reduces what is available for others – arguably having the effect of hindering others from accessing the no-longer-available capacity. Also, a decision would be needed on whether the NSP could ever grant any user an expansion option, entitling them to secure future uncontracted capacity. Such options can be valuable for the holder but can have the effect of 'sterilising' capacity from being accessed by third parties.

¹⁶⁹ This was precisely what led to the early anti-trust legislation and litigation against Standard Oil in America in the early 1900s. Oil was transported by rail. Standard Oil did not own or operate the railways, but used its bargaining leverage to force the railways to impose disadvantageous terms on Standard Oil's competitors. This included requiring the railways to levy a surcharge on every competitor's shipments and to pay that surcharge to Standard Oil. This not only gave Standard Oil a free revenue stream, but also made the competitor's products less cost-competitive in the downstream market.

Option B: Prohibit contractual provisions which have more specific effects

A more targeted approach, which could be adopted instead of or in conjunction with a general “effects test” prohibition on conduct which prevents or hinders access, would be to prohibit contractual provisions which have certain more specific effects. For example, provisions which could be barred if they have the effect of deterring an NSP from offering regulated tariffs or have the effect of sterilising spare capacity.

These reforms will necessarily intersect with those being discussed in section 5.1 above. One can only determine which foundation user rights might impact another user’s access, if one understands the rights that other user would be seeking to enjoy under its own access contract.

Some of the other measures being discussed in these reforms will also have an impact here. If Option B is adopted for managing vertical integration (see proposal 2.3 in section 2.2.4 above), so that the ISO takes over selected sensitive decisions such as managing the access queue, then the rules the ISO adopts for that task can determine how much or little weight is given to users’ contractual expansion options. The rules developed under the *Evolution of the Pilbara Networks Rules* reforms around constraints will determine the effectiveness of otherwise of foundation users’ contracted priority entitlements.

The other measures discussed here will need to be accompanied by suitable transparency measures, to ensure relevant rights could be detected. The *Evolution of the Pilbara Networks Rules* review is considering transparency more broadly for the Pilbara regime, but a subset of that discussion is whether access contracts should be largely made public, other than specific commercial terms such as quantities and tariffs. Once again this intersects with the reforms being discussed at section 5.1 above – the more standardised everyone’s contract, the less reason there is to keep their terms secret.

There are also transparency options short of full publication. NSPs can be required to publish a precis of any rights granted which could impact on third party users. And/or they could be required to give a copy of the contract to an independent third party (the ERA, the ISO) for compliance monitoring. The NSP could be required to provide an independent audit report confirming that the contract is compliant.

Stakeholder views are sought on these options.

5.2.3 Transition

Transition for early projects

Pending any reforms, the development agreement negotiated by the State with the proponent may set out the foundation user benefits which will be permitted on the corridor in question, or may set out the boundaries within which such rights can be negotiated.

This might be integrated with the transitional measures adopted under section 5.1 above – the development agreement could, if desired, append an approved form of foundation user contract.

Foundation user rights can be a necessary tool in securing their support in underwriting a project and hence in the project securing finance and getting the infrastructure built. Hence, the interaction between proponents’ negotiations with prospective foundation users and various proposed reforms to the PNAC and PNR, will need to be managed.

Legacy arrangements for existing networks

No general legacy measures are proposed. To the extent the PNAC is amended to include prohibitions or restrictions on access contract terms which might hinder access by others, these prohibitions will apply to all new access contracts entered into by existing covered NSPs.

EPWA will work with each NSP to determine whether any specific legacy treatment is needed for existing contracts.

This reform relates only to access on covered networks. It will not affect non-covered network operators.

5.2.4 Proposal

Proposal 10. Dealing with foundation user requirements

- 10.1 The paper proposes to supplement the Act's "purpose" test, to better regulate foundation user and other contractual rights which have the effect of preventing or hindering access by others.
- 10.2 Suitable transparency measures will be introduced, to ensure that any breaches of these prohibitions can be detected.
- 10.3 Transition for early projects: These matters may be managed by a development agreement between the proponent and the State.
- 10.4 Legacy for existing networks: No general legacy is planned. All future access contracts on existing covered networks will be expected to comply. The State will work with each covered NSP to determine which (if any) specific legacy treatment for pre-existing contracts is needed and appropriate.

Consultation Questions:

- (10)(a) Stakeholder feedback and proposals are invited on these matters.

6. Other improvements to access regulation

6.1 More flexible accountability measures

6.1.1 Current arrangements

The PNAC sets out various requirements for the access process, and for access contract tariffs¹⁷⁰ and terms. The only mechanism presently available for an access seeker to hold the NSP accountable to these requirements is to commence an access dispute.

Under the Industry Act the regulations may:

- prescribe civil penalties for breaches of specified PNAC and PNR provisions;¹⁷¹ and
- provide for enforcement proceedings for breaches of the PNAC and PNR and the orders that can be made including injunctions, declarations, other orders and damages.¹⁷²

The Industry Act's statutory immunity for NSPs and others¹⁷³ means that damages will generally not be available for non-compliances, unless specifically permitted by the regulations.¹⁷⁴

6.1.2 Issues and options

The disadvantage of the PNAC-style regulation model is that it relies on an access seeker's willingness (and having time and resources) to commence an access dispute.

Arbitration can require considerable time and resources and risk an uncertain outcome. Because of this, the access seeker may instead choose either to build its own infrastructure, or simply to accept the NSP's numbers or terms whether it agrees with them or not.

If access seekers are reluctant or unable to start access disputes, the NSP may not be held properly accountable to comply with the PNAC. A lack of disputes is not necessarily an indication that all is well.

Options considered

It is not considered necessary to move all Pilbara networks to ENAC-style regulation. Nor is it necessary to depart from the current emphasis on negotiated outcomes.

On the other hand, the current sole reliance on arbitration to hold NSPs accountable is not desirable.

¹⁷⁰ Most of the PNAC's tariff provisions focus on the reference tariffs to be published in a price list, not the contractual tariffs which will result from a negotiation or arbitration.

¹⁷¹ *Electricity Industry Act 2004* section 120V(2)(a) and (b)

¹⁷² *Electricity Industry Act 2004* section 120V(2)(d), (f), (g) and (h)

¹⁷³ *Electricity Industry Act 2004* section 120ZB

¹⁷⁴ Such regulations are enabled by *Electricity Industry Act 2004* section 120V(2)(h)

EPWA is considering ways in which NSP accountability can be increased by mechanisms which improve on the current PNAC model, without going so far as the 'ENAC-style' regulation model of up-front ERA approval for everything.

Arbitration will be retained as the primary method for resolving access disputes, as a backstop to the below.

Measures under consideration include:

- Option A: Activating the civil penalty and other enforcement regimes for both the PNAC and PNR.
- Option B: Implementing a form of rapid expert determination in which the parties can seek a speedy interim determination which stands pending any future full arbitration (or negotiated solution). To avoid delays, the model would need to be prescriptive as to when it could be used, the rules of use and timing. It would likely need to be binding to be of any substance.
- Option C: A mechanism for formal published advisory opinions by an agency or independent expert, in which an authoritative independent person expresses a view either on the NSP's proposals' compliance with the PNAC, or on what a suitable PNAC-compliant tariff might be. Such an opinion might guide the parties in their access negotiations.
- Option D: Triggers which activate more stringent regulation, including possible triggers to switch a network from PNAC-style to ENAC-style regulation.

6.1.3 Transition

Transition for early projects

There will be no special treatment for early projects. They will operate under the PNAC and PNR as they stand today and as they are amended from time to time, including as the above measures are introduced.

Any matters recorded in a development agreement with the State will be enforced by contractual means.

Legacy arrangements for existing networks

Legacy treatment is not considered to be necessary for this issue. Covered networks will be subject to the PNACs enforcement and accountability measures as they evolve.

This reform relates only to how covered NSPs are held accountable to the PNAC. It should not affect non-covered NSPs.

6.1.4 Proposal

Proposal 11. Improved accountability

- 11.1 It is proposed to supplement arbitration of access disputes with other accountability measures, which may have a lower threshold of activation and so improve accountability generally.
- 11.2 Measures under consideration include:
- (a) Activating the *Electricity Industry Act 2004*'s civil penalty and other enforcement regimes for both the PNAC and PNR.
 - (b) A form of rapid (likely binding) expert determination for technical matters.
 - (c) Formal published advisory opinions by an agency or independent expert.

- (d) Triggers which activate more stringent regulation, including possible triggers to switch a network from PNAC-style to ENAC-style regulation.

Consultation Questions:

- (11)(a) Will the PNAC benefit if these lower-threshold accountability measures are added, to supplement arbitration as a last resort?
- (11)(b) Please comment on the possible measures under consideration. What other such measures have you seen work effectively?
- (11)(c) For matters that make it to arbitration, do you consider the PNAC's current arbitration regime to be fit for purpose? How might it be improved?
- (11)(d) Do you agree that no special transition for early projects or legacy arrangements for existing projects are required?

6.2 A transitional 'fixed principles' mechanism

6.2.1 Current arrangements

Unlike some other regimes,¹⁷⁵ the PNAC does not include a 'fixed principles' mechanism.

The PNR have no fixed principles mechanism and would not normally be expected to have such a mechanism. Fixed principles are a feature of access regimes, not the regimes which regulate system operations and the electricity market.

The PNAC and PNR do not include any of the other mechanisms found in other regimes¹⁷⁶ to help de-risk greenfields investment.

Both the PNAC¹⁷⁷ and PNR¹⁷⁸ have rules governing legacy arrangements for prior contracts, which may or may not respond appropriately in the circumstances discussed below.

6.2.2 Issues and options

In ENAC-style regulation, a conventional 'fixed principles' regime permits the regulator to approve certain components of an access arrangement for longer than one regulatory period (typically five years). For example, this can allow the service provider some certainty in the treatment of depreciation or incentive mechanisms. This protects the service provider against the regulator changing its mind at the next reset, for example, due to changed circumstances.

A PNAC-style regulation regime cannot include such a mechanism, because it would allow the NSP to grant itself protection from the arbitrator.

Some other regimes also recognise the particular challenges that access regulation can pose for greenfields projects, and so provide ways for such projects to secure regulatory certainty for an initial period of ten or more years.

In the present PET context, consideration is being given to adapting the concept of fixed principles in the PNAC, for two related purposes as discussed below.

¹⁷⁵ *National Gas Rules* rule 99; *Competition and Consumer Act 2010* section 44ZZAAB.

¹⁷⁶ *National Gas Rules* rules 24 to 29C provide for the creation of "greenfields incentive determinations" and "greenfields price protection determinations".

¹⁷⁷ PNAC section 69

¹⁷⁸ PNR Appendix 3 and rules 28, 63 and 250-253.

The following discussion is necessarily abstract, because negotiations with preferred proponents have yet to commence. More detail will be provided in the detailed design phase, should it be decided to proceed with this reform.

How the fixed principles may be used

Regulatory certainty for early greenfields projects

The State needs to attract substantial investment in transmission assets. It would be convenient if the required reforms were completed before proponents needed to make their contracting and investment decisions. But the Pilbara decarbonisation timetable requires early projects to make these decisions more quickly than that.

These early greenfields projects face two classes of regulatory risk:

- The first relates to the problem discussed in section 4.1 above – the need to attract substantial investment in transmission assets, in the context of a PNAC-style access regulation regime. Some of these projects will need to make investment decisions before the expanded ERA pre-approval mechanism discussed in section 4.1 can be implemented. Therefore, a mechanism is being considered by which certain principles can be specified in a development agreement between the State and a proponent, which then have roughly the same effect as an ERA pre-approval – that is, a regulatory decision maker is not later able to overturn the agreed principle.
 - Example of possible use: a depreciation scheme as discussed in Box 9 on page 59 or a rate of return.
- The second relates to the reforms more generally. Many of the reforms being contemplated in this paper and in the *Evolution of the Pilbara Networks Rules* paper will involve different or additional powers or discretions for regulatory decision-makers under both the PNAC and the PNR. Each of these will represent a level of risk for a greenfields investor, until the reforms are finalised. Some of these risks may be managed by the regime's various legacy mechanisms¹⁷⁹ but until the detail of each reform, and of any refinements to the rules regarding legacy treatments, are known, the investor will not be sure. To address this, the State may be willing, in selected instances, to pre-agree certain outcomes with early project proponents, on matters that the reforms propose to leave to a decision-maker's discretion.
 - Example of possible use: If the ISO is to be given a discretion in determining certain commercially significant operational standards.

For the PNAC such mechanisms might bind the arbitrator in any subsequent access dispute, and perhaps the ERA if it has a relevant role. For the PNR, they might bind decision-makers such as the ISO, or an arbitrator in a rules dispute.

¹⁷⁹ Including *Electricity Industry Act 2004* section 120ZI; PNAC sections 27, 31(7) and 69; and PNR rules 28, 61 and 250-253 and Appendix 3.

Capturing reciprocal commitments from proponents

The second possible use of fixed principles is similar but reversed. It may be that when negotiating a development agreement with the State, a project proponent makes commitments which constrain flexibilities granted to it, or proposed to be granted to it, by the PNAC or PNR. This may be something as simple as the proponent agreeing to adopt a particular form of access contract or queuing policy.

The primary mechanism for enforcing these commitments will be the development agreement itself, but PNR and PNAC may require amendment to require or permit a decision-maker to have regard to such contractual commitments and, if necessary, ensure that the proponent fulfils them.

Policy implications

It has not yet been decided whether to implement a fixed principle mechanism as described above, or whether the WA Government would agree to a particular fixed principle if asked. The policy implications need to be considered carefully. Allowing contractual mechanisms to shape regulatory outcomes, even on an interim basis, can sometimes be permissible, but should always be done cautiously.

At this stage, five observations are made as follows:

- First, as with pre-approval discussed in section 4.1 above, when establishing the parameters for any fixed principle, care will be needed to avoid unintended outcomes. The duration of the fixing, and any triggers for its removal, will need to be specified. If such a mechanism is ever activated in the PNR, the ISO will need to be able to disregard the agreed principle for some operational reasons, e.g. when necessary to preserve power system security;
- Second, the binding effect of any fixed principle must be limited to administrative decision-makers such as the ERA and ISO, or a dispute-resolver such as the arbitrator. It would never be appropriate for this mechanism to bind a delegated legislative function – i.e. the Minister's power to amend the PNAC or the Coordinator's power to amend the PNR;¹⁸⁰
- Third, the mechanism must not hamper the regime's evolution. A fixed principle can only be considered if it can still accommodate the PET objectives and the broader reforms described in this paper and the *Evolution of the Pilbara Networks Rules* consultation paper;
- Fourth, this mechanism will apply only to agreements to which the State is a party. Wholly private contracts will have to rely on the PNAC and PNR's legacy mechanisms; and
- Finally, contractual fixed principles designed to anticipate regulatory reforms that still under development will fall away and be replaced by the actual PNAC and PNR provisions once they commence.

¹⁸⁰ Proponents, like all other stakeholders, can participate in the public consultation which accompanies any such regulatory changes.

Option under consideration

Consideration is being given as to whether to include, in either or both the PNAC and PNR, a mechanism by which certain principles recorded in a contract between the State and an NSP can take effect as ‘fixed principles’ which bind a delegated decision-maker, i.e. the NSP, an arbitrator, the ERA and the ISO.

A final decision has not yet been made as to whether to include such a mechanism. And even if a decision to include a mechanism is made, the mechanism may never be used if no fixed principle is ever agreed. It is being considered now only because the possible need for such a mechanism has been identified, and some early project timetables are tight.

The mechanism if implemented will:

- apply only in respect of principles set out in agreements to which the State is a party;
- not seek to constrain the Minister’s powers to amend the PNAC, or the Coordinator’s powers to amend the PNR;
- require every such principle to have an end date, and to specify trigger mechanisms by which it may be ended or suspended sooner. This will include when an anticipated regulatory reform comes into effect to replace the interim fixed principle;
- require every such principle not to unduly hamper ongoing regulatory evolution; and
- as with foundation user rights discussed in section 5.2 above, contain measures to ensure that fixed principles do not unduly hinder subsequent access seekers’ access.

6.2.3 Transition

Transition for early projects

This is a transitional measure. If enacted, and then if used, it will likely apply only to early priority projects pending the completion of the relevant reforms.

Legacy arrangements for existing networks

This regime, and any fixed principle implemented under this regime, is not proposed to adversely affect any NSPs or user’s existing rights in respect of existing networks.

6.2.4 Proposal

Proposal 12. A transitional “fixed principles” mechanism

12.1 Consideration is being given to implementing a transitional mechanism in the form described under “Option under consideration” in section 6.2.2 above.

Consultation Questions:

(12)(a) Feedback on this concept is welcome.

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