



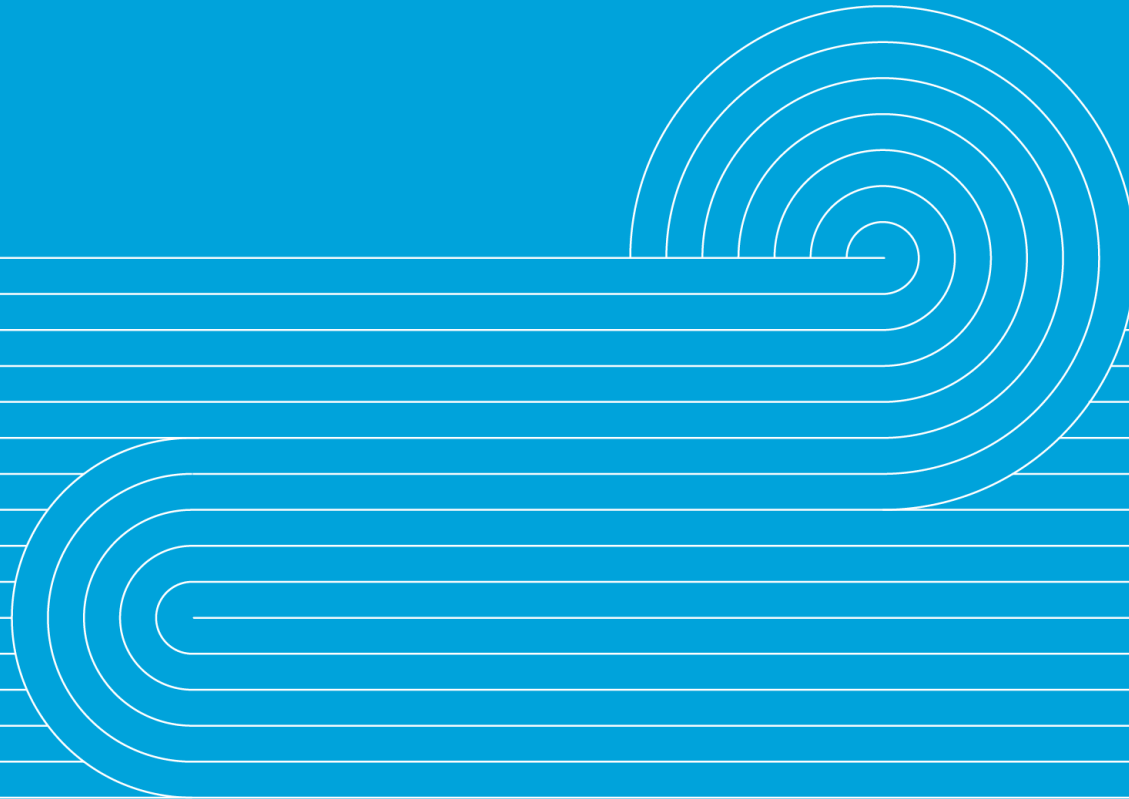
TRANSPower

Transpower's Connections Management Framework

Rupert Holbrook

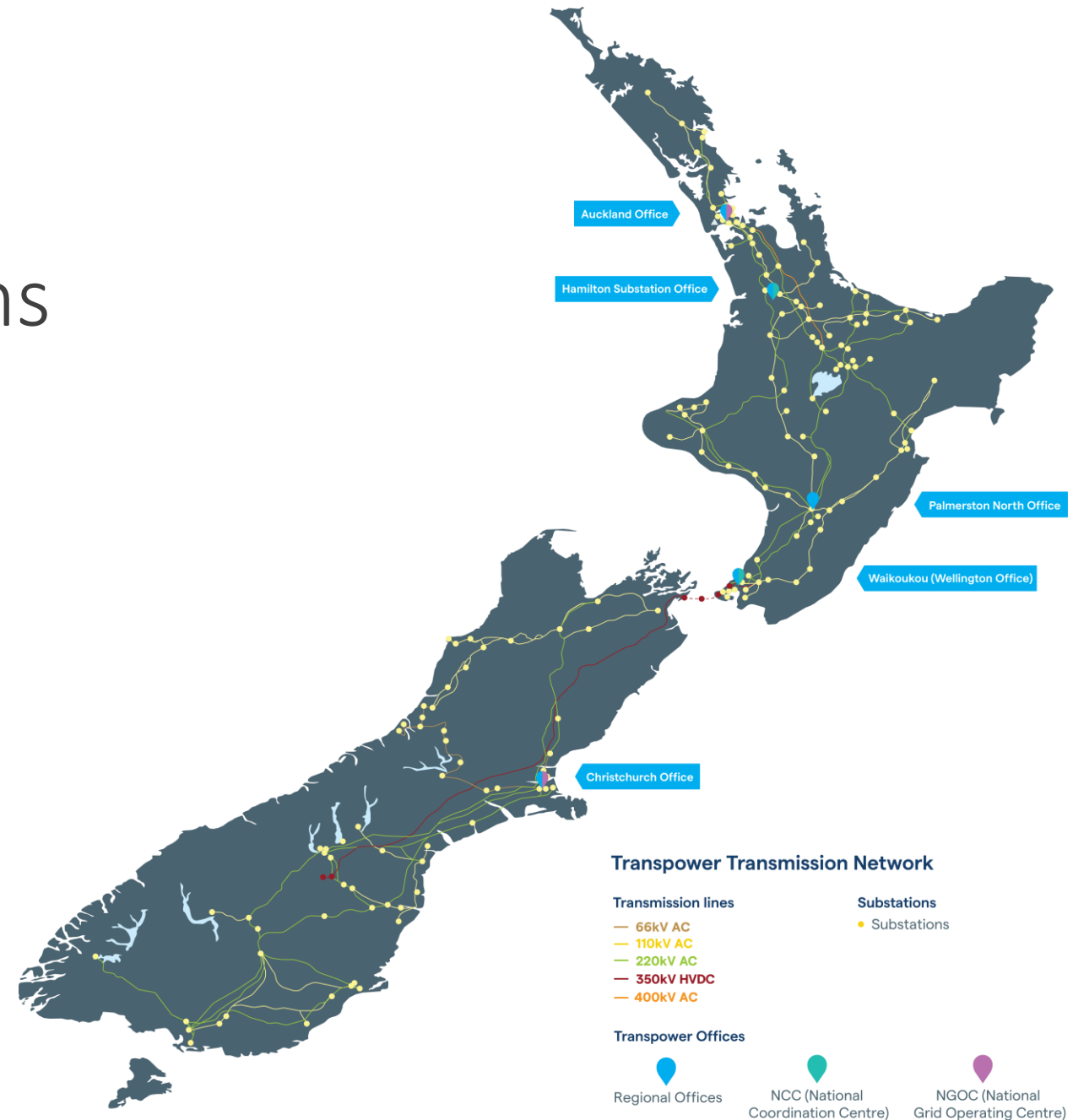
Customer Connections Project Director

NCTG presentation 8th April 2024



Content

- Transpower Connections Management Framework (CMF)
- CMF review and consultation
- Questions

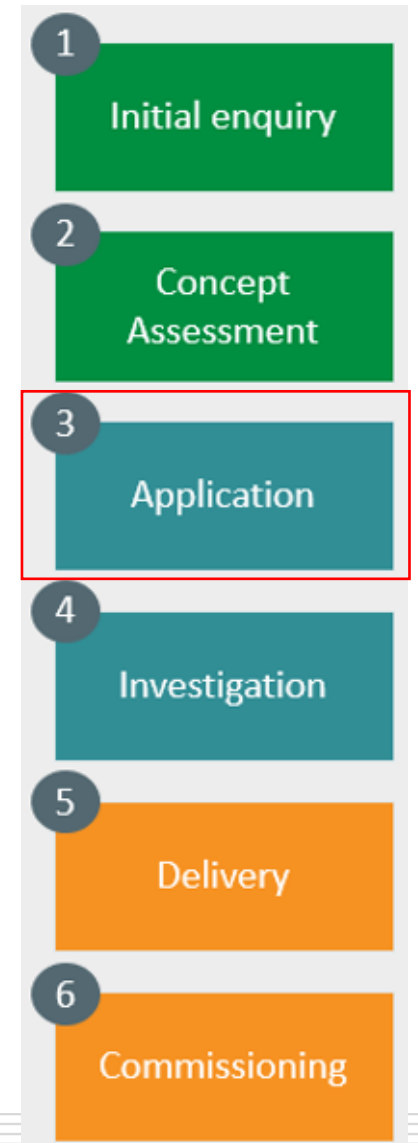




Transpower Connections Management Framework

Connection Management Framework (CMF) objectives

- To ensure a transparent and efficient Investigation and delivery process for new connections, focusing resources to well-developed projects and promoting standardisation of end-to-end connection processes;
- To provide investors with increased certainty, supporting New Zealand's continued position as an attractive place to invest in new generation and energy storage; and
- To maximise our contribution in enabling the Government's targets for connecting new renewable generation.



Minimum bar for entry with proof of readiness provided via a formal application

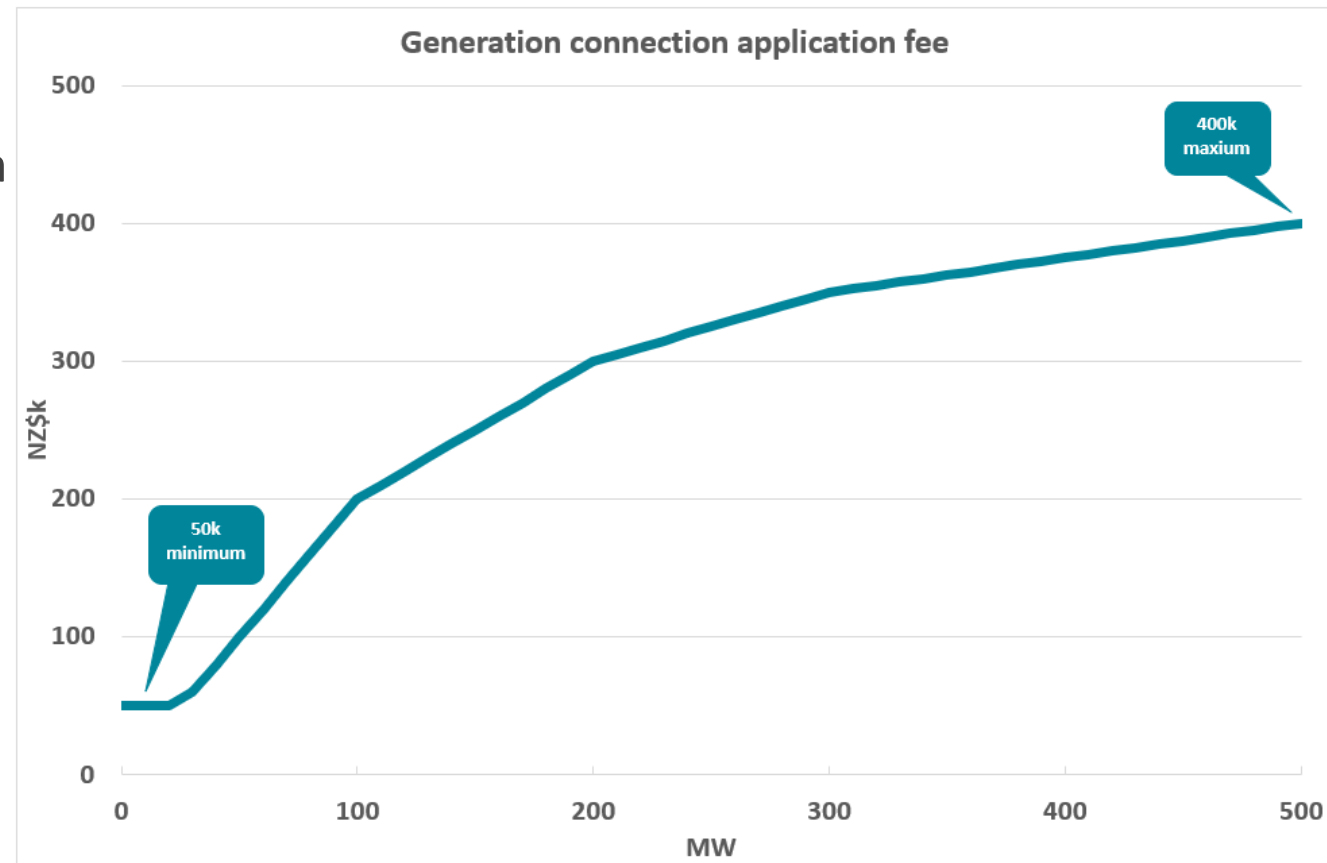
- Applicant details
- High level project details
- Technical support
- Conceptual design
- Connection capacity assessment
- Property rights
- Environmental approvals
- Stakeholder engagement
- Timing
- OIO approval
- Signature (agreement to additional terms)
 - Transpower allowed to publish basic project information
 - Agree to pay a non-refundable fee



Generation Connection Application Fee

The standard generation connection Application Fee has a maximum and a minimum but is otherwise calculated on a per MW connection capacity basis:

- Up to 100 MW: \$2,000 per MW, with a minimum Application Fee of \$50,000
- From 101 to 200 MW: \$200,000 + \$1,000 per additional MW
- From 201 to 300 MW: \$300,000 + \$500 per additional MW
- From 301 to 500 MW: \$350,000 + \$250 per additional MW
- Maximum: \$400,000



Fee allocation, refundability and transferability

- The \$50,000 initial payment to be placed in the Pipeline is non-refundable if the project is subsequently withdrawn or removed.
- For projects which enter Delivery (Stage 5), the Fee can be used to offset the cost of a Transpower Works Agreement (TWA) for the same connection.
- The Fee cannot be used to offset the costs of an Investigation (Stage 4).
- Transpower may allow some or all of the Fee to be transferred with the rights of the project to a different developer.
- The Fee cannot normally be transferred to a different connection project by the same applicant; however, Transpower may agree to this in exceptional circumstances.
- For projects that are otherwise cancelled, there are limited circumstances in which the part of the Fee above the minimum \$50,000 may be refundable. This will be considered on a case-by-case basis.

Fee refundability for projects not proceeding to a TWA

In limited circumstances, the remaining fee (total fee less \$50,000) may be refundable if the connection application is withdrawn.	Refundable % of remaining fee
The connection investigation identifies a connection is now infeasible or has a new cost estimate exceeding the upper range of the associated Transpower concept assessment estimate by at least 50% and the applicant chooses to terminate any contracts and withdraws the connection application	100%
The applicant chooses to terminate the contract due to Transpower contractual non-performance and withdraws the connection application	100%
The applicant terminates a Transpower contract under a Force Majeure clause and withdraws the connection application	100%
The applicant withdraws the connection application due to a materially adverse change in the project's value directly attributable to unforeseen regulatory changes	100%
Failure to obtain the required resource consents or Overseas Investment Office (OIO) approval and the applicant withdraws the connection application	0%
Termination by Transpower due to contractual non-performance by the applicant or developer, or withdrawal of the connection application for any other reason	0%

Project Milestones

- Milestones will be negotiated at the start of the Investigation (Stage 4). These will be bespoke and agreed between Transpower and the project developer.
- Examples include:

Consenting	The Customer and Transpower agreeing a draft agreement setting out each party's rights and obligations in relation to obtaining all necessary Consents in order for Transpower to carry out the Proposed Works and for the ongoing operation and maintenance of the Proposed Works and other relevant Transpower assets.
Property	The Customer and Transpower agreeing a draft agreement setting out each party's rights and obligations in relation to the Property Rights.
Connection type	The parties agreeing the proposed connection configuration and ownership boundary.
Feasibility	Transpower provides Solutions Study Report by best endeavours.
Delivery stage	The Customer enters into a Transpower Works Agreement for detailed design and construction of the connection within X months of Transpower providing the Solution Study Report.

Timing for making an application

- Applications can be made at any time. Transpower will review Applications by the 10th of the following month on receipt of application*.
- Unsuccessful applicants will be contacted to discuss the reason(s) their Application was not accepted.
- Successful applicants will be notified and limited relevant project information will be published within Transpower's Generation Connection Pipeline.
- Once published, applicants may withdraw their Application within 10 business days prior to the initial portion of the Application Fee becoming payable.
- Successful applicants' projects will be placed in a Pipeline and resourced in sequence of receipt of the Application Form.

*Investigation requests made prior to 29 September retain their position if a successful Application is made by 30 November 2022.

Removal from the generation connection pipeline

An Application may be removed from Transpower's generation connection pipeline if:

- The applicant fails to pay an invoice for an Application Fee
 - An applicant failing to pay an invoice may reapply after 90 business days.
- The applicant fails to meet its milestones and agreement cannot be reached on an extension, Transpower may cancel the relevant contract(s) and remove the project from the process. The developer may reapply at a later date where it will be treated as a new Application.
 - There will be a degree of tolerance associated with project milestones, recognising the need for reasonable flexibility and that there may be circumstances outside of a developer's control.

Projects connecting to an EDB

- EDBs will need to engage Transpower through a Concept Assessment. This will assess if any new assets or upgrades are required.
 - Projects that do not require any new Transpower assets or upgrades, and where any voltage, harmonic, thermal, dynamics, impacts can be managed within the EDB's existing envelope, are **not included** in the Application process
 - Embedded projects requiring new or upgraded Transpower assets are **included** in the process.
 - Embedded projects requiring only new Special Protection Systems to realise N security injection capacity are **included with a 50% reduced Fee** (the \$50k minimum Fee remains)
- The EDB must make the Application; Transpower can invoice the developer for the Fee if required.
- Milestones will be negotiated between Transpower and the EDB.

Application process stages

<p>a</p> <p>Application submission</p>	<p>The developer or the EDB (for embedded projects) submits a completed application form with any supporting information</p>	<p>Customer timeframe: Any time</p>	<p>f</p> <p>Pipeline update</p>	<p>Transpower publishes a generation pipeline update showing the relative position of all accepted projects</p>	<p>Transpower timeframe: Published by 1st business day of month following confirmation</p>
<p>b</p> <p>Application assessment</p>	<p>Transpower subject matter experts review all applications received in the previous month</p>	<p>Transpower timeframe: By 10th business day of month following application</p>	<p>g</p> <p>Investigation resourcing</p>	<p>Transpower confirms investigation resources for projects at the front of the generation pipeline</p>	<p>Transpower timeframe: As resources become available</p>
<p>c</p> <p>Application determination</p>	<p>Transpower confirms application acceptance or rejection and if rejected provide a reason why</p>	<p>Transpower timeframe: By 11th business day of month following application</p>	<p>h</p> <p>Investigation confirmation</p>	<p>Transpower prepares an investigation services agreement and the developer or EDB pays the remainder of the application fee</p>	<p>Transpower / Customer timeframe: One month prior to anticipated investigation start date</p>
<p>d</p> <p>Provisional pipeline update</p>	<p>Transpower publishes a draft update to the generation connection pipeline showing the relative position of newly accepted applications</p>	<p>Transpower timeframe: Published by 11th business day of month following application</p>	<p>i</p> <p>Investigation start</p>	<p>Transpower and Developer or EDB develop the detailed Investigation scope and agree project milestones</p>	<p>Transpower / Customer timeframe: Initial kick-starter investigation phase</p>
<p>e</p> <p>Application confirmation</p>	<p>The developer or EDB confirms they wish to proceed with their application and pays the initial \$50k fee</p>	<p>Customer timeframe: Within 10 business days of confirmation of pipeline position</p>			



First ready first served

Technology agnostic

Only applies to generation / storage

Limited ability to accelerate for system specific system need

Parallel path for DER connections not requiring new capital assets

[Transpower Grid Exit Point \(GXP\) impact studies for Distributed Energy Resource \(DER\) development](#)

Connection location (substation or circuit)	Max MW [!]	Connection voltage	Technology	Transpower stage	Sequence number
Waipara	120	220/66	Solar	Application Confirmed	17
Mangamaire	50	33/110	Wind	Application Confirmed	18
ISL_KIK	600	220	Solar + BESS	Application Confirmed	19
Whakamaru (North)	300	220	Solar + BESS	Application Confirmed	20
MNG_MST (110kV) / Linton	100	220/110	Wind	Application Confirmed	21
Wellsford	80	110	Solar + BESS	Application Confirmed	22
Glenbrook	280	33	BESS	Application Confirmed	23
ISL_KIK	310	220	Solar + BESS	Application Confirmed	24
Glenbrook	80	33	Wind	Application Confirmed	25
Ohinewai	300	220	Wind	Application Confirmed	26
Mangahao	30	33	Solar	Application Confirmed	27
Edendale	150	110	Wind	Application Confirmed	28
Tangiwai	120	220	Solar + BESS	Application Confirmed	29
BRK_SFD	750	220	Wind + Solar	Application Confirmed	30
BRK_SFD_A	200	220	Wind	Application Confirmed	31
ISL_KIK	200	220	Solar + BESS	Application Confirmed	32
Bunnythorpe	525	220	BESS + Solar	Application Confirmed	33
BPE_WKM	615	220	Solar	Application Received	34
HLY_TMN / HLY_SFD	315	220	Solar	Application Received	35
OhauB / OhauC	700	220	Solar + Wind + BESS	Application Received	36
MDN_MPE / MSD_HPI	120	110/220	Wind	Application Received	37
BPE_WDV	90	110	Wind	Application Received	38

Notes

1. The location is given as the substation where a project will connect, or if a new substation is required, the transmission circuit.
2. This list includes generation projects requiring new or upgraded Transpower assets; generation projects connecting to an electricity distribution network and not requiring new or upgraded Transpower assets are not shown.
3. Sequence numbers (for investigations and applications) will be updated as and when projects move to a new stage or are withdrawn; or if a customer with two or more projects with consecutive sequence numbers prioritises a project with a higher number.
4. An Applications sequence number indicates the order in which Transpower will allocate internal resources to new connection investigations and the order in which Transpower will allocate physical assets (spare Transpower transmission assets and land) at the proposed point of connection. An accepted connection application does not guarantee access to transmission capacity beyond the point of connection and does not guarantee the project will proceed to commissioning. For investigations the sequence number indicates the order in which projects entered the investigation stage. Investigations can move into delivery when the investigation is complete, the sequence number will not apply to this transition.

! - Max MW value includes existing generation of () MW as part of the new connection

* - Progressed based on no requirement for new Transpower capital assets for this connection, similar to the treatment of embedded generation connections with no requirement for new Transpower capital assets

^ - Multiple applications merged into a single (more efficient) connection



Our CMF design is tied to our open access policy

Transpower connection

- Open access policy
- HV network modelled in the Wholesale Market
- Market dispatch manages transmission congestion in real time
- Generation offers at point of connection

- Generation may be constrained by 'Security constrained economic dispatch'

Distribution connection

- Capacity limited
- Distribution networks not modelled in the Wholesale Market
- Ahead of time planning required to manage most distribution congestion
- Generation offers net at EDB point of connection (GXP)

- Generation may be constrained by 'Security constrained economic dispatch'



Managing shared / competing connections

- Shared sites becoming more common
- For Transpower funded assets TPM connection charges reflect current use, not future use
- Unless specifically funded through a customer investment contract as a dedicated spare, spare assets/space are not reserved for existing customers – allocated at ‘Application’ stage
- New parties connecting to a site may erode historic resilience levels but also bring reductions in TPM charges for the original customer
- Funding split for Transpower connection upgrades reliant on mutual agreement between customers (Part 12 of the Code)
- Transpower may facilitate agreement discussion and may suggest methodology precedents e.g. max anytime MW ratio
- New first mover disadvantage provisions in TPM
- TP co-funding possible where customer connection brings forward planned TP work within the same regulatory period



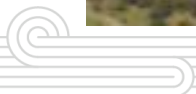


Consultation document

**Reviewing the settings of the
Connections Management
Framework**

20 March 2024

Submissions close: 1 May 2024



Original connection Management Framework (CMF) objectives are retained

- To ensure a transparent and efficient Investigation and delivery process for new connections, focusing resources to well-developed projects and promoting standardisation of end-to-end connection processes;
- To provide investors with increased certainty, supporting New Zealand's continued position as an attractive place to invest in new generation and energy storage; and
- To maximise our contribution in enabling the Government's targets for connecting new renewable generation.



Additional objectives

- speculative projects do not delay the connection of other further developed projects;
- resources available to Transpower to facilitate grid connections are used most efficiently;
- Transpower's ability to maintain a safe, secure and reliable electricity supply is maximised



The CMF appears to be delivering

Since the implementation of the CMF, there have been 69 applications for new generation connections, of which 22 have proceeded to Investigation and 13 have been cancelled, merged or rejected.

As of 4 April 2024, there are:

- 38 applications pending allocation of resources to begin Investigation, for a total of 8,164 MW;
- 33 projects in Investigation, for a total of 5,141 MW; and
- 13 projects in delivery, for a total of 1364 MW. These include solar, wind, geothermal and hydroelectric generation and BESS.



Observations after the first year of operation

We have a better understanding of what information reflects a ready and realistic generation or storage project;

- some projects have dropped out when requested to pay the full application fee;
- applications have continued to be made for new generation connections in congested parts of the grid where full dispatch of generation is unlikely;
- there is currently limited flexibility to prioritise projects in situations where this may be beneficial to the CMF's objectives



Opportunities for improving the CMF

- changes to the criteria Transpower reviews applications against
 - Proposing to strengthen evidence of readiness requirements particularly for stakeholder engagement and consenting strategy
- changing the timing of the application fee
 - Make the full fee payable on application acceptance
- improving other aspects of the process
 - Allow project acceleration under a wider set of criteria such as shared connections, or connections which re-use existing assets
 - Reporting improvements



Timing

Consult with applicants, customers and stakeholders on draft changes	March-April 2024
Review feedback and discuss with regulators	May 2024
Publish decision on final changes	June 2024
Implement changes	July 2024





Questions