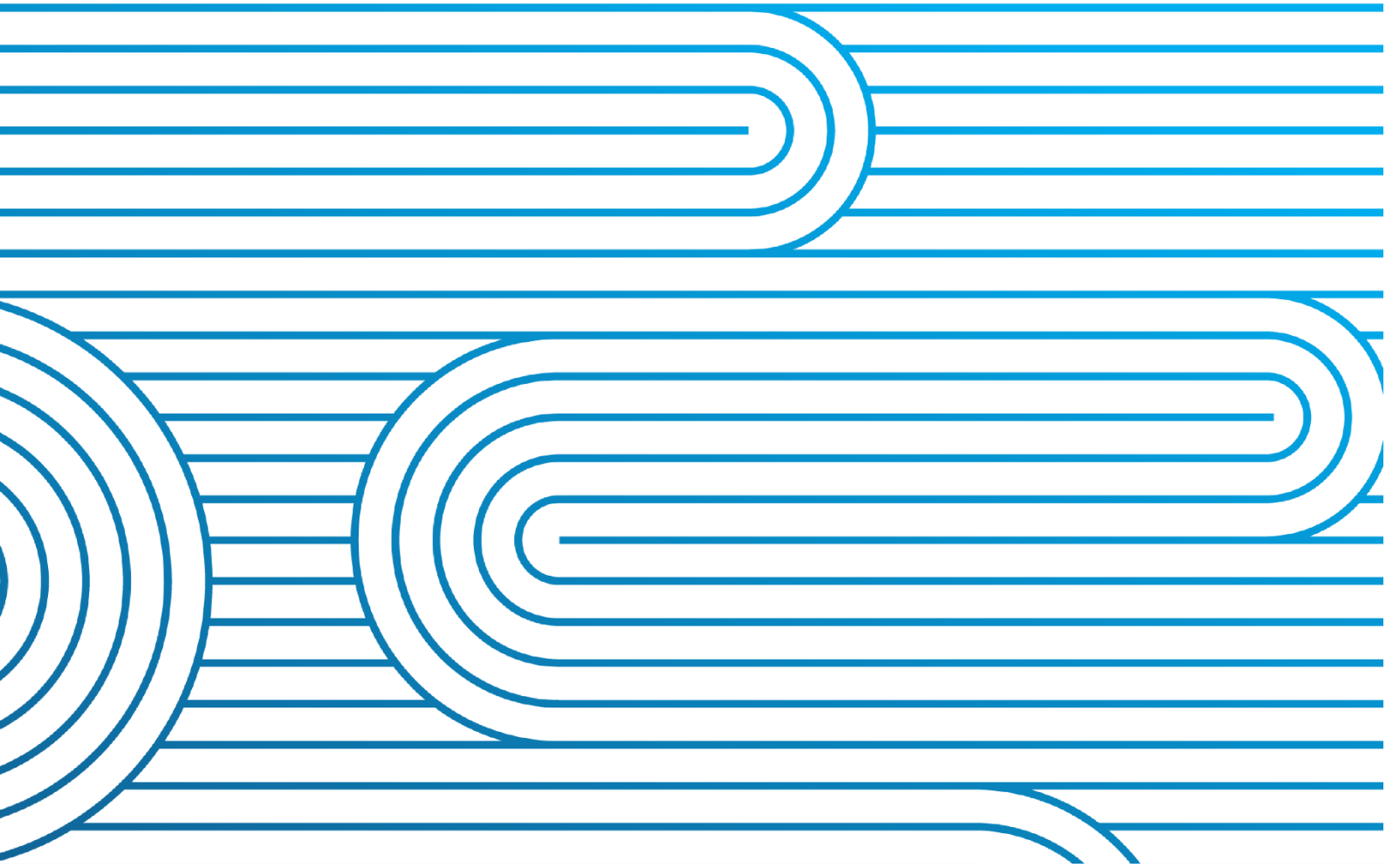
TRANSPOWER

Consultation: HVDC undersea cable decommissioning

Options for the existing in-service undersea electricity cables once they are decommissioned.

13 April 2026



Executive summary

New Zealand's High Voltage Direct Current (HVDC) link between Benmore in the South Island and Haywards in the North Island is a critical component of the national electricity transmission system. The link enables electricity to flow between the two islands, helping ensure Aotearoa's power supply is reliable and stable and allowing consumers to access the lowest-cost electricity generated across both islands.

The HVDC link includes three undersea cables crossing Cook Strait. These cables were installed in 1991 and are expected to reach the end of their operational life in the early 2030s. To maintain the ongoing reliability and enhance the capacity of the inter-island link, Transpower is progressing the HVDC Link Upgrade Programme.

In September 2025, Transpower submitted a Stage 1 Major Capex Proposal (MCP) to the Commerce Commission seeking approval for the replacement of the undersea cables and associated infrastructure. The investment analysis supporting the proposal demonstrated that replacing the existing cables with four new cables capable of transferring approximately 1400 MW (an increase from the current 1200 MW) provides the greatest net benefit to electricity consumers. The Commerce Commission have recently granted a draft approval for this work.

Once these new cables are installed and operational, the existing cables will be retired from service. Transpower must determine how the existing undersea cables should be managed once they are decommissioned.

This consultation seeks feedback on the proposed approach for managing the existing cables. Two primary options have been identified:

1. Remove the cables from the seabed and coastal marine area, recovering as much of the cable as practicable.

2. Leave the cables in place, where they would remain on the seabed[1] and in the coastal marine area and cable protection zone following decommissioning; or

While this consultation explores both options, Transpower considers that leaving the cables in place would likely require further environmental approvals, with uncertain outcomes as to whether approvals would be granted and conditions imposed.

Transpower's preferred option

After considering technical, regulatory, operational, and economic factors, Transpower's current preferred approach is to remove the existing cables where practicable once they are decommissioned.

Removing the cables as part of the HVDC Link Upgrade Programme provides several benefits, including:

- meeting the conditions of our current consent issued by Marlborough District Council
- reducing congestion within the Cable Protection Zone, especially near the cable landing points
- improving long-term operational flexibility for future cable installation and maintenance

[1] The cables are predominantly on the sea floor but are buried in some areas, especially closer to shore.

- enabling the majority of materials from the existing cables to be recovered and recycled
- allowing cable removal activities to be more efficiently coordinated with the broader HVDC upgrade programme.

The economic analysis undertaken for the Stage 1 MCP included an allowance for cable removal costs and demonstrated an overall positive net benefit. However, expenditure approval for cable removal was not sought at that stage because further investigation and stakeholder engagement were still to be completed.

Transpower now intends to develop a Stage 1A MCP to the Commerce Commission seeking approval for the expenditure associated with cable removal.

Transpower welcomes feedback on the options presented in this consultation paper and the factors informing our current preferred approach.

Overview

Transpower is seeking stakeholder feedback on the approach for managing the existing High Voltage Direct Current (HVDC) undersea cables once they are replaced and decommissioned.

The three existing undersea cables that cross the Cook Strait between Ōraumoa / Fighting Bay in the South Island and Oteranga Bay in the North Island were installed in 1991 and are expected to reach the end of their operational life in the early 2030s.

To maintain the reliability and capacity of the inter-island link, Transpower is progressing the HVDC Link Upgrade Programme, which includes replacing the existing 1991 cables and installing a fourth cable to increase electricity transfer capacity between the North and South Islands.

After the new cables are operational, the 1991 cables will be retired. This consultation invites input on managing the decommissioned cables, with Transpower currently favouring removal from the seabed and coastal marine area where feasible. Responses will guide Transpower's decision and shape a future Major Capex Proposal to the Commerce Commission.

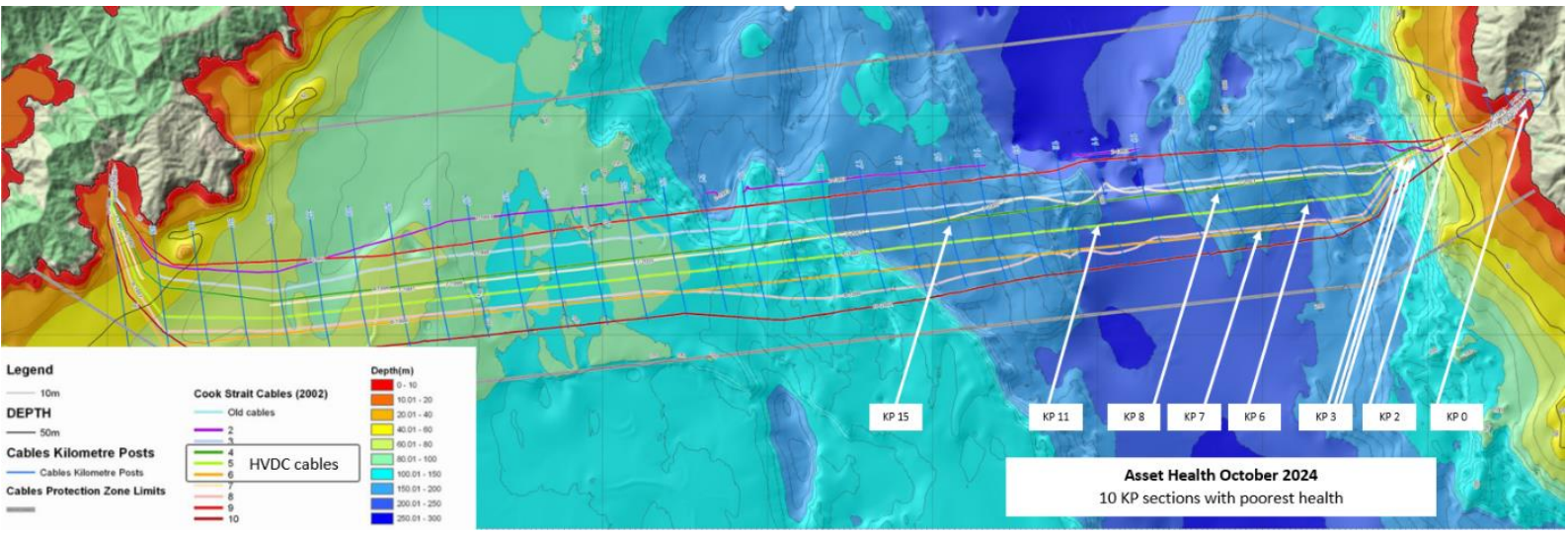
Purpose of this consultation

The purpose of this consultation is to seek stakeholder views on Transpower's current approach to managing the 1991 HVDC undersea cables once they are decommissioned.

This consultation paper:

- provides background on the HVDC Link Upgrade Programme
- outlines the options for managing the existing undersea cables once retired
- explains the key considerations informing Transpower's current preferred approach
- seeks stakeholder feedback on whether the approach is appropriate.

Feedback will help shape the final option and inform a Stage 1A MCP to the Commerce Commission.



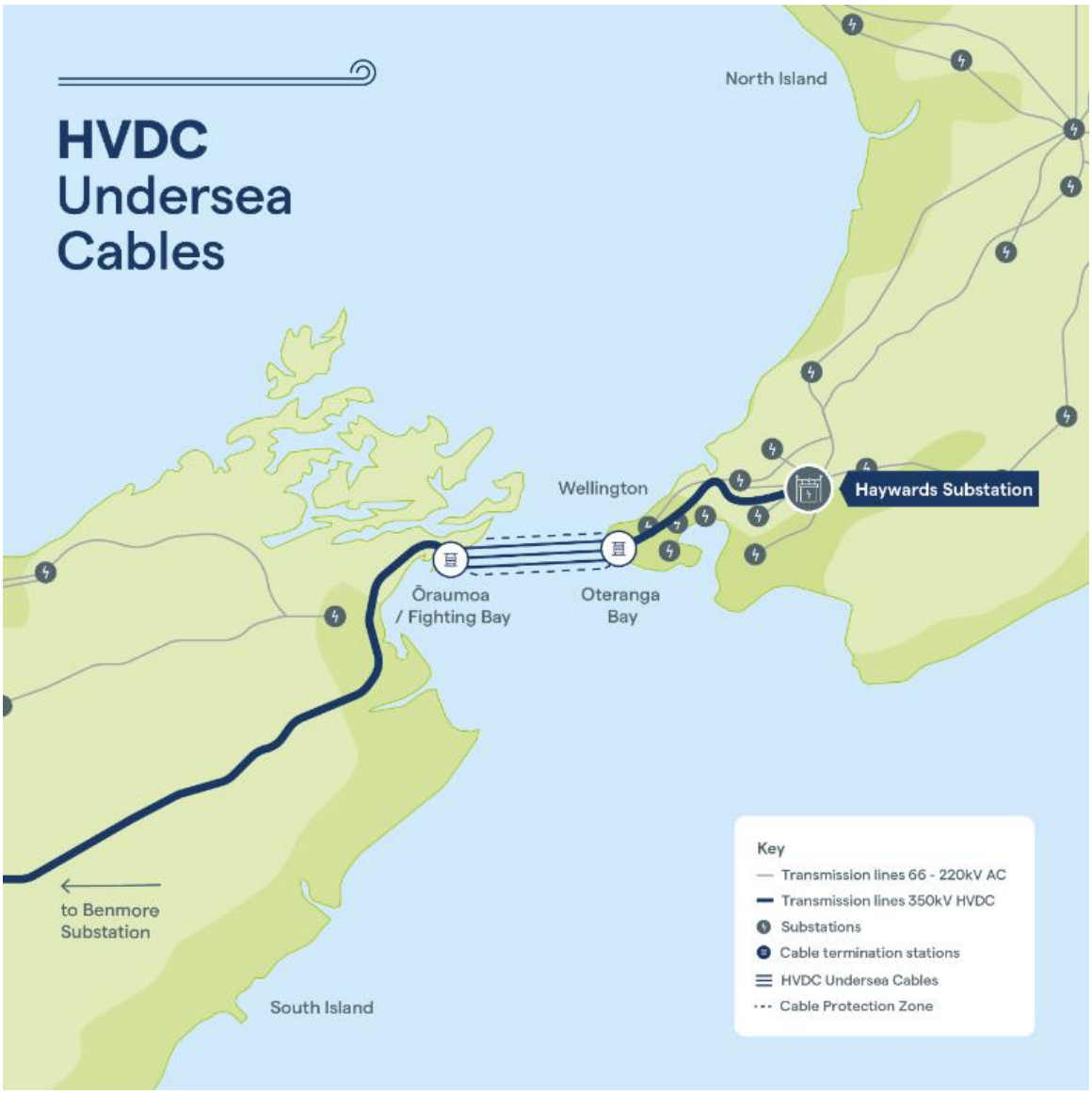
The HVDC Link Upgrade Programme

The HVDC Link Upgrade Programme includes:

- replacing the three existing undersea cables
- installing a fourth cable to increase transfer capacity between the islands
- constructing new cable termination stations at each end of the link
- increases to Pole 2's short-term overload and an additional filter bank at Benmore
- constructing a new undersea cable storage facility to safely store and maintain spare cable lengths
- replacing the HVDC control systems.

In September 2025, Transpower submitted a Stage 1 MCP to the Commerce Commission seeking approval for the replacement of the undersea cables and associated infrastructure.

The investment analysis undertaken for that proposal demonstrated that replacing the existing cables with four new cables capable of transferring approximately 1400 MW provides the greatest net benefit to electricity consumers.



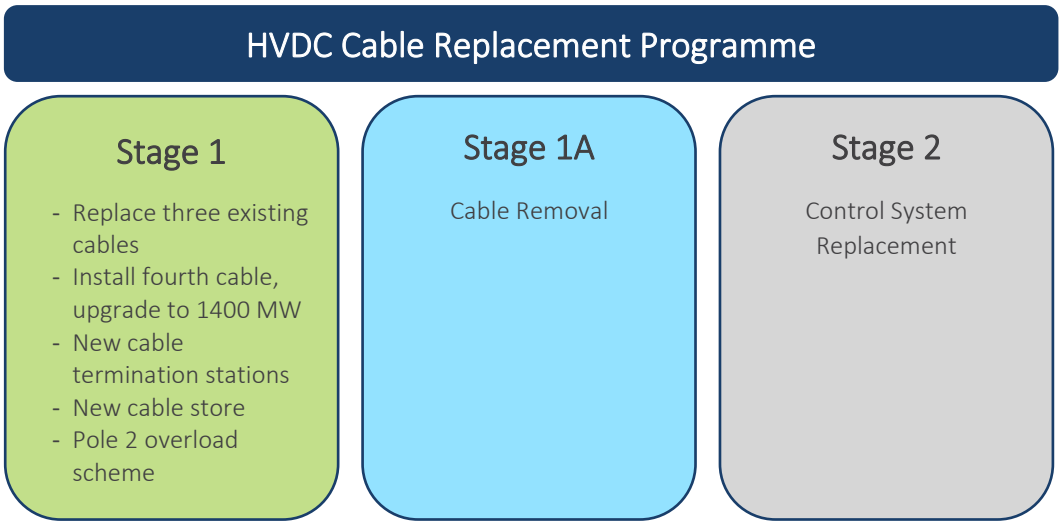
Stage 1 did not include expenditure approval for the management of the existing HVDC cables after decommissioning.

The Stage 1 MCP evaluated the HVDC upgrade programme as an integrated investment, including the proposed increase in transfer capacity with the additional cable to approximately 1400 MW.

As part of that analysis, the economic modelling undertaken for the Investment Test considered the costs associated with the entire programme. This included the expected costs of decommissioning and removing the existing 1991 undersea cables once the new cables are installed and operational.

However, the Stage 1 Proposal did not seek any expenditure approval for removal of the existing cables or replacement of the HVDC control system. This was to ensure project timelines for the cable manufacture and install were met, while the scope, delivery approach and cost estimates for the cable removal and control system replacement underwent further technical investigation and stakeholder engagement.

Transpower is developing subsequent stage proposals for the HVDC Link Upgrade Programme to address these elements. One of these stages could focus on the decommissioning and removal of the existing undersea cables, which Transpower refers to as Stage 1A.



This consultation does not revisit the investment case for replacing the HVDC cables. Rather, it focuses on determining the most appropriate approach for managing the existing cables once they are decommissioned.

Options for managing the existing cables

Once the new undersea cables are installed and the existing cables are decommissioned, Transpower will need to determine how the existing cables should be managed.

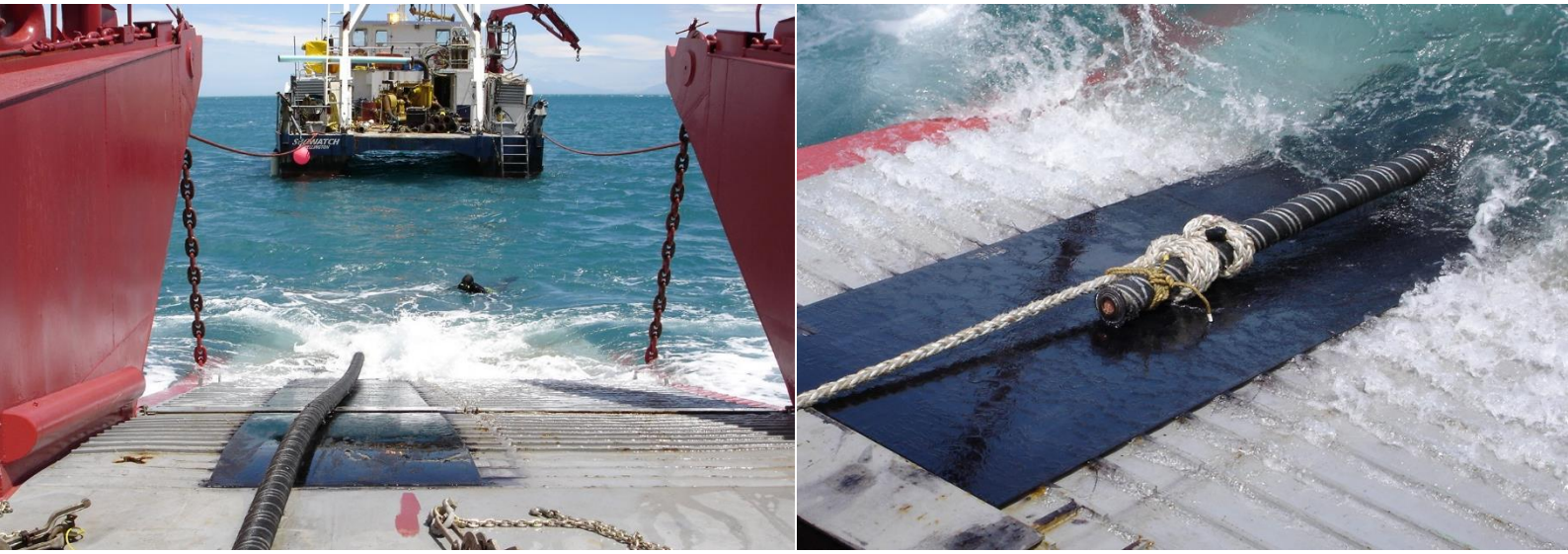
We consider that there are two primary options for managing the existing undersea cables once they are retired from service.

Option 1 – Remove the cables from the seabed and coastal marine area

With this option, after decommissioning, as much of the existing undersea cables as practicable would be removed.
Cable recovery would involve marine operations to retrieve the cable from the seabed and coastal marine area with the methodology used varying depending on water depth, seabed conditions, and the location of the cable.
Where practicable, recovered materials would be processed and recycled.
In practice, cable removal programmes typically focus on recovering cables from sections where removal is technically feasible and environmentally appropriate. Some sections of cable may remain in place where recovery is not practicable. This approach is consistent with international practice for the recovery of decommissioned undersea electricity cables.

Option 2 – Leave the cables in place

Under this option, the existing cables would remain on the seabed and in the coastal marine area following decommissioning.



Removal of a section of cable during a repair in 2004

Key considerations

Current consent arrangements from Marlborough District Council anticipate removal of the cables following decommissioning, unless a further resource consent is obtained. It is also likely that additional environmental approvals may be required to leave the cables in situ on the Northern side of Cook Strait. The outcomes of any future approval processes are not certain.

Transpower currently intends to lodge an application under the Fast Track Approvals Act (FTAA) for both the installation of the new cables and the subsequent removal of the current cables once they are decommissioned. To ensure efficiency through preparation of the application, we are consulting now to understand perspectives early, before regulatory decisions are finalised.

Transpower has further considered a range of delivery, regulatory, operational, and economic/financial factors in developing its currently preferred approach for managing the existing HVDC undersea cables once they are decommissioned.

These considerations are outlined below.

Delivery	Including cable removal within the same consenting and marine planning processes as the HVDC replacement works is likely to support more efficient and coordinated delivery of the overall programme. The HVDC Upgrade Programme is subject to tight timeframes, including the need to commence onshore works for the cable termination stations and to align with internationally constrained cable manufacturing and installation windows. The availability of specialised cable manufacturing capacity and installation vessels is limited, and Transpower has secured a delivery slot which must be maintained to enable commissioning in the early 2030s. Sequencing cable removal alongside replacement allows Transpower to address known regulatory obligations within a single, coordinated process, rather than deferring decisions that would need to be revisited later.
Regulatory	Transpower currently holds a resource consent for the occupation and use of the seabed and coastal marine area by the existing cables from Marlborough District Council. This consent is due to expire in 2038, with removal required within 2 years unless a replacement consent is obtained. As existing consents approach expiry, Transpower will need to consider what regulatory arrangements are appropriate for the continued occupation of the seabed and coastal marine area. Transpower considers that leaving the cables in place would likely require further environmental approvals, with uncertain outcomes as to whether approvals would be granted and conditions imposed.

Operational	The HVDC undersea cables are located within the Cable Protection Zone (CPZ), a legally designated area established to protect the infrastructure from damage caused by activities such as anchoring and fishing. Near-shore areas of the CPZ are becoming increasingly congested as multiple cables converge at the landing points. Removing the existing cables could reduce congestion within the CPZ and help maintain available routes for future cable installation, maintenance, and repair activities, and reduce the risk of damage to in-service assets during works.
Economic & Financial	The costs and practicality of cable recovery vary across the route. Deeper, offshore sections are generally more straightforward to recover, while cable removal in shallow, near-shore sections is more technically complex. Other economic and financial considerations include: • the potential value of recycled materials recovered during cable removal • the regulatory and accounting treatment of any proceeds from recycling • the need to carefully manage risks to newly installed HVDC assets during removal works.
Ecological	Preliminary, high level ecological advice indicates that leaving the cables in place, which contain lead, copper, and oil impregnated paper among other materials appears to have a higher associated ecological risk, which is expected to be harder to manage long-term, compared with the short-term impacts of removing them. The initial view is that the risks would relate to exposure and degradation of cable materials.

Q1. Are there other environmental, operational, cultural, or economic considerations that Transpower should consider when determining our approach to managing the existing cables after decommissioning?

Q2. Are there any risks or impacts associated with cable removal that Transpower should consider further?

Cost estimates and regulatory approval

There are costs associated with removal. The economic assessment undertaken for the Stage 1 MCP evaluated the HVDC Link Upgrade Programme as an integrated investment. As part of that assessment, the expected costs of decommissioning and removing the existing 1991 HVDC undersea cables were included in the economic analysis used in the Investment Test.

An indicative P50 estimate of $131.8 million (real 2025 dollars) was adopted in the Stage 1 analysis to represent the expected cost of cable removal.

This level of estimate was sufficient for the purposes of the Stage 1 investment analysis. However, as noted earlier, Stage 1 did not seek expenditure approval for cable removal, as further work was required to refine the scope and associated cost estimates, and to undertake stakeholder engagement.

Since submission of the Stage 1 MCP, Transpower has undertaken additional investigations to further develop the cable removal scope. This work has included:

- additional assessment of cable recovery methodologies
- consideration of risks to newly installed HVDC assets during removal works
- updated assumptions regarding marine operations and vessel requirements
- assessment of disposal and recycling pathways for recovered materials.

Based on this work, Transpower has developed an updated cost estimate of $94.6 million (real, 2026 dollars) for cable decommissioning and removal. The corresponding indicative nominal cost of this is $120.2 million, inclusive of inflation, escalation, and interest during construction.[2]

This updated cost estimate will inform the potential development of a Stage 1A MCP to the Commerce Commission seeking approval for the expenditure associated with cable removal. Any net proceeds from the recycling of materials would be applied to reduce the overall project cost.

Transpower's currently preferred approach

Transpower's current preference is to remove as much of the existing HVDC undersea cables as practicable once they are decommissioned. This approach reflects Transpower's assessment of the long-term operational and regulatory considerations associated with managing redundant undersea infrastructure. On balance, we consider that removing the cables provides the most prudent and efficient long-term approach.

Key benefits of this approach include:

1. *Consent compliance* – Transpower's current occupation consent from Marlborough District Council will expire in 2038, requiring removal of the cables by 2040.
2. *Improved long-term operational flexibility.* Removing the cables would reduce congestion within the Cable Protection Zone and help maintain space for future cable installation, maintenance, and repair activities.
3. *Environmental benefits.* Removing redundant infrastructure and recovering materials where practicable enables recycling and avoids leaving legacy assets on the seabed.

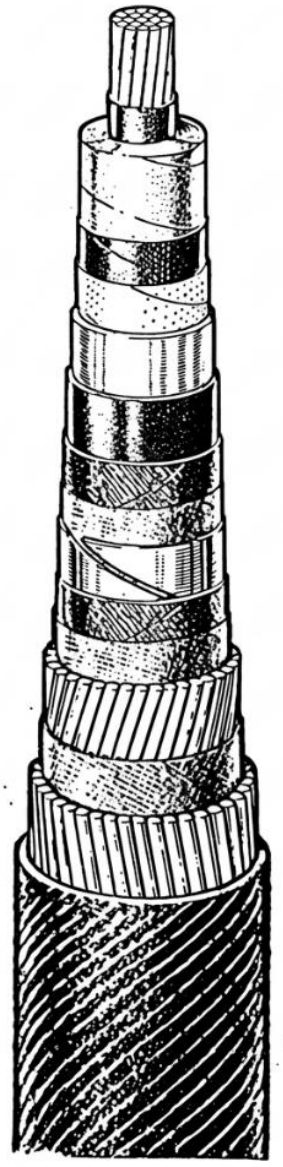
[2] The financing, CPI and escalation assumptions applied are consistent with those adopted for the Stage 1 MCP.

4. *Efficient project delivery.* Integrating cable removal with the broader HVDC upgrade programme allows marine planning, and vessel mobilisation activities to be coordinated, reducing overall project risk and delivery costs.

Transpower acknowledges that where recovery is not technically feasible or environmentally appropriate, some sections of cable may remain in place, by exception.

Q3. Do you support Transpower's preferred approach of removing the existing HVDC undersea cables once they are decommissioned?

The physical make-up of the 1991 cables



Submarine Cable for Cook-Strait, 1x1400mm² BIL 940

Rated DC voltage	kV	350
Round conductor		
- material		copper
- cross-section	mm²	1400
- diameter	mm	44
Semi-conductive layer		
Oil Impregnated paper Insulation		
- thickness	mm	17.5
Semi-conductive layer		
Lead alloy sheath		
- thickness	mm	3.3
PE-sheath		
- thickness	mm	3.5
Bedding		
Reinforcement and teredo worm shield		
Galvanized steel tapes		
- number of layers	pcs	2
- tape thickness	mm	0.4
Bedding		
Armour of steel wires		
with 2 layers in counter helix		5.0
- diameter each wire	mm	
Outer protection		
- material		polypropylene
- thickness	mm	4,4
Overall diameter	mm	127

Transpower seeks stakeholder feedback on the proposed approach outlined in this consultation paper

This consultation provides an opportunity for electricity sector participants, industry stakeholders, environmental groups, mana whenua, and other interested parties to provide feedback on the proposed approach to managing the existing HVDC undersea cables once they are decommissioned.

Stakeholder feedback will help inform Transpower's assessment of the preferred option and the potential development of a Stage 1A MCP to the Commerce Commission.

Following the close of consultation, Transpower will review submissions and consider the issues raised by stakeholders when refining the proposed approach.

How to provide feedback

Transpower welcomes written submissions on this paper. The consultation period will run from **13 April to 8 May 2026**.

Submissions can be provided via email to grid.investments@transpower.co.nz
Please include "*HVDC Cable Decommissioning Consultation*" in the subject line.

Unless confidentiality is requested, submissions will be published on Transpower's website following the close of consultation.

If you would like any part of your submission to remain confidential, please provide a version of your submission with the confidential information clearly identified or redacted for publication.

Please note that Transpower is subject to the Official Information Act 1982, which means information provided in submissions may be requested by third parties.

Next steps

Following the close of the consultation period, Transpower will:

- review all submissions received
- consider stakeholder feedback when finalising its preferred approach
- publish a summary of submissions and Transpower's responses.

The feedback received through this consultation will inform the potential development of a Stage 1A MCP to the Commerce Commission seeking approval for the expenditure associated with our preferred approach.

Summary of consultation questions

Q1. Are there other environmental, operational, cultural, or economic considerations that Transpower should consider when determining the approach to cable removal?

Q2. Are there any risks or impacts associated with cable removal that Transpower should consider further?

Q3. Do you support Transpower's preferred approach of removing the existing HVDC undersea cables once they are decommissioned?

TRANSPOWER