Vector's Application for the Innovation Project Allowance: PRISMED – *Process revolution to integrate smart meter electricity data*

May 2023

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1. Introduction

This is Vector Limited's ("Vector", "we", "us", "our") application for the innovation project allowance, dated May 2023. Under the Default Price-Quality Path Determination[1] (Determination) non-exempt Electricity Distribution Businesses (EDBs)[2] must seek approval from the Commerce Commission (Commission) for approval of drawdown of the allowance under Schedule 5.3 of the Determination. Our project PRISMED (process revolution to integrate smart meter electricity data) aims to reduce costs to consumers and improve reliability through the acquisition and processing of smart meter data (SMD) for network planning, outage management and forecasting.

Our Symphony strategy puts the customer at the centre of the energy system, using data analytics and technology to create new solutions and options to help people manage the transition to a low-carbon system. It will also result in a more affordable transition for customers, since the new solutions we deploy alleviate the pressure to invest in heavy infrastructure, and this has a beneficial flow-on effect on the prices our customers pay for the services we provide. Fundamentally, it is about creating customer choice, delivering decarbonisation while we continue to reimagine what our network is capable of.

This is a crucial time in our industry, and Vector is well positioned to respond to the challenges and opportunities decarbonisation will bring. We see this as an opportunity to do things differently; to be flexible, adaptable, and to innovate. Innovation is a key enabler to achieving our net zero targets and as such we are taking advantage of the innovation project allowance at EDBs' disposal.

Vector has a track record of being innovators. We have two current strategic partnerships one with Amazon Web Services (AWS) and the other with X, the moonshot factory. With X and other innovative companies around the world, we are working on a moonshot project to virtualise Auckland's electricity network. The aim is to make a digital copy of our network and then use simulation technology to see how it would behave in a real-life, future scenario. This is important because, with the rise of electric vehicles (EVs) as well as solar and battery storage, the flow of energy becomes more complex. We need to ensure that we are ready for these changes.

We have also explored different mechanisms for utilising non-network solutions including the Ngāti Whātua battery-solar community project, SunGenie residential solar-battery deployments, new methods of hot water load control, a peak time rebate trial, deployment of the first grid-scale batteries in NZ, deployment of grid scale battery and standby generation microgrids, behavioural smart EV charging trials and one of NZ's first EV charging network to promote EV adoption (including V2G).

[1] Electricity Distribution Services Default Price-Quality Path Determination 2020 (Consolidated 20 May 2020) available here https://comcom.govt.nz/__data/assets/pdf_file/0025/216862/Electricity-distribution-services-default-price-quality-path-determination-2020-consolidated-20-May-2020-20-May-2020.pdf

[2] A non-exempt EDB is subject to both price-quality and information disclosure regulation https://comcom.govt.nz/regulated-industries/electricity-lines/electricity-distributor-map

At Vector we believe that innovation is fundamental to reduce future costs whilst ensuring our consumers have a reliable service. But we also see innovation beyond the attributes of cost and reliability. For example innovation will be crucial for EDBs to achieve their decarbonisation commitments within the wider Aotearoa New Zealand context of achieving Net Zero by 2050.

We are happy to discuss any aspects of this application with the Commission. Please contact Susannah Garwell (Senior Economic Regulation and Pricing Specialist) at susannah.garwell@vector.co.nz or 09 978 7570 in the first instance.

No parts of this application or the WSP report are confidential, and we are happy for the Commission to publish them in their entirety.

2. Executive summary

In the Input Methodologies (IM) Determination[3], an "innovation project" means a project which enables the creation, development, or application of a new or improved technology, process, or approach in respect of the provision of electricity lines services in New Zealand.

We confirm that the project PRISMED which is the subject of this innovation funding application, establishes the development of a new process delivering lower costs and increased quality of service to the provision of electricity lines services. The proposed approach is an improvement to the existing processes where we were not receiving any SMD from metering equipment providers (MEPs). Once contracts were set up with MEPs and data was received, it required manual intervention, and the frequency of data updates was limited. Through PRISMED we have developed a new process, or set of processes, that provides Vector access to near real-time smart meter data and a platform that will facilitate the analysis and use of the data for strategic and operational decision making.

In 2021, we engaged the engineering and construction services company WSP to produce an independent report to confirm that PRISMED is an innovation project and meets the requirements set out by the Commission in the DPP Determination to grant the innovation funding for this project. We have included their report alongside this application.

WSP agrees with our own assessment that our project will be of general application to other EDBs in Aotearoa. With 83% of all residential connections in New Zealand having a smart meter[4] the opportunity for other companies to innovatively process SMD and reap the same benefits outlined in our application is huge – especially given how important low voltage (LV) visibility is to distributors across the country.

[3] Electricity Distribution Services Input Methodologies Determination 2012 (consolidated 20 May 2020) available https://comcom.govt.nz/__data/assets/pdf_file/0017/60542/Electricity-distribution-services-input-methodologies-determination-2012-consolidated-20-May-2020-20-May-2020.pdf

[4] Electricity Authority website, https://www.ea.govt.nz/consumers/what-are-electricity-meters

As such we are applying for a drawdown amount of $759,000 which is 50% of the total project PRISMED costs of $1,518,000. We note that this is Vector's first innovation allowance application and hence our application for $759,000, does not exceed our total innovation project allowance for the DPP regulatory period – which is $2,022,000.

3. Project background

Vector currently has limited LV network data which significantly restricts our ability to plan and operate the LV network at scale. There are barriers to obtaining the data as Vector does not own the meters and the data is owned by external parties.

In 2020, Vector implemented a new Default Distributor Agreement (DDA)[5], as required by the Electricity Authority (EA), with all electricity retailers who use our network. The DDA contains provisions which help with better access to electricity consumption data from customer smart meters. The requirement for SMD is a key stepping-stone for better visibility, management, and investment planning for LV networks. This data has the potential to limit unnecessary duplication of equipment needed to gather information, more targeted investment, and better use of network resources. LV capability improvement as well as operational information is an essential initial step in the transformation journey of LV networks.

The transition to a decarbonised economy is expected to result in electricity displacing fossil fuel-based services, increasing demand on our network. We anticipate a significant increase in the number of Distributed Energy Resources (DER) that will connect to the network and are already observing the beginnings of these trends. DER include small scale solar PV (i.e. residential PV systems), battery energy storage systems, hot water cylinders and electric vehicles.

DER will primarily connect to the LV network and are expected to result in changes to peak demand, consumption, timing of electricity use and power flows. We currently do not have adequate visibility of the LV network and are not well positioned to proactivity manage the impacts of increasing DER on network capacity and quality of supply. The effective implementation and orchestration of DER is essential to deliver the full benefits of DER to consumers.

Visibility of the LV network means having sufficiently recent data (preferably near to real time) to understand the power flows and power quality metrics, the ratings of the network assets and protection settings. Combined, these factors will enable Vector to manage the network effectively and make prudent investment decisions. We have determined that obtaining access to SMD is the most efficient approach to gathering the necessary data to provide visibility of the LV network.

We own and maintain the data related to network assets and protection settings; however, network usage data is primarily obtained from smart meters which are owned by the MEPs and electricity retailers.

[5] Available here https://www.vector.co.nz/about-us/regulatory/disclosures-electricity/prescribed-terms-and-conditions-of-contracts

To address the existing limitations in obtaining access to the LV network usage data, Vector has developed project PRISMED to develop a new set of processes, that will provide ongoing reliable access to near real-time smart meter data. The project will also establish a platform that facilitates the analysis and use of the data for strategic and operational decision making.

The types of data required are:

1. **Interval consumption data** is recorded as peak demand (kW) and consumption (kWh) during a given time period. This data is currently recorded by the smart meters and is available from either MEPs or retailers and enables detailed analysis of the network demand at a more granular level than is currently possible.

2. **Network Operational Data Services (NODS)** provides information on the power quality (including voltage, current, phase and frequency) and event data (such as outages).

3. **On-demand meter data** refers to contacting specific meters to extract data for specific time periods. The data obtained will be the same as interval consumption data and NODS. This is a functionality that will enable targeted data gathering by Vector for investigating specific network events.

4. **Device data** sourced from third parties such as real-time even data from (privately owned) devices at customer's property such as Chorus' Optical Network Terminal (ONT). This will provide supplementary data that for LV network visibility and understanding of network events.

4. PRISMED is part of a wider programme

4.1 Future Network Roadmap

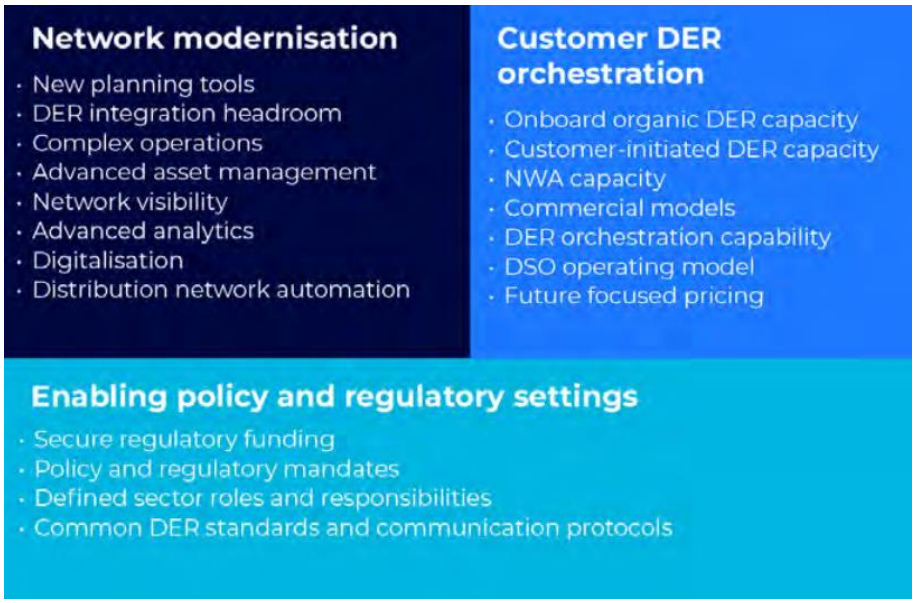
Vector's Symphony strategy, our corporate strategy, was established to create an energy system that is affordable, reliable and safe, meets customer needs and controls the variability in demand that will result from decarbonisation. It is intended to be the least cost alternative to enable decarbonisation and mitigate the impacts of climate change on future network reliability. It also enables markets of the future and the ability of customers to participate in those markets, e.g. flexibility.

To implement the Symphony strategy in the electricity business, a Future Network Roadmap has been developed with the following themes:

- Network modernisation
- Customer DER orchestration
- Enabling policy and regulatory settings

SMD is a key enabler of this strategy, and the figure below provides an overview of the roadmap and outlines the key initiatives that will be enabled by SMD to provide the future capability required.

Figure 1 Our Future Network Roadmap



4.2 Programme delivery phasing

Project PRISMED is part of a wider roadmap expected to be delivered in three phases with PRISMED constituting Phase 1 of the overall programme:

Phase 1: **Project PRISMED** - Establish foundation, gain access to data, discovery and trial.

Phase 2 – Scale data for whole of network view, targeted spend, operationalise.

Phase 3 – Establish near-real-time data availability.

With Phase 2 scheduled to be completed before the end of DPP3, Vector may apply again for future innovation funding for Phase 2 of the programme in either May 2024 or May 2025.

For further details of the full programme of work please see Table 1 below.

Table 1 Programme phasing

Phase 1 = Project PRISMED	kWh data track	• Establish foundational pathways for the acquisition of kWh data • Onboard historical data sets from all retailers (from Jan 2017 to present), and establish monthly batch processing • Build a curated 'whole of network' data repository of kWh data for analytics and use-case support • Operationalise kWh-based use-cases
	NODS data track	• Complete an operational trial of the NODS data sets with the two largest MEPs, carried out on a limited sub-set of the meter fleet. • Complete feasibility analysis of NODS + kWh use-cases
	Meter Ping track	• Develop the outage detection use-case based on the ONT data trial and Meter Ping trial with Vector Metering

Phase 2	kWh data track + NODS data track	• Scale from a trial to full-network NODS data supply from MEPs • Extend data set in line with MEP meter technical upgrade / deployment • Build a curated 'whole of network' data repository of NODS data for analytics and use-case support • Move from monthly data delivery to daily data delivery • Operationalise kWh + NODS based use-cases
	Meter Ping track	• Operationalise Meter Ping application and expand to both MEPs • Scale out additional metering ping use cases
Phase 3	kWh data track + NODS data track	• Move from daily data delivery to near-real-time delivery and shorter integrated periods (e.g. 5 minutes in Australia) • Develop operational use-cases dependent on near-real-time data.

4.3 Project PRISMED key outputs

The focus of PRISMED has been on achieving unrestricted access to kWh data sets for >90% of the network, and the establishment of a curated repository of data which is capable of supporting analysis and use cases on the whole of the distribution network.

The key outputs of the project are:

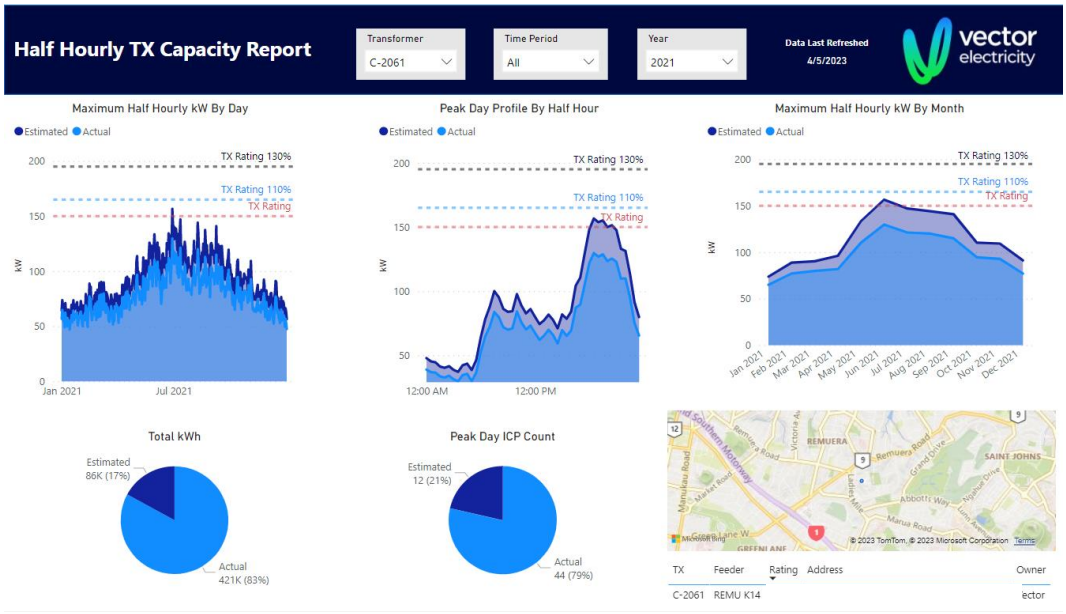
1. At the time of submitting this application, contracts (and data agreements) are in place with retailers covering 99% of the installation control points (ICPs) on the network, and over 87% of the kWh data has been made available to Vector either via the MEPs, or directly from the retailer.

2. A curated data store of kWh has been built, which is updated monthly from data received from both MEPs as well as several retailers that elected to fulfil their DDA obligation by delivering data directly to us. As part of the curation process, the data received from multiple sources is validated, cleansed, standardised, and missing values are interpolated. This provides a highly accurate and complete view of the whole of Vector's ICP network, dating back to January 2017.

3. We are actively beginning to operationalise the data for the following:

    a. Unregistered PV installation detection model.
    b. EV detection model.
    c. Transformer peak demand model.
    d. Replacement of data loggers for the acceleration and optimisation of new connection requests (example below in Figure 2)

Figure 2 Half-hourly transformer headroom report

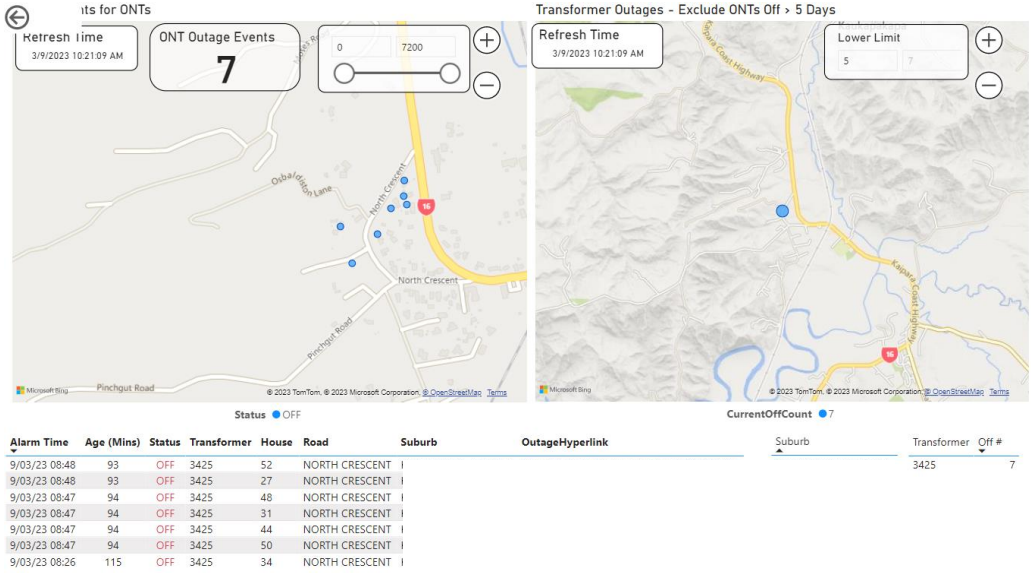


4. With regards to NODS availability, while some advancement had been made to date, neither of the two main MEPs operating in Auckland have been in a position to sign a formal data supply agreement for all meters on the network. The project made an early decision to pivot away from a network wide agreement, and rather pursue a targeted meter trial approach. At the time of submitting this application, both of the major MEPs have engaged to conduct a trial with Vector, which initially targets the collection of NODS data for up to 1,000 ICPs with each MEP. The trial will reveal the true constraints of the MEPs fleet and systems, ensure the required data points are available, and establish a cost of data supply based on those findings.

5. A proof of concept (POC) was successfully developed to visualise the location of Chorus ONT outages on a map, and ONT outages have been successfully correlated to high voltage (HV) electricity outages on the network. A commercial agreement has been signed with Chorus to provide the ONT data feed (PowerSense) on an ongoing basis (see Figure 3 below).

6. We developed the outage detection use-case based on the Meter Ping trial with Vector Metering.

Figure 3 ONT outage report



5. Our business case

5.1 Rationale and scope

The key rationale for the development of PRISMED is to provide visibility of the LV network using SMD, which is a gap in the current our management of our network. In combination with other data, such as that provided by Chorus ONT devices and the Ping service, this will provide our Network Operations team with a "single pane of glass" view to manage both the LV and HV networks to enhance network integrity, reliability, safety, and DER integration. In addition, reporting on the performance of the LV network is likely to be a future regulatory requirement.

Vector has adopted the Symphony strategy to manage the future trends of decarbonisation, electrification of transport and climate change on the integrity and reliability of its electricity network. This Symphony strategy requires the ability to understand and work in an integrated manner with an exponential increase in Distributed Energy Resources (DERs) on the LV network to not only optimise the network but to enable the customer expectations and experience associated with their use. PRISMED is critical to enable continuous improvement in Vector's asset management approach, in particular the loading on the network.

The key use cases that will be enabled by the access to smart meter data include:

- Understanding transformer loading: transformer, LV feeder and LV phase loading visibility for network planning
- Accelerating new customer connections: new connections based on visibility of transformer loading (no loggers)
- Improving DER hosting capacity: visibility of transformer voltage and loading headroom to increase DER hosting capacity
- Granular customer outage visibility: visibility of outages at individual ICP level
- DER identification: visibility of unregistered DERs

- Customer and market analysis: visibility of consumption to improve network planning and other insights
- Targeted load control: using calendar functions to manage peak demand

The full list of use cases and their associated benefits for project PRISMED can be found in Appendix A.

5.2 Assessing the counterfactual

A high-level comparison has been undertaken to determine the benefits and costs of a counterfactual to PRISMED. The most viable alternative to provide the use cases above would be a roll out of sensor monitoring equipment to distribution transformers on the network. This is considered more cost effective that replicating a smart meter infrastructure at the ICP level, such as that owned by other NZ EDBs. Table 2 below shows that this counterfactual alternative is not able to realise many of the benefits from the initial list of use cases.

Table 1 RAG comparison – benefits realisation (100% coverage option for counterfactual)

Use cases	SMD option	Counterfactual (Transformer sensors)
#1 Transformer loading	Derived values	Real time actual values
#2 New customer connections		
#3 DER hosting capacity	Derived values	Real time actual values
#4 Customer outage visibility		
#5 DER identification		
#6 Consumption Analysis		
#7 Load control		

Can deliver use case outcomes
Can support partial delivery of outcomes
Cannot support use case outcomes

A high-level assessment of the cost of this counterfactual was undertaken using two different published methodologies by Sapere in New Zealand and by SA Power Networks (SAPN) in Australia. These costs provide a range as the SAPN methodology does not allow for lifecycle totex as an example. Table 3 below shows the breakdown of the costs of coverage but in general the cost of SMD visibility for 90% of the ICPs on the network is equivalent to visibility for 10-15% of the distribution transformers on the network.

Table 2 Smart meter costs v counterfactual

10-year net present cost	ICP level visibility	Distribution transformer visibility		
ICP Coverage[6]	>90% of ICPs	10% of transformers	30% of transformers	100% of transformers
Number of meters	~600k	~2.4k	~8k	~24k
Data acquisition costs based on MEP costs of $2.5m pa	**$25m**	Not applicable	Not applicable	Not applicable
Sensor deployment SAPERE[7]	Not applicable	$19.9m	$60m (extrapolated)	**$199m**
Sensor deployment costs SAPN[8]	Not applicable	$8.5m	$28.5m (extrapolated)	**$85.5m** (extrapolated)
Data onboarding and internal cost[9]	**$4m**	Not available	Not available	Not available
Use case development and management[10]	**$10m**	Not available	Not available	Not available
Communication cost	Included	Not available	Not available	Not available

Given the reduced viability of use cases and increased costs under the counterfactual we continue to believe that the PRISMED is the best alternative to enable LV visibility on the network.

6. Project costs

This innovation allowance application is for the sum of $759,000 which is 50% of the total project costs of $1,518,000 outlined below. We note that this is Vector's first innovation allowance application and hence our application for $759,000, given no cumulative applications to date, does not exceed our total innovation project allowance for the DPP regulatory period – which is $2,022,000.

Table 4 PRISMED project costs

[6] Please note that the 10% and 30% coverage options for the counterfactual is not a reasonable comparison since it generally reflects a pilot or interim option (i.e. to be upscaled and enhanced with additional sensors on lines/feeders/phases/ICPs).

[7] Sapere, Business Case for Investment in Low Voltage Network Monitoring 806 (ena.org.nz)

[8] SAPN - Revised Proposal - 5.15 - LV Transformer Monitoring Business Case - November 2019 (003).pdf, 2019 A$, excludes lifecycle TOTEX, vendor platform costs, communications

[9] Internal estimate

[10] Based on Future Grid offering - A$3.31 per meter pa for 100k meters – adjusted for 600k meters (estimate only, to be confirmed)

Description	Opex/ Capex	Project costs ($000)
kWh – Data supply	Opex	$443
NODS – Trial data supply (one-off)	Opex	$112
ONT - Data supply	Opex	$150
SMD – Acquisition, curation and onboarding	Capex	$550
Transformer capacity - Head room (Planning)	Capex	$97
ONT and Meter Ping Trial	Capex	$81
Analytical cloud environment	Capex	$85
Total		**$1,518**

7. Touchpoints with the Commission on Innovation

DPP3 Final Decision - reasons paper

During the reset of DPP3, Vector and other EDBs argued that greater visibility of the LV network was increasingly important as it was likely to be the first part of the network impacted by emerging technologies, such as electric vehicles or battery storage. We argued that accessing smart meter data to monitor these networks is likely to be a step change cost.

However the Commission did not consider that LV monitoring satisfied the step change criteria. This viewpoint was shared in the DPP3 Final Decision reasons paper alongside a suggestion that it could instead be subject to innovation funding:[11]

> *"Where LV monitoring is achieved using methods or technologies that are innovative (in the New Zealand context) this expenditure is likely to qualify for inclusion within the innovation allowance recoverable cost."*

Based on this statement we believe PRISMED should qualify for the innovation allowance.

Meeting in August 2022

On 23 August 2022, we met with several members of the Commission, including the Head of Price-Quality Regulation, to provide an overview of our project. We also sought clarification on whether the Commission would consider multiple applications if we staged our programme of work, which

[11]Paragraph A73, Default price-quality paths for electricity distribution businesses from 1 April 2020 – Final decision https://comcom.govt.nz/__data/assets/pdf_file/0020/191810/Default-price-quality-paths-for-electricity-distribution-businesses-from-1-April-2020-Final-decision-Reasons-paper-27-November-2019.PDF

they accepted to be reasonable but noted that each would have to be evaluated against the DPP3 criteria.

We also asked the Commission about the level of detail required for them to assess that the DPP requirements are met. To which they replied that they do not consider that detailed modelling of cost savings is required for an innovation project allowance – and is designed to be a low-cost mechanism.

The meeting and subsequent clarification email were extremely useful in the lead up to our application.

Asset Management Plan (AMP) case study

In our 2023 AMP disclosure to the Commission and published on our website,[12] we have referred to the wider programme of work of which PRISMED constitutes the initial phase. The reference can be found in the case study for 'smart meter data innovation for network visibility' in Section 2 Future Network Roadmap.

Input into the IM review

On 6 April 2023 we submitted Vector's views[13] on the innovation project allowance which was supported by an expert report by NERA[14] looking at the potential barriers and solutions to better innovation under the DPP. The NERA report was provided to the Commission in December 2022. Vector believes there is scope to improve the mechanism and would welcome more discussion in this regard, either in the next phase of the IM review or the DPP reset.

[12] Vector's 2023 Asset Management Plan https://blob-static.vector.co.nz/blob/vector/media/vector-2023/vec246-vector-amp-2023-2033_120523_1.pdf

[13] Vector submission 2023 Incentivising efficient expenditure https://blob-static.vector.co.nz/blob/vector/media/vector-regulatory-disclosures/vector-submission-2023-expenditure-incentives.pdf

[14] Innovation under the DPP: potential barriers and solutions https://blob-static.vector.co.nz/blob/vector/media/vector-2023/nera-221220-innovation-under-the-dpp-potential-barriers-and-solutions.pdf

Appendix A. Use cases and benefits

The table below lists the use cases, the data required and the expected benefits accruing from each.

No.	Use case	Data (interval)	Benefits enabled
#1	**Transformer loading** *Transformer, LV Feeder and LV Phase loading visibility for network planning*	• kWh (30min)	a. Planning process efficiency improvements: • Avoid data loggers, contingent allowances, and reduction in assumptions • Demand forecasts and analysis e.g. constraint identification • Planning option analysis including evaluation of non-wire alternatives (NWA) and flexibility potential • Demand response design and validation b. Capex efficiency: • Improve utilisation, headroom, and hosting capacity • Deferral option analysis c. Optimisation: • Open point optimisation (reliability, technical losses, load) • Contingency planning d. Network management: • Ratings incl. fuse rating and sizing • Avoid excessive overloads – improve life cycle management and failure analysis • Proactively identify transformer change settings required
#2	**New customer connections** *New connections based on visibility of transformer loading (no loggers)*	• kWh (30min)	a. Customer experience and process efficiency: • Avoid data loggers – save time and cost to customers – save field service provider (FSP) resources • Enable self-service help for new connections • Reduce new connection/DER connection timeframes
#3	**DER hosting capacity** *Visibility of transformer voltage and loading headroom to increase DER hosting capacity*	• kWh (30min)	a. Increase DER hosting capacity (EV, solar uptake) by enabling: • Planning for future DER growth – EV, PV, aircon, hot water and heating • Calculate potential for non-wire alternatives (NWA) and flexibility services • Inform dynamic operating envelopes/algorithms for demand side response (DSR)/flexibility • Manage DER compliance with code requirements, operating envelopes, and incorrect inverter setpoints
#4	**Customer outage visibility** *Visibility of outages at individual ICP level*	• Ping/ONT • kWh (30min)	a. ICP level outage visibility: • Accurately detect and confirm ICPs without power • LV fault location accuracy/verification to avoid truck rolls • Confirmation of restoration following repair/before truck leaves

No.	Use case	Data (interval)	Benefits enabled
			• Identify constraints after auto-recloser or circuit breaker (CB) reclose (e.g. blown fuse) • Proactive response/inform customers • Optimise HV dispatching using LV fault clustering (before calls) • Inform civil defence/police/retailers during emergency of extended remaining LV faults (once HV restored) • Emergency/storm management b. Post event validation of: • Connectivity model (ICP – transformer, ICP-phase) c. Down wire ownership – identify telco v electricity wires down – avoid truck rolls fault response planning optimisation
#5	**DER identification** *Visibility of unregistered DERs*	• kWh (30min)	a. EV charger detection b. Unregistered PV detection
#6	**Customer and market analysis** *Visibility of consumption to enable insights*	• kWh (30min)	a. Enables insights: • Customer behaviour analysis e.g. energy efficiency/substitution • Insights into new technology adoption rates • Scenario analysis • Operational performance of LV • Voltage compliance b. Other: • Tariff and incentives design studies
#7	**Load control** *Targeted load control using calendar function to manage peak demand*	• kWh (30min)	a. Targeted hot water load control b. Other targeted control (EV, Home Energy Management Systems etc.) c. DSR validation d. Creates optionality for customers to participate in markets (outside of mandated/contracted network congestion periods) e. Targeted grid emergency support service to system operator

Appendix B. Meeting the innovation project criteria

The table below outlines how our application meets all the criteria set out in Schedule 5.30 of the Determination.

Schedule 5.3: Approval of drawdown of innovation project allowance[15]	**How we meet the requirement**
(1) In order to draw down an amount from its innovation project allowance, a non-exempt EDB must:	
(a) no later than 50 working days following the end of an assessment period submit an application to the Commission, which includes a description of:	Submitted on 19th May 2023
(i) the innovation project in respect of which that non-exempt EDB has incurred costs and for which it proposes to apply amounts drawn down from the innovation project allowance;	See Table 4
(ii) details of the costs incurred by the non-exempt EDB in undertaking that innovation project (being costs that have not previously been the subject of applications for drawdown amounts from the innovation project allowance) and the proportions of those costs that were opex or capex; and	See Table 4
(iii) that innovation project's purpose, including the steps that the non-exempt EDB has taken or intends to take in order to achieve that purpose;	See Section 3 and 4
(b) make the application specified in sub-paragraph (1)(a) of Schedule 5.3 publicly available on its website at the same time as it submits it to the Commission; and	Published on 19th May 2023
(c) obtain approval from the Commission in accordance with paragraph (2) of Schedule 5.3.	N/A
(2) The Commission may by notice in writing to the non-exempt EDB approve an application by that non-exempt EDB to draw down an amount from its innovation project allowance if that non-exempt EDB satisfies the Commission that—	
(a) the sum of the amount of the proposed drawdown amount for the innovation project and amounts already approved by the Commission for draw down from the innovation project allowance by that non-exempt EDB does not exceed that non-exempt EDB's innovation project allowance for the DPP regulatory period in Table 5.1 of Schedule 5.3; and	$759,000 < $2,022,000
(b) that non-exempt EDB has already incurred an amount of costs on the innovation project that is at least equivalent to 200% of the proposed drawdown amount (provided such costs have not already been used in a previous application to justify a drawdown amount from the innovation project allowance); and	Total project costs of $1,518,000 = 200% of $759,000
(c) prior to commencing the innovation project, the non-exempt EDB received a signed report from an engineer or suitable specialist, where the engineer or suitable specialist stated in their opinion that-	See WSP report
(i) the proposed project is an innovation project;	See WSP report
(ii) the purpose of the innovation project is either:	See WSP report

[15] Schedule 5.3 of the Electricity Distribution Services Default Price-Quality Path Determination 2020 (Consolidated 20 May 2020) available here

A. delivering electricity lines services at a lower cost to consumers; or	See WSP report
B. delivering electricity line services at a higher quality of supply to consumers; or	See WSP report
C. delivering electricity lines services at a lower cost to consumers and at a higher quality of supply to consumers; and	See WSP report
(iii) the benefits of the innovation project will be of general application to the activities of that non-exempt EDB or of other EDBs; and	See WSP report
(d) if the non-exempt EDB has elected to use a suitable specialist to procure a signed report in terms of paragraph (2)(c) of Schedule 5.3, the suitable specialist has sufficient expertise in a field relevant to the project, which must be evidenced by the non-exempt EDB providing a copy of the suitable specialist's curriculum vitae to the Commission together with the application to draw down from its innovation project allowance.	See WSP report
(3) The Innovation project allowance for the DPP regulatory period: Vector Limited $2,022,000	N/A
(4) When the Commission issues an approval for a drawdown amount for an innovation project from the innovation project allowance for a non-exempt EDB in accordance with paragraph (2) of Schedule 5.3, it must state in its approval the proportion of opex and capex in that drawdown amount, which should be equivalent to the proportion of opex and capex in the costs incurred by that non-exempt EDB for the innovation project and included in its application under paragraph (1) of Schedule 5.3.	N/A
(5) Where the Commission has approved a drawdown amount for an innovation project from the innovation project allowance for a non-exempt EDB in accordance with paragraph (2) of Schedule 5.3, that non-exempt EDB must within 50 working days of completing that innovation project:	
(a) submit a report to the Commission that outlines the key findings of that project; and	N/A
(b) make the report in sub-paragraph (5)(a) of Schedule 5.3 publicly available on that non-exempt EDB's website at the same time as it submits the report to the Commission.	N/A