

Market Operator Service Provider **WITS manager road map**

December 2024
Version 5.0



Revision history

Version	Date	Description
0.2	November 2017	Draft for Authority comment
1.0	November 2017	For initial release, incorporating Authority comments
2.0	September 2018	Roadmap update
3.0	November 2022	Roadmap update
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1. Introduction

This document presents a product strategy and road map for the WITS (wholesale information and trading system) manager services and system. It is a living document and will be revised at least annually. The product strategy and road map will be developed and evolved in close collaboration with the Authority and users of our services and system.

2. Context

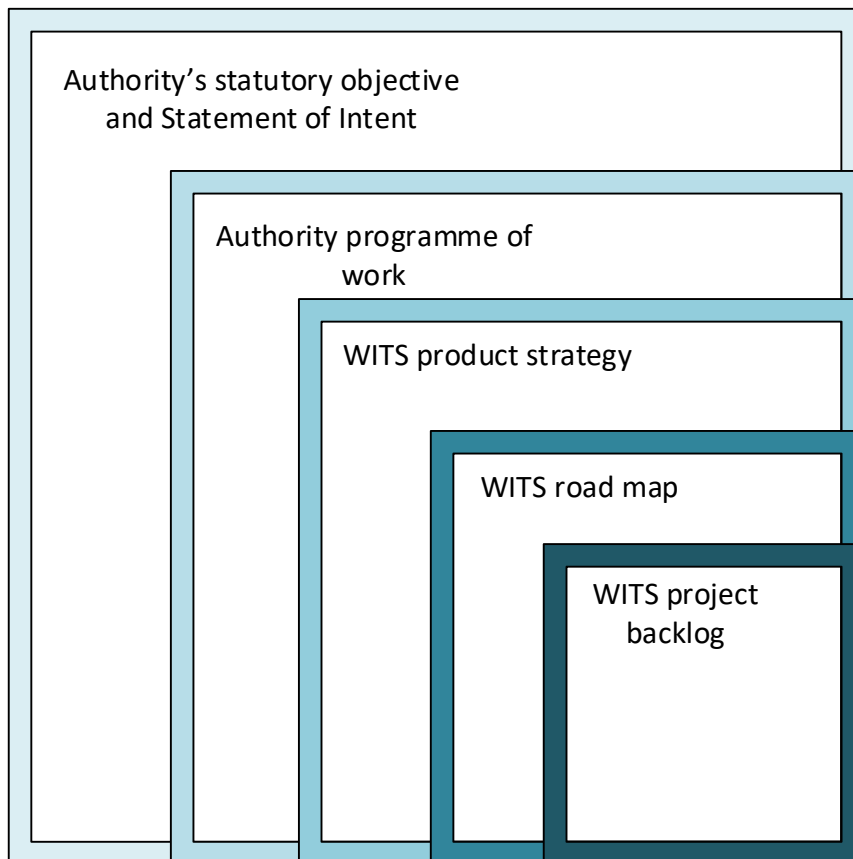
The road map provides a high level overview of work to be progressed over the next 6 – 24 months. It informs the back log of features used by our IT team to prioritise their work on a week by week basis. The road map is not intended to be at a sufficiently granular level to include all work undertaken by NZX.

Our roadmap has been developed taking into account:

- The Authority’s strategy as outlined in their statement of intent and statement of performance objectives,
- The Authority’s programme of work,
- Our product strategy for the WITS manager and services.

The relationship between these elements is shown in Figure 1.

Figure 1: Relationship between strategic elements



3. Product strategy

Our product strategy provides a high-level plan for the development of the WITS manager's services and systems.

3.1 How could the WITS manager role change in the future?

To ensure that our services and system continue to meet the needs of the industry we need to be aware of how the WITS manager role could change in the future.

We have identified the following issues below that may result in changes to our services and systems. While we have consulted with the Authority and participants, these issues are solely the WITS manager's assessment of what may happen in the future. Significant changes to systems would almost certainly require the normal Authority consultation and approval processes and would be signalled by the Authority well ahead of implementation.

WITS user changes

We expect growth in the number and range of WITS users across the suite of services provided by the WITS manager.

This includes new participants as a consequence of industry competition, changes in market design and changes in technology. Changes in market design can result in the introduction of new classes of participants. In the future, technology may facilitate the entry of participants with non-traditional business models. For example, the evolution of the internet of things, solar PV and battery storage may enable aggregators of small-scale generation and smaller dispatchable load stations (Dispatch notification purchasers).

Non - participants are also likely to increase. Such users could range from electricity futures traders through to households who are exposed, via their retailer, to the spot market. These users see WITS as an information hub rather than as a trading platform.

We have enhanced our services and systems to ensure that:

- Our services are scalable and continue to meet the required levels of reliability with greater numbers of uses, and
- Our services are fit for purpose for a much broader range of users.

We have done this by user segmentation (traders, data users and clearing users) to allow the right solution for each profile.

Market design changes

In line with its statutory objective the Authority has an on-going programme of market design enhancements. Future potential enhancements, of relevance to the WITS manager include:

- New load limit schedule from the system operator, delivering load control information from WITS to connected parties. It supports the market in managing energy shortfall scenarios.
- Further consultation on the hedge disclosure system enhancement driven by the Authority.
- Sensitivity schedule implementation to the system operator's market system, hence corresponding changes to WITS system.



- Enhancements to WITS API to provide all the public information available from WITS, and to start analysing to offer the private files via WITS API.

More generally, we do not expect that the pace of market design change will slow down. This reflects the introduction of new technologies and business models into the market and incorporates the Code changes and strategic plan from the Authority for the energy market.

Demand for new services

With a broader range of WITS users we anticipate greater demand for new services. For example:

- WITS should enable users to develop their own innovative applications using WITS data. This may require the development of alternative delivery channels, such as the expanded use of APIs, and
- WITS may need to meet to evolve to meet the specific information needs of new users.

3.2 Product strategy overview

Figure 2 provides an overview of the WITS manager's product strategy.

Our users: WITS trader

WITS trader users primarily include those participants that submit offers or bids into the market. These participants are generators including dispatch notification generators, retailers, instantaneous reserve providers, load aggregators, dispatchable demand purchasers including dispatch notification purchasers and almost any combination thereof. Some users may act as agents for other participants.

WITS trader users are typically sophisticated, established and with an excellent understanding of the market.

Some users, typically from large, established organisations, will primarily depend on WITS for the delivery of data through machine to machine interfaces and will use the WITS trader web portal either infrequently or not at all. These users have developed their own, or use third party applications, to trade on the market.

Other users will be more reliant on the full suite of services provided by WITS. These users will use the web portal to trade on the market, possibly supplemented by their own in house applications.

Our users: WITS data hub

WITS data hub¹ users are diverse. Users include small retailers, financial institutions, electricity futures traders, FTR traders, OTC hedge traders, consumers with exposure to the spot market, academics, and the general public.

These users will:

¹ www.electricityinfo.co.nz



- Differ in their understanding of the market. Some users will require a detailed, rich picture of the market. Other users will only need more basic information, such as a daily price index,
- Need market information for differing purposes. For some users, this information will be a key input to the decisions that they will make for their organisation. For the general public, the information on WITS will be only of passing interest,
- Require the information to be delivered in different ways. Some users will be dependent on the web browser, other users will prefer machine to machine interfaces to automate data delivery.

Our users: WITS API

WITS API users include registered users and developers. Registered users are typically individuals or organizations, such as homeowners, businesses or industrial facilities who have varied level of technical expertise. Developers who use the WITS API are typically technically proficient. They can be software developers, data engineers, data scientists or analysts who use the API to create custom applications, tools or integrations. API allows them to tailor solutions to specific needs.

User needs

Registered user

Registered users are diverse, can include energy providers, energy data scientists and analysts, consultants, educational and research institutions, and professionals who developing smart technologies for large scale consumers and buildings.

These users:

- Need energy real time information for monitoring, identifying market trends, insight reporting and decision making.
- Need energy real time information for ongoing research or business intelligence purposes, feeding to the predictive models and identifying patterns for analysis.
- Need energy real time information to monitor energy consumption.

WITS API user end developers require:

- Reliable, resilient, and consistent.
- Comprehensive documentation including,
 - a. Clear explanations of API endpoints, authentication methods.
 - b. Request and response formats, data formats, granularity, frequency and standards.
 - c. Rate limiting and quotas, error handling, scalabilities, webhooks and notifications and examples.
 - d. Test or UAT environment.



Our users: the Authority and service provider

Other users include the Authority, and service providers. The WITS manager works with a number of service providers. For the most part this interaction is in the form of system to system exchange of files.

User needs

Our users have a core set of common needs that must be met without compromise. Our systems and services should be:

- Reliable and resilient,
- Cyber secure and protective of the confidentiality of sensitive commercial information,
- Able to publish critical market information through multiple channels on time, and
- Supported, such that any issues escalated to the WITS manager are resolved promptly and compliant with the market requirement.

Some users will primarily interact with WITS via automated machine to machine interfaces. Given the nature of the market that WITS serves these interfaces must be reliable, secure, fit-for-purpose and based on industry standard, scalable technology. Support and communication around these services is important. Users must be aware of the next outage, disaster recovery test or change in data formats.

Other users will be more reliant on the web portal. The web browser must meet the needs of a diverse range of users. To achieve this information must be able to be viewed at user configurable levels of granularity and complexity. For example, one user may only wish to view the home page dash board, while another user may wish to view forecast prices transposed on real time prices. The information must also be presented in a manner which enables users to understand what is happening in the market. Reflective of the diverse range of users, the web portal must be mobile capable, as some users will need price information away from the comfort of a desk.

The system operator is a key WITS user. The interface between WITS and the system operator is market critical and must be operated at a very high availability. WITS is the market's gateway to the system operator. WITS transfers orders to the system operator's market system. Market schedules produced by the system operator, using these orders as an input are then published to WITS.

The Authority is an important user of the WITS manager's systems and services. As discussed above, the Authority has a significant and on-going programme of work. It is important that changes to the system can be accommodated in a cost-effective manner, providing value for money for both the Authority and participants.

Key services and features

The WITS manager:

- Publishes market critical information to participants and the public.
- Receives bids and offers from participants.
- Provides and receives critical market information to other market operator service providers.



- Provides essential communications around services, such as planned market outages and so on.

Future directions for our services and systems

Changes to our core services and systems will be driven by the strategic issues identified above and by the delivery of the MOSP enhancement project and participant engagement. We intend to prioritise the following broad areas of improvement (which we refer to as road map themes) for our services and systems:

Performance optimization for market participants: WITS was traditionally a transactional relationship model between users and the IT team. This is being replaced with a relationship between the operational team and the wider participant. This enables us to improve engagement with the participants and improve the delivery of service to the various parts of the participant's organisation through system enhancements.

Market design changes: WITS must be able to accommodate changes in market design and implement amendments to the Code.

Enhancing the delivery of WITS public and private information: Gaining access to market information should be easy. This includes enabling third parties to access this information for their own purposes. Currently WITS provide the public information via WITS frontend, WITS data hub and WITS SFTP. Prices and quantities are also available via WITS API. To understand the feasibility of offering more public information to the market, and price information to the traders.

Improving the WITS user experience: Gathering user feedback from WITS support queries, energy user and trader forum and annual survey for continuous system improvements.

System performance, security, and reliability:

- *Archiving and Data Management Enhancement:* Automating the data archiving procedures from the Authority's production systems into a data warehouse. This automation not only improves system efficiency and operating speeds but also provides a flexible means to access historical data through API connections. Upgrading the data warehouse to a new solution offers numerous benefits, including improved system performance, scalability, flexibility, cost optimization, real-time analytics, advanced data integration, governance, and self-service analytics.
- *Technological upgrade on ESB:* The current software supporting the existing Enterprise Service Bus is reaching its end-of-life, necessitating a replacement with a focus on transitioning to microservices. The shift to microservices involves a transformation from the centralized, tightly coupled architecture to a decentralized, loosely coupled one. In this approach, applications are broken down into smaller, independent services that communicate through lightweight protocols. This transition offers advantages such as flexibility in technology choice, scalability, resilience, and faster deployment.
- *Multi-factor authentication (MFA):* MFA enhances security by adding an extra layer of protection beyond passwords, making it significantly harder for unauthorized users to access accounts or systems, even if passwords are compromised. It reduces the risk of identity theft and data breaches by requiring multiple forms of verification, thereby mitigating cyberattacks such as phishing or credential stuffing.

Authority business goal

As the Authority owns the WITS manager role, the direction and pace of the product strategy will be heavily influenced by the Authority's business goals (see Figure 3).

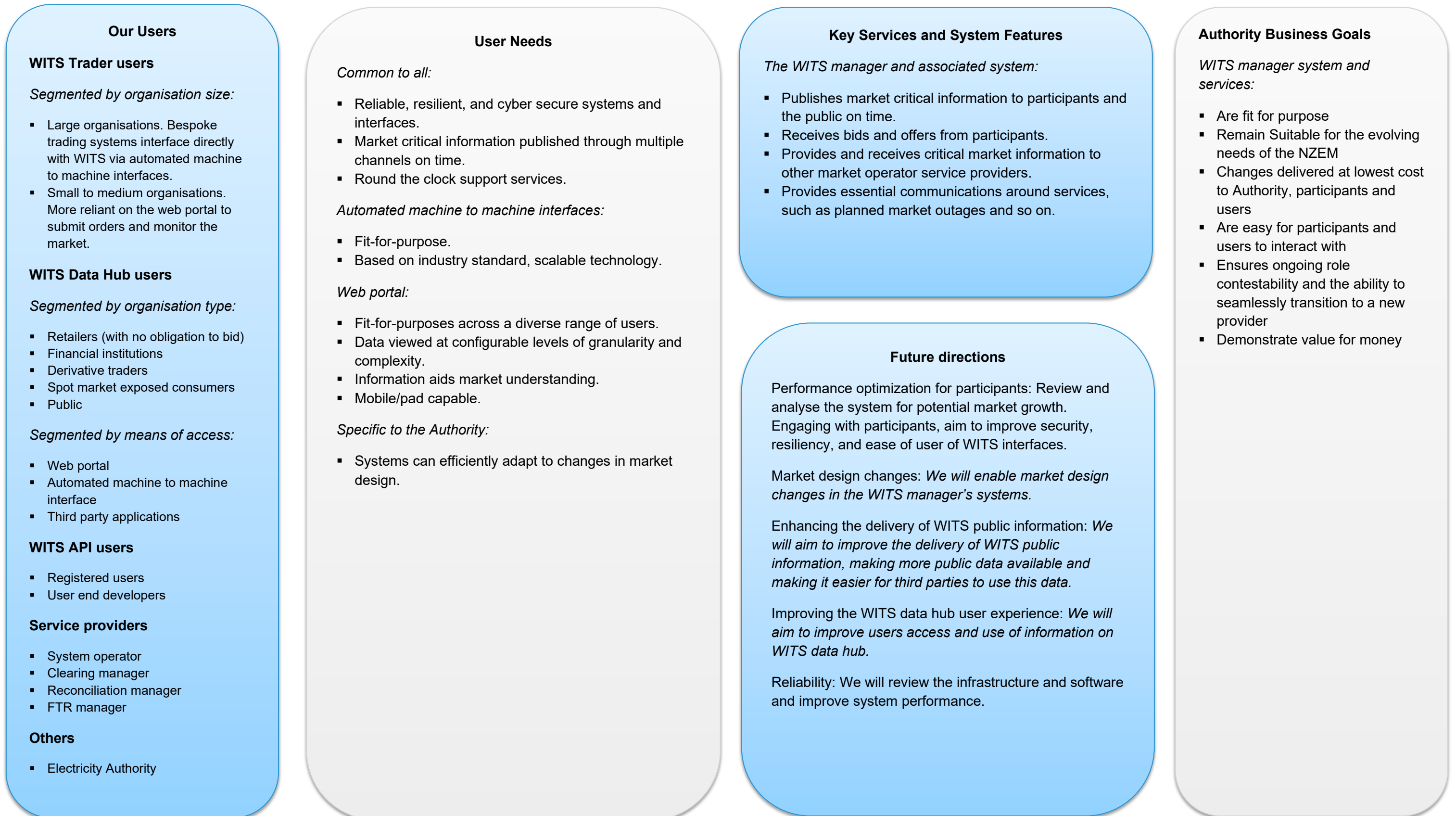
Whether any given initiative is implemented will depend on:

- Participant support as expressed in, for example, surveys and user group meetings,
- Authority approval. An initiative should be consistent with the Authority's statutory objective and business goals for the WITS manager's system,
- Available budget for system improvements. This will be a critical factor.

Our strong preference is for low cost, low risk initiatives that have a high likelihood of providing value to participants and other users.



Figure 2. WITS Manager Strategy Overview:



4. Road map

The WITS manager road map is shown in Figure 3.

The Authority and NZX has an internal joint development process to manage project conflicts and priorities. This process will manage all active road map initiatives. Part of the WITS manager role is to develop a joint goal setting framework. This framework has been integrated into the road map.

It is highly likely that the road map will change in response to:

- Participant feedback,
- Changes to the Authority's strategy or programme of work,
- Operational necessities, and
- Conflicts and changes in priority as identified through the Authority - NZX joint development process.



Figure 3. WITS Manager Road Map

WITS Manager Road Map

Who drives the change?

Feature / Enhancement	Participants	Authority	NZX	Benefit	Status	2025				2026				2027					
						Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
Performance optimization for participants																			
Analyse system for market growth and performance enhancements	X	X	X	System review and future proof for potential market growth.	In progress														
Front-end components enhancement	X	X	X	System review and future proof for potential market growth.	In progress														
Market design changes																			
New load limit schedule		X		Provide load control information and to support the market to manage energy shortfall scenarios.	In progress														
Intermittent generation forecast programme		X		Improve forecast accuracy for a more reliable and efficient electricity system.	Future work														
WITS sensitivity schedule		X		Provide price sensitivity schedule details to enhance risk management.	In progress														
Enhancement on the delivery of WITS information																			
WITS public data via WITS API	X	X	X	Provide further public information from WITS to the participants via API.	Future work														
WITS private data via WITS API	X	X	X	Provide WITS private information to the market participants via API.	Future work														
System performance, security and reliability																			
Technological upgrade on ESB			X	Offers advantages such as flexibility in technology choice, scalability, and resilience.	Future work														
WITS architecture design enhancements			X	Provide a more consistent and efficient environment.	Future work														
Multi-factor authentication			X	System security control improvement.	Future work														

