flextalk

Welcome

The Future of Smart Energy in NZ: FlexTalk's Journey to 100+ Connected Homes

Please **mute** your mic and **turn off** your camera.

Thank you to our presenters and to you, our audience for your attendance. EEA values your support.

Please note, this webinar will be recorded and shared on the EEA website.

4 June 2025

eea Electricity Engineers' Association

EECA TE TARI TIAKI PŪNGAO ENERGY EFFICIENCY & CONSERVATION AUTHORITY

Welcome & Housekeeping

- Kia ora and welcome to today’s **FlexTalk: The Future of Smart Energy in NZ** webinar.
- Thank you for making time to join us – whether you're from industry, government, technology, or community.
- Quick housekeeping:
  - This session is being recorded.
  - Please post questions in the chat – we’ll address these in the Q&A session.

flextalk

Why Flexibility? Why Now?

- The energy transition is creating new challenges and opportunities – increasing electrification, peak demand, and renewable integration.
- Consumer energy resources (like EVs, solar, batteries, and flexible loads) are central to this shift.
- But real participation won't be possible unless we solve **interoperability**, **standards**, and **visibility** challenges.
- That's where FlexTalk comes in.

flextalk

Enabling Seamless Communication

What are Open Standards?

- Publicly available, technology-neutral communication protocols (e.g. OpenADR, IEEE 2030.5)
- Developed collaboratively to ensure interoperability across manufacturers and platforms

Why They Matter for Flexibility:

- **Seamless Integration** – Devices, platforms, and networks can talk to each other without custom code or proprietary bridges
- **Lower Costs** – Reduces integration complexity for aggregators, retailers, and EDBs
- **Scalability** – Supports wide adoption across thousands of homes and businesses
- **Consumer Choice** – Enables “plug and play” participation using diverse technologies
- **Trust + Transparency** – Ensures future-proof, vendor-agnostic flexibility markets

flextalk

What is FlexTalk?

- A joint initiative of the **Electricity Engineers' Association (EEA)** and the **Energy Efficiency and Conservation Authority (EECA)**.

- FlexTalk **builds on the foundation** laid by the original FlexTalk project, which focused on **open communication protocols** to support standardised, interoperable demand flexibility.

- The **Seed Project** takes the next step—exploring how **household consumer energy resources (CER)** (e.g. solar, batteries, EV chargers, flexible hot water, and appliances) can:
  - **Respond to system needs**,
  - **Deliver value to consumers**, and
  - **Operate using open, scalable standards** across different technologies and providers.

- The aim is to **enable real-world implementation** of flexibility, grounded in openness, interoperability, and consumer choice.

flextalk

How FlexTalk Aligns with Broader Work?

- **FlexForum** – A national collaboration hosted by EEA, convening industry, government, and technology providers to advance demand flexibility.
  - Currently delivering **FlexPlan 2.0** – a shared work programme defining priorities for scaling flexibility in Aotearoa.

- **EECA's DER Scaled Projects** – Focused on testing business models and systems to integrate **distributed energy resources (DER)** like batteries, hot water control, and EV charging at scale.

- **The Flexibility Roadmap** - released in **2021** as part of the Authority's broader **work on enabling consumer participation and distributed energy resource (DER) integration**.

.

- **FlexTalk** provides foundational insights and tools to operationalise this roadmap, particularly around **interoperability** and **standardised communication protocols**.

flextalk

Today’s Agenda

- **The journey so far** – Where we’ve come from, where we’re going
- **The seed project (approach)** – What we did + how
- **The products** – What we built, why, what we learned
- **Signaling** – How we connected, what we signaled, what changed
- **Key insights** – Install, tech, signaling, customer experience
- **Where we’re heading** – Scaling up, what’s next
- **What this means for you** – Tools, protocols, don’t go it alone
- **Want to do more?** – FlexForum, AMF, EEA 2025
- **Q&A** – Your turn

flextalk

Introduction

Today we will share the FlexTalk project context, key findings, recommendations, and next steps.

Stuart Johnston
Facilitator

FlexTalk Principal Advisor – Technical & Engineering

EEA

Connie Dunbar
Speaker

FlexTalk Project Lead

EEA / Assurity Consulting

Romesh Anandaraja
Speaker

FlexTalk Technology Provider

Ivory Egg

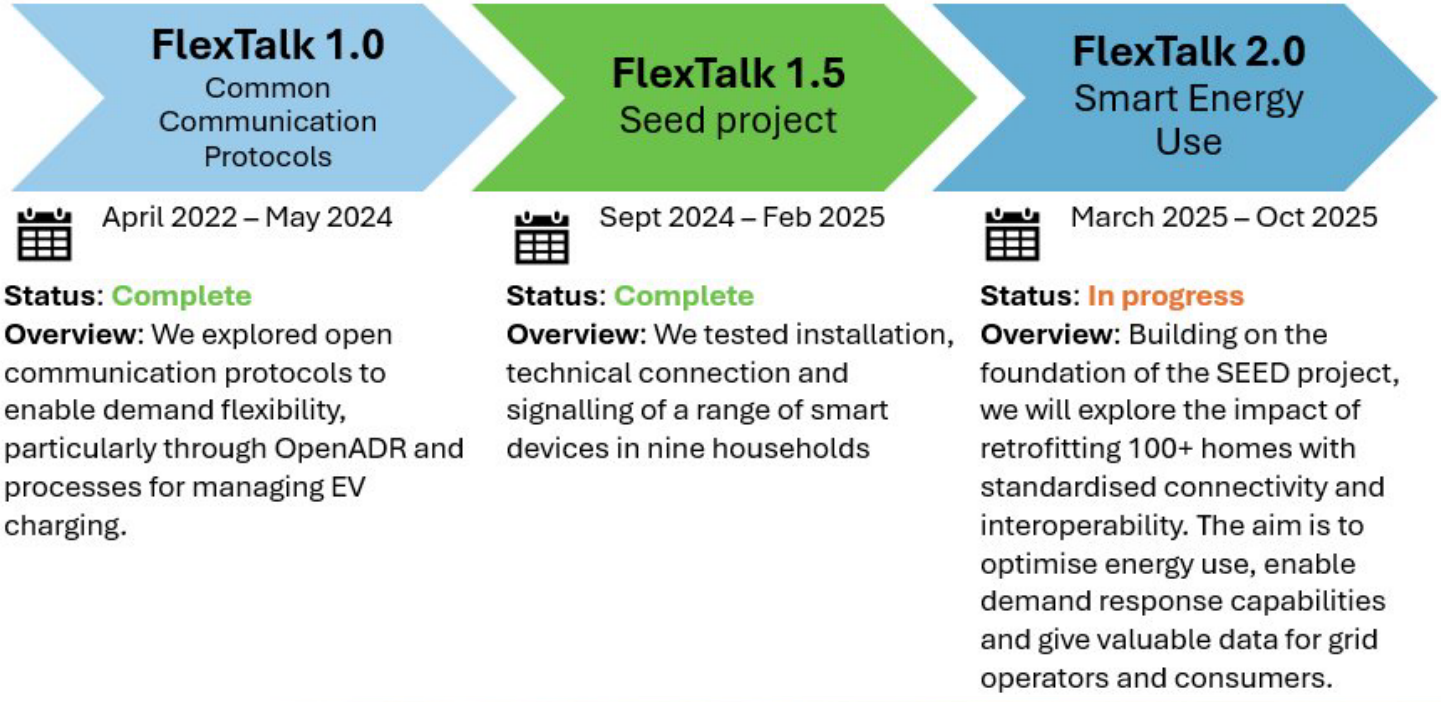
Terry Paddy
Speaker

FlexTalk Technical Lead

Cortexo

flextalk

The journey so far…



flextalk

The Seed Project – Purpose & Objectives

The FlexTalk Seed Project, a collaboration between the EEA and EECA, was designed to explore and test, at small scale, the practical application of installing and signaling smart devices to enable demand flexibility in New Zealand.

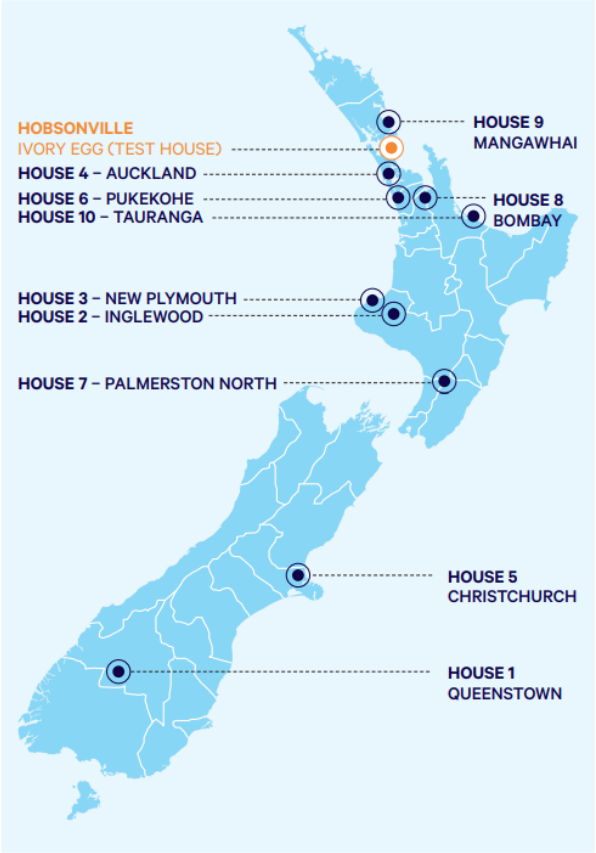
1. Identify and evaluate selected technologies for their suitability for demand flexibility
2. Identify components for project planning, including the cost, installation complexity
3. Provide insights to inform future FlexTalk projects
4. Provide guidance and the inputs into smart device installation best practice.

flextalk

Who was involved?

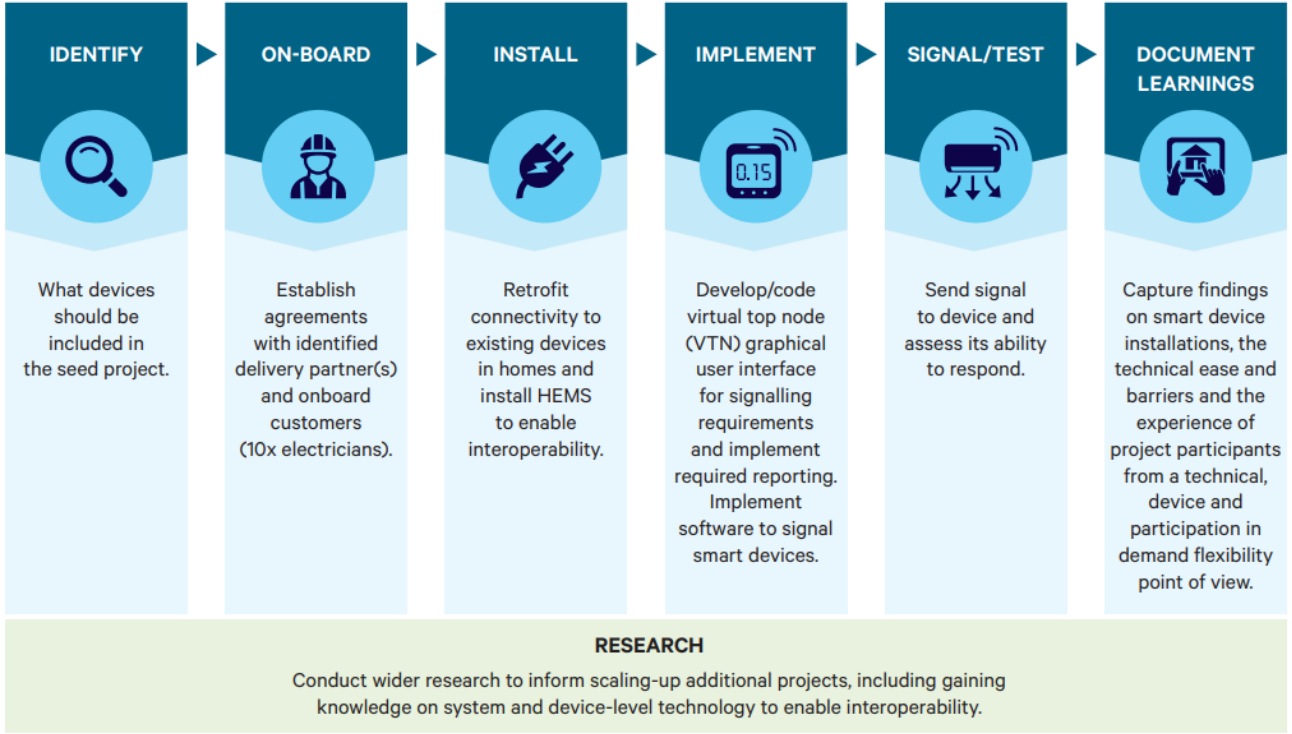
Delivery partners: Ivory Egg and Cortexo Limited

Installers / Customers: Electricians



flextalk

Delivery Approach



flextalk

The Products

Considerations

NZ electrical safety and RF compliance

Data, privacy and network security

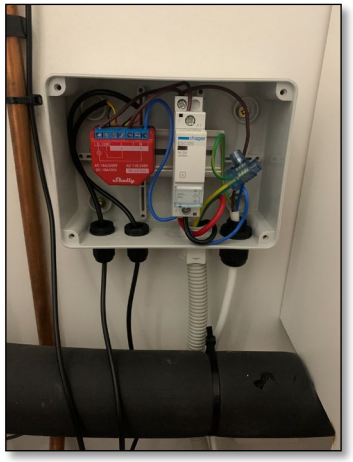
Communication using internationally standardised open protocols

Proven solutions from reputable global manufacturers

flextalk

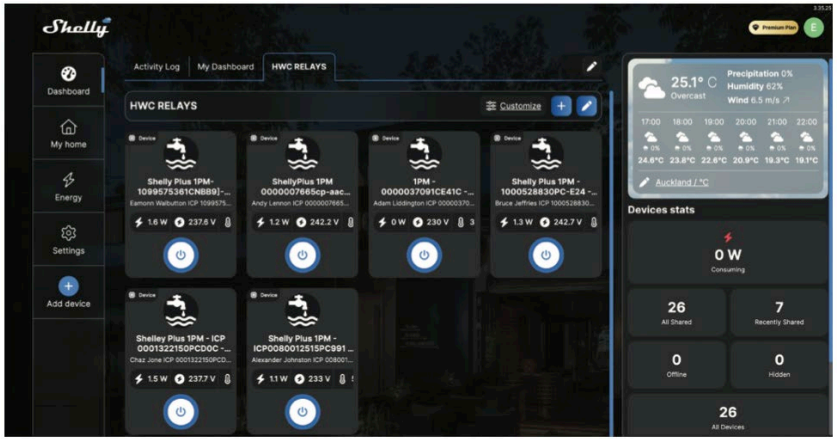
The Products

Hot Water Control & Power Measurement - Seed



Shelly device installation in house 8

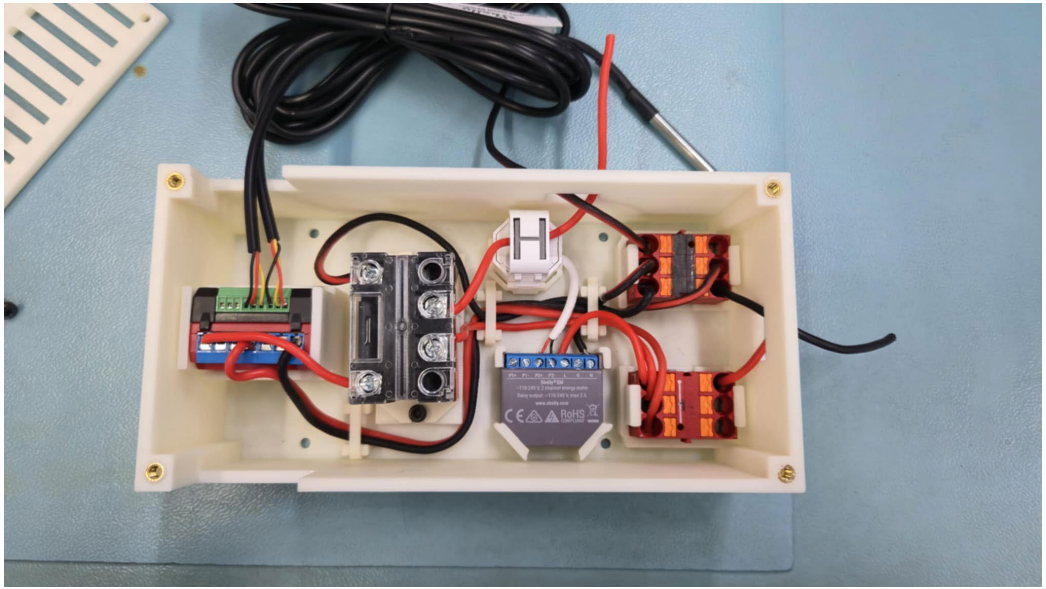
Shelly temperature probe installed on outlet pipe in house 10



flextalk

The Products

Hot Water Control & Power Measurement – Seed Extension



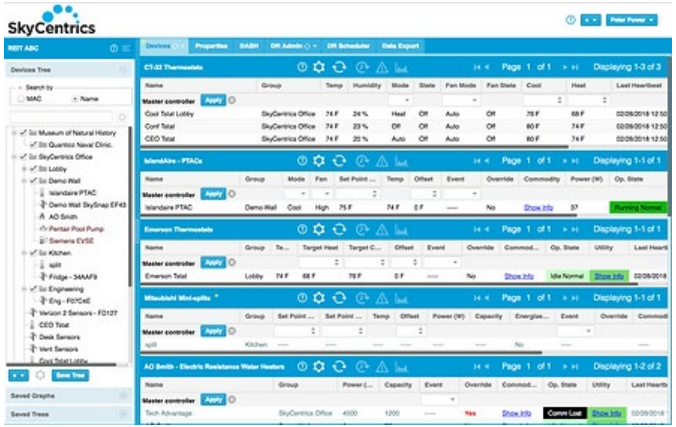
Hot water cylinder controllers, within custom enclosure box, typically mounted next to the hot water cylinder

flextalk

The Products

Hot Water Control & Power Measurement – Ecoport

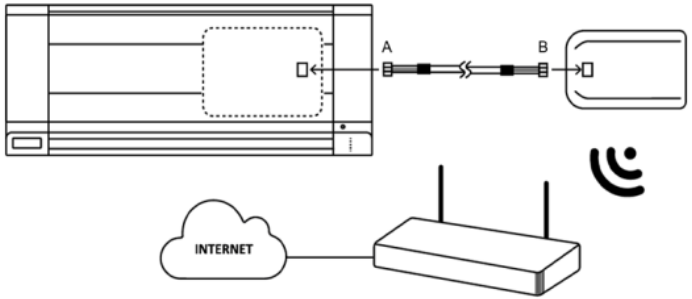
Ecoport gateway (white) and simulator (black) for hot water control

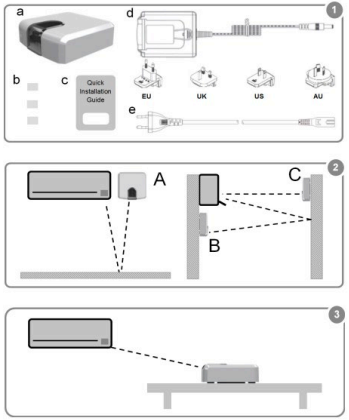


flextalk

The Products

AC Control

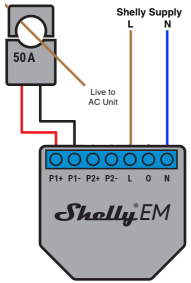


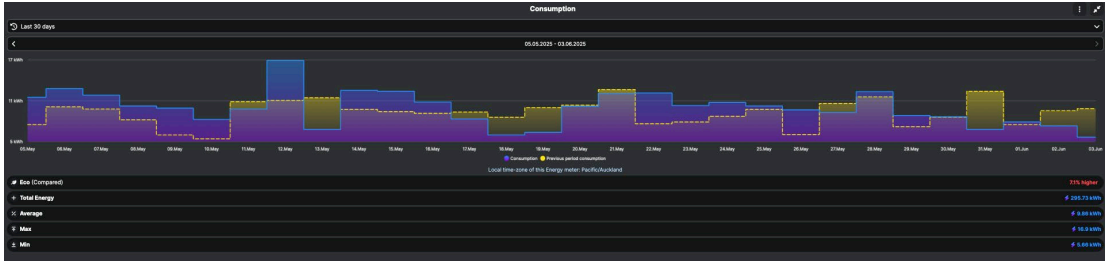


flextalk

The Products

AC Power Measurement





flextalk

The Products

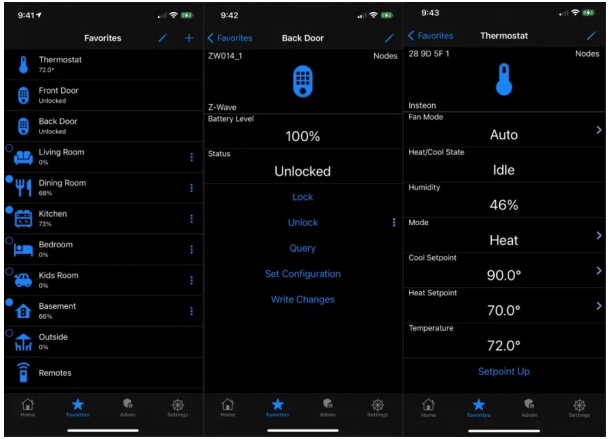
Energy Management Systems / BMS – Xxter Smart Energy Manager

flextalk

The Products

Home Energy Management Systems – Universal Devices

Universal Device HEMS



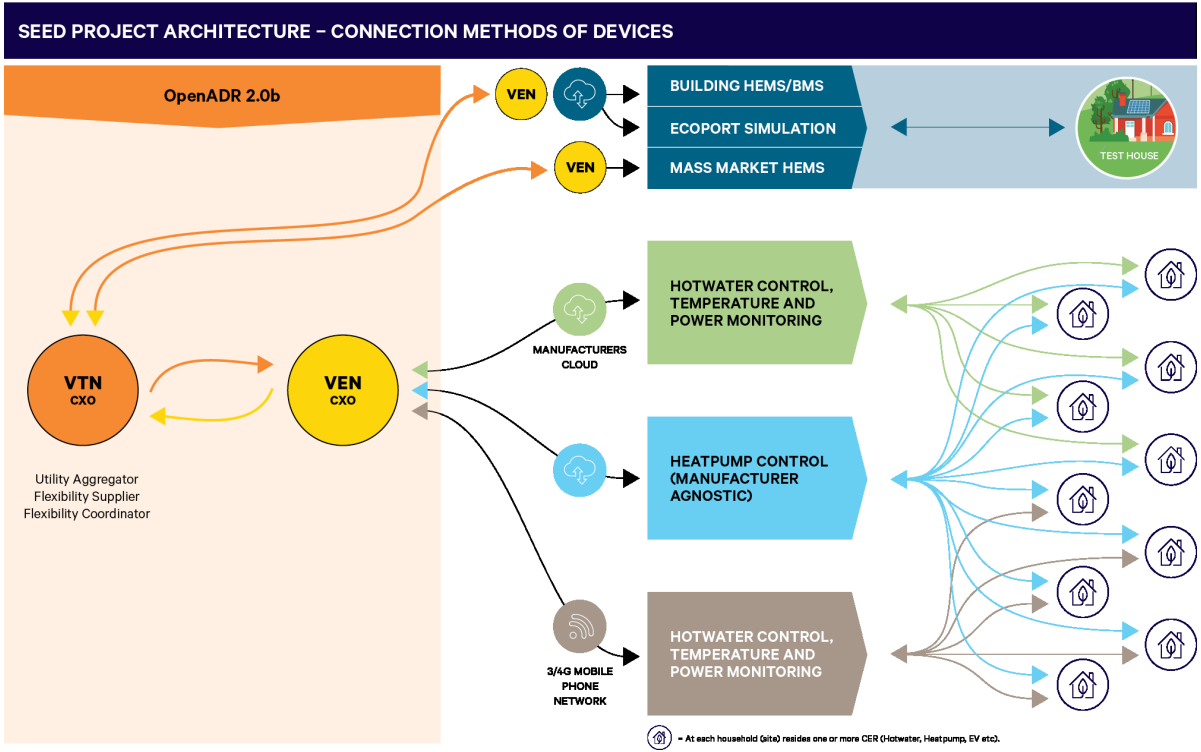
flextalk

The Products

Home Energy Management Systems – Homey Pro

flextalk

The Technical Architecture



flextalk

The Technical Architecture - Signalling

TABLE 2: SIMPLE SIGNAL MAPPING			
LEVEL	**INTERNAL STATE**	**SHELLY CLOUD / DIRECT STRATEGY**	**INTESIS STRATEGY (WHERE INSTALLED)**
0	NORMAL_DEMAND	All device relays turned ON	No action
1	REDUCED_DEMAND_LOW	Hot water DISABLED	No action
2	REDUCED_DEMAND_MEDIUM	Hot water DISABLED	Heat pump on and in cool mode: increase temp set point by 2 degrees Heat pump on and in heat mode: decrease temp set point by 2 degrees Otherwise: no action
3	REDUCED_DEMAND_HIGH	Hot water DISABLED	Turn off heat pump

flextalk

What we are doing with FlexTalk 2.0

Prove the hypothesis that smart tech can lower consumer power bills: Hot water and heat pump control with solar inverter connection to a Home Energy Management System (**HEMS**).

HEMS operates regardless off connectivity: Base level optimisation designed to lower energy use at times of high prices (network or retail TOU).

HEMS can receive external signals to change default logic to take into account dynamic changes like spot price, customer behaviour or real time hot water

HEMS is connected to external OpenADR platform: Although FlexTalk 2.0 is not focused on connectivity with Flexibility Coordinators (Aggregators), EDBs or Transpower. Signals can be sent to clusters of homes attached to specific network assets for Demand Flexibility (DF)

flextalk

Insights & Findings – Product & Installation

TECHNOLOGY PERFORMANCE

All devices tested successfully responded to signals and provided reliable control over hot water and air conditioning loads.

INSTALLATION & CONNECTIVITY

Electricians found the Shelly and Intesis products relatively straightforward to install. Connectivity through direct message queuing telemetry transfer (MQTT) was more stable and scalable than manufacturer cloud-dependent solutions.

flextalk

Insights & Findings – Signalling & Customer Experience

CUSTOMER EXPERIENCE

None of the seven respondents perceived any change in their hotwater or airconditioning experience during the demand flexibility events. One participant highlighted the additional value in the customer mobile application which also enabled remote control of their smart device.

SIGNALLING EFFECTIVENESS

Signals successfully adjusted device behaviour although variations arose due to customer intervention and appliance status at the time of signalling.

SCALABILITY CONSIDERATIONS

The project highlights that to scale demand flexibility solutions effectively, there is a need for standardised communication protocols, interoperability between systems and improved consumer engagement.

flextalk

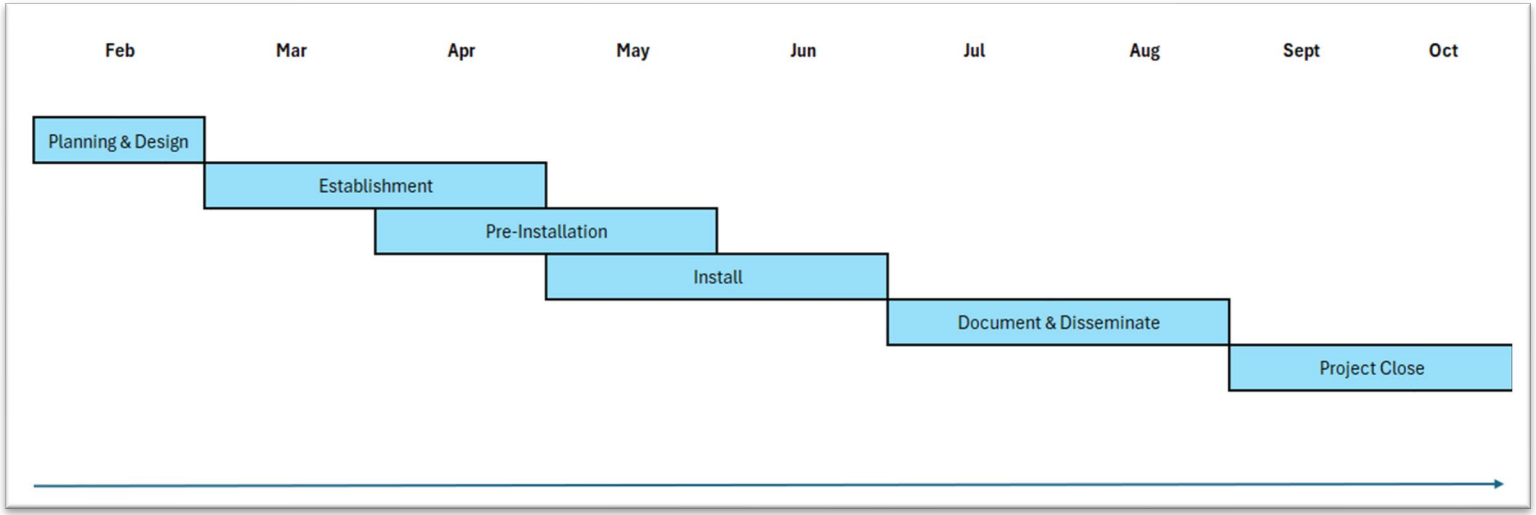
Want to learn more?

flextalk

Where to next?

flextalk 2.0 Smart Energy Use

the lines company



flextalk

We want to collaborate

We've tested and learnt some of the practicalities.

If you're engaging on a flexibility project talk to us – we want to help you.

- Products
- Technical connectivity and connection methods
- Project artefacts – agreements, FAQs, Surveys,
- Support and advice

flextalk

Questions?

Stuart Johnston
Facilitator

FlexTalk Principal Advisor – Technical & Engineering

EEA

Connie Dunbar
Speaker

FlexTalk Project Lead

EEA / Assurity Consulting

Romesh Anandaraja
Speaker

FlexTalk Technology Provider

Ivory Egg

Terry Paddy
Speaker

FlexTalk Technical Lead

Cortexo

flextalk

flextalk

Thank you!

Dr Stuart Johnston – stuart@eea.co.nz

Connie Dunbar – connie@eea.co.nz

Romesh Anandaraja – Romesh@ivoryegg.co.nz

Terry Paddy – terry.paddy@cortexo.com

eea Electricity Engineers' Association

EECA TE TARI TIAKI PŪNGAO ENERGY EFFICIENCY & CONSERVATION AUTHORITY