MITSUBISHI ELECTRIC

Next Generation
Hot Water Heat Pumps

ecodan®


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Want to Make Significant Savings on Your Power Bill?

Have you ever stopped to consider what the key contributors to your monthly electricity usage are? You may be surprised that in New Zealand, on average, domestic hot water heating accounts for 28%, and when combined with heating your home, a whopping 67% of the overall energy bill!*

So if you are trying to find ways to make significant savings on your electricity consumption, domestic hot water heating is an obvious area to target. Up to now the majority of hot water in New Zealand is heated by traditional electric hot water cylinders – but is there another, more energy efficient way to do this?

The answer is yes, and it's called Hot Water Heat Pump Technology.

Heat Pumps are Super Efficient at Heating Homes so Why Not Use the Same Technology to Heat Water

Many years ago, when heat pumps were first introduced to New Zealand, it did not take long for Kiwis to quickly embrace this super energy efficient technology to keep their homes and families warm all winter long.

So it should come as no surprise that the same heat pump technology that revolutionised home heating in New Zealand can be just as effective and efficient at heating your hot water.

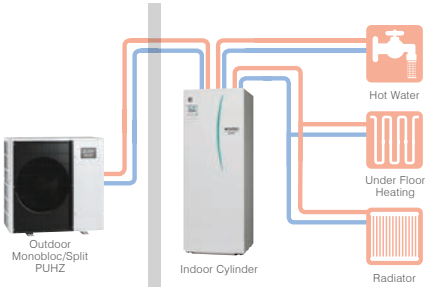
Global Leaders in Hot Water Heat Pump Technology

Since 1994 Mitsubishi Electric have utilised their heat pump technology leadership and expertise to specifically design and manufacture hot water heat pump solutions. The range is called Ecodan and is now well and truly established in Japan and Europe as the preferred way to heat water efficiently with minimal environmental impact.

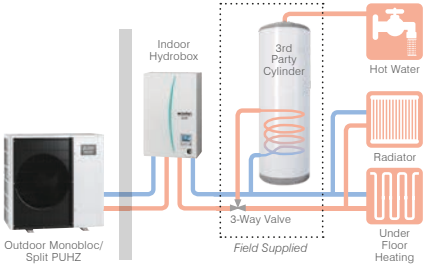
With the full range of Mitsubishi Electric Ecodan Hot Water Heat Pump Systems now available right here, it's New Zealand's turn to reap the benefits.

* Based on BRANZ study report SR221, 2010, verified by EECA.

Packaged Cylinder System



Packaged Hydrobox System



How Does an Ecodan Hot Water Heat Pump System Work?

There are three key components to the Ecodan Hot Water Heat Pump System.

The Outdoor Unit

Just like a heat pump for space heating, the Ecodan outdoor unit uses electricity to absorb freely available heat energy from the surrounding air and then transfers it to your home so it can provide energy efficient hot water heating and heating for underfloor or radiators.

The Hot Water Cylinder

Ecodan provides your home with hot water via a dedicated “all-in-one” pre-plumbed 200 litre cylinder that is specifically designed to integrate with the Ecodan outdoor unit. Alternatively, the Ecodan outdoor unit can be connected up to a different size hot water cylinder via the Ecodan Hydrobox module.

Smart Energy Controls

Ecodan Hot Water Heat Pump Systems come standard with built-in Smart Energy Control. This easy-to-use interface provides homeowners with smart energy monitoring to maximise energy efficient operation. Furthermore, advanced weather compensation ensures the system delivers comfortable heating no matter the season. The controller is intuitive to use, with individualised room temperature control available at your fingertips for the ultimate in total home comfort.

Combine Hot Water Heating with Whole Home Central Heating

As you have come to expect, Mitsubishi Electric Ecodan Heat Pumps are advanced systems that can do more than just efficiently heat hot water. The extensive line-up also includes total home heating solutions that cover all of your hot water needs as well as super energy efficient room heating – all through the one system.

These total home heating solutions provide room heating using radiators as well as underfloor heating. It’s the ultimate in total home comfort.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Hot Water Heat Pumps are Good for the Environment

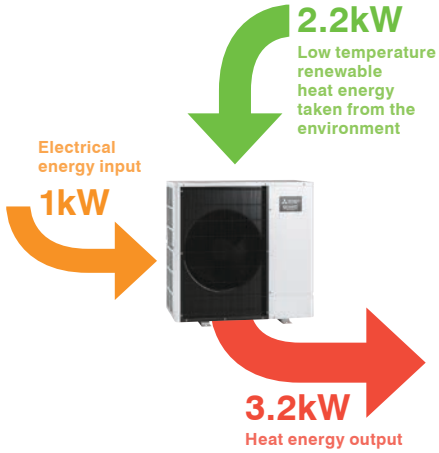
Did you know a traditional electric hot water heater produces up to three times the amount of greenhouse gas compared to a low emission alternative such as a hot water heat pump? Instant gas hot water systems are even greater greenhouse gas contributors, producing a staggering seven times more emissions compared to hot water heat pump technology.*[1]

This makes water heating one of the largest single sources of greenhouse gas emissions from the average Kiwi home. As such, EECA has identified heat pumps as playing a key role in the ability to significantly reduce costs and greenhouse emissions from energy use.

Currently an estimated 67% of New Zealand homes use a traditional electric hot water system in the home.*[2] Substituting existing, less efficient technologies with more efficient ones such as a hot water heat pump therefore has the ability to make a significant reduction in overall greenhouse emissions.

If you are looking for super energy efficient water heating that is kind to the environment, Mitsubishi Electric Ecodan Hot Water Heat Pumps are the natural choice.

“Now you can enjoy hot water responsibly all year round!”



How Efficient is a Hot Water Heat Pump?

The efficiency of a heat pump is known as the Coefficient of Performance or COP. This is a ratio of the heat delivered to power consumed. For every 1kW of electrical input energy, Ecodan absorbs freely available heat energy from the outdoor air to provide the home with an average of at least 3.2kW*[3] of heat output.

Compared to typical gas and direct electric heating systems that can have higher running costs with inefficient COPs as low as 0.82*[4], Ecodan Hot Water Heat Pumps provide a real energy efficient alternative.

*1 Based on electrical and gas emission factor for New Zealand.

*2 Based on E3 Policy Framework data for New Zealand.

*3 As independently tested by BSRIA based upon BSEN14511 Part 3 standard rating conditions. Due to the method of operation, the performance of heat pumps will vary based upon the temperature of the heat source and the requirements of the heat delivered. The BSEN14511 testing relates to the heat pump performance only and not the entire heating system.

*4 Based on manufacturer information for gas instant hot water heater (non-condensing).

Ecodan Hot Water Heat Pump Zubadan Series installed at “The Lodge” – Ruapehu Ski Club.

Designed for New Zealand Conditions

Mitsubishi Electric Ecodan Hot Water Heat Pumps are the dependable solution for year-round efficient hot water when you need it most. Ecodan Hot Water Heat Pumps will especially be appreciated during the winter months, when taking longer and hotter showers as a reprieve from the cold is typical!

Reliable performance in outdoor temperatures as low as –15°C.

For those that live in areas of New Zealand where many frosty days in winter are prevalent, it is good to know that the Mitsubishi Electric Ecodan Hot Water Heat Pump Range has specific sub-zero models called the Zubadan Series. These models are designed to effectively produce hot water even on the coldest of winter days.

Our installation on Mount Ruapehu is a testament that an Ecodan Hot Water Heat Pump with Zubadan Technology is well and truly designed for New Zealand’s low temperature conditions. With temperatures regularly dropping below 0°C in winter, this system continues to effectively provide hot water for showers, washing facilities and the kitchen for all of its club members throughout the winter season.

Ecodan is designed to work efficiently with all types of water.

Depending on where you live in New Zealand, you may experience hard water that typically manifests itself as calcium build-up. Mitsubishi Electric Ecodan Hot Water Heat Pumps incorporate advanced Scale Trap Technology to minimise scale build-up, ensuring the system will always be working at its best.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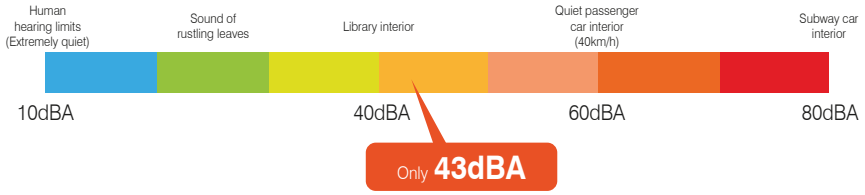
Quiet Outdoor Operation – Ideal for Higher Density Housing

With higher density housing becoming more common in New Zealand, quiet outdoor operation is important if you want to keep your neighbours happy! Designed especially for residential applications, the new Ecodan Range 6.0kW, 8.5kW and 11.2kW outdoor units, are 3dBA quieter than previous models.

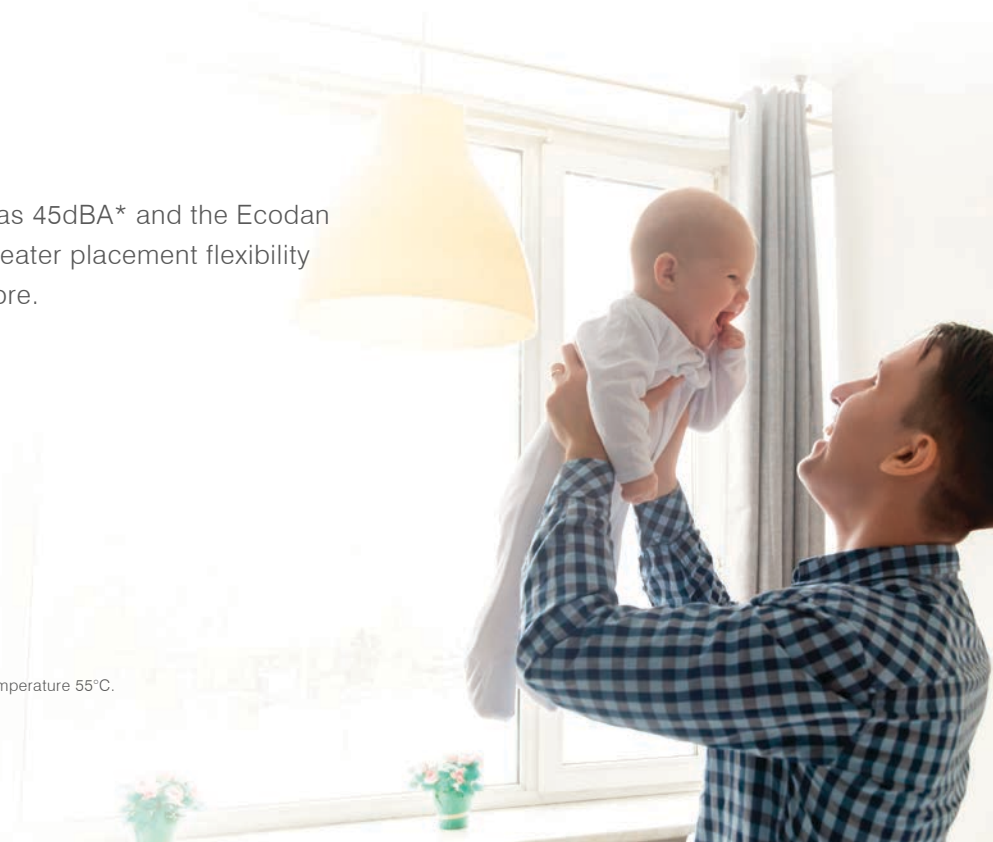
Specific design features enable quiet outdoor operation to be maintained at all times. This ultra-quiet operation means homeowners can now choose the most convenient location for their Ecodan without disturbing neighbours.

Mitsubishi Electric has always been at the forefront of improving technology including sound levels, to meet the ever-changing needs of consumers. So it should come as no surprise that with the urban landscape rapidly changing to more high-density housing, Mitsubishi Electric has specifically tackled outdoor sound levels across the Ecodan Range.



The new ultra-quiet Ecodan Series operates discreetly with a sound pressure level as low as 45dBA* and the Ecodan QUHZ features an impressive industry-leading 43dBA*. As a result, these systems offer greater placement flexibility as the outdoor unit can now be located much closer to property boundaries than ever before.

* Measured at 1m from the front of the outdoor unit operating under normal heating conditions at outdoor temperature 7°CDB/ 6°CWB, outlet water temperature 55°C.



“It’s time to join the hot water heat pump revolution!”

Manage Your Hot Water Consumption with Advanced Monitoring

On-screen power usage information means you have the visibility and freedom to efficiently manage your overall hot water power use. Add to this, daily and weekly timers so you can take advantage of off-peak tariffs and save even more on your power bills.

For those who have chosen a hot water central home heating system, zone control can be used to set different temperatures for different rooms, or turned off completely. This is the ultimate in customised temperature control.

New Build, Renovate or Retrofit – Add Value to Your Home with an Ecodan Hot Water Heat Pump

Updating your home heating and hot water heating to a heat pump system is an investment that not only will pay off instantly with lower electricity bills for you every month, but is sure to make a real impression with potential home buyers in the future.

The energy efficiency of a home is becoming a stronger purchasing consideration for home buyers. As such, properties on the market are expected to have adequate insulation and at least one heat pump in the living room at a minimum. Homeowners looking to future proof and add additional value would be wise to consider an Ecodan Hot Water Heat Pump System to provide super energy efficient hot water heating and space heating at the same time.

Whether you are building a new home, renovating an existing property or looking to retrofit, you will be able to find the perfect solution from the Mitsubishi Electric Ecodan Hot Water Heat Pump Range.

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Ecodan QUHZ Specifications

Packaged Cylinder System

- CO_2 refrigerant
- High efficiency hot water heating performance
- Class leading, low noise operation at 43dBA
- Small outdoor unit, reduced footprint
- Lightweight outdoor unit
- Water connections only from outdoor unit to cylinder

Outdoor Unit
4kW Ecodan
QUHZ

Cylinder
200 Litre Capacity

OUTDOOR UNIT		QUHZ-W40VA
Heating Capacity (kW)	at 7°C Outdoor Temperature*1	4.0
	at 2°C Outdoor Temperature*2	4.0
Heating Operating Range (°C)	Heating Flow Temperature (UFH/Radiator)	25–60
	Domestic Hot Water	40–70
Sound Pressure Level at 1 metre (dBA)		43
Dimensions (mm)	Width	809+70*4
	Depth	300+20*5
	Height	715

CYLINDER *3		EHPT20Q-VM2EA
Nominal Water Volume (Litres)		200
Heating Operating Range (°C)	Heating Flow Temperature	25–60
	Domestic Hot Water	40–70
Sound Pressure Level at 1 metre (dBA)		28
Dimensions (mm)	Width	595
	Depth	680
	Height	1600

*1 Under nominal operating conditions: Outdoor temp 7°CDB / 6°CWB, outlet water temp 35°C, inlet water temp 25°C
*2 Under nominal operating conditions: Outdoor temp 2°CDB / 1°CWB, outlet water temp 35°C, inlet water temp 25°C
*3 Cylinder includes: Flow Temperature Controller with Main Controller and Temperature Sensors, Pumps and Valves for Zone 1 and DHW use, Flow Sensor, Plate Heat Exchanger, and Booster Heater.
*4 Piping cover
*5 Wire grille

Ecodan PUHZ Specifications

Hydrobox or Cylinder Systems

- Simple graphical control
- Optional 2-Zone Space Heating Control
- Energy monitoring as standard
- Scale Trap Technology
- Pre-plumbed and wired for faster installation
- Compatible with home automation
- Range of connectable PUHZ outdoor units from 5 to 23kW

Hydrobox

Cylinder
200 Litre Capacity

HYDROBOX*1		EHPX-VM2C	EHSD(C)-VM2C	ERSE-YM9EC
Type		Packaged Monobloc	Packaged Split	Packaged Split
Outdoor Capacity Range (kW)		5.0–14	4.5–16	16–23
Heating Operating Range (°C)	Heating Flow Temperature	25–60	25–60	25–60
	Domestic Hot Water	40–60	40–60	40–60
Sound Pressure Level at 1 metre (dBA)		28	28	30
Dimensions (mm)	Width	530	530	600
	Depth	360	360	360
	Height	800	800	950

CYLINDER *2		EHST20D(C)-VM2C	EHPT20X-VM2C
Type		Packaged Split	Packaged Monobloc
Outdoor Capacity Range (kW)		4.5–16	5–14
Nominal Water Volume (Litres)		200	200
Heating Operating Range (°C)	Heating Flow Temperature	25–60	25–60
	Domestic Hot Water	40–60	40–60
Sound Pressure Level at 1 metre (dBA)		28	28
Dimensions (mm)	Width	595	595
	Depth	680	680
	Height	1600	1600

Please note that options for cooling applications are available, for more technical information please contact your local Ecodan dealer.
*1 Hydrobox includes: Flow Temperature Controller (FTC5) with Main Controller and Temperature Sensors, Water Circulation Pump, Flow Sensor, Booster Heater and Expansion Vessel.
*2 Cylinder includes: Flow Temperature Controller (FTC5) with Main Controller and Temperature Sensors, Pumps and 3-Way Valve for Zone 1 and DHW use, Flow Sensor, Plate Heat Exchanger, Scale Trap, Booster Heater and Expansion Vessel.

PUHZ Outdoor Units for Connection to Hydrobox or Cylinder

					ZUBADAN
PACKAGED MONOBLOC OUTDOOR UNIT		**PUHZ-W60VAA**	**PUHZ-W85VAA**	**PUHZ-W112VAA**	**PUHZ-HW140VHA2**
Heating Capacity (kW)	at 7°C Outdoor Temperature*1	6.0	9.0	11.2	14.0
	at 2°C Outdoor Temperature*2	6.0	8.5	11.2	14.0
Heating Operating Range (°C)	Heating Flow Temperature (UFH/Radiator)	25–60	25–60	25–60	25–60
	Domestic Hot Water	40–60	40–60	40–60	40–60
Sound Pressure Level at 1 metre (dBA)		45	45	47	53
Dimensions (mm)	Width	1050	1050	1050	1020
	Depth	480	480	480	330+30*3
	Height	1020	1020	1020	1350

					ZUBADAN	ZUBADAN	ZUBADAN
PACKAGED SPLIT OUTDOOR UNIT		**PUHZ-SW50VKA**	**PUHZ-SW75VHA**	**PUHZ-SW120VHA**	**PUHZ-SHW80VHA**	**PUHZ-SHW112VHA**	**PUHZ-SHW230YKA2*4**
Heating Capacity (kW)	at 7°C Outdoor Temperature*1	5.5	8.0	16.0	8.0	11.2	23.0
	at 2°C Outdoor Temperature*2	5.0	7.5	12.0	8.0	11.2	23.0
Heating Operating Range (°C)	Heating Flow Temperature (UFH/Radiator)	25–60	25–60	25–60	25–60	25–60	25–60
	Domestic Hot Water	40–60	40–60	40–60	40–60	40–60	40–60
Sound Pressure Level at 1 metre(dBA)		46	51	54	51	52	59
Dimensions (mm)	Width	809+62*5	950	950	950	950	1050
	Depth	300	330+30*3	330+30*3	330+30*3	330+30*3	330+30*3
	Height	630	943	1350	1350	1350	1338

*1 Under normal heating conditions at outdoor temp: 7°CDB / 6°CWB, outlet water temp 35°C, inlet water temp 30°C as tested to BS EN14511.
*2 Under normal heating conditions at outdoor temp: 2°CDB / 1°CWB, outlet water temp 35°C, inlet water temp 30°C as tested to BS EN14511.
*3 Grille.
*4 Compatible with Hydrobox ERSE only.
*5 Electrical cover.

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HOT WATER RADIATORS UNDER FLOOR

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