

The Renewable Solutions Provider
Making a World of Difference

Heating

**Meeting Scotland's
Legislation & Targets**



Air Conditioning | Heating
Ventilation | Controls



Mitsubishi Electric Global Corporation

- Founded in 1921
- Operations in 35 countries
- More than 100,000 employees
- Consolidated net sales of more than US\$32 billion

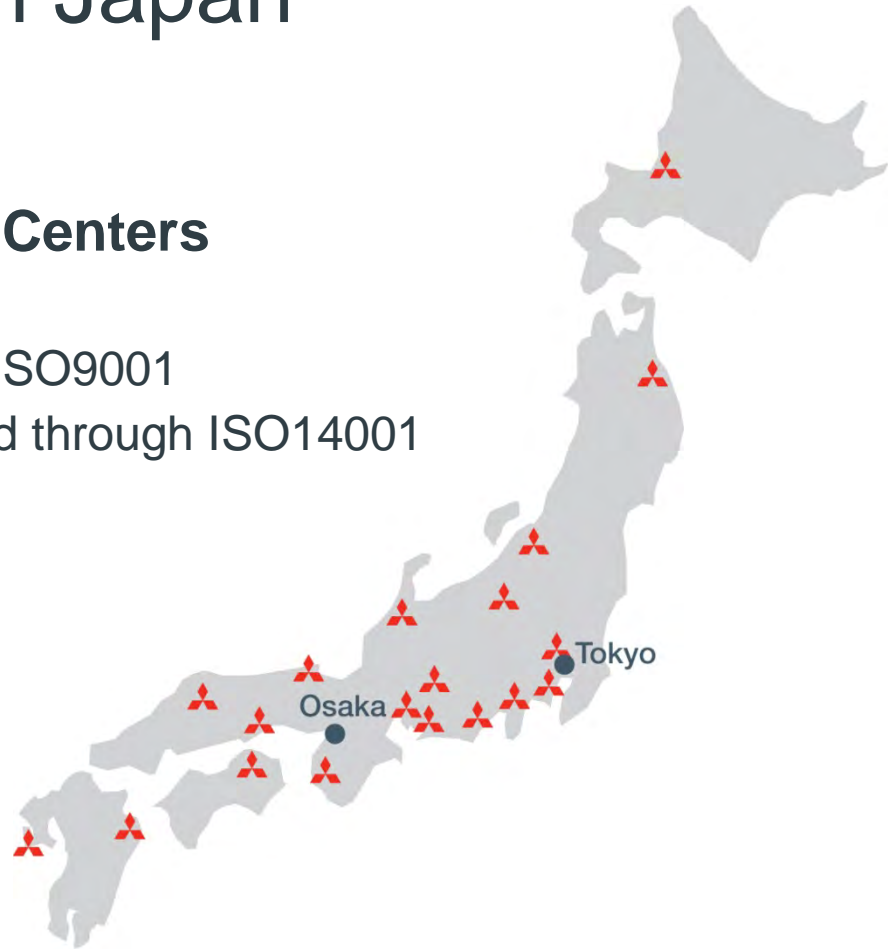


Mitsubishi Electric in Japan

**33 Factories and
12 Research & Development Centers**

Quality Standards assured through ISO9001

Environmental Management assured through ISO14001



Global Research & Development

Advanced R&D Centre

- Power electronics systems
- Electromechanics
- Ecology
- Energy and materials
- Advanced devices
- System solutions
- Imaging systems and displays

Information Technology R&D Centre

- Information processing
- Communications
- Multimedia
- Electro-optics
- Microwave technology



Mitsubishi Global Corporation

Mitsubishi Global Corporation

- US\$32 billion

Mitsubishi Global Corporation includes:

- Mitsubishi Electric Living Environmental Systems
- Bank of Tokyo-Mitsubishi Ltd
- Mitsubishi Motors Corporation
- Mitsubishi Heavy Industries
- Meiji Life Assurance Company
- Kirin Breweries
- Nikon Corporation



Mitsubishi Electric in Europe



Mitsubishi Electric UK Products & Services

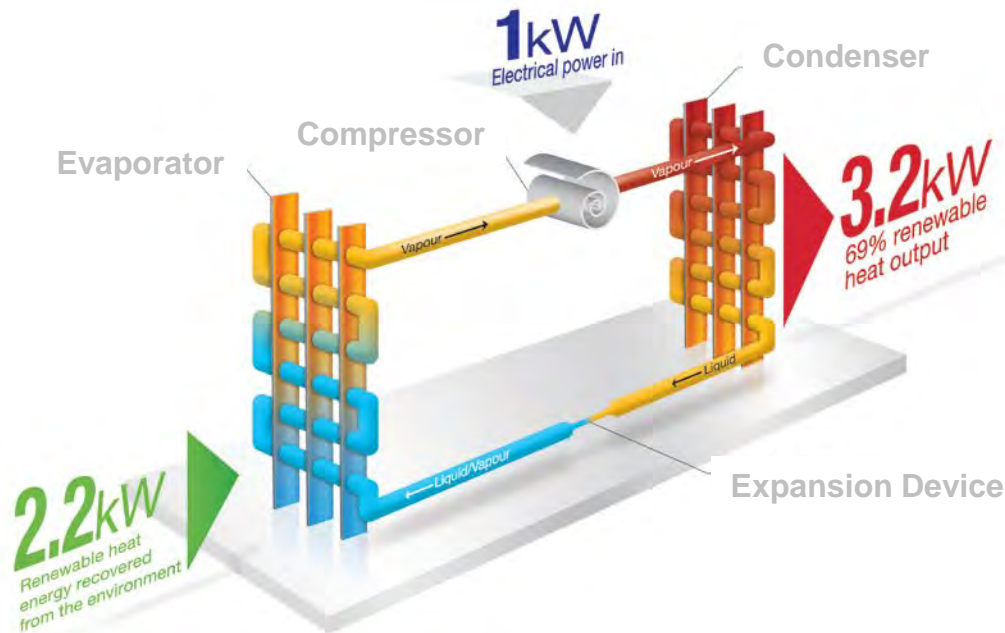
- Living Environmental Systems
- Visual Information Systems
- Factory Automation Systems
- Lifts and Escalators
- Automotive Equipment Group



Why are we here?

- Fuel Poverty
- Fuel Security
- **Scottish Housing Quality Standard**
- **Energy Efficiency Standard for Social Housing**
- Section 6
- Planning Policy
- 11% Renewable Heating Target by 2020

Product – What is a Heat Pump?



Ingeniously simple: Operating in a similar way to a domestic refrigerator in reverse, a heat pump harvests naturally occurring energy, upgrades it and uses it to generate space and/or water heating

Ecodan – The Range



Ecodan Split PUHZ



Made in Scotland



Ecodan Monobloc PUHZ

Ecodan Monobloc CAHV



Heating

Ecodan – Cylinder

Many of the social housing clients prefer the neatness of a pre-plumbed/package cylinder

Keeping the installation standard and ease of maintenance

With the new FTC4 functionality these units are becoming more and more popular



Ecodan – Intelligent Controls

Intelligent Self-learning Control

- Weather compensation – measures outside temperature, and adjusts flow temperature to suit
- Load compensation – measures indoor temperature, and patterns of use and adjusts flow temperature even further to predict user needs



Application – Domestic

The heat pump can easily be located outside the property



The cylinder is normally located within an airing cupboard or utility room

Low Rise Community Heating

Where there are issues with **line of sight** due to **planning requirements** the smaller **slimmer units** can be used



Units can also still be located on **individual flats**

High Rise Community Heating

Centralised
plant allows for
installation of
the equipment
on roof space

This means no
provision of
internal plant
space is
required



Where roof space
is limited self
contained plant
areas could be
required, perhaps
making use of car
parks or local
grounds

School Projects



Application type:

School heating scheme

Product:

6 x Ecodan CAHV heat pump boilers

Capacity:

258kW at -3°C ambient

Heat delivery method:

Underfloor heating and hot water

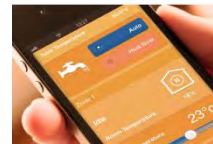
Major Projects in Scotland



- South Lanarkshire Council
 - Circa. 500 installed to date
 - 900 new installation starting this month
- Hebridean Housing Partnership
 - Circa 400 installed to date
 - 100 new installs before April '15
 - 1200 installs over next 4 year
- Highland Council (SCAPE)
 - Phase 1 – 300 systems over the next 6 months
 - Phase 2 – 300-500 systems
- Argyll Community Housing Association
 - 160 systems early next year
- Cairn Housing Association
 - First Financed project (12 systems) installed in December
- Scottish Borders Housing Associations
 - Multiple projects starting early '15
- West of Scotland HA
 - 60 Properties starting Jan '15
- Link Housing Association
 - 40 Properties starting Jan '15

The Future of Heat Pumps

- Increased efficiency
- Energy Monitoring
- Focus on Domestic Hot Water
- Remote Access
- Finance
- Service & Maintenance





Thank you