



**NUETECH**   
ENERGY FOR CHANGING WORLD  
An ISO 9001 : 2015 COMPANY



**HEAT PUMP  
WATER HEATER**  
24/7 - 365 DAYS HOT WATER SOLUTION  
WITH LOWEST OPERATING COST

## WHAT IS HEAT PUMP WATER HEATER?

Heat pump water heaters use electricity to move heat from one place to another instead of generating heat directly. Therefore, they can be two to three times more energy efficient than conventional electric resistance water heaters. To move the heat, heat pumps work like a refrigerator in reverse.

## HOW EFFICIENT IS A HEAT PUMP WATER HEATER?

A Co-Efficient of Performance (COP) is ratio of heat energy produced compared to electrical energy consumed by an appliance. The higher the COP, the less energy is consumed to produce the same amount of heat. A comparison of COPs shows that electric heating has COP of 1; meaning for every 1kW of energy consumed only 1kW of heat is produced. Gas heating is even lower at 0.85, which means for every 1kW consumed only 0.85kW of useful heat is produced.

Nuetech Heat pump water heaters are extremely energy efficient and can achieve COPs 'between' 3-4, meaning they can produce 3-4kW of heat for every 1kW consumed.

## DIFFERENT MODELS OF NUETECH HEAT PUMP

1. DOMESTIC HEAT PUMP
2. COMMERCIAL HEAT PUMP
3. SOLAR INTEGRATED HEAT PUMP
4. SWIMMING POOL HEAT PUMP
5. HIGH TEMPERATURE HEAT PUMP



# UNIQUE BENEFITS OF HEAT PUMP WATER HEATER



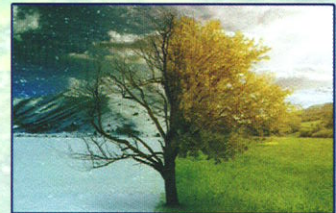
## 1. Heat Pumps Deliver Lower CO<sub>2</sub> Emission

If the electricity is generated by renewable sources like Solar, wind & hydro then the heat pump is 100% renewable and CO<sub>2</sub>-neutral. According to IEA, heat pumps could save 50% of the building sector's CO<sub>2</sub> emissions, and 5% in the industrial sectors. This means that 1.8 billion tones of CO<sub>2</sub> per year could be saved by heat pumps.



## 2. Energy Efficiency

Heat pump water heater offers the highest levels of energy efficiency with the ability to provide 3-4kW of heat energy for every 1kW used.



## 3. Weather Compensation

Weather compensation can detect changes in outdoor ambient conditions, allowing the heat pump to adjust the water temperature. This ensures the right comfort temperature. This ensures the right comfort temperature is produced without excess energy wastage.



## 4. Low Running Costs

The more energy efficient a heating system is, the cheaper it is to run. Heat pump water heater offers the cheapest available kW/h rate for hot water heating.

## HOW DOES A HEAT PUMP WATER HEATER WORK? →

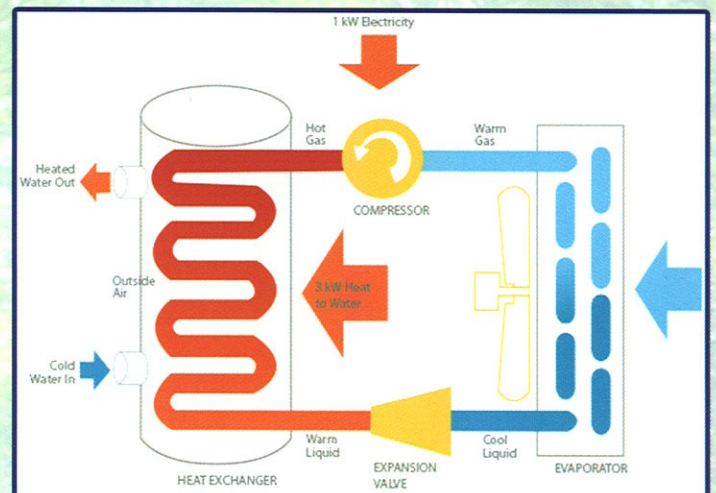
### MAJOR SYSTEM COMPONENTS

The following are the major systems, sub systems & components that are used for heat pump

1. Evaporator
2. Refrigerant
3. Compressor
4. Condenser
5. Expansion Valve

### WORKING

- ▶ An operation begins with air being forced through an "EVAPORATOR" Which contains a liquid "REFRIGERANT", with the help of fan.
- ▶ The refrigerant evaporates to a gas and extracts heat from the ambient air.
- ▶ The warm gaseous refrigerant then passes through the compressor, which increases its pressure and it becomes a hot gas.
- ▶ This hot gas enters a heat exchanger (condenser) and transfers its heat to the water inside a storage tank.
- ▶ The refrigerant cools down in the condenser during this process and becomes a warm liquid.
- ▶ It then passes through an expansion valve and becomes a cool liquid and enters the evaporator again.
- ▶ The cycle is then repeated in this manner.
- ▶ The heat absorbed from the air is transferred to the water and heating continues till the desired temperature is reached.



# HEAT PUMP COMPARISON WITH COMPETING TECHNOLOGIES

Heat pump technology scores across all parameters

Parameters	Heat Pump	Solar Water Heater	Electric Geyser	LPG Fired	Diesel Fired
Energy Savings w.r.t Conventional	Up to 75%	60-75%	N.A	N.A	N.A
Space Requirement	5% Of Solar	N.A	5% Of Solar	5% Of Solar	5% Of Solar
Climate Independent	Yes	No	N.A	N.A	N.A
Efficiency	Up to 400%	Up to 95%	Up to 95%	Up to 80%	Up to 80%
Maintenance	Minimal	Panel Cleaning	High	Moderate	High
Environment Friendly	Yes	Yes	No	No	No
Safety	Yes	Yes	Moderate	No	Moderate

## TECHNICAL SPECIFICATIONS

### DESCRIPTION

	3kW	5kW	11kW	19kW
Rated Heating capacity	3kW	5kW	11kW	19kW
Rated input power (kW)	0.9	1.34	2.7	4.5
Rated current (A)	4.1	5.9	10.9	7.41
COP (coefficient of performance)	4	3.96	4.2	4.2
Power supply-v/Hz/ph	220/50/1	220/50/1	220/50/1	440/50/3
Refrigerant	R410A	R410A	R407C	R407C
Rated heated water output (L/H)	80	140	250	450
Rated outlet water temp (°C)	55	55	55	55
Max outlet water temp (°C)	60	60	60	60
IP grade (level of protection)	IPX4	IPX4	IPX4	IPX4



## Swank's Innovative.

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