

# Gas Heat Pump Workshop 2011

December 1st, 2011

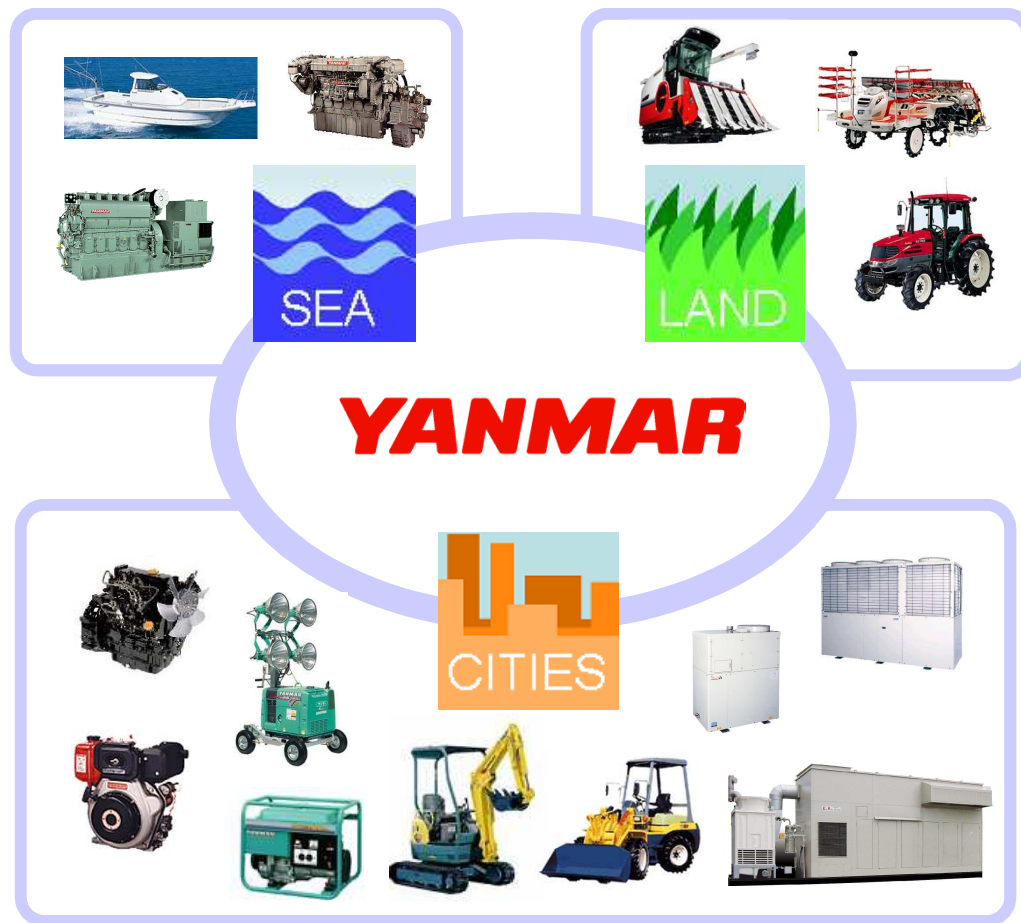
YANMAR ENERGY SYSTEM CO.,LTD

**YANMAR**

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## Yanmar group and time-line



2012	Yanmar 100 <sup>th</sup> year GHP 25 <sup>th</sup> year
2002	Gas engine cogeneration
1987	GHP sales started
1985	Diesel engine cogeneration
1933	World's first small diesel engine
1912	Founded

Active in many sectors, long experience with GHP

# Yanmar Gas Engine 1

## Yanmar 'diesel-base' gas-engine



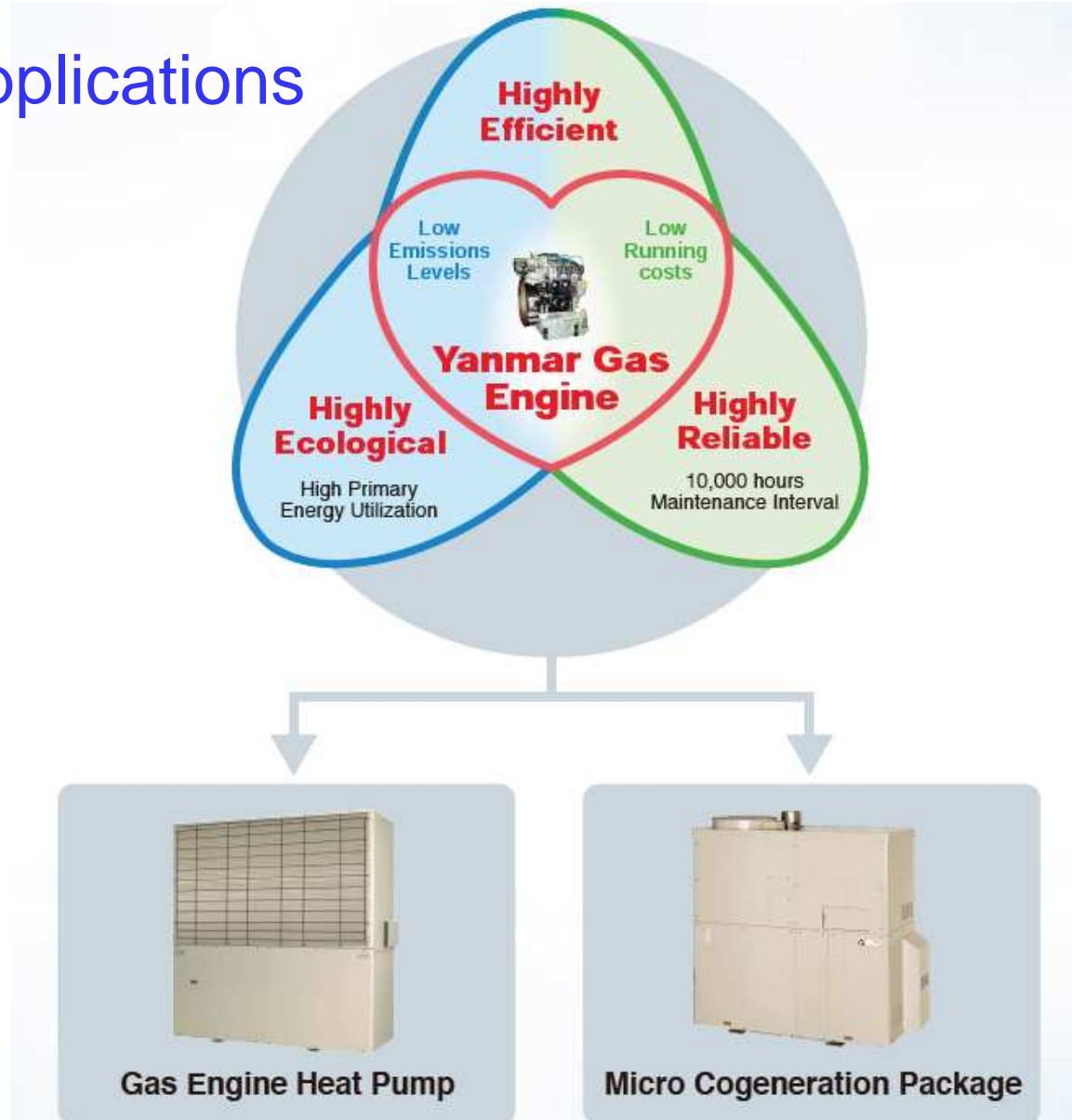
nearly 25 years experience  
over 250,000 installations

- ❑ High efficiency  
Lean burn combustion & Miller cycle
- ❑ High durability  
Maintenance interval: 10,000 hrs  
Refresh maintenance: 30,000 hrs
- ❑ High stability

Own engine technology, diesel base gives reliability

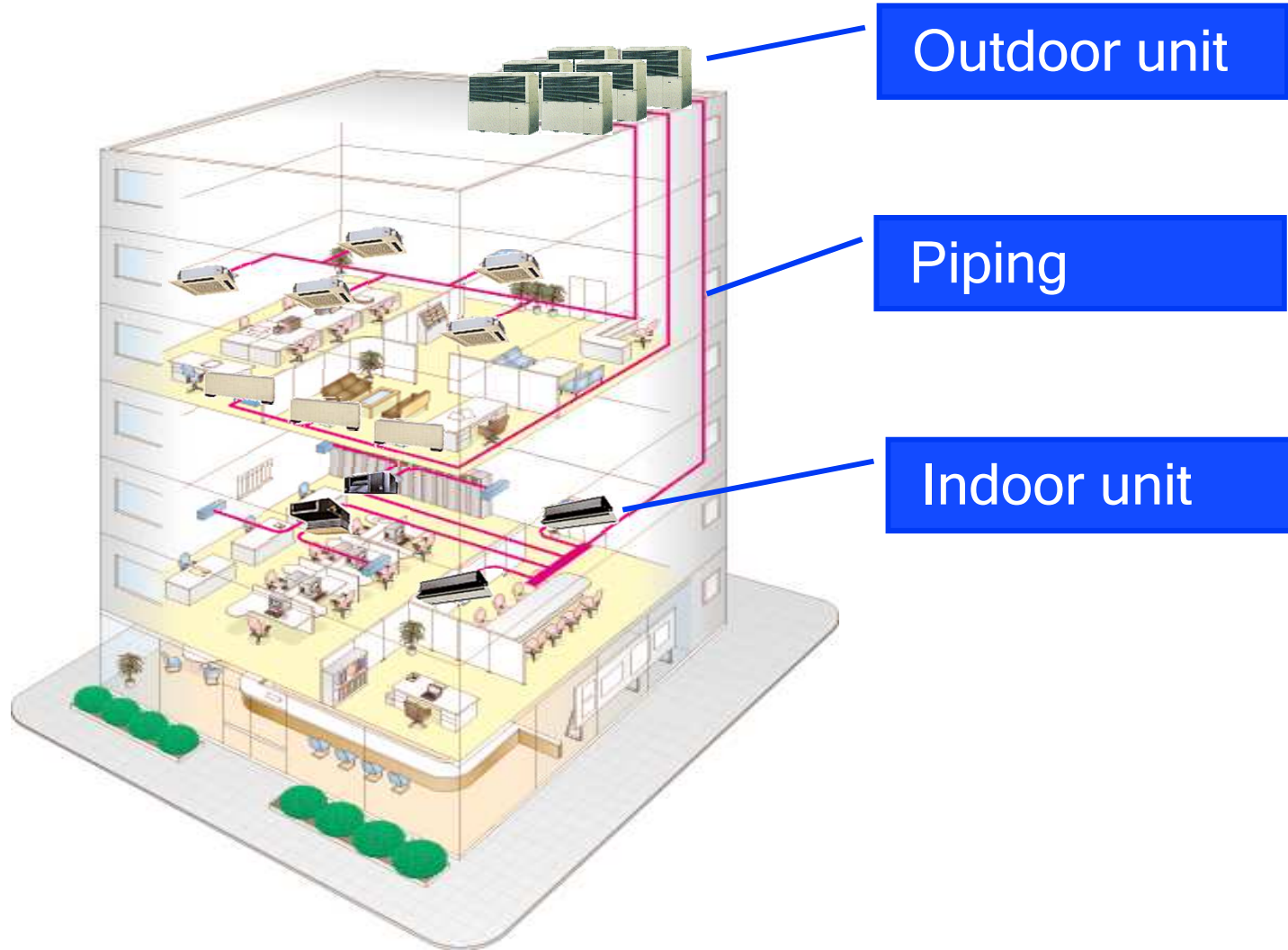
# Yanmar Gas Engine 2

## Engine applications

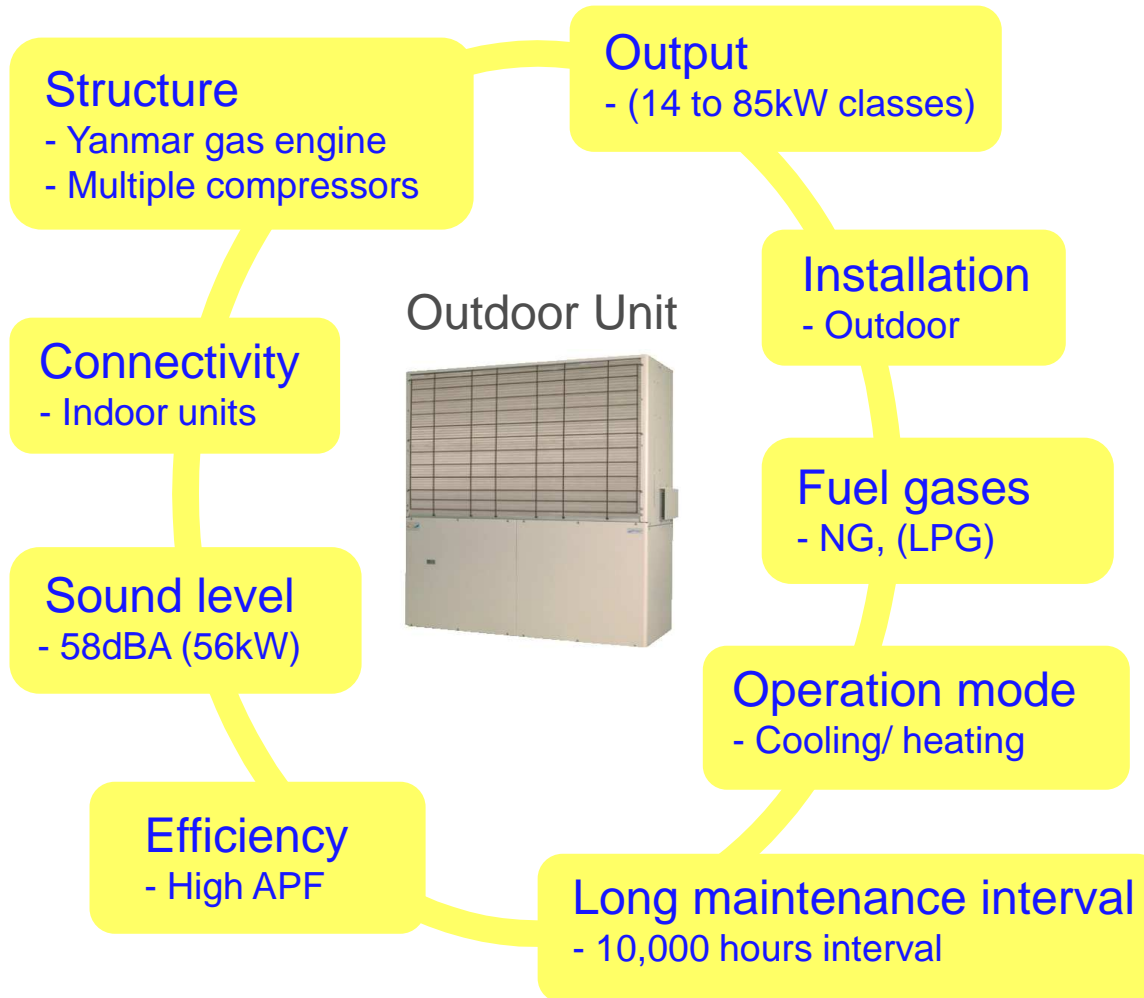


# Yanmar GHP Structure

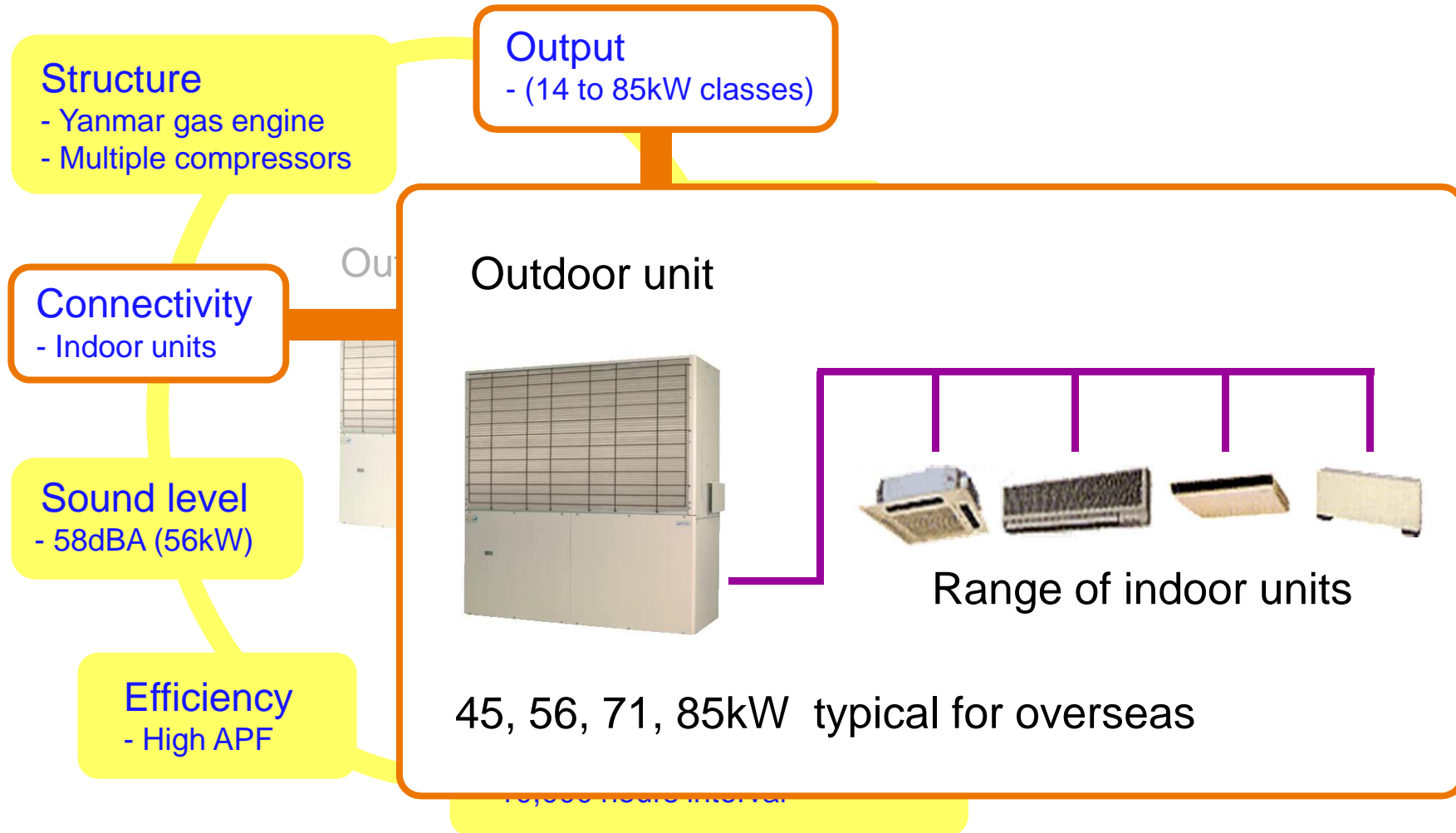
## Direct-expansion GHP system



# Key Features of Air-source Gas Engine GHP




# Key Features of Air-source Gas Engine GHP



Wide range of base unit outputs available

# Key Features of Air-source Gas Engine GHP


## Outdoor unit










Outdoor unit line-up	Indoor unit connection capacity
45kW type .....	26 units
56kW type .....	32 units
71kW type .....	40 units
85kW type .....	48 units

## Indoor units

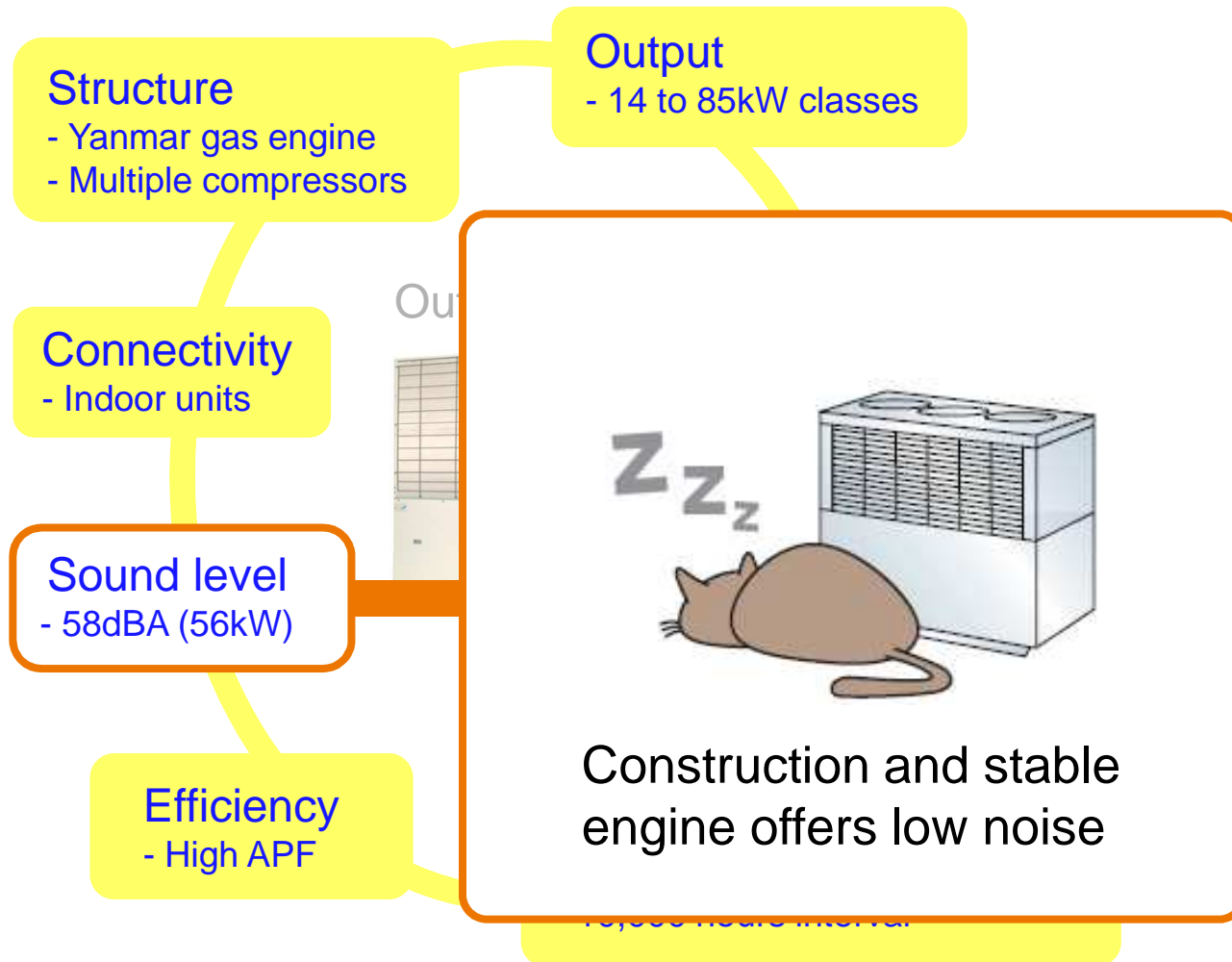
(Full range of models and power given in catalogues)



-  4-Way Cassette type
-  Ceiling type
-  Concealed Duct type
-  Concealed Duct type
-  Wall-Mounted type
-  Floor Standing type
-  Floor type

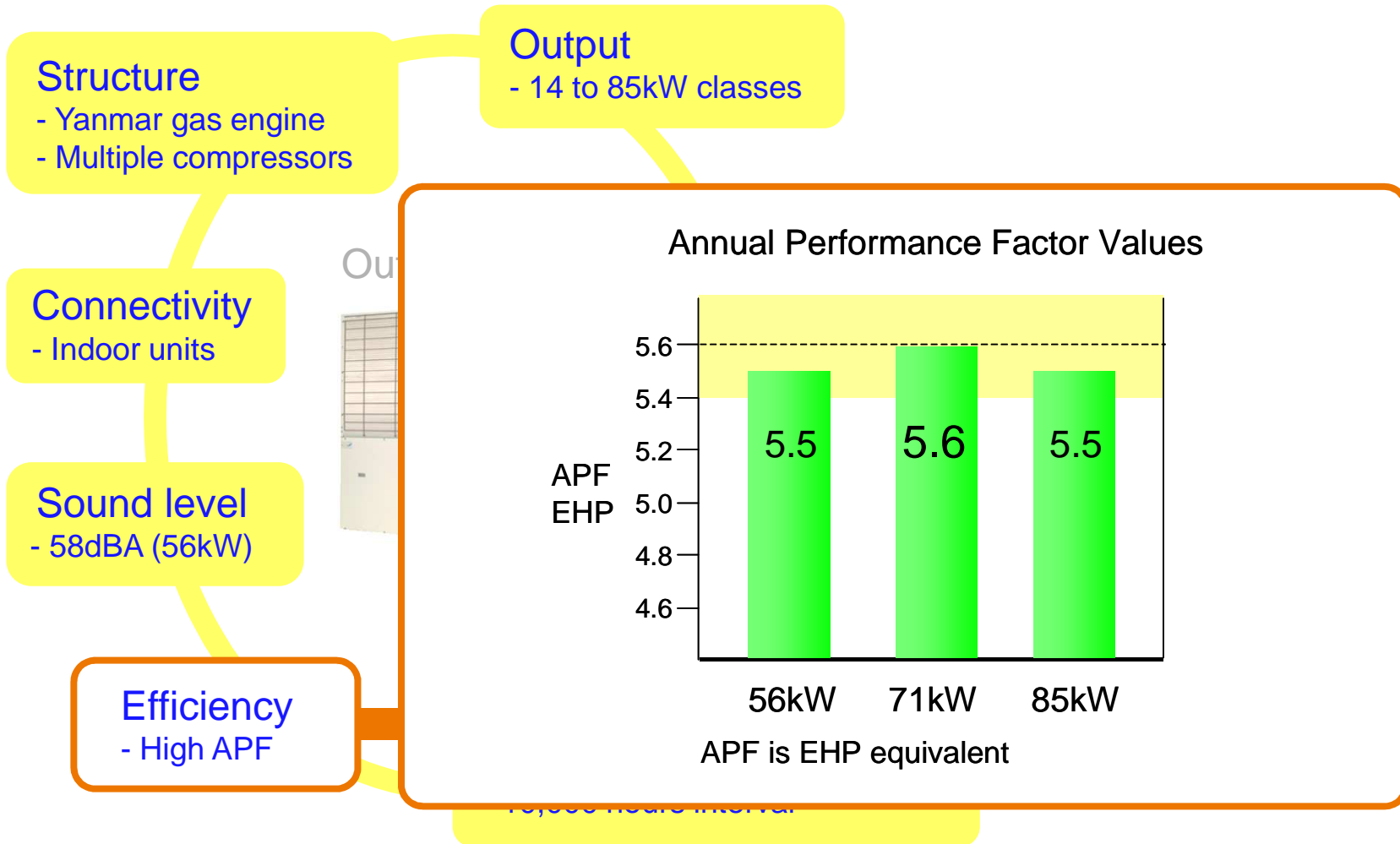
**85kW unit offers reduced cost and space for end-users**

# Key Features of Air-source Gas Engine GHP



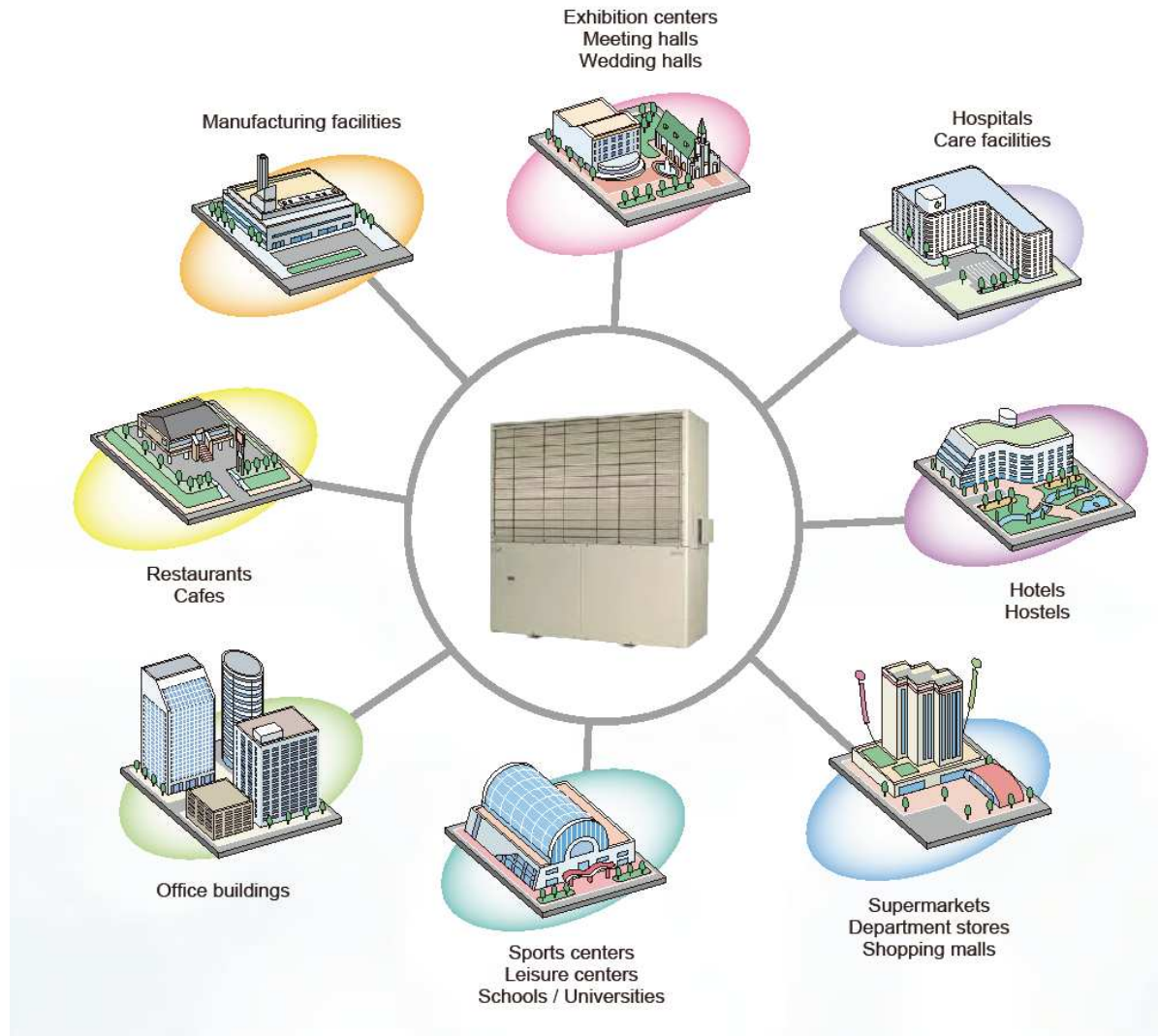
Low noise for installation on or near buildings

# Key Features of Air-source Gas Engine GHP



High annual performance factor for high efficiency

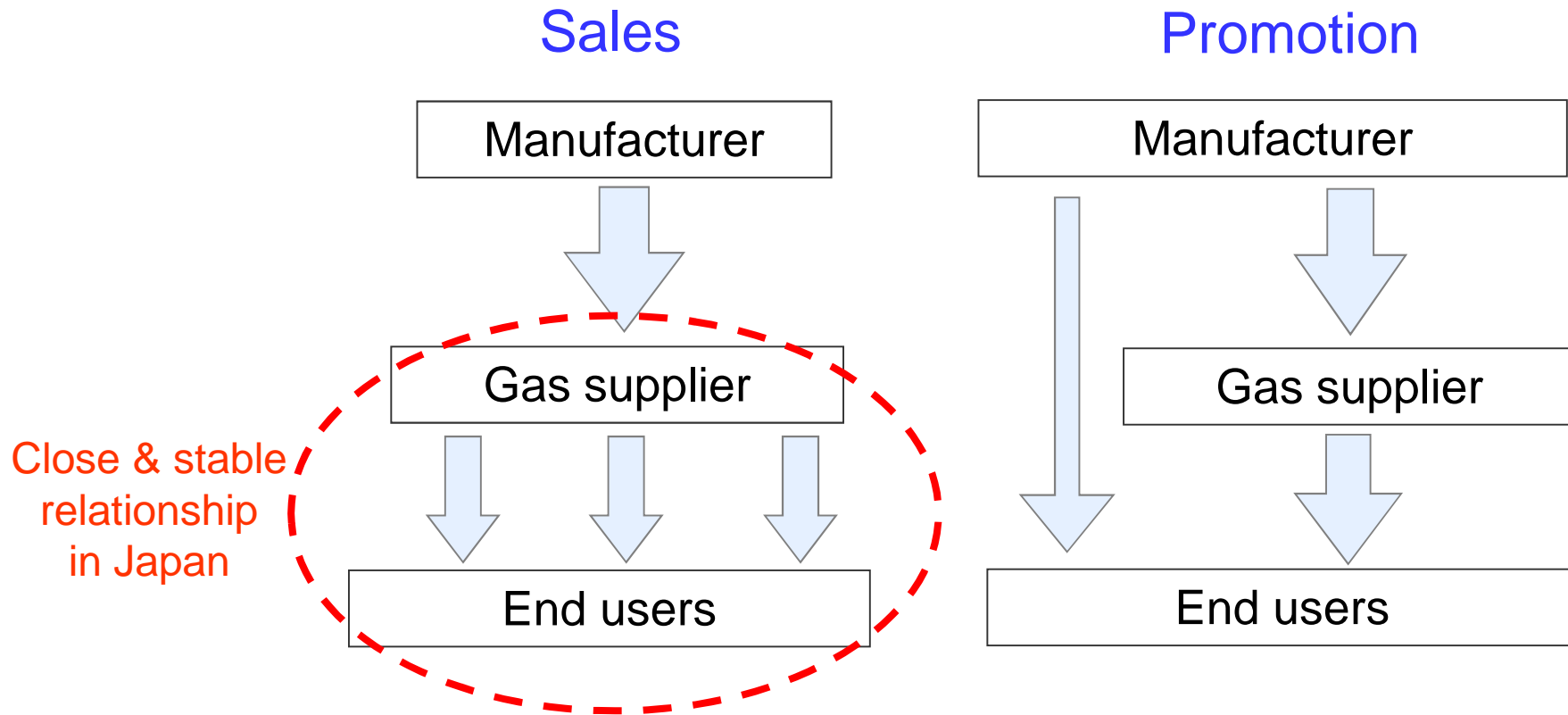
# Typical Applications



# Commercial Promotion 1

## In the case of Japan- sales & promotion

Japanese installations about 700,000 units



# Commercial Promotion 2

## In the case of Japan- incentives

Japanese installations about 700,000 units

Incentive type	GHP incentive
Initial purchase	7% of value tax deduction
Gas price	Special rates apply
Feed-in tariff	

# Commercial Promotion 3

## In the case of Europe

We see the following as important:

- 1) Structure of incentives to support efficient gas appliances
- 2) Need to raise general awareness of GHP
- 3) Good partners in Europe



THANK YOU FOR YOUR ATTENTION.

***YANMAR***