

Q-ton Air to Water

Air to Water Heat Pump Utilising Natural Refrigerant CO2



Business Case for
Natural Refrigerants

02/05/17 - Sydney



Q-ton *Air to Water*



High Performance

Hot water supply from

60c to 90c

High Efficiency

High coefficient of performance
(4.3 in intermediate season)

Environmentally Responsible

High efficient CO₂ as a refrigerant

Easy operation

Advanced operation touch
screen LCD

Long-term Reliability

High quality robust technology

Future Project Analysis



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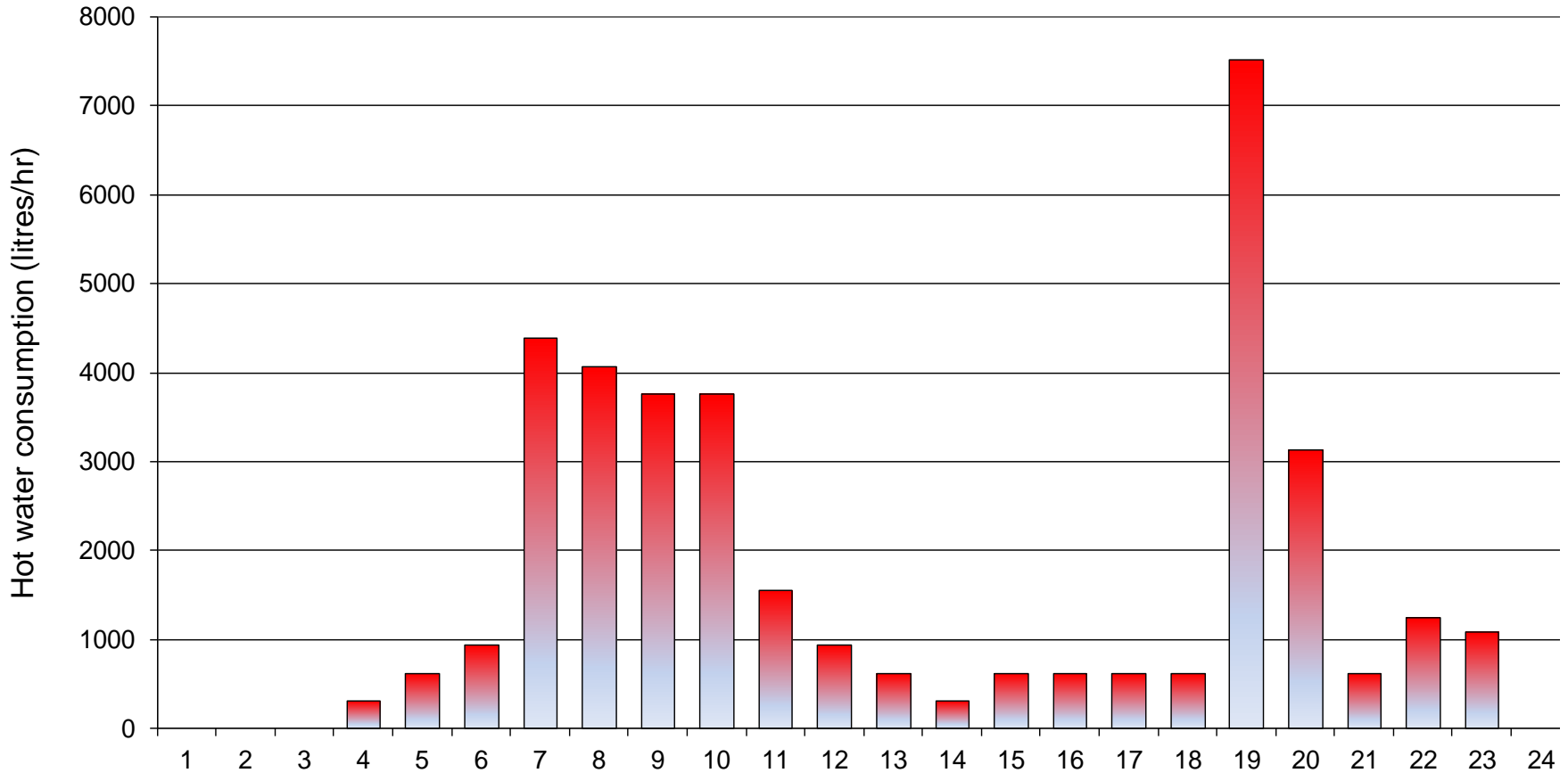


5★ Hotel 220 Rooms

- Consumption
- Load Vs capacity
- Life Cycle Cost Analysis
- Emissions
- Estimated Annual Running Cost
- Pipe Work Schematics
- Next Generation Q-ton
- Q-ton Service and Maintenance Agreement

Profiling Consumption

Daily consumption **37,400** litres/day



Profiling Consumption

period

0:00 to 1:00

1:00 to 2:00

2:00 to 3:00

3:00 to 4:00

4:00 to 5:00

5:00 to 6:00

6:00 to 7:00

7:00 to 8:00

8:00 to 9:00

9:00 to 10:00

10:00 to 11:00

11:00 to 12:00

12:00 to 13:00

13:00 to 14:00

14:00 to 15:00

15:00 to 16:00

16:00 to 17:00

17:00 to 18:00

18:00 to 19:00

19:00 to 20:00

20:00 to 21:00

21:00 to 22:00

22:00 to 23:00

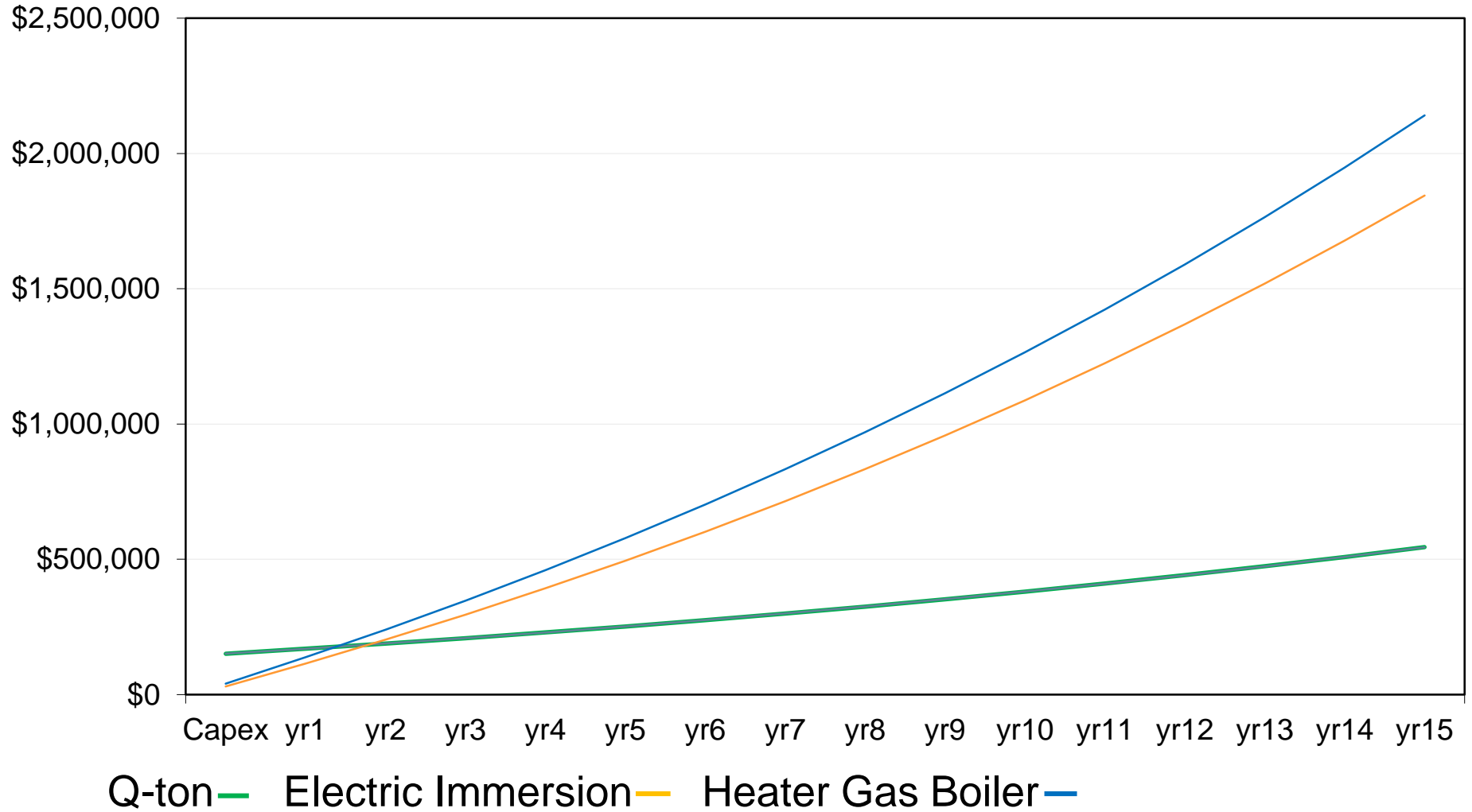
23:00 to 24:00

Total :

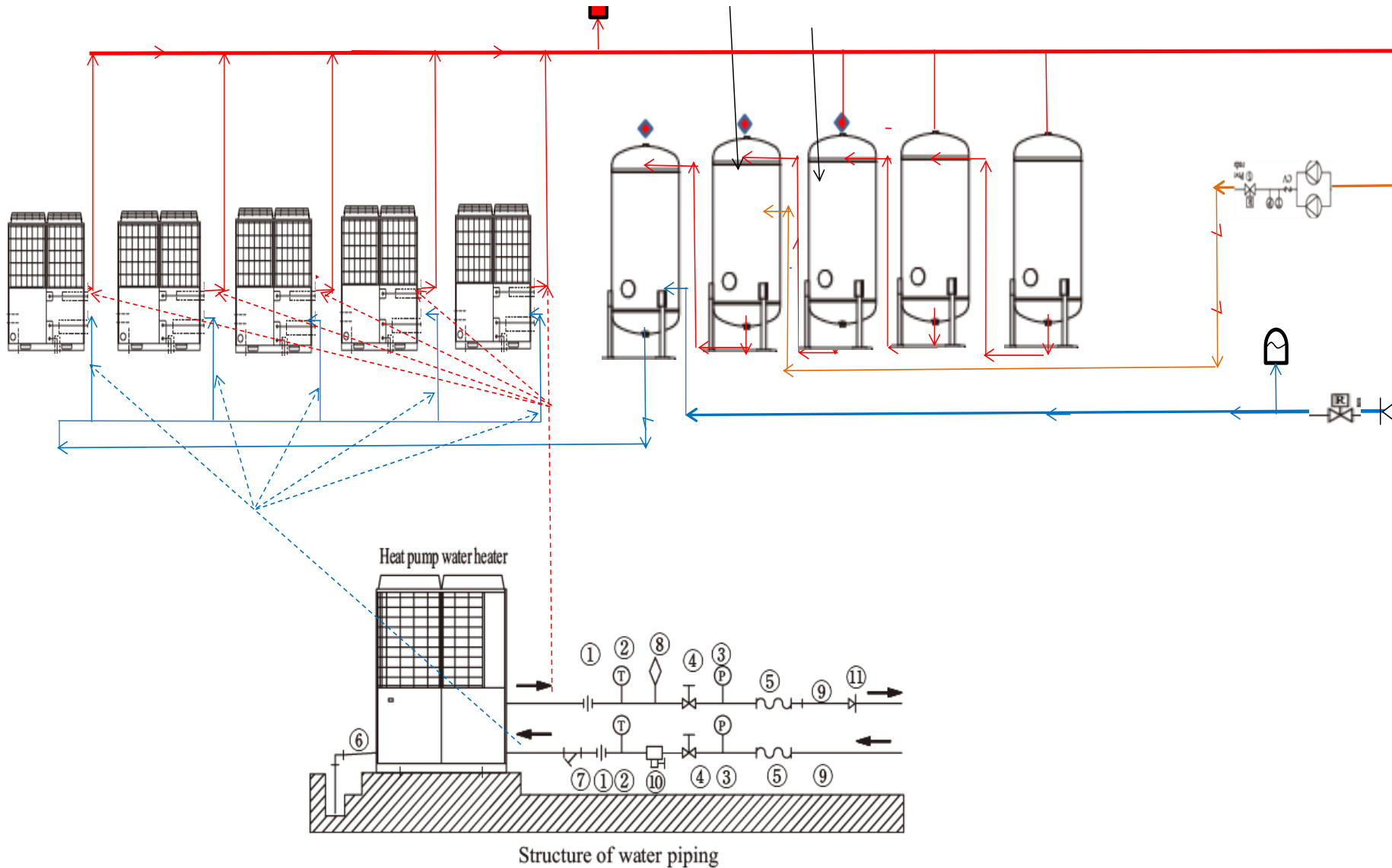
0
0
0
312
624
936
4384
4072
3760
3760
1560
936
624
312
624
624
624
624
624
7521
3136
624
1248
1092
0

37400 litres/day

Theoretical life Cycle Cost

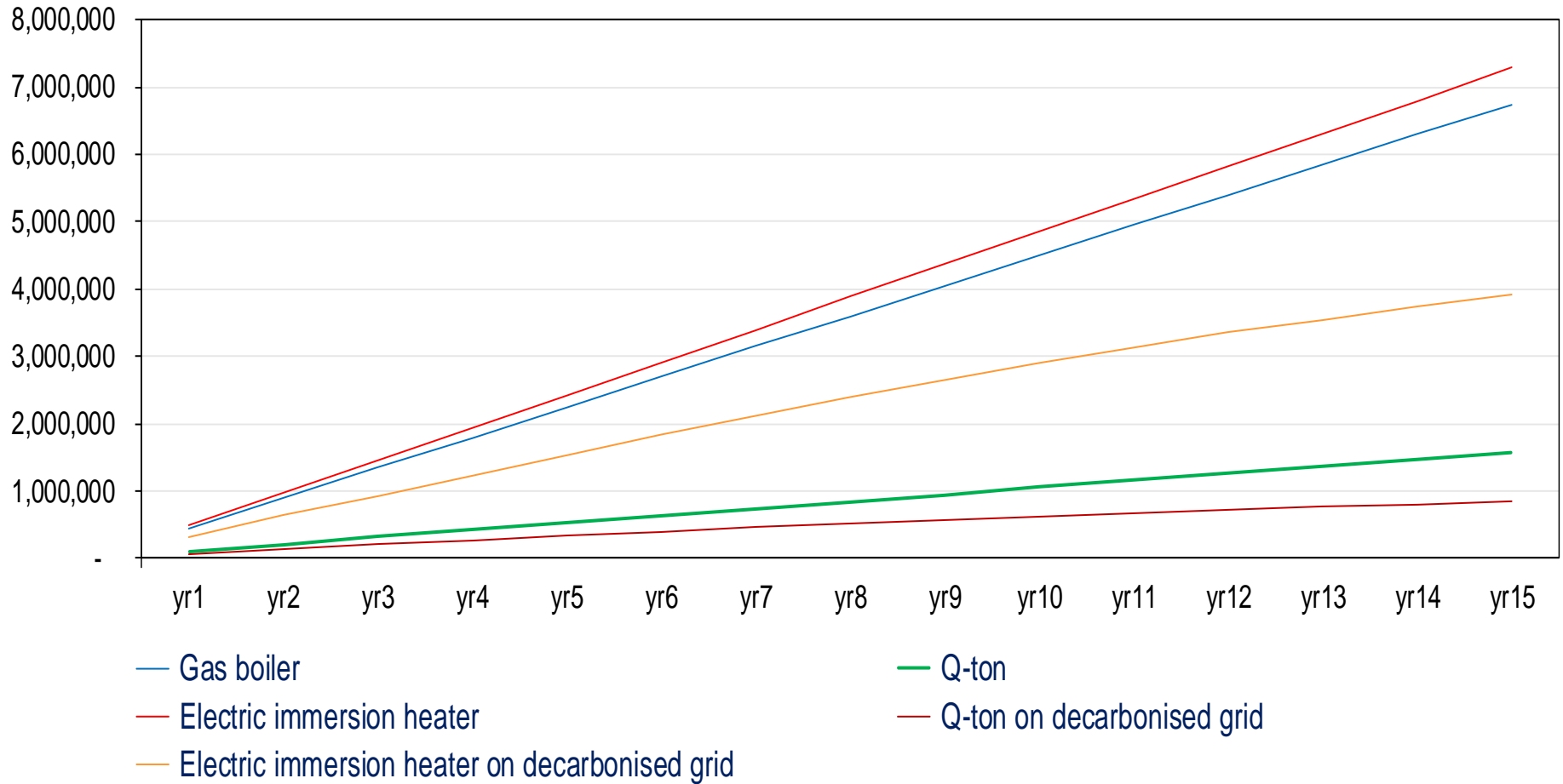


Tank and Pipe Work



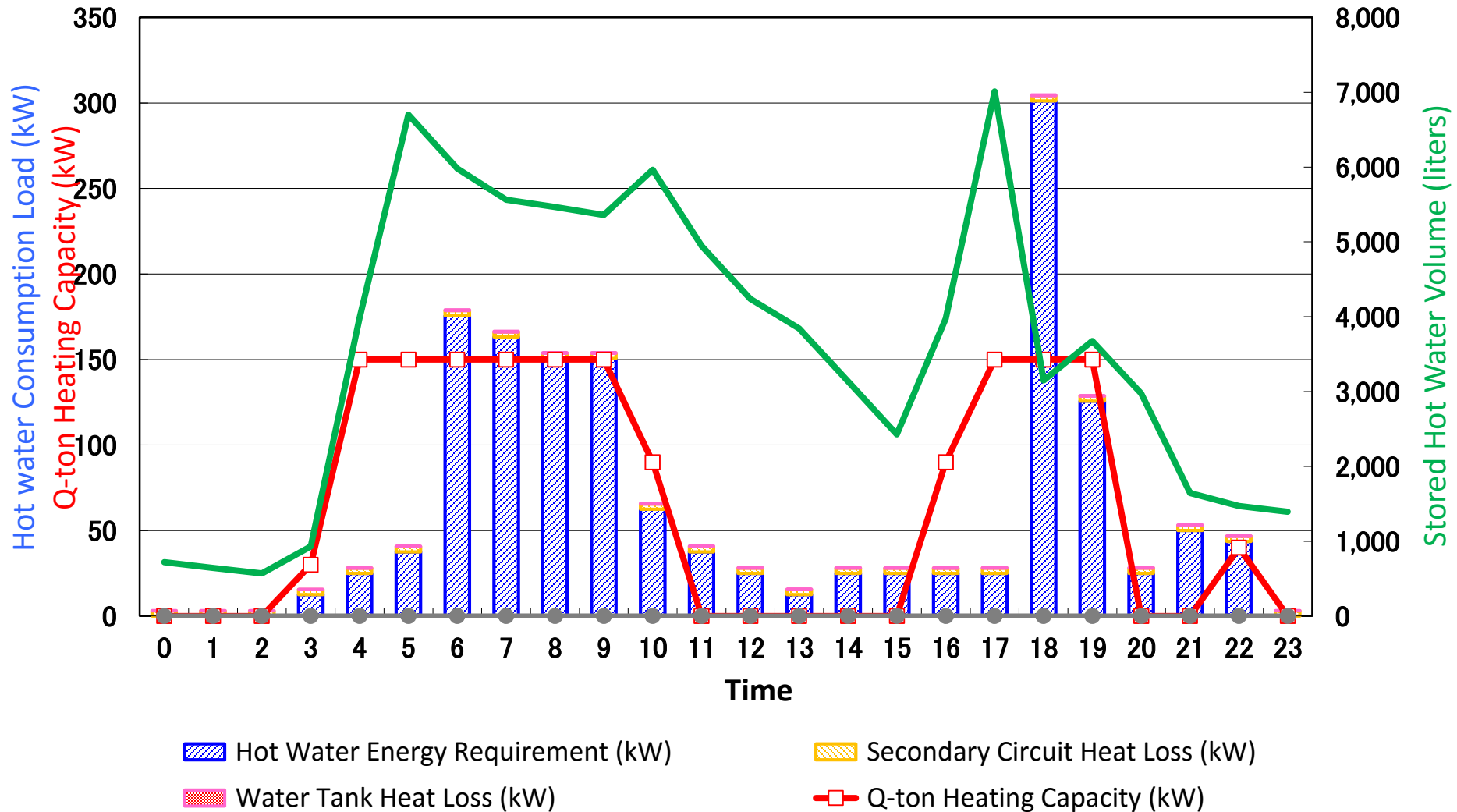
Estimated CO2 Emissions

Estimated CO2 emissions



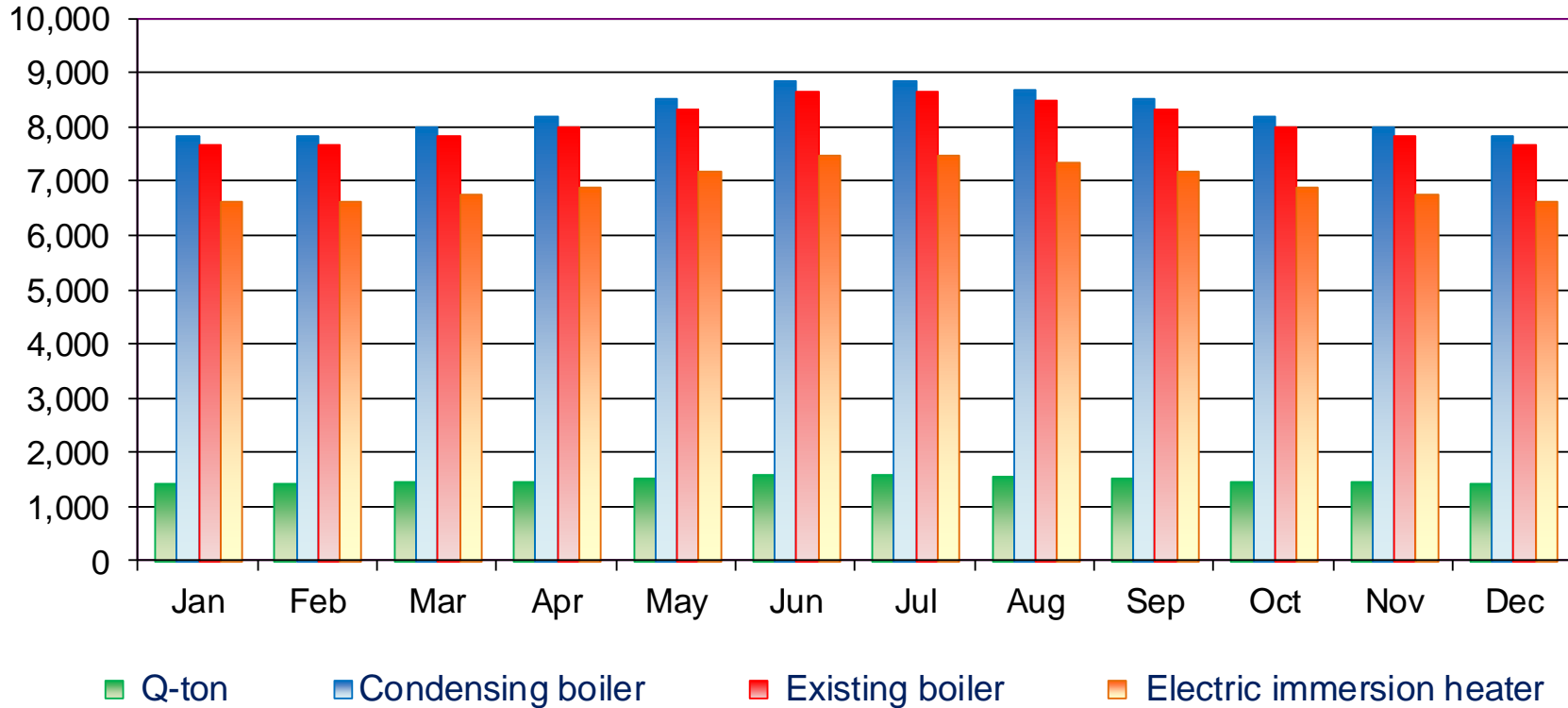
Load and Capacity

Load vs Capacity



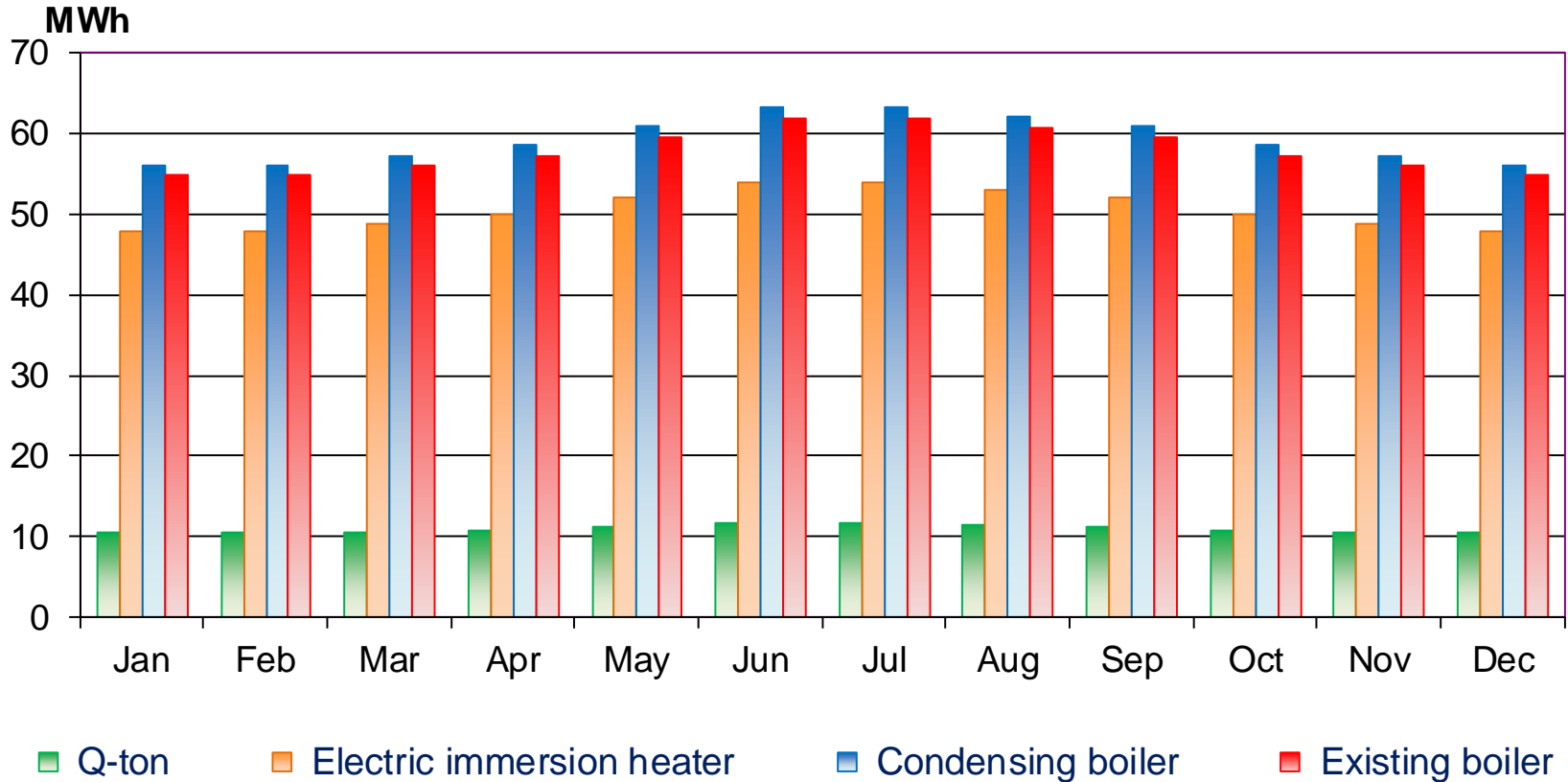
Annual Running Cost Comparison

Running cost comparison (\$)



Annual Energy Cost Comparison

Energy consumption comparison (MWh)



Q-ton *Air to Water*

Air-to-water CO₂ heat pump
Typical operation cycle



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AIR CONDITIONING EUROPE, LTD.**



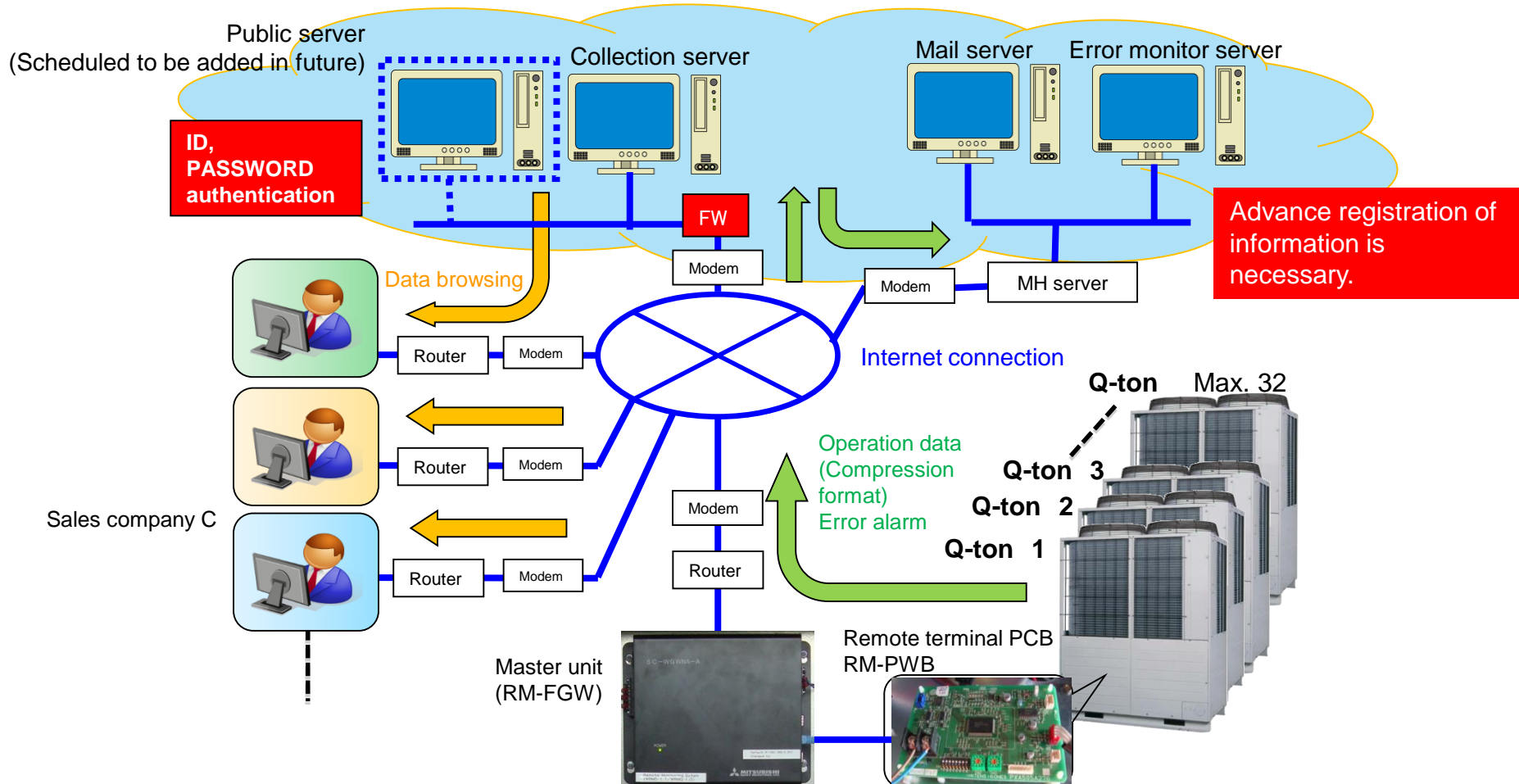
MHI MITSUBISHI
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Our Technologies, Your Tomorrow

- The remote monitoring uses the server administered by MHI.
- It is necessary to set the customer information on the server for the remote monitoring.
- Please fill necessary information on the following questionnaire form, and submit it via your distributor.
- If you could submit the information a week earlier than the installation date, the work will be carried out smoothly on the date.

2. Data collection for setting of server

- The remote monitoring uses the server administered by MHI.
- It is necessary to set the customer information on the server for the remote monitoring.
- Please fill necessary information on the following questionnaire form, and submit it via your distributor.
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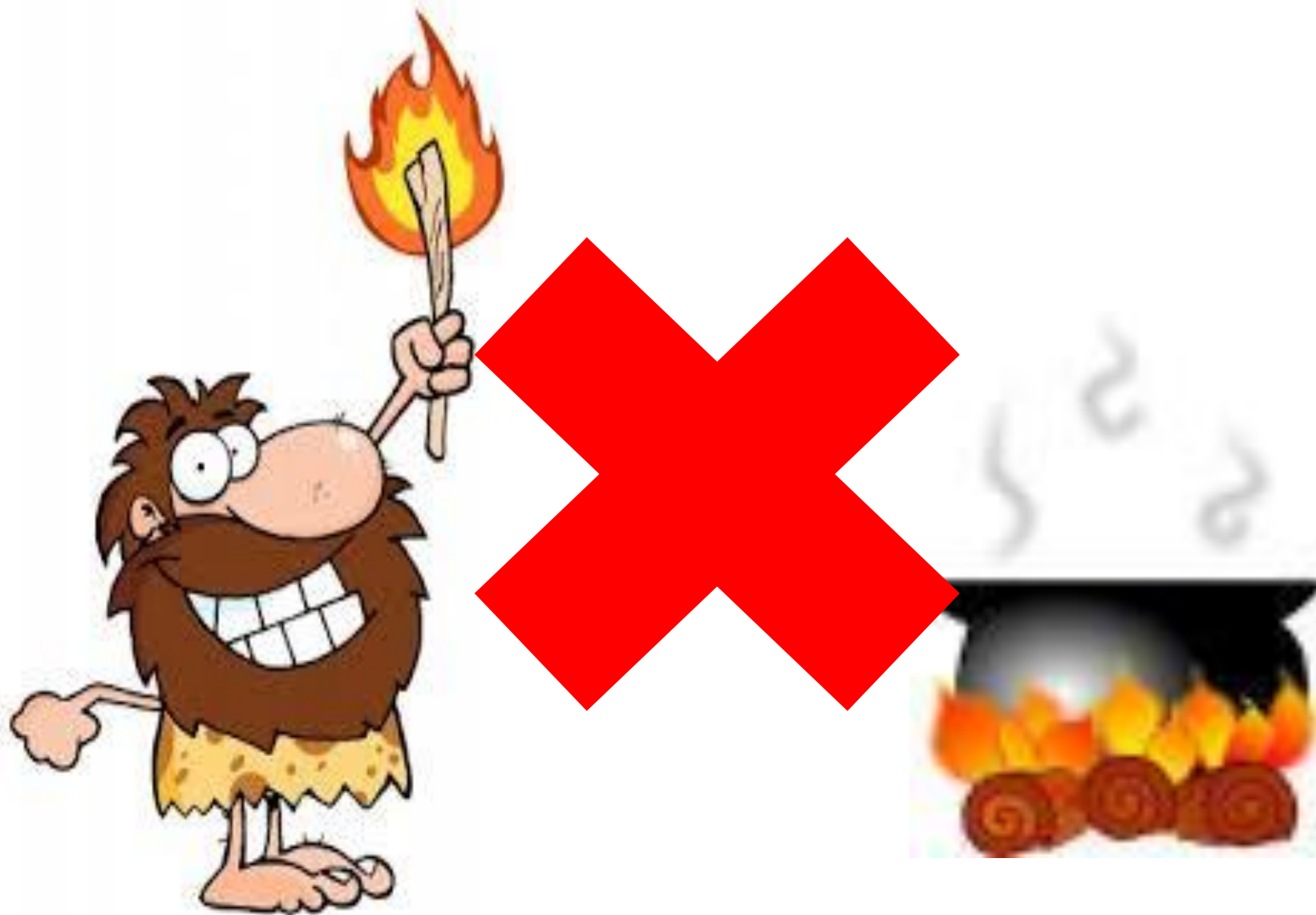
Brisbane Office Q-ton Training Facility



Q-ton Service and Maintenance Agreement

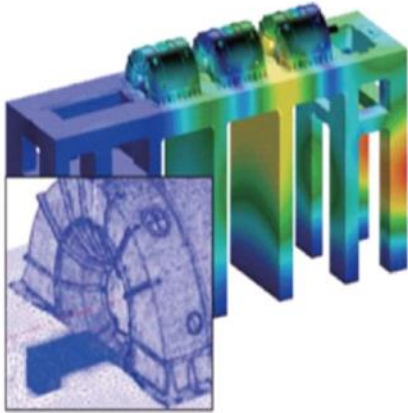


Conventional Australian Hot Water Production



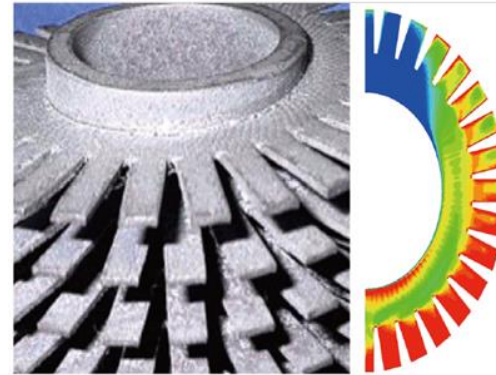
Collaboration with MHI Research Laboratories

Fundamental product research and component research are conducted using cutting-edge testing equipment, analysis equipment, and technology possessed by Mitsubishi heavy Industries research laboratories.



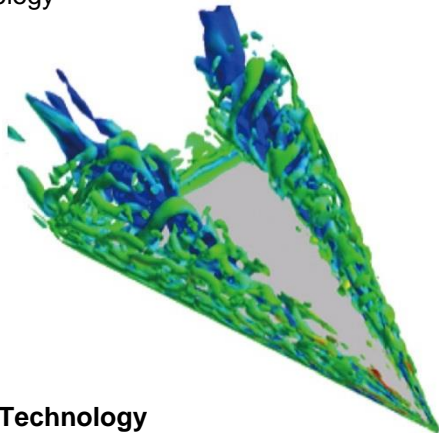
Vibration Technology

Large-scale vibration and sound simulation technology



Heat Transfer Technology

Development of high-performance finned tubes for exhaust air heat recovery boilers



Fluid Technology

Development of airplane aerodynamic characteristic analysis technology



Technology for improving performance of turbo units

Development of gas turbine aerodynamics

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