

# Heat up Carbon down

## Financing of CO<sub>2</sub> neutral heat pump solutions – Survey report 2023

The global energy demand for heating and cooling, which accounts for 50% of total energy consumption and contributes to 40% of CO<sub>2</sub> emissions, has increased significantly. This current situation challenges both cost-efficiency and environmental sustainability. However, heat pumps present a compelling solution. They serve as a practical and efficient means of reducing heating costs and carbon emissions in utilities and process industries. Large-scale heat pumps, especially when driven by renewable electricity, pave an economical route to achieve a fully decarbonized heating and cooling supply.

MAN Energy Solutions promotes a sustainable energy future. To this end, the company offers various **climate-neutral and energy-efficient heat pump solutions**. The heat pumps can be tailored to multiple applications and customer requirements, adjusting to individual temperature and power needs. With a supply temperature range of 60-280°C, these heat pumps can heat water and liquids, process heating, and steam production. The power outputs range from 10 megawatts thermal (MWth) to over 90 MWth per unit, with the potential for higher outputs using multiple heat pumps in parallel operation. Financing is a key consideration when deciding on the optimal heat pump technology. Thus, understanding which financing options are most suitable for customers is critical.

**In this survey, MAN Energy Solutions highlights four main financing approaches:**

### **1. Heat as a Service:**

The provider covers all installation and energy costs and operates the heat pump. The client pays only for the output they require.

### **2. Equipment as a Service:**

The provider assumes all technical costs for the heat pump and its installation, while the customer pays for the energy costs.

### **3. Classic Leasing:**

The provider charges the customer for machine operating times, maintains equipment ownership, and handles the installation.

### **4. Long-Term Service Agreement (LTSA):**

The customer pays for machine operating times like leasing. The provider manages the installation and then transfers ownership rights to the customer while remaining responsible for the operation of the machines.

This report will provide further **insight into the most popular financing options among MAN customers**, guiding you toward the most effective and sustainable energy choices.

## Result overview

### Survey Results: Large-Scale Heat Pump Interest and Financing Models

The following report provides an overview of a recent survey to understand company interests in large-scale heat pumps and their respective financing models. 102 participants contributed to this study over a timespan of two months.

### Heat Pump Interest

The results of this study indicate a strong interest in purchasing large-scale heat pumps among both small and large companies. Thermal needs varied considerably from 10 MWth to 100 MWth, with most companies expressing needs in the 10-20 MWth range. Some companies demonstrated higher demands, even above 280 °C. However, the majority required temperatures within the 60-150 °C range. This diverse range of needs speaks to the flexibility and adaptability of large heat pumps for different operational processes.

### Maintenance and Monitoring

A significant result from the survey was the high level of acceptance for maintenance and monitoring services provided by the heat pump manufacturer, with over 85% of participants indicating their preference for this. This result underscores the importance of reliable operation and readily available expertise, highlighting the necessity for smooth operation of the heat pump.

### Financing Options

The survey brought to light important details concerning financial strategies. Most companies indicated a willingness to self-finance their investments, indicating their financial stability and a desire for control over financing. However, many companies were also open to funding through a bank or investors, suggesting that external support could be a viable and desirable option for some.

### Preferred Financing and Operating Models

Regarding the preferred financing and operating models for large-scale heat pumps, the survey didn't show a clear preference. Despite this, the Long-Term Service Agreement (LTSA) model received the most votes, followed by Heat-as-a-Service and Leasing.

### Conclusion

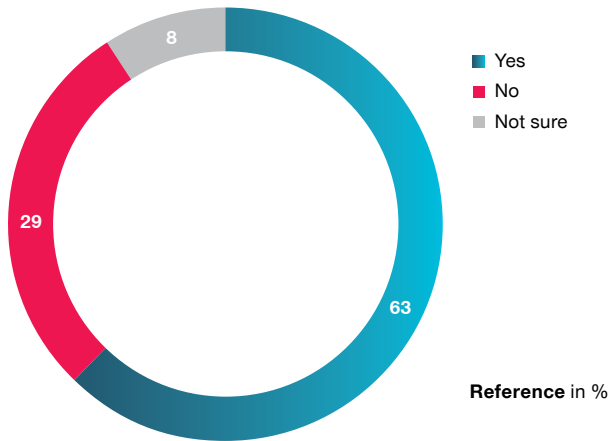
The survey results confirm the growing interest in large-scale heat pumps and their vast applications. There was a clear preference for maintenance and service support provided by manufacturers. On the other hand, various financing and operating models were not the primary focus for companies. However, we anticipate that these considerations will gain more importance in the future.



## Your current project intentions in terms of large-scale heat pumps

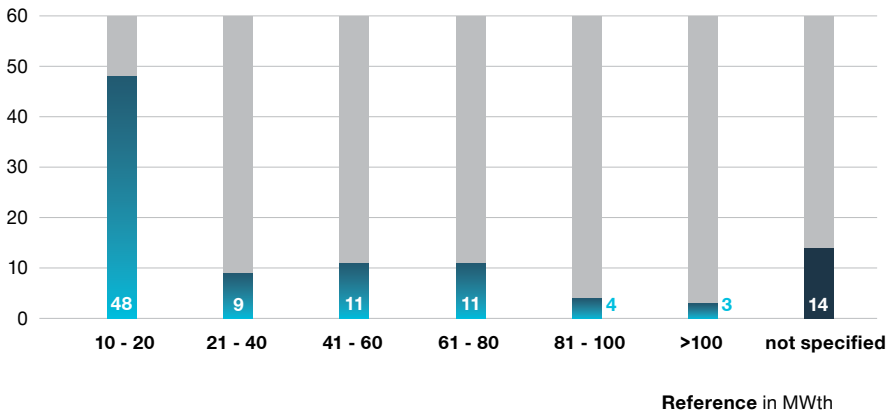
Have you considered installing a large-scale heat pump system in your facility?

n = 80



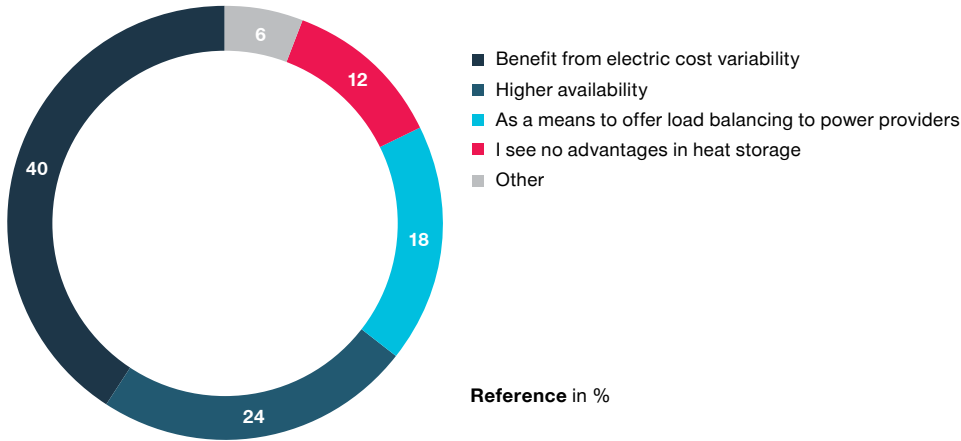
What thermal size would your facility require?

n = 79



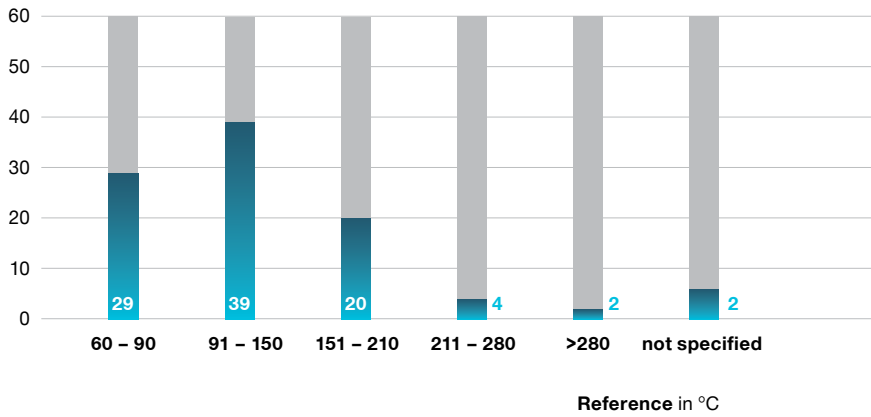
**How do you judge the benefits of thermal storage?**

n = 51



**At what temperature does your facility require the heat?**

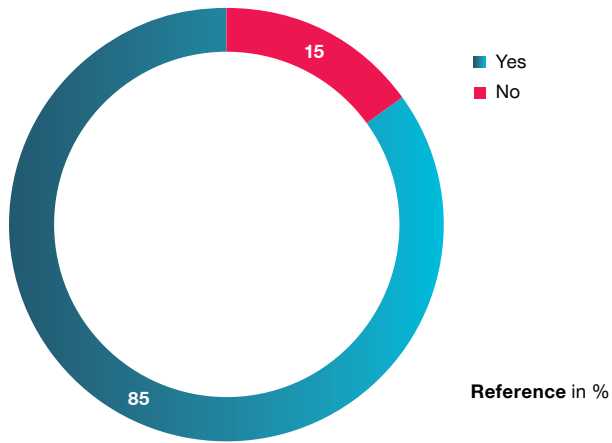
n = 51



## There are many ways to finance your installation. Which one do you take?

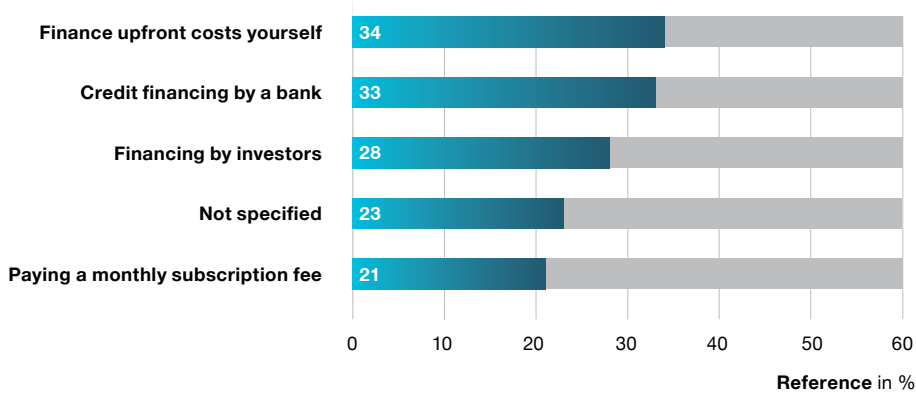
Would you consider a monitoring and maintenance program to optimize performance and availability by the supplier?

n = 61



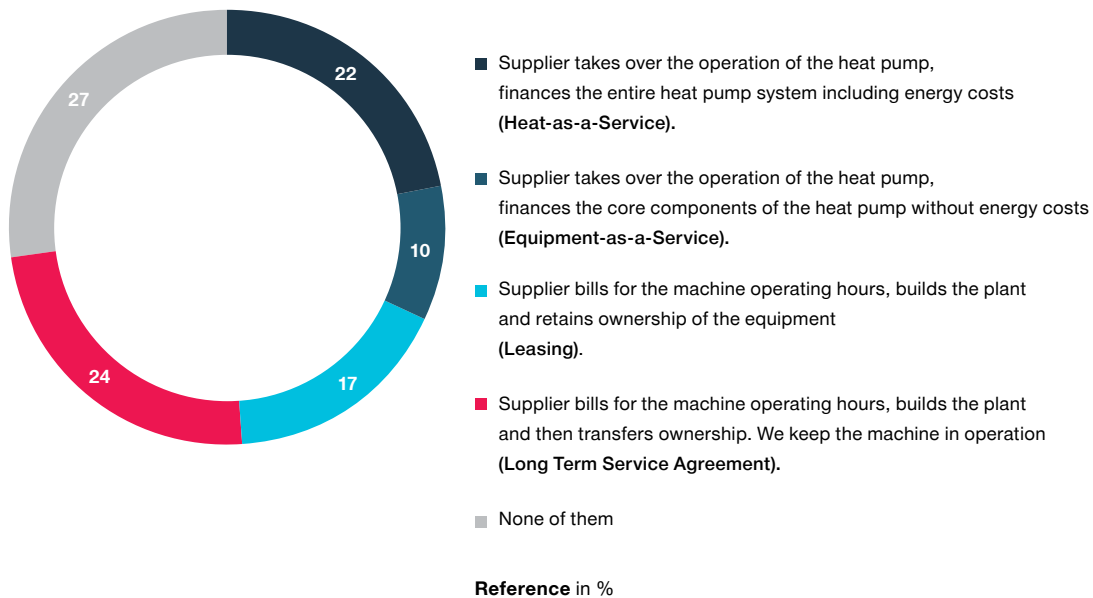
### What form of financing is possible for you?

n = 61



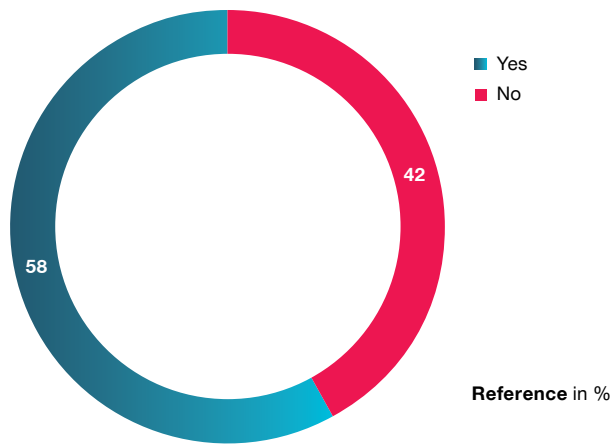
### Which financing model from a heat pump supplier would you prefer?

n = 60



Would you be interested in learning more about subscription models for large heat pump systems?

n = 55



## Area of responsibility

<b>Business Industry</b>	n = 101
District Heating	19%
Chemical/Petrochemical	18%
Industrial production (e.g. steel, cement, etc.)	16%
Food and beverage	14%
Pulp and paper	10%
Other	23%
<b>Job role</b> n = 102	
Decider	26%
Influencer	21%
Initiator	18%
Buyer	11%
User	11%
Other	13%

## Sociodemographics

<b>Country</b>	n = 23
Germany	22%
Italy	13%
Australia	4%
Brazil	4%
Cameroon	4%
Canada	4%
Egypt	4%
France	4%
Greece	4%
India	4%
Netherlands	4%
Puerto Rico	4%
Spain	4%
Suriname	4%
Switzerland	4%
Turkey	4%
USA	4%
Other	5%

<b>Gender</b>	n = 23
Male	91%
Female	4%
Other	5%

**MAN Energy Solutions**  
46145 Oberhausen, Germany  
P +49 208 692-01  
F +49 208 692-021  
info@man-es.com  
www.man-es.com

**MAN Energy Solutions  
Switzerland Ltd.**  
Hardstrasse 319  
8005 Zurich, Switzerland  
P +41 44 278-2211  
F +41 44 278-2261  
info@man-es.com

