

Decarbonization of Thermal Processes in Manufacturing (Amount covered by the government: Up to 32.51 billion yen)

- In the US, China, and European countries, **there is a growing movement—mainly among large companies—to decarbonize entire supply chains** in various fields including automobiles. They are also beginning to **call on their suppliers to address carbon neutrality**.
- In light of this trend, we will **develop and demonstrate efficient thermal processes** to address the decarbonization of energy with a focus on industrial furnace manufacturers, **keeping in mind the metal parts manufacturing industry** that supports Japan's internationally competitive industries. This will be **in combination with other efforts including electrification, transitions to zero-emission fuels, and energy efficiency improvement**.

[Main technologies to be developed]

- Basic technologies for improving the efficiency of combustion technology using zero-emission fuels (e.g., hydrogen, ammonia)
- Basic technologies for improving the efficiency of electric heating in an innovative manner, enabling the electrification of thermal processes

Application of basic technologies to thermal processes throughout manufacturing supply chains



Material (upstream)

Steel heating and rolling process



Processing (midstream)

Forging process



Casting process



Sintering process



Metal heat treatment process



Product (downstream)

Coating process

