

# Overview of "JSR Sustainability Challenge"

## Negative impacts



**Animal testing**  
**Life Sciences**  
 ✓ Request for regulatory compliance from pharmaceutical companies  
 ✓ Mounting ethical demands from society

**CO<sub>2</sub> emissions**  
**Elastomers**  
 ✓ Thermal energy required in the petrochemical industry, which makes it difficult to shift to renewable energy

**Plastic waste disposal**  
**Plastics**  
 ✓ Negative attention after G7 adoption of the Ocean Plastics Charter in 2018  
 Increasing calls for circular economy initiatives

**Materials facing tighter regulations**  
**Semiconductor Materials**   **Display Materials**  
**Plastics**  
 ✓ Tighter regulations due to potential negative impact on human health  
 ✓ Demands to shift to alternative materials

**Solvents**  
**Semiconductor Materials**   **Display Materials**  
 ✓ Used in our manufacturing processes and customer sites

## Positive impacts

### Digital Solutions

**Semiconductor Materials**  
 Reduce semiconductor power consumption while improving nanotechnology to contribute to a smart society including IoT, AI and 5G. JSR's cutting-edge semiconductor materials can achieve miniaturization and high performance with less power. Adopting a higher performance GPU is expected to reduce power consumption by 280 times.

**Display Materials**  
 Possible to reduce LCD TV power consumption 30% by boosting display brightness and low-temperature curing. As the No. 1 global supplier of alignment films for high-performance displays, JSR is poised to reduce power consumption for displays around the world.

### Life Sciences

**Improve drug development success rates and shorten development timeline for customers**  
 Through our contract development and manufacturing organizations (CDMO), timeline from drug discovery through mass production to approval of human clinical trials can be shortened from 12-24 months to 9 months.

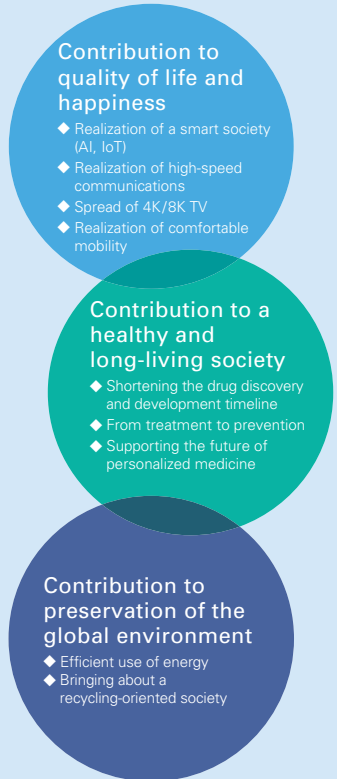
### Elastomers

**JSR Group products help offset greenhouse gases emitted by manufacturing processes by more than double through products that reduce greenhouse gas emissions within society**  
 With JSR's unique SSBR for fuel-efficient tires, reduction in CO<sub>2</sub> emissions from automobiles is expected to be 2.7 times greater than CO<sub>2</sub> produced during the manufacturing process.

### Plastics

**Promoting mono-materialization aimed at reuse of plastic resources**  
 Contributing to customers by incorporating new materials to convert composite materials to mono-materials. Easy recyclability and reduction of environmental burden by eliminating coatings for brightly colored materials, reducing the need for solvents. JSR is proposing a 50% weight reduction while maintaining rigidity.

## Social value created by JSR through positive impacts



**Contribution to quality of life and happiness**  
 ◆ Realization of a smart society (AI, IoT)  
 ◆ Realization of high-speed communications  
 ◆ Spread of 4K/8K TV  
 ◆ Realization of comfortable mobility

**Contribution to a healthy and long-living society**  
 ◆ Shortening the drug discovery and development timeline  
 ◆ From treatment to prevention  
 ◆ Supporting the future of personalized medicine

**Contribution to preservation of the global environment**  
 ◆ Efficient use of energy  
 ◆ Bringing about a recycling-oriented society