



Semiconductors & Semiconductor Equipment

Driving forces

Continuous innovation is crucial for this industry - not only in order to keep pace with Moore's Law, but also to respond to the rise of artificial intelligence, which requires novel chip designs. To ensure their long-term capacity to innovate, semiconductor companies must properly manage R&D processes and attract and retain a skilled workforce. Shrinkage (increasing transistors and processing power without increasing chip size), migration to new materials, and the introduction of more efficient production processes are the dominant trends. Other challenges include energy-efficient production processes and low energy consumption chips and processors. Quality, performance, and reliability must be monitored throughout the entire value chain. The semiconductor industry must also address the environmental impacts of its own operations by reducing the use of chemicals and hazardous substances, generating less waste, enhancing the energy efficiency of ultra-clean spaces, and reducing consumption of ultra-pure water. Considering the long lead time of capacity extensions, the semiconductor industry's extreme cyclicity is forcing companies to pay close attention to strategic planning and business cycle management.

Highlighted criteria

- Economic Dimension**
 - Corporate Governance
 - Innovation Management
 - Supply Chain Management
- Environmental Dimension**
 - Climate Strategy
 - Environmental Policy & Management Systems
 - Operational Eco-Efficiency
 - Product Stewardship
- Social Dimension**
 - Human Capital Development
 - Talent Attraction & Retention

Sustainability leaders 2018

| RobecoSAM Gold Class | |
|---|---------------|
| Advanced Semiconductor Engineering Inc | Taiwan |
| Taiwan Semiconductor Manufacturing Co Ltd | Taiwan |
| RobecoSAM Silver Class | |
| United Microelectronics Corp | Taiwan |
| RobecoSAM Bronze Class | |
| ASML Holding NV | Netherlands |
| Infineon Technologies AG | Germany |
| Intel Corp* | United States |
| STMicroelectronics NV | Italy |
| Sustainability Yearbook Members | |
| NVIDIA Corp | United States |
| SK Hynix Inc | South Korea |
| Tokyo Electron Ltd | Japan |

* RobecoSAM Industry Mover

Industry statistics

| | |
|--|----|
| Number of companies in universe | 70 |
| Number of companies assessed by RobecoSAM in 2017 | 38 |
| Assessed companies to total companies in universe (%) | 54 |
| Market capitalization of assessed companies to total market capitalization (%) | 91 |

Results at industry level

| Dimension | Average score | Best score | Dimension weight |
|---------------|---------------|------------|------------------|
| Economic | 50 | 88 | 43% |
| Environmental | 53 | 97 | 34% |
| Social | 47 | 91 | 23% |

Total score

