Kumamoto Semiconductor Industry Promotion Vision Overview

Industrial Support Division

Chapter I Purpose of formulation

- As the prefecture's economic management is expected to respond immediately to economic and social changes in the post-corona/with-corona era, it was a good news for Kumamoto that ,TSMC, a world-class semiconductor manufacturer from Taiwan, has decided to build its first improvement in Japan in Kumamoto. Kumamoto Prefecture established “the Headquarters for the Promotion of Enhancement of Semiconductor Industry Cluster”.
- Taking this opportunity, Kumamoto Prefecture will formulate the "Kumamoto Semiconductor Industry Promotion Vision," which will be a policy for future industrial promotion activities, in order to further promote not only the semiconductor industry but also other industries in Kumamoto Prefecture and realize the growth of the prefectural economy in all areas of the prefecture.

【Period for the plan】Ten years from fiscal year 2023 to fiscal year 2032 *Necessary reviews will be conducted, according to changes in the social environment and status of initiatives.

Chapter II Changes in the Environment Surrounding the Semiconductor Industry and Current Situation and Issues in Kumamoto Prefecture

（1）Changes in the social environment
- ◆Changes in Industrial Structure Due to the Fourth Industrial Revolution and the Realization of Society 5.0
- ◆Accelerating digitalization in the wake of the pandemic
- ◆Changes in the environment surrounding economic security, increasing scale of natural disasters, and impact of the new coronavirus have revealed the vulnerability of supply chains.
- ◆Expanding efforts for achieving SDGs

（2）Changes in the semiconductor industry
- ◆Market trends in semiconductor-related industries
- ◆Changes in the semiconductor market, users and applications
- ◆Changes in semiconductor manufacturing technology
- ◆Ripple Effects of Attracting Semiconductor Factories

（3）Measures for semiconductor-related industries in other countries
- ◆Trends in global supply chain construction
- ◆Trends in Human Resource Recruitment and Development
- ◆Trends in Semiconductor Innovation Ecosystem Construction

（4）Current status of the semiconductor industry in Kumamoto
- ◆The semiconductor supply chain
- ◆Securing and developing semiconductor human resources
- ◆The Semiconductor Innovation Ecosystem

（5）Future challenges
- ◆Strengthening the semiconductor supply chain
- ◆Secure and develop stable semiconductor human resources
- ◆Building a semiconductor innovation ecosystem

Chapter III Aim for around 2030 「Kumamoto, a region that continues to support and challenge semiconductor infrastructure」

（1）Kumamoto, a center that continues to supply semiconductors to the world
- ◆A robust semiconductor supply chain that can respond to diverse risks.
- ◆The first industrial cluster of three-dimensional stacked packaging
- ◆An environmentally harmonious semiconductor industry

（2）Kumamoto, a hub of professionals for the semiconductor industry
- ◆The world's top semiconductor professionals are gathering
- ◆Each resident is familiar with semiconductors
- ◆Robust human resources with connections to diverse industries

（3）Kumamoto, a center for creating new businesses with semiconductors at its core
- ◆Creating new venture startups and industries
- ◆DX/GX initiatives are accelerating in all industries
- ◆An innovation ecosystem hub that connects with the rest of the world

Chapter IV Three strategies and initiatives to Realize the Ideal Model

Strategy 1 Semiconductor supply chain resilience

<Key Initiatives> Seamless technical and financial support at each stage to increase companies’ international competitiveness

Initiatives based on strategy

1-1 Further enhancing the competitiveness of pre-processes and semiconductor manufacturing equipment
1-2 Conducting R&D to create a three-dimensional stacked packaging industry (R&D of new technologies)
1-3 Build a strong, seamless semiconductor supply chain
1-4 Build a smooth semiconductor supply chain by developing transportation infrastructure such as roads and railways and utilizing transportation
1-5 Reducing Environmental Impact in the Semiconductor Supply Chain

Strategy 2 Ensuring a stable semiconductor Professionals and human resource development

<Key Initiatives> Improving labor productivity through DX, developing practical human resources through reskilling and providing semiconductor education for a wide range of generations

Initiatives based on strategy

2-1 Enhance practical human resource development programs through reskilling, and corporate interns
2-2 Support for unified branding of the prefectures and clarification of the required image of semiconductor talent
2-3 Support for securing human resources through the promotion of migration and settlement measures
2-4 Increase labor productivity by promoting DX
2-5 Expanding semiconductor education opportunities for residents
2-6 Enhancing semiconductor education programs through collaboration among universities, technical colleges, and companies

Strategy 3 Building a semiconductor innovation ecosystem

<Key Initiatives> In collaboration with the UX Project, promoting open innovation in different fields of industry and providing matching and commercialization support for the creation of new industries

Initiatives based on strategy

3-1 Ensuring matching opportunities with semiconductor exit industries
3-2 Supporting semiconductor industry-related venture startups
3-3 Strengthening Support Systems for Building an Innovation Ecosystem
3-4 Promoting DX through the use of semiconductors
3-5 Promote open innovation programs in collaboration with other industries
3-6 Promoting International Cooperation

Chapter V Promoting the Vision

- ◆ Progress management and promotion structure
- ◆ Setting targets