The population of Saitama residents aged 75 and older will soon increase at the swiftest rate in the nation, meaning the prefecture will face an entirely different dimension of aging. As the prefecture ages, the working-age population of 15- to 64-year-olds will decrease, bringing fears of an economic downturn and less societal vitality. In these circumstances, it is imperative that local governments increase their "earning power" to maintain and improve the economic activity of their communities.

The Leading-Edge Industry Design Project (Leading Edge Project) developed by Saitama Prefecture aims to provide comprehensive support for the practical application, product commercialization, and industrialization of leading-edge industry fields with high growth potential in order to grow and sustain a concentration of leading-edge industries within the prefecture. A wide range of universities and businesses from all over Japan are already actively participating in the project and contributing to the steady development of new technologies and products.

Looking to the future, we will continue in our efforts to further accelerate the progress of the projects and initiatives within Saitama Prefecture to stimulate the growth of industries with strong competitive capabilities. We are looking forward to the challenges of the future and the opportunities for success they will bring!

**Saitama Prefecture Leading-Edge Industry Design Project**

Saitama Prefecture is actively promoting the Leading-Edge Industry Design Project. By combining innovative ideas from research organizations and universities with businesses' advanced technology and by consistently promoting the practical application and commercialization of new products, Saitama aims to grow and sustain a concentration of leading-edge industries within the prefecture. The following promotion systems are supporting the development of the project.

**Establishment of the Leading-Edge Industry Research Salon**
The Leading-Edge Industry Research Salon was established to offer advice on Leading Edge Project policies and to provide verifications and evaluations for development initiatives related to the project.

**Concluding the Leading-Edge Industry Development Agreement**
Formed on February 10, 2014, this technological support agreement established a collaboration between the Saitama Prefecture and two of the foremost research organizations in Japan: the New Energy and Industrial Technology Development Organization (NEDO) and the National Institute of Advanced Industrial Science and Technology (AIST).

**Creating Connections with Saitama-based Financial Organizations**
Saitama is creating connections with financial organizations in the prefecture to provide trouble-free loans for industrialization.

![Diagram of Key Fields](image)

Concentrated investment in five key fields with high growth potential: nano-carbons, medical innovation, robotics, new energy, and air and space.

- **Leading Edge Industry Research Salon**
- **AIST, NEDO, and Saitama Prefecture Agreement**
- **Industry Promotion and Job Opportunity Creation Fund**
- **Local Financial Institutions**
- **Saitama Prefectural Government Public Enterprise Bureau and Privatized Business Companies**

![](image)
Nano-carbons, part of a family of microscopic carbon-based materials that includes carbon nanotubes, possess high electroconductive and thermal conductive properties while also being light and strong. The emergence of new materials that take advantage of nano-carbons' superior qualities is anticipated to lead to the development of a variety of products across many fields. Saitama Prefecture's initiatives to develop new industries and expand emerging business projects include human resources development seminars for nano-carbon-related fields, technology exchange meetings between businesses and universities, and support for the development of new nano-carbon materials and products.

**Nano-Carbons Leading-Edge Technology Exchange Meetings**

Through the regular hosting of leading-edge technology exchange meetings, Saitama is actively promoting the concentration of nano-carbon-related technologies, human resources, and information within the prefecture. Furthermore, Saitama is encouraging the establishment of new networks through the organization and hosting of social gatherings that introduce the latest nano-carbon-related technology projects developed by small, medium, and large businesses.

**Nano-Carbons Implementation Program**

Saitama Prefecture offers lectures for employees of businesses that will enter nano-carbon-related fields to aid in their systematic understanding of the base knowledge and technology necessary for the development, sale, and production of nano-carbon materials and products.

**Development of Evaluative Analysis Technology**

SAITEC (Kawaguchi City) has resources available for the development of evaluative analysis technology of new materials produced using nano-carbons.

**Industry-Academia Collaborative Development Project**

This project supports research and development that combines the innovative ideas of research organizations and universities with the technological capabilities of businesses.

- Percentage of Costs Covered: up to 100%
- Maximum Subsidy Amount (per Fiscal Year): 25,000,000 JPY

**Newly Selected Themes (FY 2016)**

- Development of Measurement Devices equipped with Nanocarbon Electrodes (AIST)
- Development of Built-In Capacitor Graphene Lead Batteries (Tokyo University)

**New Technology and Product Commercialization Development Costs Subsidy**

This subsidy assists with the independent product industrialization and practical application development efforts of businesses.

- Percentage of Costs Covered: up to 100%
- Maximum Subsidy Amount: 20,000,000 JPY

**Selected Themes (FY 2016)**

- Development of Nano-carbon-added Resin Products
- Nano Dispersion Technology Development
  ...and more!

**New Nano-Carbon Materials Development Costs Subsidy**

Supporting the development of new materials using nano-carbons.

- Percentage of Costs Covered: up to 100%
- Maximum Subsidy Amount: 500,000 JPY
Medical Innovation

With a high concentration of optoelectronic (optical) industries ideal to the production of medical equipment, Saitama Prefecture boasts the highest pharmaceutical and medical equipment production revenue in Japan and high potential for medical-related industry growth. Saitama is striving to achieve an even higher local concentration of medical-related industries by supporting medical equipment innovation that takes advantage of the prefecture's unique qualities.

Saitama Medical Innovation Network
Saitama Prefecture and Saitama City have coordinated efforts to establish a support platform for medical equipment-related businesses, universities, research organizations, and medical organizations, as well as those businesses aspiring to enter into the medical equipment industry. The Saitama Medical Innovation Network is promoting medical-engineering and industry-academia-medicine collaborations through a variety of initiatives, including offering information seminars and organizing observational tours of advanced medical facilities.

Medical Equipment Prototype Development Contest
Aiming to support product commercialization, this contest recognizes innovative medical equipment prototypes.

FY 2015 Grand Prix Award Winner KANEKO Manufacturing Co., Ltd. (Multi-view Glasses-free 3D Endoscope System)

Exhibition Participation Support
This project supports participation in exhibitions of developed products and prototypes to promote effective matching of medical organizations with manufacturing and sales businesses.

Annual Meeting of the Japan Society for Endoscopic Surgery
Medtec Japan 2016

New Technology and Product Commercialization Costs Subsidy
This subsidy assists with the independent product industrialization and practical application development efforts of businesses.

- Percentage of Costs Covered: up to 100%
- Maximum Subsidy Amount: 20,000,000 JPY

Selected Themes (FY 2016)
- IPS (Induced Pluripotent Stem Cell) Culture Device Production
- Development of Apparatus for Measuring Ossicular Mobility
...and more!

Industry-Academia Collaborative Research and Development Projects
Subsidies support research and development which combines the innovative ideas of research organizations and universities with the technological capabilities of businesses.

- Percentage of Costs Covered: up to 100%
- Maximum Subsidy Amount (per Fiscal Year): 25,000,000 JPY

Newly Selected Themes (FY 2016)
- Development of New Coagulation Device and Realization of Minimally Invasive Cardiac Surgery
- Production of Ultra-high Purity Magnesium-based Bone Fixation Plates
- Development of the novel antibody affinity maturation technology and the automated high-throughput screening system

Creating a 3-Way Collaboration Development Model
Manufacturing industries, medical organizations, and manufacturing and sales businesses form a 3-way collaboration to create a development model for a genuinely marketable product that reflects current needs.

3-Way Collaboration

Support for Obtaining Overseas Certification
The project offers subsidies for a portion of the costs incurred to obtain certifications which are necessary for trade overseas.

- Percentage of Costs Covered: up to 50%
- Maximum Subsidy Amount: 1,500,000 JPY
Robotics technology has shown an increased presence in industries such as automobile manufacturing and is expected to play a prominent role in the creation of new service industries. Robotics is also predicted to aid in the resolution of a variety of social issues such as human resource shortages in a wide range of fields, including medicine and caregiving, infrastructure, agriculture, and housework. Saitama is aiming to increase the concentration of robotics industries within the prefecture by actively supporting the industrialization and development of robotics that are useful at work and in the home.

**Robot Business Consortium**

The Robot Business Consortium manages a collaborative platform for robotics technology businesses, users interested in robotics innovation, universities and research organizations with innovative ideas, and financial organizations. By supporting socially beneficial and marketable robot creation through an industry-academia-government-finance network, the Robot Business Consortium is working towards the promotion and increased concentration of robotics industries in Saitama Prefecture. (Membership is free.)

### Main Initiatives
- Robotics Business Networking Events
- Rehabilitation and Caregiving Robotics Research Meetings

**Exhibition Participation Support**

Saitama supports participation in exhibitions to provide opportunities for market expansion, new business, and the promotion of prefecture-based businesses' advanced technology and products.

**Selection of Participation Support Accomplishments**
- 2015 International Robot Exhibition (iREX)
- Sai-no-Kuni Business Arena 2016, 2017

**New Technology and Product Commercialization Development Costs Subsidy**

This subsidy assists with the independent product industrialization and practical application development efforts of businesses.
- Percentage of Costs Covered: up to 100%
- Maximum Subsidy Amount: 20,000,000 JPY

**Selected Themes (FY 2016)**
- Remote Control Service Robotics Technology Development
- Development of Automated Transport Management Systems for Movement Assistance Robotics Used at Leisure Facilities.
  
  ...and more!

**Robotics Testing Fields**

The robotics testing fields contribute to the development of the robotics industry by providing a site for businesses, universities, and research organizations to test and experiment with robots and drones. (Former Moroyama Senior High School and other locations.)

**Industry-Academia Collaborative Research and Development Project**

This project supports a variety of robotics development initiatives conducted through collaborations between universities and Saitama-based businesses.
- Percentage of Costs Covered: up to 100%
- Maximum Subsidy Amount (per Fiscal Year): 25,000,000 JPY

**Newly Selected Themes (FY 2016)**

- Development of Lower Layer Atmospheric Environmental Monitoring Robots using Drones (UAV) (Saitama University)
- Development of Transfer a Robotic Arm System for Use in Sterile Environments (Saitama University)
- Development of Post-connection External Kinesthetic Sensors to Increase Surgical Safety (University of Tokyo)

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[Image of various robotics-related activities and technologies]
Increased demand for energy and efforts to decrease fossil fuel dependence have emphasized the importance of renewable energy and an energy-saving, energy-creating perspective in modern society. Saitama is actively supporting the research and development of smart houses, storage batteries, hydrogen energy, and other technologies in the high growth potential field of new energy. The prefecture is also promoting new energy-related industries through new technologies produced by Saitama-supported research and development.

**Saitama Next-Generation Housing, Industry Project**
Development of Technologies for Energy-Saving, Energy-Creating Smart Housing (Saitama Industrial Promotion Public Corporation)

- **Geothermal Heat Pump Technology**
  Development of highly efficient, low cost, direct-expansion geothermal heat pump systems.

- **High Insulation Glass Film Technology**
  Development of new glass films which combine glass films capable of thermal insulation and radiant heating with a superhydrophilic coating.

- **Wood-based Insulation Material Technology**
  Development of wood-based insulation materials that feature superior sound absorbency and humidity (anti-condensation) control and use Saitama Prefecture-produced timber and timber from forest thinning.

- **EMS (Energy Management Solutions) Technology**
  Development of software capable of comprehensive estimations regarding the cost-benefit and energy-saving capabilities of energy-saving and energy-creating products from this and other projects.

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### Solar Cell Development
- Development of Next-Generation Organic Solar Cells (Saitama University)
  Saitama University is actively pursuing the development of solution-processed organic solar cells which are promising for a wider range of applications in our society presently based on silicon solar cells.

  - Flexible Sheet Solar Cell
  - Solution-processed Crystalline Si/PEO4TFSI Solar Cell Module

### Development of Battery Technology
- Development of Next-Generation Storage Battery Technology (SAITEC)
  Saitama Industrial Technology Center is working on development magnesium rechargeable battery, and is aiming to make the battery into the production in a few years as small-size consumer batteries for the first time in the world.

  - Developed Test Cell for Magnesium Rechargeable Battery

### Industry-Academia Collaborative Development Project
Through collaboration among universities, research organizations, and SMEs within Saitama Prefecture, this project supports joint research and development conducive to the use of hydrogen energy and new energy.

- Percentage of Costs Covered: up to 100%
- Maximum Subsidy Amount (per Fiscal Year): 25,000,000 JPY

**Selected Themes (FY 2016)**
- Development of Extreme Low Temperature-Tolerant, High-Accuracy Platinum Temperature Sensors Used in Liquefied Hydrogen (-253°C)
- Research and Development of Micro Generators via Piezoelectric Thin Film MEMS
  …and more!
The rapidly growing aircraft industry is expected to double its presence in the marketplace over the next twenty years. Consisting of approximately 3,000,000 parts, around the same amount as 100 vehicles, aircrafts represent a concentrated body of leading-edge technology, and growth in the aircraft industry is anticipated to result in a ripple effect on supporting industries. Saitama Prefecture is implementing various support measures for Saitama-based SMEs that have cultivated advanced technological expertise through the automobile and electronics industries and are now looking to enter the air and space industry.

**Research Meetings about Entry into the Aircraft Industry**
Saitama-based businesses seeking to enter the aircraft industry can take advantage of marketplace entry and technology development support initiatives such as information seminars and factory observation tours of major aircraft parts construction companies.

**Assistance with Participation in Domestic and International Product Exhibitions and Business Negotiations**
Saitama supports participation in both domestic and international airshows in order to provide business matching opportunities for market expansion, new business, and the promotion of prefecture-based businesses' advanced technologies and products.

Selection of Participation Support Achievements
- Farnborough International Airshow
- The Paris Airshow
- The Singapore Airshow
- Aeromart Seattle
- Japan International Aerospace Exhibition
- Aeromart Toulouse
- Sai-no-Kuni Business Arena 2015, 2016, 2017

...and more!

**Air and Space Industry Participation Support Project Subsidy**
This subsidy supports the independent development efforts of businesses towards project expansion and entry into the air and space industry.
- Percentage of Costs Covered: up to 50%
- Maximum Subsidy Amount: 20,000,000 JPY

Selected Themes (FY 2016)
- Development of Aircraft Engine Part Surface Quality Measurement Technology
- Development of Labor-Conserving Turning Processing Technology of Thin Titanium Parts for Use in Aircraft Engines

...and more!

**Other Support Initiatives**
**Subsidy for the Acquisition of Necessary Trade Certificates in Aircraft**
- Percentage of Costs Covered: up to 50%
- Maximum Subsidy Amount: 1,500,000 JPY

Supporting the Construction of Integrated Production Systems
Saitama provides support for the construction of a framework managed by several collaborating SMEs that provides one-stop service for orders from trade partners.
Leading-Edge Industry Support Center of Saitama

The Saitama Leading-Edge Industry Support Center offers support services to businesses working on initiatives in leading-edge fields, particularly nano-carbons, medical innovation, robotics, new energy, and air and space. Please feel free to inquire about our comprehensive services!

1. Comprehensive Consultation Services for Leading-Edge Industries
   Free expert advice in all fields from experienced professionals (technological guidance, business matching, management of legal regulations, entry into new markets, etc.).

2. Introduction of Development Strategies
   Informational presentations at our first-floor exhibition corner outline the programs and development strategies of the Leading-Edge Industry Design Project.

Open: Monday to Friday, 9:00 to 17:00 (excludes public holidays and the New Year holiday period)

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