

ENERGY AND ENVIRONMENT

Intelligent solutions for a sustainable future



Answer tomorrow's challenges today

Supporting the nation's move towards renewable energy and environmental sustainability.

Like the rest of the world, Malaysia needs to achieve greater energy independence through the use of renewable energy sources such as solar energy, wind energy and biofuels. It is also important to find innovative ways to mitigate climate change and conserve the integrity of our natural environment through ecodesign solutions and environmental technologies.

Malaysia is adopting a voluntary national reduction indicator of up to 40% in terms of GDP emission intensity by 2020 compared with 2005 levels. This initiative is a tremendous opportunity for businesses interested in participating in the green economy.

As one of the country's leading energy and environmental technology research institutes, SIRIM is doing its part to answer tomorrow's challenges today.



Micro-hydro dams provide electricity to communities in locations too remote to access the national power grid.

END-TO-END SOLUTIONS ACROSS THE VALUE CHAIN

IDEATION & CONCEPTUALISATION

Business consultants evaluate the commercial potential of an idea to determine its viability given current market opportunities.

PRODUCT DEVELOPMENT

Product designers and researchers collaborate to build a working prototype of the product along with a pilot plant that makes it.

TRIALS & PRE-COMMERCIALISATION

Consultants help organise user trials for the product and help ensure that its production is in line with GMP or GLP guidelines where necessary.

GREEN TECHNOLOGIES FOR MALAYSIAN BUSINESSES.

SIRIM conducts strategic research and development of innovative technologies that support national economic growth by finding ways to mitigate climate change and ensure a clean environment. Our renewable energy and environmental protection services are accepted globally, and are divided into four priority areas.

- Energy generation
- Energy storage
- Eco-product development
- Environmental technologies

We adopt a multidisciplinary approach to our technological solutions, which integrate our various platform technologies. Whatever your market sector, we source the necessary domain competencies to serve your requirements.



Artificial ceramic corals invented by SIRIM help natural coral habitats to regenerate.

SCALE-UP & COMMERCIALISATION

Designers and engineers develop a full-scale manufacturing line for the new product that complies with necessary regulations.

STANDARDS & QUALITY SERVICES

Consultants help ensure the product meets local and global industry standards to increase its quality appeal and marketability abroad.

TESTING & CERTIFICATION

The product is routinely tested and certified by an independent third-party to ensure it complies with applicable industry standards and regulations.

ENERGY & ENVIRONMENTAL TECHNOLOGY FOCUS AREAS

ENERGY GENERATION

Micro-hydro

Hybrid energy

Bioenergy

ENERGY STORAGE

Electrochemical energy

Energy materials

Power management

ECO-PRODUCT DEVELOPMENT

Ecomaterials

Product safety

Ecodesign

ENVIRONMENTAL TECHNOLOGIES

Pollution treatment

Resource recovery

Cleaner production

Your competitive edge

As communities are becoming increasingly affected by climate change impacts, SIRIM is focusing on initiatives and actions to support the growth of industries and businesses that contribute to climate change mitigation and adaptation, environmental conservation and human health. We concentrate on key areas where our expertise and capabilities can deliver maximum benefits to help enterprises in a wide range of industries.

ENERGY GENERATION

We are equipped with wide-ranging facilities and expertise to deliver appropriate technologies and strategies in the area of bioenergy, hybrid and micro-hydro energy.

- Renewable Energy Resource Map and Applications
- Biogas production
- Photovoltaic performance monitoring for Feed-in Tariff (FiT)
- Hybrid energy (solar and wind) supply for remote locations
- Micro-Hydro generation
- Energy management



A greenhouse gas sampler developed by SIRIM.

ENERGY STORAGE

Energy storage is essential for electric vehicles and renewable energy applications. SIRIM is ready to lend its expertise in energy storage technologies for use in all sectors.

- Electrochemical Battery Testing and Analysis
- Electrochemical Battery Management System
- Power Back-up Systems design and management
- Materials formulation and Prototyping (lithium ion batteries and supercapacitors)
- Training courses on Electrochemical Energy Storage Handling and Safety



Electrochemical battery testing and analysis.

ECO-PRODUCT DEVELOPMENT

At SIRIM, we find innovative ways to make your systems and products more eco-friendly. Our Eco-Product Development focus area covers Ecodesign, Ecomaterials and Product Safety Assessment.

- Life Cycle Assessment (LCA) applications (including Carbon Footprinting)
- Health and Environmental Hazard assessment
- Good Laboratory Practice (GLP) compliant studies for product registration
- Product formulation and trial production services
- Bio-based product development



Eco-friendly furniture made from a wood polymer bio-composite of polypropylene and rice husks.

ENVIRONMENTAL TECHNOLOGIES

As a leading centre of environment technology research, SIRIM is constantly finding new ways to better understand and mitigate the impact of industry on our environment. Our experts help businesses balance economic growth with environmental accountability.

- Cleaner Production
- Pollution Abatement/Treatment
- Waste Management (including Waste Characterisation)
- Performance Monitoring of Anaerobic Digesters
- Environmental Technology Verification



SIRIM's bioplastic plant turns oil palm waste into high-quality Polyhydroxyalkanoate (PHA) plastic.



Collaborate with us

The renewable energy industry is estimated to generate at least RM70 billion worth of revenue for the private sector annually. With the right business environment and infrastructure, Malaysia has the potential to become a major hub for green industries.

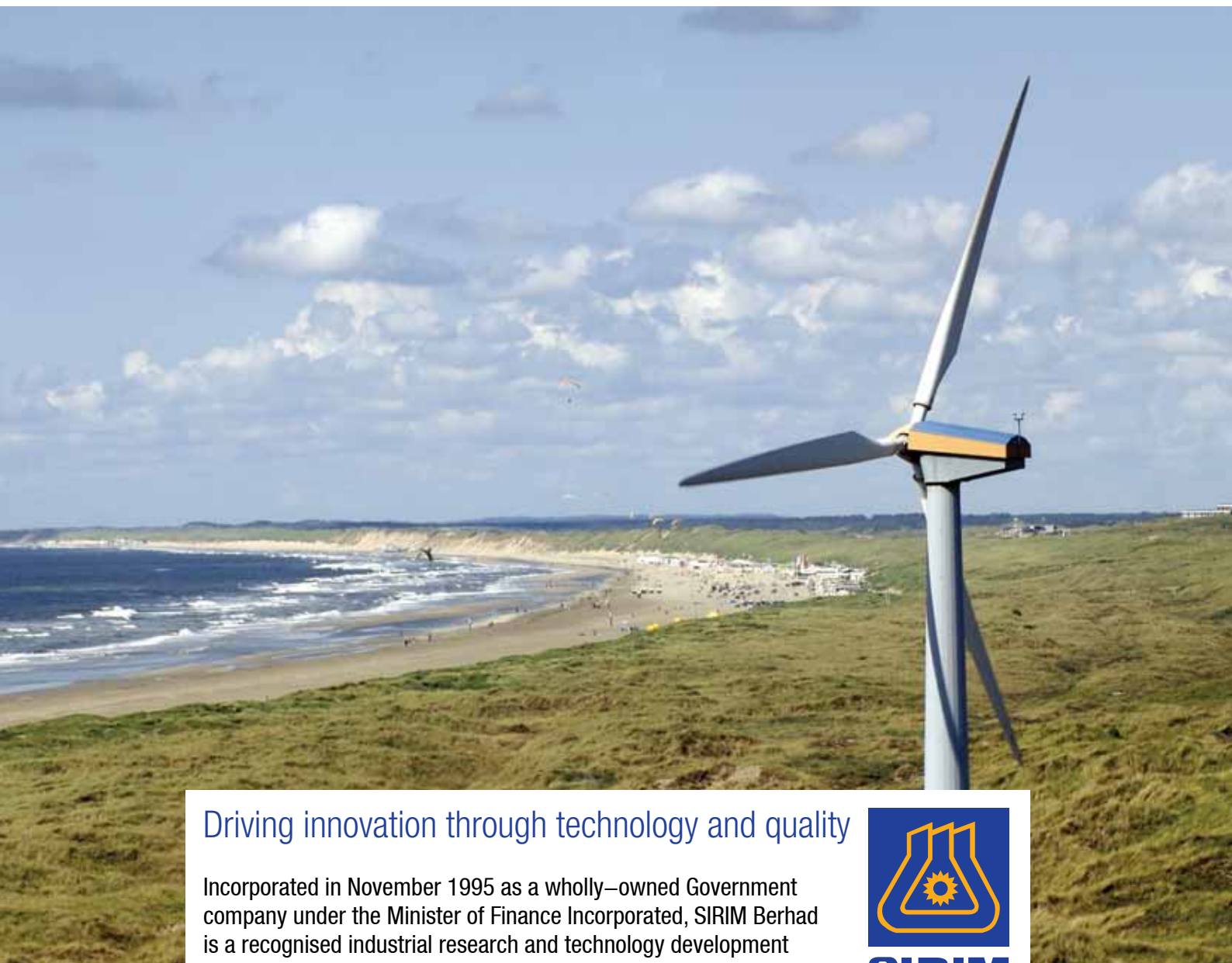
SIRIM can help you take advantage of this opportunity. Over the years, we have developed several energy and environmental products and services to serve the needs of research institutions, government agencies and businesses. We are ready to collaborate with private and public agencies on research projects and would be happy to discuss how your organisation can benefit from our expertise.

Our current research themes are:

- Climate Change Mitigation/Carbon Sequestration
- Climate Change Adaptation
- Water Management
- Ecosystem Management
- Resource Management (Resource Recovery and Reuse)
- Ecodesign, Ecomaterials and Eco-product Development
- Bioenergy Generation
- Energy Materials (for Electrochemical Energy)
- Solar Thermal Technologies

THE SIRIM ADVANTAGE

- **End-to-end solutions:** With over 40 years of experience as the national research and technology development body, we offer customers comprehensive capabilities in R&D, design and engineering, and standards, all under one roof. Our solutions cover the entire product life cycle from ideation to commercialisation.
- **Multi-disciplinary synergy:** Our industrial R&D activities span a full range of technologies and solutions with commercial potential in energy and environmental technologies, plant and machinery expertise and medical technology. Our experts integrate different engineering fields to develop innovative solutions for our customers.
- **Customer-driven:** SIRIM's solutions are tailored to the needs of modern enterprises. We combine technological innovation with business-oriented disciplines to deliver products and services that are relevant to the marketplace. We stay up-to-date with emerging trends and opportunities and are committed to delivering quality services to our clients.
- **Standards expertise:** We are the national standards development agency and we also serve as the WTO/TBT enquiry point in Malaysia. Our extensive expertise in standards, certification and regulatory compliance help ensure that your products meet the international standards and requirements of global markets.



Driving innovation through technology and quality

Incorporated in November 1995 as a wholly-owned Government company under the Minister of Finance Incorporated, SIRIM Berhad is a recognised industrial research and technology development institution.

With a vision to become a premier total solutions provider, we make businesses compete better through quality and technology innovations. Our technology focus areas are aligned with national strategic initiatives in energy and environmental technologies, plants and machinery expertise and medical technologies.



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