

Research & Development



OCI R&D Center, Seongnam, Korea

We are developing and refining the technologies and processes that will enable us to lead in cost and quality.

The OCI R&D Center is our hub of innovation. Building on a core technical foundation in chemicals and chemical engineering, the center's multi-disciplinary expertise today spans the electrical, mechanical, metals, and nanomaterials fields, enabling our businesses to achieve their cost reduction goals, prepare products and processes for commercial production, and create the innovative products that will drive future growth and profitability.

Strategy

We initiated a fundamental shift in our R&D priorities from the long-term to the short-term with a focus on cost innovation in 2015. We are now investing 60% of our resources into working closely with each business and production site to achieve the cost reductions that will give OCI products an edge in today's increasingly competitive markets. In the mid-term, we will invest 30% of our resources into pursuing a diversification and differentiation strategy focused on developing new products to meet the needs of our customers and enhancing general competitiveness to grow existing businesses. In the long-term, we will invest 10% of our resources into expanding our core technology portfolio and developing the basic technologies that will enable us to

bring new value-added consumer products and business models to market.

2016 Activities

As mentioned earlier, our priority in the short-term is on cost reduction. Our researchers spent more time on-site at plants during the year to facilitate collaboration and get feedback faster, a trend we expect to continue in the future. Key successes in 2016 included a 14% reduction in energy consumption for our polysilicon manufacturing process.

Mid- and long-term initiatives also received substantial attention and resources in 2016. In the basic chemicals field, we continued our chemical innovation initiative to explore opportunities to enhance

competitiveness through innovations in core processes and identify potential areas for new product development. In the carbon black field, we focused on strategically bolstering the technical capabilities of our carbon black business as part of a mid-term initiative to expand our specialty black product lineup with an emphasis on close collaboration with tire makers. In the energy field, we continued work on projects focused on integrating renewable energy generation and energy storage systems to deliver total energy solutions.

2017 Plans

We are working to create a learning organization that is strategic and focused on the future. Building on the momentum of our new short- and mid-term focused strategy, we will continue to expand our collaborative framework with our businesses to steadily reduce manufacturing costs for existing products as we also pursue R&D on new products that have a high probability of generating revenue in the mid-term. We will also be taking a multi-disciplinary approach to tackling the fundamental challenge presented by continued low oil prices to ensure our businesses stay competitive.

Intellectual property

In 2016, we applied for 56 patents and registered 60 business secrets. We implemented and launched a new IP management system to enhance our ability to manage our intellectual property. We also conducted IP training to help our researchers think strategically about patents as we leverage these valuable assets to strengthen the competitiveness of OCI products and contribute to the bottom line going forward.

Patents granted	
Korea	181
Rest of world	67
Total	248

2016 Patent applications	
Korea	56
Rest of world	36
Total	92

Global R&D network

Established in 2015 in San Antonio, Texas, our US R&D center represents the first step in our global R&D network initiative. The center's focus is on fostering collaboration between clients and OCI subsidiaries OCI Solar Power, Mission Solar Energy, and Sun Action Trackers with an emphasis on innovation in the energy business. We continue to expand our R&D network by co-developing energy storage system technologies with top companies, universities, and research institutes in US. This fledgling global network will position us to secure proprietary know-how, gain insights on new trends in technology, and recruit top talent from leading local universities.



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