SIEMENS

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From 4.0 to Net-zero: Siemens supercharges Taiwan's sustainable developments through digitalization technologies

- **Capitalizing on its pioneering technological leadership established since the launch of Industrie 4.0 to accelerate the net-zero transition**
- **Combining the power of digital twin and AI technologies to support Taiwan's semiconductor, energy management, MicroLED display tech, exhibition venues, and rail transportation in FY24**
- **Commits to assist Taiwan's public and private stakeholders to supercharge sustainability through digitalization**

Since the German government introduced its high-tech strategic development plan, Industrie 4.0, nearly 10 years ago, Siemens has been actively involved in related initiatives worldwide, including in Taiwan. Building on its decades of leadership in Digital Twin technology, Siemens has played a key role in transforming and advancing the manufacturing sector toward Industrie 4.0. By combining the power of Digital Twin with the emerging potential of Artificial Intelligence, Siemens has further driven sustainable development and the net-zero transformation across manufacturing, buildings, energy grids, and rail transportation.

Combining the real and digital worlds to 'achieve more with less' is Siemens' strategy for driving its own growth while helping stakeholders master digital and net-zero transformations. Partnering with world-class companies accelerates the impact and scalability of these technologies. In FY2024, Siemens collaborated globally with SONY and Mercedes-Benz on Digital Twin, expanded partnerships with NVIDIA and Microsoft on Generative AI, and supported Merck and HEINEKEN in their digital and net-zero transformations. Locally, Siemens helped companies in sectors such as semiconductor, MicroLED display technology, exhibition venues, energy management, and rail transportation achieve success.

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In FY2024, Siemens assisted Merck in building its first large-scale smart semiconductor solution mega-site in Kaohsiung. Siemens' SIMIT digital twin solution allowed Merck to conduct comprehensive testing and virtual commissioning on a single simulation platform, boosting trial run efficiency and accelerating time to market. Siemens also provided a unified platform that seamlessly integrated hardware and various digital twin software solutions for PlayNitride, enabling the digital simulation of machine behavior before assembly and production. As a leader in MicroLED display technology, PlayNitride required cutting-edge production innovations and advanced motion control to handle increasingly complex scenarios. Siemens' solutions have helped PlayNitride shorten trial times, optimize performance, and reduce material waste.

Taiwan’s robust industrial growth in recent years has attracted more exhibitors and visitors, but it has also led to increased energy consumption at exhibition venues. In response, Siemens’ smart building management platform, Desigo CC, helped transform the Nangang Exhibition Center’s Hall 1 into a Green Venue by monitoring real-time energy usage and reducing air conditioning system energy consumption by 35%. In the realm of green infrastructure, Siemens partnered with CHUNG HSIN to create a successful technological collaboration, making Taiwan’s electric vehicle charging facilities even more sustainable. By combining CHUNG HSIN’s hydrogen fuel cell technology with Siemens’ power conversion technology, the first-ever Smart Micro-Grid application with green charging facilities under a public-private BoT model was launched. Siemens’ power conversion technology also serves as a battery backup for AI computing and data centers, ensuring a unique, seamless, and uninterrupted power supply.

Green infrastructure, energy transition, and net-zero transformation are closely interconnected. Electrical switchgears, widely used by utilities and industries globally and in Taiwan, traditionally relied on sulphur hexafluoride (SF_6), a gas that contributes to global warming in a manner similar to carbon dioxide (CO_2). To address this, TPC launched a landmark pilot project at its Yuli Power Substation in Hualien, where Siemens, in collaboration with Lo Electric, provided its innovative Blue Gas Insulated Switchgear (GIS) technology. This Siemens clean air technology helped TPC reduce the environmental impact of its energy operations, supporting its ESG targets and overcoming various other challenges.

In addition to the above achievements, Siemens Mobility played a key role in assisting the Kaohsiung City Government with the successful opening of the Metro Red Line Extension Gangshan Station in FY24. Despite the challenging installation, testing, and commissioning timelines, Siemens Mobility’s advanced technologies not only improved operational efficiency and safety but also ensured a

seamless integration of the new extension with the existing line, without any interruption to regular passenger operations.

Siemens Taiwan President and CEO Frank Grunert remarked, “I began my assignment in Taiwan on August 1, 2024. After eight months of engaging with various stakeholders and observing firsthand, I remain optimistic about Taiwan’s future and I’m pleased with the accelerated growth trajectory of Siemens in Taiwan driven by our technologies. However, in a world of increasing volatility, it’s crucial for us to focus on our long-term objectives. We must optimize and strengthen key areas, including: (1) mindset change toward carbon neutrality, (2) embracing technologies to accelerate sustainability, (3) balancing hardware and software development to combine the real and digital worlds, (4) fostering partnerships and ecosystems because nobody can do it alone, and (5) supercharging sustainability through digitalization!”

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Siemens AG (Berlin and Munich) is a leading technology company focused on industry, infrastructure, mobility, and healthcare. The company’s purpose is to create technology to transform the everyday, for everyone. By combining the real and the digital worlds, Siemens empowers customers to accelerate their digital and sustainability transformations, making factories more efficient, cities more livable, and transportation more sustainable. Siemens also owns a majority stake in the publicly listed company Siemens Healthineers, a leading global medical technology provider pioneering breakthroughs in healthcare. In fiscal 2024, which ended on September 30, 2024, the Siemens Group generated revenue of €75.9 billion and net income of €9.0 billion. As of September 30, 2024, the company employed around 312,000 people worldwide on the basis of continuing operations. Further information is available on the Internet at www.siemens.com.