



Photo by Theerasak Saksritavee

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## SUSTAINABLE INNOVATION

**In the second half of the 20th century, Taiwan became one of the world's key economic players on the back of its industrial prowess. Now, in the face of increased international competition and trade liberalization, the administration of President Tsai Ing-wen has outlined a broad range of initiatives designed to shift the nation's focus from manufacturing to innovation. To power this transition, plans have been set in motion to harness the island's abundant sustainable resources, and through this process make the country a hub of green energy technology.**

The Ministry of Economic Affairs (MOEA) has been tasked with spearheading efforts to increase the ratio of electrical power produced via renewable resources from today's roughly 4 percent to 20 percent by 2025. Currently, the majority of Taiwan's electricity – around 80 percent – is generated by burning fossil fuels such as coal, gas and oil. The remaining 16 percent comes from the nation's three active

nuclear power facilities, which the administration aims to phase out by 2025.

The most ambitious of the clean energy endeavors involves increasing the installation and output of solar panels, of which Taiwan is the world's second largest manufacturer. According to Premier Lin Chuan, the plan is designed to make the island more energy self-sufficient and stimulate domestic demand and employment. The initial



two-year phase of the project began in July 2016 with the objective of adding 1.52 gigawatts to Taiwan's solar capacity. By 2025, the goal is to have an installed solar power capacity of 20 GW, with 3 GW coming from rooftop units and 17 GW from ground-mounted panels.

To further capitalize on Taiwan's abundant sustainable resources, efforts are underway to erect wind turbines in the Taiwan Strait, which boasts some of the world's best offshore wind resources. The 2025 objective is to establish 3 GW of offshore wind power capacity. Toward this target, a public-private strategic alliance was initiated last November under the auspices of the MOEA's Bureau of Energy and led by shipbuilder CSBC Corporation, Taiwan.

Tainan City has been chosen as the hub of the nation's green energy sector. In November last year, the Shalun Green Energy Science City project was launched in the southern municipality with the goal of spurring R&D. Activities at the green energy park will initially focus on four crucial areas, namely electricity generation, storage and conservation, as well as smart grids. The park will also act as a demonstration area for environmentally friendly technologies such as wirelessly charged electric buses, solar-powered vehicles and green architecture. Situated in Tainan due to the area's existing tech talent, the park will serve as the foundation of a nationwide industrial ecosystem for green technologies.

Source: Tainan Review

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## GOVERNMENT SEES POTENTIAL IN TAIWAN'S MIDDLE-AGED LABOR MARKET

**Taiwan's labor participation rate for those aged 45-64 was 62.42 percent last year, up 2.41 percentage points from a decade ago, underscoring the effectiveness of government efforts to tap this demographic.**

A total 4.23 million people in the age group were employed in 2016 representing a year-on-year rise of 65,000, or 1.57 percent. The percentage of men and women with jobs increased 25.08 and 54.53 from 10 years ago, respectively, according to statistics released June 19 by the Ministry of Labor (MOL).

Around 2.51 million chose to remain out of the workforce, with homemak-

ing, old age and financial independence as the top three reasons in that order.

The strong result for women was attributed by an MOL official largely to a rise in education and increased willingness to enter the job market and carve out professional careers. "This is particularly encouraging as the hollowing out of the local labor market due to Taiwan's declining birth rate and rapidly aging

Source: Tainan Today



society is presenting challenges across the board,” the official added.

The ministry is implementing numerous measures to boost the number of middle-aged workers in the labor market. These include providing professional training for job seekers and subsidizing employment. One of the key initiatives is a middle-aged employment act aimed at removing possible employment hurdles and fostering a more friendly work environment for the

age group. The MOL-drafted legislation is expected to be ready for Cabinet approval by year-end.

“But more work remains to be done,” the official said, adding that the country’s labor participation rate for 60- to 64-year-olds is low in comparison with other countries. MOL statistics reveal that 36.4 percent of the demographic was employed in Taiwan compared to 65.8 percent in Japan, 61.5 percent in South Korea and 55.8 percent in the US.

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## TAIPEI INTERNATIONAL INVENTION SHOW TO BE HELD IN SEPTEMBER

**The 2017 Taipei International Invention Show and Technomart, the largest invention show in Asia, will be held in Exhibition Hall 1 of the Taipei World Trade Center from September 28 to 30, the Taiwan External Trade Development Council (TAITRA) said June 19.**



Organized by the Bureau of Foreign Trade and TAITRA, more than 550 exhibitors are expected to attend this year's event and put around 2,000 inventions on display. According to TAITRA, the three-day event will likely attract more than 60,000 domestic and foreign visitors, and create a platform for both manufacturers and inventors to exchange innovative technologies and discuss the commercialization of patents. A competition for inventions will also be held

during the exhibition period. The show will cover a broad range of products, from agricultural products, chemicals, textiles and machinery to hand tools, housewares, consumer electronics and computer hardware, software and peripherals.

This year's invention show will also be held in conjunction with eCommerce Expo Asia 2017, an event that will feature exhibits and forums on big data, cross-border e-commerce, and startups.



## UNEMPLOYMENT FALLS TO TWO-YEAR LOW OF 3.66%

Taiwan's unemployment rate fell 0.01 percentage points from a month earlier to 3.66 percent in May, the lowest level in two years, according to government data released June 22.

The May figure was down 0.18 percentage points compared with the same month of last year, the Directorate General of Budget, Accounting and Statistics (DGBAS) said.

The DGBAS said that after seasonal adjustments, the latest jobless rate was up 0.01 percentage points from a month earlier at 3.79 percent.

There were 431,000 workers without jobs in May, 1,000, or 0.23 percent, fewer than in April, the data shows. Pan Ning-hsin, deputy director of the DGBAS census department, said that the latest job data shows that the local job market remained stable at a time when the domestic economy has been on the road to recovery. Pan said that the May unemployment rate was the lowest level since May 2015, when the jobless rate stood at 3.62 percent.

Taiwan's economy has been boosted by improved exports amid growing global demand, with outbound sales accounting for about 60 percent of the country's gross domestic product. The DGBAS has raised its forecast for Taiwan's gross domestic product (GDP) growth to 2.05 percent from an earlier estimate of 1.92 percent.

Source: Focus Taiwan

From January to May, the labor participation rate averaged 58.73 percent, up 0.08 percentage points from the same period last year, with the number of employed at 11.32 million, up 0.70 percent from a year earlier, the DGBAS added.

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## Cycling festival promotes lighthouse tourism

The Taiwan Tourism Bureau is promoting lighthouse tourism as part of the Taiwan Cycling Festival this year.

The series of events will see biking tours kick off on July 15 at Sandiaojiao (Cape Santiago) Lighthouse—the easternmost tip of Taiwan. Similar activities will take place at Eluanbi Lighthouse at Taiwan's southernmost point on September 2; and Guosheng Lighthouse, the westernmost tip, on September 16, the bureau said. The first leg started on June 24 at Fugueijiao Lighthouse, the northernmost point of the island.

According to the Bureau, participants will be offered the option of taking a short bike tour near the lighthouse or an island-wide tour to explore Taiwan's coastal beauty.

Other events to be held later this year as part of the cycling festival include the Taiwan KOM Challenge on October 20, a 105-kilometer hill climbing ride from Hualien on the east coast to Hehuan Mountain in central Taiwan, the organizers said.



Source: Focus Taiwan, Taipei Representative Office in Hungary, Photo: Courtesy of Taiwan Tourism Bureau

Another event is Formosa 900, an island-wide competition in which several teams set out from different cities, each required to cycle a 900 kilometer loop in 9 days, from November 4-12, the organizers said. The Sun Moon Lake "Come! Bikeday" on November 11-12 will involve cyclists from home and abroad, along one of the world's most beautiful bike paths, according to the organizers, adding that from September 23 to October 1, the "oK Taiwan-Floral City

Biking Festival" will be staged in Taichung, as part of efforts to promote low-carbon tourism.

The annual Taiwan Cycling Festival, the most important cycling festival in the country, is organized by the Tourism Bureau, Taiwan Cyclist Federation, Taiwan Bicycle Exporters' Association and Sun Moon Lake National Scenic Area Administration. For news updates and event registration, please visit the official website of [Taiwan Cycling Festival](#).

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## GOVERNMENT EXPANDS SAME-SEX REGISTRATION RIGHTS

**Same-sex couples will have the option to be officially listed as legal partners at household registration offices in most administrative districts of Taiwan regardless of their areas of residence beginning July 3, according to the Ministry of the Interior.**

Under the soon-to-expire regulations, same-sex couples seeking legal partnerships must be residents of the same administrative area. The MOI said June 21 that it is lifting this restriction in order to protect the rights of lesbian, gay, bisexual and transgender citizens.

The new regulations will apply to household registration offices in all areas except those that do not issue same-sex partnership certifications. Currently, there are five cities and counties in Taiwan that do not accept applications for same-sex



partnerships, namely Hualien County, Keelung City, Penghu County, Taitung County and Yunlin County. According to MOI statistics, more than 2,000 same-sex couples had registered partnerships in Taiwan as of May, with female couples outnumbering male couples at 1,703 and 439, respectively.

Registration affords partners the right to apply for family care leave as well as the ability to sign patient consent forms in case of medical emergencies. The government is working to formulate amendments to the Civil and Criminal codes regarding same-sex marriage. In a Cabinet

meeting June 21, Executive Yuan Secretary-General Chen Mei-ling said the government's aim is to work toward the creation of regulations under which all forms of marriage are equally protected by the law.

In May, the Constitutional Court ruled that provisions of the Civil Code forbidding same-sex marriages violate the people's freedom of marriage and rights to equality as guaranteed by the Republic of China (Taiwan) Constitution. The court asked the Legislature to amend or enact relevant laws in accordance with the ruling within two years.

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## TAIWAN KEEPS TIER 1 RANKING IN TRAFFICKING IN PERSONS REPORT

**Taiwan maintained its Tier 1 ranking for the eighth consecutive year in the 2017 Trafficking in Persons Report issued June 27 by the US Department of State.**

The country fully meets the minimum standards for the elimination of human trafficking, the report stated, with the Republic of China (Taiwan) government demonstrating serious and sustained efforts in prosecuting offenders and raising public awareness of all forms of trafficking.

Of the 36 Tier 1 countries, Taiwan, Australia, New Zealand and South Korea are the only four in Asia-Pacific. Neighboring Japan and Singapore

are Tier 2, Hong Kong is on the Tier 2 Watch List and mainland China is downgraded to Tier 3.

The report found that in 2016, Taiwan conducted 134 trafficking investigations, initiated 128 prosecutions and obtained 56 convictions. In addition, 263 victims were identified and 240 of these referred to shelters. The country also enacted new regulations requiring standard employment contracts and benefits for foreign nationals hired

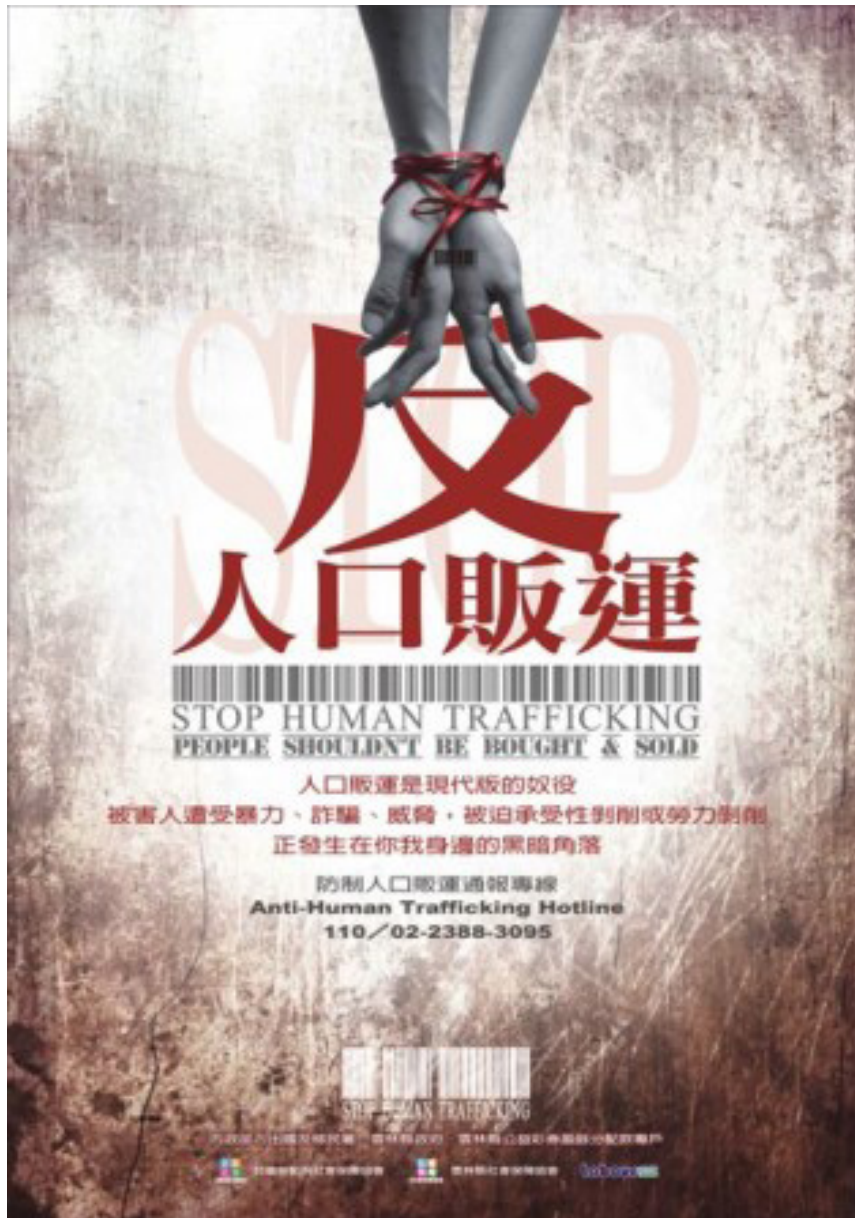


abroad as fishermen.

But the value of Taiwan's Human Trafficking Prevention and Control Act as a deterrent was called into question by the report given the majority of prosecutions were

made under other laws and jail terms were less than 12 months.

In response, the National Immigration Agency (NIA) under the Ministry of the Interior welcomed the ranking and said it underscores the effectiveness of the government's four-pronged anti-trafficking strategy: prevention, prosecution, protection and partnership. Great importance is attached to the report's recommendations, many of which will be addressed at an international workshop on combating human trafficking set to take place next



month in Taipei, the NIA added.

Separately, the State Department presented a “Hero Acting to End Modern Slavery Award” to Allison Lee, secretary general of the Yilan Migrant Fishermen Union, in recognition

of her efforts to uphold the rights of foreign fishermen.

She was the first Taiwanese citizen ever to receive the honor. Lee was honored "in recognition of her unwavering advocacy on behalf of foreign fishermen on Taiwan-flagged vessels, her central role in forming the first labor union composed of and led by foreign workers, and her courage in demanding stronger protections for vulnerable workers through sustained engagement with authorities and the public," according to the citation.



# NEW ENERGY MODEL

*Taiwan Review*  
*By Pat Gao*

**Taiwan's power generation sector is moving toward a balanced future on the back of nationwide restructuring initiatives.**



*A wind farm built by Taipower in Baisha Township of outlying Penghu County (Photo courtesy of Taiwan Power Co.)*

The nation's first ultra-supercritical coal-fired generator sprang to life at New Taipei City's Linkou Power Plant in October 2016. Installation of the new piece of equipment was the first step in ongoing efforts to replace the plant's pair of decades-old generators, each with a capacity of 300 megawatts, with three much more

advanced models. Ultra-supercritical units operate at higher temperatures and pressures than normal generators and can be up to 45 percent more efficient. The upgrades will increase the plant's total capacity to 2.4 gigawatts while lowering emissions due to reduced coal consumption per kilowatt-hour.





New Taipei City's Linkou Power Plant began operating Taiwan's first ultra-supercritical coal-fired generator in October 2016. (Photo courtesy of Taiwan Power Co.)

According to Chu Wen-chen, chairman of state-run utility Taiwan Power Co. (Taipower), “the generators perform very much like they’re burning natural gas,” which is one of the cleanest fossil fuels.

Currently, power stations running on fossil fuels produce approximately 80 percent of the nation’s energy. As part of efforts to transform Taiwan into a low-carbon society, the government aims to decrease the ratio of electricity generated via the burning of coal from today’s 35.7 percent to 30 percent by 2025. The proportion of power produced by natural gas-fired plants is slated to increase from 35.1 percent to 50 percent in the same time frame, while oil-burning facilities will largely be phased out.

The remaining 20 percent will be provided by biomass, hydro, solar and wind power resources, which now account for roughly 4 percent of the national supply, as well as new renewable energy sources such as geothermal, according to the chairman.

### A RESPONSIBLE BALANCE

Roughly 16 percent of Taiwan’s electricity is produced by the nation’s three active nuclear power plants. Construction on a fourth facility was halted in 2014 due to growing public concerns over the safety of atomic power. The administration of President Tsai Ing-wen has set a goal of completely halting the use of nuclear energy by 2025, in line with Article 23 of the Basic Environment Act, noted Lin Chuan-neng, direc-

tor-general of the Bureau of Energy (BOE) under the Ministry of Economic Affairs.

The legislation, promulgated in 2002, stipulates that “The government shall establish plans to gradually achieve the goal of becoming a nuclear-free country.” For Lin, those plans include achieving a balanced mix of traditional and renewable energy sources so as to ensure stable supply on the one hand and reduced emissions on the other. In order to expand the nation’s use of natural gas, a third liquefied natural gas receiving terminal is slated to be built by state-run energy supplier CPC Corporation, Taiwan. It will be situated at the coastal Guantang Industrial Park in the northern city of Taoyuan near the Datan Power Plant, the largest gas-fired power station in the country. “Traditional energy sources must be used in the most efficient way possible,” Lin said. For instance, three advanced combined-cycle turbines, each with a capacity of 892.6 MW, are being installed at the gas-fired Tongxiao Power Plant in central Taiwan’s Miaoli County, with the first scheduled to begin commercial operations in July this year. Combined-cycle units create more power than standard generators by utilizing both natural gas and steam produced from the system’s exhaust.

The government is also placing “a greater emphasis on the demand side by, for example, working to reduce the peak load,” Lin added. Among Taipower’s measures to cut power consumption during peak times is a program that will involve members of the general public who, if interested, can have a smart meter installed in their homes to gather consumption data. Participants will be given discounts on their power bills, and the information gathered will be used to build an advanced metering infrastructure. Other measures include improving energy management and storage capabilities.

### LIBERALIZING THE MARKET

Unlike efforts to improve generation and storage technology, modifying energy laws



and regulations is a contentious matter. The central issue faced by lawmakers is market liberalization. For decades, Taipower has dominated the domestic electricity sector, possessing decisive control over generation, transmission and distribution. Amendments to the Electricity Act, which passed legislative review in January, aim to dismantle the company's monopoly and pave the way for multiple suppliers, fair use of transmission networks and free choice for consumers. The proposed revisions allow renewable energy businesses to produce, sell and send electricity to clients, creating an environment conducive to green energy development, according to Lin. Taipower will remain the primary power provider for a time, with the firm gradually being reorganized into two



*New Taipei City's Linkou Power Plant (Photo courtesy of Taiwan Power Co.)*

separate companies responsible for generating and distributing electricity, respectively. There are those, however, such as pro-reform activist Gao Ru-ping, who have serious concerns about the liberalization process. Gao, who chairs the Taiwan Renewable Energy Alliance (TRENA), said there cannot be a



*Datun Mountain, located in the heart of Yangmingshan National Park on the border of Taipei and New Taipei cities, possesses geothermal resources that could be harnessed to produce electricity. (Photo by Huang Chung-hsin)*

truly open market if Taipower continues to control the electricity transmission systems across the country, which seems likely for the foreseeable future. Comparing the systems to transportation networks, Gao said even if cars can be built freely, it is Taipower that decides which ones can use the highways.

Established in mid-2015 in Taipei City, the TRENA comprises members from academia as well as the business and civil sectors. A longtime anti-nuclear activist, Gao believes renewable energy will be a major force behind the next industrial revolution and the development of green energy could help trigger a new community renaissance in Taiwan.

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