

Taoyuan City

City Profile

ABOUT THE CITY

Taoyuan, the most important international hub and gateway in Taiwan, is located in the northwestern part of the island. With a population of more than 2.2 million people averaging at 39 years old, the city is also known as the youngest Taoyuan City in comparison with its other five metropolitan counterparts. The young and highly educated population explains the city's variety of industrial clusters, ranging from manufacturing to hi-tech industries, such as biological and medical science, new energy, aerospace. The total industrial added value amounted to New Taiwanese Dollars, NTD 3,000 billion (EUR 85 billion), contributing 17.4% to Taiwan's Gross Domestic Products (GDP).

The city houses one of the largest and busiest airports for passenger and freight transport in East Asia, known as the Taoyuan International Airport. Other significant transport infrastructure includes the intra-city highway network, intercity corridors, and elaborate railway system as well as an existing industrial (Taipei) port nearby. Taking full advantage of Taoyuan's industrial resources and transport infrastructure, it forms the backbone of the logistic system. As a result, Taoyuan is home to 1,800 logistics operators, including international enterprises such as UPS, FedEx.

Facts & Figures

Population

2,254,363 inhabitants (2020)

Population Density

1900 inhabitants/km²

Land area

88 square kilometers (km²)

Mayor

Wen-Tsan Cheng (Mr.)

Website

<https://www.tycg.gov.tw/eng/>

SUSTAINABLE MOBILITY IN TAOYUAN

Passenger Transport

According to the municipal data in 2017, about 22% of the residents use ecomobile modes of travels, i.e., walking, cycling and the use of public transport.

Pedestrian connectivity is highly relevant for Taoyuan city, especially within the older city core with veranda-type shop houses to ensure path continuity and accessibility, and the presence of physical barriers as well. In 2019, the City upgraded the quality of 51 roads intersections and enhanced pedestrian connectivity walkways with the total re-paved pedestrian arcade of 8,955 meters (m).

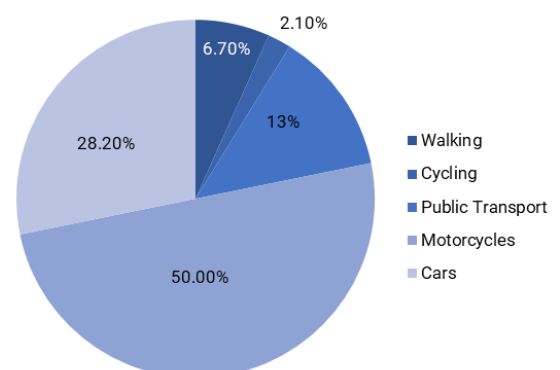


Figure 1: Modal split (2016)¹

The public transportation system of Taoyuan City consists of mass rapid transit (MRT), public bus system, passenger rail transport, and the high-speed rail railway system (HSRS), linking Taoyuan City to other major cities in Taiwan. This system is complemented by different shared services, i.e., the public bike-sharing system (YouBike) and the e-scooter sharing (GoShare), offering multi-modal transportation services to the residents.

The Mass Rapid Transit system in Taoyuan is designed as an orbital circle route linking the municipalities of Taoyuan with three cores and six lines. The MRT forms the backbone of the public transportation system. Besides servicing within Taoyuan City, the MRT links Taoyuan City to the integral nodes within the Taoyuan metropolitan area, Zhongli district, the Taoyuan Aerotropolis, the City of New Taipei, and to the capital City of Taipei. Currently, it runs an incomplete loop from the Taoyuan International Airport to the downtown Taipei, passing through the western part of New Taipei City). In the future, five more routes will be extended to the existing railway and high-speed railway system (HSRS), forming a complete and more seamless loop.

YouBike, the well-known public bike-sharing system piloted in the City of Taipei, was also launched in Taoyuan since 2016. To date, there are 355 bike stations in Taoyuan. Rides less than 30 minutes are free, and an “accident and liability insurance” is offered free for all YouBike cyclists.

In 2019, the first e-scooter-sharing program, GoShare, started in Taoyuan with a fleet of 1,000 vehicles accessible for 7 to 24 hours to promote carbon reduction. This is a significant step forward as many locals rely on private motorcycles to travel. Furthermore, Taoyuan has the largest share and highest number of 179 battery kiosks for e-scooters.

A people-centered approach in transport planning is also introduced. Taoyuan municipality incorporates barrier-free taxi service into the social care system to ensure that adequate and equitable public transportation services for all “Taoyuanese.” The vulnerable groups, such as the elderly and physically-challenged residents, benefit from the reduced and affordable fares for taxi or van service. Besides, six taxi companies upgraded 1,456 taxis to accommodate to the physical needs of the vulnerable taxi users, as part of the city’s goals to improve accessibility. More than 115,000 rides have been made since the start of the program in 2013.

Freight Transport

Geographically, Taoyuan is close to some of the world's top economies and major Asian countries. To the north, China, Japan, and South Korea are the leading international economic partners. To the south, the ten ASEAN countries and India are with tremendous economic potential as emerging powers. In terms of air transport, the average flight time from the Taoyuan International Airport to the leading Asian and Pacific cities, such as Shanghai, Seoul, Hong Kong, and Tokyo, is only 2 hours and 55 minutes.

Goods from Taoyuan typically travel via Taipei Port, with an average time of 53 hours to the listed cities above¹. Benefiting from the strategic location Taoyuan forms a mature logistics and storage industrial supply chain with high capacity air and sea transportation. For example, the import and export volume of re-exports was about 2,097,228 metric tonnes at the Taoyuan International Airport. The average growth rate of freight in recent years (2011-2016) was about 5.20%, based on the national statistics in 2016.²

Taoyuan International Cargo Terminal was established in 1979 and operated as the busiest freight traffic in Taiwan. On an annual basis, 2.6 million tonnes of import, export, and transfer cargoes pass through the terminal, accounting for 96.7% of the total market share in Taiwan. There are four operating cargo terminals, three integrators, and two professional ground service operators to be in charge of the overall freight management for both domestic and international markets.

¹ Taoyuan City Investment website: <https://invest.tycg.gov.tw/home.jsp?id=21&parentpath=0,20>

² Taoyuan City Landuse Planning Draft: Newsletter Review

The Current Status of Logistics Development in Taoyuan

In terms of the local logistics market, the majority of goods are transported through roads and partially through railways. Goods flow on roads mainly occurs in three directions, through both north and south directions on Sun Yat-Sen Freeway/ National Highway No. 1 and northeast to National Highway No. 3. These are the three main corridors for freight movement in and out of the inner city.

Taoyuan developed the "Asian Silicon Valley Project 2020", aiming to be the leading investment promotion guideline that boosts as many investors to invest in the City from the globe. To empower the next generation of logistics in Taoyuan, it actively promotes green and intelligent technology in the logistics industry and pioneers innovative warehousing operations. DHL invested NTD 80 million (EUD 2.29 million Euro) in 2019 to establish the most extensive service center around the island, the Taoyuan Chingpu Special Zone. Another leading investor is a Danish company, DSV Baihe Logistics, the world's fourth-largest logistics company, expanded its investment in the Guanyin District in 2019 by constructing a new plant of more than 66,000m², which is now the largest logistics base in Taiwan.

Other well-known domestic companies, such as the Evergreen Group and Cathay Life Insurance, also invested their main logistics centers in Taoyuan. Air warehousing companies, Huachu, Farglory, Yongchu, and Evergreen Air Transport, are all based in Taoshi, with air cargo accounting for 96.7% of the total operation, the first in Taiwan.

In addition, most recognized e-commerce platforms, such as PChome, Yahoo, and Fubon momo, have also set up their shipping centers and cross-border e-commerce logistics centers in Taoyuan. Dachang Huajia, Yuli, and Jiuyu, the top three major medical logistics centers in Taiwan, have also chosen Taoyuan to be their home. For international operators like DHL, FedEx, UPS, SF Express, Kerry Darong, Hsinchu Logistics, and more have also set up either storage or distribution centers in Taoyuan.

According to the statistics compiled by the City, more than 2,700 logistics relevant operators and service providers registered their headquarters in Taoyuan, and the number keeps growing. Table 1 shows the types of services that are operating in Taoyuan.

Table 1: Number of the logistics operators and service providers registered in Taoyuan (2015-2019)

Categories	2015	2016	2017	2018	2019
Railway Transportation*	1	1	1	1	1
Automobile Container Freight	62	62	67	68	72
Moving service	13	12	11	14	18
Other Car Freight	699	729	767	787	798
Rickshaw transport by human or animals	7	6	5	5	5
Pipeline transportation	2	2	2	2	2
Ocean water Transport*	3	3	3	3	2
Other marine water transportation *	0	0	0	1	1
Inland river and lake water transportation*	53	49	48	46	45
Air Transportation*	10	9	9	9	9
Customs Declaration Service	71	70	68	62	64
Shipping agency	0	0	0	0	0
Railway and land freight contracting	18	19	20	21	22
Land baggage parcel	15	15	16	17	18

Categories	2015	2016	2017	2018	2019
Ocean freight contracting	3	2	2	3	5
Air Cargo Contracting	54	54	51	61	59
Parking management *	454	491	569	659	722
Other land transportation assistance	150	151	149	156	159
Port management	0	0	0	0	0
Towing barge operation	0	0	0	0	0
Cargo loading and unloading	30	30	28	26	26
Ship tally	11	11	11	12	12
Unclassified other water transportation aids	0	0	1	1	1
Air transportation assistance	4	4	5	5	6
Transportation notary service	8	8	7	6	6
Container and cargo terminal operations	11	11	11	10	11
generation tonnage	9	9	9	10	8
Other transportation aids not classified	113	121	121	130	144
Ordinary warehousing operations	94	96	101	107	108
Refrigerated and Refrigerated Storage Operation	5	6	3	3	3
Postal Service	34	34	34	33	33
Home Delivery Service	2	2	2	3	4
Other courier services	12	11	12	8	7
Total	2,242	2,279	2,457	2,601	2,713

Note: *represents operators of both passenger and goods carrier services



Taoyuan Darong Guanyin Logistics Center

THE CHALLENGES OF ECOLOGISTICS DEVELOPMENT IN TAOYUAN

The growing logistics sector in Taoyuan reflects the importance of contributing to the local economy, job creation, and supporting the industrial ecosystem of Taoyuan, as one of the prominent innovation and manufacturing hub in Taiwan. However, the growth also brings challenges to the environment, traffic conditions, and livability. Several barriers that prevent the sustainable development of the logistics sector are related to the regulation and the urban environment, as listed below:

- **Conflicting portfolio in the public sector** – Based on current regulations, the logistics industry within the responsibilities of both the Ministry of Economic Affairs and the Ministry of Transportation. The overlapping responsibilities caused massive inconvenience and hindered the development of this whole industry.
- **Insufficient warehousing lands** – Land scarcity leading to exorbitant rental costs for the legal and registered warehousing land, obstructs the small and medium operators from entering the industry.
- **Illegal warehouses**- The insufficient warehousing lands but high demand led to the unlawful rental of farms or vacant space for warehouse use, which also leads to high external costs.
- **Lack of capacity/ Talent gap** - With its traditional image as a “3K industry” (hardworking, dirty, and low-paid), the logistics industry is struggling to recruit talents to sustain the current growth and to transform into a greener and smarter future.
- **Downsizing** - In the e-commerce era, real-time and on-demand delivery are expected by the end-customers, resulting in increasing small or personal carriers entering the market, including Food Panda and UberEats drivers. Since lots of these enterers are not licensed nor certified compared to registered operators, this has caused more difficulties. At the same time, the city tries to tackle regulations and management issues.

The “Taiwan Logistics Coalition” launched by Taoyuan City in 2015 research into the leading logistics operators in Taoyuan. Some of the current needs and possible solutions from the operators’ perspectives are flagged, such as:

- Land tax deductions and credits can be an excellent relief for warehousing and logistics center operators.
- The current restrictions on the volume rate of the warehousing buildings need to be relaxed to mitigate the insufficient land uses.
- Regulations need to be enforced on unlicensed carriers and operators
- The current Labor Act limits the flexibility to hire, resulting in higher personnel costs for logistics operators.

GREENHOUSE GASES (GHG) EMISSION PROFILE

In 2016, the annual GHG emission accounted for 30.84 million tons of CO₂e. According to the inventory conducted by Taoyuan, the sector with the highest GHG emissions is the energy industry (71.92%), followed by the transport sector (12.45%).

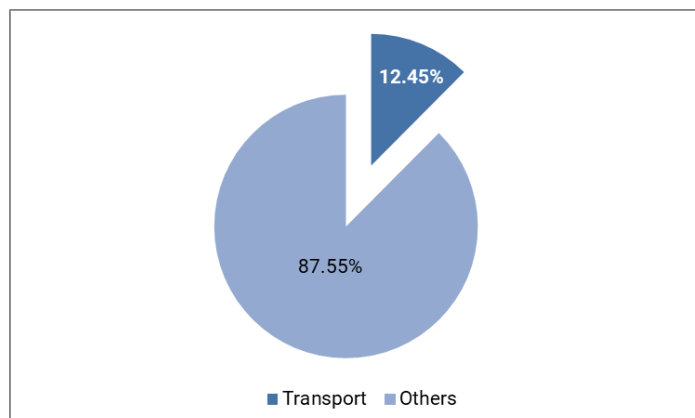


Figure 2: GHG Emission Profile of Taoyuan

TRANSPORT DECARBONIZATION STRATEGIES

In response to a dominant share of transport vehicles powered by fossil fuels, Taoyuan City developed policies to benchmark and transform into low-carbon infrastructure and facilities. Since the “Autonomous Regulations on Developing Taoyuan City as a Low-Carbon- Emission and Green City,” enacted in 2017, the municipality launched a series of projects and action plans, which can be categorized into three themes:

- **GHGs Emissions Reductions**
 - Increase the capacity of the public transport system
 - Increasing subsidies to eliminate old heavy-duty diesel vehicles into green vehicles and for retrofitting diesel particulate filters (based on the “Operation Directions of Subsidies for Low Carbon Vehicles in Taoyuan City”)
 - Accelerate the growth of green vehicle (mainly electric vehicle) usage by offering subsidies upon purchasing to both individual users and company-owned vehicles
- **Air Quality Management**
 - Issue “diesel vehicle self-management emission sticker” to rate the level of pollution
 - Demarcate clean air (or low emission) zones by banning the diesel and other most polluting vehicles from entering these designed zones
 - Establish a “License Plate Recognition System” in clean air (or low emission) zone
- **Reuse of By-products in Road Construction**
 - Boost the use of recycled and reused materials that meet green standards for current construction projects. For instance, the annual road maintenance plans, transport infrastructure projects for industrial parks and Taoyuan Aerotropolis, etc.

Apart from the specific policies focusing on greenhouse gas emissions and air pollution reduction, other polities also aim to reduce motorized transport to alleviate traffic congestion. Taoyuan City deployed information communication technologies (ICT) in the transport sector, to monitor, control, and respond to real-time traffic conditions. Thus, increasing traffic efficiency and safety.³

³ The conclusion of “The Committee of Smart City Promotion” 桃園市政府智慧城市推動委員

Furthermore, the Taoyuan City initiated industry, government, and academic collaboration by launching the “Taiwan Logistics Coalition”⁴ in 2015 to improve the stakeholder engagement of logistics operators. With globally recognized practitioners, the City hopes to transform itself into a home and hub of greener logistics operators for the whole Asia-Pacific area.

FUTURE PLANS FOR ECOLOGISTICS DEVELOPMENT IN TAOYUAN

Under the framework of its local climate change actions and sustainable development, Taoyuan City has engaged in facilitating all potential resources to address these issues locally. EcoLogistics serves as a window for Taoyuan City to communicate sustainable development opportunities with all the stakeholders in logistics industries through awareness-raising, participation, workshops, amongst others.

The Taoyuan City, in cooperation with ICLEI, serves as the Chair of the EcoLogistics Community, the first international network for cities aspiring to improve ecologistics. To coordinate the development of the EcoLogistics initiative and projects across sectors, the Taoyuan City Government has set up the EcoLogistics Community Chair Office to facilitate the activities over the next two years (2020-2021). The project activities are listed below:

- Establish a working group with interested peer cities and partners to facilitate peer-to-peer exchange and contribute to plans and activities within the Community
- Gain an understanding of Taoyuan’s initial situation on urban freight by developing an EcoLogistics Index (ELI) performance measurement system for ecologistics in cities
- Form and engage multi-stakeholder groups to develop and implement goals and meaningful forms of actions for implementation
- Implement five demonstration project(s) on sustainable urban logistics
- Develop a Sustainable Urban Logistics Plans for Taoyuan

Latest information about the Community can be found at: <https://ecomobility.org/ecologistics-community/>

⁴ “Taiwan Logistics Coalition”, 台灣物流聯盟