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CDP Cities 2017 - Taoyuan City Government

Module: Introduction

Page: Introduction

0.1

Please give a general description and introduction to your city including your city's boundary in the text box below.

Administrative boundary	Description of city
City/Municipality	Taoyuan City is an aerotropolis city situated at the center of Asia-Pacific. The industrial output of the city has always been the pioneer of the country. Recently Taoyuan city is actively involved in development of renewable energy, sustainable transport and integrating environmental education into citizens' daily lives. These actions make Taoyuan City become a well-balanced green city economically and environmentally.

0.2

Emissions Accounting Choice

Reporting emissions is optional for all cities. By checking the boxes below you are indicating that you have fuel and/or greenhouse gas (GHG) emissions data to report at this time.

Select 'Government' to report emissions from your local government operations (sometimes referred to as 'corporate' or 'municipal' emissions).

Select 'Community' to report emissions from the entire city area over which the city government can exercise a degree of influence through the policies and regulations they implement (sometimes referred to as 'geographic' or 'city-wide' emissions).

Select both boxes to report fuel and/or emissions for both inventories.

IF YOU HAVE NO FUEL AND/OR GREENHOUSE GAS EMISSIONS TO REPORT DO NOT CHECK EITHER BOX.

Government

Community

M0.0

Would you like CDP to use the responses provided in the main questionnaire as your city's submission to the Global Covenant of Mayors for Climate and Energy (Compact of Mayors)?

No - I would like to continue responding in the Global Covenant module

Module: Governance

Page: City Details

0.3

Please provide information about your city's Mayor in the table below.

Leader title	Leader name	Current term start	Current term end	Total time in office (years)
Mayor	Cheng Wen-Tsan	2014	2018	3

0.4

Please provide details of your city's annual operating budget.

Annual operating budget	Currency	Budget year start	Budget year end
102234389340	TWD New Taiwan Dollar	Sun 01 Jan 2017	Sun 31 Dec 2017

0.5

Please provide details of your city's current and projected population.

Current population	Current population year	Projected population	Projected population year
2153521	2017		

0.6

Please provide details of your city's GDP.

GDP	Currency	Year of GDP	Source
17111263000000	TWD New Taiwan Dollar	2016	DGBAS, Executive Yuan, Taiwan

0.7

Please provide further details about the geography of your city.

Average annual temperature (in Celsius)	Land area (in square km)	Average altitude (m)	Longitude (e.g. -120.9762)	Latitude (e.g. 41.25)
23	1220.9		121.301019	24.993176

Page: Governance

1.0

Please describe the impact of national and/or regional climate change activities on your city's own climate change activities.

We formulated corresponding emission reduction targets in accordance with greenhouse gas reduction and energy efficiency targets drawn up by Executive Yuan, and developed relevant carbon reduction policies and strategies. We review the plans and their progress at least once every five years.

1.1

Please describe how your city manages overall responsibility for climate change mitigation (emissions reduction) and adaptation (climate risk reduction).

For mitigation, based on our greenhouse gas inventory results, we investigated our industrial structure and emission sectors, and differentiate the authority and responsibilities for Emission sources. And then for the part that is within city government's operational control, we hold inter-bureau meetings to set up reduction targets.

For adaptation, we established an inter-bureau platform of reduction and adaptation to climate change and integrated governance policies from different bureau through the platform and meetings.

1.2

Does your city incorporate desired sustainability goals and targets (e.g. GHG reductions) into the master planning for the city?

Response	Description
Yes	The overall goal is to reduce 50% of GHG emissions by 2050 compared with 2005 level

Module: Risks & Adaptation

Page: Climate Hazards

2.0

Has a climate change risk or vulnerability assessment been undertaken for your local government area?

No

2.1

Do the current and/or anticipated effects of climate change present a significant risk to your city?

Don't know

2.1a

Please list the most significant climate hazards currently faced by your city and indicate the probability and consequence of these hazards.

Climate hazards	Probability of hazard	Consequence of hazard
Rain storm	Medium High	Medium High
Drought	Medium	Medium High
Cyclone (Hurricane/Typhoon)	Medium High	Medium High
Landslide	Medium High	High

2.1c

Please identify how you expect climate change to affect the frequency and intensity of the hazards faced by your city and when you expect to experience those changes.

Climate hazards	Change in frequency	Change in intensity	Anticipated timescale
Rain storm	Increasing	Increasing	Current
Drought	Increasing	Increasing	Current
Cyclone (Hurricane/Typhoon)	Decreasing	Increasing	Current
Landslide	Increasing	Increasing	Current

Page: Climate Hazards II

2.1d

Please describe the magnitude of the impact of these hazards and identify three critical assets or services that may be most impacted.

Climate hazards	Magnitude of impact	Impact description	Asset or service	Asset or service	Asset or service
Rain storm	Less serious	Continuous rainfall causes flooding on main roads and residential areas	Water Supply & Sanitation	Public health	Food and agriculture
Drought	Serious	Decreasing rainfall between winter and spring	Water Supply & Sanitation	Food and agriculture	Public health
Cyclone (Hurricane/Typhoon)	Serious	Stronger typhoons could cause greater level of damage	Emergency Management	Water Supply & Sanitation	Commercial
Landslide	Serious	Result in land loss and property loss	Environment	Residential	Emergency Management

2.2

Do you consider that the effects of climate change could threaten the ability of businesses to operate successfully in your city?

Response	Explanation
Yes	It is anticipated that Taoyuan City may encounter larger rainfall gap between wet and dry seasons. Considering bursting population and industries development in the city, along with agriculture irrigation in spring and the storage capacity of reservoirs, there is high opportunity for spring-time water shortage. Therefore, it is worth attention of how to use water resources efficiently and wisely. In the face of greater and more intense rainfall events in the future, we should pay more attention to urban drainage system, high risk regions of landslide, consider climate risk caused by extreme weather events and design a comprehensive adaptation strategy to climate change.

Page: Adaptation

3.0

Has the Mayor or local government committed to adapting to climate change across the geographical area of the city, town or settlement?

Yes

3.0a

Please select the type of commitment(s) and attach evidence.

Type of commitment	Attach	Comments
Compact of Mayors	committed_badge_2016.png	Taoyuan City committed to the Compact of Mayors in March 2016. The commitment badge was granted .

3.1

Does your local government have a plan that addresses climate change adaptation?

In progress

3.1b

Please explain why not and/or any future arrangements you have to create a plan.

Late last year we started to collect and integrate information about adaptation from different departments of Taoyuan City Government. It is anticipated that later this year or in the first few months next year, we'll have a more complete result and develop a climate change adaptation plan.

3.2

The Global Covenant of Mayors requires cities to complete [these additional questions](#) on the climate hazards affecting your city and your city's plans to adapt to these hazards. Other cities wishing to disclose further detail about their adaptation efforts are also encouraged to fill out the download.

[Click here to download the additional questions.](#)

Page: Social Risks

4.0

Does your city face any social risks as a result of climate change?

Yes

4.0a

Please complete the table

Social risks	Anticipated timescale in years	Impact description
Increased demand for public services (including health)	Current	Some areas have higher percentage of elderly population without enough medical resources.
Increased risk to already vulnerable populations	Short-term	More hot days and other climate hazard may put the social vulnerable groups at risk.

Module: Opportunities

Page: Opportunities

5.0

Does climate change present any economic opportunities for your city?

Yes

5.0a

Please indicate the opportunities and describe how the city is positioning itself to take advantage of them.

Economic opportunity	Describe how the city is maximizing this opportunity
Development of new business industries (e.g. clean tech)	In accordance with central energy policy, Taoyuan City develops solar photovoltaic industries, promote local government buildings to install solar power on their rooftop. Furthermore, we provide subsidy to encourage private sectors install solar panel on their rooftop. Besides PV industries, we encourage Taiwan Power Company and other private companies to invest in wind energy in coastal areas within city's boundary.
Additional funding options	Some banks have committed to support solar PV installation by reducing the financing threshold.
Improved efficiency of operations	We promote using of high efficient devices, such as replacing streetlights and signal lights with LED, and using LED for public areas.
Increased attention to other environmental concerns	We take advantage of climate risk that occurred within the nation to raise public awareness about climate change issues.
Increased infrastructure investment	To improve Taoyuan City's resilience, all infrastructure and construction designs should take the impact of extreme weather into consideration.

5.1

Does your city collaborate with businesses in your city on sustainability issues or projects?

Response	Description
Yes	We set up making business greener service corps to assist industries to establish its determined reduction goal. Also we held competitions and counseling workshops to encourage enterprises to pay more attention to the environment and sustainable development issues.

5.2

List any climate change-related projects for which you hope to attract private sector financing, and provide any details on the estimated overall costs and status of the project. If your city does not have any relevant projects, please select None under Project Area.

Project area	Status of project	Status of financing	Project description	Total cost of project (USD\$)	Total investment cost needed (USD\$)
Renewable energy	Implementation	Project partially financed and seeking additional financing	The first PV pond has finished with floating solar panel installation earlier this year. On 13th of April, we held a press conference plus opening ceremony for the PV pond, hoping to inspire and motivate the owner of other ponds in Taoyuan to be involved in renewable energy development.	994333	

Module: Emissions - Local Government Operations

Page: Local Government - Methodology

LGO1.0

Please state the dates of the accounting year or 12-month period for which you are reporting a GHG measurement inventory for your local government operations.

Thu 01 Jan 2015 - Thu 31 Dec 2015

LGO1.1

Please indicate the category that best describes the boundary of your municipal GHG emissions inventory.

Departments, entities or companies over which operational control is exercised

LGO1.2

Please indicate which of the following major sources of emissions are included in your municipal GHG emissions inventory.

Source of emissions	Status
Airport(s)	Not applicable
Buildings	Included
Buses	Not applicable
Electricity generation	Not applicable
Electricity transmission and distribution	Not applicable
Employee commuting	Not included
Incineration of waste	Not included
Landfills	Included
Local trains	Not applicable
Maritime port	Not applicable
Municipal vehicle fleet	Included
Regional trains	Not applicable
Roads / highways	Not applicable
Street lighting and traffic signals	Included
Subway / underground	Not applicable
Thermal energy	Not applicable
Waste collection	Not applicable
Wastewater treatment	Not applicable
Water supply	Included
Unknown source	Included
Total	Not applicable

LGO1.3

Please give the name of the primary protocol, standard or methodology you have used to calculate GHG emissions.

Primary protocol	Comment
Other: GHG inventory calculation guideline for county-and-municipality-level government	"GHG inventory calculation guideline for county-and-municipality-level government" is published by Environmental Protection Administration of Taiwan with "International Local Government Greenhouse Gas Emissions Analysis Protocol, IEAP" as the reference.

LGO1.4

Which gases are included in your emissions inventory? Tick all that apply.

- CO2
- PFCs
- CH4
- SF6
- N2O
- NF3
- HFCs

Further Information

For Question LGO1.5, the weight of protein consumption per person per year is also included in our inventory, but we couldn't find the appropriate unit for this data. Therefore we have it attached here.

Attachments

[GHG_inventory_government_waste_water_treatment_for_LGO1.5.pdf](#)

Page: Local Government - Energy Data

LGO1.5

Please give the total amount of fuel (refers to Scope 1 emissions) that your local government has consumed this year.

Source	Fuel	Amount	Units
Buildings	Natural gas	70255.00	m3 (cubic meters)
Buildings	Liquefied Petroleum Gas (LPG)	246103.41	L
Buildings	Diesel/Gas oil	846459.28	L
Buildings	Motor gasoline (petrol)	563.45	L
Landfills	Waste (municipal)	0	Metric tonnes
Municipal vehicle fleet	Motor gasoline (petrol)	2437264.15	L
Municipal vehicle fleet	Diesel/Gas oil	3272309.93	L
Buildings	Other: CO2 fire extinguisher	0.521	Metric tonnes
Buildings	Other: Sodium bicarbonate dry chemical fire extinguisher	9.995	Metric tonnes
Buildings	Other: Potassium bicarbonate dry chemical fire extinguisher	1.876	Metric tonnes
Buildings	Other: Refrigerant R134a	0.325	Metric tonnes
Buildings	Other: Refrigerant R410a	0.284	Metric tonnes

LGO1.6

How much electricity, heat, steam, and cooling (refers to Scope 2 emissions) has your local government purchased for its own consumption during the reporting year?

Source	Type	Amount	Units
Buildings	Electricity	112624657.50	kWh
Street lighting and traffic signals	Electricity	83143991.32	kWh

Page: Local Government - GHG Emissions Data

LGO1.7

Please provide total (Scope 1 +Scope 2) GHG emissions for your local government's operations, in metric tonnes CO2e.

124688.30

LGO1.8

If applicable, please provide the following GHG emissions.

Scope 1: All direct GHG emissions

Scope 2: Indirect GHG emissions associated with the consumption of purchased or acquired electricity, steam, heating, or cooling.

Total Scope 1 activity in metric tonnes CO2e emitted	Total Scope 2 activity in metric tonnes CO2e emitted
21322.45	103365.85

LGO1.9

Do you measure Scope 3 emissions?

Yes

LGO1.9a

Please complete the table.

Source of Scope 3 emissions	Emissions (metric tonnes CO2e)	Comment
Emissions from Contracted Services	4152.88	includes: 1.Buildings 2257.9870 tonnes 2.Water treatment 1801.0449 tonnes 3.Transportation 93.7063 tonnes 4.Fugitive emissions 0.1406 tonnes

LGO1.11

Where it will facilitate a greater understanding of your government emissions, please provide a breakdown of these emissions by department, facility, source, or by any other classification system used in your city.

Department / Facility / Source / Other	Scope	Emissions (metric tonnes CO2e)
Residential-buildings/LPG, Natural gas, Diesel/Gas oil, Motor gasoline	Scope 1	2778.52
Residential-buildings/Electricity	Scope 2	59465.82
Street lighting and traffic signals/ Electricity	Scope 2	43900.03
Transportation/Motor gasoline · Diesel/Gasoil	Scope 1	14431.34
Fugitive/Refrigerant · Fire extinguisher	Scope 1	854.11
Waste/Landfills · Wastewater treatment	Scope 1	3258.49

LGO1.12

Please indicate if your emissions have increased, decreased, or stayed the same from the previous year, and please describe why.

Change in emissions	Reason for change
Increased	Taoyuan officially became a special municipality (Taoyuan was a county before) on 25th of December, 2014 and the inventory boundary has changed. The most significant change is that this year the inventory included street lighting and traffic signals; also there are more departments/institutions included in the inventory; hence the increase.

Page: Local Government - External Verification

LGO1.13

Has the GHG emissions data you are currently reporting been externally verified or audited in part or in whole?

Yes

LGO1.13a

Please provide the following information about the emissions verification process.

Name of verifier	Year of verification	Attach verification certificate	Comments
BSI	2015	2015_Government_GHG_inventory_verification_opinion_statement.pdf	

Module: Emissions - Community

Page: Community - Date and Boundary

C1.0

Please state the dates of the accounting year or 12-month period for which you are reporting a GHG measurement inventory for your community.

Wed 01 Jan 2014 - Wed 31 Dec 2014

C1.1

Please indicate the category that best describes the boundary of your community GHG emissions inventory.

Administrative boundary of a local government

Page: Community - GHG Emissions Data

C1.2

Please give the name of the primary protocol, standard or methodology you have used to calculate GHG emissions.

Primary protocol	Comment
2006 IPCC Guidelines for National Greenhouse Gas Inventories	

C1.3

Which gases are included in your emissions inventory? Tick all that apply.

- CO2
- PFCs
- CH4
- SF6
- N2O
- NF3
- HFCs

C1.4

Please detail total (Scope 1 + Scope 2) emissions for your community, in metric tonnes CO2e and provide a comment on the level of confidence in the accuracy of your community emissions figure.

Total emissions (metric tonnes CO2e)	Attach your inventory	Level of confidence	Comment on level of confidence
35764526.0208	2014_Community_GHG_inventory_report_Taoyuan_City.pdf	Medium	For level of confidence, we multiply the accuracy level of collected activity data by the accuracy level of emission coefficients used. Accuracy level classification for activity data : 「H」 Regional statistics data :1 「M」 Cities statistics data:2 「L」 Central statistics data:3 Accuracy level classification for emission coefficients : 「H」 Regional emission

Total emissions (metric tonnes CO2e)	Attach your inventory	Level of confidence	Comment on level of confidence
			coefficients: 1 「M」 National emission coefficients: 2 「L」 International emission coefficients: 3 The overall result is 5.13, the score falls within range 4-7, which was classified as medium level of confidence

C1.5

If applicable, please provide a breakdown of your GHG emissions by scope. Where values are not available, please use the comment field to indicate the reason why.

Scope	Metric tonnes CO2e	Level of confidence	Comments
Scope 1 emissions excluding emissions from grid-supplied energy generation	6435409.68	Medium	
Scope 1 emissions from grid-supplied energy generation within the city boundary	14707784.92	Medium	
Total Scope 1 emissions (Row 1 + Row 2)	21143194.60	Medium	
Total Scope 2 emissions	14621331.42	Medium	

C1.6a

Where it will facilitate a greater understanding of your community's emissions, please provide a breakdown of these emissions by IPCC sector in the table below.

IPCC sector	Sector	Scope	Emissions (metric tonnes CO2e)
Energy	Residential buildings	Scope 1	837389.23
Energy	Residential buildings	Scope 2	3036544.90
Energy	Industrial buildings	Scope 1	14707784.92
Energy	Industrial buildings	Scope 2	11544778.85
Energy	Road	Scope 1	3986605.30
Energy	Rail	Scope 1	2739.11
Energy	Rail	Scope 2	40007.67
Industrial Processes and Product Use (IPPU)	Other: Industrial processes and product use	Scope 1	1078462.30

IPCC sector	Sector	Scope	Emissions (metric tonnes CO2e)
Agriculture, Forestry and Other Land Use (AFOLU)	Other: Agriculture	Scope 1	45319.67
Waste	Waste	Scope 1	484894.01

C1.7

Please give the total amount of fuel (referring to Scope 1 emissions) consumed in your city during the reporting year.

Fuel	Amount	Units	End user / Economic sector / IPCC sector / Other	Sector
Crude oil	204904302.57	L	Energy supply from buildings and AFOLU(原油)	Stationary energy (buildings)
Natural gas	103950875.75	m3 (cubic meters)	Energy supply from buildings and AFOLU(天然氣)	Stationary energy (buildings)
Liquefied Natural Gas (LNG)	39338598.96	m3 (cubic meters)	Energy supply from buildings and AFOLU(液化天然氣)	Stationary energy (buildings)
Diesel/Gas oil	7201.67	L	Energy supply from buildings and AFOLU(柴油)	Stationary energy (buildings)
Waste (municipal)	153998.68	Metric tonnes	Energy supply from Industries(一般廢棄物)	Industrial buildings
Natural gas	5467136694	m3 (cubic meters)	Energy supply from Industries(天然氣)	Industrial buildings
Other: biofuel	56392.82	Metric tonnes	Energy supply from Industries(生質燃料)	Industrial buildings
Diesel/Gas oil	8868551	L	Energy supply from Industries(柴油)	Industrial buildings
Liquefied Natural Gas (LNG)	14116517	m3 (cubic meters)	Energy supply from Industries(液化天然氣)	Industrial buildings
Liquefied Petroleum Gas (LPG)	1244175928	L	Energy supply from Industries(液化石油氣)	Industrial buildings
Coal (Anthracite)	27425.18	Metric tonnes	Energy supply from Industries(無煙煤)	Industrial buildings
Coke breeze	803.94	Metric tonnes	Energy supply from Industries(焦炭)	Industrial buildings
Coal (Bituminous or Black coal)	4339193.59	Metric tonnes	Energy supply from Industries(煙煤)	Industrial buildings
Residual fuel oil	496678400	L	Energy supply from Industries(蒸餘油)	Industrial buildings
Coal (Lignite or Brown coal)	190816.82	m3 (cubic meters)	Energy supply from Industries(褐煤)	Industrial buildings
Refinery gas	507895874	m3 (cubic meters)	Energy supply from Industries(煉油氣)	Industrial buildings
Coal (sub-bituminous)	48834.32	Metric tonnes	Energy supply from Industries(次煙煤)	Industrial buildings

Fuel	Amount	Units	End user / Economic sector / IPCC sector / Other	Sector
Coal (unknown)	18841389	Metric tonnes	Energy supply from Industries(燃料煤)	Rail
Sludge gas	8939980	m3 (cubic meters)	Energy supply from Industries(汙泥沼氣)	Road
Diesel/Gas oil	1033066.67	L	Transportation(軌道柴油)	Road
Motor gasoline (petrol)	1079098469.84	L	Transportation(車用汽油)	Road
Diesel/Gas oil	538989290.80	L	Transportation(車用柴油)	Road
Biodiesels	3343373.43	L	Transportation(車用生質柴油)	Industrial buildings
Liquefied Petroleum Gas (LPG)	5272134.00	L	Transportation(車用液化石油氣)	Industrial buildings
Other: NF3	0.70	Metric tonnes	Industrial processes and product use(工業製程)	Industrial buildings
Other: HF	2.63	Metric tonnes	Industrial processes and product use(工業製程)	Industrial buildings
Other: HNO3	45172.32	Metric tonnes	Industrial processes and product use(工業製程)	Industrial buildings
Other: CaCO3	8693.67	Metric tonnes	Industrial processes and product use(工業製程-碳酸鈣)	Industrial buildings
Other: Paraffin wax	30.53	Metric tonnes	Industrial processes and product use(工業製程-石蠟)	Industrial buildings

C1.8

How much electricity, heat, steam, and cooling (referring to Scope 2) has been consumed by your city during the reporting year?

Type	Amount	Units	End user / Economic sector / IPCC sector / Other	Sector
Electricity	5828301156	kWh	Energy supply from buildings and AFOLU	Stationary energy (buildings)
Electricity	22158884555	kWh	Energy supply from Industries	Industrial buildings
Electricity	76684783	kWh	Transportation	Transportation

C1.11

Do you measure Scope 3 emissions?

Yes

C1.11a

Please complete the table

Source of Scope 3 emissions	Emissions (metric tonnes CO2e)	Comment
Aviation	5962485.42	

C1.12

Please indicate if your emissions have increased, decreased, or stayed the same since your last emissions inventory, and please describe why.

Reason for change	Please describe why
Increased	Our industry is growing continuously, so our total emission is slowly increasing. The sectors with increasing emissions are: industrial energy (fuel) by 14.2%; industrial processes and product use by 12.1%; buildings and AFOLU by 3.7%. The sectors with emission reductions are: agriculture by 0.4%; industrial energy (electricity) by 0.04%.

Further Information

For question C 1.6a, the inventory also include -354254.78 metric tonnes of carbon credit. For question C 1.7, there are some compounds also included in our inventory but with emission numbers too small to choose an appropriate unit from the list, so we've attached all the other compounds here.

Attachments

[Additional data for C1.7.pdf](#)

Page: Community - External Verification

C1.13

Has the GHG emissions data you are currently reporting been externally verified or audited in part or in whole?

Yes

C1.13a

Please provide the following information about the emissions verification process.

Name of verifier	Year of verification	Attach verification certificate	Comments
BSI	2014	2014_BSI_community_GHG_verification_opinion_statement.pdf	

Module: Strategy

Page: GHG Emissions Reduction - Local Government Operations

6.0

Do you have a GHG emissions reduction target in place for your local government operations?

No

6.0b

Please explain why you do not have a local government operations emissions reduction target.

We follow the reduction target set up by central government. We have no specific reduction target at city-level. Our main focuses are to save energy and reduce resources consumption.

6.1

What actions are you undertaking to reduce your emissions in your local government operations?

Emissions reduction activity	Anticipated emissions reduction – cumulative over the lifetime of the action (metric tonnes CO2e)	Action description
Building codes and standards		New public buildings with total project cost over NTD 200 million should achieve “Intelligent Green Building” label, and total project cost that is over NTD 50 million must obtain “Green Building” label, and those with total project cost less than NTD 50 million shall at least meet the criterion of “Daily Energy Conservation” indicator and “Water Conservation” indicator.
LED / CFL / other luminaire technologies	10916	Put forward a complete ban on using mercury street lights, and replace them with LED streetlight. Reduce about 10916 tons of CO2 emission annually.

Page: GHG Emissions Reduction - Community

7.0

Does your city have a climate change action plan for reducing GHG emissions?

Yes

7.0a

Please attach your city's climate change action plan below.

Publication title	Year of publication	Attach	Web link
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Publication title	Year of publication	Attach	Web link
Low Carbon Green City Flagship Projects	2017	2017 Taoyuan City Low Carbon Green City Flagship Projects.pdf	

7.1

Do you have a GHG emissions reduction target in place for your community? Tick all that apply.

Base year emissions (absolute) target

7.1a

Please provide details of your total city-wide base year emissions reduction (absolute) target. In addition you may provide details of your sector-specific targets, by providing the baseline emissions specific to that target.

Sector	Baseline year	Baseline emissions (metric tonnes CO2e)	Percentage reduction target	Target date	Comment
Total	2005	30474326	50%	2050	In accordance with Central Government policy

7.2

What actions are you undertaking to reduce emissions city-wide?

Emissions reduction activity	Anticipated emissions reduction – cumulative over the lifetime of the action (metric tonnes CO2e)	Action description
Improve bus infrastructure, services, and operations		We improve the willingness of citizens to use public transportation through different kind approaches. First, we review all the bus routes and route map for public transportation to ensure the service to reach entire city. Then we check the quality of service and continue to improve the accuracy and added value of public transport inquiry platform enabling passengers to track real-time bus movements.
Carbon emissions reduction from industry		We set up “Making Business Greener Service Corps” to assist industries to establish its determined reduction goal.
Energy efficiency/ retrofit measures		We provide subsidies to improve low-carbon communities, and encourage people to put low-carbon life into effect.
Low or zero carbon energy supply generation		Taoyuan city is dedicated to developing solar photovoltaic industries. We request that local government install solar power on their rooftop and moreover we promote solar photovoltaic installation on the rooftop of communities and factories.
Improve fuel economy and reduce CO2 from motorized vehicles		To ameliorate the traffic congestion in certain area, we use advanced traffic management systems designed on traffic signal to enhance the efficiency and safety. And with less traffic congestion lower carbon dioxide would be discharged into the air.

Emissions reduction activity	Anticipated emissions reduction – cumulative over the lifetime of the action (metric tonnes CO2e)	Action description
Building codes and standards		We should demand that buildings over 6 floors to adopt green roof design and its area should not be smaller than 50% of the top floor.
Water recycling and reclamation		1. Raise the installation rate of piped sewage, and reuse the water that has been processed by water resource recycling center 2. Provide subsidy for schools to install rainwater recycling systems in their campus, and encourage them to also install “water piggy bank” for involving recycling concept into education

Page: Renewable Energy

8.0

Please indicate the energy mix of your electricity consumed at the city-wide scale.

Energy source	Percent
Coal	
Gas	
Oil	
Nuclear	
Hydro	
Biomass	
Wind	
Geothermal	
Solar	
Unknown sources	

8.1

Does your city have a renewable energy or electricity target for consumption and/or production of energy?

No

8.1b

Please explain why you do not have a renewable energy target or a renewable electricity target and any plans to introduce one in the future.

Taiwan has a national renewable energy target: 20% renewable energy by 2025. Taoyuan dedicated to develop renewable energy according to this target. i.g. Install solar panels on public buildings, PV ponds and wind energy. However energy is not under Taoyuan’s governance, therefore Taoyuan has not set up our own renewable energy targets.

Page: Water Supply Risks

9.0

Do you foresee substantive risks to your city’s water supply in the short or long term?

Yes

9.0a

Please identify the risks to your city’s water supply as well as the timescale and level of risk.

Risks	Timescale	Level	Risk description
Increased water stress or scarcity	Current	Serious	Increasing population and industries in the city, along with agriculture irrigation in the spring and the limited storage capacity of reservoir result in high opportunity for spring drought in the future.

Risks	Timescale	Level	Risk description
Flooding	Current	Serious	Due to the increase number of severe typhoons developed in tropical area, the intense and continuous rainfall lead to flooding on main roads and residential areas.
Declining water quality	Short-term	Less serious	Extreme rainfall events bring about the difficulties of controlling water supply in reservoirs.

Page: Water Supply Management

9.1

Please describe the actions you are taking to reduce the risks to your city's water supply.

Risks	Adaptation action	Action description
Increased water stress or scarcity	Conservation awareness and education	Encourage the use of water-saving devices and recycling through Propaganda campaign.
Flooding	Stormwater management (natural or man-made infrastructure)	Review the flood control design standards, and ensure all the Infrastructure designs and construction designs should take the impact of extreme weather into consideration.
Declining water quality	Watershed preservation	Strengthen soil and water conservation around the catchment area, and reduce the probability of landslide occurrence due to heavy rain erosion, in order to avoid having impact at lower basin.

Module: Compact of Mayors

Page: COM Overview

M0.1

If registering intent of compliance with the Compact of Mayors, please attach your letter.

[Letter Of Intent Taoyuan City.pdf](#)

M0.2

Please give a general description and introduction to your city including your city's boundary in the text box below.

Administrative boundary	Description of city
City/Municipality	Taoyuan City is an aerotropolis city situated at the center of Asia-Pacific. The industrial output of the city has always been the pioneer of the country. Recently Taoyuan city is actively involved in development of renewable energy, sustainable transport and integrating environmental education into citizens' daily lives. These actions make Taoyuan City become a well-balanced green city economically and environmentally.

M0.3

Please provide details of your city's current and projected population.

Current population	Current population year	Projected population	Projected population year
2114172	2016		

M0.4

Please provide details of your city's GDP.

GDP	GDP Currency	Year of GDP	Source
16759016000000	TWD New Taiwan Dollar	2015	DGBAS, Executive Yuan, Taiwan

M0.5

Please provide the land area (in km²) of your city.

1220.9

M0.6

Please provide information about your city's Mayor in the table below.

Leader title	Leader name	Current term start	Current term end	Total time in office (years)
Mayor	Cheng Wen-Tsan	2014	2018	3

M0.7

Please provide details of your city's annual operating budget.

Annual operating budget	Currency	Budget year start	Budget year end
102234389340	TWD New Taiwan Dollar	Sun 01 Jan 2017	Sun 31 Dec 2017

Page: COM GHG Emissions Inventory

M1.0

Please state the dates of the accounting year or 12-month period for which you are reporting a GHG emissions inventory for your community.

Wed 01 Jan 2014 - Wed 31 Dec 2014

M1.1

Please indicate the category that best describes the boundary of your community GHG emissions inventory.

Administrative boundary of a local government

M1.2

Please give the name of the primary protocol, standard, or methodology you have used to calculate GHG emissions.

2006 IPCC Guidelines for National Greenhouse Gas Inventories

M1.4

Does your city commit to reporting a compact-compliant GPC inventory?

Yes

M1.4a

When does your city commit to reporting a compact-compliant GPC inventory?

Page: COM GHG Emissions Reduction

M1.6

Does your city have a climate change action plan for reducing GHG emissions?

M1.6b

Please describe how your city's climate change action plan addresses the following key areas, and provide details on the location of this evidence within your plan.

Key requirement	Proof statement	Page number	Publication title
Political commitment to emissions reduction			
Vision describing city's overall ambition and clear objectives			
Context of the action plan			
Baseline GHG emissions figure			
Business as usual GHG emissions forecast			
GHG emissions reduction target			
Implementation of the action plan			
Monitoring of the action plan			

M1.7

Do you have a GHG emissions reduction target in place for your community? Tick all that apply.

Page: COM Climate Hazards

M2.0

Please list the most significant climate hazards currently faced by your city and indicate the probability and consequences of these hazards.

Climate hazard	Probability of hazard	Consequence of hazard
Rain storm	Medium High	Medium High
Drought	Medium	Medium High
Cyclone (Hurricane/Typhoon)	Medium High	Medium High

Climate hazard	Probability of hazard	Consequence of hazard
Landslide	Medium High	High

M2.1

Please identify how you expect climate change to affect the frequency and intensity of the hazards faced by your city and when you expect to experience those changes.

Climate hazards	Change in frequency	Change in intensity	Anticipated timescale
Rain storm	Increasing	Increasing	Current
Drought	Increasing	Increasing	Current
Cyclone (Hurricane/Typhoon)	Decreasing	Increasing	Current
Landslide	Increasing	Increasing	Current

Page: COM Climate Hazards II**M2.2**

Please describe the magnitude of the impact of these hazards and identify three critical assets or services that may be most impacted.

Climate hazards	Magnitude of impact	Impact description	Asset or service	Asset or service	Asset or service
Rain storm	Less serious	Continuous rainfall causes flooding on main roads and residential areas	Water Supply & Sanitation	Public health	Food and agriculture
Drought	Serious	Decreasing rainfall between winter and spring	Water Supply & Sanitation	Food and agriculture	Public health
Cyclone (Hurricane/Typhoon)	Serious	Stronger typhoons could cause greater level of damage	Emergency Management	Water Supply & Sanitation	Commercial
Landslide	Serious	Result in land loss and property loss	Environment	Residential	Emergency Management

M2.3

Has a climate change risk or vulnerability assessment been undertaken for your local government area?

No

Page: COM Adaptation**M3.0**

Has the Mayor or local government committed to adapting to climate change across the geographical area of the city, town or settlement?

Yes

M3.0a

Please select the type of commitment(s) and attach evidence.

Commitment	Attach	Comment
Compact of Mayors		Taoyuan City committed to the Compact of Mayors in March 2016. The commitment badge was granted .

M3.1

Does your local government have a plan that addresses climate change adaption?

Response	Type of plan
In progress	

M3.1b

Please describe how your local government climate adaptation plan addresses the following key areas, and provide details on the location of this evidence within your plan.

Key requirements	Proof statement	Page number	Publication title

Key requirements	Proof statement	Page number	Publication title
Political commitment to adaptation			
Identification of adaptation actions			
Engagement of multiple city government agencies/departments			
Process for regular review of the plan			

M3.2

The Global Covenant of Mayors requires cities to complete [these additional questions](#) on the climate hazards affecting your city and your city's plans to adapt to these hazards. Other cities wishing to disclose further detail about their adaptation efforts are also encouraged to fill out the download.

[Click here](#) to download the additional questions.

CDP: [X][-,][P2]



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