CDP Cities 2016 Information Request
Taipei 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	1. Taipei City is the capital of Taiwan, and also the political, economic, and cultural center of Taiwan. As the city works towards the target of becoming financial and trade center in Asia, its persistent efforts in developing low carbon city bears symbolic significance. 2.The amount of population increased slightly in the past from 2,688,772 in 2010 to 2,704,810 in end of 2015. 3. The region covers an area of 271.8 square kilometers. 4. The service sector is Taipei City's largest industry, accounting for 81.04% of the total employment. Industrial sector follows second at around 18.82%. 5. The public transport network is well developed, which consists of city bus system, Metro, Taiwan high speed rail, and Taiwan railway system. By a survey of different transport modes in Taipei in 2014, public transport accounts for a substantial portion with Taipei residents having the highest utilization rate at 57.2%. 6. The figures of GHG emissions declared herein were based on all sectors of Taipei City.

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.

Community

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	Wen-je Ko	2014	2018	2

0.4
Please provide details of your city's annual operating budget.

Annual operating budget	Currency	Budget year start	Budget year end
158544077387	TWD New Taiwan Dollar	Thu 01 Jan 2015	Thu 31 Dec 2015

0.5
Please provide details of your city's current and projected population.

Current population	Current population year	Projected population	Projected population year
2704810	2015	2536252	2020

0.6
Please provide details of your city's GDP.

GDP	Currency	Year of GDP	Source

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	272	60	121.38	25.03

Page: Governance

1.0
Please describe the impact of national and/or regional climate change activities on your city's own climate change activities.

Taipei formulated corresponding emissions reduction targets in accordance with greenhouse gas reduction and energy efficiency targets drawn up by Executive Yuan, and developed relevant carbon reduction policies to enforce in accordance with Low-Carbon City Practices & Planning Dimensions issued by Central Government. Meanwhile, keep persistent reviews on related performance and effectiveness in the process of implementation. Overall, Taipei City Government makes concerted efforts driving climate change policies based on central policy trend.

1.1
Does your city incorporate desired sustainability goals and targets (e.g. GHG reductions) into the master planning for the city?

Response	Description
Yes	a. International Communication 1. Handle the activities of “Promoting the reduction of greenhouse gases” 2. Reviewing GHG inventory every year. 3. Participate the activities of ICLEI and COP. 4. Participate the Compact of Mayors. 5. Strive to become a low carbon city. b. Government Agencies & Schools 1. Encourage and carry out the save energy policies in every agency. 2. Replace the old fleet with new hybrid vehicles. c. Residence and Business 1. Establish a “Energy Saving for Community” committee to provide the consultation. 2. Encourage the every organization or community to set up renewable energy facilities for demonstrating. 3.Encourage the industrial and commercial buildings to install the renewable energy facilities. 4. Develop and implement “Taipei City Industrial and Commercial Business Self-Controlling Saving Energy Program.” 5. Develop and Implement “Taipei Green Building Ordinance.” 6. Establish a group of “Saving Energy Services” to provide consultation to the citizen about how to save energy at the individual level. 7. Promote the LED Traffic Lights. d. Transportation 1. Enlarge the public transportation network and coordinate and integrate the bus lines. 2. Replace the old fleet with low energy use and low pollutants buses. 3. Develop and deployment an intelligent metropolitan bicycle trails. 4. Promote the rent system of bicycle in the city. 5. Add more taxi stations. e. Waste 1. Install more facilities to capture the natural gas from landfills and use it to produce the power. 2. Use the co-generation CHP in the incineration to recover the waste heat. 3. Promote waste reducing and recycling f. Agriculture & Forestry 1. Enlarge the public green space and promote the beautiful environment surrounding the city. 2. Plant more trees. 3. Increase the plants on the two sides of road. 4. Protect the green resources by means of maintaining from volunteers. 5. Push the reconstruction of public toilets to save energy and water. 6. Strengthen the city's main road greening. g. Save Water 1. Improve the pipelines of water to promote the efficiency of water use. 2. Raise appliance efficiency standards and give the tariff discount incentive measure on water conservation. h. Business Propaganda and Marketing 1. Promote Green Labels products. 2. Hold a training class to educate the travel agencies to learn how the concept of saving energy and carbon reduction can be used in a trip. 3. Promotion of energy-saving products in cooperation with local retail stores.

1.2
Please describe how your city collaborates with businesses in your city on sustainability issues or projects?

1. Taipei city cooperate with the businesses to promote turning off the building landscape for one hour once a month.
2. Enhance the energy-saving knowledge for sales staff of appliance manufacturers and appliance distributors and provide promotional activities to attract public using energy-saving products.
3. To promote business carbon reduction and energy-saving awards program.
4. Taipei city provides free counseling services to evaluate energy-saving consulting. Businesses also have the responsibility to reduce carbon emissions into the corporation society responsibility (CSR).
5. Cooperating with businesses to promote high energy efficiency product which has Energy Label.

Module: Risks & Adaptation

Page: Climate Hazards

2.0

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

Yes

2.0a
Please attach and provide details on your climate change risk or vulnerability assessment.

Publication title	Year of publication	Attach the document	Boundary of assessment	Primary author of assessment	Web link
Taipei-City_Adaptation-Action Plan	2011	https://www.cdp.net/sites/2016/46/31446/CDP Cities 2016/Shared Documents/Attachments/Cities-2.0a-C3-AttachtheDocument/100年度台北市氣候變遷調適計畫.pdf	City/Municipality	Consultant	

2.0b
Please select the primary process or methodology used to undertake the risk or vulnerability assessment of your city.

Primary methodology	Description
IPCC climate change impact assessment guidance	The main project content are: (1) To establish the climate change adaptation planning framework and platform. (2) To analyzes the trends and the impact of climate change. (3) To clarify the impact of climate change in key sector with the concept of vulnerability. (4) Analysis the impact of climate change vulnerability. (5) Analysis of the key issues. (6) Review both policy and related programs. (7) Proposal of climate change adaptation strategy and action plan.

2.1
Do the current and/or anticipated effects of climate change present a significant risk to your city?

Yes

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
Extreme hot days	High	Medium
Cyclone (Hurricane/Typhoon)	Medium High	High
Rain storm	High	Medium High
Other: Greater temperature variability	High	Medium Low
Other: Increased urban heat island effect	Medium High	Medium

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
Extreme hot days	Increasing	Increasing	Current
Cyclone (Hurricane/Typhoon)	Increasing	Increasing	Short-term
Rain storm	Increasing	Increasing	Current
Other: Greater temperature variability	Increasing	Increasing	Short-term
Other: Increased urban heat island effect	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
Extreme hot days	Serious	According to the data of 1897-1999 in Central Weather Bureau, the results indicate that the number of days which the daily maximum temperature greater than 28 degrees was increasing.	Food and agriculture	Commerical	Residential

Cyclone (Hurricane/Typhoon)	Extremely serious	Typhoon Nari (September 2001) , the maximum rainfall up to 148.5 mm / hr, resulted to large areas flooded in the Taipei city and the MRT system shut down.	Emergency services	Food and agriculture	Transport
Rain storm	Serious	According to the Central Weather Bureau show that in recent years (1997 to 2007) and the front surface of the typhoon brought rainfall exceeds the design capacity of the multi- city sewer system.	Water	Food and agriculture	Transport
Other: Greater temperature variability	Serious	The Frequency and duration of heat waves had a significant increase and lead to significant temperature variability over the past 50 years in the north Taiwan.	Health and community	Residential	Food and agriculture
Other: Increased urban heat island effect	Serious	Taipei had no significant temperature increase over the past half century during the day, but the average temperature during the night increase 2 degrees over the previous half century.	Residential	Commerical	Health and community

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	In terms of industrial structure, Taipei City particularly lays on Tertiary industrial sector, which takes 80.2% of the total workforce. Most of business operations happen in blocks of commercial/office buildings or service activities. Ambient temperature rises and the rising frequency of extreme rainfall caused by climate change will result in business operating costs increased, such as spending on raising air-conditioning power consumption and enhanced construction of disaster prevention equipment.

Page: Adaptation

3.0
Please describe the process by which the city reviews its progress and manages overall responsibility for climate change adaptation.

Setting principles for sustainable development policy as a top priority, and reinforcing adaptive measures to the negative impact of climate change, we kick start, from Taipei City Government itself, a series of action plans and actively take part in global affairs, which are listed as below:
2000 the implementation of the Per-Bag Trash Collection Fee Policy
2003 All households are required to recycle kitchen waste
2004 complete survey of GHG emissions in Taipei City
2005 Signed “Green Cities Declaration” and “Urban Environmental Accords in San Francisco, USA”
2007 Joined ICLEI
2008 Approved Program of energy saving and carbon reduction in Taipei city; enacted “Vehicle Anti-Idling Ordinance” and attended COP14 Poznan, Poland
2009 Signed Climate Protection Agreement (Copenhagen, Demark) and attended 2009 Seoul Climate Change Exposition (Seoul, Korea) C40 Cities Climate Leadership Group, ICLEI Climate Summit for Mayors and COP15 Copenhagen, Demark.
2010 Enacted Taipei City self-government Ordinance of energy conservation and carbon reduction in business & industry sectors, set up the Energy Saving consulting
2010 Attended ICLEI’s 20th anniversary congress, Incheon, Korea and the 3rd Congress of United Cities and Local Government
2010 Signed The Mexico City Pact
2011 Participation in Cities Carbon Disclosure Project (CDP), attended COP17 (Durban, South Africa), signed Durban Adaptation Charter for Local Governments and disclosed the 2009 GHG emissions in Carbon City Climate Report (cCCR), promote electricity consumption improvement in communities, full scale replacement of public lighting
2012 Attended RIO+20 Conference (Rio, Brazil); confirmed establishment of ICLEI Taipei Office; put City Bike Rental System into effect
2013 Participation in The LivCom Awards 2013 (Xiamen, China) and attended COP19 (Warsaw, Poland)
2014 Attended COP20 (Lima, Peru)
2015 Attended ICLEI World Congress 2015, joined Compact of Mayors(COM) and received the full compliant badge, attended COP21 (France, Paris), energy support for low-income households

3.1
Has the Mayor or local government committed to adapting to climate change across the geographical area of the city, town or settlement?

Yes

3.1a
Please select the type of commitment(s) and attach evidence.

Type of commitment	Attach	Comments
Durban Adaptation Charter		Develop an acceptable, robust, transparent, measureable, reportable and verifiable (MRV) register. Promote multi-level and integrated governance and advocate for partnerships with sub-national and national governments on local climate action
Mexico City Pact		Sign Mexico City Pact to enter climate actions on the cCR and submit official documentation on greenhouse gas reduction commitments
Other: San Francisco Urban Environmental Accords		Achieve “San Francisco Urban Environmental Accords” commitment, and reduce the jurisdictions emissions by 25% of 2005 by 2030.
Other: World Mayors and Local Governments Climate Protection Agreemen		Achieve “World Mayors and Local Governments Climate Protection Agreement” goal, and achieve a reduction of 60% greenhouse gas emissions from 1990 levels by 2050.
Compact of Mayors	https://www.cdp.net/sites/2016/46/31446/CDP Cities 2016/Shared Documents/Attachments/Cities-3.1a-C2-Attachment/Full Compliance letter_Taipei.pdf	Taipei city joined Compact of Mayors (COM) on Sep 2015 and received the full compliant badge on Oct 2015.

3.2
Does your local government have a plan that addresses climate change adaptation?

Yes

3.2a
Please provide more information on your plan that addresses climate change adaptation and attach the document.

Publication title	Year of publication	Attach the document	Scope of plan	Area under your city's control	Primary author of plan
Taipei City Urban renewal autonomous regulation	1990	https://www.cdp.net/sites/2016/46/31446/CDP Cities 2016/Shared Documents/Attachments/Cities-3.2a-C3-Attachment/臺北市都市更新自治條例.pdf	Local government area within a city/metropolitian area	Administrative boundary of city governance	Relevant city department
Green Building autonomous regulation	2014	https://www.cdp.net/sites/2016/46/31446/CDP Cities 2016/Shared Documents/Attachments/Cities-3.2a-C3-Attachment/臺北市綠建築自治條例.pdf	City/Municipality	Administrative boundary of city governance	Relevant city department
Taipei City Adaptation Project for Climate Change	2011	https://www.cdp.net/sites/2016/46/31446/CDP Cities 2016/Shared Documents/Attachments/Cities-3.2a-C3-Attachment/100 TaipeiCCA part1.pdf	City/Municipality	Administrative boundary of city governance	Relevant city department
Overall target and framework for flooding protection	2013	https://www.cdp.net/sites/2016/46/31446/CDP Cities 2016/Shared Documents/Attachments/Cities-3.2a-C3-Attachment/總合治水推動歷程及發展現況 以臺北市為例.pdf	City/Municipality	Administrative boundary of city governance	Relevant city department
Taipei city Typhoon and flooding crisis emergency plan	1998	https://www.cdp.net/sites/2016/46/31446/CDP Cities 2016/Shared Documents/Attachments/Cities-3.2a-C3-Attachment/臺北市天然災害緊急疏散及收容安置計畫(草案).doc	City/Municipality	Administrative boundary of city governance	Relevant city department
Taipei city heat island effect mitigation plan	2012		Local government area within a city/metropolitian area	Administrative boundary of city governance	Relevant city department

Taipei city green building reward plan	2013	https://www.cdp.net/sites/2016/46/31446/CDP Cities 2016/Shared Documents/Attachments/Cities-3.2a-C3-Attachment/104年優良綠建築作品甄選須知.pdf	City/Municipality	Financial boundary of city governance	Consultant

3.3
The Compact 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.

https://www.cdp.net/sites/2016/46/31446/CDP Cities 2016/Shared Documents/Attachments/Cities-3.3-Adaptation/CRAFT_Questionnaire_CDP-Download.xlsm

3.4
Please describe the actions you are taking to reduce the risk to, or vulnerability of, your city's infrastructure, citizens, and businesses from climate change as identified on the previous page.

Climate hazards	Action	Action description
Extreme hot days	Retrofit of existing buildings	Promoting green building, shaping "urban green point", and greening sidewalk of urban green axis to construct urban green network. Then, moving on to ecological street blocks "dimension" with comprehensive greening and sustainable development so as to help to lower urban air temperatures.
Cyclone (Hurricane/Typhoon)	Crisis management including warning and evacuation systems	An app utilizes GIS to display disaster location. It can also show the distance between the disaster location and the user. This information serves as a reminder to user to avoid disaster site. We also edit city disaster prevention manual per year and prevention disaster acknowledge, these can be find on this app.
Rain storm	Storm water capture systems	Properly conducting adaptation measures of disaster prevention, flood control and river dredging work to avoid flash flood due to drainage load caused by heavy rain or storm water.
Other: Greater temperature variability	Tree planting and/or creation of green space	Promoting green roof of a building, roof greening & beautification, which not only help to reduce temperature of the building itself, but also lessen power consumption on air conditioning, to achieve the effect of energy saving and carbon reduction and mitigate the heat island effect.
Other: Increased urban heat island effect	Cool pavement	Data from the three-year plan, which began on April 11, 2014, shows the permeable pavement's surface temperature peaked 30 to 60 minutes later than the compressed concrete pavement; the difference between their daily peak temperatures could reach 2.05 to 3.53˚C. In terms of surface runoff, the control group exceeded the experimental group by 7.3% to 17.85%, depending on the precipitation intensity.

Page: Social Risks

4.0
Does your city face any social risks as a result of climate change?

No

4.0b
Please explain why not.

1. The job market in Taipei City is stable. Industry type tends to be stationary. The employment rate doesn't change significantly in recent years.
2. In respect of environment, Taipei City has no major development projects in recent years, so the environment is no significant change. In addition, the city acts on the maintenance of environmental health control properly, so epidemic disease seems unlikely to break out in large scale.
3. Taipei City's overall development has been stabilized. Population mobility is not obvious, so little change in resource requirements.

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)	Taipei City Government has greatly advanced in energy-saving improvement in public and private sectors. Encouraging private sector to replace energy-saving equipment by offering incentive grants and counseling services, and also indirectly supporting development of energy services industry (ESCO), such as promoting community and public sector energy conservation improvement guided by mode of ESCO.
Improved efficiency of operations	The inventory of jurisdiction indicated that major GHG emissions came from residential & commercial sector and transport sector, so as to develop and enforce relevant energy-saving and carbon reduction programs, including reduction of electricity/oil consumption in public sector (City agencies and schools), improving leakage rate of urban water supply network, uplifting energy efficiency in public transport system, upgrading traffic lights control, and increasing driving smoothness (reduce traffic congestion situation) etc.
Increased infrastructure investment	In order to reduce carbon emissions and increase energy efficiency, Taipei City enforced public lighting LED replacement project, and budgeted to improve citywide water supply network, as well as strengthened to promote greening of City's main roads. To promote low-carbon transport, the city strengthens the promotion of public bike rental system in the recent years, and continued planning on constructing cycling infrastructure.

5.1
List any climate change-related projects for which you hope to attract private sector involvement, and provide any details on the estimated cost of the project

Project area	Project description	Cost of project (USD$)
Infrastructure improvement	Promote comprehensive replacement of energy-efficient lighting equipment.	60000
Renewable energy	Promote the use of renewable energy demonstration facility settings	40000
Infrastructure improvement	Promotion of energy-saving products	85000
Transport	Promotion of Electric Scooter	260000

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
Global Protocol for Community-Scale Greenhouse Gas Emissions Inventories (GPC), (WRI, C40 and ICLEI)	Taipei city using GPC methodology to make City GHG inventory since 2014.

C1.3
Which gases are included in your emissions inventory? Tick all that apply.

CO2
CH4
N2O

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
14957404	https://www.cdp.net/sites/2016/46/31446/CDP Cities 2016/Shared Documents/Attachments/Cities-C1.4-C2-Inventory/2014年臺北市溫室氣體排放量分析報告1040608-EN-E.docx	High	Inventory data using the city's Statistical Yearbook every year.

C1.5

If applicable, please provide a breakdown of your GHG emissions by scope.

Scope	Metric tonnes CO2e	Level of confidence
Scope 1 emissions excluding emissions from grid-supplied energy generation		
Scope 1 emissions from grid-supplied energy generation within the city boundary		
Total Scope 1 emissions (Row 1 + Row 2)	6493593	High
Total Scope 2 emissions	8463811	High

C1.9a

Please provide a summary of emissions by sector and scope as defined in the Global Protocol for Community Greenhouse Gas Emissions Inventories (GPC), (WRI, C40 and ICLEI). Please complete the corresponding emissions for each row in the table below.

Sector and scope (GPC reference number)	Emissions (metric tonnes CO2e)
Stationary Energy: energy use – Scope 1 (I.X.1)	1101836
Stationary Energy: energy use – Scope 2 (I.X.2)	8344476
Stationary Energy: energy use – Scope 3 (I.X.3)	
Stationary Energy: energy generation supplied to the grid – Scope 1 (I.4.4)	
Transportation – Scope 1 (II.X.1)	5118344
Transportation – Scope 2 (II.X.2)	119335
Transportation – Scope 3 (II.X.3)	70971
Waste: waste generated within the city boundary – Scope 1 (III.X.1)	271482
Waste: waste generated within the city boundary – Scope 3 (III.X.2)	
Waste: waste generated outside the city boundary – Scope 1 (III.X.3)	
Industrial Processes and Product Use – Scope 1 (IV)	
Agriculture, Forestry and Land Use – Scope 1 (V)	1930
TOTAL Scope 1 (Territorial) emissions	6493592
TOTAL BASIC emissions	14955473
TOTAL BASIC and BASIC+ emissions	15028375

C1.9b

Please provide a breakdown of fuel use and emissions by subsector and scope as defined in the Global Protocol for Community-Scale Greenhouse Gas Emission Inventories (GPC), (WRI, C40 and ICLEI) and attach GHG emissions report. Download the GPC Reporting Tool here.

https://www.cdp.net/sites/2016/46/31446/CDP Cities 2016/Shared Documents/Attachments/Cities-C1.9b-GHGEmissionsAttachment/2014 Taipei City GPC.xlsm

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	The greenhouse gas emissions of Taipei City in 2014 were 14,546,000 metric tons. The greenhouse gas emissions of the City present a rising tendency in 1998-2008. The increasing tendency slowed down and began to decline since the 2008. Due to the operation commencement of Mass Rapid Transit (MRT) Xinyi Line and Songshan Line and because the global average temperature in 2014 was 0.69℃

	higher than that of previous years, the electricity consumption increased slightly by 0.52% compared to that in 2013. Thus the overall greenhouse gas emissions in 2014 increased compared to that in 2013

Further Information

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
Foundation of Taiwan Industry service	2014		1. Name of auditor： Foundation of Taiwan Industry service 2. Year of audit：2008 to 2014 3. Percentage of emission inventory audited：100% 4. Sections of emission inventory audited： It includes transportation, residence & business, industry, waste, agriculture as well as forestry. 5. Future plans to seek third party verification of emissions：Seek international certificated organizations to verify.

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.

For local government, we have "public agencies & schools reduce consumption of electricity and fuel oil" plan. Compared to the baseline in 2006, reduction in period of 2007-2011 and 2012-2016 hit 10% respectively. Namely, reduction is to be accumulated by 20% between 2007 and 2016.

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	0	Enacting Green Building Ordinance：By compulsory rules, new constructions contain green building design and plan. After completion, if the building fails to comply with Green Building Standard, manufacturer’s performance bond will be confiscated.
On-site renewable energy generation	3658	1. As the effects of global warming become more severe, the City Government issued the “Renewable Energy Action Plan in Taipei City” in 2008 to promote the renewable energy policies and achieve the goal of using renewable energy as it has committed in the Urban Environmental Accords. Aside from its advocates on education, energy conservation, carbon reduction and the application of renewable energy, it also distributes the budget for the affiliated institutions and schools, provides subsidies to the private industries and businesses that set up a solar and photovoltaic power system, employs professional institutions to make research plans on renewable energy development mechanisms, and passes and carries out the policies on the utilization of renewable energy. The expected goal of this action is achieved. 2.

		Until 2014, there are 25 agencies and 39 schools set up solar PV power generation system in 77 sites, total capacity of 3,120 kw include private setting.
Smart public transport	0	To promote low-carbon transport, the city strengthens the promotion of public bike rental system recent years, and continued planning and construction of cycling infrastructure.
Improve fuel economy and reduce CO2 from motorized vehicles	5170	Enforcing to replace official use of government vehicles beyond 2008 with hybrid car, and to transform government vehicles beyond 2003 into hybrid, if they match the type or model.
LED / CFL / other luminaire technologies	48305	Replace streetlights with LED lamps : Finish 72,760 streetlights changeover to LED lamps before the end of 2014, and change 10,010 public parking lightings to T8-LED
Transportation demand management	0	1. Gradually expand public transport network and adjust bus route to match up MRT system. Suspended four MRT routes and shorten two MRT routes in 2014 to integrate Song-Shan line operation. 2. To replace the bus for low energy and low emission vehicles. There are 3,361 vehicles complied with environmental standards in 2014, it accounting for 95.5% of city bus fleets.
Recycling or composting collections and/or facilities	3551500	In 2000, Taipei City imposed the creative Policy of per Bag Trash Collection Fee, which aimed to reinforce the efficiency of reducing, sorting and recycling. The emissions reduction accumulated in the past decade has reached to 3,551,500 TCO2e.

Page: GHG Emissions Reduction - Community

7.0
Please describe the process by which the city reviews its progress and manages overall responsibility for emissions reduction.

Setting principles for sustainable development policy as a top priority, and reinforcing adaptive measures to the negative impact of climate change, we kick start, from Taipei City Government itself, a series of action plans and actively take part in global affairs, which are listed as below:
2000 the implementation of the Per-Bag Trash Collection Fee Policy
2003 All households are required to recycle kitchen waste
2004 complete survey of GHG emissions in Taipei City
2005 Signed “Green Cities Declaration” and “Urban Environmental Accords in San Francisco, USA”
2007 Joined ICLEI
2008 Approved Program of energy saving and carbon reduction in Taipei city; enacted “Vehicle Anti-Idling Ordinance” and attended COP14 Poznan, Poland
2009 Signed Climate Protection Agreement (Copenhagen, Demark) and attended 2009 Seoul Climate Change Exposition (Seoul, Korea) C40 Cities Climate Leadership Group, ICLEI Climate Summit for Mayors and COP15 Copenhagen, Demark.
2010 Enacted Taipei City self-government Ordinance of energy conservation and carbon reduction in business & industry sectors, set up the Energy Saving consulting
2010 Attended ICLEI’s 20th anniversary congress, Incheon, Korea and the 3rd Congress of United Cities and Local Government
2010 Signed The Mexico City Pact
2011 Participation in Cities Carbon Disclosure Project (CDP), attended COP17 (Durban, South Africa), signed Durban Adaptation Charter for Local Governments and disclosed the 2009 GHG emissions in Carbon City Climate Report (cCCR), promote electricity consumption improvement in communities, full scale replacement of public lighting
2012 Attended RIO+20 Conference (Rio, Brazil); confirmed establishment of ICLEI Taipei Office; put City Bike Rental System into effect
2013 Participation in The LivCom Awards 2013 (Xiamen, China) and attended COP19 (Warsaw, Poland)
2014 Attended COP20 (Lima, Peru)
2015 Attended ICLEI World Congress 2015, joined Compact of Mayors(COM) and received the full compliant badge, attended COP21 (France, Paris), energy support for low-income households

7.1
Does your city have a climate change action plan for reducing GHG emissions?

Yes

7.1a
Please attach your city’s climate change action plan below.

Publication title	Year of publication	Attach	Web link
Taipei climate change	2012	https://www.cdp.net/sites/2016/46/31446/CDP Cities 2016/Shared Documents/Attachments/Cities-7.1a-C3-AttachPlan/100年度台北市氣候變	

adaptation plan		遷調適計畫.pdf	

7.2
Do you have a GHG emissions reduction target in place for your community?

Yes

7.2a
Please provide details of your total city-wide emissions reduction target. In addition you may provide details of your sector-specific targets, by providing the baseline emissions specific to that target.

Sector	Define target boundary	Baseline year	Baseline emissions (metric tonnes CO2e)	Percentage reduction target	Target date	Comment
Total	All city	2008	16546253	0%	2020	
Total	All city	2005	16132003	25%	2030	
Total	All city	2005	16132003	50%	2050	

7.3
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
Building codes and standards		Enacting Green Building Ordinance：By compulsory rules, new constructions contain green building design and plan. After completion, if the building fails to comply with Green Building Standard, manufacturer's performance bond will be confiscated.
Building performance rating and reporting	158000	1. Develop Taipei City Commercial & Industrial Sectors Energy Efficiency & Carbon Reduction Ordinance：Checking and testing industrial or commercial establishment or workplace indoor air temperature and lighting equipment, through legal means, regulate energy use behaviour. 2. Counselling of commercial & industrial sectors energy efficiency assessment：Aiming at major power users to provide expertise counselling and deliver specific report to guide energy efficiency improvement 3. Aimed at voluntary energy conservation enterprises with city electricity contract capacity over 100 kW, we provided counselling service for electricity, lighting, air conditioning and heat system. From 2008 to 2014, there were 196 cases fulfilled, electricity saving up to 48.3 million kWh, and carbon reduction of 28,000 metric tons. 2. Counselling of commercial & industrial sectors energy efficiency assessment：Aiming at major power users to provide expertise counselling and deliver specific report to guide energy efficiency improvement 3. Aimed at voluntary energy conservation enterprises with city electricity contract capacity over 300 kW, we provided counselling service for electricity, lighting, air conditioning and heat system. From 2008 to 2013, there were 176 cases fulfilled, electricity saving up to 38.3 million kWh, and carbon reduction of 21,000 metric tons.
Energy efficiency/ retrofit measures	23593	1.Citywide Energy-Saving Lighting Subsidization Plan ： In 2011, Taipei City Government promote "Community Energy-Saving Lighting Subsidization Plan" to replace high-energy-consuming lighting equipment with energy-saving lighting in the public areas of communities. From 2011 to 2014, there were 646 cases subsidized, electricity saving up to 11.7 million kWh, and carbon reduction of 6,144 metric tons. 2.Subsidy for replacement of energy saving lighting in schools: In 2010, all schools have fully replaced TL5 type high frequency lighting, which is expected to decrease electricity fee at least NTD 3,000 each classroom annually, and save energy up to 30%. The estimated total reduction of electricity fee is around NTD 39 million per year. 2.Subsidy for replacement of energy saving lighting in schools: In 2010, all schools have fully replaced TL5 type high frequency lighting, which is expected to decrease electricity fee at least NTD 3,000 each classroom annually, and save energy up to 30%. The estimated total reduction of electricity fee is around NTD 39 million per year.
		1. As the effects of global warming become more severe, the City Government issued the "Renewable Energy Action Plan in Taipei City" in 2008 to promote the renewable energy policies and achieve the goal of using renewable energy as it has committed in the Urban Environmental Accords. Aside from its advocacies on education, energy conservation, carbon reduction and the application of renewable energy, it also distributes the budget for the affiliated

On-site renewable energy generation	3658	institutions and schools, provides subsidies to the private industries and businesses that set up a solar and photovoltaic power system, employs professional institutions to make research plans on renewable energy development mechanisms, and passes and carries out the policies on the utilization of renewable energy. The expected goal of this action is achieved. 2. Until 2014, there are 25 agencies and 39 schools set up solar PV power generation system in 77 sites, total capacity of 3,120 kw include private setting.
LED / CFL / other luminaire technologies	25033	Replace streetlights with LED lamps : Finish 70,000 streetlights changeover to LED lamps before the end of 2014, and change 10,010 public parking lightings to T8-LED
Improve fuel economy and reduce CO2 from motorized vehicles		Promotion of Electric Scooter: Subsidy $ 777 USD per E-Scooter purchased and build 350 free battery-recharging stations
Improve bus infrastructure, services, and operations		1. Gradually expand public transport network and adjust bus route to match up MRT system. Suspended four MRT routes and shorten two MRT routes in 2014 to integrate Song-Shan line operation. 2. To replace the bus for low energy and low emission vehicles. There are 3,361 vehicles complied with environmental standards in 2014, it accounting for 95.5% of city bus fleets.
Waste prevention policies and programs	3551500	In 2000, Taipei City imposed the creative Policy of per Bag Trash Collection Fee, which aimed to reinforce the efficiency of reducing, sorting and recycling. The emissions reduction accumulated in the past decade has reached to 3,551,500 TCO2e.
Water recycling and reclamation	119976	1. Advocacy of water-saving measures through household, community, and city agencies & schools, 2014 Statistics revealed the daily household water consumption in city water supply area was 219 liters, declined 16.73% compared with 263 liters in 2006. Total household water consumption reduced 631 million tons. 2. Removing the useless water supply pipeline in the city.
Energy efficiency/ retrofit measures	11500	Providing guidance and counselling service of energy saving citywide: Since 2007, we have started to push the project of low-carbon communities, undertake guidance and assistance of energy saving, and select the best practice communities as benchmark. By the end of 2014, we have fulfilled services over 512 communities, and achieved the accumulated emissions reduction of 11,500 TCO2e.
Energy efficiency/ retrofit measures	59408	Campaign for energy saving and carbon reduction: Promote voluntary energy conservation "Taipei leadership for Energy Saving" in private sectors. This project saved about 51.2 million kWh electricity, It is estimated that these projects help to save electricity consumption up to 200 million kwh annually; accumulated emissions reduction about 59,408 TCO2e.

Page: Renewable Energy

8.0
Please indicate the energy mix of your electricity at the city-wide scale.

Energy source	Percent
Coal	39.23%
Gas	37.15%
Oil	2.92%
Nuclear	19.41%
Hydro	1.24%
Biomass	0.03%
Wind	0%
Geothermal	0%
Solar	0.02%

8.1
Does your city have a renewable energy or electricity target?

Yes - my city has a renewable electricity target

8.1a
Please provide details of your renewable electricity targets and how the city plans to meet those targets.

Scale	Total installed capacity of renewable electricity (in MW)	Proportion of total electricity from renewable energy sources	Target date	Plans to meet target (include details on types of energy)
City-wide	209347	2%	2016	1.Hydro 2.Landfill gas to generate electricity 3.solar

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
Declining water quality	Short-term	Less serious	The number of typhoons and torrential rain and rainfall increases, resulting in increased degree of raw water turbidity.
Other:	Current	Serious	According to Ministry of Economic Affairs Water Resources Agency data show that Taiwan often drought, frequency of about once every two years , and each time have caused water shortages .

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
Declining water quality	Investment in existing water supply infrastructure	1. An online water quality monitoring system base on ISO27001 for monitoring water quality from source to user for 24 hours of continuous monitoring. 2. Routine sampling for water supply districts from fixed sampling points. 3. Establishment of the detection procedures of new pollutants. 4. Promoting “water supply pipe network improvement and management plan" since 2006, and a total replacement 1,462.1 kilometres till the end of 2014.
Other:	Conservation incentives	1. Holding the water saving lottery to encourage people to water conservation. 2. Setting up new water treatment equipment. 3. Counselling establishment and maintenance of high altitude residents’ simple water supply system. 4. Planning to set up 45 emergency water supply stations which could provide drinking water to approximately 344,000 tons and supply water about 28 days for 3.92 million populations.

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