Supplementary Materials:

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Supplementary Table S1: List of 49 Five-Million+ Population Cities, There are 49 urban agglomerations across 15 countries (Australia, Bangladesh, China, India, Indonesia, Iran, Japan, Malaysia, Myanmar, Pakistan, Philippines, Republic of Korea, Singapore, Thailand, and Viet Nam) in Asia-Pacific with population of at least (or approaching) 5 million in 2020 (listed below).

Rank	Urban Agglomeration	Country	Population (2020)
1	Tokyo	Japan	37,393,128
2	Delhi	India	30,290,936
3	Shanghai	China	27,058,480
4	Dhaka	Bangladesh	21,005,860
5	Beijing	China	20,462,610
6	Mumbai	India	20,411,274
7	Osaka	Japan	19,165,340
8	Karachi	Pakistan	16,093,786
9	Chongqing	China	15,872,179
10	Kolkata	India	14,850,066
11	Manila	Philippines	13,923,452
12	Tianjin	China	13,589,078
13	Guangzhou	China	13,301,532
14	Lahore	Pakistan	12,642,423
15	Shenzhen	China	12,356,820
16	Bangalore	India	12,326,532
17	Chennai	India	10,971,108
18	Jakarta	Indonesia	10,770,487
19	Bangkok	Thailand	10,539,415
20	Hyderabad	India	10,004,144
21	Seoul	Republic of Korea	9,963,452
22	Nagoya	Japan	9,552,132
23	Tehran	Iran	9,134,708
24	Chengdu	China	9,135,768
25	Nanjing	China	8,847,372
26	Ho Chi Minh City	Viet Nam	8,602,317
27	Wuhan	China	8,364,977
28	Ahmedabad	India	8,059,441
29	Xi-an Shaanxi	China	8,000,965
30	Kuala Lumpur	Malaysia	7,996,830
31	Hangzhou	China	7,642,147
32	Hong Kong	China, Hong Kong SAR	7,547,652
33	Dongguan	China	7,407,852
34	Foshan	China	7,326,852
35	Shenyang	China	7,220,104
36	Surat	India	7,184,590
37	Suzhou	China	7,069,992
38	Pune	India	6,629,347
39	Harbin	China	6,387,195
40	Singapore	Singapore	5,935,053
41	Qingdao	China	5,619,977
42	Dalian	China	5,617,849
43	Fukuoka	Japan	5,528,632
44	Ji-nan Shandong	China	5,360,185
45	Yangon	Myanmar	5,331,800
46	Zhengzhou	China	5,322,696
47	Chittagong	Bangladesh	5,019,824
48	Melbourne	Australia	4,967,733
49	Sydney	Australia	4,925,987

Source: United Nations, Department of Economic and Social Affairs, Population Division (2018). World Urbanization Prospects: The 2018 Revision, Accessed at: https://population.un.org/wup/Download

Supplementary Table S2: The detailed data matrix of select 17 Asia-Pacific cities showing variability of data, information and action planning in the urban climate domain. Complete references of data are provided at the bottom of the table.

	Demographic and socio-economic data	Urban data		Energy data	GHG Inventory	Climate Action Plan
City/ Country	**Q1) Are the following data indicators available for the city or not?)** 1. Population 2. GDP, sectoral break-up: agriculture, industry, services), 3. Household Expenditure, 4. Poverty/ Income Inequality or GINI 5. Workforce or labour participation rate, 6. Employment or Unemployment rate, 7. Educational level (% of graduates), 8. Healthcare (Hospitals or doctors/ 1000 popln) **MENTION** **Which one is not available** **Q2) Are these available in unified form in a single document or website? If so, mention source/ reference**	**Does the city have a Master Plan or Regional/ Metropolitan Plan?** **MENTION** **(Year, Reference)**	**Does the city have a disaster vulnerability or adaptation or resilience plan?** **MENTION** **(Year, Reference)**	**Does the city have data or inventory on Energy consumption (in buildings-residence/ commercial, industry, transport, etc.)?** **MENTION** **(Year, Reference)**	**Does the city have a GHG / CO2 Inventory?** **MENTION** **(Official/ Non-official, Year, Reference)**	**Does the city have an official Climate Action Plan/ Strategy Document?** **MENTION** **(Yes/No, Year, Reference)**
Australia						
Sydney	**1) YES** For 1,3,5-8 available in unified form (Australian Bureau of Statistics 2016a). For 2. GDP (Greater Sydney Commission 2017) For 4. Income Inequality (University of Sydney 2006)	**YES** City Plan 2036 (Sydney City Council 2020). Greater Sydney Region Plan (NSW 2017)	**PARTLY** Towards a Resilient Sydney (NSW 2013). Adapting to the impacts of urban & natural hazards & climate change (GSC 2021)	**NO** Available for sectors at regional level (DISER 2020)	**YES** Carbon Neutral by 2035 (CNCA 2019)	**YES** Draft Environmental Strategy 2021-2025 (Sydney City Council 2018)
Melbourne	**1) YES** **For 1,3,5-8** available in unified form (Australian Bureau of Statistics 2016b). **For 2.** GDP, Employment, Income, Expenditure (REMPLAN 2021)	**YES** Plan Melbourne (State Government of Victoria 2017) Regional Growth Plans (State Government of Victoria 2019)	**YES** Climate Change Adaptation Strategy (MCC 2017).	**YES** Available for sectors at regional level (DISER 2020). Melbourne City Energy Profile (NAGA 2012).	**YES** Annual Report 2019-20 (MCC 2020). Melbourne City Energy Profile (NAGA 2012)	**YES** Climate Change Mitigation Strategy 2050 (MCC 2018).
China						
Shanghai	**1) For 1-3, 5-8** (SMBS 2021) For 4. NA	**YES** Implementation of Shanghai Municipal Plan..2020 (SMDRC 2020a) Shanghai Master Plan 2017-2035 (SUPLRAB 2018)	**YES** Measures for the prevention of meteorological disasters 2017 (PGSM 2017)	**YES** Shanghai Statistical Yearbook 2020. (SMBS 2021)	**YES** Carbon Emission Accounts & Datasets 1997-2017 (CEADs 2018)	**YES** Shanghai's key work arrangements for energy conservation, emission reduction and climate change (SMDRC 2020b)
Beijing	**1) For 1-3, 5-8** (CSP-BIP 2021) For 4. NA	**YES** Master plan 2016-2035 (BMCPLRM 2017) Regional Plan 2015-2020 (PGBM 2017)	**YES** Promoting Safe Urban Development (PGBM 2019) Emergency plan for sudden geological disasters 2013 (BMCPNR 2013)	**YES** Beijing Statistical Yearbook 2020 (BMBS 2021)	**YES** Carbon Emission Accounts & Datasets. 1997-2017 (CEADs 2018)	**YES** Plan for Energy Saving, Consumption Reduction and Climate Change Addressing in Beijing during the 13th Five-Year Plan

						Period 2016-2020 (PGBM 2016)
Guangzhou	**1) YES, for 1- 8** (GSB 2021)	**YES** Master plan 2020 (GDRC 2020) Regional Plan (PGGM 2021)	**YES** Geological Disaster Prevention and Control Plan (GMBPNR 2007)	**YES** Guangzhou Statistical Yearbook 2020 (GSB 2021)	**NO**	**YES** Guangdong's 13th Five-Year Plan on Climate Change 2016-2020 (GDRC 2017)
Tianjin	**1) YES, for 1-3, 5-8** (TMBS 2021) For 4. NA	**YES** Master plan 2017-2035 (PGTM 2018)	**YES** Geological disaster prevention and control plan 2020 (TMBPNR 2008) Plan of Action to Enhance Capacity to Control Natural Disaster (PGTM 2019)	**YES** Tianjin Statistical Yearbook 2020 (TMBS 2021)	**YES** Carbon Emission Accounts & Datasets. 1997-2017 (CEADs 2018)	**YES** Implementation Plan of Greenhouse Gas Emission Control in Tianjin during the 13th Five-Year Plan Period 2016-2020 (PGTM 2017)
Shenzhen	**1) YES, for 1-3, 5-8** (SSB 2020) For 4. NA	**YES** Master Plan 2020 (SMBPNR 2010) Regional Plan 2015-2020 (PGSM 2021)	**YES** Geological disaster prevention and control plan (SMBPNR 2018)	**YES** Shenzhen Statistical Yearbook 2019 (SSB 2020)	**NO**	**YES** Shenzhen's 13th Five-Year Plan on Climate Change 2016-2020 (SDRC 2017)
India						
New Delhi	**1) YES** **For 1 to 8** (GNCTD 2020). For 4. NA	**YES** Master Plan (DDA 2007) Regional Plan (NCRPB 2005)	**YES** Disaster Management Plan (DDMA 2015)	**NO** State Action Plan Climate Change (GNCTD 2017)	**YES** Comprehensive Study on GHGs (IIT Kanpur 2016)	**YES** State Action Plan Climate Change (GNCTD 2017)
Mumbai	**1) YES** **For 1 to 8** Mumbai Human Development Report 2009 (MCGM 2010). For 4. NA	**YES** Development Plan of Greater Mumbai (MCGM 2016). Regional Plan (MMPC 2021)	**YES** Disaster Management Plan (MCGM 2019).	**YES** Non-official for Navi Mumbai (TERI 2013)	**YES** Non- Official Emission Inventory (Urbanemissions 2018)	**YES** Non-official for Navi Mumbai (TERI 2013)
Kolkata	**1) YES** Kolkata City Population 2011–2021 (Census 2011a). For 4. NA	**YES** Landuse and Development Control Plan (KMDA 2008)	**YES** Disaster Management Plan (KMC 2020).	**NO**	**YES** Non- Official Emission Inventory (Urbanemissions 2018)	**YES** Low Carbon and Climate Resilient Plan (PWC 2016) Towards Resilient Kolkata (ADB 2018)
Bengaluru	**1) YES** For 1,2,7 (IIHS 2014) For 5, 6 (MOSPI 2015) For 4. NA	**YES** Master Plan (BDA 2017) Regional Plan (BMRDA 2017)	**NO** But available at state level (KSDMA 2019).	**YES** Electricity Consumption Bengaluru City 2018-19 (MoHUA 2019a)	**YES** Non- Official Emission Inventory (Urbanemissions 2018)	**NO** But available at state level (EMPRI-TERI 2013)
Chennai	**1) YES,** common with district Chennai District Population 2011–2021 (Census 2011b). District Human Development Report (SPCTN 2017) For 4. NA	**YES** Second Master Plan for Chennai Metropolitan Area, 2026 (CMDA 2008)	**YES** Disaster Management (CMDA 2008).	**YES** Electricity Consumption Chennai City 2018-19 (MoHUA 2019b)	**YES** Non- Official Emission Inventory (Urbanemissions 2018)	**PARTLY** Non-official Resilient Chennai Strategy (CRC 2019)
Japan						

Tokyo	**1) YES** Data (TMG 2019a)	**YES** Data (TMG 2019a) Action Plan for 2020 (TMG 2019b)	**YES** Tokyo Climate Change Adaptation Policy (TMG 2019c)	**YES** Final Energy Consumption and Greenhouse Gas Emissions in Tokyo (TMG 2020)	**YES** Final Energy Consumption & Greenhouse Gas Emissions in Tokyo (TMG 2020)	**YES** Tokyo Climate Change Strategy (TMG 2007). Tokyo Climate Change Adaptation Policy (TMG 2019c)
Osaka	**1) YES** Vital Statistics (OPG 2021a)	**YES** Master Plan (OPG 2021b)	**YES** Global Warming Plan (OPG 2021c)	**YES** Energy use (OPG 2021d)	**NO** Only summary, no inventory	**YES** Global Warming Plan (OPG 2021c)
SE Asia						
Bangkok, Thailand	**1) YES** 1. Population 1993 – 2019 (DPA 2021) 2. GDP, sectoral break-up 1995 – 2018 (ONESDC 2019) 3. Household Expenditure: 2006 – 2015 (NSO 2021a), 2011– 2020 (NSO 2021b) 4. Poverty (NSO 2021b) 5. **For 5** (NSO 2021c) 6. Educational / labor force 2011-2019 (NSO 2021d) 7. No. of doctors, hospitals and bed 2015-2019 (NSO 2021e)	**YES** The city has a Master Plan or Regional/ Metropolitan Plan (BMA 2013a).	**PARTLY** Disaster vulnerability plan is briefly mentioned in the Development Plan for Bangkok Metropolis (BMA 2013b).	**PARTLY** Average monthly energy use per household, 2004 – 2015 (by type of sector available only at national)- can be compiled at provincial by using sectoral GDP as weight (NSO 2021f) Fuel type 2010–2019 (NSO 2021g)	**PARTLY** Briefly in the Bangkok Assessment Report on Climate Change 2009" for year 2007 (BMA, GLF and UNEP 2009).	**YES** The city has an official Climate Action Plan/ Strategy Document called the Bangkok Master Plan on Climate Change 2013-2023 (BMA-JICA 2011a), along with Summary document (BMA-JICA 2011b).
National Capital Region (NCR) of Manila, Philippines	**1) YES** **For 1.2** (PSA 2020a). **For 3, 4.** Family Income and Expenditure Survey for 2018, (PSA 2018a). Poverty 2018 (PSA 2018b). **For 5 - 7.** (PSA 2019). **For 8.** Healthcare: NA, but for national level data (PSA 2017) **For 6:** NA	**YES** Manila Bay Sustainable Development Master Plan (MBSDMP): Final Master Plan (NEDA 2020)	**YES** Manila Bay Sustainable Development Master Plan (NEDA 2018) Natural Disaster Risk Assessment in the ASEAN Region (JICA 2015)	**PARTLY** To be extracted from the following national data: Power Situation Report (DOE 2019) Average monthly energy consumption per household- fuel, electricity (PSA 2008)	**PARTLY** Metro Manila briefly in the Greenhouse Gas Inventory (Manila Observatory 2010 and NEDA 2018)	**YES** National Climate Change Action Plan (CCC 2011) National Framework Strategy on Climate Change (CCC 2010)
Singapore, Republic of Singapore	**1) YES, in real-time (DSSS 2021):** **For 1.** Population 1950–2020 **For 2.** GDP 1975–2020 **For 3.** Expenditure 2017-18) **For 4.** Poverty - N/A, income in deciles, Gini 2000 - 2019 **For 7.** Graduates 1993 – 2018 **For 8.** Doctors 1960 – 2019 **For 5,6:** NA	**YES** Master Plan 2019 (Urban Redevelopment Authority 2019)	**YES** Natural Disaster Risk Assessment in the ASEAN Region (JICA 2015) Disaster Risk Reduction in Singapore (UNDRR 2020).	**YES** Energy Supply 2005-2019 (Government of Singapore 2019).	**YES** National Communications and Biennial Update Reports 2018 (NEA 2018).	**YES** Singapore's Climate Action Plan: Take Action Today, For a Carbon-Efficient Singapore (NCCS 2016)
Notes- NA: Not available						