SECTION I

Progress made through international climate initiatives

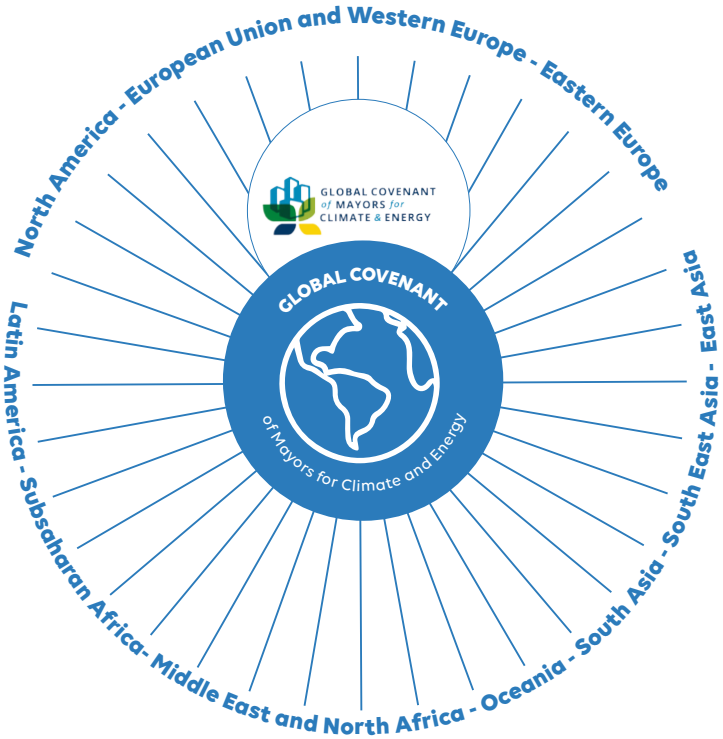
1. Global Covenant of Mayors (GCOM)

A. Signatories and achievements in 2021

The Global Covenant of Mayors (GCOM), became in 2017 the largest coalition of cities committing to reduce their greenhouse gas emissions and adapt to the impacts of climate change (Climate Chance, 2019). The GCOM is organised by regions, into several regional Covenants of Mayors, and now counts more than 10,000 signatories across 6 continents and 138 countries.

FIGURE 1

REGIONAL COVENANTS OF MAYORS IN 2020



By signing the GCOM, cities commit to delivering a Sustainable Energy and Climate Action Plan (SEACAP) within 3 years, covering three pillars: mitigation, adaptation, and access to energy. Each regional covenant preserves a certain flexibility in the data and information required from cities, but they share a common timeframe of the implementation and monitoring of their action plans (**fig. 2**). Read our Local Action report 2019 for more details on the functioning of the GCOM.

As of today, the initiative has around 10,500 signatories, and has gained more than 300 signatories in 2020 (GCOM, 2019; GCOM portal, n.d). In total, the initiative represents more than 1 billion inhabitants, or 14% of the global population, compared to 11% in 2019.

FIGURE 2

TIMEFRAME OF THE REPORTING ELEMENTS REQUIRED WITHIN THE GCOM

Source: Presentation of the GCOM Secretariat March 2019

REPORTING ELEMENTS	Year 1	Year 2	Year 3	Year 4	Year 5
1. Measuring GHC emissions - GHG emissions inventory	WITHIN 2 YEARS				
2. Assessing risks and vulnerability	WITHIN 2 YEARS				
3. Setting targets for reducing emissions and goals for increased resilience	WITHIN 2 YEARS				
4. Climate action planning, including mitigation and adaptation	WITHIN 3 YEARS				
5. Energy access planning	TO BE DEFINED				
6. Reporting progress (incl. GHG emissions inventory)				EVERY 2 YEARS AFTER SUBMITTING THE CLIMATE ACTION PLAN	

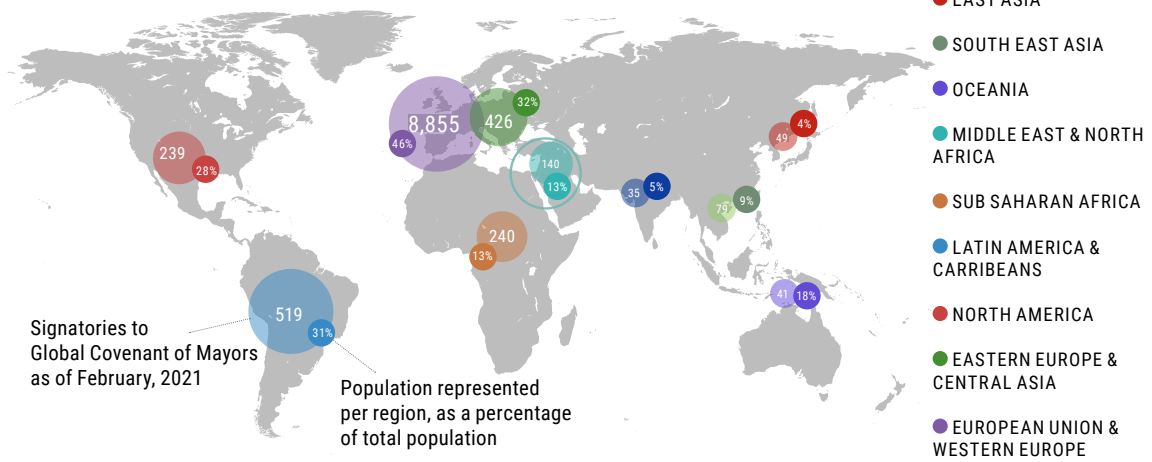
A large majority (~8,800) are cities in European Union member countries, where the Covenant was first launched in 2008 (**fig. 3**). The most dynamism is observed in Latin America and the Carribean with +100 members since December 2019, reaching 519 signatories as of March 2021. The initiative remains poorly represented in Asia with less than 8% of the population represented and 163 signatories.

The Covenant in the European Union has the particularity that it gathers many small and medium-sized cities and towns, and so in terms of represented population, the gap is not too large between the European covenant and other regional Covenants more recently put in place. In Europe 46% of the population is covered by signatories, while in Latin America or North America, signatories cover 31% and 28% of their population with respectively 519 and 239 signatories (**fig. 3**).

FIGURE 3

SIGNATORIES TO GLOBAL COVENANT OF MAYORS AS OF MARCH, 2021

Sources: GCoM portal, n.d.; data collected from regional covenants



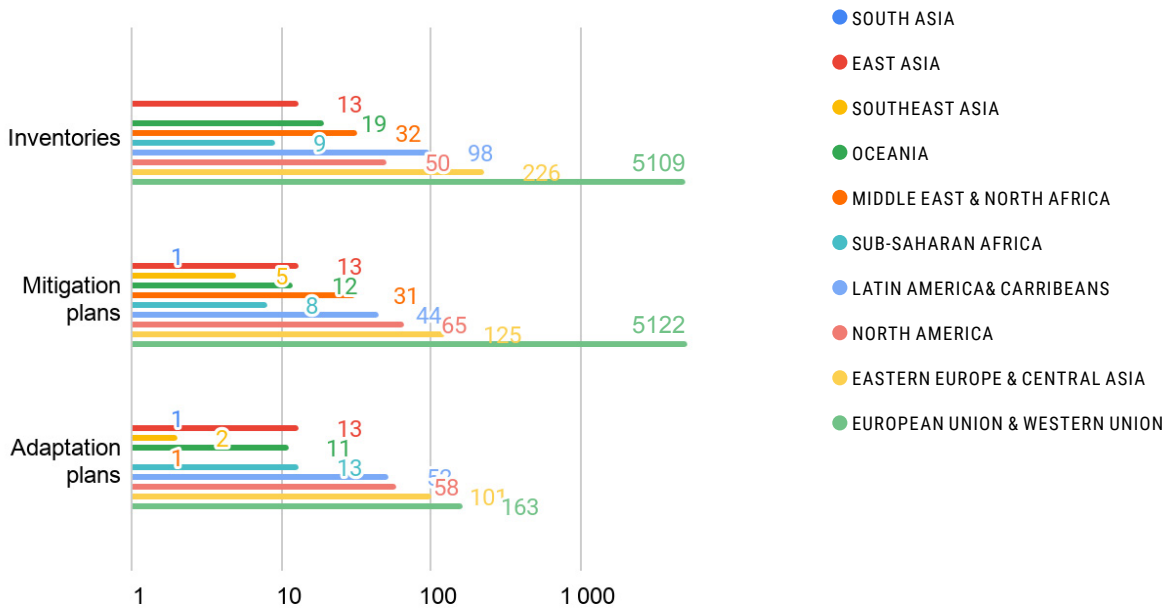
In the implementation of the Covenant and the monitoring of their actions (emissions reduction, energy consumption etc.) there is no aggregated data available in 2021 at the GCOM scale. The online portal of the initiative provides some data on the numbers of inventories or action plans published (**fig. 4**), but these are not always up to date nor representative of the state of "advancement" of the initiative in regional covenants, since they adopted different approaches to disseminate the initiative across the countries of their regions. A more qualitative analysis of the regional covenants follows this section.

Possible comparisons between regional data are therefore limited, but observing the evolution from data in our 2019 Edition indicates that in Asia or Africa few new inventories, mitigation or adaptation strategies have been released. Here too Latin America and the Carribean seems to be the most dynamic covenant with more than 50 additional mitigation and adaptation plans reported to the GCOM in 2020.

FIGURE 4

INVENTORIES, MITIGATION AND ADAPTATION PLANS REPORTED IN 2021

Sources: GCoM portal, n.d.



B. Latest data from the "Unified Reporting System"

Since 2019, CDP and ICLEI have merged their reporting platforms to form the "CDP-ICLEI Unified Reporting System", which offers a single reporting space for cities, and more specifically, for the signatories of the GCoM. As 72% of the cities reporting through the CDP-ICLEI Unified Reporting System are signatories of the GCOM, this database offers a complementary perspective of the profile of signatory cities, the GHG emissions represented, and the population covered.

Our assessment of the yearly city-wide emissions dataset[1] shows a slight decrease in the number of cities reporting to the CDP, with more than 770 cities having reported in 2020. But there is a growing number of cities reporting emissions data, with 400 cities reporting in 2020 as against 330 in 2019, now representing 367 million inhabitants. The decrease in reporting cities in 2020 could be attributed to the Covid-19 crisis, yet there is more data available, and more complete and comprehensive inventories, which could account for the increasing emissions reported.

1 2020 City-wide Emissions, accessed from the CDP Open Data Portal on 29/01/2021

The total GHG emissions reported has increased between 2019 and 2020 reaching 2.19 $GtCO_2e$ (tab 1.). This figure could, however, have been affected by a higher number of big cities reporting, a wave of new inventories recently made, changes in methodologies used or emission types between various years, or non-uniformity in data points. It is also important to note that CDP does not verify the data, which is reported by cities themselves.

Over time, a growing number of cities, including ones from lower income countries, are reporting GHG emissions originating outside their boundaries related to imports and goods consumption of their inhabitants. However, the sources of indirect emissions covered greatly differ from one city to another and cannot be compared. In addition, the total emissions reported are still very low (233 millions of tons CO_2 equivalent) considering that for many cities, especially in high-income countries, consumption-based emissions surpass their city-wide emissions (**see Section II**).

TABLE 1

REPORTING ELEMENTS FROM THE 2020 CITY-WIDE EMISSIONS DATASET[2]

Year	Number of cities having reported their territorial emissions to the CDP	Total of GHG emissions reported ($GtCO_2e$)	Population represented (millions)	Cities reporting emissions outside boundaries (Scope 3)	Total emissions outside boundaries reported
2015	119 46 31	1.25			
2016	187 84 36	1.29	260		
2017	229 101 45	1.41	279		
2018	284 115 45	1.91	315		
2019	332 176 94	1.84	332	207	89 $MtCO_2e$
2020	401 191 120	2.19	367	253	233 $MtCO_2e$

NUMBER OF CITIES REPORTING OF A REDUCTION IN THEIR EMISSIONS COMPARED TO THE PREVIOUS INVENTORY

NUMBER OF CITIES REPORTING OF AN INCREASE IN THEIR EMISSIONS COMPARED TO THE PREVIOUS INVENTORY

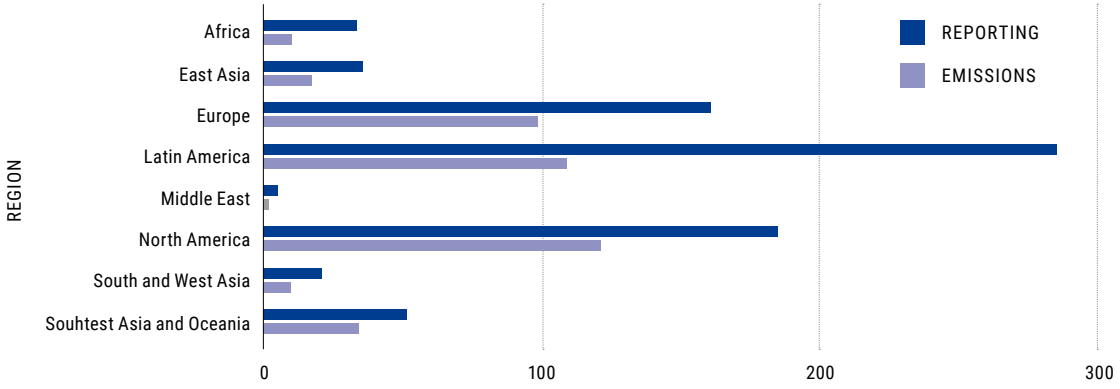
The geographical distribution of reporting cities reflects the legacy of the Compact of Mayors[3], with a majority of cities in North and South America. We observe also the poor representation of Asian cities but also African cities. Most European cities report to their dedicated platform MyCovenant and not to this unified reporting system, and some other covenants such as in Middle East and North Africa are also launching their own platform to ensure the regional governance and management of local data.

2 2020 City-wide Emissions, accessed from the CDP Open Data Portal on 29/01/2021

3 The Compact of mayors merged with the Covenant of Mayors to form the Global Covenant of Mayors, see the history of City level climate initiatives in our 2018 Edition.

FIGURE 5

GEOGRAPHICAL DISTRIBUTION OF CITIES REPORTING THROUGH THE CDP-ICLEI UNIFIED REPORTING SYSTEM IN 2020 - *Source: 2020 City-wide Emissions, accessed from the CDP Open Data Portal on 29/01/2021*



Most of the cities reporting data (61%) use the Global Protocol for Community Greenhouse Gas Emissions Inventories (GPC), a global method adapted in 2014 from the GHG Protocol created by the WRI and the World Business Council for Sustainable Development (WBCSD) in 1998 for business (**see Section I for GHGH accounting methodologies**).

FIGURE 6

SHARE OF DIFFERENT METHODOLOGIES USED BY REPORTING CITIES IN 2020 - *Source: CDP-ICLEI dataset*

The changes in methodologies and scopes of emissions over the years have affected the evolution of emissions data over the last few years. Following the evolution of data also allows us to underline some progress.

Some cities have reported a remarkable trajectory such as Porto who reduced its emissions by 30% or Wellington by 26% (**tab. 2**).

While the reduction of emissions in some cities is evident from the emissions data (**tab. 2**), in other cases, the total emission figures have increased with more refined methodologies, the inclusion of more gases in calculations, and more available data, but actual emissions have been on the decline (**tab. 3**). Most of the cities in Table 3 have reported declining emissions, though changes in methodology show significant jumps in last-reported total emissions.

Evident progress made in terms of more detailed inventories is encouraging, and contributes greatly to the improvement of actions plans which follow.

TABLE 2

EVOLUTION OF EMISSIONS OF SELECTED CITIES, FROM 2015-2020

Sources: City-wide Emissions datasets, 2015-2020

Emissions reported in $MtCO_2e$

City	Country	2015 (accounting year)	2020 (accounting year)	Net % change from 2015
Melbourne	Australia	5.8 (2014)	5 (2019)	-14 %
Vancouver	Canada	2.6 (2013)	2.6 (2019)	-1 %
Hong Kong	China	42.7 (2011)	40.14 (2018)	-6 %
Wellington	New Zealand	1.3 (2013)	0.95 (2018-19)	-26 %
Warsaw	Poland	12.7 (2012)	13.14 (2016)	3.5 %
Porto	Portugal	1.3 (2004)	0.9 (2017)	-30 %
Chicago	USA	33.5 (2010)	31 (2015)	-7.3 %
New Taipei	Taiwan	18.1 (2013)	19.5 (2018)	7.6 %
Stockholm	Sweden	2.5 (2012)	2.4 (2018)	-4.2 %

TABLE 3

CITIES SHOWING "JUMPS" IN TOTAL EMISSIONS REPORTED, OWING TO CHANGES IN METHODOLOGY

Sources: City-wide Emissions datasets, 2015-2020

Emissions reported in MtCO2e

City	Country	2015 (accounting year)	2020 (accounting year)	Net % change from 2015
Rio de Janeiro	Brazil	20.3 (2012)	26.3 (2017)	30%
Cape Town	South Africa	22.7 (2012)	23.5 (2018)	3.4%
Mexico City	Mexico	24.1 (2012)	47 (2018)	95%
Buenos Aires	Argentina	11.4 (2013)	20.5 (2017)	79%
Rotterdam	Netherlands	28.2 (2014)	38.7 (2018)	37%

C. GCOM - Governance

The Board, that provides the strategic direction for the initiative, is co-chaired by the two main funders of the initiative: the European Commission, represented by the Executive Vice President for the European Green Deal Frans Timmermans, and the former New York City Mayor Michael Bloomberg (GCOM, 2021). 10 mayors are members of the Board, representative of all the regional covenants : Hobart (Australia); Surabaya (Indonesia); Seoul (South Korea); Accra (Ghana); Colombo (Sri Lanka); Heidelberg (Germany); Paris (France); Pittsburgh (USA); Lima (Peru) ; Chefchaouen (Morocco).

The Strategic Advisory Committee members are composed of the European network funders of the European Covenant of Mayors and other global initiatives and networks, as well as representatives from the European Commission and the European Committee of the Regions. It helps set the strategic direction for the initiative for ultimate approval by the Board.

Currently the GCOM Secretariat supports the coordination of city network partners through five "Technical Working Groups" on the following areas: (1) Global and Regional Coherence ; (2) Data Management, Monitoring, and Reporting; (3) Finance; (4) Communications; (5) Research and Innovation.

The Covenant secretariat was managed by a team financed by Bloomberg Philanthropies and the Commission. As of 2021, following a call for tenders, a European based consulting firm "Human Dynamics" is carrying out the working of the secretariat.

2. Regional Covenants of Mayors

A. Europe

10,346 SIGNATORIES	244 MILLION PEOPLE REPRESENTED	6,200 ACTION PLANS AND 3,309 MONITORING PLANS

The Covenant of Mayors for Climate & Energy in Europe has been launched in 2008 by the European Commission, in cooperation with the main European networks representing local and regional governments and their national associations (CEMR, Energy Cities, FEDARENE, EUROCITIES, Climate Alliance, ICLEI Europe) and progressively extended to Eastern Europe and other cities in countries non members of the European Union.

Exact figures may differ from the ones used by the Global Covenant of Mayors, because of different historical methods of accounting signatories. But thanks to compilation of the yearly assessment reports of the European Commission (**tab. 4**) we can identify the following trends:

TABLE 4

EVOLUTION OF FIGURES OF THE COVENANT IN EUROPE - *Source: Joint Research Center*

EUROPE (EU-East-CoM-EFTA)			
COMMITMENTS			
	Signatories	**Including signatories of the 2030 objectives**	**Inhabitants represented (millions)**
2015	7,868	0	208
2016	8,787	520	213
2017	9,220	990	238
2018	9,510	1,411	253
2019	10,059	2,369	295
2020	10,346	3,445	279
IMPLEMENTATION			
	Action Plan and a Baseline Emission Inventory (BEI) submitted		**Adaptation Pillar**
2015	5,000		-
2016	5,630		-
2017	6,000		-
2018	6,096		92
2019	6,200		201
2020	7,544		576
IMPACT			
	Monitoring plans of Action Plans	**Monitoring Emissions Inventories (MEI)**	**Emissions reduction rates based on the MEI**
2015	800	122	-23%
2016	1,240	315	-23%
2017	1,850		-
2018	2,585		-
2019	3,209	1,877	-25%
2020	3,309	N/A	N/A

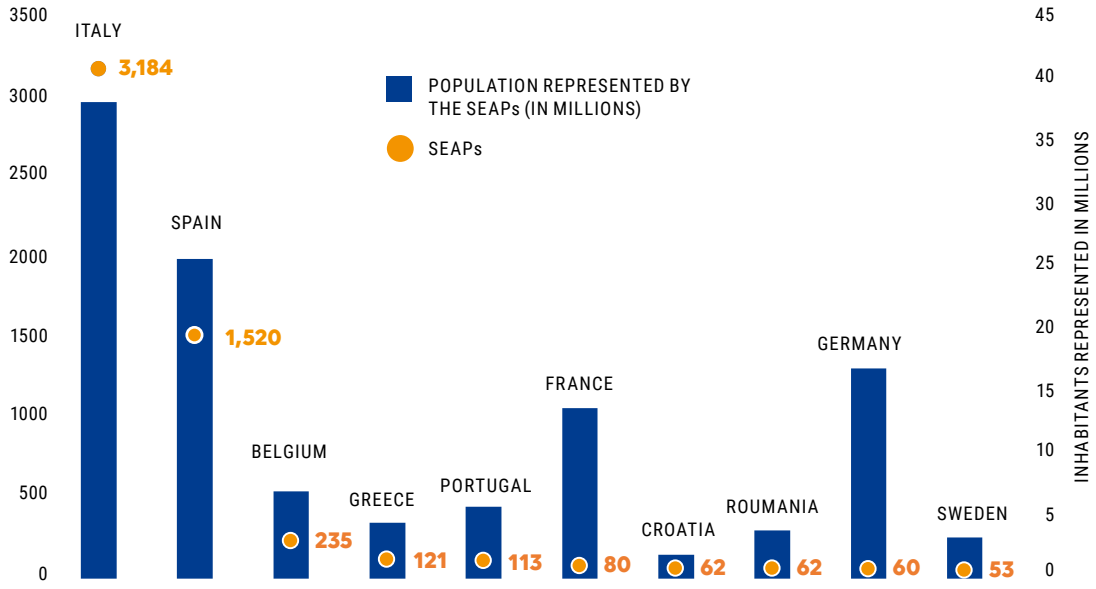
• COMMITMENTS • The level of ambition of European cities is higher than that of the EU Member-States. On average EU-28 cities have committed to a 31 % emissions reduction from 2005 levels by 2020, ten points higher than the minimum target required, and 47% by 2030. Honoring these commitments would already achieve 28% of the EU's overall 2020 emission reduction goal.

Around 90% of the signatories are small and medium sized towns. Large cities represent the highest proportion of inhabitants covered by the Covenant, of 53%. Wide disparities exist across the countries: in 2018 only 60 German local authorities had submitted SEACAPs but covered almost 17 million inhabitants, whereas the 3,184 action plans from Italian local authorities cover approximately 38 million inhabitants (**fig. 7**).

A 2020 study of 1,000+ CoM-EU cities (Hsu et al, 2020) also found that cities on track to meet their commitments have less-ambitious targets and higher baseline emissions at the city-level, and are in countries with more-ambitious national climate policies and higher realized emissions reductions.

FIGURE 7

THE 10 COUNTRIES WITH HIGHEST NUMBER OF SIGNATORIES WHICH HAVE SUBMITTED THEIR ACTION PLAN IN 2018 - *Source: compilation taken from Kona A. et al. 2018*



• IMPLEMENTATION • A cumulative total of 6,200 action plans have been submitted by European cities. A small share are concerning the 2030 commitments (318), meaning that most of the action plans would soon be updated.

These 6,200 baseline emissions inventories represent a total GHG emissions of 1,080 $MtCO_2e$/year, 12% more than the last estimation made in 2016, illustrating the growing importance of the initiative.

Turin - Italy

CITY PROFILE

Population: ~872,316 (2019)
Target emissions reduction: 45% reduction from 1991 levels by 2020, 60% by 2030, and net-zero by 2050
Last reported emissions: 3.48 $MtCO_2e$ (2017)

Turin is the capital of the Italian Piedmont region, and has been a signatory of the Covenant of Mayors since 2009. It is an important economic centre of Italy, and has significant automotive, service and aerospace industries. The city has made remarkable progress in reducing its CO_2 emissions from its 1990 baseline, having already reduced 44.5% by 2017. The economic restructuring towards the service sector has helped reduce industrial emissions, and the city's policies have been effective in reducing residential, transport and public buildings' emissions.

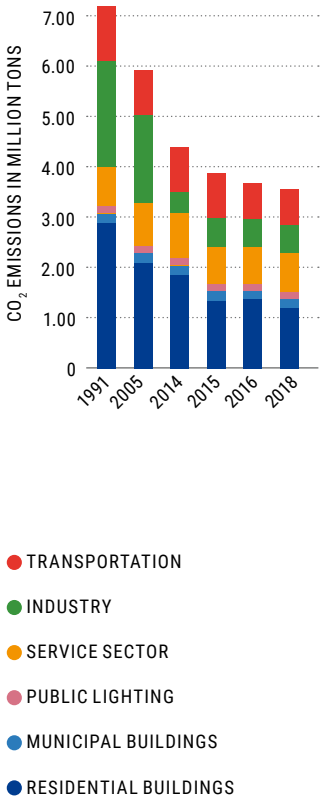
The city had in place since 2010 the Turin Action Plan for Energy (TAPE), which set the targets and identified the most suitable actions to reach them by 2020. In the energy sector, the most advances have been made due to the city's district heating network, which is the largest in the country, and a considerable share of hydroelectricity in the mix. The national level schemes of "Ecobonus" and the "Heating Fund" have also contributed, through financial incentives, to promote building energy efficiency and renewables in heating respectively. The city worked with the University Politecnico of Turin to collect data on energy efficiency, and based on the results, undertook renovations of public buildings and installed LEDs in street lighting. Going forward, a stricter revision of the Energy Efficiency and Sustainability Code is expected in 2021.

The Sustainable Urban Mobility Plan adopted in 2011 laid down the 2025 goals, covering the expansion of public transport (especially metro lines), bicycle and pedestrian infrastructure, and the promotion of greener vehicles in the private fleet. Currently the share of public transport in all trips made is around 23%, out of which 50% are by electric vehicles and another 20% by natural gas-powered vehicles. The city has also launched bike-sharing and car-sharing programmes, with further expansion of the charging network being planned.

Sustainable urban land-use is also extremely important in the city's planning. Turin has one of the highest rates of urban green area per inhabitant (18 m^2). The city actively promotes urban farming, and also participative urban forestry, along with incentivising green roofs.

EVOLUTION OF CO_2 EMISSIONS OF TURIN

Source: Città di Torino



Other areas of focus in the city's climate action include waste, water (from a more adaptation approach), and integrating nature and biodiversity as well.

Sources: Città di Torino, 2019; Covenant of Mayors Europe, 2019; Città di Torino, 2018.

INDICATOR

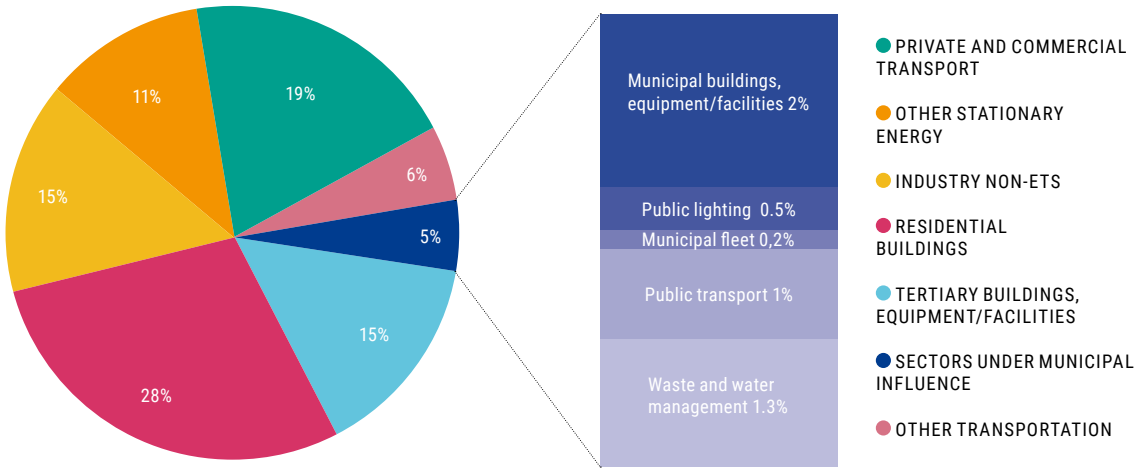
+12%

Additional GHG emissions since last estimation made in 2016

These reported emissions are mainly related to energy consumption emissions in sectors that can be influenced by local authorities (housing, urban services, transport). Their breakdown is as shown in **figure 8**.

FIGURE 8

GHG EMISSIONS IN COM SUB-SECTORS REPORTED IN BASELINE EMISSIONS INVENTORIES (BEO) IN THE COM DATASET 2019 - *Source: European Commission - JRC, 2020*

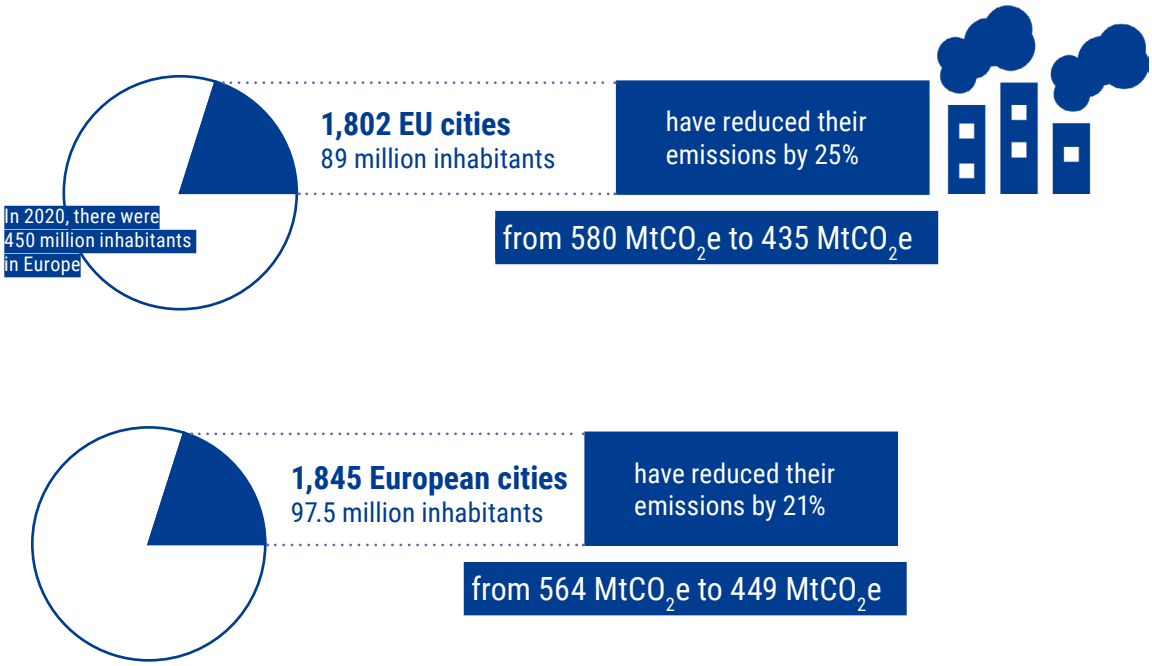


Territorial emissions are therefore the primary issue for municipalities. Direct emissions represent only 5% of the total emissions (municipal buildings and fleet, public transport and waste), the vast majority is composed of emissions from local private actors and inhabitants.

Monitoring reports have to be submitted by signatories every 2 years and Monitoring Emissions Inventory (MEI) every 4 years. In reality these dates are not met, due to difficulties in adapting local inputs to the Covenant of Mayors framework — data is also often incomplete or not entirely accurate.

• **MONITORING AND RESULTS** • Using a data methodology (statistical approach and projection model) developed by the Joint Research Center of the European Commission, progress can be observed between 2005 and 2017 for a sample of cities that submitted a monitoring emissions inventory (JRC, 2020).

INDICATOR



Besides having overpassed the 2020 minimum target by 6 points, municipalities from EU Member States are also well on track to meet their own target of -30% emissions reduction by 2020.

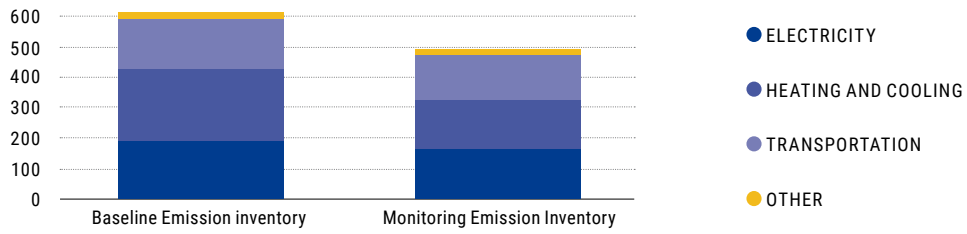
It confirms the earlier mentioned study that alsoshowed that around 60% of them were on track to achieve the targets which they had set for 2020 which were more ambitious than the EU target. (Hsu et al., 2020).

The drop in emissions is more obvious in the buildings sector -22%, particularly in heating and cooling, whose emissions felt by 27%. It is less pronounced in the transport sector with a 16% reduction (**fig. 9**).

FIGURE 9

EVOLUTION OF EU GHG EMISSIONS PER SECTOR FROM BASELINE TO MONITORING INVENTORIES

Source: JRC, 2020



This analysis confirms a previous study in 2018 based on a sample of 315 cities showing the Covenant's 2020 goals were well on the way to being achieved by signatories (Kona A. et al., 2018).

In a more recent study of the same sample of 315 cities analysed the distribution of policies adopted divided by the types of tools and field of action, and also looked at socio-economic and geo-demographic drivers of the policies. The study found that small and medium towns, in warmer or intermediate regions, form the majority of the sample who submitted the MEIs. Less populated

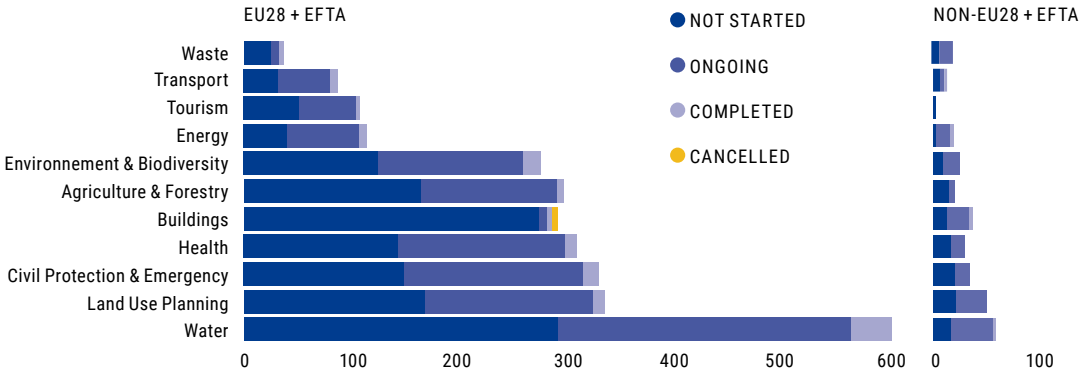
municipalities used more self-governing tools (like green public procurement or energy management), and less financial tools and provisions. More populated municipalities used Regulation, and financial tools and provisions more frequently (energy performance contracts, grants, loans etc.). Education and enabling tools were universally adopted, showing active community participation.

The study also saw that larger urban centers have been more successful in implementation, with more policies *ongoing* or completed, while smaller cities and towns require more support and time, particularly in using financing tools. Sectorally, the building and transport sectors respectively see the most policies, across all climate classes (Palermo V. et al., 2020).

• ADAPTATION • Only signatories to the Covenant who joined after 2018, when the adaptation pillar was incorporated in the Covenant, are required to report on adaptation. The early 2020 assessment of the Covenant is based on the 429 municipalities that provided information on their adaptation goals, risks and vulnerability assessment or their adaptation action plan, mostly from EU Member-States and Iceland, Liechtenstein, Norway and Switzerland (370) but also from Neighbourhood countries in Eastern Europe, Middle East or Central Asia (59). Among them around 50% of signatories have reported adaptation goals *"though the meaning of word goal has been misinterpreted by a number of signatories"*.

FIGURE 10

SIGNATORIES REPORTING IMPACTS ON SOCIO-ECONOMIC SECTORS AND THE ENVIRONMENT, AND STATUS OF ADAPTATION ACTIONS, BY SECTOR - *Source : JRC, 2020*



Around 44% of the signatories have reported active stakeholder and citizen participation (JRC, 2020). Yet signatories are still in the initial stages of their policy process. Most of the engagement is related to the contribution of the local authority staff, stakeholders at other levels of governance. Few are consulting external stakeholders (business, researchers, farmers, health services etc.) and no data are available for citizens.

Less than 70% of municipalities allocate funding for adaptation. Funding is sourced mainly through European funds and local funds, then governments grants and private sources. Limited financial sources are also reported as the main barrier for signatories, together with immature or high cost technology and lack of technical expertise. There is also an issue of making the municipalities aware of all available financing possibilities.

All signatories have reported climate hazards, in particular droughts, extreme precipitation and forest fires presently and with extreme heat and droughts as the most expected in the future. Municipalities have identified vulnerabilities to these climate hazards, but they almost all reported socio-economic impacts of climate change, mostly in health and water, while tourism is considered

as the least impacted sector presently and in the future.

Eventually, as of today 70% of signatories reported adaptation actions because many of them are still initiating their policy process, with a majority of actions being listed as "not started" or "ongoing". But municipalities often mainstream adaptation in their sectoral policies, for example in the areas of water and biodiversity (**fig. 10**).

B. Eastern Europe

426 SIGNATORIES FROM 6 COUNTRIES	72 MILLION PEOPLE REPRESENTED	226 ACTION PLANS AND 74 MONITORING REPORTS

The Covenant of Mayors in Eastern-Europe or "CoM-East" covers the countries of the EU's Eastern Partnership, in Eastern Europe and Central Asia, namely, Armenia, Azerbaijan, Belarus, Georgia, Moldova and Ukraine. CoM-East has 426 signatories (402 active signatories), representing a population of 72 millions. As per the most recent figures, 226 action plans (SEAPs and SECAPs) and 74 monitoring reports have been submitted.

The Covenant of Mayors - Demonstration project (CoM-DeP), started in 2014, has yielded several success stories in the region, on the energy efficiency and renewables front. The first phase from 2014-2018 saw 19 projects carried out, and the 2018-2021 phase has 14 projects. The project has resulted in an annual decrease of 19,878 tons of CO_2 emissions and annual energy savings of 31,024 MWh (CoM-DeP, n.d.). The case study on Slavutych, Ukraine highlights the success of energy efficiency programmes in the region.

C. Middle East & North Africa

109 SIGNATORIES REPRESENTING 145 CITIES IN 8 COUNTRIES	11 TO 15 MILLION PEOPLE REPRESENTED	100 ACTION PLANS BEING PREPARED

• **CLIMA-MED PROGRAMME** • The Clima-Med programme was created in 2018 to support low carbon and climate resilient transitions in 8 countries of the Mediterranean, covering the Maghreb and Mashreq regions, and also works to improve energy security and strengthen adaptation capacities. It provides technical support for climate and energy policies and specifically, to adopt and implement Sustainable Energy and Climate Action Plans (SEACAPs). Across the 8 member countries (Morocco, Algeria, Tunisia, Lebanon, Egyptia, Israel, Palestine, Jordania) around 100 action plans are currently being elaborated by the cities, to be in line with Global Covenant of Mayors principles.

Along the project's operations, climate change governance and mainstreaming climate action are improved, as country partners are supported in their quest to implement and update Nationally Determined Contributions (NDCs), to develop adaptation and mitigation plans and enhance capacities in the field of Measurement, Reporting and Verification (MRV); all in collaboration with relevant government bodies and in consultation with regional, national and subnational stakeholders.

Clima-Med is carried out by a team of experts performing on all levels related to climate change, local sustainable development, SEACAP Preparation, policy and finance strategy and communication and networking in both Mashreq and Maghreb regions. The project duration is until June 2022 with a total budget of €6,9 million from the European Union. Clima-Med is a project labelled by the Union for the Mediterranean (UfM)[4].

Concerning sustainable local actions, Clima-Med is working towards:

Empowering Local Authorities as innovators and facilitating their interaction with National Authorities (i.e. in terms of implementing national policies on energy sustainability and climate resilience at the local level).

Establishing effective and embedded institutional mechanisms:

- **The National Coordination Groups, NCGs:** so far 8 National Coordination Groups (NCGs) created. The NCG is an assembly of key national ministries , key climate actors, international organisations, NGOs and associations, who will lead climate action nationwide.

- **The SEACAP Support Mechanisms, SSMs**: 7 National SEACAP Support Mechanisms (SSM) are proposed. The SSM sets ways to support cities in preparing and implementing SEACAPs and facilitate the link between the national and local levels.

To build the capacity of local actors to act in a participatory way, a 'training of trainers' programme based on the principle of learning by doing has been set up, as well as an effective peer learning network and a range of regional workshops.

One of the priorities of Clima-Med is to facilitate access to climate financing for the implementation of projects - and to this end, the National Coordination Groups (NCGs) bring together the relevant ministries in each country, to be able to continue working beyond Clima-Med after the completion of the SEACAPs.

Clima-Med's challenge is to go beyond the traditional climate financing and to promote much needed innovative and effective climate finance solutions, by means of:

- Designing and testing innovative financing mechanisms, such as performance-based PPPs, preferential private sector investment and support to operators/service providers; Collaborating with IFIs and development actors, as well national financing actors (in addition to NCGs member institutions).
- Raising the project implementation capacity of public and private sector and cities to implement national SEACAPs.
- Identifying and assisting in the implementation of quick-win pilot projects that are easily replicable at multiple levels and by different actors.
- Prioritizing and developing funding for Adaptation actions
- Identifying and formulating innovative and well adapted and replicable pilot projects that have high potential to access financing.

Additionally, 8 Climate Action Roadmaps have been prepared per country. The Roadmap states the engagement of the NCG members to support the Clima-Med project, to implement and sustain the project's recommended Climate Actions.

4 The Union for the Mediterranean is an intergovernmental organization of 42 member states from Europe and the Mediterranean Basin: the 27 EU member states and 15 Mediterranean partner countries from North Africa, Western Asia and Southern Europe

Slavutych - Ukraine

CASE STUDY 2

CITY PROFILE

Population: ~24,783 (2020)
Target emissions reduction: 29% reduction from 2000 levels by 2020 as per the Sustainable Energy Development Plan, 30% by 2030[5]
Last reported reduction: 31% from 2000 levels (2019)

Slavutych is a small town in Ukraine that was built to accommodate those who were displaced by the Chernobyl nuclear disaster. It was the last planned Soviet city, planned to be "comfortable", with residential spaces integrated into public and green spaces. The town has no public transport, as it is planned to have all facilities within walking distances, and also has well-developed cycling infrastructure. From the year 2000, the social infrastructure of the town was rendered unsustainable and expensive, taking up almost a third of the municipal budget. Being established as a monofunctional town, nearly all of its emissions are energy-related (fig. 12), and its climate strategy is also largely energy-oriented.

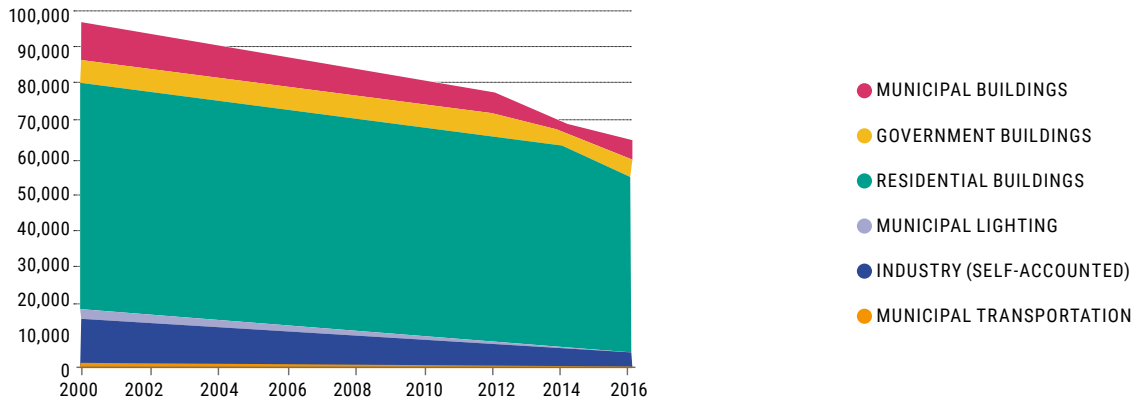
After being included in Ukraine's list of energy efficient towns and cities in 2007, and joining the Covenant of Mayors in 2007, Slavutych began several energy refurbishment projects. Being selected for the CoM-DeP, the town first installed an energy management system across all municipal institutions, and then identified the most inefficient ones - with international energy ratings of F. As a result of the refurbishment of these institutions, Slavutych's energy consumption reduced by 23% compared to 2014 and CO_2 emissions by 5%.

The town council is trying to promote energy efficient habits among residents, along with incentivising renovations of private residences through reimbursing upto 10% of credit taken for renovations from the municipal budget. This has already been used by around 200 households.

Slavutych has also made considerable progress in community renewables. The Solar Town project, with three solar power plants owned by a cooperative consisting of the city, residents and private organisations, had 200kW of capacity on three roofs rented by the municipality at the end of 2019.

Sources: Slavutych City Council, 2017; CoM-DeP, 2019; EU Neighbours East, 2018; Energy Cities, 2019; Brunn, Dronova & Kononenko, 2020.

EVOLUTION OF CO_2 EMISSIONS OF SLAVUTYCH, 2000-2016



5 Slavutych is a signatory of CoM-East and has committed to the 2020, 2030 and Adaptation targets (the 2030 target being a 30% reduction).

And **8 Climate Action Strategies (CAS) are being prepared**. The CAS is prepared with the NCG. It advances recommendations to mainstreaming climate actions. Each of the CAS includes nationally agreed actions to take and recommendations to follow on NDCs, NAPs, MRVs implementation.

• THE COVENANT OF MAYORS FOR THE MEDITERRANEAN, COM MED • Clima-Med has de facto established the Covenant of Mayors for the Mediterranean, CoM Med, which accounts for more than 10 countries, and stands to be enlarged to cover the whole Mediterranean region. Its main objective is to support local authorities in their quest to design and implement coherent Sustainable Energy Access and Climate Action Plans (SEACAP) in line with GCoM requirements.

To consolidate and sustain the role of this regional covenant, Clima-Med is setting up a CoM Med website as a main platform for the region in three languages (French, Arabic and English). The new initiative will provide a common reporting platform, MyCovenant, that brings together relevant data on cities' energy and climate actions. The website will provide an array of information about tools, manuals, benchmark examples, sources of funding; and a forum of exchange for applicant municipalities to share experience and join forces to conduct sustainable local climate mitigation and adaptation actions.

More than 100 cities are presently involved in CoM Med from 8 countries in the Maghreb and Mashreq regions (Algeria, Egypt, Jordan Lebanon, Libya, Israel, Morocco, Palestine, Syria, Tunisia)[6]; with additional countries from the Gulf (United Arab Emirates, Saudi Arabia, Qatar, Oman, Kuwait and Bahrain) the Middle East (Iraq) and Central Asia (Iran, Turkey). As of now, it has an expected 138 signatories, and would represent a population of 60.2 million.

All SEACAPS are validated by the EU's Joint Research Center (JRC), through a methodology in place that is unique to the South Mediterranean, which basically adapts to the local context.

D. Sub-Saharan Africa

240 SIGNATORIES FROM 35 COUNTRIES	422 MILLION PEOPLE REPRESENTED	6 VALIDATED ACTION PLANS

The Covenant of Mayors in Sub-Saharan Africa (CoMSSA) has been active since 2015. Presently, it has 240 signatories, covering a population of 142 million citizens, across 35 countries.

6 SEACAPs have so far been finalized and validated, while more are in the pipeline. The CoMSSA has also been considerably dynamic, with the signatories increasing by 26% from 2019 to the present, and nearly 18% increase in the population represented.

In 2020, the CoMSSA elaborated concrete sectoral finance roadmaps for different types of projects, to support local governments in financing and operating ten types of climate action projects, across waste management, energy, buildings, forestry and risk reduction. The CoMSSA is also continuing to hold workshops and taking other initiatives to help local governments in capacity building, data collection and putting in place SEACAPs.

6 At the time this publication was prepared, EU cooperation with Syria and Libya was suspended due to the political situation in the countries

It has put in place guidebooks, and a SEACAP toolbox, to provide step-by-step support to local authorities. An analysis done by ICLEI-Africa highlights the importance of having baseline data, in helping cities to leapfrog to low-carbon futures, as shown by the examples of Nacala in Mozambique, KwaDukuza in South Africa or Bobo Dioulasso in Burkina Faso (ICLEI-Africa, 2020).

E. Latin America and the Caribbean

519 SIGNATORIES FROM OVER 10 COUNTRIES	154 INVENTORIES, 67 MITIGATION PLANS AND 71 ADAPTATION PLANS	203 MILLION PEOPLE REPRESENTED

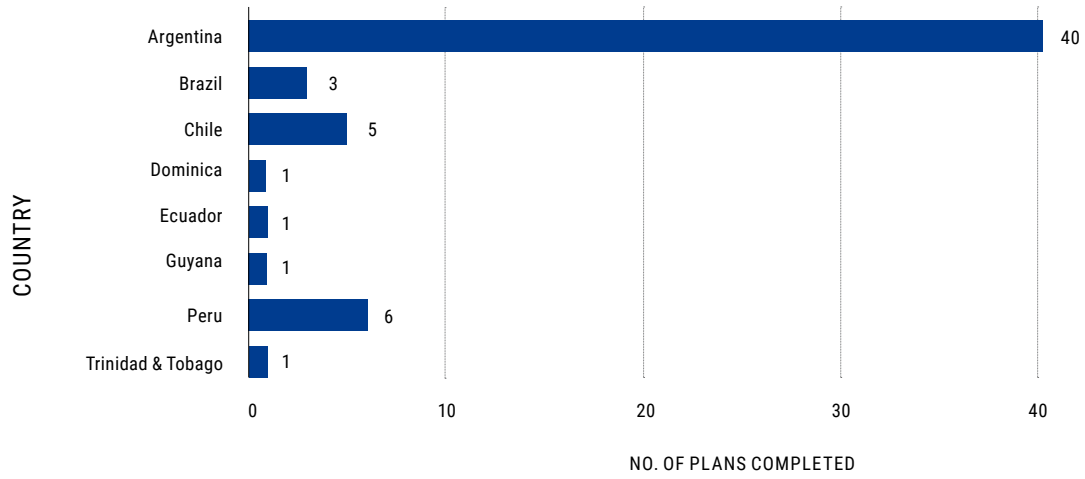
The regional governance of the GCoM in Latin America and the Caribbean (GCoM-LAC) is carried out by a secretariat and a regional steering committee consisting of European Union Delegation in Brazil, C40, ICLEI SAMS, the Latin American Development Bank, and UCLG, with the implementation until 2020 falling under the European Union's International Urban Cooperation (IUC) programme. There are also 2 sub-regional and 8 National Advisory Committees, and several national coordinators and technical coordinators working towards political coordination and elaboration of action plans in the region.

As mentioned in part 1. above, GCoM-LAC has shown the most dynamic growth in signatories in the last year, currently standing at 519 signatories, and representing a population of 203 million. In the 2020 reporting cycle, the region reported 154 inventories, 67 mitigation plans and 71 adaptation plans, which have since increased in number.

Among action plans already completed, the highest number are in Argentina, followed by Peru and Chile (**fig. 11**) The IUC-LAC also reported a potential to reduce GHG-emissions in the region by 27% by 2030[7] (IUC-LAC, 2020).

FIGURE 11

NUMBER OF ACTION PLANS COMPLETED PER COUNTRY IN LATIN AMERICA IN 2019 - *Source: IUC-LAC, 2020*



Considerable progress has also been made by the country coordinator organisations in the various countries of the region. The Red Argentina de Municipios frente al Cambio Climático (Argentine Network of Municipalities against Climate Change), presently has 193 member municipalities, of

7 The value was extracted from the average of the NDCs assumed by the countries that integrate the initiative in the region. The minimum ambition of each city that becomes part of the initiative is related to its respective NDC, however there are cities that go beyond that ambition.

which 80 have GPC-regulated GHG inventories. **Case study 3** on San Carlos de Bariloche in Argentina, a member of the RAMCC, shows examples of how smaller and medium sized cities are acting to reduce emissions.

The Red Chilena de Municipios Ante el Cambio Climático in Chile, the Unión Nacional de Gobiernos Locales in Costa Rica, and the Foro Ciudades para la Vida, in Peru have been successful in this front, helping cities and communes develop action plans, including their SEACAPs, and build capacities for adaptation and mitigation.

F. North America

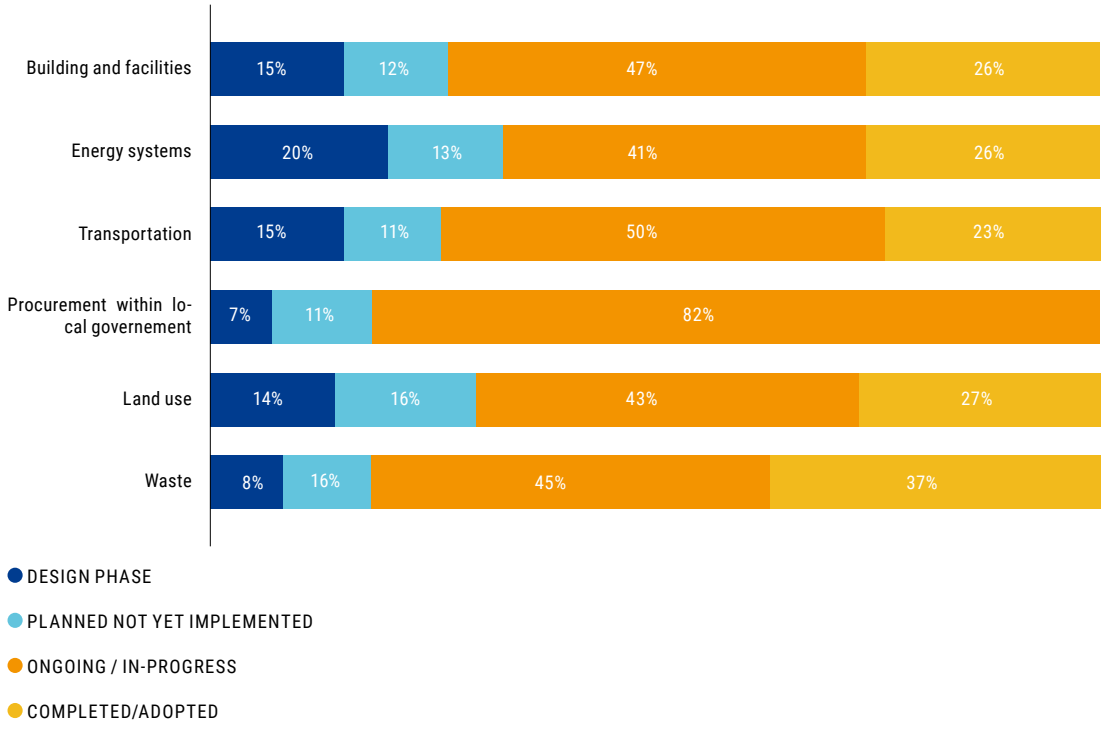
186 SIGNATORIES FROM THE USA, AND 53 SIGNATORIES FROM CANADA	101 MILLION PEOPLE REPRESENTED	65 MITIGATION AND 58 ADAPTATION PLANS REPORTED

The Covenant in North America consists of the Global Covenant of Mayors United States and the Global Covenant of Mayors Canada. In the USA, there are 186 signatory cities covering a population of 86 millions.

GCoM Canada is implemented through the collaboration between Federation of Canadian Municipalities (FCM), ICLEI Canada, the GCoM Secretariat and the EU-funded IUC. There are 53 signatory cities, representing a population of 15 millions. In December 2019, 25 signatory cities were selected for the Showcase Cities of GCoM Canada, to receive intensive mitigation and adaptation support.

FIGURE 12

IMPLEMENTATION STATUS OF MEASURES ADOPTED UNDER PARTNERS FOR CLIMATE PROTECTION IN CANADA, BY SECTOR - *Source: ICLEI-Canada & FCM, 2019*



San Carlos de Bariloche - Argentina

CITY PROFILE

Population: ~138,000 (2021 projection)
Target emissions reduction: 20% reduction from BAU scenario by 2030, net zero by 2050[8]
Last reported emissions: 973.031 $ktCO_2e$ (2016)

The city of San Carlos de Bariloche, or Bariloche as it is commonly referred to, is located in Northern Patagonia, and has a prominent tourism industry. Particularly of note are its plan for sustainable tourism by 2025, and its "Emergency Plan" for climate, which contains measures to be adopted in contingencies and specifies the responsibilities of actors in various key sectors of the city like health, tourism, and others, taken up through a letter of commitment.

The Climate Action Plan and its main areas of focus

In early 2020, Bariloche also developed a Climate Change Action Plan for 2030, covering various energy, transport and waste programmes across the public and private sectors, and adaptation action as well.

The energy sector is of utmost priority as it is the largest source of emissions. Following a pilot phase in 2016-17, the city's sustainable housing programme aims to generate energy savings in air conditioning and improve the overall air quality in precarious households, through diagnoses, technical interventions and follow ups. Beneficiary households have shown over 40% improvement with respect to air replacement rates, and 500% improvement in thermal transmittance of roofs. Bariloche is also piloting the use of geothermal energy for heating in winters, and also working on a forestry-waste to fuel programme with the INVAP foundation. The city is progressively replacing old street-lighting with energy efficient LEDs, expanding the existing lighting network, and using solar panels to power public spaces.

In transport, the city is working to expand radial connectivity across its public transport lines and also introduce shared-paths for soft mobilities like walking and cycling, given the existing infrastructure and the less than 1% of the population currently cycling. The city has been divided into 3 sectors- west, centre-south and east - each carrying out a renewal of its territorial planning with citizen engagement, to reduce dependence on the city centre, with dedicated indicators being developed to follow up on impacts.

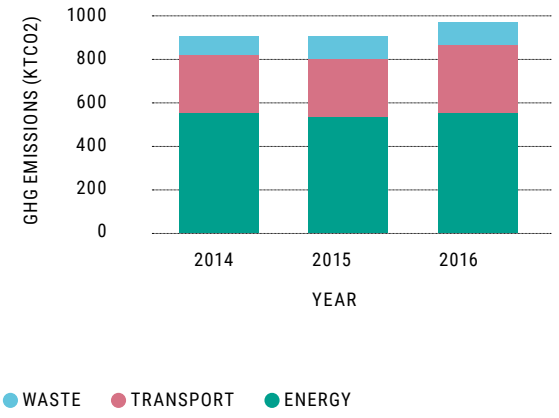
In the waste sector, the city is developing its strategy focusing on reducing waste generation at the source, improving segregation, re-valuing dry waste, renewing municipal landfills and also exploring waste-to-energy solutions. In adaptation, the focus is on risk management and reduction (as seen with the emergency plan), stormwater drainage, biodiversity and forest rehabilitation.

Monitoring progress

The city has laid its target to reduce emissions by 30% from the Business as usual scenario by 2030, with 2014 as the base year. This implies a reduction of 500 $ktCO_2e$ by 2030.

Sources: GCoM-LAC, n.d.; Bariloche Municipio, 2020; RNUN & Bariloche Municipo, 2017

EVOLUTION OF GHG EMISSIONS OF SAN CARLOS DE BARILOCHE - *Source: Bariloche Municipio, 2020*



8 The city of San Carlos de Bariloche is part of the RAMCC, which is part of Climate Ambition Alliance: Net Zero 2050, committing to reduce emissions to net zero by 2050.

The GCoM Canada initiative also combines and complements two existing domestic programmes, the Partners for Climate Protection (PCP) programme and Building Adaptive and Resilient Communities (BARC) programme. PCP supports municipalities in GHG emission reductions and promoting community energy, while BARC helps with capacity building and climate risk resilience GCoM-Canada provides a companion guide for municipalities using the PCP/BARC framework who wish to join the Covenant. As reported at the end of 2019, the most commonly reported measures adopted under the PCP programme for emissions reduction were building retrofits, public charging stations for electric vehicles and the promotion of walking and cycling lanes. A majority of the measures reported were already in progress or completed (**fig. 12**) (ICLEI-Canada & FCM, 2019).

G. Asia and Oceania

4 REGIONAL COVENANTS	222 MILLION PEOPLE REPRESENTED	WITH 204 SIGNATORIES

The continent of Asia is covered in different parts by different regional covenants. South Asia, East Asia and Southeast Asia each have their own, while Central Asia and Eastern Europe fall under the CoM-East, covered in the earlier Part 2. B which supports cities in the Eastern Partnership countries, working more closely with the European Union and the European Covenant.

The Covenant in South Asia covers India, Bangladesh, Pakistan, Sri Lanka, Nepal and Bhutan, with 35 signatory cities, representing over 90 million inhabitants. In East Asia, there are 12 signatory cities from Korea and 29 from Japan, representing populations of over 18 million and 26 million respectively.

The most dynamic in Asia has been the Global Covenant of Mayors in Southeast Asia. The GCoM-SEA secretariat is managed by UCLG Asia Pacific, and covers Indonesia, Malaysia, Vietnam, Thailand, and the Philippines. There are 79 signatories, representing nearly 58 million inhabitants. Most recently, through IUC-Asia, 12 pilot cities in Indonesia, Malaysia and Vietnam received support in mitigation and adaptation action planning, in the context of rapid, high density urbanization. Baseline inventories were created for all the cities, between 2017 and 2019, and their emissions profiles analysed, in order to set targets and work on action plans (**tab. 5**).

The analysis of all the pilot cities showed that the largest contributor to their emissions was the energy sector. The mitigation actions undertaken in the cities most commonly fall under the energy, transportation, waste and building sectors.

In Oceania, GCoM-Oceania is coordinated by ICLEI-Oceania, and has 40 signatory cities, representing a population of 7 millions. A large majority of the signatories are from Australia or New Zealand, and 4 signatories from the Pacific Islands.

TABLE 5

THE 12 PILOT CITIES IN INDONESIA, MALAYSIA AND VIETNAM, THEIR LATEST REPORTED EMISSIONS AND MITIGATION TARGETS - *Source: Climate Action Plan Development in Indonesia, Malaysia and Vietnam, IUC-Asia, 2020*

City, Country	Current Emissions (tCO_2)	Target
Palembang, Indonesia	5,049,469	15% emission reduction against the 2030 BAU scenario
Malang, Indonesia	1,343,913	12% emission reduction against the 2030 BAU scenario
Makassar, Indonesia	3,447,032	Yet to be defined
Denpasar, Indonesia	2,624,663	8% emission reduction against the 2030 BAU scenario
Depok, Indonesia	4,078,742	11% emission reduction against the 2030 BAU scenario
Muar, Malaysia	1,620,345	63% emission intensity reduction of GDP by 2030 relative to the base year 2010 emissions level
Hang Tuah Jaya, Malaysia	1,030,238	45% emission intensity reduction of GDP by 2030 relative to the base year 2010 emissions level
Penampang, Malaysia	455,416	
Tawau, Malaysia	1,561,104	
Can Tho, Vietnam	4,016,783	Yet to be defined, but will be consistent with the updated Vietnamese NDC - 9% reduction from BAU scenario with domestic resources, 27% with international support.
Da Nang, Vietnam	3,432,483	
Tam Ky, Vietnam	341,639	

CASE STUDY 4

Palembang - Indonesia

CITY PROFILE

Population:1.8 million (2019)
Target emissions reduction: 15% reduction from BAU scenario by 2030
Base year emissions: 5,049,469 tCO_2e (2019)
Last reported emissions: 5,049,469 tCO_2e (2019)
Scope of emissions: Scope 1 & 2

Palembang's Mitigation Plan focuses in the energy sector on energy efficiency in the residential and commercial sectors, and directly involving the industrial sector. For example, the energy roadmap of the Pertamina Refinery Unit III Plaju, along with other climate actions taken by Pertamina, a state-owned oil and gas corporation have already largely contributed to reducing emissions, and other prominent companies in the city, such as a fertilizer producer, the electricity company, a light-rail transit company and others, have also made commitments to work with the city and submitted action plans to reduce their GHG emissions.

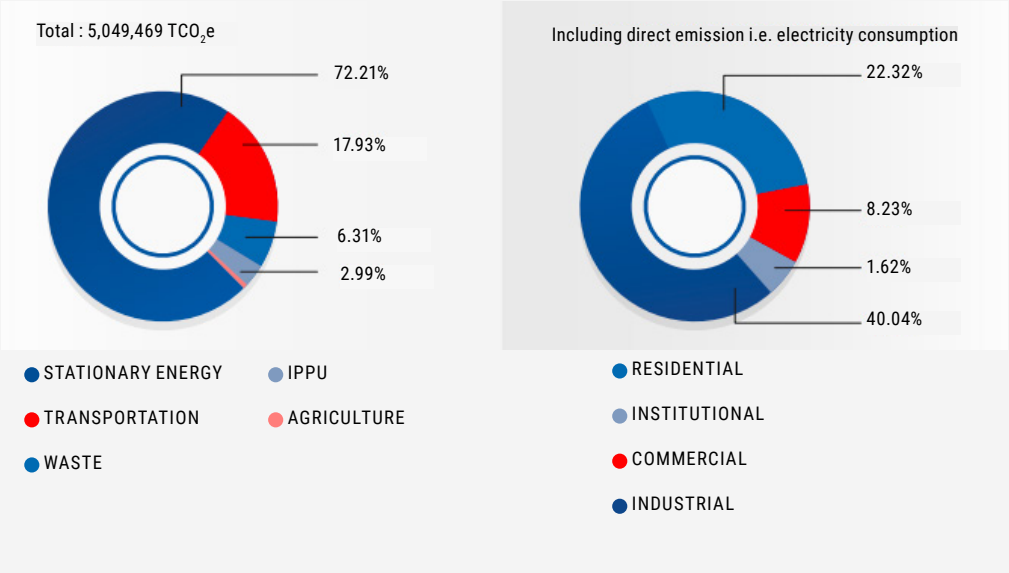
In transport, the actions taken are under the umbrella of Indonesia's Sustainable National Urban Transportation programme (SUTRI), which aims to replace individual transportation with shared, and non-motorised transport., and mitigate 0.9 to 1.7 Mt CO_2e of emissions per year by 2030 in the pilot cities (among which is Palembang). The city is also working to promote the use of biodiesel in its public transport.

Action in the waste sector is aimed at both environmental (i.e. waste management) and climate goals, with various policies being pursued for their co-benefits in both these areas. Practices adopted include Landfill Gas Recovery at solid waste disposal sites, the country's first waste-to-energy power plant, and a campaign of intense sensibilisation promoting composting, segregation and recycling.

Climate change adaptation is equally, if not more important to Palembang. While storm and flood risks have been identified, the higher probability is of landfire. Adaptation actions identified include socio-economic, educational and infrastructural ones, all aimed at increasing the resilience of the most vulnerable areas.These actions cover sectors of public health, small and medium enterprises, agriculture, food security, urban planning, and others.

Sources: IUC-Asia, 2020; Asian Mayors, 2020; Pertamina, n.d.; NAMA Facility, 2017

GHG EMISSIONS PROFILE OF PALEMBANG, 2019 AND SECTORAL BREAK-UP OF CONSUMPTION OF STATIONARY ENERGY - *Source: IUC-Asia, 2020*



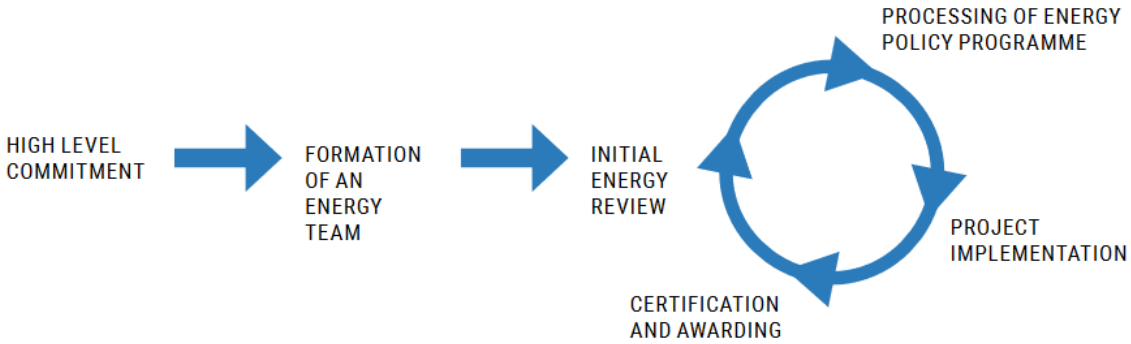
3. European Energy Award

European Energy Award (eea) launched in 1988 is a management and award system for municipalities and regions. It supports local authorities in establishing action plans and implementing energy and climate policy measures through the efficient energy usage and increased use of renewables. 8 national eea organisations lead the eea process at the national level and provide technical support to the municipality in the identification of its strengths and weaknesses and throughout the entire planning eea process by accrediting eea advisors.

FIGURE 13

6 STEPS TO FULFILL FOR A CITY TO GET AWARDED

Source: eea website, n.d



Once a city completes step 5 called "project implementation", it is either awarded "European Energy Award" if it implemented 50% of the standardised catalogue which comprises 79 mesures, and "European Energy Award GOLD" if it implemented 75% of the catalogue.

Presently, participating cities are from Switzerland, Austria, Germany, France, Italy, Lichtenstein, Luxembourg and Monaco, and from some of the pilot countries of Belgium, Croatia, Greece, Poland, Romania, Serbia and Ukraine. Some of them were added as a part of the EU-funded project IMPLEMENT which aims at setting up the necessary structures to carry out the eea programme in municipalities in the new targeted regions.

The cooperation with the european Covenant of Mayors, and the work on the EU project CoME EASY, which were covered in the 2019 Local Action Report, have also progressed, along with cooperation with the European Innovation Partnership on Smart Cities and Communities.

Connections were also created in 2019 with the Middle East and North Africa, where similar initiatives have been developed, namely the MEA Middle East & Africa Energy Award with pilot cities in Tunisia and Morocco. A memorandum of understanding was signed with the trustees of the Chilean Comuna Energética programme, which has been operational in 48 communities and since 2014, aligning its methodology more with that of the EEA (EEA, 2020).

TABLE 6

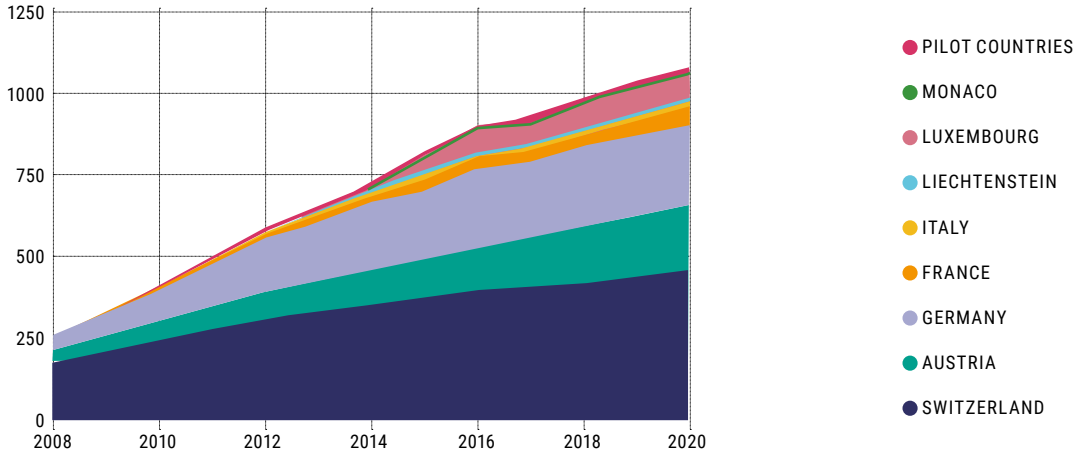
NATIONAL EEA PROGRAMMES' MAIN FIGURES - *Source: eea secretariat*

Country	Name of the national programmes (organisation)	Number of participating cities in 2020 (additional since 2019)	Cumulated Certified Cities in 2020 (certified GOLD)	Represented population
Austria	Programm für energieeffiziente Gemeinden (e5 Österreich)	335 (+ 5)	183 (29)	3,647,341
France	Cit'ergie (ADEME)	219 (+ 12)	64 (5)	29,100,319
Germany	European Energy Award® (Bundesgeschäftsstelle des)	310 (+ 25)	243 (53)	28,582,235
Italy	ComuneClima (SPES Consulting Srl & Agency for Energy South Tyrol – CasaClima)	40 (+ 8)	17 (3)	777,631
Liechtenstein	Energiestadt (Amt für Volkswirtschaft)	11 (=)	11 (2)	36,868
Luxembourg	PacteClimat (myenergy Luxembourg)	102 (=)	90 (13)	626,108
Monaco	European Energy Award (Principality of Monaco)	1 (=)	1	39,000
Switzerland	Cité de l'énergie (Trägerverein Energiestadt)	642 (+ 7)	456 (65)	5,904,917
Other EU countries	Belgium, Croatia, Greece, Poland, Romania, Serbia and Ukraine.	44	2	(956,248 in Romania, 1,902,068 in Ukraine)
Total		1,704	1,067	71,572,735

As of 2020, 1,704 participating cities, out of which 1,067 were awarded, and 170 of these were awarded the eea Gold. Switzerland continues to have the highest number of awarded cities, followed by Germany (see **tab. 6**, and **fig. 14**).

FIGURE 14

NO. OF EEA AWARDED BY COUNTRY, 2008-2020 - *Source: eea secretariat*



Among the awarded cities, a large majority are small and medium cities with a population of 5,000 and less or 5,000 to 50,000, with a smaller number of cities with over 50,000 inhabitants (**fig. 15**).

Additionally, in 2019, an optional innovation chapter on climate change adaptation was introduced, comprising 17 measures which work with existing measures or extend them, which were trialled in several pilot cities in 2020. The chapter will further improve the link of eea to the Covenant of Mayors for Climate and Energy Europe.

By the end of 2020, 170 local authorities were labelled eea Gold. In 2020, 20 local authorities received the eea Gold for the first time, while 25 other local authorities successfully renewed their eea Gold label. **Figure 16** presents the top 50 best performing cities of 2020 based on the progress made in the level of implementation of measures, of which the highest number are from Germany, Austria, Switzerland and France.

FIGURE 15

PERCENTAGE OF CITIES AWARDED EEA, BY POPULATION SIZE IN 2019 - *Source: eea secretariat*

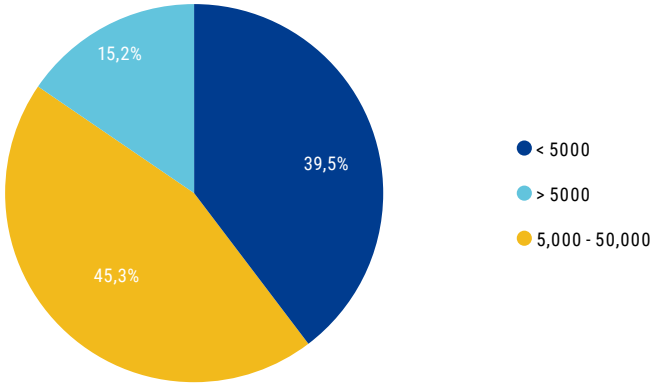
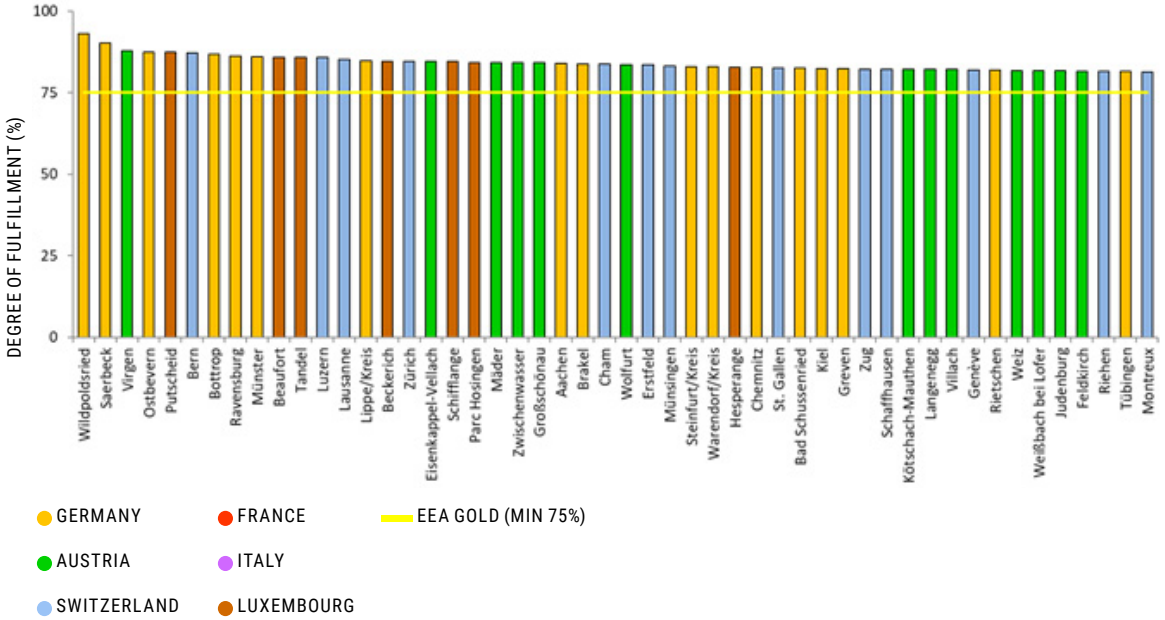


FIGURE 16

TOP 50 EEA CITIES BASED ON LEVEL OF IMPLEMENTATION, 2020 - *Source: eea secretariat*



4. Climate action of regions and subnational governments

A. The "Under2 Coalition"

The sub-national state and regional governments that are part of the Under2MoU, referred to as the Under2 Coalition since 2017, have committed to reducing GHG emissions by 80-95% by 2050. The Climate Group continues as the secretariat of Under2, working with CDP for the annual disclosures.

In 2020, 121 regions disclosed their climate and energy related data and actions, representing 599 million inhabitants. The GHG emissions data reported by 86 of them reach a total of 4.5 $GtCO_2e$, more than 10% of annual global emissions.

The year 2020 saw an average decrease of 7% compared to the base year, which is lower than the decrease seen in 2019 (**tab. 7**). This could be explained by the change in the set of regions reporting in each year, with some large emitters not reporting in a particular year. With some regions choosing not to report, and some reporting anew, the net reduction in the number of reporting regions could also be attributed to the fact that regional governments had to prioritise the Covid crisis, and not spend as much time and resources on disclosures.

TABLE 7

EVOLUTION OF REPORTING ELEMENTS FROM STATES AND REGIONS TO CDP'S PLATFORM

Sources: Annual Disclosure Reports, The Climate Group and CDP, 2015-2020; CDP Open Data Portal

	Regions reporting clim-energy data	Inhabitants represented (mn)	Emissions represented	Average decrease in emissions compared to base year	Reported Climate Actions
2015	44	325	2.8 $GtCO_2e$	6 %	348
2016	62	440	3.1 $GtCO_2e$	6.3 %	1,299
2017	110 (incl. 53 Under 2 members)	658	3.9 $GtCO_2e$	8.5 %	2,329
2018	120 (incl. 78 Under 2 members)	672	5 $GtCO_2e$	9 %	3,097
2019	124	669	5 $GtCO_2e$	14,2 %	3,562
2020	121 (incl. 86 Under 2 members)	599	4.5 $GtCO_2e$ (from 86 regions)	7 %	3,599 (across 11 sectors)

The 2020 Annual Disclosure Report states that 18 states and regions have made net zero commitments so far, and 21 have targets of 75% or higher reductions. 26 of the states and regions have set climate targets for 2030, which are IPCC compliant, and 40% of them have targets which are more ambitious than their respective national ones, and the IPCC recommended range of reductions (The Climate Group & CDP, 2020.) (**tab. 8**).

The statistical work done by CDP and the Climate Group shows many regions achieving great and fast progress to their emissions goals, a selection of which are covered in **Table 8** (The Climate Group & CDP, 2020). These selected 20 subnational territories show a rate of compliance with their own 2020 emissions reductions goals of 26%. Some of them should be able to reach their commitments such as Andalucia (Spain), Northern Territories (Canada) or Wales (UK).

TABLE 8

PROGRESS MADE TO 2030 GHG EMISSION REDUCTION TARGETS, SELECTED REGIONS

Source: The Climate Group & CDP, 2020

Region	Base Year	Base Year Emissions (millions of tCO_2e) *	Target (reduction %)	Target emissions 2030 (metric tonnes CO_2e)	% progress made, 2020
Andalucia	2005	67.7	26%	50,082,908	88%
ACT	1990	3.2	65%	1,118,880	19%
Azores*	2014	1.7	~50%*	864,165	-13%
British Columbia	2007	63.4	40%	38,040,760	-18%
California	1990	431	40%	258,600,000	3%
Catalonia	1990	41.4	40%	24,814,293	-16%
Connecticut	2001	49.2	45%	27,040,921	39%
Hesse	1990	50.8	55%	22,854,600	36%
Lower Saxony	1990	97.5	55%	43,859,700	25%
Navarra	2005	6.6	45%	3,649,391	33%
New York	1990	236	40%	141,714,000	32%
New Foundland and Labrador	2005	10.5	30%	7,317,128	-18%
North Karelia**	2007	1.7	~96%*	70,000	25%
Northwest Territories	2005	1.6	30%	1,110,200	75%
Québec	1990	86.1	37.5%	53,813,750	23%
Queensland	2005	121	30%	131,120,692	28%
Scotland	1990	85.5	75%	19,050,041	61%
South Australia	2005	32	50%	17,719,000	63%
Wales	1990	56.7	45%	30,964,878	69%
Washington	1990	90.5	45%	49,774,065	-17%

* These emissions figures are gross or net figures, depending on the methodology used by the particular region.

** These particular regions have set their targets as % reductions from the predicted BAU emissions for the target year. The % reduction from the base year is calculated here from the base year emissions and target year emissions, for the purpose of uniformity.

A more sectoral analysis reveals that the disclosing states and regions generate 47% of their electricity from renewables, compared to a global average of 26%. Out of this, 20% of electricity is generated from wind, geothermal and solar energy, with the potential to increase reliance on these sources. Hydropower remains the most used among renewables, while the phasing out of fossil fuels seems to be lagging. In the forestry sector, efforts to address deforestation remain low, with less than half the states and regions (37%) having a plan, and even fewer having set a target to tackle the issue.

Earlier this year, the Climate Footprint Project, an initiative of the Under2 Coalition, was launched in 2018 to help state and regional governments in tracking and reducing their GHG emissions. Under

this project, a toolbox is provided for these subnational governments, with resources to help compile economy-wide GHG inventories, and also to identify and track suitable mitigation actions with technical training and capacity building. The project has been directly working with the regions/states of Pernambuco (Brazil), Chhattisgarh and West Bengal (India), Baja California, Jalisco and Yucatán (Mexico), and KwaZulu-Natal (South Africa), and set to be completed later in 2021.

The Climate Pathways framework was developed to support states and regions develop their own 'pathway' or transformational process towards emissions reduction. The framework provides a nine-step process with political and stakeholder engagement at the base, and promotes dialogue with local communities, businesses and others, to achieve a threefold outcome of defining a vision for the process, identifying priority actions which have the most economic potential, and implementing these and monitoring progress. The framework is complemented by the Pathway Accelerator, which provides unique, tailored support in the understanding and achievement of these outcomes (The Climate Group, 2021). The idea behind this is to set a long term target, and then backtrack to identify what is feasible in the medium-term. Under the Climate Pathways project, Under2 has worked in countries like Peru, Mexico and South Africa to support regions. In Madre De Dios (Peru) and Queretaro, Quintana Roo (Mexico), work was done to help these regions better coordinate with the national governments, and Western Cape (South Africa) has developed a vision for its climate pathway.

B. RegionsAdapt

The RegionsAdapt initiative, launched at COP21 in Paris, supports the acceleration of climate adaptation by subnational governments. With over 70 signatory regions, the RegionsAdapt aims to inspire and support regional governments to take concrete action, collaborate and report on climate adaptation. The initiative offers a unique platform for regional governments to enhance their ambition on climate adaptation by facilitating cooperation and knowledge exchange between its members, and remains open for adhesion for all regions interested in advancing their climate adaptation efforts.

In 2020, 28 states and regions from 15 countries worldwide who are part of the RegionsAdapt Initiative disclosed their mitigation and adaptation data. Though the number of disclosing regions has remained unchanged from 2019, the regions that disclosed in 2020 represented a larger population (**tab. 9**).

TABLE 9

EVOLUTION OF DISCLOSING REGIONS AND POPULATION REPRESENTED, 2018-2020. SOURCE: REGIONSADAPT BRIEF REPORTS 2018, 2019, 2020 - *Source: RegionsAdapt Brief Report 2020*

Year	Members of RegionsAdapt disclosing to CDP	inhabitants (million)
2018	37	205
2019	28	200
2020	28	233

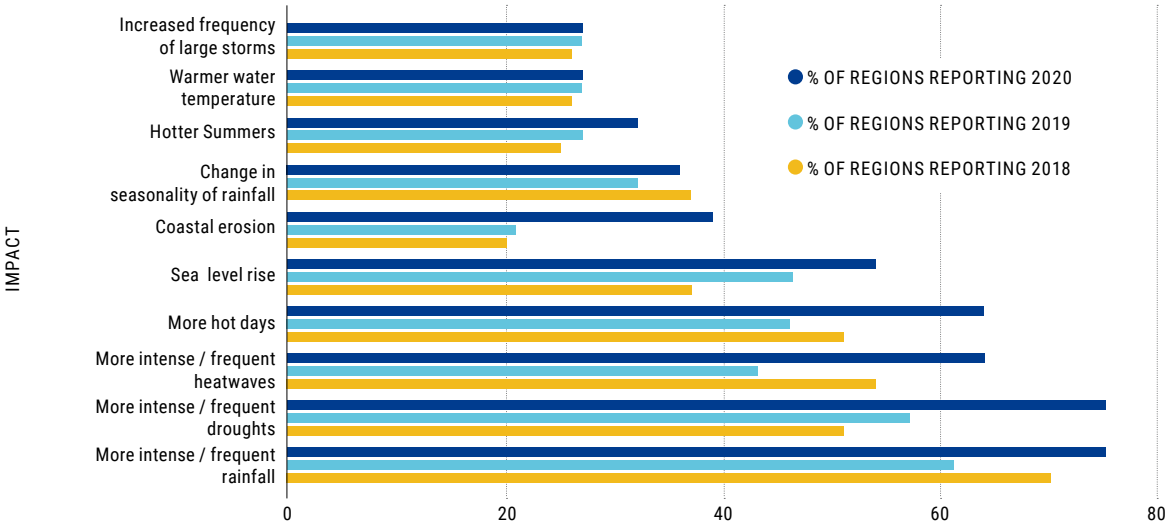
Out of the regions disclosing in 2020, 79% of them have already developed or are in the process of developing risk vulnerability assessments, and 68% already have an adaptation plan in place. There were a reported 185 climate change impacts and 232 adaptation actions. 89% of the regions also reported experiencing a socio-economic impact of climate change, with the most commonly reported ones being related to public health and expenditure, increasing economic costs of disasters, and risks to already vulnerable populations.

The percentage of regions reporting the most common climate change risks has increased across all categories in 2020, with more intense or frequent droughts and rainfall being the most commonly reported (**fig.17**). The seriousness of these risks as well as the high probability to experience them all in the medium-term, clearly indicate that adaptation strategies and actions are inevitable to achieve resilience.

FIGURE 17

10 CLIMATE CHANGE IMPACTS MOST COMMONLY REPORTED BY DISCLOSING GOVERNMENTS

Source: RegionsAdapt Brief Reports 2018, 2019, 2020

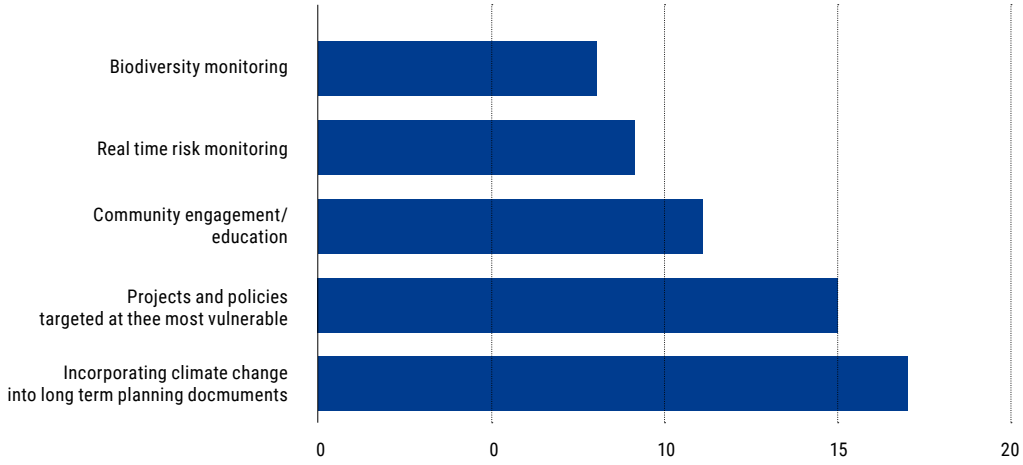


Among the most commonly reported adaptation actions in 2020 (**fig. 18**), incorporating climate change into long term planning remains the most adopted, and the most common priority areas addressed by the regions are forestry and biodiversity, resilience and disaster risk reduction, agriculture, water resources, and infrastructure (RegionsAdapt, 2020).

FIGURE 18

MOST COMMONLY REPORTED ADAPTATION ACTIONS IN 2020

Source: RegionsAdapt Brief Report 2020



The report also shows how regional governments are leading the way in fostering multi-level adaptation governance, with 25 of the 28 disclosing regions reporting to be collaborating with

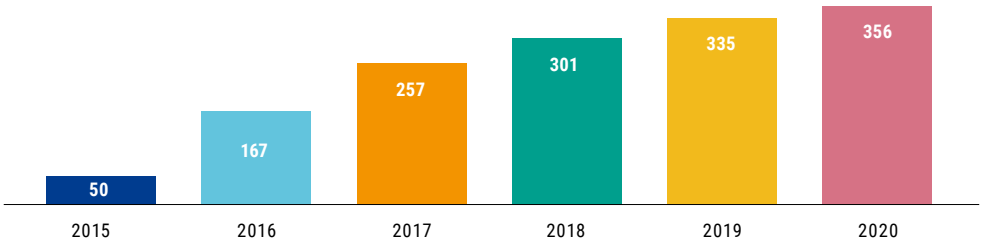
their national counterparts, while 100% of them reported to be collaborating with their local counterparts. This multi-level governance approach ensures local realities are reflected into regional adaptation plans, while also feeding into national climate policies. However, it is important to highlight that only seven reported to be collaborating in climate adaptation, while 12 reported to be collaborating in emissions reduction. More insights on multi-level governance can be found in **Section III** of this report.

5. Sectoral Initiatives from the NAZCA

UITP Declaration on Climate Leadership: This declaration by the International Union for Public Transportation is recognised as a non-stakeholder collaboration initiative under the Marrakesh Partnership. It essentially commits the public transport sector to contribute towards the Paris Agreement Goals, through 350 projects to climate action in over 80 cities around the world, doubling public transport use by 2025 and reducing per capita urban transport emissions by 25%. As seen in figure. 23, as of 2020, the projects pledged and delivered stood at 356, covering low carbon vehicles, new transport lines, BRT, cleaner and efficient fuels, and mixed mobilities (UITP, 2020).

FIGURE 19

PROJECTS PLEDGED AND DELIVERED 2015-2020 (CUMULATIVE) - *Source: page 2 UITP, 2020*



Building Efficiency Accelerator: In this initiative led by the World Resources Institute, businesses, NGOs and international organizations, and civil society commit to supporting building efficiency through tools, expertise, technical capabilities and financial support, while city and subnational governments commit to implementing at least one enabling policy and one demonstration project and track the progress. As reported on the NAZCA website, 44 cities and 8 regions have made progress in this aspect.

Net Zero Carbon Buildings Commitment: This initiative of the World Green Building Council calls upon cities, regions and states to have all buildings in their direct control to be net zero carbon by 2030, and advocate for all buildings to be net zero by 2050. The Commitment launched in 2018, now has 28 cities and 6 states and regions. Including businesses and local governments, the signatories account for a total floor area of 32 million m^2 (WGBC, 2020).

C40 Clean Bus Declaration/ Zero Emission Vehicle Network: The declaration is aimed at reducing emissions from mass public transport, and the ZEV Network brings together C40 cities to share best practices and policies, and also collaborate with other stakeholders. The Network has 4 focus areas of a citywide ZEV strategy, infrastructure development, promotion of ZEV fleets and incentivisation. The declaration has 37 signatory cities.

C40 Zero Waste Declaration: This declaration commits 20 cities and 3 regions to reducing the municipal solid waste generation per capita by at least 15% by 2030 compared to 2015, and to reducing the amount of municipal solid waste disposed to landfill and incineration by at least 50% by 2030 compared to 2015, and increase the diversion rate away from landfill and incineration to at least 70% by 2030. Out of the 18 cities that voluntarily disclosed their progress in 2019, 17 are on track to deliver these commitments by 2030 (C40 Cities, 2019).