

# Green Digital Charter - Covenant of Mayors

Comparative analysis on GDC-CoM reports

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# 1 Introduction

The Green Digital Charter and the Covenant of Mayors are two mainstream initiatives both engaging European cities to increase energy efficiency across their territories.

Although differentiating in many aspects such as size and focus, the two initiatives are clearly linked. Focusing on one specific aspect of the broader energy efficiency spectrum, the Green Digital Charter actions in the field of Information and Communication Technologies (ICT) and energy efficiency should therefore be fully compatible with those under the Covenant of Mayors.

This need of compatibility is confirmed by the fact that all Charter signatories have also committed to the Covenant of Mayors. At the moment though, signatories of the Green Digital Charter who are also signatories of the Covenant of Mayors are facing a number of challenges in combining the reporting on progresses under the two initiatives.

The present document explains the development of the Green Digital Charter-Covenant of Mayors reporting tool (hereafter 'Charter-Covenant reporting tool') that enables cities, Charter signatories and beyond, to highlight the ICT dimension of their efforts to reach the Covenant of Mayors commitment.

This reporting tool has been developed by the NiCE (Networking intelligent Cities for Energy Efficiency) project consortium as part of a set of Green Digital Charter reporting tools to support the Charter implementation. During the development, feedback received from Charter signatories, the Reference Cities Group and the Expert Advisory Board of the NiCE project was taken into account.

## 2 Objective of this reporting tool

To support more streamlined actions in implementing the Green Digital Charter, the NiCE project aims at a better coordination of the reporting procedures under the Charter and the Covenant of Mayors. NiCE has therefore introduced a Charter-Covenant reporting tool which facilitates the integration of an ICT component within the Covenant planning and monitoring without creating additional procedural requirements. As a result, the contribution of ICT related measures in the context of the Covenant of Mayors will be clearly discernible, thus enabling conclusions about future priorities and facilitating clearer benchmarking and monitoring of city ICT activities.

Such a tool has a strong added value:

- First, a vast majority of Green Digital Charter signatories are Covenant of Mayors signatories and would benefit from the integration of the two initiatives. The integration of an ICT component within the Covenant planning and monitoring would prevent duplication of paperwork and double reporting for the two initiatives;
- Second, as shown in studies such as City2020<sup>1</sup>, Smart2020<sup>2</sup> and recent work of the International Telecommunications Union (ITU<sup>3</sup>), ICT plays a strategic role in increasing efficiencies and decreasing carbon emissions across a city's territory. Therefore both Charter signatories and non-signatories will be able to provide the deserved visibility to activities relating to ICT's positive impact within the Covenant of Mayors initiative.

The tool was developed following a two-step approach: the first version of the tool aimed at drawing a roadmap for the future versions of the tool, presenting recommendations for modifications to the Covenant reporting templates and procedures. These recommendations were discussed with the Covenant of Mayors Office<sup>4</sup> and the second version of the tool provided a reporting tool that follows the final decisions of the Covenant of Mayors Office, recommendations from the GDC signatories and the feedback from the Reference Cities Group.

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<sup>1</sup> 'City2020 - Support to the development of an ICT driven transition strategy to the Low Carbon City - Green Digital Cities Replicating Inventiveness and Exuberance', 2010, Clicks and Links Ltd under commission of the Information Society Directorate of the European Commission.

<http://www.greenshifteurope.eu/opencms/opencms/city2020/>

<sup>2</sup> 'SMART 2020: Enabling the low carbon economy in the information age', 2008, the Climate Group on behalf of the Global e-Sustainability Initiative (GeSI). <http://www.smart2020.org/publications/>

<sup>3</sup> ITU is currently developing a new Recommendation: 'Recommendation 'Methodology to evaluate the GHG Impact of ICT in Cities' presenting general principles on how to evaluate the environmental impacts of ICT in cities and recommending how ICT may be used to reduce the rate of greenhouse gas (GHG) accumulation in the atmosphere by optimising the use of energy. <http://www.itu.int>

<sup>4</sup> The Covenant of Mayors Office, established and funded by the European Commission, is responsible for the coordination and daily management of the Covenant of Mayors. It is managed by a consortium of European networks representing local and regional authorities, led by Energy-Cities and composed of CEMR, Climate Alliance, EUROCITIES and FEDARENE. [http://www.eumayors.eu/about/contact\\_en.html](http://www.eumayors.eu/about/contact_en.html)

## 3 Covenant of Mayors - planning and reporting

### 3.1 Planning

The Sustainable Energy Action Plan (SEAP) is the key document which the Covenant of Mayors signatories are required to develop to show how they will reach their commitments by 2020. SEAPs should be considered as tools that allow to:

- Outline how the city will look like in the future, in terms of energy, climate policy and mobility (the vision);
- Communicate and share the plan with the stakeholders;
- Translate this vision into practical actions assigning deadlines and a budget for each of them;
- Serve as a reference during the implementation and monitoring process<sup>5</sup>.

The Covenant of Mayors Office (CoMO) has structured the process for elaborating and implementing a successful SEAP into different key steps which can be grouped into four phases: initiation, planning, implementation, monitoring and reporting. See Figure 1 page 7 for a more detailed overview of the SEAP process.

After the signature, Covenant signatories are required to undertake two important steps:

1. **Submit the Sustainable Energy Action Plan:** Covenant signatories commit to submitting - within one year following the CoM signature - their SEAP where the Covenant objectives and measures to reach them will be justified. SEAP must be approved by the municipal council and uploaded using the on-line submission system and the provided SEAP template.
2. **Submit regular "Implementation Reports":** Every two years after having submitted the SEAP, Covenant signatories have to report on their SEAP implementation. These implementation reports aim to check the compliance of the interim results with the foreseen objectives in terms of measures implemented and CO<sub>2</sub> emission reductions.

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<sup>5</sup> 'How to develop a Sustainable Energy Action Plan - Guidebook', Covenant of Mayors, 2010, Part I, Chapter 1. [http://www.eumayors.eu/IMG/pdf/seap\\_guidelines\\_en-2.pdf](http://www.eumayors.eu/IMG/pdf/seap_guidelines_en-2.pdf)

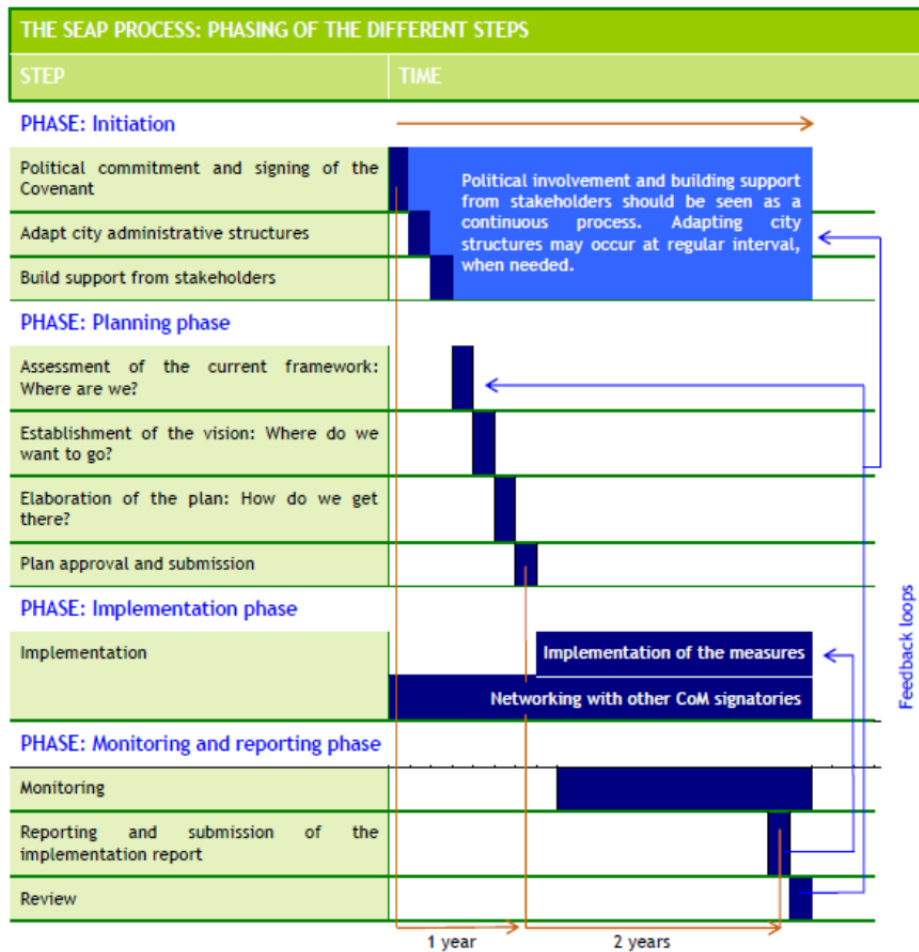


Figure 1 - The SEAP process

The Covenant of Mayors Office, in close collaboration with the Joint Research Centre (JRC), has developed a SEAP template which complements and summarises in English the commitments inserted in the Sustainable Energy Action Plan which cities have to produce in their own (national) language.

The template includes three main parts dedicated to:

- Long term vision and overall strategy - specifying the overall CO<sub>2</sub> emission target foreseen, the priority areas of action, the attribution of staff and financial capacities;
- Key results of the Baseline Emission Inventory (BEI) - indicating the current level of energy consumption and identifying the principal sources of CO<sub>2</sub> emissions (Figure 2);
- Key elements of the Sustainable Energy Action Plan - defining the short and long term measures set up to put the overall strategy into action, together with time frames, assigned responsibilities and allocated budgets (Figure 3).

Category	FINAL ENERGY CONSUMPTION [MWh]															Total
	Electricity	Heat/cold	Fossil fuels								Renewable energies					
			Natural gas	Liquid gas	Heating Oil	Diesel	Gasoline	Lignite	Coal	Other fossil fuels	Plant oil	Biofuel	Other biomass	Solar thermal	Geothermal	
BUILDINGS, EQUIPMENT/FACILITIES AND INDUSTRIES:																
Municipal buildings, equipment/facilities																
Tertiary (non municipal) buildings, equipment/facilities																
Residential buildings																
Municipal public lighting																
Industries (excluding industries involved in the EU Emission trading scheme - ETS)																
Subtotal buildings, equipments/facilities and industries																
TRANSPORT:																
Municipal fleet																
Public transport																
Private and commercial transport																
Subtotal transport																
Total																

Municipal purchases of certified green electricity (if any) [MWh]:	
CO2 emission factor for certified green electricity purchases (for LCA approach):	

Figure 2 - Baseline Emission Inventory



## Sustainable Energy Action Plan (SEAP) template

### SUSTAINABLE ENERGY ACTION PLAN

1) Title of your Sustainable Energy Action Plan

 Instructions

Date of formal approval

Authority approving the plan

2) Key elements of your Sustainable Energy Action Plan

Green cells are compulsory fields

Grey fields are non-editable

SECTORS & fields of action	KEY actions/measures per field of action	Responsible department, person or company (in case of involvement of 3rd parties)	Implementation (start & end time)	Estimated costs per action/measure	Expected energy saving per measure [MWh/a]	Expected renewable energy production per measure [MWh/a]	Expected CO2 reduction per measure [t/a]	Energy saving target per sector [MWh] in 2020	Local renewable energy production target per sector [MWh] in 2020	CO2 reduction target per sector [t] in 2020
<b>BUILDINGS, EQUIPMENT / FACILITIES &amp; INDUSTRIES:</b>										
Municipal buildings, equipment/facilities	Action 1: _____ Action 2: _____	1: _____ 2: _____	1: _____ 2: _____	1: _____ 2: _____	1: _____ 2: _____	1: _____ 2: _____	1: _____ 2: _____			
Tertiary (non municipal) buildings, equipment/facilities										
Residential buildings										
Municipal public lighting										
Industries (excluding industries involved in the EU Emission trading scheme - ETS) & Small and Medium Sized Enterprises (SMEs)										
Other - please specify: _____										
<b>TRANSPORT:</b>										
Municipal fleet	Action 1: _____ Action 2: _____	1: _____ 2: _____	1: _____ 2: _____	1: _____ 2: _____	1: _____ 2: _____	1: _____ 2: _____	1: _____ 2: _____			
Public transport										
Private and commercial transport										
Other - please specify: _____										
<b>LOCAL ELECTRICITY PRODUCTION:</b>										
Hydroelectric power	Action 1: _____ Action 2: _____	1: _____ 2: _____	1: _____ 2: _____	1: _____ 2: _____	1: _____ 2: _____	1: _____ 2: _____	1: _____ 2: _____			
Wind power										
Photovoltaic										
Combined Heat and Power										
Other - please specify: _____										
<b>LOCAL DISTRICT HEATING / COOLING, CHPS:</b>										
Combined Heat and Power	Action 1: _____ Action 2: _____	1: _____ 2: _____	1: _____ 2: _____	1: _____ 2: _____	1: _____ 2: _____	1: _____ 2: _____	1: _____ 2: _____			
District heating plant										
Other - please specify: _____										
<b>LAND USE PLANNING:</b>										
Strategic urban planning	Action 1: _____ Action 2: _____	1: _____ 2: _____	1: _____ 2: _____	1: _____ 2: _____	1: _____ 2: _____	1: _____ 2: _____	1: _____ 2: _____			
Transport / mobility planning										
Standards for refurbishment and new development										
Other - please specify: _____										
<b>PUBLIC PROCUREMENT OF PRODUCTS AND SERVICES:</b>										
Energy efficiency requirements/standards	Action 1: _____ Action 2: _____	1: _____ 2: _____	1: _____ 2: _____	1: _____ 2: _____	1: _____ 2: _____	1: _____ 2: _____	1: _____ 2: _____			
Renewable energy requirements/standards										
Other - please specify: _____										
<b>WORKING WITH THE CITIZENS AND STAKEHOLDERS:</b>										
Advisory services	Action 1: _____ Action 2: _____	1: _____ 2: _____	1: _____ 2: _____	1: _____ 2: _____	1: _____ 2: _____	1: _____ 2: _____	1: _____ 2: _____			
Financial support and grants										
Awareness raising and local networking										
Training and education										
Other - please specify: _____										
<b>OTHER SECTOR(S) - Please specify:</b>										
Other - Please specify: _____	Action 1: _____ Action 2: _____	1: _____ 2: _____	1: _____ 2: _____	1: _____ 2: _____	1: _____ 2: _____	1: _____ 2: _____	1: _____ 2: _____			

Figure 3 - SEAP template<sup>6</sup>

<sup>6</sup> [http://dev2.eumayors.eu/about/covenant-step-by-step-developments\\_en.html](http://dev2.eumayors.eu/about/covenant-step-by-step-developments_en.html)

### 3.2 Reporting

Climate Alliance<sup>7</sup>, the Covenant of Mayors Office partner leading on the SEAP development monitoring, and the Joint Research Centre have developed a template for the implementation report to help cities in the monitoring and reporting phase. The template was initially planned to be available in early autumn 2012, after being tested by a voluntary group of Covenant signatories. Unfortunately, due to the exponential rate of SEAPs submission, the European Commission has been forced to postpone the finalisation and publication of the SEAP reporting/monitoring template<sup>8</sup>. Signatories that have already developed their own implementation report are invited to upload their report and publish it on their own online profile.

The implementation report template reflects the SEAP structure and includes:

- A qualitative part, providing information on the implemented measures, which needs to be submitted every second year from the SEAP submission;
- A quantitative part which includes an updated CO<sub>2</sub> emission inventory (MEI, Monitoring Emission Inventory), which cities need to submit at least every fourth year from the SEAP submission.

The aim is to use the implementation report template as the new SEAP template for new Covenant of Mayors signatories in order to make monitoring and reporting easier from the very start.

The implementation report template of the Covenant of Mayors (to be released) was provided to the NiCE project (EUROCITIES) after a number of bilateral meetings in which the integration of the reporting for GDC and CoM was discussed. In the following figures, the three main components of the template can be seen.

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<sup>7</sup> [http://www.eumayors.eu/about/covenant-supporters\\_en.html?structure\\_id=33](http://www.eumayors.eu/about/covenant-supporters_en.html?structure_id=33)

<sup>8</sup> [http://dev2.eumayors.eu/support/faq\\_en.html?id\\_faq=55](http://dev2.eumayors.eu/support/faq_en.html?id_faq=55)

## My Overall Strategy

### My Overall Strategy

1) Overall CO<sub>2</sub> reduction target (%)

2020 target  Long-term target  Target year

Baseline year

☐ Absolute reduction  
☐ Per capita reduction

Population estimates by 2020

2) Vision

3) Coordination and organisational structures created/assigned

4) Staff capacity allocated

**SEAP preparation:**

Full-time equivalent jobs

☐ Local authority  
☐ Local/regional energy agency  
☐ External consultant  
☐ Covenant Territorial Coordinator  
☐ Other

**SEAP implementation:**

Full-time equivalent jobs

☐ Local authority  
☐ Local/regional energy agency  
☐ External consultant  
☐ Covenant Territorial Coordinator  
☐ Other

5) Involvement of stakeholders and citizens

6) Overall estimated budget for the implementation of your SEAP

Implementation cost  € Budget spent so far

Time period  1990  2020  31 years

7) Financing sources used so far for SEAP implementation

☐ Public

☐ Local Authority's own resources  
☐ National Funds & Programmes  
☐ EU Funds & Programmes

☐ Private

Please specify the %


8) Monitoring process *Please point out and rate (little/fair/strong/nd, applicable) the main problems encountered during SEAP implementation (by sector):*

	All key sectors	Municipal	Tertiary	Residential	Transport	Local energy production
Limited financial sources						
Absence of / weak regulatory framework						
Lack of Covenant team's technical expertise						
Lack of support from stakeholders						
Lack of political support						
Incompatibility with national policy orientations						
Immature or high cost technologies						

Other comments

⑤ Introduction of a table to gather structured feedback on the main barriers encountered by the local authorities during SEAP implementation.

Figure 4 - CoM implementation report template, p.1

## My Emission Inventories

### Monitoring Emission Inventory

- 1) Inventory year
- 2) Number of inhabitants in the inventory year
- 3) Emission factors ☐ IPCC  
☐ LCA (Life Cycle Assessment)
- 4) Emission reporting unit ☐ tonnes CO<sub>2</sub>  
☐ tonnes CO<sub>2</sub> equivalent

5) Methodological notes and data sources

### Results of the Baseline Emission Inventory

#### A Final energy consumption

Please note that for separating decimals dot (.) is used. No thousand separators are allowed.

Sector		FINAL ENERGY CONSUMPTION (MWh)															
		Electricity	Heat/cold	Fossil fuels								Renewable energies					Total
				Natural gas	Liquid gas	Heating oil	Diesel	Gasoline	Lignite	Coal	Other fossil fuels	Plant oil	Biometh	Other biomass	Solar thermal	Geothermal	
BUILDINGS, EQUIPMENT/FACILITIES AND INDUSTRIES																	
Municipal buildings, equipment/facilities				10													10
Tertiary (non municipal) buildings, equipment/facilities																	0
Residential buildings																	0
Public lighting																	0
Industry	Non-ETS																0
	ETS (no free allowances)																0
Subtotal		0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	10
TRANSPORT																	
Municipal fleet																	0
Public transport																	0
Private and commercial transport																	0
Subtotal		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
OTHER																	
Agriculture, Forestry, Fisheries																	0
TOTAL		0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	10

Greater emphasis on the Covenant Key Sectors (Municipal, Residential and Tertiary) is needed.

New mandatory fields (allows or not to)

#### B. Energy supply

Please select when applicable:

- ☐ Municipal purchases of certified green electricity
- Local distributed electricity production
- ☐ Wind
  - ☐ Hydroelectric
  - ☐ Photovoltaics
  - ☐ Geothermal
  - ☐ Combined Heat & Power
  - ☐ Other
- Local heat/cold production
- ☐ Combined Heat & Power
  - ☐ District heating (heat-only)
  - ☐ Other

Introduction of tick-boxes. The fields (B1, B2, B3, B4) will appear according to the boxes ticked

Figure 5 - CoM implementation report template, p.2a

#### B1 Municipal purchases of certified green electricity

Certified green electricity purchased [MWh]	
CO <sub>2</sub> emission factor [t/MWh]	

#### B2 Local distributed electricity production

Local renewable electricity plants (excluding large-scale plants > 20 MW)	Renewable electricity produced [MWh]	CO <sub>2</sub> emission factor [t/MWh produced]	CO <sub>2</sub> / CO <sub>2</sub> eq. emissions [t]
Wind			0
Hydroelectric			0
Photovoltaic			0
Geothermal			0
<b>TOTAL</b>	0		0

#### B3 Local distributed electricity production

Local electricity production plants (excluding ETS plants and large-scale plants > 20 MW)	Electricity produced (MWh)		Energy carrier input (MWh)										CO <sub>2</sub> / CO <sub>2</sub> eq. emissions (t)	
			Fossil fuels						Waste	Plant oil	Other biomass	Other renewable		
	Total	from renewable sources	Natural gas	Liquid gas	Heating oil	Lignite	Coal							
Combined Heat and Power														
Other														
TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0

#### B4 Local heat/cold production

Local heat/cold production plants	Heat/cold produced [MWh]		Energy carrier input [MWh]										CO <sub>2</sub> / CO <sub>2</sub> eq. emissions [t]	
			Fossil fuels											
	Total	from renewable sources	Natural gas	Liquid gas	Heating oil	Lignite	Coal	Waste	Plant oil	Other biomass	Other renewable	Other	Fossil sources	Renewable sources
Combined Heat and Power														
District heating (heat-only)														
Other														
TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0

### C. CO<sub>2</sub> emissions

#### C1 Please insert the CO<sub>2</sub> emission factors adopted [t/MWh]

Click here to visit our fuel emission factors

Use of a constant or a variable National Electricity Emission Factor?

Electricity		Fossil fuels										Renewable energies			
National	Local	Heat/cold	Natural gas	Liquid gas	Heating oil	Diesel	Gasoline	Lignite	Coal	Other fossil fuels	Biofuel	Plant oil	Other biomass	Solar thermal	Geothermal
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Note: If your local emission factor is equal to the National, please fill in the Local cell with the same value. The formula for CO<sub>2</sub> emissions from electricity below picks up the value of the Local cell.

#### C2 Please tick the box in case non-energy related sectors are included ☐

Non-energy related sectors	CO <sub>2</sub> eq. emissions
Waste management	
Waste water management	
Other non-energy related	

Generate Emission Inventory

#### Your Baseline Emission Inventory

Sector		CO <sub>2</sub> emissions (t) / CO <sub>2</sub> equivalent emissions (t)														Total
		Electricity	Heat/cold	Fossil fuels							Renewable energies					
				Natural gas	Liquid gas	Heating oil	Diesel	Gasoline	Lignite	Coal	Other fossil fuels	Biofuel	Plant oil	Other biomass	Solar thermal	
BUILDINGS, EQUIPMENT/FACILITIES AND INDUSTRIES																
Municipal buildings/equipment/facilities		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tertiary (non-municipal) buildings/equipment/facilities		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Residential buildings		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Municipal public lighting		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Industry	non-ETS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	ETS (no trees common dec)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TRANSPORT																
Municipal fleet		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Public transport		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Private and commercial transport		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
OTHER																
Agriculture, Forestry, Fisheries		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
OTHER NON-ENERGY RELATED																
Waste management																0
Waste water management																0
Other non-energy related																0
TOTAL		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Figure 6 - CoM implementation report template, p.2b

## Sustainable Energy Action Plan

6) Estimates of the impacts of actions in 2020 in relation to:	BEI (option 1)
----------------------------------------------------------------	----------------

### Key Actions of the SEAP

⑨ Assessment of the impacts of the actions implemented so far.

Key Actions	Area of intervention	Policy instrument	Action decided at the local level	Responsible body	Implementation timeframe		Status of implementation	Degree of implementation	Progress-based indicator	Estimated implementation cost	Implementation cost	Estimates in 2020			Benchmarks of Exoletter
					Start	End		%				Energy savings	Renewable energy production	CO <sub>2</sub> reduction	
MUNICIPAL BUILDINGS, EQUIPMENT/FACILITIES															
Add a row for other key action															
Eliminate rows associated with any reported actions											0	0	0	0	
TERTIARY BUILDINGS, EQUIPMENT/FACILITIES															
Add a row for other key action															
Eliminate rows associated with any reported actions											0	0	0	0	
RESIDENTIAL BUILDINGS															
Add a row for other key action															
Eliminate rows associated with any reported actions											0	0	0	0	

**(10)** During the monitoring, signatories will be asked to submit a minimum number of BoE. Click on this box to visualise the corresponding BoE form.

Figure 7 - CoM implementation report template, p.3a

Figure 8 - CoM implementation report template, p.3b

More specifically, the SEAP reporting template for *key (CoM) actions*, which are equivalent to the *GDC activities* contains the following fields:

Template field	Value
Key actions	<p>Name of the action classified in one of the following categories:</p> <ul style="list-style-type: none"> <li>• MUNICIPAL BUILDINGS, EQUIPMENT/FACILITIES</li> <li>• TERTIARY BUILDINGS, EQUIPMENT/FACILITIES</li> <li>• RESIDENTIAL BUILDINGS</li> <li>• PUBLIC LIGHTING</li> <li>• INDUSTRY</li> <li>• TRANSPORT</li> <li>• LOCAL ELECTRICITY PRODUCTION</li> <li>• LOCAL HEAT/COLD PRODUCTION</li> <li>• OTHERS</li> </ul>
Area of intervention	<i>See following tables</i>
Policy instrument	<i>See following tables</i>
Action decide at the local level	Yes, No, Not possible to say
Responsible body	<i>Free text</i>
Implementation timeframe	Year of start, year of end
Status of implementation	Ongoing, completed, pending, cancelled, new
Degree of implementation	<i>Free text</i>
Progress-based indicator	<i>See following tables</i>
Estimated implementation cost	<i>Free text</i>
Implementation cost	<i>Free text</i>
Energy savings (in MWh/a, in 2020)	<i>Free text</i>
Renewable energy production (in MWh/a, in 2020)	<i>Free text</i>
CO <sub>2</sub> reduction (in t CO <sub>2</sub> /a, in 2020)	<i>Free text</i>
Benchmark of excellence	Yes, no

The final draft “area of intervention” and “policy instrument” values can be found in the next table:



A AREA OF INTERVENTION		B POLICY INSTRUMENT	
<b>A1 Municipal - Residential - Tertiary Buildings</b>		<b>B1 Buildings</b>	
A11	Building envelope	B11	Awareness raising / training
A12	Renewable energy for space heating and hot water	B12	Energy assessment and energy management
A13	Energy efficiency in space heating and hot water	B13	Energy certification / labelling
A14	Energy efficient lighting systems	B14	Energy suppliers obligations - (i.e.: White certificate mechanisms)
A15	Energy efficient electrical appliances	B15	Financial mechanisms - Energy or carbon tax to be applied on other sectors
A16	ICT	B16	Financial mechanisms - Grants and subsidies (incl. tax reductions)
A17	Behavioural changes	B17	Financial mechanisms - Third party financing (incl. EPC and ESCOs), PPP
A18	Integrated action	B18	Public procurement
A19	Other	B19	Standards for refurbishment and new development (incl. Building code)
		B110	Land use planning
		B111	Voluntary agreement with stakeholders
		B112	No policy instrument
		B113	Other
<b>A2 Public Lighting</b>		<b>B2 Public Lighting</b>	
A21	Energy efficiency	B21	Energy assessment and energy management
A23	Integrated renewable power	B22	Energy suppliers obligations - (i.e.: White certificate mechanisms)
A24	ICT	B23	Financial mechanisms - Third party financing (incl. EPC and ESCOs) - PPP
A25	Other	B24	Public procurement
		B25	No policy instrument
		B26	Other
<b>A3 Industry</b>		<b>B3 Industry</b>	
A31	Energy efficiency in industrial processes	B31	Awareness raising / training
A32	Energy efficiency in buildings	B32	Energy assessment and energy management
A33	Renewable energy	B33	Energy certification / labelling
A34	ICT	B34	Minimum energy performance standards
A35	Other	B35	Financial mechanisms - Energy or carbon tax to be applied on other sectors
		B36	Financial mechanisms - Grants and subsidies (incl. tax reductions)
		B37	Financial mechanisms - Third party financing (incl. EPC and ESCOs), PPP
		B38	No policy instrument
		B39	Other
<b>A4 Municipal - Public - Private Transport</b>		<b>B4 Transport</b>	
A41	Cleaner/efficient vehicles > municipal fleet	B41	Awareness raising and provision of information to the general public
A42	Cleaner/efficient vehicles > public transport	B42	Integrated ticketing and charging
A43	Cleaner/efficient vehicles > private and commercial fleet	B43	Financial mechanisms - Grants and subsidies (incl. tax reductions)
A44	Smarter vehicle use > Eco-driving - Municipal fleet	B44	Financial mechanisms - Road pricing
A45	Smarter vehicle use > Eco-driving - Public transport	B45	Mobility management
A46	Smarter vehicle use > Eco-driving - Private and commercial transport	B46	Mobility planning regulations
A47	Smarter vehicle use > Car sharing and car pooling	B47	Land use planning regulations
A48	Improvement of logistics and urban freight transport	B38	Public procurement
A49	Modal shift > Public transport	B39	Voluntary agreements with stakeholders
A410	Modal shift > Walking & cycling	B40	No policy instrument
A411	Electric vehicles infrastructure	B41	Other
A412	Road network optimisation		
A413	Mixed use development and sprawl containment		
A414	ICT		
A415	Other		
<b>A5 Local Electricity Production</b>		<b>B5 Local Electricity Production</b>	
A51	Hydroelectric power	B51	Awareness raising / training
A52	Wind power	B52	Energy suppliers obligations
A53	Photovoltaics	B53	Financial mechanisms - Grants and subsidies
A54	Biomass power plant (incl. co-combustion)	B54	Financial mechanisms - Third party financing (incl. EPC and ESCOs) - PPP
A55	Combined Heat and Power	B55	Public procurement (including GEP)
A56	Other	B56	Standards for refurbishment and new development (incl. Building code)
		B57	Regulation for land use planning
		B58	No policy instrument
		B59	Other
<b>A6 Local heat/cold Production</b>		<b>B6 Local heat/cold Production</b>	
A61	Combined Heat and Power	B61	Awareness raising / training
A62	District heating/cooling plant	B62	Energy suppliers obligations
A63	District heating/cooling network (new, expansion, refurbishment)	B63	Financial mechanisms - Grants and subsidies
A64	Other	B64	Financial mechanisms - Third party financing (incl. EPC and ESCOs) - PPP
		B65	Standards for refurbishment and new development (incl. Building code)
		B66	Regulation for land use planning
		B67	No policy instrument
		B68	Other
<b>A7 Other</b>		<b>B7 Other</b>	
A71	Urban regeneration	B71	Awareness raising / training
A72	Waste & wastewater management	B72	Regulation for land use planning
A73	Tree planting in urban areas	B73	No policy instrument
A74	Agriculture and forestry related	B74	Other
A75	Other		

Figure 9 – Area of intervention

In the following table, some examples of progress-based indicators that CoM signatories could use to determine the degree/percentage of implementation of an action are shown:

AREA OF INTERVENTION	INDICATOR
<b>Municipal - Residential - Tertiary Buildings</b>	
Building envelope	Number/surface area of buildings insulated [-/m2]
Energy efficiency in space heating and hot water	Number of boilers replaced [-]
Energy efficient lighting systems	Number of lamps replaced [-]
Energy efficient electrical appliances	Number of electrical appliances replaced [-]
Renewable energy for space heating and hot water	Surface area of solar thermal panels installed [m2]
Integrated action	Number/surface area of buildings retrofitted [-/m2]
ICT	Number of buildings with smart meters installed [-] / Number of new buildings with domotic systems [-]
Behavioural changes	Number of participants in awareness raising campaigns [-] / Number of CFLs distributed [-]
Other	-
<b>Public Lighting</b>	
Energy efficiency	Number of conventional traffic lights replaced by LED [-]
Integrated renewable power	Renewable power installed (kW)
ICT	Number of remote control systems installed [-]
Other	-
<b>Industry</b>	
Energy efficiency in industrial processes	Number of boilers replaced [-]
Energy efficiency in buildings	Number of lamps replaced [-]
Renewable energy	Renewable power installed (kW)
Other	-
<b>Municipal - Public - Private Transport</b>	
Cleaner/efficient municipal vehicles	Number of vehicles replaced [-]
Municipal fleet - efficient driving behaviour	Number of participants targeted by energy efficiency driving courses given [-]
Cleaner/efficient public transport	Number of new CNG buses purchased [-]
Public transport infrastructure, routes and frequency	Network extension (km) / Number of services per day [-]
Electric vehicles infrastructure	Number of charging points [-]
Cleaner/efficient private vehicles	Number of financial incentives granted by the local authority [-]
Car sharing	Number of car share vehicles and locations [-]
Walking & cycling	Number of bicycle parking spaces [-]
Road network optimisation	Number of roundabouts built [-]
Traffic congestion reduction	Surface area on which congestion charge applies [m2]
ICT	Number of roads with Variable Speed Limits (VSB) introduced [-] / Number of teleworking schemes in pl
Efficient driving behaviour	Number of courses given [-]
Other	-
<b>Local Electricity Production</b>	
Hydroelectric power	Power installed [MW]
Wind power	Power installed [MW]
Photovoltaics	Power installed [MW]
Biomass power	Power installed [MW]
Combined Heat and Power	Power installed [MW]
Other	-
<b>Local heat/cold Production</b>	
Combined Heat and Power	Capacity installed [MW]
District heating/cooling plant	Capacity installed [MW]
District heating/cooling network (new, expansion, refurbishment)	Network extension [km] / Number of customers [-]
Other	-
<b>Other</b>	
Waste and wastewater management	tbd
Tree planting in urban areas	Net tree gain [-]
Agriculture and forestry related	Number of farm machinery replaced [-] / Number of pumps replaced for irrigation [-]

Figure 10 – Policy instrument

It is important to mention that, following the discussions with NiCE project, the new CoM template includes ICT as a specific area of intervention in all requested categories of actions:

- MUNICIPAL BUILDINGS, EQUIPMENT/FACILITIES
- TERTIARY BUILDINGS, EQUIPMENT/FACILITIES
- RESIDENTIAL BUILDINGS
- PUBLIC LIGHTING
- INDUSTRY
- TRANSPORT

Unfortunately this is not the case in the last three categories of actions, namely:

- LOCAL ELECTRICITY PRODUCTION
- LOCAL HEAT/COLD PRODUCTION
- OTHERS

For these three categories of actions a number of potential areas of intervention had been identified in previous NiCE project deliverables and respective proposals were made. Unfortunately, CoMO and JRC have still not included specific GDC-related areas of intervention for these categories of actions, mainly because the proposed areas of intervention are not considered as belonging to the ICT sector *per se* but an integral part of the local electricity/ heat/ cold production projects.

Categories of actions	Areas of intervention
Local electricity production	Smart grids
Hydroelectric power	<ul style="list-style-type: none"> <li>- Expansion of the electricity network</li> <li>- Smart Metering</li> <li>- Virtual Power Plants</li> </ul>
Wind farm	<ul style="list-style-type: none"> <li>- Expansion of the electricity network</li> <li>- Smart Metering</li> <li>- Virtual Power Plants</li> </ul>
PVs	<ul style="list-style-type: none"> <li>- Expansion of the electricity network</li> <li>- Smart Metering</li> <li>- Virtual Power Plants</li> </ul>
CHPs	<ul style="list-style-type: none"> <li>- Expansion of the electricity network</li> <li>- Smart Metering</li> <li>- Virtual Power Plants</li> </ul>
Local district heating/cooling, CHPs	Virtual power plants/Smart Grids
Other sectors	Green IT

NiCE project proposals for the last three categories of SEAP template

In any case, CoMO and JRC have stated during the meetings with EUROCITIES that they may change some of the fields/values/indicators or add additional ones in the previous tables depending on the input they will receive along with the first reporting documents from cities.

*It has to be mentioned that, following the delay of the template's release or difficulties that cities may experience in reporting, until now (end of May 2014), CoMO hasn't received any report from signatory cities<sup>9</sup>.*

### ***3.3 Impact of ICT in the Emission Inventory***

Still, Covenant of Mayors signatories can neither highlight the negative impact nor the positive contribution of ICT in their initial emission calculation (Baseline Emission Inventory) and in their following review (Monitoring Emission Inventory). Instead, the energy consumption of ICT is included in the reporting on the overall electricity use of a city.

Furthermore, developing an option for cities to report on ICT-generated emissions is not favoured by CoMO and JRC since it would change the structure and meaning of the BEI and MEI tables.

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[http://dev2.eumayors.eu/about/signatories\\_en.html?q=Search+for+a+Signatory...&country\\_search=&population=&date\\_of\\_adhesion=&status=3](http://dev2.eumayors.eu/about/signatories_en.html?q=Search+for+a+Signatory...&country_search=&population=&date_of_adhesion=&status=3)

## 4 Green Digital Charter and Covenant of Mayors: integration challenges

Given the different focus of the two initiatives (all activities related to energy efficiency for the Covenant and only ICT-related ones for the Charter), cities committed to both initiatives face some integration challenges mainly due to their different scale and timelines.

### 4.1 Scale

The Covenant of Mayors concerns actions at local level within the competence of the local authority and the commitments cover the whole geographical area of the local authority (town, city). The emission inventory, that has to be submitted as part of the SEAP, should assess the energy consumption and CO<sub>2</sub> emissions of all the different sectors and actors present in the territory of the local authorities.

The Green Digital Charter instead has a different approach. The primary focus of the Charter is the signatories' public administration and this is reflected on the quantitative commitments of deploying ICT pilots and decreasing the direct carbon footprint of the city's ICT. By city's ICT we mean the ICT equipment and infrastructure owned or operated solely by the city administration and not the ICT equipment of the residential or the tertiary sectors of the city.

### 4.2 Timeline

The Covenant of Mayors requires the signatories to define their goals and actions towards a specific time-horizon: 2020. Their vision and consequently their SEAP need to be compatible with the Covenant of Mayors' commitments and should therefore imply a CO<sub>2</sub> emission reduction of more than 20% by the 2020 target. The Covenant signatories though, are free to be more ambitious than this by establishing a SEAP, which covers a longer period, still providing intermediate values and objectives for the year 2020.

The Green Digital Charter, originally committing cities to reduce by 30% their ICT footprint by 2020, has been revised in 2011 to allow a more flexible approach for cities that joined the initiative at a later stage. The Charter signatories now commit to work with other signatories, deploy five large scale pilot projects within 5 years from the signature, and decrease the carbon footprint of their ICT by 30% within 10 years from the signature. This commitment no longer refers to 2020 as the reference year and does not engage cities to consider this year as an intermediary target.

## 5 Green Digital Charter-Covenant of Mayors reporting tool

In light of the Covenant of Mayors implementation reporting template, the need to integrate the CoM and GDC reporting, the main challenges for this integration mentioned in the previous paragraph and the specific needs (following the GDC commitments) from reporting under the GDC, NiCE finalised its GDC-CoM reporting template that cities can access through the online toolkit.

The main drivers for the development of the final GDC-CoM reporting tool can be codified as follows:

- It was recognised that CoM is a far wider initiative with more than 5000 signatory cities, thus, its reporting template should serve as a guide;
- GDC signatories (through RCG meetings and meetings of NiCE partners with other cities) have clearly expressed their reluctance to get involved in additional and not compatible reporting procedures;
- GDC signatories (through RCG meetings and meetings of NiCE partners with other cities) have expressed their reluctance to use, specifically for GDC, performance indicators that do not have a “wider” value, meaning, being recognised and used also by other initiatives;
- There is a set of additional GDC data that need to be reported by the cities (e.g. Action Framework dimensions of projects and activities).

The GDC/CoM reporting tool cannot be seen as separate from the “Add GDC activities” facility of the online toolkit. That’s because the latter acts as the interface between the CoM reporting (SEAP or implementation reporting) and the GDC activities database. Thus, the format and contents of the GDC-CoM reporting tool are reflected in the interface for reporting the GDC pilot projects. Apart from following the recommendations coming from RCG meetings and meetings of NiCE partners with other cities, a number of design decisions were taken:

1. GDC-CoM reporting tool should be as much as possible compatible with the CoM SEAP and implementation template;
2. Then, additional GDC reporting data can be added in a complementary way;
3. Nevertheless, when reporting to GDC, GDC data should have a greater priority;
4. The “timeline” challenge of the previous paragraph needs to be taken into account;
5. For the time being, use of indicators should be avoided.

Following these considerations, the “Add GDC activities” facility of the online toolkit is separated in two parts: the first one is called “Activity details” and the second one “Additional CoM data”.

## 5.1 Activity details

*Shaded rows denote a mandatory field*

Field	Instruction to the reporting city
Title	<i>Enter the name of your city's activity/project</i>
Description	<i>Describe your city's activity/ project (You could use an existing summary, text from a project's brochure, etc.) - max. 100 words</i>
Website	<i>A URL that someone can use to find more material about the activity/project</i>
Application area <sup>10</sup>	<i>According to the GDC system, this can be one or more of the: Buildings, Energy, Green ICT, Public lighting, Transport, Other domains, Cross-domain</i>
Activity type	<i>According to the GDC system, this can be one or more of the: Governance, Policy, Operational, Exchange, Monitoring</i>
Role of ICT	<i>According to the GDC system, this can be one or more of the: Efficiency, Analysis/Decision Making, Perception/Behaviour, Innovation/Substitution</i>
Is this one of the 5 "large scale pilot projects" required in the Charter commitments?	<i>Press Yes if you want to include this activity/project in the 5 pilot projects required by the Charter</i>

## 5.2 Additional CoM data

*Shaded rows denote a mandatory field*

Field	Instruction to the reporting city
CoM category	<i>Select which CoM category the activity/project falls in: Industry, Local electricity production, Local heat/cold production, Municipal buildings/facilities/equipment, Public lighting, Residential buildings, Tertiary buildings/facilities/equipment, Other</i>

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<sup>10</sup> For more information about the *Application area*, *Activity type* and *Role of ICT*  
[http://www.greendigitalcharter.eu/wp-content/uploads/2012/03/NiCE\\_D2.2\\_ActionFramework\\_v2.0\\_-12.07.31.pdf](http://www.greendigitalcharter.eu/wp-content/uploads/2012/03/NiCE_D2.2_ActionFramework_v2.0_-12.07.31.pdf)

Implementation timeframe	<i>Year that the activity/project will (has) start(ed) and year that it will (has) end(ed)</i>
Degree of implementation	<i>If it has already started what is the approx. degree of implementation (in %)?</i>
Estimated cost for city	<i>Estimated total cost of the activity/project (in euros)</i>
Benchmarks of excellence	<i>Is this activity/project one of your CoM "Benchmarks of Excellence"</i>
Area of intervention	<i>By default ICT</i>
Policy instrument	<i>What kind of policy instrument is the activity/project related to?<sup>11</sup></i>
Action decided...	<i>State if the activity/project was decided at local level (city) or not</i>
Responsible body	<i>Responsible body for the activity/project</i>
Status of implementation	<i>Describe the status of the activity/project using one of the following: New, Pending, Ongoing, Completed, Cancelled</i>
Degree of implementation in 2020	<i>What will the degree of implementation of your activity/project be in 2020 (in %)? If it will be completed, write 100</i>
Actual cost for city	<i>If the activity/project is completed, what was the actual final cost?</i>
Estimated savings (end of project)	<i>What are the estimated annual energy savings (in MWh) from the energy efficiency obtained from the activity/project?</i>
Estimated production (end of project)	<i>What is the estimated annual energy production (in MWh) from renewable sources obtained from the activity/project?</i>
Estimated reduction (end of project)	<i>What is the estimated annual carbon emissions reduction (in tonnes of CO<sub>2</sub>) after the activity/project is implemented?</i>



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<sup>11</sup> One of the following: Awareness raising/training, Energy assessment and energy management, Energy certification/labeling, Energy suppliers obligations - (i.e.: White certificate mechanisms), Financial mechanisms - Energy or carbon tax to be applied on other sectors, Financial mechanisms - Grants and subsidies (incl. tax reductions), Financial mechanisms - Third party financing (incl. EPC and ESCOs), PPP, Public procurement, Standards for refurbishment and new development (incl. Building code), Land use planning, Voluntary agreement with stakeholders, Other, No policy instrument



After using the “Add GDC activities” facility of the online toolkit, a signatory city can check all the GDC activities’ reporting in an online (and downloadable) table in a format compatible with the SEAP template – ready to be used in the CoM reporting process.


On the other hand, if a city has already submitted a SEAP, the template can be used to report GDC activities and help other GDC cities identify new projects and opportunities - a city has just to open the "Add an activity" box and just copy the SEAP template fields in the corresponding GDC ones. After submitting the data, the activity will be uploaded for all cities to see.


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### GDC to Covenant of Mayors

Review your activity...



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Feedback

Key actions/GDC Activities	Area of intervention	Policy instrument	Action decided at the local level	Responsible body	Implementation timeframe		Status of implementation	Degree of implementation	Progress-based indicators	Estimated implementation cost	Implementation cost
					Start	End		%			
Municipal Buildings, Equipment / Facilities											
Tertiary Buildings, Equipment / Facilities											
Residential Buildings											
Residential Buildings	ICT	Energy certification / labelling	Not possible to say	City council	23-10-2014	19-07-2014	Ongoing	2	-	1000	1000
Public Lighting											
Industry											
Industry	ICT	Land use planning	Not possible to say	City Planning	15-02-2014	31-12-2016	Pending	30	-	100000	100000

The important function that hides beneath this facility is the reordering of data so that all submitted data can be easily separated in two parts:

- The 100% compatible with the CoM reporting in the first part;
- The additional GDC data in the second part

This function can be seen in the breakdown of the final reporting table - the user can see or download the data in this exact form.

Key actions/GDC Activities	Area of intervention	Policy instrument	Action decided at the local level	Responsible body	Implementation timeframe		Status of implementation
					Start	End	
MUNICIPAL BUILDINGS, EQUIPMENT/FACILITIES							
TERTIARY BUILDINGS, EQUIPMENT/FACILITIES							
RESIDENTIAL BUILDINGS							
PUBLIC LIGHTING							
INDUSTRY							
TRANSPORT							
LOCAL ELECTRICITY PRODUCTION							
LOCAL HEAT/COLD PRODUCTION							
OTHERS							

This part of the table can now be directly copied and pasted in the CoM template - 1

Degree of implementation	Progress-based indicators	Estimated implementation cost	Implementation cost	Estimates in 2020			Benchmarks of excellence
				Energy savings	Renewable energy	CO <sub>2</sub> reduction	
%		€	€	MWh/a	MWh/a	t CO <sub>2</sub> /a	

This part of the table can now be directly copied and pasted in the CoM template - 2

Is this a GDC pilot project?	GDC Action Tool	Activity types	Application areas	Roles of ICT	Degree of implementation (in 2020)	Estimates in end of project		
					%	Energy savings MWh/a	Renewable energy MWh/a	CO <sub>2</sub> reduction t CO <sub>2</sub> /a

This part of the table contains the remaining GDC data

## 6 Analysis of Green Digital Charter-Covenant of Mayors reports

*As it was mentioned before, following the delay of the template's release or difficulties that cities may experience in reporting, until now (end of May 2014), CoMO hasn't received any report from signatory cities<sup>12</sup>. Nevertheless, most of the GDC signatories have submitted their SEAP, thus, have publicised their strategy to meet their CoM commitments.*

After analysing the SEAP submitted by the GDC signatories, the following ICT- or GDC-related reporting activities were found:

- **Amsterdam<sup>13</sup>:** The city mentions the need to make the ICT sector greener, especially since almost 6% of all the CO<sub>2</sub> emissions of Amsterdam are estimated to be caused by data centres and the number of ICT businesses in the city is increasing annually. The local authority and the Amsterdam ICT sector have jointly set up the 'Green IT initiative'. In addition to making the ICT sector more efficient, ICT plays an important role in changing the city's mobility patterns, integrating sustainable energy sources and making houses and offices more efficient. In cooperation with the ICT sector, existing data centres will be made more energy efficient and new sustainable centres will be designed.
- **Barcelona<sup>14</sup>:** The city recognises how the use of ICT can be a problem, if not properly tackled, as the analysis of the energy consumption evolution shows a rise of intensity in electricity consumption in the domestic sector as well as in the tertiary sector which seems to go along, among others, with the evolution and rise of the ICT in houses and offices.
- **Bari<sup>15</sup>:** The City of Bari has identified 78 initiatives that can help in the reduction of its CO<sub>2</sub> emissions. Eight of them are classified as ICT/TLC<sup>16</sup>:
  - Municipal area wireless coverage
  - Development of a web portal that collects data of consumption of resources used in the municipal area
  - "MEMS" - Municipal Energy Management System
  - "Infomobility" - Use of ICT for clever transport
  - Creation of a system of remote monitoring and collection of meters' data
  - Green ICT
  - Dematerialisation process of the public administration
  - Streamlining and strengthening of ICT systems

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<sup>12</sup>

[http://dev2.eumayors.eu/about/signatories\\_en.html?q=Search+for+a+Signatory...&country\\_search=&population=&date\\_of\\_adhesion=&status=3](http://dev2.eumayors.eu/about/signatories_en.html?q=Search+for+a+Signatory...&country_search=&population=&date_of_adhesion=&status=3)

<sup>13</sup> [http://dev2.eumayors.eu/about/signatories\\_en.html?city\\_id=280](http://dev2.eumayors.eu/about/signatories_en.html?city_id=280)

<sup>14</sup> [http://dev2.eumayors.eu/about/signatories\\_en.html?city\\_id=381](http://dev2.eumayors.eu/about/signatories_en.html?city_id=381)

<sup>15</sup> [http://dev2.eumayors.eu/about/signatories\\_en.html?city\\_id=1971](http://dev2.eumayors.eu/about/signatories_en.html?city_id=1971)

<sup>16</sup> TLC stands for Telecommunications

- **Bologna<sup>17</sup>**: The city recognises that ICT represent an area relevant to the SEAP for two reasons. On the one hand, ICT is a source of growing direct electricity consumption (e.g. servers and data centres), and on the other hand it is the basis of innovative solutions for the measurement and optimisation of energy consumption (e.g. smart meters, remote control systems, etc.). Bologna describes a “Green Computing” strategy in order to decrease the electricity consumption of the municipal ICT equipment by 141 MWh/a by 2016.
- **Bristol<sup>18</sup>**: Bristol describes the development of “Green Digital Economy” as one of its “Climate Change & Energy Security Framework” axes. Two actions are described in more details:
  - Deliver innovative ICT solutions (incl. smart metering) in social housing to save energy, shift consumption to off-peak and reduce carbon
  - Deliver Bristol’s Green ICT Strategy and share best practice with other organisations through Bristol Green Addict
- **Helsinki<sup>19</sup>**: Helsinki mentions the Green Digital Charter as one of the plans that the city is compiling/ following in order to meet its sustainable development targets. Nevertheless, more concrete analysis is still to be reported.
- **Venice<sup>20</sup>**: Venice has included the Green Digital Charter in its SEAP as one of the measures the city will take in order to meet its 2020 commitments. More specifically, Venice has assessed that by implementing (between 2012 and 2020) the decrease of 30% in its ICT equipment a reduction of 425 tCO<sub>2</sub>/a will have been achieved.

*Similarly to CoM, GDC hasn’t received any GDC-CoM reports from signatory cities (the way it is described in Task 3.3 of the NiCE project DoW), mainly due to the fact that cities are not yet reporting for the Covenant or not fully using the NiCE project ICT carbon footprint tool.* Nevertheless, and after the continuous support and help provided by EUROcities to all signatories, cities have begun using the online toolkit and have started reporting their activities<sup>21</sup>.

City	Number of reported activities
Amsterdam	1
Belfast	5
Birmingham	4
Bologna	3

<sup>17</sup> [http://dev2.eumayors.eu/about/signatories\\_en.html?city\\_id=397](http://dev2.eumayors.eu/about/signatories_en.html?city_id=397)

<sup>18</sup> [http://dev2.eumayors.eu/about/signatories\\_en.html?city\\_id=378](http://dev2.eumayors.eu/about/signatories_en.html?city_id=378)

<sup>19</sup> [http://dev2.eumayors.eu/about/signatories\\_en.html?city\\_id=189](http://dev2.eumayors.eu/about/signatories_en.html?city_id=189)

<sup>20</sup> [http://dev2.eumayors.eu/about/signatories\\_en.html?city\\_id=3005](http://dev2.eumayors.eu/about/signatories_en.html?city_id=3005)

<sup>21</sup> [http://www.greendigitalcharter.eu/nice\\_toolkit/snapshots.php](http://www.greendigitalcharter.eu/nice_toolkit/snapshots.php)

City	Number of reported activities
Bristol	2
Eindhoven	2
Ghent	5
Lisbon	1
Manchester	4
Murcia	5
Rijeka	1
Tallinn	3
Vienna	1
Zagreb	6
Warsaw	3
Linköping	6
Venice	1

As a conclusion, it is evident from the small number of direct references to “ICT” that cities, whether signatories of CoM or GDC:

- either haven’t yet compiled coherent digital or smart city strategies that explicitly explore the relationship and combine *digital development strategies* with *energy efficiency and climate commitments*;
- or, and this is the most frequent case, see ICT projects as cross-cutting projects that contribute to other sectors (e.g. transport, buildings, etc.) and, thus, are not able to identify and isolate the ICT components and contribution to energy and climate targets

To this end, a necessary task of a NiCE project follow-up needs to be the creation of awareness among cities so that they can efficiently:

- Identify and assess the problems that the increased use of ICT can pose;
- Report specific measures for energy efficiency in ICT use, ICT for energy efficiency and decrease of ICT’s carbon footprint;
- Promote these measures to their citizens and the European stakeholders (other cities, institutions, etc.).

## 7 Next steps

The Charter-Covenant reporting tool was finalised following the finalisation of the reporting template by CoMO and JRC. Nevertheless, monitoring and reporting in both initiatives have not yet advanced. The next steps (to be implemented during a NiCE follow-up project) towards future developments of the reporting for GDC-CoM will mainly consist of:

- **Analysis of Covenant of Mayors useful ICT activities**

Based on the Green Digital Charter reporting, a list of exemplary ICT measures that contribute to the CoM commitments will be compiled.

This list will be promoted and recommended to the Covenant of Mayors members through the Covenant Benchmarks of Excellences<sup>22</sup> and by developing together with the Covenant of Mayors Office a Thematic Leaflet focusing on ICT.

- **Inclusion of ICT in the Covenant of Mayors reporting**

NiCE will continue to work in synergy with Climate Alliance, the other partners of the Covenant of Mayors Office and the Joint Research Centre to facilitate the better inclusion of ICT in the Covenant planning and reporting.

Although, during the last 12 months there hasn't been any significant progress in the CoM reporting (closing of CoMO2 contract and inception of the CoMO3 contract), EURO CITIES, being a partner in both initiatives, is promoting GDC and its toolkit in order for the latter to be included in the CoMO3 strategy documents.

At a later stage, NiCE will promote the ICT footprint calculation and reporting tool that is being developed by NiCE, aiming to include it in the Covenant of Mayors reference material as an option for cities to introduce quantitative reporting on ICT in their Covenant activities.

- **Incorporate new developments and project results in GDC reporting**

A problem currently experienced by all sustainable development initiatives is the different reporting processes and methods that they need to impose to monitoring & reporting cities and organisations. Following a Horizon 2020 call for project by DG CONNECT<sup>23</sup>, it is expected that after the respective project has finished, all major initiatives like Covenant of Mayors, Green Digital Charter, CIVITAS, etc. will be provided with:

- a common set of performance indicators;
- a common framework to assess the economic, social and environmental value of different project and activities;

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<sup>22</sup> [http://www.eumayors.eu/actions/benchmarks-of-excellence\\_en.html](http://www.eumayors.eu/actions/benchmarks-of-excellence_en.html)

<sup>23</sup> SCC2 - 2014 Developing a framework for common, transparent data collection and performance measurement to allow comparability and replication between solutions and best practice identification

- common methodologies for the impact assessment of project and activities;
- a framework for best practices exchange.

The Green Digital Charter will need to keep track of these or similar developments and adapt its reporting facility accordingly (keep compatibility with existing or become compatible with the new framework that will emerge).

- **Support cities to coherently report their energy efficiency strategies for ICT equipment**

Although cities tend to know about and follow recent ICT innovations, they tend to combine these developments only with increased functionality or better services to the citizens.

In the meantime, many ICT innovations promise, as well, reduced energy consumption and better environmental performance; two improvements that can result in the faster pay-off of the necessary initial investments in equipment and software.

Green Digital Charter needs to support cities, and especially ICT departments, in identifying these benefits and including them in all relevant reporting processes.