

Green Digital Charter – Covenant of Mayors Reporting Tool

Green Digital Charter reporting tools

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**Green Digital Charter reporting tools:
Green Digital Charter - Covenant of Mayors reporting tool**

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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 nearly all the Charter signatories also committed to the Covenant of Mayors (more than 90%).

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.

Drawing on a preliminary analysis of cities' challenges and needs, the present document outlines a possible design and development roadmap towards a final Green Digital Charter-Covenant of Mayors reporting tool (hereafter 'Charter-Covenant reporting tool') that will enable cities, Charter signatories and beyond, to highlight the ICT dimension of their efforts to reach the Covenant of Mayors commitment.

This reporting tool is 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. It will be revised throughout the project duration and refined according to the feedbacks received from Charter signatories, Reference Cities Group and Expert Advisory Board of the NiCE project.

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 is therefore producing a Charter-Covenant reporting tool which will facilitate 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 would have strong added value:

- First, a vast majority of Green Digital Charter signatories are Covenant of Mayors signatories and would benefit from further 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 City2020¹, Smart2020² and recent work of the International Telecommunications Union (ITU³), 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.

In particular, the first version of this tool aims at drawing a roadmap for the future versions of the tool, presenting recommendations for modifications to the Covenant reporting templates and procedures.

These recommendations will be presented to the Covenant of Mayors Office⁴ and to the Joint Research Centre of the European Commission, in charge - among other tasks - of providing the signatory cities with technical support in planning and monitoring their Covenant activities.

The next versions of the tools will further develop these recommendations, providing more detailed guidelines for cities.

¹ '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/>

² '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/>

³ 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>

⁴ 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

3 Covenant of Mayors - planning and reporting

The Sustainable Energy Action Plans (SEAPs) are the key documents 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 process⁵.

The Covenant of Mayors Office 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 below for a more detailed overview of the SEAP process.

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

1. **Submit the Sustainable Energy Action Plan**, within the year following the adhesion, where the Covenant objectives and measures to reach them will be justified within the year following adhesion.
2. **Submit regular 'Implementation Reports'** for evaluation, monitoring and verification purposes.

⁵ 'How to develop a Sustainable Energy Action Plan - Guidebook', Covenant of Mayors, 2010, Part I, Chapter 7.
http://www.eumayors.eu/IMG/pdf/seap_guidelines_en-2.pdf

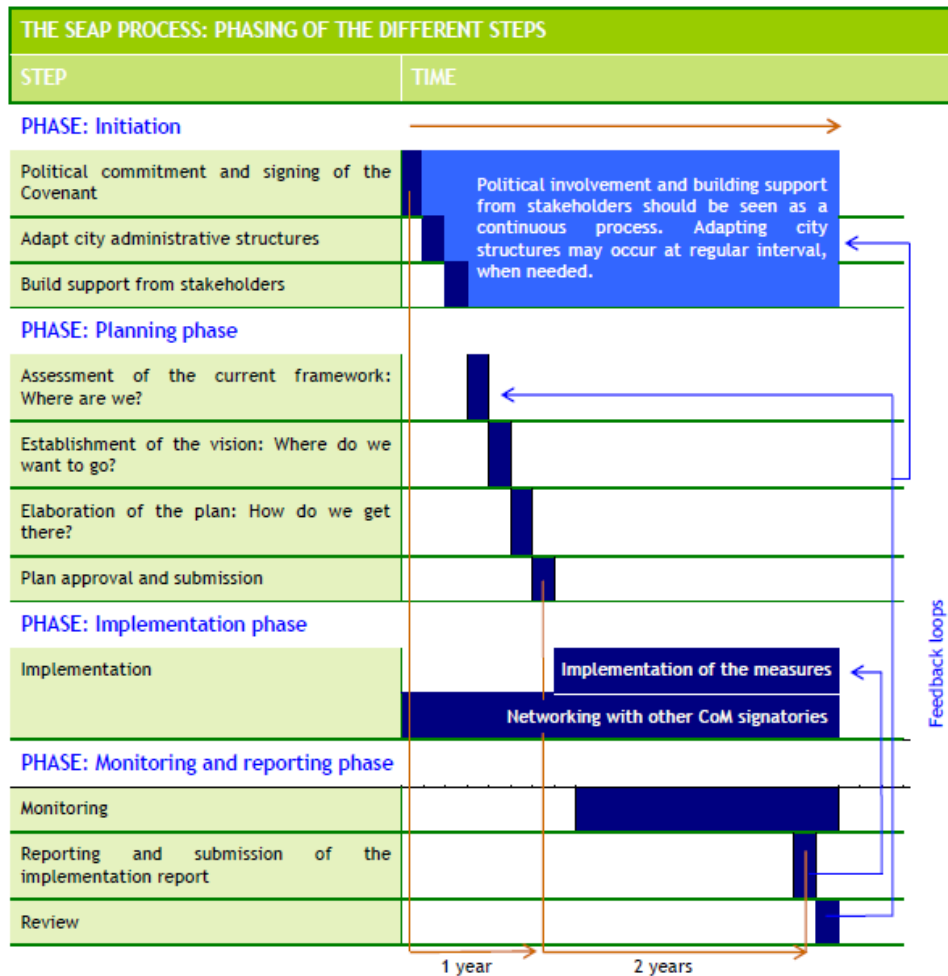


Figure 1 - The SEAP process

The Covenant of Mayors Office, in close collaboration with the Joint Research Centre, has developed a SEAP template (in English) which cities have to submit and use to report their key results. To facilitate cities in data collection, the template is also available in 23 languages.

The template includes three main parts dedicated to:

- Long term vision and overall strategy - specifying the overall CO₂ emission reduction 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 CO₂ 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, allocated budgets and estimated impacts in term of energy savings, renewable energy produced and CO₂ emissions reduction for each action (Figure 3).

| Category | 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 | 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 tradingscheme - ETS) | | | | | | | | | | | | | | | | |
| Subtotal buildings, equipments/facilitiesand 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 - Emission Inventory

Sustainable Energy Action Plan (SEAP) template

SUSTAINABLE ENERGY ACTION PLAN

1) Title of your Sustainable Energy Action Plan



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 |
|--|---|--|--------------------------------------|---------------------------------------|--|---|---|---|--|---|
| BUILDINGS, EQUIPMENT / FACILITIES & INDUSTRIES: | | | | | | | | | | |
| 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: _____ | | | | | | | | | | |
| TRANSPORT: | | | | | | | | | | |
| 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: _____ | | | | | | | | | | |
| LOCAL ELECTRICITY PRODUCTION: | | | | | | | | | | |
| 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: _____ | | | | | | | | | | |
| LOCAL DISTRICT HEATING / COOLING, CHPS: | | | | | | | | | | |
| 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: _____ | | | | | | | | | | |
| LAND USE PLANNING: | | | | | | | | | | |
| 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: _____ | | | | | | | | | | |
| PUBLIC PROCUREMENT OF PRODUCTS AND SERVICES: | | | | | | | | | | |
| 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: _____ | | | | | | | | | | |
| WORKING WITH THE CITIZENS AND STAKEHOLDERS: | | | | | | | | | | |
| 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: _____ | | | | | | | | | | |
| OTHER SECTOR(S) - Please specify: _____ | | | | | | | | | | |
| Other - please specify: _____ | Action 1: _____ Action 2: _____ | 1: _____ 2: _____ | 1: _____ 2: _____ | 1: _____ 2: _____ | 1: _____ 2: _____ | 1: _____ 2: _____ | 1: _____ 2: _____ | | | |
| TOTAL: | | | | | | | | | | |

Figure 3 - SEAP template

Climate Alliance, the Covenant of Mayors Office partner leading on the development of the SEAP monitoring framework, and the Joint Research Centre are currently developing a

template for the Implementation Report - so called SEAP monitoring template - to help cities in reporting their key achievements. The template will be available in 2013, after being tested by a voluntary group of Covenant signatories.

The Implementation Report template will reflect the SEAP structure and will include:

- 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 CO₂ emission inventory (MEI, Monitoring Emission Inventory) and quantitative information about the impacts of the actions implemented or ongoing (as CO₂ emission reduction, energy savings, renewable costs, etc), which cities need to submit at least every fourth year.

Together with the new Implementation Report template, the Covenant Office and Joint Research Centre are also working to adapt and update the SEAP template.

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

Given for granted the different focus of the two initiatives (all activities related to energy efficiency for the Covenant and ICT-related ones only for the Charter), cities that committed to both initiatives still 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, region). The emission inventory, that has to be submitted as part of the SEAP, should assess the energy consumption and CO₂ emissions of all the different 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 carbon footprint of the city's ICT. On the other side however, the Charter entails a series of other ICT-related actions which can be implemented at different levels: administration, municipality, urban region, etc⁶.

This different scale of action might result in difficulties in highlighting the negative impact ICT in both initiatives.

4.2 Timeline

The Covenant of Mayors requires the signatories to define their goals and actions toward 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 minimum CO₂ emission reduction of 20% in 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.

⁶ For a more detailed analysis the different scales of the Green Digital Charter actions, see 'Green Digital Charter implementation progress reporting tool' produced by NiCE as part of the set of 'Green Digital Charter reporting tools'.

The Charter signatories now commit to work with other signatories and deploy five large scale ICT pilot projects per city to decrease the carbon footprint of their ICT by 30% within 10 years from the signature. This commitment no longer refers to 2020 as reference year and does not engage cities to consider this year as an intermediary target.

When establishing their vision and goals to be inserted in the SEAP (Phase I), cities will need guidance on how to include the Green Digital Charter goals in their plans.

5 Developing the Charter-Covenant reporting tool

In light of the imminent Covenant reporting process review, this document presents a set of recommendations to support ICT-related reporting in both the qualitative and quantitative planning and reporting of the Covenant.

A first recommendation is to include Green Digital Charter signatories in the group of cities which will be selected by the Covenant of Mayors Office to voluntarily test the reporting process during the summer of 2012. Being signatories of both initiatives, these cities will be able to provide feedback on the new Covenant reporting procedure also considering the ICT aspect.

To be able to test the implementation report, cities must have submitted their SEAP two years ago. Among the 26 Charter signatories, nine are ready to move to the reporting phase of the Covenant: Amsterdam (NL), Barcelona (ES), Bristol (UK), Eindhoven (NL), Genoa (IT), Ghent (BE), Helsinki (FI), Malmö (SE) and Nuremberg (DE).

5.1 Highlight the ICT dimension in energy efficiency measures

In developing the SEAP, it is essential to take advantage of the key role that can be played by ICT in the creation of a low-carbon society.

ICT has in fact a positive impact on the environment by reducing energy consumption and emissions, for example through the substitution of high carbon products or activities with low carbon alternatives, and through enabling efficiency, providing solutions to calculate emissions or to optimise systems and processes and make them more efficient.

On the other side it is also important to consider the negative impact of ICT, i.e. the carbon footprint generated by ICT infrastructure and by the use of ICT-based services, to ensure that ICT remains a solution to, and not cause of, climate change.

The importance of ICT is clearly recognised by the Covenant of Mayors, which has dedicated a paragraph of its Guidebook to ICT-related policies and measures⁷.

Nevertheless, at the moment it is very difficult to highlight the ICT contribution in the context of the Covenant of Mayors.

Within the current SEAP description of key measures, i.e. the section focusing on actions, cities do not have the possibility to categorise their actions in the field of green digital, ICT or IT. Cities are requested to provide information on the key actions planned to reach the Covenant objectives. The measures can be classified within eight different sectors /fields of action, of which four sectors are highly recommended.

None of these sectors/field of actions or their relative 31 sub-fields relates to ICT/digital measures (Figure 4) and there are no specific guidelines or recommendations for cities on how ICT-related measures should be classified.

⁷ 'How to develop a Sustainable Energy Action Plan - Guidebook', Covenant of Mayors, 2010, Part I, Chapter 8.
http://www.eumayors.eu/IMG/pdf/seap_guidelines_en-2.pdf

| Sectors/fields of action | |
|--|--------------------|
| Municipal | Highly recommended |
| Residential | Highly recommended |
| Tertiary | Highly recommended |
| Transport | Highly recommended |
| Local energy production | Recommended |
| Land use planning | Recommended |
| Public procurement | Recommended |
| Working with the citizens and stakeholders | Recommended |
| Industries (excl. ETS sector) | Optional |
| Other sectors | |

Figure 4 - Priority sectors covered by SEAP

This lack of ICT actions classification is reflected in the challenges faced in identifying the ICT-related measures among the 32,000 actions submitted by the 1,000 Covenant signatories who have already elaborated their SEAP, with consequent difficulties in analysing the ICT-related data.

With the support of the Joint Centre for Research, the NiCE project consortium has indeed tried to extract the measures using the following key words: ICT, IT, Smart, Digital, Information, Data, Metrics, 'Green IT' and 'Green Digital'⁸.

More than 1,000 measures responded to the requested criteria without being necessarily related to ICT. For instance, a measure containing the word 'information' could have been related to 'information campaign' while the keywords 'IT' and 'ICT', for which the search was case-sensitive to avoid too many inappropriate results, sometimes delivered inappropriate results when the description of a has been introduced in upper case (e.g. 'DISTRICT HEATING').

Analysing the 1,000 filtered actions, it resulted that only 65 of these directly refer to 'ICT', 'IT', 'information system', 'computer' or 'digital' in either the sector or key action description. 16 out of these 65 measures have been categorised as 'ICT' by choosing the 'Other sectors' field and are therefore more easily identifiable. See Figure 5 below for more details.

Moreover, from an early analysis of the other measures, it appears that more than 100 other measures relate to digital actions without a direct reference to ICT.

This limit in ICT actions classification corresponds to the difficulty in discerning ICT related measures within all the Covenant cities measures, limiting as well the possibility of drawing conclusions and adapting future priorities.

⁸ To guarantee and respect the privacy of the Covenant of Mayors signatories, the NiCE consortium had access to the following information only: country of the signatory, key measure and field of action.

| Sectors/Fields of actions | No. of measures | Countries |
|---|-----------------|--|
| Other | 16 | <ul style="list-style-type: none"> • Belgium • Bulgaria • Italy • Romania • Spain • United Kingdom |
| Advisory services | 2 | <ul style="list-style-type: none"> • Bosnia & Herzegovina • Romania |
| Awareness raising and local networking | 1 | <ul style="list-style-type: none"> • France |
| Energy efficiency requirements/standards | 3 | <ul style="list-style-type: none"> • Germany • Sweden • United Kingdom |
| Municipal buildings, equipment/facilities | 6 | <ul style="list-style-type: none"> • Portugal • Romania • Spain • Sweden |
| Municipal public lighting | 4 | <ul style="list-style-type: none"> • Portugal • Spain |
| Private and commercial transport | 28 | <ul style="list-style-type: none"> • Germany • Italy • Romania • Spain |
| Public transport | 2 | <ul style="list-style-type: none"> • France • Greece |
| Strategic urban planning | 3 | <ul style="list-style-type: none"> • Bosnia & Herzegovina • Italy |
| | 65 | |

Figure 5 - Identifiable ICT measures submitted by Covenant signatories

As previously anticipated, the Covenant Office and Joint Research Centre are however currently exploring the possibility of adapting the former SEAP template in order to facilitate the measures classification.

Although no final decision has been taken yet, it is likely that alongside to the eight sectors/fields of action cities will have to further classify their planned/implemented measures by assigning them one specific category among those (probably) included in the new template.

Suggested actions

In the light of the imminent SEAP template modifications, considering the above mentioned difficulties and aiming at making the contribution of ICT in the context of the Covenant clearly discernible, NiCE suggests:

- To include in the SEAP ICT-related categories. This will help highlighting the positive ICT contribution to energy efficiency measures in all the different areas where the local authorities have a specific role to play. NiCE has drafted a first set of suggested ICT-related categories which are provided as annex to this document (see Annex A). In the weeks following the publication of this document, NiCE will provide the Covenant of Mayors Office and the Joint Research Centre with a final list of recommended categories, following a consultation with the NiCE Reference Cities.
- To include the sub-sector 'Green IT' within the 'Other sector(s)' field for measures aiming at reducing negative impact of ICT. While the ICT-related categories will help identifying the ICT-significant measures but there is still no clear classification for measures tackling the negative impact of ICT on energy consumption and CO₂ emissions. Until the introduction of this new sub-sector, NiCE will promote the use of 'Other sector(s): Green IT' as common wording to specify actions in the field.

5.2 Impact of ICT in the Emission Inventory

At the moment, 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.

Thus for the time being, reporting specifically on emissions produced by ICT in the Covenant of Mayors emission inventory is not possible. Furthermore, developing an option for cities to report on ICT-generated emissions could prove very challenging. First, without a common methodology the generated data will not be comparable. Second, the different scale and timeline of the Green Digital Charter as action framework and the Covenant of Mayors makes double reporting very likely.

Suggested actions

At this stage it is not possible yet to outline a clear contribution of the Green Digital Charter and NiCE to the Covenant of Mayors emission inventory.

For the calculation of negative ICT impact, a possible input could come via the ICT footprint reporting tool that NiCE is developing as part of the set of Green Digital Charter reporting tools. The final version of the ICT footprint reporting tool, expected in June 2013, could be recommended to Covenant signatories or be featured in the Covenant of Mayors SEAP Guidebook if revised.

The calculation of the emission reduction obtained thanks to the positive contribution of ICT will be more difficult. For the time being, the introduction of ICT-related categories in the SEAP measures though, will provide an indication of the general ICT contribution to the change of local practices.

Further recommendations will be developed in future versions of this document, also considering the methodologies recommended by ITU to evaluate ICT impact in cities emissions.

6 Next steps

The Charter-Covenant reporting tool will be revised and refined throughout the project duration based on feedbacks received from Charter signatories and NiCE Reference Cities, also depending on the development of the Covenant planning and reporting procedures. A second version will be published in June 2012 while the final tool will be published in June 2013.

The next steps towards future developments of the tool will mainly consist of:

- **Analysis of ICT-related Covenant of Mayors measures**

Based on the Covenant of Mayors measure database and on the NiCE Green Digital Charter Action Framework, NiCE will develop a list of exemplary ICT measures which will be included in the Green Digital Charter Action Tools provided by NiCE.

This list will be promoted and recommended to the Covenant of Mayors members through the Covenant Benchmarks of Excellences⁹ and by proposing examples or case studies to be integrated in the Covenant of Mayors Office communication tools. .

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

NiCE will continue to work in synergy with the Covenant of Mayors Office and the Joint Research Centre to facilitate the inclusion of ICT in the Covenant planning and reporting.

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.

⁹ http://www.eumayors.eu/actions/benchmarks-of-excellence_en.html

7 Annex A

| Sectors/Field of actions | Recommended categories |
|---|---|
| Buildings, equipments/facilities & industries | Smart Buildings/Smart Grids/Smart Lightening |
| Municipal buildings, equipment/facilities | <ul style="list-style-type: none"> - Smart Energy Management - Energy Management/Visualisation - Virtual Power Plants |
| Tertiary (non municipal) buildings, equipment/facilities | <ul style="list-style-type: none"> - Smart Energy Management - Energy Management/Visualisation |
| Residential buildings | <ul style="list-style-type: none"> - Smart Energy Management - Energy Management/Visualisation |
| Municipal public lighting | <ul style="list-style-type: none"> - Solid State Lighting - Intelligent Lighting Systems |
| Industries (excluding industries involved in the EU Emission trading scheme - ETS) & SMEs | <ul style="list-style-type: none"> - Engagement and Prize schemes - Mapping of commercial activity - Alternative currencies - Smart Manufacturing |
| Transport | Intelligent Transport System |
| Municipal fleet | <ul style="list-style-type: none"> - Smart Distribution |
| Public transport | <ul style="list-style-type: none"> - Transport Information |
| Private and commercial transport | <ul style="list-style-type: none"> - Transport Applications |
| Local electricity production | Smart grids |
| Hydroelectric power | <ul style="list-style-type: none"> - Expansion of the electricity network - Smart Metering - Virtual Power Plants |
| Wind farm | <ul style="list-style-type: none"> - Expansion of the electricity network - Smart Metering - Virtual Power Plants |
| PVs | <ul style="list-style-type: none"> - Expansion of the electricity network - Smart Metering - Virtual Power Plants |
| CHPs | <ul style="list-style-type: none"> - Expansion of the electricity network - Smart Metering - Virtual Power Plants |
| Local district heating/cooling, CHPs | Virtual power plants/Smart Grids |
| CHPs | |
| District heating plant | |

| | |
|--|---|
| Land use planning | Digital Planning, participatory planning using new media and engagement tools |
| Strategic urban planning | |
| Transport/mobility planning | |
| Standards for refurbishing and new development | |
| Public procurement of products and services | E-Procurement |
| Energy efficiency requirements/standards | |
| Renewable energy requirements/standards | |
| Working with the citizens and stakeholders | ICT-enabled |
| Advisory services | |
| Financial support and grants | |
| Awareness raising and local networking | <ul style="list-style-type: none"> - Smart metering - eParticipation - Open data |
| Training and education | <ul style="list-style-type: none"> - Portal with energy saving measures |
| <i>Pilot projects*</i> | |
| Other sectors | Green IT |
| <i>Green IT*</i> | |
| <i>Broadband infrastructure*</i> | |

* Additional recommended sectors/fields of action