NiCE – Networking Intelligent Cities for Energy Efficiency

PROJECT FINAL REPORT

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1. Foreword

Cities are becoming increasingly recognised as catalysts for tackling climate change and delivering on Europe's energy targets. The success of the EUROCITIES Declaration on Climate Change, the European Commission's Covenant of Mayors and the Smart Cities & Communities Innovation Partnership, are proof of this. Our Green Digital Charter is another step forward in this process.

The Green Digital Charter is a EUROCITIES initiative, started by the city of Manchester and Clicks and Links and supported by the European Commission. It demonstrates that, through innovation, European cities can find new and creative solutions for dealing with climate change. Clearly, one of the greatest sources of innovation lies in exploiting information and communication technologies (ICTs), to contribute to a greener digital world.

So far, 42 major European cities have signed our Green Digital Charter (GDC). They are committed to working together to deliver on the EU climate objectives through digital technologies that increase energy efficiency, reduce emissions and fight climate change.

Over the past three years, EUROCITIES and the European Commission have turned to our NiCE (Networking intelligent Cities for Energy efficiency) project to guide the work of cities towards their charter commitments.

Current and potential GDC signatories have participated in the project's training and knowledge exchange activities, and in networking and visibility events with cities and stakeholders that share the same goals.

The project has helped to develop a new attitude towards ICTs. They are no longer seen as just equipment, but a technical solution and enabler of behavioural change to reduce CO_2 emissions, including those from ICTs themselves.

Many signatory cities are in the process of preparing digital strategies or action plans. Exchanging experience through NiCE on how to draw up a successful strategy is extremely valuable to these cities.

The cities have also benefitted from NiCE's EU-China urbanisation partnership. This aims to promote exchanges and cooperation across a wide range of urban development topics, including economic rebalancing and a more qualitative, smart, sustainable and inclusive growth. The creation of a Chinese network of cities that will share the same goals of the European GDC signatory cities will help foster new collaboration and business opportunities on both sides.

This report outlines the knowledge shared through the NiCE city-to-city learning and networking activities. It demonstrates that such activities can help cities improve their policies and reach their EU2020 energy goals. It also illustrates the value of EU funding in supporting these kinds of activity.

Anna Lisa Boni
Secretary General of EUROCITIES

2. Final publishable summary report

Executive summary

The NiCE project (Networking Intelligent Cities for Energy Efficiency) was designed to promote and advance implementation of the commitments of the Green Digital Charter (GDC). The Charter is promoted by EUROCITIES, the network of major European cities, supported by the European Commission, and signed by 42 major European cities as of January 2014. It commits signatories to exploit ICT as enabling technology for reducing CO_2 emissions, to demonstrate leadership in adopting innovative technical solutions for delivering on climate change commitments; and to build partnership between the public and private sectors to use ICT as an enabler to significantly reduce energy consumption and CO_2 emissions.

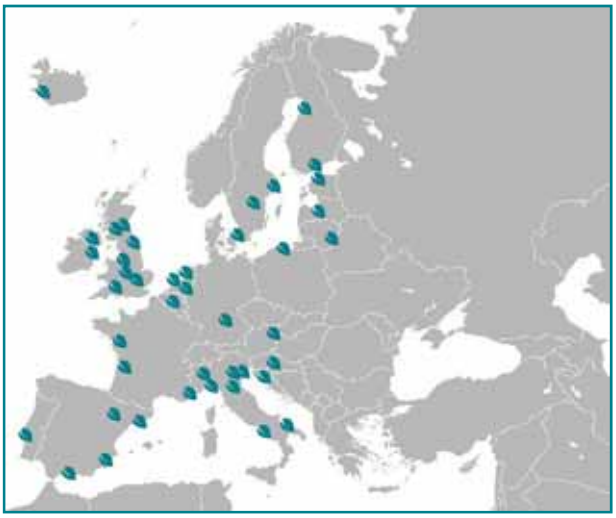

Figure 1: GDC signatory cities

The NiCE project was structured around three main areas of work:

1. Develop GDC Framework and Tools
   The project developed a common framework and online tools for classifying, assessing, reporting on, and supporting city actions in the context of the Green Digital Charter, also with a view of allowing integration with the Covenant of Mayors implementation reporting activities.
2. City Support and Action
   The developed framework and tools were transferred to cities and their implementation partners through a series of targeted exchange and learning activities with experts and other signatory cities with a view to triggering “ICT for energy efficiency” project implementation and exchange of best practices. Added to that, a strategy for continued exploitation and support activities beyond the project's lifetime was put in place.
3. Outreach and Engagement
   A number of networking and visibility events were held to increase the number of signatories and showcase cooperation opportunities with key policy and practices communities. The project included a special focus on engaging with Chinese cities currently developing similar initiatives.

Project context and objectives

The Green Digital Charter (GDC) is a EUROCITIES response, initiated by Clicks and Links Ltd and the City of Manchester, as part of a 'Greenshift' initiative, to the 2009 European Commission consultation on "*mobilising Information and Communications Technologies (ICTs) for a low carbon economy*". It has been realised through the work of the EUROCITIES Knowledge Society Forum (KSF) Working Group on ICT for Energy Efficiency, led by the City of Manchester. It builds on ICT-enabled initiatives on sustainability like "Smart 2020," with GeSI (Global eSustainability Initiative) and the Climate Group, and "ICT4EE" with the European Commission.

Figure 2: Commissioner Kroes & Mayor of Barcelona after city of Barcelona signed the Charter

The Green Digital Charter aims specifically to:

1. **Exploit ICT as a technical solution and enabler of behavioural change** to reduce emissions, including those from ICTs themselves;
2. **Encourage leadership from public municipal authorities** in adopting innovative technical solutions and building new partnerships to deliver on climate change commitments;
3. **Share public and private sector experience** and expertise in deploying ICT to address climate change, in cooperation with local, national, European and international initiatives.

The Green Digital Charter starts from the premise of cities as catalysts for driving the reduction of energy usage and GHG emissions, and commits signatories to:

- **Develop cities as platforms for innovation** through digital planning and new digital infrastructures and services, which will enable low carbon activities and achieve systemic carbon efficiencies;
- **Demonstrate that cities can lead by practical example** by ensuring that a city's own ICT infrastructure and digital services have the smallest possible carbon footprint, and by promoting these practices towards the private sector and the wider community;
- **Create new partnerships** by connecting leaders and stakeholders together in each city to secure practical commitments for implementing a new green digital agenda;
- **Promote integrated approaches and large-scale solutions** through a series of digital applications for improving the measurement, transparency and visibility of energy use, and by involving citizens, service providers, public sector organisations, civil society and private sector in test-bed implementation projects;

- **Support open innovation** by encouraging and promoting low carbon activities in all sectors, through R&D activities and deployment projects in user-driven, open innovation environments.

Figure 3: Mayor of Bordeaux signs the Charter

Eventually, cities that sign the Green Digital Charter commit to:

1. Working with Green Digital Charter signatories on ICT & Energy Efficiency;
2. Deploying five large-scale ICT pilots per city addressing the above areas within 5 years from signature;
3. Decreasing ICT's direct carbon footprint per city by 30% within 10 years.

The Charter was launched at EUROCITIES' annual conference on 27 November 2009 in Stockholm and was endorsed further by the European Commission during a high-level conference in February 2010. As of January 2014, 42 major European cities have signed the Charter. The initiative is now recognised by public, private and European stakeholders as reference and benchmark of excellence for innovative and disruptive local action, making a strong case for quick and coordinated progress.

In September 2011, the FP7 project 'NiCE – Networking intelligent Cities for Energy Efficiency' was launched with the aim to promote and advance the GDC implementation. NiCE is led by EUROCITIES in a consortium with Clicks and Links, the City of Manchester and the Leibniz Institute of Ecological Urban and Regional Development as partners.

NiCE has aimed at supporting the GDC based on the Commission Recommendation on "*mobilising ICT to facilitate the transition to an energy-efficient, low-carbon economy*", with a view to use ICT as an enabler to significantly reduce energy consumption and CO_2 emissions. The project has envisioned making use of the existing momentum and helping cities and their partners to translate political commitment into practical and hands-on activities. Moreover, linking with Covenant of Mayors activities, and using the Charter as a potential model for international cooperation, in particular with Chinese cities.

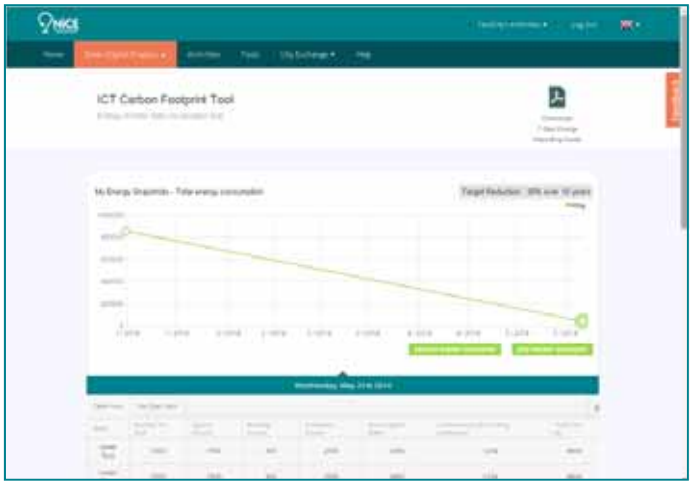

Figure 4: NiCE ICT carbon footprint tool

The project has worked towards three specific objectives:

1. **To establish an implementation and monitoring structure for the GDC by**
    a. developing an Action Framework that facilitates the classification, comparison and assessment of effective approaches in cities, while informing targeted policy recommendations;
    b. compiling Reporting Tools to allow cities to assess their status and report on their progress on achieving GDC commitments and integrating this into the Covenant of Mayor's reporting process;
    c. delivering an integrated set of Action Tools that will offer practical assistance to cities for implementing their GDC commitments;
    d. validating outputs with reference cities[1] to ensure they reflect a diversity of local implementation contexts.

2. **To transfer the monitoring and implementation framework to cities and deliver practical support for accelerated achievement of GDC commitments in a sustainable way by**
    a. establishing a central GDC contact point that handles enquiries, compiles information resources and channels communication with signatory cities
    b. delivering technical networking, training and knowledge exchange events on the GDC Action Framework and Toolkit, which bring together city actors with other experts
    c. raising the profile of signatory cities by supporting them in (publicly) reporting on achievements, in particular on integrating ICT aspects into their Covenant of Mayors reporting
    d. developing a plan for continued promotion and exploitation of NiCE outcomes and the GDC beyond the duration of the project

Figure 5: GDC poster in Chinese

[1] Bologna, Eindhoven, Linkoping, Manchester and Warsaw

3. **To increase the number of GDC signatory cities, facilitate exchange with similar initiatives in China, and engage with key stakeholders to be involved as implementation partners by**

    a. implementing a coordinated set of promotion and visibility activities targeted at potential signatory cities;

    b. engaging with the international smart cities community, and in particular develop a new collaborative network with Chinese cities and their partners;

    c. establishing and showcase strategic cooperation with various initiatives and stakeholder communities from research, industry and related EU policy initiatives, including contributions to the Covenant of Mayors annual events;

    d. developing an interactive GDC web portal through which all stakeholders can easily access and exchange information related to GDC.

Main results

Each of the project objectives and respective areas of action were addressed by a set of carefully designed tasks and activities. NiCE project achieved a large number of results in all objectives that had been set at the beginning of the project.

In the following paragraphs, a result-oriented list of work and achievements are presented. More detailed and specific information can be always provided through the project website, the GDC contact point or the project partners. All contact information is provided in page 32 of the current document.

Communicating GDC as the promoter of "ICT as a technical solution and enabler of change"

Since 2011, NiCE succeeded in promoting GDC as to be currently recognised by public, private and European stakeholders as reference and benchmark of excellence for innovative and disruptive local action, making a strong case for quick and coordinated progress.

A survey, conducted with GDC signatories during the NiCE project showed that environmental progress and use of ICT fit together well. In fact, the Green Digital Charter provides a lot of ideas and starting points for Green Digital activities and action. This is why political commitments like the Green Digital Charter are useful for cities to agree on and support implementation of respective activities. However, each city is different with respect to green digital progress achieved and options for further targeted initiatives. Moreover most cities:

- 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 their contribution to energy and climate targets

NiCE project has tackled these challenges and produced a number of evident-based results:

- ***European Commission*** (DG CNECT) has recognised that GDC can be the initiative that will succeed in mobilising ICT-based projects towards energy efficiency and climate change targets. In a number of recent Horizon 2020 project calls (SCC1-2014 & SCC2-2014), GDC is included among the European initiatives that the next generation of projects and frameworks should be based on. More importantly, a call for the follow-up of NiCE has been

announced n the 2014-2015 Horizon 2020 work programme, with the aim to "…*follow-up and continue implementing the activities successfully initiated by these cities*"[2]

- ***European cities*** have, in a concrete way, started to recognise GDC as the most important "ICT for energy efficiency" related initiative and work towards its commitments. Apart from the obvious fact that 42 cities have signed the GDC (and another 14 have explicitly declared their interest to do so) a number of indicative examples exhibit this trend:
  - Manchester has initiated GDC and considers the Charter part of its sustainable development strategy
  - Venice has described the fulfilment of its GDC commitments as an important measure in its Covenant of Mayors Action Plan
  - Dublin has included GDC in its Digital Strategy
  - The Mayor of Ghent recently underpinned the importance of GDC in his article "*Charting green, digital success in cities*"[3]
  - 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
  - Linkoping mentions GDC and NiCE as the reason that the city started monitoring its ICT carbon footprint
- ***European stakeholders*** are now recognising that GDC is developing a strong momentum. The number and quality of the GDC signatories, the training and visibility events that NiCE organised, the provision of the online toolkit, the opportunities for networking that the project has created, the strong collaboration of NiCE with Chinese stakeholders are some of the reasons that well-established stakeholders (ICLEI, British Standards Institution, International Telecommunication Union, DIGITALEUROPE, European Policy Centre, Council of European Municipalities and Regions, EU-China Policy Dialogues Support Facility, etc.) have established and will continue collaborating with the NiCE partners on the green digital agenda for cities
- ***Chinese institutions and organisations*** in different levels (central government, local authorities, industry and commercial stakeholders) are getting aware of the GDC and are becoming more and more positive to the idea of using GDC as the vehicle of cooperation between European and Chinese cities in the area of ICT for energy efficiency and sustainability
- ***Projects and initiatives***, like Covenant of Mayors, Cities Climate Registry, TRANSFORM, CASCADE, Living Labs Europe, SMARTSPACES, etc. have developed or exploring various schemes of cooperation with GDC and NiCE and the activities it organises.

[2] http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/calls/h2020-lce-2015-1.html#tab2
[3] http://www.europeanenergyinnovation.eu/Portals/0/publications/EuropeanEnergyInnovation-Spring2014.pdf

Design of an Action Framework

The Green Digital Action Framework can be used by cities to help their implementation of the Green Digital Charter including the reduction of a city's carbon footprint using digital technology. This structure can also be used more broadly to guide a city's use of digital media to become greener and to make their ICT infrastructure itself more environmentally friendly.

The framework provides a powerful tool to help cities from across Europe and beyond:

- understand and identify where action is required;
- assess local progress in terms of green digital activity (including the implementation of the Charter)

The framework can be represented as a three dimensional matrix, formed by the:

1. ***application areas*** for a city;
2. ***type of activity*** they might undertake;
3. ***role*** that ICT can play in impacting a city's carbon footprint.

These three dimensions help analyse and plan city-based ICT activities in different domains as follows: the type of ICT activity and its role is applied to a variety of areas from energy to buildings to transport to ICT itself. The Action Framework also provides a standardised structure to enable the GDC toolkit to be presented in a consistent way and be accessible by cities via a consistent set of terms arranged in the three Charter dimensions. This standardising approach helps cities:

- categorise their own activities in such a way that they can share information between each other;
- connect green digital activity to the Covenant of Mayors planning structure by matching common terminology.

In this way, the Action Framework provides to cities a guide on their "green digital journey" and in the context of the Charter, answering the question "We signed the Charter on Friday - so what do we do on Monday?".

The following matrix attempts to visualise these 3 dimensions working together. Each 'space' within the matrix is made up of boxes containing specific green digital actions, defined by the three dimensions (e.g. Energy/Measurement/Innovation). Starting from single practices in any of these boxes, cities can thus use the framework to expand activity types in a given domain, transfer and broaden activities towards other domains, or gradually explore new roles of ICT.

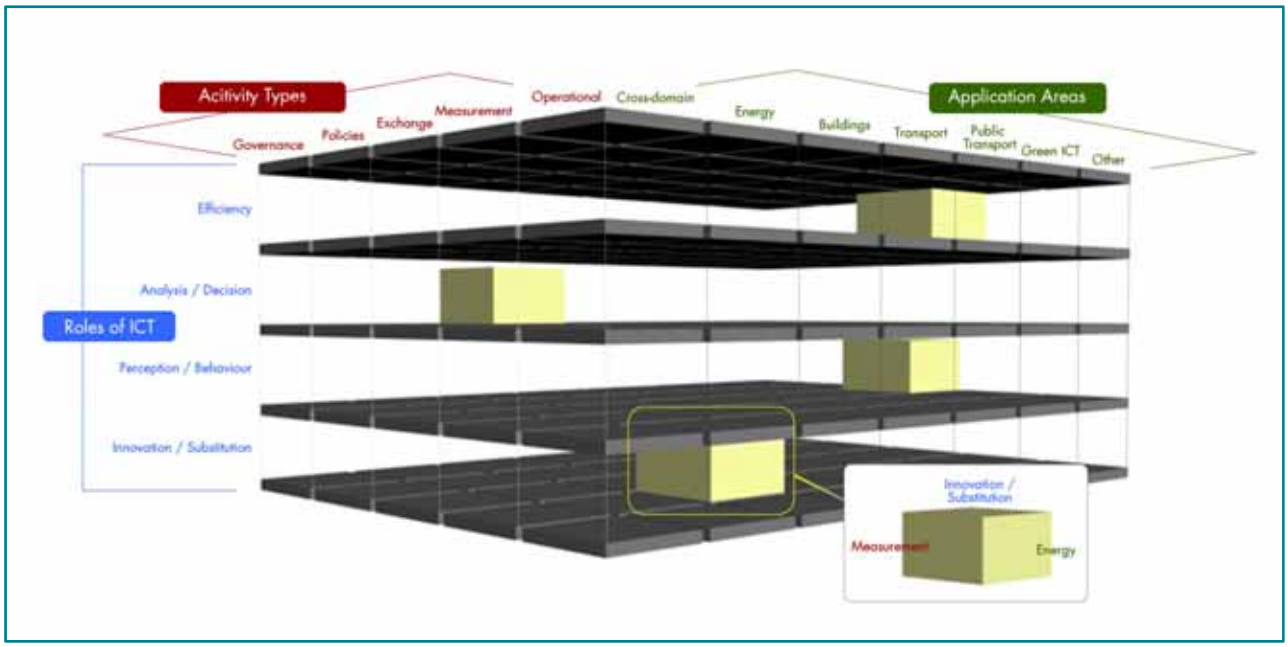

Figure 6: GDC Action Framework

1st Dimension: Application areas

The first dimension of the framework is represented by "***Application areas***"'. These are the key policy domains in which actions for green digital development should be implemented including energy, buildings, transport, public lighting and green ICT. In addition, it includes green digital actions that cut across domains as well as contributions from other domains.

Area	*Description*	Example Subcategories	*Examples actions*
Cross-domain	*Green digital actions across two or more domains*		*A city strategy that states green digital development as a main priority; extensions of digital infrastructures and services to enable low carbon activities such as decision support tools for household or enterprise location.*
Energy	*Green digital actions in the energy domain*	Electricity production	*Adoption of standards for collecting, comparing and analysing emission and energy data across the city administration; implementation of smart energy grids; advanced planning tools to support greater use of renewable energy sources and micro generation*
		Electricity distribution	*Territorial cooperation for the extension of electricity infrastructures, implementation of smart energy grids to support the integration of renewable energy sources and micro generation into electricity grids.*

Area	Description	Example Subcategories	Examples actions
Buildings	*Green digital actions in the buildings domain*	Municipal buildings, facilities	*Application of common standards for new buildings and retro-fitting existing buildings; implementation of smart meters in city administration buildings, schools and, libraries*
		Tertiary (non-municipal) buildings, facilities	*Creation of open innovation platforms for integrating renewable energy sources into building structures; implementation of advanced energy management systems in offices or museums*
		Residential buildings	*Citizen involvement or test-bed projects for smart homes; implementation of demand side management systems in residential buildings*
		Industries (excluding industries involved in Emissions Trading Scheme)	*Strategic concept for improving the energy efficiency of lighting systems; implementation of intelligent lighting systems in production and storage buildings*
Transport	*Green digital actions in the transport domain*	Soft modes	*Trip planners or on-trip services for cycling or walking (non-motorised transport); public bicycle rental systems*
		Public transport	*Real-time passenger information services; smart card systems for ticketing and services; bus priority schemes*
		Motorised private	*Parking management systems; car sharing schemes; usage-based road pricing*
		Demand management	*Mixed-land-use and urban design simulations; car-pooling and lift sharing schemes; teleworking and teleconferencing*
		Logistics / freight	*Freight transport guidance systems; green logistics and hubs*
Public lighting	*Green digital actions in the public lighting domain*		*Territorial cooperation for smart lighting systems; implementation of sensor-based lighting systems*
Green ICT	*Green digital actions in the green ICT domain*		*Procurement rules or service level agreements to minimise the carbon footprint of ICT infrastructures digital services; use of renewable energy sources to power ICT*
Other domains	*Green digital actions in other domains*	Industrial processes	*Collaboration with industry to support green digital processes; implementation of smart manufacturing systems*
		Waste	*Service level agreements for sharing information electronically to avoid using paper resources; implementation of intelligent recycling systems*

Area	Description	Example Subcategories	Examples actions
		Land use	*Advanced planning and policy simulation software; use of Geographical Information Systems (GIS) or the Urban Atlas initiative to provide ecomaps*

2nd Dimension: Activity types

The second dimension of the framework is represented by "***Activity type***". These are five different kinds of activity that should be combined and coordinated to enable green digital development: governance, policy, exchange, monitoring and operational activities.

Activity Type	Description	Example Subcategories
Governance	*Activities that enable the partnership, stakeholder structures and work methods that facilitate green digital activity.*	Stakeholder involvement
		Territorial cooperation
		Partnerships
		Commitments
Policy	*Activities that provide guidance and orientation, set a framework for action and drive innovation for green digital development*	Strategy
		Roadmap
		Rules/regulation
		Procurement of goods and services
		Open innovation
		Broadband
Exchange	*Activities that support city-to-city learning and knowledge transfer*	Study Tours
		City Networks
		Peer to Peer Learning
Monitoring	*Activities that enable measurement, assessment and comparison of green digital developments*	Good practice benchmarks

Activity Type	Description	Example Subcategories
		Measurement standards
		Data collection & analysis
Operation	*Activities that implement green digital technologies and practices on the ground*	Test-bed projects
		Living labs
		Large-scale pilots
		Other implemented solutions
		Planning and management
		Services and engagement

3rd Dimension: Roles of ICT

The third dimension in the framework is represented by "***Roles of ICT***". These are the kinds of contribution that ICT can make within each activity type and policy domain.

Role of ICT	*Description*
Efficiency	*Use of ICT for improvements of conventional systems, processes, operations, etc. for energy efficiency and carbon emission reduction*
Analysis / decision making	*Use of ICT for data collection, analysis and interpretation for decision support within/across organisations for energy efficiency and carbon emission reduction*
Perception / behaviour	*Use of ICT for data visualisation and interpretation addressing individuals and households for energy efficiency and carbon emission reduction*
Innovation / substitution	*Use of ICT for design and/or support of new systems and processes or replacement of conventional ones for energy efficiency and carbon emission reduction*

Examples

1. An 'innovative measurement method' applied in the energy sector can be categorised as follows:

   Application Area: *Energy*

Activity Type: *Monitoring*
Role of ICT: *Innovation*

2. The 'analysis of forms of data exchange applicable across multiple domains' can be categorised as follows:
   Application Area: *Cross-domain*
   Activity Type: *Exchange*
   Role of ICT: *Analysis*

3. Linkoping has recently rolled out a 'broadband solution across the city'. This solution resulted in less travel to work, resulting in lower carbon emissions. This process can be categorised as follows:
   Application Area: *Green ICT*
   Activity Type: *Operation*
   Role of ICT: *Efficiency*

4. Manchester has recently started a pilot to 'measure the local levels of pollution in the city using air monitoring devices'. This process can be categorised as follows:
   Application area: *Other – Waste (including air pollution)*
   Activity Type: *Innovation*
   Role of ICT: *Measurement*

Creation of an Online Toolkit

The NiCE project provided cities with a set of three ***Reporting Tools*** to assess their status and compare their performance regarding GDC activities. The tools were tested and validated by the reference cities group in iterative steps and were deployed to the wider GDC community through training events In the end, these tools were incorporated with the online green digital toolkit[4] in order to increase their user-friendliness.

Along with the reporting tools, the online toolkit contains the ***Action Tools Catalogue*** which is compiled from tools provided by cities, for cities. The tools catalogue comprises not just the tools used by a city but also underlines the context in which they have been used, through association with the project (***activity***) on which they are used. Cities are encouraged to provide details of the activities being undertaken that relate to their GDC Commitments. This includes deployment of five appropriate, large-scale ICT pilot projects within five years of signing the GDC.

The activities that the NiCE toolkit contains, are classifiable by the GDC Action Framework dimensions and are useful to other cities considering how to meet GDC commitments. They provide

[4] http://www.greendigitalcharter.eu/nice_toolkit/

examples of what experience is available within the peer group and, importantly, give an appropriate contact for further information.

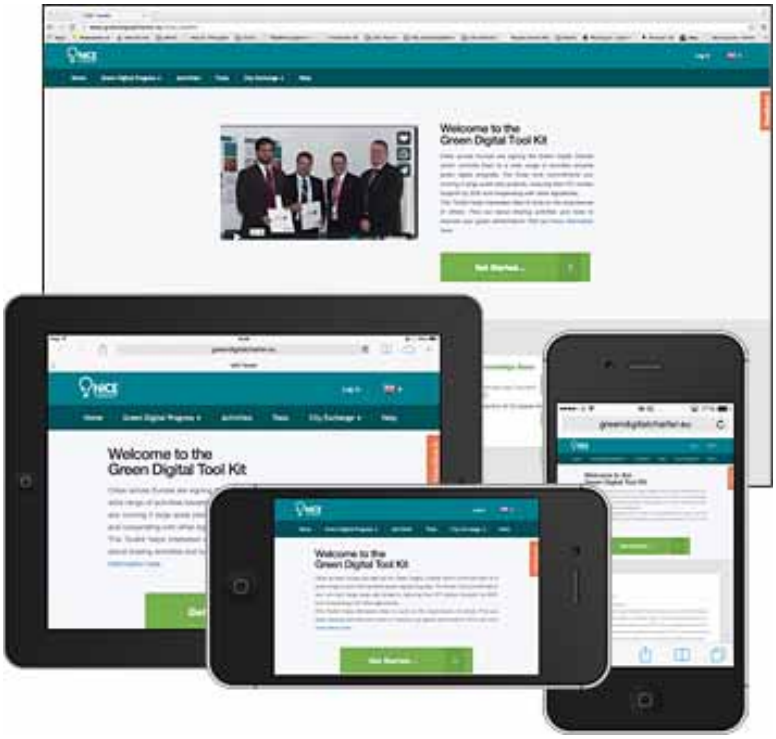

Figure 7: GDC online toolkit homepage

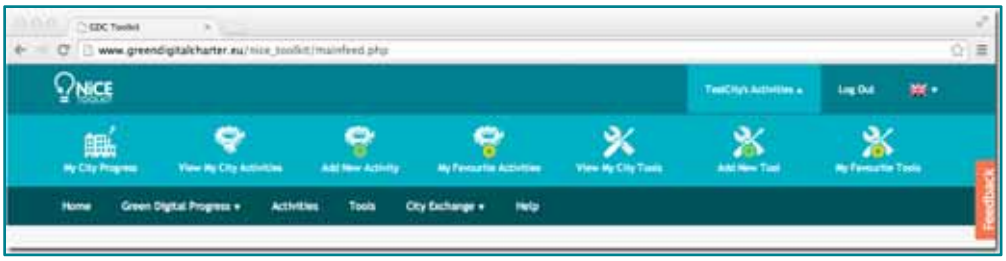

Figure 8: GDC toolkit toolbar

Activities are unique to a city and employ city ***tools*** to deliver. A tool is therefore always associated with an Activity. The re-use of developed tools is encouraged as being efficient and promoting collaboration. In practice a tool will inevitably be altered in some way before being employed in another city's activity (project). Therefore each tool is also regarded as unique, although there is an ambition to provide a derivation path for tools if future funding allows. All users may search activities and tools, whether or not they are logged in, but only a city user may add, amend or delete an activity or tool – and only for its own activities and tools.

The GDC ***Self-Assessment Questions*** tool has been developed with the aim to ensure coherence with the Action Framework and other project deliverables. A set of 26 self-assessment questions,

each of them interlinked with the GDC commitments[5] and the three dimensions of the Action Framework, have been developed and tested with the group of reference cities. For each city-user of the toolkit, the answers to these questions are summarised into a graphical overview on the city status on Green Digital Activity.

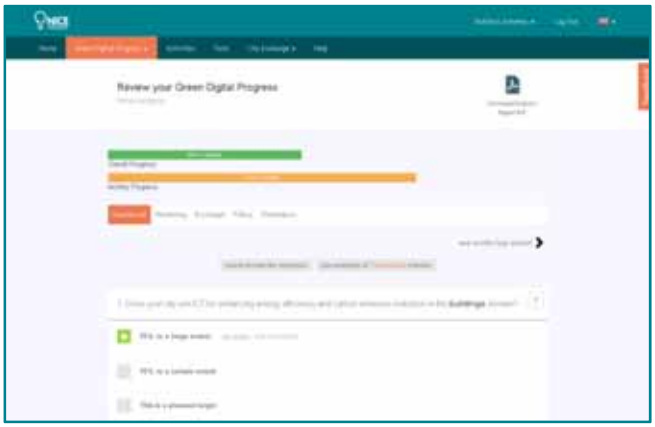

Figure 9: Self-assessment questions

The ***Green Digital Charter-Covenant of Mayors (CoM)*** reporting tool allows cities to report their activities more easily and effectively in both initiatives:

- ICT related activities and projects already entered in CoM can be simply copied and pasted into the new GDC Activity form.
- When green digital activities are already reported in the NiCE Toolkit, a city only needs to download the excel file generated by the GDC/CoM tool, then copy/paste all activities directly to the CoM reporting template.

Figure 10: GDC-CoM interface

The aim of the ***ICT Footprint measurement*** tool is to develop a method and technique which is flexible and complementary to existing methods that cities already use. It draws on existing international standards and methodologies (such as the ITU's L.1400 recommendations, GHG protocol, the Carbon Disclosure Project, as well as standards from International Bodies such as ISO14064) to enable cities to measure, compare and report on ICT's direct carbon footprint at a city administration level. This tool is complimented by an online visualisation tool to allow comparison of metrics across a specified time period, thereby supporting cities to evaluate their status in meeting the Green Digital Charter target of 30% reduction of CO2 emissions on ICT equipment over 10 years.

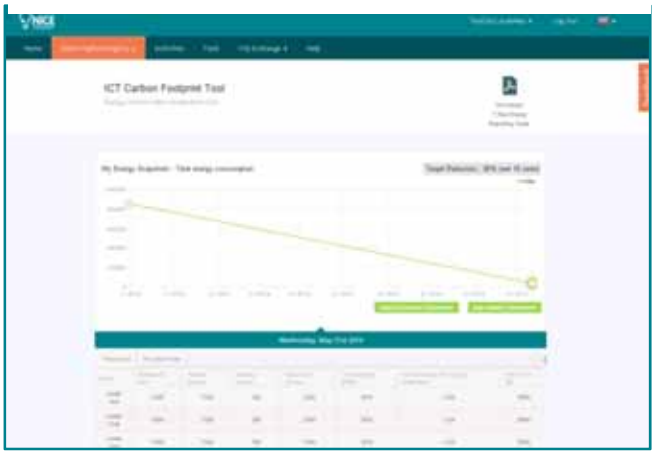

Figure 11: NiCE ICT carbon footprint tool

[5] http://www.greendigitalcharter.eu/greendigitalcharter/text

Cooperation with experts

An ***Expert Advisory Board*** (EAB) composed of five members was set-up. The members of the EAB were renowned experts, offering independent expertise from complementary technical, scientific and business backgrounds. The experts:

- Provided strategic advice on the overall project approach and methodology
- Commented on the quality of project deliverables
- Offered specific expertise on key issues addressed by the project, especially the development of the online tools and toolkit
- Contributed as invited experts to the project's technical networking and visibility events

Cooperation with the EAB took the shape of physical meetings, web conference meetings and of regular correspondence so that the experts can reflect on specific technical issues and give their opinion.

Expert Advisory Board members			
Nicola Villa	**Molly Webb**	**Dennis Pamlin**	**Max Blöchle**
Internet Business Solutions. Group	Smart Technologies	Strategic economic, technology and innovation advisor	Energy Department - Sustainable Buildings and Cities
CISCO	The Climate Group	21st Century Frontiers	AIT Austrian Institute of Technology GmbH

Cooperation with cities

A ***Reference Cities Group*** (RCG) with 5 cities was established to provide input from the perspective of policy practitioners and local decision-makers. Cities for this reference group were selected to ensure a balanced representation of different implementation contexts - cultural and institutional, growth dynamics, ICT diffusion levels (e.g. regarding information society and e-government readiness indices - as well as with a view to their high commitment. Bologna, Eindhoven, Linkoping, Manchester and Warsaw were the reference cities group that engaged consistently in the project and provided useful insight in the project development and activities.

Cooperation with the reference cities took the shape of physical meetings, bilateral interviews or of regular correspondence. Moreover, during the first months of the projects, technical experts of the project organised five ***site visits*** to the reference cities with the aim to meet local experts and

stakeholders, present the first outcomes of the project and ask for feedback as well as study pilot projects and methodologies used by cities in GDC-related areas.

Creation of a GDC contact point

After being established early in the project, the Green Digital Charter contact point has successfully handled information and requests from cities and stakeholders. The management of this information point involved different activities:

- Support and contacts with signatory cities
- Exchanges with stakeholders
- Approach, support and contacts with potential signatories
- Coordination and organisation of signatory ceremonies
- Development of the Green Digital Charter governance
- Preparation of all necessary information and communication material

The work of the GDC contact point concluded with 19 new European cities having signed the Charter, after September 2011 that NiCE was launched, thus, GDC reaching a total of 42 signatories, all major European cities.

Figure 12: Vilnius (left) & Sunderland, Riga and Gdynia (right) signing the GDC

The Green Digital Charter contact point will continue operating (by EUROCITIES) after the end of the NiCE project, according to the compiled exploitation plan.

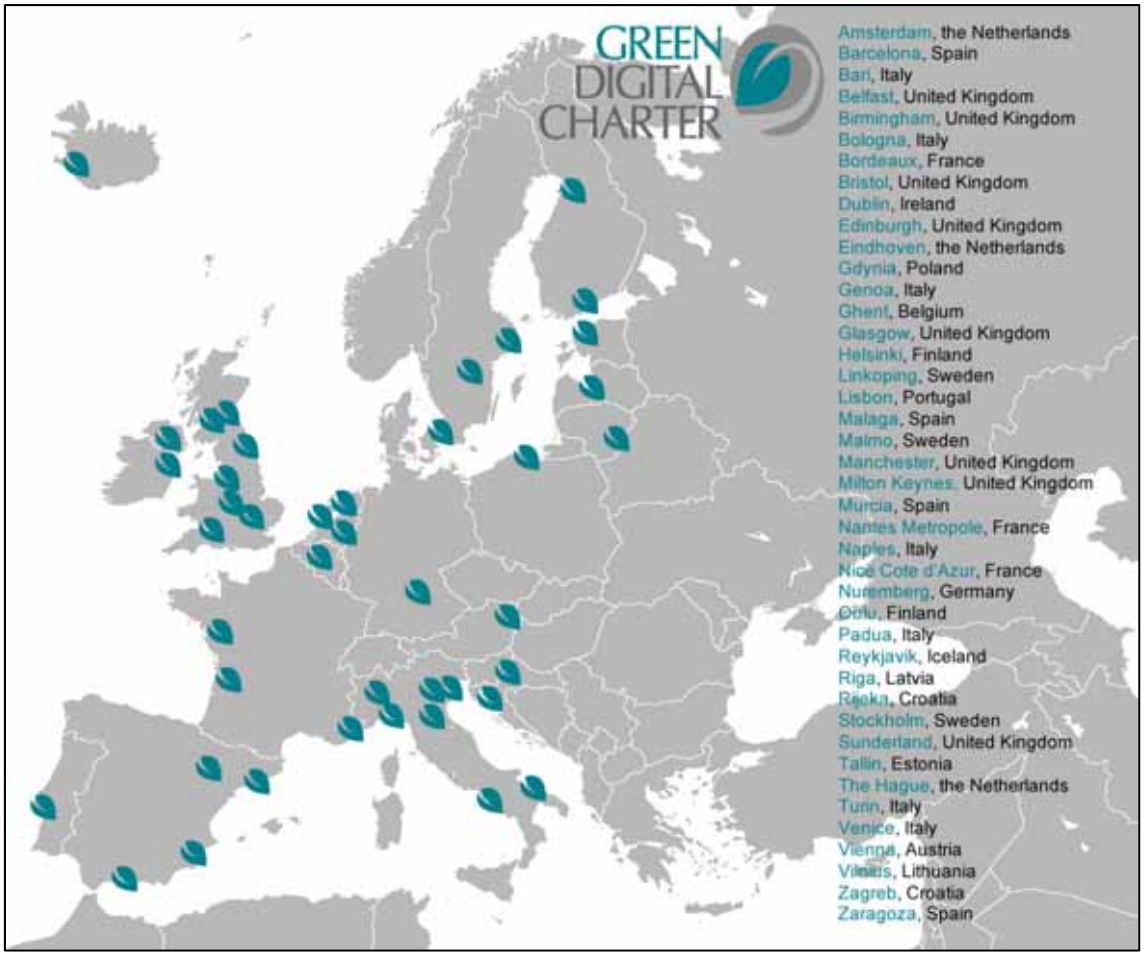

Figure 13: Map and list of the 42 GDC signatories

Organisation of training events

Based on the developed GDC action framework and toolkit, and building in particular on feedback from the group of Reference Cities concerning implementation barriers and challenges, a series of ***technical training events*** and sessions within events was designed and delivered. NiCE project organised seven events of this kind:

- The first training on Measuring Green IT took place in Belfast on 19 June 2012
- An event, jointly organised by EUROCITIES and the NiCE project, took place in Brussels on 11 July 2012 focused on the Smart Cities projects call
- A training session and workshop for the GDC toolkit was organised during the EUROCITIES Knowledge Society Forum meeting in Manchester on 17 October 2013
- A training and funding brokerage event, jointly organised by EUROCITIES and the NiCE project, took place in Brussels on 11 December 2013

- A training session for the GDC results and the NiCE toolkit was organised during the EUROCITIES Knowledge Society Forum meeting in Barcelona on 2 April 2014
- A training session for the GDC results and the NiCE toolkit was organised during the Zagreb energy week meeting in Zagreb on 14 May 2014
- A training event about the present and the future opportunities of smart cities was organised in Brussels on 21 May 2014

Figure 14: Training events in Belfast (left) and Brussels (right)

Organisation of knowledge exchange events

One of the most successful ways of turning innovation into action is to explore implementation challenges and successes on the ground. Building on the best practices identified during the project, with a particular focus on the practices studied in the Reference Cities Group, NiCE organised a series of four ***study tours*** for GDC signatory cities (as well as for non-signatories so that they can better understand what it means to implement the GDC commitments).

Figure 15: Study tours catalogue

For the purpose of advancing implementation of GDC commitments, cities that are leaders in the field of ICT/EE projects and could showcase innovative projects around the fields of action of the GDC Action Framework were selected to host the study tours.

Four study tours were organised during the last year of the project:

- The first one in Vienna on 5-6 December 2013 with the participation of representatives from 8 cities[6]
- The second one in Birmingham on 27-28 February 2014 with the participation of representatives from 6 cities[7]

[6] http://www.greendigitalcharter.eu/1st-nice-study-tour-hosted-by-vienna

- The third one in Murcia on 05-06 May 2014 with the participation of representatives from 6 cities[8]
- The fourth and last one in Linkoping on 09 May 2014 with the participation of representatives from 3 cities[9]

Figure 16: Promotion event in Rimini (left) and study tour in Birmingham (right)

Organisation of showcase events

Roadshows are visibility and networking events that were organised under the NiCE project with the purpose of increasing the visibility of the Green Digital Charter and enabling the fostering of partnerships between signatory cities, European Institutions (DG CONNECT) and other relevant stakeholders. Three roadshows were hosted by GDC signatory cities in different regions of Europe to enable balanced participation and benefit from all signatories and potential signatories. The events highlighted different aspects of GDC goals, encouraging further cities to become GDC signatories:

- The city of Bologna hosted the first roadshow on 31 October 2012 which focused on the "Energy & Technology" theme, and included four new cities signing the Green Digital Charter (Bari, Milton Keynes, Padua and Naples). The event has been the occasion to deepen the knowledge of how the City of Bologna is implementing the Green Digital Charter together with its implementation partners: the Emilia Romagna Region, the City of Manchester, the Austrian Institute of Technology and the Stuttgart

Figure 17: 1st roadshow in Bologna

[7] http://www.greendigitalcharter.eu/2nd-nice-study-tour-hosted-by-birmingham
[8] http://www.greendigitalcharter.eu/3rd-nice-study-tour-hosted-by-murcia
[9] http://www.greendigitalcharter.eu/4th-nice-study-tour-hosted-by-linkoping

University. The project team has supported the city of Bologna and its partner (ForumPA) in the organisation of the event which was held in connection with the SmartCity Exhibition taking place in the city[10]

- The city of Nuremberg hosted the second roadshow on 14 March 2013. The event focused on financing and policy for smart and sustainable cities. Speakers included Mr Phillip Barth from the European Commission (DG CONNECT) who gave members an update on Horizon 2020 and the Smart Cities initiative. Participants heard from city speakers on national and EU funding, as well as city examples on innovative financing mechanisms for smart cities. The plenary session also included a political discussion involving the vice chair of the KSF - Councillor Nigel Murphy (Manchester), Chair of the Environment Forum - Councillor James McKay (Birmingham), Vice Chair of the Environment Forum and Deputy Mayor of Nice Veronique Paquis, Milan Obradovic (Malmö) from the Environment Forum, councillor Ronan Dantec (Nantes) and Peter Pluschke, environmental and health officer of host city, Nuremberg. Study visits also focused on Nuremberg's implementation of the Green Digital Charter[11]

Figure 18: 2nd roadshow in Nuremberg

- The city of Amsterdam successfully hosted the third roadshow on 14-15 November 2013. The event focused on the public-private cooperation on Green Digital Charter commitments. Speakers included Nicola Villa from Cisco, Marleen Stikker from Waag Society, Hans Tijl from the city of Amsterdam, Paul Bevan, secretary general of EUROCITIES and Philipp Barth from DG CONNECT. The plenary session also included presentations about the Green Digital Charter and smart cities (Dave Carter – Manchester, Nikolas Kontinakis – EUROCITIES & Vin Sumner – Clicks & Links) a discussion about the smart cities and communities with the participation of Paul Bevan, Dave Carter and Johan Bouwmeester (city of Almere) and a presentation about EU-China collaboration from Shaun Topham from eu-forum. Finally, study visits and presentations focused on Amsterdam's smart projects and implementation

Figure 19: 3rd roadshow in Amsterdam

[10] http://www.greendigitalcharter.eu/four-new-signatorie
[11] http://www.greendigitalcharter.eu/second-green-digital-charter-roadshow-held-in-nuremberg

of the Green Digital Charter[12]

During the Amsterdam roadshow, the winners of the first Green Digital Charter Awards were announced. Linkoping won the “Best effort in ICT carbon footprint reduction” award, Genoa the “Best GDC project” award and Bristol the “Best set of GDC projects” award. The Green Digital Charter (GDC) Awards were designed and proposed as a recognition of achievement by GDC signatory cities in their effort to work together to deliver on the EU climate objectives using digital technologies that increase energy efficiency, facilitate emissions reductions and forestall climate change. Under this scheme, cities have been asked to:

- Describe tools that they have used and projects that they have designed or implemented;
- Assess their own progress;
- Measure their ICT direct carbon footprint.

Figure 20: GDC awards ceremony

Creation of synergies with the Covenant of Mayors

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 different in many aspects, the two initiatives are clearly linked, offering the potential for synergies and collaboration. One of the objectives of outreach & engagement activities of the NiCE project was to enable a close collaboration between the GDC and the Covenant of Mayors on visibility events and dissemination activities.

Figure 21:GDC mayors during the CoM ceremony

[12] http://www.greendigitalcharter.eu/third-nice-roadshow-in-amsterdam-14-15-november-2013

Measured against the initial objectives of NiCE project, the cooperation between the CoM Office and the NiCE team is considered as successful:

- GDC actively participated and was mentioned in both CoM ceremonies that were organised after the launch of the project (November 2011 and June 2013);
- CoM Office is well aware of the GDC and the NiCE activities, as well as of the NiCE team supporting the GDC;
- NiCE project had an extensive collaboration with CoM Office and EU Joint Research Centre (JRC) during the design of the GDC-CoM online tool of the NiCE project
- Collaboration has been extended to other topics of common interest: e.g. a meeting between CoMO and NiCE took place in 5 March 2014 to explore how SCC2 call (and the projects that will come from this call) expects to benefit from the CoM and GDC databases and toolkits.

Collaboration with Chinese cities

The project has aimed at establishing a collaborative network of Chinese cities and their partners that would enable exchanges of experiences and knowledge transfer between Europe and China and vice versa. This vision is especially relevant in the current climate of EU-China cooperation, as it complements the primary objectives of the EU-China Urbanisation Partnership[13]. In addition, the adaptation of the Green Digital Charter to a Chinese context falls in line with the EU's growing cooperation with China particularly in the area of environment and innovation.

The NiCE project has worked very closely with DG CONNECT, the Chinese Ministry of Industry and Information Technologies and the city of Yantai towards this aim and participated in a large number of high-level events, forums and bilateral meetings with all involved stakeholders.

Figure 22: EU-China Green Smart City Cooperation Exchange Forum

The results of the EU-China cooperation within NiCE are considered as positive and important. Although there is still not a Chinese network in place, a number of other accomplishments have shown the efforts of the NiCE consortium had a real positive impact:

[13] http://eeas.europa.eu/delegations/china/eu_china/sustainable_urbanisation/sustainable_urbanisation.htm

- Many European as well as Chinese cities, and especially the 15+15 ones participating in the EU-China smart city partnership, are now aware of the possibilities that a Chinese GDC network can offer
- DG CONNECT, being the main supporter of GDC and NiCE project from the side of the European Commission, has always considered the creation of a network of Chinese cities as necessary for the success of the EU-China Partnership. Especially after April 2013 (signing of the NiCE project-Yantai city subcontract), DG CONNECT and especially its "Smart Cities & Sustainability" Unit have intensified their collaboration with the NiCE partners in the effort of creating the Chinese GDC network
- DG ENERGY has long-standing cooperation with China and, among others, coordinates the annual EU-China Urbanisation Forum[14]. Officers of DG ENERGY have expressed their satisfaction, after the November 2013 Forum, with the efforts to create a network of GDC Chinese cities in line with the wider EU-China Urbanisation Partnership
- After June 2013, the NiCE partners have initiated a continuous collaboration with the China Academy of Telecommunication Research (CATR)[15] of the Ministry of Industry and Information Technology (MIIT)[16] in the effort to create the Chinese network of GDC cities
- During the project, NiCE partners cooperated with a number of stakeholders in order to promote the creation of the Chinese GDC network and create momentum for the EU-China cooperation at city level, namely the EU-China Policy Dialogues Support Facility (PDSF), the "Europe-China Eco-Cities" EC-LINK project, OPENCHINA-ICT project, the Organisation for Economic Co-operation and Development (OECD), the European Policy Centre (EPC), DIGITALEUROPE association and the UrbanTec Asia Conference

Figure 23: EU-China Green Smart City Cooperation Exchange Forum

[14] http://ec.europa.eu/energy/international/bilateral_cooperation/china/china_en.htm
[15] http://english.catr.cn/
[16] http://www.miit.gov.cn/n11293472/index.html

Potential impact, main dissemination activities and exploitation of results

Potential impact

The NiCE project and the GDC initiative that it supports are expected to result in the reduction of energy consumption and CO_2 emissions. Focusing on the contribution of ICT, NiCE has triggered and enabled cities to take action on reducing urban energy consumption and CO_2 emissions. In particular, the actual reduction will gradually become quantifiable on the basis of the uptake and use of the reporting tools developed and adopted in NiCE, addressing the ICT carbon footprint as well as the spectrum and depth of measures related to ICT-enabled energy efficiency.

The potential impact of the project can be divided into two categories: ***direct*** and ***wider*** impact. The following table summarises the main points:

Type of impact	Level	Description
Direct	Local	Local GDC awareness raised and implementation capacity increased Cities were enabled together with their ICT and energy stakeholders to actively address the challenge of using ICT for energy efficiency. NiCE dissemination and outreach activities raised the overall awareness of the need for coordinated local action on this issue. Practical knowledge and tools were provided to stakeholders for setting off local coordination processes and designing suitable measures, assisting them in their GDC steps.
	European	Increased number of GDC signatories and GDC becoming a leading initiative in ICT for Energy Efficiency (EE) As a result of the project's implementation, NiCE increased the number of Green Digital Charter signatory cities. Thus, the GDC is obtaining the necessary critical mass to become the leading initiative on ICT for urban energy efficiency and sustainable urban development in Europe, gathering all pertinent experiences and fostering vivid exchange between stakeholders.
		Increased reporting on the ICT for EE Through the development of a set of self-assessment and reporting tools, NiCE provided a key instrument for transparent reporting of ICT for EE activities across Europe. Furthermore, a simple aggregated benchmark has aimed towards triggering local commitment and activity. This monitoring of progress will eventually allow for the identification of strengths and weaknesses of local GDC adoption, hence guiding the design of targeted future support through various policies at local or European levels.

Type of impact	Level	Description
	International	**Development of a similar initiative that will twin the Green Digital Charter in China** This vision complements the primary objectives of the EU-China Urbanisation Partnership, which include: 1) To engage China further, both bilaterally and on the world stage, through an upgraded political dialogue, 2) To support China's transition to an open society, 3) To raise the EU's profile in China, 4) To let both EU and China benefit from an exchange or knowledge and practices in the urbanisation agenda, 5) To help EU and Chinese business stakeholders develop efficient collaborations with cities in the two areas.
Wider	European	**Increased business opportunities and increased green growth** Through NiCE, the wide range of business opportunities as well as the provision of a new wave of urban services and products linked to ICT-enabled energy efficiency was addressed, involving stakeholders at all levels. ICT for EE is expected to trigger growth and employment especially in local SMEs, but also in the related industries.
		Energy consumption and CO_2 emissions reduced Focusing on the contribution of ICT, NiCE has enabled cities to take action on reducing urban energy consumption and CO_2 emissions. In particular, the actual reduction will gradually become quantifiable on the basis of the uptake and use of the reporting tools developed and adopted through NiCE, addressing the ICT carbon footprint as well as the spectrum and depth of measures related to ICT-enabled energy efficiency.

Main dissemination activities

A wide selection of outreach activities and collaborations was used to foster a better understanding of synergies and cooperation possibilities between the community of urban practitioners and decision-makers to stakeholder communities such as national and EU policy-makers, relevant industry and research in related fields, including energy, transport, buildings & construction, eGovernment and ICT.

Updated information about the project developments, results, related news and events have been communicated through various media channels:

- Electronic newsletters
- Leaflets and brochures
- Posters in high-level events and conferences
- Press releases and specialised or general public media
- The project website which is regularly updated with project news, cities profile and information, project events or related ones from signatory cities, partners and other stakeholders and projects
- Through EUROCITIES that is using its own network to promote project results and updates to its members using a wide set of events and communication activities

- The NiCE project had a strong presence (presentation, stand or table, dissemination of material, etc.) in a large number of external events, related to the objectives of the project but also to the GDC
- Twitter, YouTube and Facebook GDC accounts

It is also important to note that the outreach activities were not implemented by the project team only: other staff members of each partner and the current signatories have indeed contributed to present the Green Digital Charter and the project activities in various occasions across Europe.

Exploitation of results

The NiCE project has already been hugely successful in attracting over 40 cities to sign the GDC and reinforcing or embedding green digital thinking in those cities. Facilitated by NiCE, the GDC cities have shared knowledge of their own projects and challenges. The high profile of the GDC can be seen by its presence in Horizon 2020 and its contribution to the developing EU-China city collaborations.

Project partners have had the opportunity to further develop their capacities during the NiCE project, for example EUROCITIES in sustaining its leadership role for cities, Clicks and Links gaining access to cities and as a result new project work and Manchester in reinforcing China links.

The exploitation plans of the project seeks to build on these successes by identifying areas in which the partners can continue to provide services that will progress the impact of the GDC. These include three areas of significant importance, likely to be the subject of a follow-up NiCE project. These are:

- Review/re-contextualising of the GDC text - 6 years after its creation,
- Deepening of support for cities in implementing the GDC,
- Strengthening and developing the international outreach of the GDC including China.

The NiCE project partners have decided on an exploitation strategy and associated plan based on a series of linked strands of activities before and after the end of the NiCE project in May 2014:

- EUROCITIES will retain use of the term ‘Green Digital Charter’ in their network and other large European cities that are interested in signing the GDC. Moreover, it will take responsibility for the content and technical maintenance of the NiCE tools after the end of project. Finally, EUROCITIES will monitor the progress of the GDC implementation in regular implementation reports (under a NiCE follow-up project) and, in response to the changing needs of the signatory cities, look for opportunities to fund further developments of the GDC and its associated tools.

- EUROCITIES will continue to run the 'Green Digital Charter' contact point both to support the current signatories and to progress acquisition of new signatories through its Knowledge Society Forum (KSF) and Environment Forum (EEF). This will include embedding support activities for GDC signatories (e.g. signing ceremonies) within the normal programme of EUROCITIES events but also in the framework of EU-level events such as EUSEW and DG REGIO Open Days. To this end, EUROCITIES will continue being the liaison between the GDC and the Covenant of Mayors.
- EUROCITIES is leading discussions with the European Commission regarding a follow-up Horizon 2020 project with a particular focus on the review of the GDC text; the deepening of technical support offered to signatory cities; activities in relation to the EU-China smart city dialogue and the creation of a Chinese version of the Green Digital Charter, alongside other international developments.
- The creation, packaging and exploitation of a 'Green Digital Guide' by Clicks and Links as a programme of activity for networks of cities and municipalities in other geographies as well as smaller or thematically linked cities and municipalities (thus avoiding overlap with the Green Digital Charter cities). Whilst the Green Digital Guide will be made available to cities and city networks on an open source, non-profit basis; the NiCE partners and in particular Clicks and Links, that has indicated their readiness and will to action this, will provide consultancy and technical services at commercial rates to cities and networks that wish to replicate and work with the objectives and methods of GDC. The knowledge gained through the NiCE project can and will be used to prepare this initiative. Moreover, тhe tool and activity details and other sharable content , publicly available through the GDC toolkit, can be replicated in the Green Digital Guide using RSS data feeds. Similarly, tools shared via the Green Digital Guide can be made available in the Green Digital Charter Toolkit via an integration or cooperation of the two databases containing solutions, projects and tools.
- The development of a specific package of support and knowledge exchange for Chinese cities as part of the EU-China dialogue on smart cities, which includes 15 EU and 15 Chinese cities.
- EUROCITIES will continue to promote the online NiCE tools to the KSF, EMF and EEF members, and encourage their use and population. The city provided *sharable content*, will be available to the other exploitation activities described in this paragraph.[17]

[17] The cities' activities and tools (content of the online NiCE tools) are provided by cities and they remain the property, and responsibility of the respective city. A city may only publish on its own behalf. No-one else, including the toolkit administrator may or has the ability to publish or provide an update on another city's behalf. As explained and agreed during the city's GDC engagement process, activities and tools content is made available for 3rd party view and use, on a publically available website – the online toolkit. As such it should be considered as in the public domain. Data that is provided by a city to the toolkit for self-assessment purposes, i.e. information submitted for use with the Green Digital Progress (Self-assessment and review); Self assessment questionnaire (SAQ) and ICT carbon footprint reporting, are held private to the city submitting that data. The data is only shared between, or viewable by, users who have been associated with that city by the toolkit administrator. Only the toolkit administrator may associate a user with a city. A city's self-assessment data may not be viewed on the toolkit by another city, or by the toolkit administrator. A city should ensure the safe-keeping of any downloaded data such as the SAQ snapshot.

- The reuse of the NiCE software and platform by a next generation of EU-funded projects, specifically those under the HORIZON2020-SCC call of 2014 and 2015 and the EC-Link project between EU and China.
- The further development of reporting tools based on the International Telecommunication Union (ITU) methodologies or the British Standards Institute (BSI) smart city framework, in particular for ICT projects.
- In response to the move to smart and resilient cities and the time since the creation of the GDC, the review of the GDC and associated Green Digital Framework and toolkit in the context of smart, resilient and future city activity should be considered. The partners are looking at both city and grant funding opportunities.
- Progressing relevant opportunities within the Horizon2020 programme that relate to cities' use of the GDC, for example the Horizon 22020 SCC1-2014 call.

Contact details

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@:	info@greendigitalcharter.eu
WWW:	http://www.greendigitalcharter.eu/
NiCE toolkit:	http://www.greendigitalcharter.eu/nice_toolkit/
Infograph:	http://www.greendigitalcharter.eu/greendigitalcharter/infographicstest
YouTube:	http://www.youtube.com/channel/UChAu5ASNZNyTH5k7Hh3qAOQ
Twitter:	https://twitter.com/GDCharter

To contact the NiCE consortium partners:

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3. Use and dissemination of foreground

The NiCE project produced an adequate number of dissemination material and presented itself and GDC in a large number of events, all of them related to the project outreach main target groups: cities politicians, experts and practitioners.

The project started its dissemination by creating a published identity through a leaflet and an info-pack that was created in six different languages: English, French, Italian, German, Spanish and Polish. Later in the project a Chinese one-page printout was created. Finally, all English publications were redesigned in a single 4-page leaflet that contained all necessary information about the GDC and the NiCE project.

Figure 24: NiCE printed promotion material

e-Green update, an electronic newsletter, was used as a flexible means in order to keep experts and stakeholders, related to NiCE project informed about the project and GDC developments

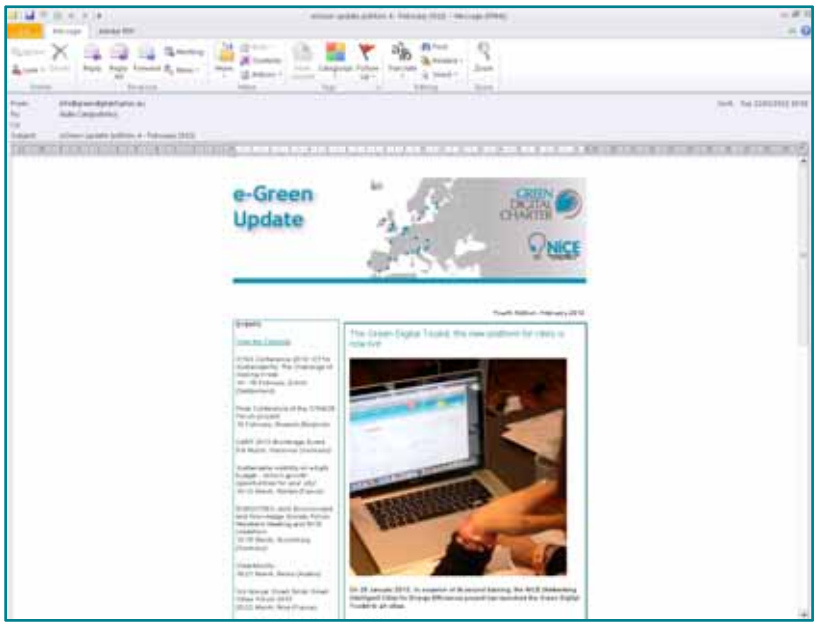

Figure 25: eGreen update

Moreover, all related EUROCITIES network electronic publications were used in a regular basis to disseminate GDC and NiCE project accomplishments:

- EUROCITIES Flash publication
- Urban Voice publication
- Environment forum newsletter
- Knowledge Society forum newsletter

Figure 26: EUROCITIES Urban voice

Another online communication tool that NiCE used, especially through EUROCITIES network homepage is the creation and posting of banners that were advertising major project events.

Figure 27: Banners used in the EUROCITIES main site

A small number of press releases were used to promote the NiCE project and its key events. The scarce use of this specific means of communication comes after the observation that press releases' recipients (i.e. Pan-European specialised or generalist press) don't follow this type of events (unless a very high-level politician such as a Mayor or Minister speaks at the event). For this

reason, the GDC contact point has strongly recommended all involved cities to locally disseminate, for example GDC signature ceremonies or organisation of GDC-related events in the city, as local press and citizens are more interested to follow *their* city's commitments and activities.

PRESS RELEASE - 8 October 2013 - BRUSSELS

Three more cities sign the Green Digital Charter

Three more major European cities have expressed their commitment to fight climate change by using information and communication technologies (ICT). City leaders from Gdynia (Poland), Riga (Latvia) and Sunderland (UK) signed in Brussels on Tuesday 08 October the Green Digital Charter which commits cities to reducing emissions through ICT and to promoting progress in tackling climate change through the innovative use of digital technologies in cities.

The number of cities that have signed the Green Digital Charter goes up to 40, ten of which are capital cities.

During the signing event, the chairman of Gdynia City Council, Stanislaw Szwabski, said:

"During the last 10 years, the city of Gdynia has developed and is implementing a clear strategic plan that will create a durable, socially accepted and ecologically safe city development. Signing of the Green Digital Charter is a clear statement of our commitment to use ICT towards this vision."

Mayor of Riga, Nils Usakovs, said:

"The City of Riga has set ambitious targets for its citizens and the environment. We work closely with the European Commission, our representation in Brussels and Riga Energy Agency as well as with major European and regional city networks for the improvement of our citizens' quality of life. Green Digital Charter will yield many opportunities to do precisely this!"

Leader of Sunderland, Cllr Paul Watson said:

"Sunderland has a longstanding commitment to managing carbon emissions and as a city at the forefront of digital developments, we're committed to using ICT as a tool to increase energy efficiency and reduce emissions.

As a growing centre for low carbon software companies and the first in the UK to offer wall to wall superfast broadband, we are working with IBM as their first UK Smarter City. We believe cities like Sunderland are well placed to play a significant role in finding innovative solutions to dealing with climate change. Signing the Green Digital Charter is an important step along the way to achieving future smart sustainability for our city."

- ENDS -

BORDEAUX

Communiqué de presse

LA SEMAINE DIGITALE

Le numérique pour faire face au changement climatique

Mardi 26 mars 2013 à 11h45 à l'Athénée municipal Wrasinski à l'occasion de la semaine digitale, Alain Juppé maire de Bordeaux signera la Green Digital Charter (charte écologique numérique) initiée par le réseau de métropoles européennes Eurocités. Il s'engagera ainsi pour Bordeaux à réduire les émissions de gaz à effet de serre de la ville, grâce à l'utilisation innovante du numérique.

Bordeaux est membre de Eurocités depuis 1989. Le réseau de métropoles a lancé en 2010 une charte numérique écologique visant à démontrer que, par l'innovation numérique les villes européennes peuvent trouver des solutions nouvelles et créatives pour faire face au changement climatique contribuant ainsi au respect de l'environnement. Les technologies numériques peuvent aujourd'hui être exploitées, notamment pour augmenter l'efficacité énergétique.

Les villes signataires s'engagent sur plusieurs objectifs :

- exploiter le numérique pour développer des solutions techniques innovantes et modifier les comportements des usagers afin de réduire les émissions de carbone y compris celles provenant des TIC Technologies de l'Information et de la Communication elles-mêmes.
- déployer 5 grands projets pilotes par ville dans les 5 ans suivant la signature.
- travailler avec les autres signataires sur le numérique et l'efficacité énergétique.
- diminuer l'empreinte carbone directe des TIC de 30% par ville dans les 10 ans suivant la signature.
- encourager le rôle moteur des autorités municipales pour l'adoption de ces solutions et l'élaboration de partenariats.
- partager l'expérience et l'expertise des secteurs public et privé dans ce domaine en coopération avec des initiatives nationales, européennes et internationales.

Pour la Ville de Bordeaux, rejoindre le réseau des 34 métropoles européennes déjà signataires de cette charte (en France Nantes et Nice), sera l'occasion de renforcer sa démarche, aussi bien au titre du programme Bordeaux Cité Digitale en faveur du développement du numérique, que de l'Opération 21.

Figure 28: Samples of press releases

Posters of the project were presented in poster areas in the following events:

- ECOCITY Summit, Nantes, 24-27 September 2013
- Open Days – CoR exhibition, Brussels, 7-10 October 2013
- EU-China Urbanisation Partnership Forum & Exhibition, 20-23 November 2013, Beijing
- EIP smart cities launch conference, Brussels, 26 November 2013

Figure 29: NiCE/GDC posters in English and Chinese

The NiCE project had a strong presence (presentation, stand or table, dissemination of material, etc.) in a large number of key external events, related to the objectives of the project:

- Digital Agenda Summit, Brussels, 04 October 2011
- Open Days 2011, Brussels, 11-13 October 2011
- CoR event on Future Cities, Brussels, 12 October 2011
- Smart Cities event at the Future Internet Week, Poznan, 24-28 October 2011
- Intelligent Cities Expo, Hamburg, 8-10 November 2011
- Ecomondo-Sustainable City, Rimini, 9-12 November 2011
- SET-Plan conference, Warsaw, 28-29 November 2011
- Covenant of Mayors annual ceremony, Brussels, 29 November 2011
- Future Internet, Living Labs and Smart Cities workshop, Brussels, 25 January2012
- E-Energy congress, Berlin, 02-03 February 2012
- Energy Days, Banka Luka, 19 April 2012
- Energy Days, Zagreb, 16 May 2012
- IREEN project's workshop at Innovative Cities Convention, Nice, 06 Juna2012
- Conurbant project's workshop at EUSEW, Brussels, 21June 2012
- Green IT Network Europe conference, Catania, 21-22 June2012
- BaseLondon, London, 21June 2012
- World Smart Capital, Amsterdam, 25 June 2012
- Green City Energy Forum, Pisa, 05-06 July 2012
- Base Leeds, Leeds, 11 September 2012

- Green Standards Week, Paris, 17 September 2012
- UK Future Cities, London, 19 September 2012
- CASCADE project consortium meeting, Malmo, 19-20 September 2012
- EcoIslands Global Summit 2012, Isle of Wight, 17 October 2012
- GREEN ICT project meeting, Manchester, 16 April 2013
- Covenant of Mayors annual ceremony, Brussels, 24 June 2013
- Resource-efficient Europe CoR conference, Vilnius, 2-3 September 2013
- ICT for sustainable places conference, Nice, 9-11 September 2013
- EPC workshop, Brussels, 17 September 2013
- ECOCITY Summit, Nantes, 24-27 September 2013
- Open Days – CoR exhibition, Brussels, 7-10 October 2013
- Open Days – CASCADE workshop, Brussels, 10 October 2013
- ICT2013, Vilnius, 6-8 November 2013
- EU-China Urbanisation Partnership Forum & Exhibition, Beijing, 20-23 November 2013
- EIP smart cities launch conference, Brussels, 26 November 2013
- CASCADE workshop, Brussels, 31 January 2014
- CASCADE Polish network seminar, Zabrze, 13 March 2014
- CASCADE final consortium meeting, Brussels, 1-2 April 2014
- EU-China Green Smart City Cooperation Pilot City Exchange Meeting, Beijing, 28-30 April 2014
- SEISMIC inaugural workshop, Prague, 28-30 May 2014
- UrbanTec Asia Conference, Beijing, 29-30 May 2014
- EPC panel discussion, Brussels 12 June 2014 (speaker invitation accepted)
- Digital Venice, Venice, 08 July 2014 (speaker invitation accepted)

Figure 30: Participation in events - EIP smart cities launch conference, Brussels (left), UrbanTec Asia Conference, Beijing (right)

Figure 31: Promotion events across Europe – Manchester, Bologna, Rimini, Brussels (from top left, clockwise)

It is worth mentioning, that among others, the project has been presented through the EUROCITIES network in a large number of events:

- Seven Knowledge Society Forum meetings (Berlin, 19-21 March 2012; Belfast, 20-21 June 2012; Vienna, 22-23 October 2012, Nuremberg, 14 March 2013; Manchester, 17 October 2013; Brussels 23 January 2014, Barcelona, 02 April 2014)
- Five Environment Forum meetings (Prague, 15 June 2012, Nice, 03 October 2012, Nuremberg, 14 March 2013; Stockholm, 12 June 2013; Birmingham, 19 March 2014)
- One Mobility Forum meeting (Lion, 12-13 September 2012)
- One EUROCITIES in the cities conference (Beyoglu, 16-17.04.2012)
- Six corporate events (Annual Conference, Genoa, 2-5 November 2011, Cooperation Platform, Gijon, 10-11 May 2012, Annual Conference, Nantes, 7-9 November 2012, Cooperation Platform, Espoo, 16-17 May 2013 and Edinburgh, 15-16 May 2014 and Annual Conference, Ghent, 27-29 November 2013)

NiCE project managed to create content or appear in a number of publications, further to the standard communication publications that was originally foreseen:

- July/ August 2013: "Europäisches Städtenetzwerk – Energieeffizienz digital (European city network – digital energy efficiency)" in "Fachzeitschrift für Alternative Kommunalpolitik (Journal for alternative local government politics)" publication
- July 2013: "Techs and the city" in "China Daily – European Weekly" newspaper
- Spring 2014: "Charting green, digital success in cities" (*signed by the Mayor of Ghent*) in "European energy innovation" magazine

Finally, NiCE project created a number of short videos in order to promote GDC or explain and promote the online toolkit. All videos can be found in the NiCE YouTube channel: http://www.youtube.com/watch?v=weDtvy-6WaE&list=PLbATprtqEvVGEBJ74rxhCv41TBzYXu1HA

Videos from the 1st NiCE roadshow in Bologna were published by local stakeholders in: http://www.youtube.com/watch?v=1cPRJwwRKVQ&list=PLJqDgROEqMMW-AUt6E8upQKWJeJARQJeT

In order to increase the project's visibility, a Twitter account was created where NiCE and GDC news, updates, reminders as well as interesting news from other projects and initiatives are posted: https://twitter.com/GDCharter

4. Report on societal implications

Replies to the following questions will assist the Commission to obtain statistics and indicators on societal and socio-economic issues addressed by projects. The questions are arranged in a number of key themes. As well as producing certain statistics, the replies will also help identify those projects that have shown a real engagement with wider societal issues, and thereby identify interesting approaches to these issues and best practices. The replies for individual projects will not be made public.

A General Information *(completed automatically when Grant Agreement number is entered.*	
Grant Agreement Number:	288042
Title of Project:	NiCE – Networking Intelligent Cities for Energy Efficiency
Name and Title of Coordinator:	Nikolaos Kontinakis – Project coordinator

B Ethics	
1. Did your project undergo an Ethics Review (and/or Screening)? • If Yes: have you described the progress of compliance with the relevant Ethics Review/Screening Requirements in the frame of the periodic/final project reports? Special Reminder: the progress of compliance with the Ethics Review/Screening Requirements should be described in the Period/Final Project Reports under the Section 3.2.2 *'Work Progress and Achievements'*	*No*
2. Please indicate whether your project involved any of the following issues (tick box) :	*YES*
RESEARCH ON HUMANS	
• Did the project involve children?	No
• Did the project involve patients?	No
• Did the project involve persons not able to give consent?	No
• Did the project involve adult healthy volunteers?	No
• Did the project involve Human genetic material?	No
• Did the project involve Human biological samples?	No
• Did the project involve Human data collection?	No
RESEARCH ON HUMAN EMBRYO/FOETUS	
• Did the project involve Human Embryos?	No
• Did the project involve Human Foetal Tissue / Cells?	No
• Did the project involve Human Embryonic Stem Cells (hESCs)?	No
• Did the project on human Embryonic Stem Cells involve cells in culture?	No
• Did the project on human Embryonic Stem Cells involve the derivation of cells from Embryos?	No

PRIVACY	
• Did the project involve processing of genetic information or personal data (e.g. health, sexual lifestyle, ethnicity, political opinion, religious or philosophical conviction)?	No
• Did the project involve tracking the location or observation of people?	No
RESEARCH ON ANIMALS	
• Did the project involve research on animals?	No
• Were those animals transgenic small laboratory animals?	No
• Were those animals transgenic farm animals?	No
• Were those animals cloned farm animals?	No
• Were those animals non-human primates?	No
RESEARCH INVOLVING DEVELOPING COUNTRIES	
• Did the project involve the use of local resources (genetic, animal, plant etc.)?	No
• Was the project of benefit to local community (capacity building, access to healthcare, education etc.)?	No
DUAL USE	
• Research having direct military use	No
• Research having the potential for terrorist abuse	No

C Workforce Statistics

3. Workforce statistics for the project: Please indicate in the table below the number of people who worked on the project (on a headcount basis).

Type of Position	Number of Women	Number of Men
Scientific Coordinator	1	1
Work package leaders	3	4
Experienced researchers (i.e. PhD holders)		
PhD Students		
Other	12	17

4. How many additional researchers (in companies and universities) were recruited specifically for this project?	
Of which, indicate the number of men:	

D Gender Aspects

5. Did you carry out specific Gender Equality Actions under the project?	○ ◆	Yes No

6. Which of the following actions did you carry out and how effective were they?

	Not at all effective				Very effective
❑ Design and implement an equal opportunity policy	○	○	○	○	○
❑ Set targets to achieve a gender balance in the workforce	○	○	○	○	○
❑ Organise conferences and workshops on gender	○	○	○	○	○
❑ Actions to improve work-life balance	○	○	○	○	○

○ Other:

7.	Was there a gender dimension associated with the research content – i.e. wherever people were the focus of the research as, for example, consumers, users, patients or in trials, was the issue of gender considered and addressed? ○ Yes- please specify ○ No		
E	Synergies with Science Education		
8.	Did your project involve working with students and/or school pupils (e.g. open days, participation in science festivals and events, prizes/competitions or joint projects)? ○ Yes- please specify ◆ No		
9.	Did the project generate any science education material (e.g. kits, websites, explanatory booklets, DVDs)? ○ Yes- please specify ◆ No		
F	Interdisciplinarity		
10.	Which disciplines (see list below) are involved in your project?[18] ○ Main discipline: 2.2 ○ Associated discipline: ○ Associated discipline:		
G	Engaging with Civil society and policy makers		
11a	Did your project engage with societal actors beyond the research community? *(if 'No', go to Question 14)*	◆ Yes ○ No	
11b	If yes, did you engage with citizens (citizens' panels / juries) or organised civil society (NGOs, patients' groups etc.)? ○ No ○ Yes- in determining what research should be performed ○ Yes - in implementing the research ◆ Yes, in communicating /disseminating / using the results of the project		
11c	In doing so, did your project involve actors whose role is mainly to organise the dialogue with citizens and organised civil society (e.g. professional mediator; communication company, science museums)?	○ Yes ◆ No	

[18] For each answer, insert number from list below (Frascati Manual)

12. Did you engage with government / public bodies or policy makers (including international organisations)

- ○ No
- ◆ Yes- in framing the research agenda
- ◆ Yes - in implementing the research agenda
- ◆ Yes, in communicating /disseminating / using the results of the project

13a Will the project generate outputs (expertise or scientific advice) which could be used by policy makers?

- ◆ Yes – as a **primary** objective (please indicate areas below- multiple answers possible)
- ○ Yes – as a **secondary** objective (please indicate areas below - multiple answer possible)
- ○ No

13b If Yes, in which fields?

Agriculture		Energy	◆	Human rights	
Audiovisual and Media		Enlargement		Information Society	◆
Budget		Enterprise		Institutional affairs	
Competition		Environment	◆	Internal Market	
Consumers		External Relations		Justice, freedom and security	
Culture		External Trade		Public Health	
Customs		Fisheries and Maritime Affairs		Regional Policy	
Development Economic and Monetary Affairs		Food Safety		Research and Innovation	
		Foreign and Security Policy		Space	
Education, Training, Youth		Fraud		Taxation	
Employment and Social Affairs		Humanitarian aid		Transport	

13c If Yes, at which level?

- ◆ Local / regional levels
- ○ National level
- ◆ European level
- ◆ International level

H Use and dissemination

14. How many Articles were published/ accepted for publication in peer-reviewed journals?	0
To how many of these is open access[19] provided?	
How many of these are published in open access journals?	
How many of these are published in open repositories?	

[19] Open Access is defined as free of charge access for anyone via Internet.

To how many of these is open access not provided?	
Please check all applicable reasons for not providing open access:	
❑ publisher's licensing agreement would not permit publishing in a repository ❑ no suitable repository available ❑ no suitable open access journal available ❑ no funds available to publish in an open access journal ❑ lack of time and resources ❑ lack of information on open access ❑ other[20]: ……	

15. How many new patent applications ('priority filings') have been made? *("Technologically unique": multiple applications for the same invention in different jurisdictions should be counted as just one application of grant).*		0
16. Indicate how many of the following Intellectual Property Rights were applied for (give number in each box).	Trademark	0
	Registered design	0
	Other	0
17. How many spin-off companies were created / are planned as a direct result of the project?		0
Indicate the approximate number of additional jobs in these companies:		

18. Please indicate whether your project has a potential impact on employment, in comparison with the situation before your project:

❑ Increase in employment, or	❑ In small & medium-sized enterprises
❑ Safeguard employment, or	❑ In large companies
❑ Decrease in employment,	❑ None of the above / not relevant to the project
◆ Difficult to estimate / not possible to quantify	

19. For your project partnership please estimate the employment effect resulting directly from your participation in Full Time Equivalent (*FTE = one person working fulltime for a year*) jobs:	*Indicate figure:* 11
Difficult to estimate / not possible to quantify	❑

I Media and Communication to the general public

20. As part of the project, were any of the beneficiaries professionals in communication or media relations?

○ Yes ◆ No

21. As part of the project, have any beneficiaries received professional media / communication training / advice to improve communication with the general public?

○ Yes ◆ No

[20] For instance: classification for security project.

22	Which of the following have been used to communicate information about your project to the general public, or have resulted from your project?		
	◆ Press Release	◆	Coverage in specialist press
	❑ Media briefing	◆	Coverage in general (non-specialist) press
	❑ TV coverage / report	❑	Coverage in national press
	❑ Radio coverage / report	◆	Coverage in international press
	◆ Brochures /posters / flyers	◆	Website for the general public / internet
	◆ DVD /Film /Multimedia	◆	Event targeting general public (festival, conference, exhibition, science café)
23	In which languages are the information products for the general public produced?		
	❑ Language of the coordinator	◆	English
	◆ Other language(s)		

***Question F-10*:** Classification of Scientific Disciplines according to the Frascati Manual 2002 (Proposed Standard Practice for Surveys on Research and Experimental Development, OECD 2002):

FIELDS OF SCIENCE AND TECHNOLOGY

1. NATURAL SCIENCES

1.1 Mathematics and computer sciences [mathematics and other allied fields: computer sciences and other allied subjects (software development only; hardware development should be classified in the engineering fields)]

1.2 Physical sciences (astronomy and space sciences, physics and other allied subjects)

1.3 Chemical sciences (chemistry, other allied subjects)

1.4 Earth and related environmental sciences (geology, geophysics, mineralogy, physical geography and other geosciences, meteorology and other atmospheric sciences including climatic research, oceanography, vulcanology, palaeoecology, other allied sciences)

1.5 Biological sciences (biology, botany, bacteriology, microbiology, zoology, entomology, genetics, biochemistry, biophysics, other allied sciences, excluding clinical and veterinary sciences)

2 ENGINEERING AND TECHNOLOGY

2.1 Civil engineering (architecture engineering, building science and engineering, construction engineering, municipal and structural engineering and other allied subjects)

2.2 Electrical engineering, electronics [electrical engineering, electronics, communication engineering and systems, computer engineering (hardware only) and other allied subjects]

2.3. Other engineering sciences (such as chemical, aeronautical and space, mechanical, metallurgical and materials engineering, and their specialised subdivisions; forest products; applied sciences such as geodesy, industrial chemistry, etc.; the science and technology of food production; specialised technologies of interdisciplinary fields, e.g. systems analysis, metallurgy, mining, textile technology and other applied subjects)

3. MEDICAL SCIENCES

3.1 Basic medicine (anatomy, cytology, physiology, genetics, pharmacy, pharmacology, toxicology, immunology and immunohaematology, clinical chemistry, clinical microbiology, pathology)

3.2 Clinical medicine (anaesthesiology, paediatrics, obstetrics and gynaecology, internal medicine, surgery, dentistry, neurology, psychiatry, radiology, therapeutics, otorhinolaryngology, ophthalmology)

3.3 Health sciences (public health services, social medicine, hygiene, nursing, epidemiology)

4. AGRICULTURAL SCIENCES

4.1 Agriculture, forestry, fisheries and allied sciences (agronomy, animal husbandry, fisheries, forestry, horticulture, other allied subjects)
4.2 Veterinary medicine

5. SOCIAL SCIENCES
5.1 Psychology
5.2 Economics
5.3 Educational sciences (education and training and other allied subjects)
5.4 Other social sciences [anthropology (social and cultural) and ethnology, demography, geography (human, economic and social), town and country planning, management, law, linguistics, political sciences, sociology, organisation and methods, miscellaneous social sciences and interdisciplinary , methodological and historical S1T activities relating to subjects in this group. Physical anthropology, physical geography and psychophysiology should normally be classified with the natural sciences].

6. HUMANITIES
6.1 History (history, prehistory and history, together with auxiliary historical disciplines such as archaeology, numismatics, palaeography, genealogy, etc.)
6.2 Languages and literature (ancient and modern)
6.3 Other humanities [philosophy (including the history of science and technology) arts, history of art, art criticism, painting, sculpture, musicology, dramatic art excluding artistic "research" of any kind, religion, theology, other fields and subjects pertaining to the humanities, methodological, historical and other S1T activities relating to the subjects in this group]