

Green Digital Charter implementation progress reporting tool

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1 Scope and objectives

This ‘Green Digital Charter implementation progress reporting tool’ has been developed to provide practical assistance for urban stakeholders working on the implementation of the Green Digital Charter (GDC - in the following referred to as Charter). It is made up of quantitative and qualitative performance indicators that depict the progress made in different implementation phases. In order to ensure comprehensive coverage, transparency and pertinence, these are firmly based on the Charter and its individual commitments. Such an approach is crucial for enabling cities from across Europe and thus starting from diverse local preconditions to assess their status - including *prior* to signing the Charter. It equally provides the basis for consistent monitoring and comparison. In the following, this tool will be referred to as ‘Implementation reporting tool’.

The key objectives of this tool are to:

- Ensure Green Digital Charter actions are measurable and comparable across Europe;
- Enable local stakeholders to monitor and evaluate their implementation of the Charter;
- Enable stakeholders from all over Europe to monitor and compare local implementation processes, identify good practice and establish benchmarks.
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The final version of the Implementation reporting tool will consist of two sets of indicators:

- Green Digital Charter coverage indicators: These are developed to reflect the implementation progress along the lines of the Charter in a comprehensive manner. By focusing on different implementation stages, they are particularly important for local stakeholders to assess the specific starting point in their city;
- Green Digital Charter core indicators: These will be selected and/or aggregated indicators developed gradually from the coverage set in order to obtain a high-level picture of implementation progress while ensuring representativeness of the Charter and relevance for stakeholders.

In addition to these indicator sets, the NiCE (Networking intelligent Cities for Energy Efficiency) project will explore the possibility of creating an aggregated green and digital index in the second draft of this Implementation reporting tool. Since the practical utility of such an index depends essentially on the acceptance by all stakeholders concerned, it needs to be widely discussed and agreed upon in order to be adopted for the final version.

The Implementation reporting tool is an important instrument which will facilitate learning and knowledge transfer at a local and European scale. It also provides the framework for the other Green Digital Charter reporting tools that the NiCE project will develop, specifically addressing the overlap with the Covenant of Mayors, and the key issue of measuring the direct carbon footprint of ICT (Figure 1).

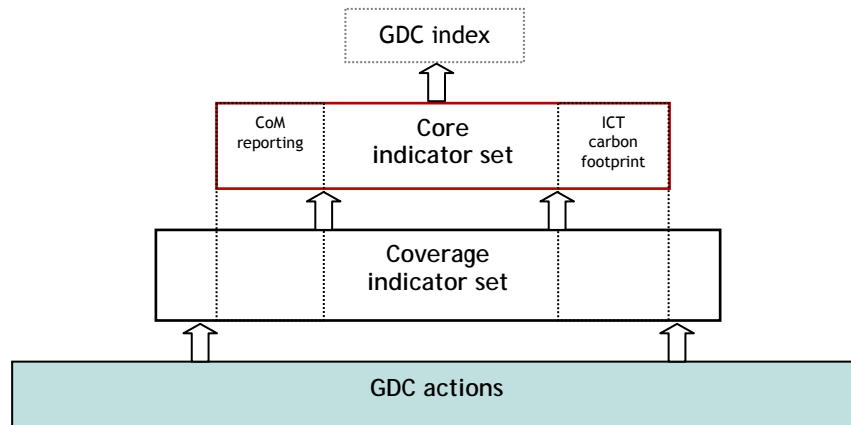


Figure 1 - Charter implementation reporting tool - indicator sets

The Implementation reporting tool also serves to *guide* local action. Its indicators provide a comprehensive check-list to identify all local actions that can be derived directly from the Charter. It equally allows identifying specific tools that are required to support certain actions and therefore assists in the delivery of the Charter (see also: NiCE Green Digital Charter Action Tools - Catalogue). Nevertheless, adopting all the actions from this list does not guarantee a complete GDC implementation. Cities will need to initiate a broader enabling process through which these actions can contribute to achieve the impacts targeted. Guidance on designing this process will be provided by the NiCE Green Digital Charter Action Framework.

2 Indicator development approach

In order to develop the indicator set, the NiCE project draws on two complementary methods: The indicator typology employed is based on the *impact chain model*, whereas the structuring of indicators is done with regard to the *transition management* approach. Since these conceptual references are essential for Implementation reporting tool, both will be briefly explained in the following.

2.1 Indicator types

For developing the indicators from the Charter, the NiCE project has adopted a practice-oriented typology widely used by e.g. by the United Nations, the World Bank and the OECD for monitoring complex implementation processes in diverse contexts (cf. Chaplowe 2008; World Bank 2009; OECD 2009).

The starting point of this typology forms a logical breakdown of the implementation process into five sequential steps that are used for measuring progress towards achieving ultimate goals. This so called impact chain provides the basic definitions for distinguishing five types of indicators that will be used for monitoring Green Digital Charter implementation (

Figure 2).

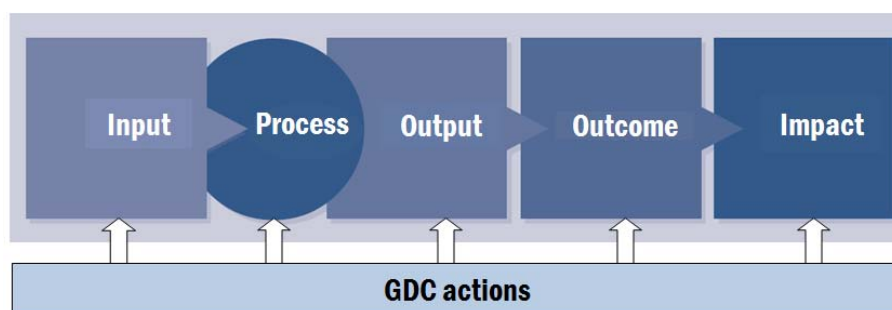


Figure 2 - Impact chain - implementation steps considered for indicator development

- **Input:** The financial, human, institutional and material resources used for the intervention;
- **Process:** Actions taken or work performed through which inputs, such as funds, technical assistance etc. are mobilised to produce specific outputs;
- **Output:** The products, capital goods and services which result from an intervention;
- **Outcome:** The likely or achieved short-term and medium-term effects of an intervention's outputs;
- **Impact:** Positive and negative, primary and secondary long-term effects produced by a development intervention, directly or indirectly, intended or unintended.

2.2 Outcome types

The process of Green Digital Charter implementation in cities can be interpreted as a transition process affecting complex and large-scale socio-technical systems across various scales (cf. Grin et al. 2010).

The objective-driven management of such processes needs to address four different types of outcomes in order to be able to create the necessary dynamic of change, and is often referred to as transition management (cf. Kemp & Loorbach 2006) - see also the state-of-the-art review discussed in the foundation document for the Green Digital Charter Action Framework:

- Culture: outcomes concerning change of stakeholder involvement and interaction formats (governance), as well as shared conceptual references, visions and priorities;
- Structure: outcomes concerning change of programmes and organisation, planning and financial frameworks, institutions and regulation;
- Practice: outcomes concerning change of routines, technology and applications in concrete settings;
- Knowledge: outcomes concerning feedback and learning through measurement, reporting, monitoring and reflection.

2.3 Classification of Charter actions

By adopting the impact chain model and transition management perspective, all individual actions contained in the Charter have been analysed and classified. In terms of input, the four basic categories of Knowledge, Time, Institutions and Funding have been distinguished.

For processes and outputs, specific categories have been developed according to the four outcome types (culture, structure, practice, knowledge). In this, multiple classifications have been avoided as far as possible. Finally, the impacts targeted have been taken directly from the Charter and complemented by two overarching key categories, namely Adaptation and Transformation.

The following table provides an overview of the categories used for breaking down the Charter into measurable actions along the impact chain (

Figure 3). A glossary for the terms used and a full breakdown of this classification can be found in the annex.

Input	Process	Output	Outcome	Impact
Knowledge Time Institutions Funding	Involving Dialoguing Analysing Envisioning Reframing Backcasting	Arena Visions Scenarios Discourse	Cultures	Adaptation Transformation Behavioural change Decarbonisation Climate change mitigation Sustainable growth Sustainable transport Sustainable prod. & cons. Social cohesion & incl.
	Transferring Networking Negotiating Allying Agenda setting Designing	Coalitions Organisation Programmes De/regulation Financing Standards	Structures	
	Experimenting Implementing Managing	Innovation Experience Green ICT Deployment projects ICT infrastructure ICT applications ICT services Measurement Data sharing Open innovation R&D activity RES usage	Practices	
	Monitoring Evaluating Learning Disseminating	Feedback Reporting Good practice	Knowledge	

Figure 3 - Categories for GDC interpretation and indicator development along the impact chain

2.4 Indicator utility and robustness

Each indicator is reviewed considering its utility and robustness. For an indicator to be useful and widely accepted, this necessarily implies co-development with users and stakeholders.

Together with the Reference City Group and the Expert Advisory Board, the NiCE project will thus review the indicators in terms of their relevance for monitoring Green Digital Charter implementation progress. This includes consideration of the SMART criteria for indicators as employed in result-based management i.e. making sure that the suggested measurements are specific, measurable, achievable, realistic and timebound (OECD 2009)

3 Draft set of indicators

With the present draft of the Implementation reporting tool, a first set of coverage indicators has been developed, addressing inputs, process, outputs and impacts - as far as the Green Digital Charter refers to them. It is crucial for the following development steps to make sure that this basic set of indicators aligns well with stakeholders' understanding and interpretation of the Charter.

The draft set of indicators is provided as an annex to this document (NiCE_D2.4.1_CharterImplementationProgress_ReportingIndicators_V1.0.xls).

The file incorporates two basic tables:

- Green Digital Charter actions: Breakdown of the Charter into 96 discrete actions;
- Indicators split: Full list of coverage indicators based on a split-up and sorting of Green Digital Charter actions along the impact chain (input, process, output, outcome, impact).

In addition, four selected overview tables are provided to focus on a single indicator type. Each of them is sorted by outcome type. This allows identifying redundancies and complementarities that need to be considered for selecting/aggregating the core indicator set:

- INPUT indicators;
- PROCESS indicators;
- OUTPUT indicators;
- IMPACT indicators.

4 Questions and next steps

With the present draft set of coverage indicators, the first round of co-development of the Implementation reporting tool can be initiated. This will involve both the Reference City Group, and the Expert Advisory Board.

Key questions to be addressed for selecting the core indicators and refining the coverage set will be:

- Which are the key impacts that the core indicator set should focus on?
- What are key outcomes to be measured, ensuring full representation of changes in terms of cultures, structures, practices and knowledge?
- What are possible core indicators that could provide a balanced picture of Green Digital Charter implementation progress - without significant omissions?
- What modifications are needed to ensure that the coverage indicators provide a balanced picture of Green Digital Charter implementation progress?
- What are emerging gaps between the indicator sets and the ‘spirit of the Green Digital Charter’, as well as (theoretical) requirements for managing local innovation processes?
- Are the individual indicators robust enough for use in practice?

5 References

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6 Annexes

6.1 Glossary of Green Digital Charter categories

Category	Interpretation
Agenda setting	Define and prioritise concrete actions, assign budgets and responsibilities
Allying	Establish coalitions among selected key stakeholders, more or less formalised (e.g. MoU, agreements, partnerships, contracts), with a view to aligning strategies, securing resources, and implementing policies/measures
Analysing	Carry out systems analysis regarding the status of energy consumption and carbon emission, as well as green & digital policies/measures across domains (industry, households, construction, transport, ICT, etc.)
Arena	Format for regular and frequent interaction bringing together 10-15 selected individuals (forerunners, lateral thinkers, pertinent stakeholders) to drive esp. the processes of analysing, envisioning, integrating, reframing
Backcasting	Specify modification requirements for system components and their interactions by connecting vision values and status analysis, and identify alternative development scenarios
Coalitions	Pact or alliance among stakeholders, during which they cooperate in joint action, each in their own self-interest, temporarily or durably joining forces together for a common cause
De/regulation	Modification of the legal and/or regulatory frameworks affecting green and digital activities
Designing	Draw up detailed programmes and technical plans for implementing policies/measures
Dialoguing	Realise a structured exchange between key individuals as well as the wider stakeholders using various targeted interaction and participation formats
Discourse	Set of shared concepts, arguments and story lines produced and reproduced by stakeholders, and through which meaning is given to reality and its transformation
Envisioning	Co-develop a long-term systemic vision for the city/region regarding its energy performance and carbon emissions including clear targets for different subdomains
Institutions	Social rule structures governing individual and collective behaviour within a community, reflecting rather permanent norms and values (e.g. local government, unions, associations)
Involving	Actively approach and engage forerunners and lateral thinkers, as well as all pertinent stakeholders - ranging from key actors (resource ownership) to implementing agencies, intermediaries and those affected positively/negatively by policies/measures
Negotiating	Specify costs and benefits over different time-scales and agree acceptable levels and trade offs among stakeholders
Networking	Work towards durable relationships with the different stakeholder groups, creating trusted relations among key individuals
Open innovation	Method for user-driven development of new products, services or infrastructures, based on stakeholder (public, private, research) and user involvement in a specific local setting (partnership, organisation, physical innovation environment, technical infrastructure, methodology)
Organisation	Social group or collective with distributed tasks and responsibilities, pursuing common goals - e.g. public administration.
Programmes	Strategy or plan for achieving particular goals, laying down the actions and budgets required and assigning responsibilities e.g. for design, implementation,

	evaluation
Reframing	Adopt vision and backcasting concepts/language to review and describe the current status, and to redefine and prioritise problems/issues
Scenarios	Alternative future development pathways describing actions and changes leading towards vision achievement
Transferring	Specify structural components and their interactions (e.g. legal frame, portfolio division) and derive concrete actions for changing existing structures
Visions	Integrated description of a desired future status and overall development goals

6.2 Green Digital Charter reporting indicators

The list of Green Digital Charter reporting indicators is provided in a separate file:
 NiCE_D2.4.1_CharterImplementationProgress_ReportingIndicators_V1.0.xls