Results Intake workshop:

City report

1st step toward the Transformation Agenda

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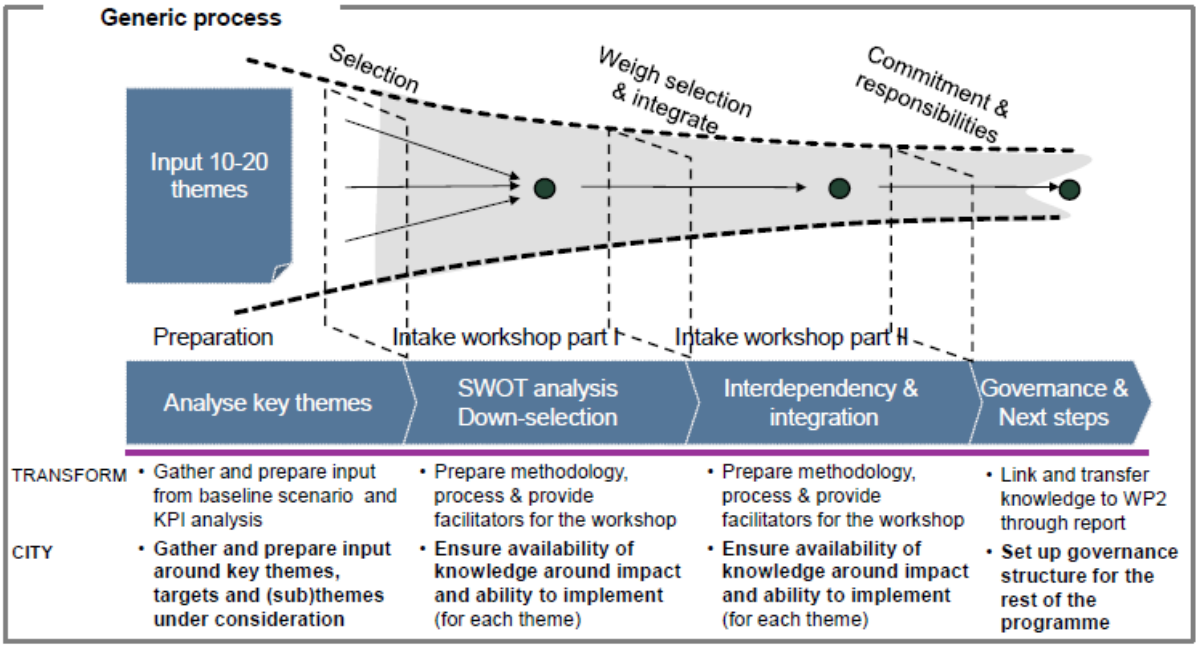
Content

1 Introduction

1.1 Reminder about Intake Workshop objectives and impacts on WP2

The **intake workshop objective is to prioritise 3 to 5 themes each city wants to work on within its Transformation Agenda.** To do so, each city has been through a down-selection process. For each one of the selected themes a SWOT and PESTLEGS analysis has been made to identify main barriers and opportunities, the city will have to work on in order to improve its energy documents and reach targets. Last but not least, intake-workshops has been the opportunity to committee local stakeholders with the TRANSFORM project and the drafting of the TA.



1.2 Objective of the Intake Workshop City report

The main objective of this report – to be filled in by each city, after their intake workshop, and send to the WP2 team 20 days after the intake, is to compile the outputs of the intake workshop (content wise), to set-up the context for each one of the 3-5 themes selected, to have insight in how each city sees the Transformation agenda as a product (3-5 themes = minimum, other elements like?) as well as to identify the strategy for working on the TA and the 3-5 themes with local stakeholders (methodological & governance issue) in the next phase until November 2014. The combination of reports will provide material (together with status quo reports) for the strategic working group and for the organization and identification of key considerations meetings.

In other words, the present report will address the following issues:

- *The list of the 3-5 themes selected (incl. a detailed description of each theme);*
- *Explanations detailing why these themes have been selected;*
- *A PESTLEGS and SWOT analysis of the 3-5 themes;*
- *Mapping of the actors (in terms of competencies, assets,…) that will be involved in the making of the TA (probably one per theme);*
- *TA governance: a description of the process (methodology, timelines, stakeholders involvement, number of meetings per themes, etc.) on how the city will lead the making up of its TA (at least until November 2014, when draft deliverables per city is due, but ideally for the whole process);*
- *List of participants to the intake-workshop.*

2 Themes to be addressed by the TA

2.1 Down-selection of the themes

The City of Copenhagen suggested six themes for the intake workshop.

A long-list of approximately 22 themes had been established in the months preceding the workshop. Based on six criteria, the down-selection to six themes took place prior to the workshop.

1. The key criteria for selecting the eventually chosen six themes was the expected impact relative to the goals of the Climate Plan CPH 2025, that is, in particular the potential to reduce CO2.
2. Attention was paid to new smart cities ambitions in the City focused on the use of intelligent data.
3. Timing and time horizons played a role in favoring themes with a potential to be worked on during the TRANSFORM project-time.
4. Themes stemming from an existing project group or fitting a politically mandated priority stood a better chance of selection.
5. It was important to cover the smart city field broadly to enable the identifying of potential synergies across sectors (e.g. including themes at for instance energy-system and building level as well as transport).
6. Finally, in keeping with the logic of testing out some of the ideas of the Transformation agenda in the Smart Urban Lab, Nordhavn, some degree of overlap with the themes selected for the Implementation Plan of WP4 was ensured.

Two themes had early on in the consultative process been identified as useful to cover both from a WP2 and WP4 perspective: ‘Dialogue with developers’ and ‘intelligent data’, the latter being reflected in two themes: buildings and flexible energy markets.

The six themes chosen for the intake workshop:

- Dialogue with developers (using Nordhavn as test area)
- Flexibility in the energy system

- Smart Energy Buildings
- Electric Vehicles
- Removing plastic from waste
- Vacuum waste system in Nordhavn.

Long list of 10-20 themes

N°	Theme	Descriptions/comments
1	Flexibility in energy consumption	Analysis of the need for flexibility in energy consumption Which systems should be included? How could it be operationalised?
2	Energy and flexibility	Mapping and strategy. Analysis of the contribution of e.g. buildings: How could they contribute technically? How to implement their contribution? How to organise it? And finance it?
3	Indicator / Certification of a building's flexibility contribution	Assessment of a building's contribution to flexible energy consumption. Visibility through standardized certification (e.g. next generation DGNB) or other type of labeling.
4	Energy production	Flexibility in energy consumption through tariffs with a view to influencing peak production (energy sources).
5	Systems synergy effects	Analysis of synergies among the different utilities (electricity, heat, water, waste).
6	Land power in Nordhavn (habour)	Analysis of and promotion of conditions for introducing land power in Nordhavn (powering liners and cruise ships).
7	Wind in industrial areas	Analysis of conditions for installing wind power in industrial areas (e.g. different risk assessments or standards for distance to buildings).
8	Copenhagen Connecting	Digital infrastructure for the city with a view to harnessing the societal benefits.
9	Using open data to improve energy efficiency	Analysis and implementation of (new) ways of using open data to improve climate and energy performance, e.g. improving energy efficiency.
10	Transport	Identification of the greatest CO2-reducing potential in transport that the city can influence.
11	Green growth and road maps	Coordination with road maps (e.g. energy community) to assess whether Transform can demonstrate the value of a business oriented approach.
12	Dialogue with developers	Method to improve public-private collaboration and a means to strengthen the goals of the City Administration in urban development areas.
13	Energy Partnership Nordhavn 2.0	Coordination with the process of revitalising the public-private collaboration 'Energy Partnership Nordhavn'.
14	LSE-collaboration	Coordination with the process to initialise collaboration with LSE, aimed at strengthening green growth.
15	DAMVAD-methodology	Assessment and visibility of green growth, using the DAMVAD methodology.
16	University collaboration	Mutual learning, input and inspiration to strengthen development and innovative thinking. AAU, DTU, KU.
17	Master class during 'Sharing	'How to do a climate plan?'

	Copenhagen' (European Green Capital – CPH 2014)	
18	People's meeting (*Folkemødet*), Bornholm	How to make a smart city known, popular and understood in concepts and business?
19	Municipal urban planning (every four years process)	Coordination with the municipal urban planning process that takes place every four years with a view to laying out a new overall framework for the city that constitutes the formal basis for the elaboration of local urban plans.
20	Remove plastic from waste	How to reduce if not remove plastic from waste?
21	Vacuum waste system in Nordhavn	How to introduce a vacuum waste system in Nordhavn? And is it desirable: which problems would it solve? At what cost? Whom to involve?
22	Smart energy buildings	How to define the smart energy building? What is the goal and which are the requirements in terms of data, connection to a smart grid, and implementation of well-known retrofit/energy saving solutions.

How these themes were selected?

The 22 themes were identified during an informal consultative process across the City administration. The idea was to gather insight about potential areas of synergy-building between the Transform project and priorities pertaining to smart cities development in the City of Copenhagen.

The process took place from June through September 2013, based on informal interviews with key contacts in various Administrations: Financial Administration, Technical and Environmental Administration and the Culture and Leisure Administration.

The starting point for the process was the CPH 2025 Climate Plan that sets out the goal for Copenhagen to become the world's first CO2-neutral capital by 2025. In addition, more recent processes to work with smart cities development were identified and included as guiding principles for the identification of themes. In particular, this included decisions following from Budget 2014 on: the use of data in new ways, Big Data, open data portals, and a re-organisation of the City's smart city work through the set-up of a Smart City Project Council. The purpose of the Smart City Project Council is to coordinate the smart city work across the entire City Administration.

2.2 Description of the 3-5 themes

Theme 1	
Name of the theme	Dialogue with developers
Category	*New* buildings – with potential off-springs regarding Waste Management, Water, Energy Supply and Transport.
Description of the theme	The idea is that the City of Copenhagen improves the dialogue with developers prior to construction in brown and green field areas. Copenhagen draws on experiences from the City of Malmö and invites developers, experts in city development and finance to co-develop a better way of having the dialogue. The goal for the City of Copenhagen is more sustainable building and urban development than would otherwise be the case. The key challenge is the question of how to achieve more sustainable urban development in a situation of voluntary agreement, and when the land owner is not the City itself. The desired outcome is a more focused process that will deliver a greater degree of sustainable urban development.
Contribution to main KPI: - Energy demand reduction - CO2 reduction - Renewable energy production - Energy efficiency	There are currently no exact KPI-related values defined for the project. The evaluation of the project will in the short term be based on a qualitative assessment of the potentially redesigned process for engaging stakeholders in dialogue. In the long run, the evaluation of the project hinges on development of more specific criteria – and ultimately the resulting more sustainable building.
Value of the theme: - Environmental - Economic - Social	The focus is on Environmental values. At present, only a qualitative assessment of the impact of the project has been envisaged.
Other motivations for selecting this theme	The theme responds to most of the criteria, cf. section 2.1, including criteria no. 1, 2, 4 and 6.
Municipality involvement/ competencies	The Technical and Environmental Administration (TEA) is driving the project, and coordinating the entire process with other departments and external partners. Ideas from the project will be tested during the

	ILS in April 2014. The steering group within the City of Copenhagen has a very broad representation across the municipality, convening 12 line managers. A steering group between the Cities of Copenhagen and Malmö convenes representatives from the TEA and Malmö.
Key-actors	The primary group of stakeholders includes developers and the CPH City and Port Development (CCPD), second finance, experts on urban development and various public institutions, including in a key role the City of Malmö as privileged partner in inspiring the new City of Copenhagen concept for dialogue with developers. The interest of the developers and the CCPD is yet to be clearly understood. A priori, it would be for them to be, or appear, among the front runners in sustainable urban development, and to reap the associated benefits in the market. However, their interest may likewise dwindle, should they suspect no benefit from the initiative and time invested.
Other actors	Expectedly not.
Interaction between stakeholders	Responding to the process with some interest; exchanging knowledge; and some of them watching on each other, being competitors in the market.

Theme 2	
Name of the theme	Smart Energy Buildings
Category	Primarily: Existing buildings, tied up with Energy Supply. With potential off-springs to Waste Management, Water and Transport.
Description of the theme	The theme derives from the City-internal consultation prior to the intake workshop and bridges a series of interests across the City Administration to 1) use data more intelligently, 2) improve the City's own building and maintenance practices, and 3) reduce energy and resource use from buildings in the city. The idea is, first, to define what 'Smart Energy Buildings' means in a Copenhagen context, second to develop a set of criteria that the City and others can use as a check-list to assess how smart their buildings are (e.g. construction, maintenance, and use – seen in the context of the wider energy system and avoiding the pitfalls of sub-optimised practice, i.e. focusing on the single building-level only). Ideally, the process will yield material for both existing and new buildings.
Contribution to	The contribution to the main KPIs depends on the degree to which the

main KPI: - Energy demand reduction - CO2 reduction - Renewable energy production - Energy efficiency	criteria for assessing the smartness of a building will be 1) operational and 2) successfully implemented in the processes that can have an impact on the decision-making regarding buildings; whether new-built or retrofitted ones. Provided the criteria will be useful, they could enhance energy efficiency, and hence drive down CO2 whilst ensuring a reduction in energy demand and, ideally, favoring the use of energy from renewable sources.
Value of the theme: - Environmental - Economic - Social	Environmental and, second, Economic. It will be measured as the actual, optimsed consumption of energy, and derived budget savings, as compared to consumption and budget costs prior to the use of the criteria in the same (existing), or similar (new-built), buildings.
Other motivations for selecting this theme	It resonates well with criteria no. 1 through 4, and 6 in section 2.1.
Municipality involvement/ competencies	The Technical and Environmental Administration drives the process in close cooperation with the Financial Administration, in particular the Section responsible for the City's own buildings.
Key-actors	The City itself (in need of more sustainable building); the Greater Copenhagen Utility Company (aspiring to deliver sustainable city-development, not just energy at low cost), potentially DONG Energy (although the process needs DONG Energy more than vice versa), experts (university-affiliated and others), and private companies (offering the technical solutions and interested in market opportunities).
Other actors	---
Interaction between stakeholders	During workshops: exchanging knowledge, co-developing a definition of smart energy buildings.

Theme 3	
Name of the theme	The flexible energy system
Category	Primarily Energy Supply, but by definition, the link to other sectors are at the core of the concept, including, inter alia, Existing and New buildings, Waste Management, Water, and Transport (e.g. EVs as buffer).

Description of the theme	The idea is – through tools developed by the project 'EnergyLab Nordhavn' – to explore potentials for flexible energy consumption and the use of data and methodologies to monitor, control and handle energy flexibility in daily operations. Different energy data will be available online and collected from relevant, available users, technologies, energy infrastructures and buildings. All online and historical data will be available for various applications and purposes from a central data hub and database. The data will be visualised in different formats for different applications and purposes. The impacts and robustness's of the new building designs, the new technologies and the new infrastructures on the operation of the integrated energy system, will be analysed for different future scenarios, based on the collected simultaneously energy data. The results will form inputs to the decision basis for the planning and development of the area. The project expects to provide: • A unique data hub with fast online data from different types of relevant users, energy units and buildings. • A unique database with detailed, simultaneous, historical energy and conditional data. • Online overview and personal visualisations of the data intended for planning, operation and awareness support. • Analyses of the impact on the operation of the energy system and of the robustness to different futures of the different technologies, designs and regulations.
Contribution to main KPI: - Energy demand reduction - CO2 reduction - Renewable energy production - Energy efficiency	Potentially CO2-reduction (through reduced peak load), Renewable energy production (being favoured or more fully exploited), and Energy Efficiency (as a potential spin-off through increased awareness of energy consumption modalities, and new technologies being developed from the public availability of online energy data).
Value of the theme: - Environmental - Economic - Social	Environmental, and second Economic. It will be measured in qualitative terms as a method to reduce peak load, reduce energy consumption, and optimize daily operations.
Other motivations for selecting this theme	Funding opportunity through Danish national funding scheme (EUDP).
Municipality involvement/ competencies	The Technical and Environmental Administration in role as steering group member and, potentially, working group member.

Key-actors	Key stakeholders include: utilities (Greater Copenhagen Utility), grid operators (DONG Energy, Advisory board), private companies, and universities (DTU) whose interests are to explore new market opportunities and/or enhanced knowledge, respectively. The project has no formal connection to TRANSFORM or the TA. It is the task of the TRANSFORM team to stay abreast of project developments and include findings in the TA.
Other actors	It depends on project findings and conclusions.
Interaction between stakeholders	Within the project: collaborative approach to creating new knowledge and mutual understandings. Between the project and TRANSFORM: Project representatives are expected to respond to requests for updates on an informal basis. Pre-project expected completed by August 2014.

2.3 SWOT analysis through PESTLEGS filter of each of your selected themes (only the ones that were selected for further work upon the intake workshop are described here).

Theme 1 - *Dialogue with developers*					
	Leading question	**Strength**	**Weakness**	**Opportunity**	**Threat**
Political	Is the intervention political supported?	Executive support to the theme.	---	CPH2025 equals executive support to the theme.	Politicians messing things up/politicisation.
Economical	Is the intervention economically feasible? (is there a business case)?	The theme may contribute to a focus on win-win solutions among the actors.	The 'What's in it for me?' question as reg. higher sustainable standards in buildings, and as seen from the vantage of private companies is in need of a clearer answer – and a compelling business case.	First mover effect and branding of the area and stakeholders building there – due to DGNB-certification. Attractive City to invest and build in: High prices, but good odds for sale. Potentially, a rise in green growth.	By & Havn's focus on selling land at the highest price. High land prices. Lack of business case for sustainable building. Economic/financial crisis. Nobody wants to build during a recession(/-like period). The theme puts great pressure on *small* developers in particular in terms of time and resource demands.
Social	Will the intervention be socially	---	---	'Sharing economy':	---

	accepted?			share things (e.g. cars, bicycles).	
Technical	Is the intervention technically feasible?	---	---	More flexible building in terms of functions and use (from youth to elderly housing; from office to housing – and vice versa).	Individual sup-optimisation may impede proper coordination.
Legislation	Is the intervention in coherence with the existing legal framework, is it impacted by any legal barrier?	---	A challenge for e.g. utility companies to engage in dialogue for developers prior to local plans being issued.	---	Changes in the Building Code. Public procurement is subject to many rules: how to negotiate under these conditions?
Environmental	Has the intervention impact on energy reduction, energy efficiency, renewable energy and/or CO2 reduction?	The theme will, if implemented fully, contribute to reduced sub-optimisation in energy planning.	---	DGNB-certification of the area provides for increased focus on higher quality building. *If* a business case provides the right impetus, improved building quality through a 'race to the top' among developers may ensue. Likewise, *if* developers begin coordinating building, more robust solutions (e.g. integrated with energy system) may ensue.	Lack of clear and credible information on optimal heat choices – partly due to utility companies holding a position as monopolies are not allowed to do marketing to promote their (e.g. district heating) solutions.

				If a car pool of shared cars is set up, fewer parking lots for cars be required.	
Governance	Are all relevant stakeholders involved in the planning process?	The theme, once fully implemented, can contribute to: Clearer picture of mutual expectations; A shared vision and a focus on holistic solutions; Early/earlier involvement of stakeholders (including, e.g. entrepreneurs, waste management); More cooperation between the City Administration and stakeholders, and in particular less bureaucracy or lacking internal coordination as a barrier; Greater awareness within the City Administration as to when it acts in which role (development,	Risk of all actors pursuing their own interests; A great many actors are potentially involved, but at differing stages at the same time, making it difficult to facilitate one process; Lack of shared goals and visions; Difficult to assess the importance of the theme in the big picture; Lack of internal coordination within the City Administration (vertically + horisontally); Building is subject to many demands, and it is unclear what is actually up for discussion; The City Administration cannot make mandatory claims, but only	Synergies through closer collaboration between utilities and developers, on, e.g. setting up a common utility in 'Outer Nordhavn'/phase 3 (e.g. heat, water). Inspiration from Høje-Taastrup and their model for extended technical dialogue prior to public procurement.	Developers consider the City Administration as an opposing force rather than a party to collaborate with.

		negotiation or public authority) A learning process for all.	negotiate; yet it is unclear what is up for negotiation/co-creation; Too frequent staff-turnover; Often too little time to develop good solutions;		
Spatial	Is spatial design (space and program) part of the intervention?	The theme can contribute to shaping frameworks and directions prior to development of local plans for the area.	---	---	---

Theme 2 - *Smart Energy Buildings*					
	Leading question	**Strength**	**Weakness**	**Opportunity**	**Threat**
Political	Is the intervention political supported?	CPH2025 translates as the City of Cph.'s ambitions for urban development. The green transition resonates with progressive national and international climate	Local government support to theme is wanting: too slow, too little, or off the point. Lacking support to long-term investment. Lacking definition of target group and	---	National parliament too slow in removing barriers to new business models. Lack of push for progressive EU politics.

		politics. Enhanced use of data: Cph. is a pioneer and an example for private companies and organizations.	stakeholders. Lacking strategic focus on real needs of the city as opposed to what is simply possible.		
Economical	Is the intervention economically feasible? (is there a business case)?	Opportunity and size to 'vote through the money' in the City's public procurement strategy.	Lack of business case to drive market for the theme. Lack of incentives to invest in theme. Many actors with diverging stakes and interests in theme. Data are 'locked' within systems of data ownership.	Start ups and innovative businesses wanting to drive market. Market boost through idea competitions. Scale through bundled retrofitting (e.g. block instead of building level). National and international market for solutions to boost theme.	Market for theme narrowed/closed down through conventional public procurement with short-sighted focus on price and/or one big IT/energy company.
Social	Will the intervention be socially accepted?	The green transition enjoys broad support in constituencies and among private companies.	---	Gamification – means to strengthen theme.	Building users unwilling to invest time in making theme work, i.e. expect buildings to be smart without their active effort.
Technical	Is the intervention technically feasible?	High degree of technical knowledge around. We know how to make the largest share, the	Lacking understanding of relevant data and services. Lacking understanding	Ability to define energy labels on the basis of data. Use of open data	Too early standardization (i.e. prior to best solutions tested and found).

		existing buildings, 'smart.' Data can be considered an asset to improve the bottom line, sustainability and the quality of life. Access to customer data.	of what a 'smart' building is. Quality of data is too poor. Lacking skills among manual workers and users buildings to support theme.	standards. Knowledge on how to integrate solutions: optimized comfort, use of indoor space, use of buildings. Sensors can support standards for data communication towards a data hub.	
Legislation	Is the intervention in coherence with the existing legal framework, is it impacted by any legal barrier?	---	Lacking legal clarity as to privacy issues for open or shared data. Legislation lacking behind in support of business case for theme (e.g. only 20 pct. of electricity price is variable). Lack of platform for open and shared data.	End-users can consent to a service provider's use of consumption data.	---
Environmental	Has the intervention impact on energy reduction, energy efficiency, renewable energy and/or CO2 reduction?	Ability to make energy consumption more efficient.	---	---	---
Governance	Are all relevant stakeholders involved in the planning process?	Internal organization	Too many technical or organisational silos, both witin single (big) organizations, and	---	---

			among organizations (e.g. city administrations, utility companies, private businesses etc.). Too difficult to get access to data, and volume in tasks. Theme being dealt with in a too fragmented manner.		
Spatial	Is spatial design (space and program) part of the intervention?	---	---	---	---

Theme 3 - *The flexible energy system*					
	Leading question	**Strength**	**Weakness**	**Opportunity**	**Threat**
Political	Is the intervention political supported?	---	Lack of clear goals and visions.	Local government support to CPH2025. Cph. has a strong brand and ambitions.	Uncertainties/Changes in political support to theme.
Economical	Is the intervention economically feasible? (is there a business case)?	---	Lack of business case, both overall and for individual companies. Lack of business case due to surplus energy generation capacity and surplus import/export capacities. Lack of business case in terms of cost of investment vs. value of implementation. Low energy prices. Lack of incentives. Lack of long-term perspectives. Lack of 'burning platform' for theme. Lack of ambitious	Potential to lead to more cost efficient systems. Many start ups and innovative companies in sector. Trend in decentralization and cooperatives. Green jobs creation.	Drop in energy prices. Unstable business case for end-users.

			Budgets for CPH2025. No clear process or contracts for OPI or OPP, hence too high risks for companies to invest. Difficult to quantify energy flexibility, hence difficult to work on business case. Difficult to assess potential for the share of flexible energy consumption, hence difficult to work on business case.		
Social	Will the intervention be socially accepted?	---	---	Visibility and clear information on how to live sustainable resonates well with citizen desires to do so.	Aging population equals less interest in 'new ways of doing'.
Technical	Is the intervention technically feasible?	Ability to integrate different energy systems.	See 'Economical', items 3 and 4.	Ability to bring power (electricity), heating, transport (e.g. EVs), PV and water in sync to reap synergies. Lack of skilled work force.	Data security/threat of hacking.
Legislation	Is the intervention in coherence with	---	Unclear framework for	---	---

	the existing legal framework, is it impacted by any legal barrier?		privacy and data protection.		
Environmental	Has the intervention impact on energy reduction, energy efficiency, renewable energy and/or CO2 reduction?	Ability to optimise use of energy and reduce peak load, hence CO2-reduction potentials.	---	Energy production can be matched (better) with energy needs on the basis of RES and flexible energy consumption. Through cooperation among all stakeholders (City of Cph., utility companies, private businesses and end-users), ability to build net-zero districts.	Sub-optimisation through bad timing or bad investments.
Governance	Are all relevant stakeholders involved in the planning process?	Platforms for more open planning processes in new urban development areas.	Organisational structure in City of Cph. out of tune with CPH2025 ambitions. Lack of collaboration among utility and energy companies. Too many differing interests among stakeholders.	City of Cph. ability to influence utility and energy companies, EV-investments.	Organisational changes. Risk of conflict between public goals and overarching energy system.
Spatial	Is spatial design (space and program) part of the intervention?	---	---	---	---

3 TA process, method and governance

3.1 Process and Method

This section details the kind of sources that the Transformation Agenda (TA) of Copenhagen will draw on, then proceeds to sketch out the processes, how the latter feed into the TA, and how stakeholders will be involved.

In general, the Copenhagen TA responds to the need of local Government to make the most of data and collaboration with stakeholders in the service of a resource-optimising city that, in the case of Copenhagen, aims at enhancing life quality, sustainability and growth in the city while working towards the ambition to become the world's first carbon neutral capital by 2025.

Sources feeding into the TA

The Copenhagen TA will roughly speaking be based on two sources of input: Various overall plans and strategies, and concrete themes as identified during the intake workshop. While existing overall plans will form the natural starting point for long-term strategic priorities of the TA for Copenhagen, the role of the concrete themes will be to suggest in detail how the City aims to flesh out some of the strategies.

CPH 2025

First, the overarching and long-term Copenhagen 2025 Climate Plan (CPH 2025), adopted in 2012, constitutes the back bone of the transformation agenda for the City of Copenhagen. The CPH 2025 plan works in tandem with a range of other plans and strategies on, e.g., climate adaptation, bicycling, green mobility and architecture policy.

CPH 2025 is both a strategy, and the result of a process with 200+ private companies, organisations and universities on how to make it happen.

There are four pillars in CPH 2025: 1) Energy Production, 2) Energy Consumption, 3) Mobility and 4) City Administration climate initiatives. CPH 2025 defines goals within each pillar, and singles out a range of concrete measures from energy system level via city space to individual homes. As of ultimo 2013, 47 projects have been launched, including, for instance, 1) the conversion of coal-fired CHP plants to biomass (significant, as district heat covers 98 pct. of heat in Copenhagen); 2) the introduction of LED street lights (50 pct. energy savings); 3) the separation of plastic through more fractions in household waste.

Innovative ways of collaborating in public-private partnerships are pursued through, e.g., urban development agreements, Copenhagen as a lab to test new solutions, or an Open Data Portal, and collaboration with data enthusiasts to make the most of public data for the city and its users.

Re-organising the CPH Smart City approach

Another source of input at a general level that will be reflected on in the TA is a smart city process that was initiated ultimo 2013, upon the adoption of the Budget for 2014. The goal is to redefine the way the City of Copenhagen works with the smart city agenda (e.g. define smart city and the kind of projects that should be given priority), and including a focus on the City's own organisation.

So far, smart city initiatives have sprung from different Administrations with little or only *ad hoc* consultation across the City administration. The idea is instead to ensure more joined-up government through better organisation – such as, for instance, through a cross-cutting division with representatives from each Administration, and a direct line of communication to executives.

Concrete themes

The second set of sources of input for the TA consists of the concrete themes that Copenhagen has chosen to focus on upon the intake workshop, including 1) Dialogue with developers, 2) Smart Energy Buildings, and 3) The flexible energy system (described in more detail in a previous section).

Processes and participation

The TA will either depend on TRANSFORM driving forward emerging agendas, or alternatively, the TA will follow, analyse and reflect on processes that proceed independently of TRANSFORM. In most cases, the latter will apply. This is the case for both CPH 2025 and the organisational review of the City's way of working with the smart city agenda.

CPH 2025 process – next steps in 2014 and onwards will be followed and described.

Re-organising the CPH Smart City approach – next steps will be followed and described.

When it comes to the three concrete themes, the role of TRANSFORM in the process varies.

The theme '**dialogue with developers**' is an independent project that runs from October 2013 to May 2014. The idea is to develop a better way of engaging stakeholders in the dialogue that preceeds the actual construction phase. The goal is to get more sustainable building, that is, through voluntary agreements and beyond formal demands that the City or, for instance, the Building Code make on developers.

The primary working form is workshops that convene representatives from the Cities of Copenhagen and Malmö, and a group of stakeholders, including mainly developers, consultancies, and experts on city planning or finance. A group of approximately 25 participate in the process. In addition to the kick-off workshop on 8 October, three workshops (December 2013, February 2014 and March 2014) with stakeholders constitute the core of the project. Moreover, a series of working group meetings among city representatives and steering committee meetings take place to assist and guide the process.

To reap the fullest potential for synergies, the dialogue with developers is also a key theme for the Implementation Plan in work package 4, and hence a focus area during the Intensive Lab Session concentrating on Nordhavn, the Smart Urban Lab of Copenhagen.

The theme '**the flexible energy system**' hinges on 'Energy Lab Nordhavn', a project run by DTU (university) together with ABB (international private company), Balslev (Danish private company) and the City of Copenhagen. In 2013 the project was granted EUDP-funding (Danish Government funded research programme targeting energy-related projects). The project runs one year from January 2013. It aims at exploring potentials for working more intelligently with data, including analysis of the requirements to achieve this (e.g. data types, level of detail, privacy, communication platforms, actor involvement).

The theme '**Smart Energy Buildings**' will be driven on TRANSFORM-initiative and mainly as an internal project that targets the City of Copenhagen's own building mass but with a view to scaling and broadening out the approach to private buildings too. The theme depends on expert contributions from staff from across the City of Copenhagen, the local TRANSFORM partners, DTU and HOFOR, as well as various other stakeholders, including private companies, interest organisations and research environments.

3.2 Governance/Participation

In Copenhagen, the governance model of TRANSFORM reflects the fact that Copenhagen has for long been working on the issues that a smart city transformation agenda addresses, notably through the CPH2025 Climate Plan. This means that existing steering committees and working groups take precedence over the set-up accompanying TRANSFORM. It also means that TRANSFORM can potentially make the greatest impact when closely coordinated with existing frameworks for smart city work (e.g. CPH2025), or emerging ones with high executive attention (e.g. the smart city strategy work and groups aimed at defining a smart city strategy that is relevant across the entire City Administration and thus addressing the full smart city agenda, not only the smart *energy* city).

As to the daily operations: A team of three people (adding up to roughly two full positions) forms the core of the City of Copenhagen's engagement in TRANSFORM. Expert colleagues are requested to contribute on ad hoc basis, subject to their primary areas of responsibility and available time. Originally, a steering committee with two line managers from the Finance Administration and The Technical and Environmental Administration, respectively, oversaw the progress of TRANSFORM in terms of it as an isolated project. When 1) by mid-2013, project ownership was transferred from the Finance Administration to The Technical and Environmental Administration, and 2) in November 2013, a new project manager took over from the second one (the first one having left the project in September 2013 to take up a new position), the Steering Committee lost its immediate function, and no longer exists (as of mid-2014). TRANSFORM figures on the list of smart city projects that the Smart City Project Council deals with.

The working groups supporting the three themes were described previously (see 3.1).

4 Participation to the Intake workshop

4.1 List of participants

Dialogue with developers:		
Contact	CMI	Annette Egetoft
	CBG	Kai Stefan Kanafani
	CBG	Anni Møller
	CMI	Tina Hjøllund
	CMI	Thomas Chapelle
	Malmø Stad	Kerstin Torseke Hulthen
	Skanska	Elo Alsing
	HOFOR	Jørgen Boldt
Flexibility in the energy system:		
Contact	CMI	Anders Brix Thomsen
	HOFOR	Jannik Kappel
	DTU	Per Bromand Nørgaard
	DONG Energy, Distribution	Peder Cajar
	Spirae	Peter Keller-Larsen
	Balslev	Benny Andersen
	Dansk Energi	Christian Dahl Winther
	DTU	Sara Benn Amer
	Enel	Filippo Gasparin
	Accenture	Alex Cramwinkel
Vacuum waste system, Nordhavn:		
Contact	CAG	Mette Skovgaard
	CAG	Mette Jørgensen
	CMI	Sara Winding
	Envac	Thomas Rovsing Nielsen
	Dansk Skraldesug	Frank Frederiksen
	Dansk Skraldesug	Jan Bruun
	MariMatic	Palle Stevn
Remowe plastic from waste:		
Contact	CAG	Mette Skovgaard
	CAG	Marianne Bigum
	ØKF	Jesper Svensson

	CMI	Hans Christian Christiansen
	CMI	Hanne Coco Arildsen
	Vestforbrænding	Yvonne Amsgaard

Smart Energy Buildings:

Contact	KEjd	Jesper Samson
	ØKF	Søren Nørgaard-Madsen
	CRS	Rolf Foxby
	KEjd	Sten Erik Drønen
	CBG	Winn Nielsen
	CBG	Niels-Aage Kirketerp
	HOFOR	Sannah Grüner
	DTU	Peder Bacher
	DTU Byg	Fred Heller
	NineConsult	Søren Peter Nielsen
	Siemens	Kurt Othendal Nielsen
	IBM	Bente Tørring Koefoed

Electric vehicles:

Contact	CMI	Lone Pedersen
	CMI	Greta Nedergaard
	CTR	Annette Kayser
	CPK	Stine Helms
	Copenhagen Electric, Region H	Kåre Albrechtsen
	Danske Delebiler	Knud Henrik Strømming
	Hertz Delebiler	Helle Friborg
	DTU	Sara Benn Amer
	DTU	Per Sieverts Nielsen
	Let's Go	Bjarke Fonnesbech

Others:

Facilitator	Accenture	Trygve Skjøtskift
Facilitator	Accenture	Kristoffer Hvidsteen
Line manager	CMI	Charlotte Korsgaard
Line manager	CMI	Ole Vissing
Workshop responsible	CMI	Else Kloppenborg
Subcontractor WP4	Copenhagen Cleantech Cluster	Peter Bjørn Larsen

4.2 Do you think the intake workshop has been a success for stakeholders' commitment?

The workshop worked as an occasion for the City Administration to interact with stakeholders. The goal was both to 1) improve the City's thinking and approach to the discussed themes, and 2) to build or strengthen relations to stakeholders. Both goals were fulfilled. With regard to the TA, the workshop naturally formed a starting point that will be built upon in the process that focuses on a smaller set of the themes 2014 onwards.

5 Transform added-value

Increased focus on smart city agenda.