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Faculty of humanities, Social Science and Education

The City of the future

Precarious, proleptical – prophetical

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Master's thesis in Nordic Urban Planning Studies SPL-3901 November 1 2022

Abstract:

In the face of the complexity of the interconnected processes involved in the relationships between cities and climate change this report researches the carbon-neutral city through a Bacchi-inspired governmentality lens, where the focus lies on how the physical structure and the technological choices are shaped and made in and through discursive problem representations.

The field of carbon-neutral strategies lies in an intersection of physical and technological realities and an administration of social relations. Particular visions of the future are a momentary equilibrium of cultural, historical, and physical relations. Specific socio-technical choices are made as a result of underlying rationales, assumptions and conceptual premises in the strategies shape frame and the understood realm of possibilities for the imagined carbon neutral cities. It is this relation which I seek to scrutinise how the representation of the problem as global, together with premises of 'future technology', 'compensation' and the 'limitless growing city' lays the building block for the visualised futures and thus also for the inherently omitted and silenced elements. I conclude that the choiced trajectories of the Nordic cities towards practical initiatives for a carbon-neutral city are formed within the conjunction of historical, social and geographical situations and the conceptual world constructed by the international and national governed frame.

Keywords: climate change, carbon neutral, urbanisation, Bacchi, governmentality discourse theory, WPR-method.

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1 Introduction

1.1 A period of carbon-neutrality strategies in cities all over the world.

February 27th, 2022, the second part of the sixth assessment report from (The Intergovernmental Panel on Climate Change) was finalised and published. The report finds that the extent of climate change impacts reaches further than previously estimated. Ultimately it furthers the attested conclusion that the fundamental structures and functions of ecosystems are experiencing extensive deterioration as the resilience and natural adaptive capacities to engulf the changes and shifts in seasonal timing and typical climate patterns become apparent. Even more evident after this report is that this change has occurred due to human activity. Some of these transformations have already reached a state of irreversibility as natural, and human systems are pushed beyond their ability to adapt, change or override; other impacts are still reversible. These all-pervading impacts on ecosystems adversely affect people, settlements, and infrastructure (Begum et al., 2022).

Human-induced climate change and the environmental crisis have made decarbonisation and restructuring of our usage of resources and space a global imperative as well as a local one.

The modern transformation of territory and, as such, especially the urban areas, might prove to be a pivotal leverage point for the decarbonisation needed; as we now enter the urban age, where the Urban are home to 4.2 billion people, the majority of the world's population (the world's population is now exceeding 7.9). Whilst cities occupy merely 3% of the earth's acreage and thus seem maybe meaningless, we cannot exclude the "existential" territories that define the ways we inhabit the world; so, they might only occupy 3% of the build material; they account for three-quarters of its energy consumption and carbon emissions (Checker et al., 2015).

Cities are essentially agglomerates of artificial constructions; they transform aspects of the environment across spatial and temporal scales reaching far outside their physical borders. A reach that will only penetrate further as the urban areas grow.

Approximately 1/2 of the habitable land is used for agriculture as of today, of which nearly 80 per cent is consumed within cities. Today's cities account for about 60 per cent of total global 'domestic material consumption (DMC) of all raw materials such as sand, gravel, iron, coal, and wood. Simultaneously, 60 per cent of the built environment still needs to be made to meet

the needs of the cities of 2050, as growing population and urbanisation occur across the globe (IRP, 2018). Cities constitute hubs of carbon flow, as their metabolism entails energy flows, organic waste, and biobased materials (Kristjansdottir & Busch, 2019, p. 1). They are rarely the start or end of these flows and are embedded in a broader, complex global metabolism.

Over the last two decades, cities worldwide have engaged in several initiatives aiming to create better environmental and climate conditions. Consequently, several concepts for 'sustainable' urban development have been introduced in policy discourse and academic research. These concepts are often used interchangeably by policymakers, planners, and developers and have been subject to policy preferences and marketing strategies (de Jong et al., 2015, Greenberg, 2015, Checker et al., 2015).

As the interest in sustainable solutions has become more apparent, consortiums of local governmental actors: C40, Covenant of Mayors, CNCA and ICLEI, have, over the last 20 years, been organised to promote the goal of CNity (CN) and general CO2 reduction measures in their member cities or local communities. More than 400 cities and organisations have already published their CN targets and formed strategies to get there. Notwithstanding, there is still a lack of a clear common definition of CN despite these last 20 years where the CN concept or concepts that are often used synonymously, like climate neutrality or net-zero emissions, has become increasingly central in policy discourse shown in academic as well as grey literature (Hsu et al., 2020, Huovila et al. 2022).

Various concepts have been introduced in response to the urban climate change debate, concepts like a low-carbon city, carbon-neutral city, zero-carbon city, and negative carbon city. According to De Jong et al. (2015), these can all be considered subsets of a sustainable city concept; adding to this, Fu and Zhang (2017) argue that these subset concepts of the sustainable city tend to emphasise technical and energy issues. Most articles addressing CN tend to have a single isolated system focus (e.g., decarbonising waste treatment plants, buildings, transport etc.) (Huovila et al., 2022, p. 2, 4).

There is a tendency within this techno-rational dominating literature to discuss the relative usefulness of individual measures for meeting the set goals rather than what goals are set in policy and what directionality policy has, according to Howlett and Cashore (2009).

The choice of wording can greatly impact the end goals, as described by Damsø (2017) through the example of Copenhagen (CPH from here on). CPH aimed for CN, including emission

offsetting in climate projects outside the city by 2025, while its net-zero carbon goal is 2050 (Damsø et al., 2017). In the litterateur review carried out by Huovila et al. (2022), it is argued that the CN goal offers more flexibility than, e.g., zero-carbon goal, as the latter compels an elimination of all carbon emissions, CN allows for offsetting emissions through the purchase of offsets from third parties that lie outside the city's boundaries. This ambiguity in the definition makes it hard to delve into the literature created and to make sense of the concept's reach into political discourses (Huovila et al., 2022. Damsø et al., 2017; Kennedy & Sgouridis, 2011).

Although no standard definition is used in strategies or academics, CN can be broadly understood as balancing cities' emitted carbon and absorbed carbon from the atmosphere, either within the city or in carbon sinks outside the city border (Plastrik & Cleveland, 2019). A carbon sink is any system (ecosystem or technical system) that acts as carbon sequestration. The crucial natural carbon sinks are soil, forests, and oceans.

CN allows for sectors still unable to be decarbonised to continue emitting by carbon compensation or offsets. E.g., air travel and shipping, cement and steel production and certain agriculture for which there are currently no direct zero-carbon alterations.

A carbon offset is a reduction in emissions of greenhouse gases (GHG) to compensate for an emission made elsewhere. It is through protocols such as the Kyoto protocol or the GHG protocol (the most commonly used nowadays) that set GHG accounting standards, including here what counts as CN and can act as a carbon offset. Carbon offsets do not need to be carbon sequestration; they can be any projects that reduce the emission of GHGs in the short- or long term. Common projects used as carbon offsets are renewable energy, such as wind farms, biomass energy, or hydroelectric dams. However, it could also entail energy efficiency projects, the destruction of industrial pollutants or agricultural byproducts, the destruction of landfill methane, LULUCF (land use, land-use change, and forestry), REDD (reducing emissions from deforestation and forest degradation) (Tsai, 2020).

The CN Cities Alliance (CNCA) defines a *CN city* as a city or region where the net GHG emissions 'associated' with that territory are zero or less.

1.2 State of the art.

Projecting a climate-neutral city requires understanding the city, its boundaries, and its development within the physical placement and temporality of the globalised production patterns; simultaneously embedded in understanding the city's carbon emissions is an understanding of the city as a delineated place, distinguishable and in some ways detached from its "environment" or broader metabolism (Kenis & Lievens, 2016). A reduction of complexity in this proportion is the sole condition for the possibility of the project, as it allows for identifying strategies and priorities for climate neutralisation within a circumscribed location. Nevertheless, it is an ever-inadequate practice, a process whereby contestable choices and decisions are constantly made: What will be included in making this city climate-neutral, and what will not? What is hard to decarbonise, and what can be done now? Which sectors shall continue to emit, and which shall compensate for it? What forms of carbon offsets can be used?

According to Kenis & Lievens (2016), questions soon follow, how do we justifiably disentangle the broader metabolism and contently claim that climate neutrality is reachable while abstracting from specific dimensions? How do we decide which GHGs are associated with a city, and which are not? Cities' climate networks and the GHG protocol, the provided definitions for CN, is that, over a year's time, the net GHG emissions of the system considered are zero (Dobbelsteen et al., 2019). Leaving out specific flows from the general metabolism is a contingent and arbitrary act, possibly making the concept of CN seem vague and abstract. It is in this aporia that a space of political contestability resides, a space of political contestability, bounded by a multitude of actors and institutional structures as well as the physical geographical situation.

The attempt to make any city carbon-neutral presupposes a spatial delineation of the city; it entails an understanding of its temporality and the framing of time within the strategies while simultaneously breaking from the ways of the ex-city, as it is proleptically being fixed-into-being. Cities' climate networks and the GHG protocol, the provided definitions for CN, is that, over a year's time, the net GHG emissions of the system considered are zero independent of the years before or those to come (Dobbelsteen et al., 2019).

Kenis & Lievens (2016) describe how the change toward CN starts with an enthusiastic ideal image of the city; the future city is sustainable but still rooted in contemporary developments and realities. Here the future is the dominant category in all CN strategies. They draw upon Daniel Bensaïd (1995) as they describe how having a future as the dominant category might

lead to a loss of political intensity in the now moment, resulting from an attitude of patience inspired by a future utopian image, unlike politicised conceptions where the 'now moment is the dominant category. There is a tension between the longer-term transition planning and the short-term crisis management (within which all carbon-neutrality plans are rooted), which might obscure and render many political decisions invisible or self-evident by a scientific or technical discourse legitimised by the utopian future image.

On the one hand, there is the idea that climate neutrality is to be built step by step, and what cannot be done today can possibly be solved tomorrow. Within this, an engraved idea that technological improvements will deliver solutions - such as the affordable electric car downplays the linear and path dependency extra car parks pose for the city's goals and extends its impact. This bet on the future relies on an empty and non-political conception of time and de-politicising the concept of a carbon-neutral city (Jasanoff & Kim, 2015).

Despite a depoliticisation of Carbon neutrality, it is, in essence, a political endeavour. A political endeavour where the managerial role of the city plays a central role in designing the institutions, infrastructures, and behaviours that drive decarbonisation and adaptation to a carbon-neutral path. A path, laid by political decisions, policies, and initiatives that promote, alter, enable, constrain, or demand technological and behavioural changes (Seto, 2016). This is what Hofstad, Sørensen, Torfing & Vedeld refer to as urban climate governance (2022).

The urban infrastructure of energy, heat, waste, wastewater/water, transport, and communication is largely privatised or non-publicly controlled hands, with frames set by national or supra-national governmental entities. Notwithstanding, the term urban climate governance might be more relevant, as local governmental authorities simultaneously have more political agility than private actors or nations regarding specific parts of decarbonising the urban and less direct agency. They have the opportunity to influence or decide on what scale a sector is operating. Still, they are bound to work within the other actors' terms; most systems of material flow are inextricably linked to the site, bounded by geographical placement, and therefore bound by property ownership.

We see this governmentality strategy in attempts to include and reframe climate adaptation as a win-win solution between private and public actors. A tendency especially epitomised by an emerging green economy and circular economy discourse, where the climate challenge is reframed in more market-oriented terms (de Jong et al., 2015, Greenberg, 2015, Checker et al.,

2015). As a result of this broadening of the concept, much of carbon-neutral city literature remains set in the techno-rational model, focused on technical or economic aspects of becoming a carbon-neutral city.

The techno-rational approach can provide practical, tangible answers about sectors which can be decarbonised or offer suggestions for how best to implement a policy. However, it might not adequately address how the carbon-neutral concept is part of constructing and transforming the physical build of the cities and the externalities on a larger scale. Further, the ambiguous definition obscures the unsaid and the silences in the representation of CN and emphasises depoliticisation.

The conventional approach to political and power research rarely asks about what CN makes of us as humans or what it says about our visions for society or the world as a whole (including the natural environment). Additionally, the techno-rational approach may regrettably answer questions asked by policymakers (such as, 'how do we increase city growth while reducing the city's GHG emissions?) without asking questions back (such as, 'why?' or, 'what if you have to choose?'). Put directly, the conventional approach to carbon-neutral city research treats ends and aims as given and focuses on the means and tools. This approach tends to miss path dependencies (political, technological, economic) that impact technology choices: Such as burning something to produce heat (biomass emissions are accounted for differently than coal) (Vaden et al., 2019), and all the unseen paths.

Marsden and Reardon (2017) argue that "The 'policy' literature is […] currently drawn to answering questions relating to what is, and making that work more effectively, than on critiquing the assumptions of the status quo, and arguing for what ought to be, or what could be" Marsden & Reardon, 2017, 245f). They call for developing a "body of knowledge that critiques practices and also understand why decisions come to be made the way they are" (Ibid). Analysing frames, images, or discourse is a way to grasp what the techno-rational approach leaves out, and a perspective which directs attention to those questions frequently falls aside for the techno-rational, frequently economistic approach to city planning.

1.3 Aim and research question

Inspired by writings such as Seto et al. (2016), Kenis & Lievens (2017), Rehnlund (2019) and Low & Boettcher (2020), I have chosen to look at the carbon-neutral city through a Foucauldian-inspired governmentality lens, where the focus lies on how the physical structure and the technological choices are shaped and made in and through discourse or, in Bacchian terms, problematisation. There seems to be a discrepancy between mitigation and adaptation responses and the overall issues (climate change) they are intended to address. Simultaneously many key drivers and determinants involved are kept out of policies and strategies. In the face of the complexity of the interconnected processes involved in the relationships between cities and climate change, we do not yet know what a thoroughly carbon-neutral city looks. Nevertheless, many of the mitigation and adaptation responses tend to be very alike despite the specific placed temporality and history of each city.

What has produced the visions of the carbon-neutral city to be constructed in its practical execution as it is today within the Nordic cities?

- *how are represented problems in the three cities' climate strategies defined by their geographical, historical, and social position?*

- *How do underlying rationales, assumptions and conceptual premises in the strategies shape and frame the understood realm of possibilities for the imagined carbon neutral cities?*

- *What problematisations are omitted in the specific problem representation? Where are the 'silences'?*

I needed some analytical framework which would allow me to explore not only if there was uniformity but also from where it might stem. I choose to find meaning in an understood likeness through a comparative analysis mixed with a Bacchian approach. Before understanding where it came from, I needed to confirm this likeness and comprehend its extent.

Therefore, the first part of the analysis is trying to understand the logic or rationalities by going through the strategies and the discourses that form the strategies and comparing these to see if I find this uniformity and the same sociotechnical imaginaries.

The second part of the analysis will comprise of a genealogically inspired run-through of the strategies and any documents referred to within these to see if there is a coherence from where

some of these logics and solutions come. What rationalities are built into the sociotechnical imaginaries, and from where do they stem?

One of the primary tendencies, scrutinised by many other studies, was an obscuring and almost a concealment of political decisions by a scientific or technical discourse. The discussion will therefore have to focus on exploring whether Nordic cities' CN strategies are indicative of a tendency to think within an ingrained and seemingly fixed idea of decarbonising the cities, with some of the same arbitrary technological progress, 'saving us from the hard to decarbonise areas, just around the corner?

1.4 Demarcation

I am not trying to disregard or question the need to delimit the city when planning for CN but understand how it is used today as a tool and what kind of effect is created in the way we demarcate the city and imagine the carbon-neutral city of tomorrow within the governing framework of today. What rationalities lie within the framing of the carbon-neutral city, and where do these rationalities come from? The reason for wanting to understand where they come from is because this can give a better comprehension of what effects have been sought so far, what discourses and regimes have created these rationalities and thus, pathways have been laid out as the possible imagined solutions. I do not intend to advance the inclusion of scope three emissions nor to contest the constructed boundaries and claim them as false. I am aware, as I have explored earlier, that any CN strategy will have to carve out a space within which it is possible to realise specific changes because the urban and its hinterlands stretch from the physical environment of a city to the remotest corner of the world, which is undeniable too big to try and change. However, having the boundaries and demarcation of the city as a vocal point in my study still seems to be necessary, primarily because these are the most apparent politically contested areas in the strategies. What is included and what carbon emissions are not thought of as problems of the city in the policies can say a lot about how problems are represented.

I am therefore interested in the discourses creating the boundaries and logic for solutions behind the CN strategies and from where these come.

I spread my focus from 'just' looking at one country/city to see the resemblances in our strategy patterns in the Nordic region. This is partly done to scrutinise the idea of a carbon-neutral city and the practical, tangible answers provided by a techno-rational approach. Likewise, it is with

the intention, in so far as it is possible, to promote asking not just how to do it but why we do it. Moreover, why might we tend to do it similarly? What do these demarcations provide and legitimise as planning tools?

In the next chapter, I describe my analytical and methodological considerations for this study and discuss how I use the The *What is the Problem Represented to be.*

2 Theoretical and methodological considerations

Within this section, I present the analytical framework chosen for this study, the *What is the problem represented to be* (WPR) approach (Bacchi, 2009). She uses a governmentality approach to identify rationalities and strategies of rule (Bacchi, 2009, p. 26).

This approach explicitly scrutinises the knowledge and scientific testimony underlying policy-making and problem-solving, questioning the epistemology and ontology behind today's policies. Bacchi's WPR analysis, in addition to presenting a general theoretical framework for critical analysis of policies, also contains a concrete method in the form of six analytical 'steps' adaptable to the subject of the analysis.

2.1 Studying policy from a critical perspective

I consider it beneficial to put forward some general scientific theoretical assumptions that can set the framework for the particular understanding of reality that I work with before we go into depth with Bacchi, the theoretical base and the methodological foundation of the dissertation.

I enter a poststructuralist or post-positivist tradition when utilising Bacchi's approach. The poststructuralist tradition can be said to be an anti-fundamentalist standpoint; meaning that poststructuralism is a tradition based on a critique of philosophies and science's search for a metaphysical basis from which it is possible to make definitive judgments about the world or reality (Stormhøj, 2006, p. 32). In the following section, I clarify what is meant by this, as well as what implications this tradition has for the thesis analysis.

Poststructuralism is a critique of positivism, a scientific approach that relies on observational studies of empirical, quantifiable data that can be translated into experiments where causal relationships can be identified.

The positivist tradition is based on the assumption that the objects of science are empirical as they can be experienced with the senses, measured, and quantified, and that these objects exist in a reality independent of the sensing subject. The forms of analysis developed by the positivist social sciences have aimed at creating information for 'effective' political action plans that solve various specific social 'problems' (i.e., information on how to get people to act more carbon-neutral). Within this tradition, it is implied that the nature of the social 'problems' can be reduced to sets of measurable categories that make it possible to assess whether a particular measure has effectively solved the given 'problem' (i.e., studies on the effectiveness of a

parking ring, to get people to stop using the car within the city centre). The categories treated are not examined but assumed as pre-existing and objective empirical quantities (in the example above, the parking ring is accepted as a climate-friendly implication, as it lessens cars in the city centre, and therefore studies have to focus on the effectiveness of this solution). Poststructuralism must be understood as a challenge to this tendency of transferring the natural scientific assumptions onto research about action patterns of humans and society's characteristics and instead accept that knowledge is a human construction -it is now asked: Why the choice of a parking ring? How is this idea constructed, and what form of patterns does it recreate in society?

Poststructuralism takes a further turn from social constructivism by placing the role of the state and governmentality at a centric point. "Among the many competing constructions of 'problem' that are possible, governments play a privileged role because their understandings' stick' - their visions of the 'problem' are formed or constituted in the legislation, reports and technologies used to govern." (Bacchi, 2009, p. 33). According to Bacchi, all policies make proposals for change, and thus by their very nature, they contain implicit representations of 'problems' - things that need changing. Policies define, shape, frame and constitute 'problems', meaning that policies are made not as a reactionary to fixing and identifying problems but with an intrinsic fixed idea of a problem, which then justifies and permeates within society as the policies are implemented. The response to the problem, thus, is part of what constitutes the problem. Our understanding of the 'problem' or what the strategy should resolve is often influenced by deeper cultural preconceptions: "... any policy proposal we put forward may well reflect deep-seated cultural assumptions." (Bacchi, 2009, p. 41). How problems are represented carries implications for how the issue is thought of and its imagined solutions. With this approach, the research object is how rule takes place in the way society is governed (Bacchi, 2009).

Governance, as explained by Evans & Evans (2012, p. 12), is "the purposeful effort to steer, control or manage sectors or facets of society." Therefore, a governance analysis should analyse how sectors or facets of society are steered, controlled, or managed (Evans & Evans, 2012). The same themes are present in Bacchi's approach, although here, the focus lies in how the actors govern, rationalise and instrumentalise their governance, exercising power by managing people's perception of social reality (Bacchi, 2009). 'Governmentality' implies the multiple governing conducts permeated and held together by a particular 'mentality'. There is a rather broad understanding of rule and incorporates, whilst also expanding beyond, the states in order

to identify other forms of influence on governing conduct (Bacchi, 2009). They draw on theories, philosophies, calculations, or values that are themselves social and cultural products and become (re)produced in the processes of government (Dean, 2010, p. 16). In this broad understanding, 'government' is 'not a definite and uniform group of institutions' but 'an inventive, strategic, technical, and artful set of "assemblages" fashioned from diverse elements' (Dean & Hindess, 1998, p. 8).

The state is kept as an essential actor but is not defined as a primary actor above anything else; instead, only one player in the general administration of societal relations. The other players include the full panoply of professional groups and of groups that influence the shape of governing knowledges, including science researchers and lobbyists. A particular focus is indirect influences, including the role of experts, 'that link the conduct of individuals and organisations to the object of politics' (Miller & Rose, 1990). This kind of analysis, therefore, poses a challenge to conventional distinctions between state and civil society.

Knowledge, in this sense, constitutes the use of power, and power, in turn, produces knowledge; they form an immanent complex of 'power-knowledge' (Foucault, 1978, p. 98). In other words, governmentality highlights the way discourses are intertwined with a field of seemingly disparate practices. Finally, understanding government as the 'conduct of conduct' draws attention to the level of the subject. 'Technologies of the self' (Foucault, 1993, p. 203) enable subjects to internalise governmental rationalities and translate them into individual practices. Put bluntly, the concept of governmentality helps shed light on the multiple ways power is exercised 'at a distance' beyond the narrow confinements of state policies (Miller & Rose, 2008). It is important to remember that regimes of governance do not determine forms of subjectivity; they elicit them (Dean, 1999, p. 32). The discursive regimes frames and lays the foundation from which individuals are introduced to a subject. It is, therefore, possible to understand that we as political subjects are constituted within the discursive regimes whilst still being autonomous individuals retaining a space for political agency.

In the WPR approach, discourses are "socially produced forms of knowledge" that "set limits upon what is possible to think, write or speak" about an object or practice (Bacchi & Goodwin, 2016, p. 35). As such, the WPR framework moves away from the 'linguistic turn' of discourse analysis and treats policy as a form of discourse. The WPR approach relates discourses to the "multifarious practices and relations involved in producing 'knowledge' and 'what is said'" (Bacchi & Goodwin, 2016, p. 37). These may be semiotic or linguistic, or other forms of

communications, such as policies or strategies, but may also manifest as more material, such as plans for physical city changes (infrastructure, energy, et cetera.). This is where we must understand that Bacchi follows Foucault in his understanding of power; it is productive. Discourses (policies) accomplish things; they produce 'problems', 'subjects', 'objects', and 'places' (Bacchi & Goodwin, 2016, p. 29). As discussed, the policy is regarded as productive of 'problems', producing discursive, subjectification, and lived effects. Bacchi and Goodwin refer to discourse as "[bridging] a symbolic-material divide" (Bacchi & Goodwin, 2016, p. 37) and part of the production of the 'real'. It is important here to note that this attention to the discursive does not preclude the existence of the 'real' or that the 'real' is made up or endlessly relative. It means that our understanding of the world is rooted in discourse or ways of making meaning of everything around us, including each other and ourselves. It produces our imagined roam of possibilities and our physical roam of possibilities. The production of the 'real' should be understood as our understanding of what is 'real' and our knowledge of 'the real'. The discursive offers a way to produce an understanding of the world and ourselves when no meaning is intrinsic or 'natural'. Therefore, when I speak of something as discursive in this dissertation, I mean the meaning-making and meaning-carrying inherent in words and practices. A discursive effect, when understanding it in the light of the WPR approach, is the way that a particular meaning-making can shape and limit our way of thinking and acting in regard to what it makes meaning of. Discursive elements are those elements of a problem representation that carry or make meaning.

This is as far as I go, as there will not be space for more. Through the discussion, I try and work with the delineation of the city and how this is part of the silences. I discuss 'future technology', 'compensation'/'offsetting' and other tools used to get towards the goal of CN and how these concepts create silences.

With reference to Foucault, Bacchi recommends so-called practical texts to be used (Bacchi, 2009, p. 34). There will be an emphasis on the implementations, techniques, and mechanisms rather than rhetorical persuasion, as the objective is to identify the deep-seated conceptual premise that makes the "thinking" possible. From here on, a focus is on particular words or expressions to recover the rationale and the problems. Are there similarities in the modes of governance, and what is the underlying reasoning are some of the questions I answer through this method? The domain I be analysing is made up of texts written to create a future image and a viable pathway to the idea of CN. Therefore, these texts are intended to guide a specific practice, namely the practice that will ultimately solve the 'problem' that a policy presupposes.

But texts of this kind are also called practical, as they themselves are an expression of a particular practice, a problematisation that must also be included in a study of it. According to Bacchi, the way in which practical texts are treated is through working with discourses.

2.2 Selecting the main policy documents

I examine visions of the Carbon neutral city in three different cities in the north – respectively Copenhagen, Tromsø and Reykjavik, the choice of which I get into in chapter three - and have therefore chosen to build my analysis of discourses on the official documents regarding the strategies for each city. It is slightly different from how far they are in the process to create a finished carbon neutral strategy. Where CPH has had a completed strategy since 2012, ' *KBH 2025 klimaplanen - en grøn, smart og CO2-neutral by*' (CPH 2025 The Climate Plan - a green, smart, and CO2-neutral city), with the following changes and additions each fifth year or so, Reykjavik is working more within a sustainability plan called *Loftslagsáætlun - Aðgerðaáætlun Reykjavíkurborgar í loftslagsmálum árin 2021-2025'* (Reykjavíkurborg, 2021) from 2021, updated 2022 and ' *Græna planið'* (the green deal strategy until 2030) from 2020 (Reykjavík, June 2022). The green plan is described as Reykjavík's municipality's overall strategy, which outlines the city's future vision until the year 2030 and links the city's central policies and plans to this vision, including its climate action plan. Tromsø has what they call a *'klima-, Miljø- og Energiplan'* (Climate- environmental and energy plan) (Tromsø_Kommune, 2018) from 2018, which is the document I am starting from, but they also have a plan underway to become CN in 2030. It was not planned to be CO2-neutral when it was made, just that they should be a low-emission society.

I start from the three climate/carbon neutral strategies but incorporate various policies and official descriptions from the municipalities regarding changes in the CN strategies. The reason why it is possible to compare three vastly different municipalities in three different countries is, amongst other things, because of a common principle in all the Nordic countries, as manifested in their planning legislation; the "municipal planning monopoly", whereby legally binding physical plans must be approved by the municipalities before being ratified by the state institutions. Although it plays out differently depending on the state, region and even municipality, the core principle that the municipality has to accept any physical alteration within local plans is universal within all states of the Nordic Region. A city may be more pragmatic as the area of authority, and legislative power is limited, as well as their funds, whilst cities are still, as discussed in the introduction, the primary emitter in their entirety, which

makes municipal policy an interesting arena for exploring how visions of the carbon neutral city is constructed in its practical execution.

The governance texts that I have analysed are all municipal led but often include participation from local stakeholders and significantly reference both flows and authorities well beyond the official scope of the local government. The climate governance texts were produced between 2009 and 2022, ranging from short-term climate action plans to long-term CN 'roadmaps'. The plans are not formulated as a strict legal obligation but rather as an assessment of planning tasks that are important to work with in the future if the visions are to be achieved. The roadmaps or action plans have described initiatives and more specified plans, whereas the overall strategies are much looser. The overall strategies are all more than five years and vary from lasting over 8 to 18 years. None of the visions or plans are legally binding and often yet to be funded. The purpose of strategic planning is threefold, according to Mintzberg (1994); envision the future, integrate decisions, and improve coordination mechanisms (Mintzberg, 1994). I work between the strategic planning of carbon-neutral cities with visions and the materialisation of these visions with action plans, which have a much shorter time perspective, most being regulated and re-evaluated every 1-3 years. The operational plans must relate to formal frameworks where visions are free and unfettered by legal requirements.

To construct a fuller picture, I ensure to fill in the newest and starting points of each CN strategy. The texts I work with are either in Danish, Norwegian, Icelandic, or English and all freely available to the public. Document analysis is an appropriate approach because CN strategies are still largely in the planning stages, which means that policy discourses on CN are primarily textual at this point. Although there has been a strategy for CN in place in CPH since 2012, the first four years of this were predominantly research and planning, and with the new plans for a climate strategy for 2035, it is yet again in the planning domain.

2.3 Translations

As I am not proficient in Icelandic, I have made sure to translate any Icelandic, both from Icelandic to Norwegian, Danish, and English, to delimit the amount lost in translation. However, I am aware that as I have used a computer-generated translator for the major parts of the Icelandic texts, there might be discrepancies that I am unaware of. The English text and the Icelandic versions available are vastly different, so it would still be more reliable to use the translated one rather than solely depend on an abbreviated text.

As most of the used texts are not in English a have had to translate most of the quotations, and words which a use from the original texts. With words that are appearing in the English version of "the green deal" I have used those to keep it consistent, but with words that are different I have used the word but also the context to determine if they are used the same way. With Danish the words used are more or less the same, although spelled differently, like 'bæredygtig' (sustainable in Danish) opposite to bærekraftig (sustainable). Words appearing in the Danish and Norwegian text I have then translated to Icelandic and search for these words, which does mean I might have missed other ways to describe similar things in the Icelandic text, but as they also have the English version, I have continuously held anything found in the Icelandic text up against what is said or used in the English version.

2.4 What's the problem presented to be?

Bacchi distinguishes, with reference to the Australian policy researcher Hal K. Colebatch (1945), between three main currents in policy analyses (Bacchi, 2009, p. 32): Authorised choice, structured interaction, and social construction. What matters most to Bacchi (and our analysis) is how these currents relate to the 'problem' behind the policy. Authorised choice considers policies to be technical solutions to already existing 'problems' (Ibid.), which is why policies are considered to be reactionary, i.e., arising from an independent need for the very solution that the given policy produces (Bacchi 2009, p. 1, 32). In addition, structured interaction recognises that there can be several and sometimes conflicting understandings of a given 'problem'. In this perspective, it is then the researcher's task to identify solutions that can be done in the given political environment; but it is also the role of the researcher to identify the most desirable solution, which is a witness to the very understanding of rationality with which Bacchi and the Foucauldian tradition are trying to deal. Both currents are also based on a positivist knowledge paradigm that fails to involve the knowledge producer and, therefore, not the social and cultural influences on which it is exposed. Therefore, Bacchi attributes the WPR analysis to the latest trend in social construction (Ibid.). An important but unfortunately frequent misunderstanding must be mentioned here, as Bacchi does not believe that social constructivism should be understood as: "... the persons as 'actively engaged in the creation of their own phenomenal world'..." (Bacchi 2009, p. 33). Rather, in the WPR analysis, emphasis is placed on the influences of the socio-cultural forces on our understanding of the world. The focus then becomes not an individual psychological but a post-structural social one. In this way,

the focus of the WPR analysis is on the struggle of paradigms to influence our understandings and self-understandings. In this way, the most central breach in the WPR analysis is that one does not understand 'problems' in a positivist sense as something that exists in the world, regardless of how we perceive and define the 'problem'. Implicit but central to the WPR approach is a critique of the notion of policy as natural and neutral and suggests that policy – rather than responsive to pre-existing 'problems'– is creative in its power; it characterises a 'problem' as a problem. Policies should be understood as a way of addressing and making sense of the social conditions constituting the society rather than a means to 'solving problems' in society (Bacchi, 2009). Policy defines what needs to be 'fixed' – and, indeed, that there is something that needs to be 'fixed' in the first place – and by studying the proposed solutions, the shape of the implicit problem (the problem representation) can be discerned.

2.5 Applying the WPR framework

The methodological analysis tool consists of six questions that constitute a kind of taxonomy, the purpose of which is to get to the bottom of the deeper social and cultural preconceptions that may be left out in a political action plan/strategies.

She works with six steps in the WPR analysis, although I only be introducing five of these steps as these are the ones I be touching upon within my analysis.

2.5.1 What is the 'problem' represented to be in a specific policy?

In this question, a distinction is made between two types of problem interpretations, endogenous and exogenous. It is essential in Bacchi's analysis that one rejects an exogenous understanding of the 'problem': "[...] a key premise in a 'what is the problem represented to be?' Approach to policy analysis is that it is unwise and inappropriate to think that 'problems' somehow exist in the world in the way these discussions suggest." (Bacchi, 2009, p. 9). On the contrary, within all problem representations are underlying presumptions substantiating and legitimising the premising way to understand reality for a problem to be represented this way. Understanding a problem thus as an endogenous way of creating the world is immanent for this analysis.

In the WPR approach, Bacchi (2009) draws upon Foucault to argue that through problematisations, policy has a vital function in governing (Bacchi, 2009, p. xxi). The way an issue is problematised matters because it dictates and rationalises the decisions made by politicians on what should be done and how – "the ways in which 'problems' are constituted (or shaped) carry all sorts of implications for how we live our lives on a day-to-day basis". The

contemporary problem-based reasoning of policy and planning may contribute to inefficient measures taken (Bacchi, 2009, p. xviii). E.g., A large part of public space in cities is often dedicated to motorised traffic such as cars and trucks. Nello-Deakin (2019) illustrates how a parked vehicle requires at least three times more space than public transport and ten times more than a bicycle. When a car is driven at 50 km/h, it requires 70 times more space than a cyclist or pedestrian. It is an entirely different built environment when the car is centric, so the car-centric planning we have done significantly impacts the city's image (Gehl, 2010). These problematisations need to be studied, and through analysing the problem representations inherent in policy, analysts should scrutinise the "premises and effects" they hold (Bacchi, 2009, p. xxi). What is most interesting is that a car centricity is a politically decided choice, and it also impacts our carbon strategies, such as focussing on either buss rather than trains, accessibility of shared cars or electric car charging facilities.

The WPR was formulated to 'problematise the problematisations' of policy and address questions of power, silences, and the contingency of meaning and practices. Informed by the WPR approach, I ask: what is policy aiming to change (and so representing as a problem) when addressing CN? What effects does this have? To understand the seemingly limited roam of possibilities around CN strategies, I begin by asking: if CN is the solution, what is the problem? What are the problems which CN can solve? The answer there is fairly simple, perhaps the problem is climate change created by humans, so we have to fix our emissions to halt climate change. We must equilibrate what a city needs to emit to survive (thrive) with carbon sinks. The problems represented in these policies can thus show how the carbon-neutral city is constituted. Once these emission issues are out of the way, what should the city of the future be?

2.5.2 What preconceptions or assumptions underlie this representation of the problem?

This question aims to "identify the conceptual premises […] that underpin specific problem representations" (Bacchi, 2009, p. 5). It is here that the influence of post-structuralism becomes apparent, as it "draws attention to the politics involved in the process of assigning meaning to key terms, picturing contents and categories as contested and malleable" (Bacchi, 2009, p. 265). The opinions and beliefs of individual policymakers are irrelevant; rather, the focus lies on what is lodged within problem representations and what makes the particular representation possible. That is, what "meanings must be in place for a particular problem representation to cohere or make sense" (Bacchi, 2009, p. 5). In line with the previous question, it is suggested here that

one asks in-depth about the understanding of the problem that has caused the given policy to formulate the 'problem' in the way(s) it has been done. In order to unfold these preconceptions and the representation of problems, the analyst is to ask themself: What is assumed? What is taken for granted? What is not questioned? These are not guaranteed to be conscious values of individual policymakers, nor are the beliefs of those making policy the object of the study. To study the way that a problem representation is constructed, Bacchi recommends looking into policy for binaries, key concepts, and categorisations.

Binaries, or dichotomies, are common and central in public debate, often shaping the understanding of an issue by simplifying juxtapositions and hierarchies – for example, nature/culture, public/private, and responsible/irresponsible (Bacchi, 2009, p. 7). In discourse theory, signifiers are understood as always defined in opposition to something else – the discursive outside. An 'us' can never be wholly inclusive because without a 'them', the defining limits will disappear, and 'we' will no longer be a whole. In discourse theory, this is understood as a logic of equivalence. Simply put, all things on this side, articulated (joined together) into a chain of equivalence, are the same (Culture, for instance); while all things on that side (in this example, Nature) are also the same as each other, but completely different to everything on this side. As in an equivalently logic, there is an implicit hierarchy in binaries: 'we' are better than 'you', and 'culture' usually takes precedence over 'nature', although, in this analysis, we will find that natural or green takes precedence over anything black or fossil fuelled. The binaries, or dichotomies, are hierarchising aspects of policy.

Key concepts or keywords are "abstract labels that are relatively open-ended" (Bacchi, 2009, p. 8). The meaning put into these concepts can differ between political visions, which is the cause for much debate. In the introductory chapter, I have already introduced several keywords: CN, net-zero and sustainable. Indeed, Bacchi is careful to point out that even seemingly 'obvious' concepts can hold uncertain or conflicting meanings when studied more carefully.

Categories are a way to organise behaviours, people, and other objects of study, through measurement (e.g., censuses and surveys). In policy and projects, calculations, as pointed out by, e.g., Ronnle (2018, p. 61) and Rehnlund (2019) and are "tools for political actors to frame their decisions and actions". What – or who – is given particular attention as something to be addressed or as a reason for action? In CN strategies, categories may include public transport, electricity, and buildings. Categories are used to give meaning to problem representations: how, for example, does the category 'hard to decarbonise' give meaning to the problem

representation in the CN strategies? Further, different meanings can be given to categories at different times and worldwide (Bacchi, 2009, p. 58). The category of climate adaptation and water is completely different in a place where drought and lack of clean drinking water occur regularly, whereas, for most places in the Nordic region, climate mitigation and water quickly lead to the concept of surplus water and rising sea levels.

2.5.3 How did this representation of the 'problem' come into the world?

The WPR approach further prompts creating a genealogy, a history of when, how, and why decisions came to be. This will highlight that the problem representation is not given or 'natural', that there are other ways of thinking about a 'problem', and other decisions that were not made. Discourse is always rooted in history and context and must be understood in relation to it. Genealogy taps into that potential to highlight the non-necessity of the current way of things. Genealogy studies the wider system of practices from which such problematisations emerge (Bernauer 1992, p. 158 as cited by Bacchi, 2009, p. 43). A genealogical approach takes its starting point in the present and attempts to analyse its roots in order to expose the historical conditions. Perhaps, for this reason, Foucault is often called the philosopher of discontinuity, specifically in his work with genealogy. Genealogy is oriented to discontinuities rather than seeing history as continuous development. Emphasis is placed on discontinuity because Foucault is interested in showing how changes have taken place that has affected our basic perception of various phenomena. According to Foucault, truth cannot be separated from the procedures of its production. Genealogy conceives human reality as an effect of the interweaving of certain historical and cultural practices, which the approach sets out to trace (Bacchi, 2009).

Genealogy thus breaks with the idea that society is heading towards a better state, where any problems in today's society are due to developmental errors rather than systematic errors. This becomes relevant when the strategies are to be subjected to an analysis that attempts to include historical elements/practices. For, if history is considered a linear and logical development, then there is a possibility that crucial exercises of power will be hidden under the guise of other phenomena. Instead of giving a historical event/practice a singular causal meaning for posterity, it is given a double meaning both as creating opportunities for subsequent actions; and as an event that has a limiting effect on potential opportunities.

Genealogy is concerned with the processes, procedures, and apparatuses by which truth and knowledge are produced, the institutions and institutionalised practices that constitute the

preconditions for thinking and imagining possible outcomes (Dreyfus & Rabinow, 1982, p. 204). The preconditions of thinking can be understood as the practical and situational preconditions that make it possible for some discourses to emerge and find their way into, for example, a strategy. In contrast, others are rejected or even not considered at all.

The objective of a genealogical method is to recover these countless lost events and open up to the ideas which are not considered instead of accepting and, thus, legitimising the 'truths' of the phenomena as they stand today (Foucault, 1977, p.155 in Bacchi, 2009, p. 43).

Genealogy is particularly useful when analysing societal norms that have an extensive history, like the work Foucault has done, for example, in the Western penal systems or sexuality. This is also a lengthy process that I will be unable to delve fully into. I will, therefore, differ slightly by employing a comparative method to understand the problems which are represented and a sense of whether the reasonings are similar and, as such, what the preconceived solutions might be. Similar to the discourse and assumptions of Question 2, we should note "the tendency for actors to relate to the world through a set of perceptual filters composed of pre-existing beliefs that are difficult to alter" (Sabatier & Weible, 2007, p. 194; see also Jenkins-Smith et al. 2014: 191). These filters can be expected to shine through in policy and providing alternative perspectives can highlight that they are there. The WPR approach calls for attention to other contexts (whether in time, place, or culture), as having something with which to compare the identified problem representation may open up one's eyes to new questions and issues on which the existing policy is silent. Comparative analysis is often used when looking for patterns of similarities and differences that may explain continuity and change.

Policies from international, European, national, trans-, and sub-national levels could build a picture of the processes and institutions that shaped the policies within the Nordic region, despite not looking into all the pre-CN history. Thus, the analysis of the contemporary institutional configurations and circumstances allows the problem representations to become but also defend and disseminate them. That being said, I demarcate my study through the amount of data I need to analyse. The 'raw' material used to make this analysis is thus limited to the three carbon strategies of the three cities, but I be looking into municipal action plans and budgets from each city and the pre-mentioned protocols or international entities to make up the before mentioned picture. Particular emphasis is placed on how certain practices lead to specific, prevailing problem understandings. I focus on concepts/practices that I have identified

within the first work question, off-setting, compensation, where they come from and how they have become part of the discourse.

An actual genealogical research would be impossible to prepare as part of this project due to time, space and resources. I, therefore, ensured a historical perspective to explain and put into perspective the differences and similarities that occur during the work with binaries and keywords through other means. To help me in this historical contextualisation, I have used the works of Nordic researchers. Primarily this has been focused on the rebranding and development of planning in each country. A development resembling each other in many ways but still has several specific trends. Specifically, for Tromsø, there has been significantly less literature, and I have therefore taken a more general approach to Norway's planning development.

There is a political aspect to it that I have not been able to include the development of each city's own changed narratives through grey literature is limited to other people's research. The oral aspect of discourses, which are taken up by the population and never accepted as legitimate, is also an aspect I will not go into. So much of the critique i lost. Through, e.g., previously grey literature and media, a focus on previous problems and solutions could have been produced. I have refrained from this, as it would once again spread my focus too widely. I have touched on why document analysis can be a good place to start to find discursive trends since the plans are largely ongoing at the planning and revision stage. So, the focus is on which planning choices are made for the future image and what has made this possible.

2.5.4 What problematisations are omitted in the specific problem representation?

Where are the 'silences'? Can the 'problem' be considered differently? Bacchi mentions that this part of the analysis is about understanding a policy better than the authors. A tool for this is to search for the boundaries of the given problem understanding to find the point where a critical analysis can transcend the specific problem understanding and present alternative understandings of the 'problem'.

When we examine the political issue of reducing the city to a tangible size to create a carbon-neutrality strategy genealogically, we conclude that there is a historical, social, and geographical context from which the context of ideas arises. How the strategies have been thought of happens because of this context, and it is essential to ask questions about what other space of possibilities we could work and think within. We will have to understand what has

been excluded. To understand what has been precluded and the process of this preclusion, we must consider what alternative problem understandings are left out in the rationale of the strategies. Through the discussion, I will work with the city's delineation and how this is part of the silences. I discuss 'future technology', 'compensation'/'offsetting' and other tools used to get towards the goal of CN and how these concepts create silences.

In this part, we transcend into the fifth question, "What effects are produced by the specific representation of the 'problem'?" where Bacchi points to three (overlapping) categories of effects that are consequences of different ways of representing a given 'problem': 1) discursive effects that deal with what is discussed and what is not discussed. 2) Subjectivation effects deal with the way people are talked about. 3) lived effects that deal with effects on life and death, which could also be understood as effects on the material world of life (Bacchi, 2010a).

I will again delimit myself from fully delving into this question, as I will not focus on the lived effects nor the subjectivation, but primarily on what is not discussed.

Because I will not be able to delve into all the silences in every aspect of the cities and the technological, infrastructural, spacial, and social aspects of a CN strategy, I will be utilising the concept of sociotechnical imaginaries to bridge governmentality and discourse and the technological and physical more indisputable realities. Jasanoff (2015) defines these as "collectively held, institutionally stabilised, and publicly performed visions of desirable futures, animated by shared understandings of forms of social life and social order attainable through, and supportive of, advances in science and technology" (Jasanoff, 2015, p. 4). With this concept, it is possible to consider how the vision of social order (governance) is coproduced with science and technology. The field of carbon-neutral strategies lies in an intersection of physical and technological realities and an administration of social relations. Where carbon emissions, energy consumption and technical instruments consist of objective and natural processes, it is made sense of and governed in terms of discursively constituted representations. While technological inventions have indisputably advanced as far as they have, choosing which technology to invest in and employ, or when it is deemed 'effective' enough to get, e.g., energy, transport, etc., are politically contestable conducts.

3 Choosing the area of study.

A comparative analysis relates similar or diametrically different study objects to understand deviations and comparability, making it possible to give perspective, show a tendency to some development, or see that a change does not necessarily lead to a set outcome. As described, I aim to understand why there might be a tendency within cities in the Nordic Region to create similar CN strategies, and I aim to do so by focusing on three strategies which should be very location specific.

I am working in the tension between politically contestable CO2 strategies and the incontestable context of climatic situations and geographical positions. It is thus relevant to relate to the political and physical aspects that make the Nordic Region both similar, different, and comparable. In what follows, I will summarise my case selections, the types of selection strategies I have chosen, and the implications these have for my study.

3.1 The Nordic Region

The Nordic Council of Ministers has a vision of the Nordic Region as the most sustainable Region in the world by 2030. This idea of the Nordic leading the way is not contained within the Region. Across the world, the capitals of Denmark, Finland, Iceland, Norway, and Sweden are often viewed as being on the frontier of climate action.

The Nordic Region is known internationally for having some of the most consistent and progressive policies for decarbonising some of the hard-to-decarbonise sectors like transport, electricity, buildings, and industry. Nordic countries have emerged to become global leaders in technological areas such as renewable electricity supply or the adoption of energy efficiency technologies and practices. This vision is evident in the strategies of all bigger Nordic cities, as they have set CN targets reaching further than the Paris agreement.

There is a tendency, both in academia and in policy literature, working papers, newsletters, government documents, urban plans etc., to imply a common green and sustainable picture and future of the 'Nordic region'. For example, in January 2019, the prime ministers of all five Nordic countries committed to achieving CN in the Nordic Region in the Helsinki Declaration on CN. Cooperation on this shared commitment is being followed up under the auspices of the Nordic Council of Ministers and by the mayors of several of the bigger cities.

Significant parallel developments in the Nordic local governing authorities enable comparison between these localised discretions in the strategies. Local governments in the Nordic countries have traditionally been characterised by extensive functional decentralisation, as well as a strong emphasis on local autonomy (M. Goldsmith & Larsen, 2004; M. J. Goldsmith and Page, 2010; Loughlin et al., 2011; Page & Goldsmith, 1987; Sellers and Lidström 2007).

The functional status of local governments in the Nordic countries is more pronounced than in other European countries; together with an institutionally similar context with much history in common, the Nordic cities are an easier international comparison. In short, the Nordic cities are characterised by a high degree of devolution, prominent professional and bureaucratic administrations, a reluctant and selective adoption of New Public Management reforms, high trust in government, a strong tradition of public-private collaboration and despite the grant scale difference, the city and municipalities are all highly capacitated (Bjurstrøm & Christensen, 2017; Greve et al., 2016; Christensen & Lægreid, in press; Johnsen & Vakkuri, 2006; Lægreid, Roness, & Rubecksen, 2006). Bottom-up negotiation processes characterise the Nordic performance management style regarding goals and targets. It is primarily soft and dialogue-based, and performance information is only loosely coupled to sanctions (Christensen & Lægreid, in press; Johnsen & Vakkuri, 2006; Lægreid, Roness, & Rubecksen, 2006).

The Nordic Region have particular types of spatial economies differentiated by nations due to different associations with supra-national economic federations and regionally.

On the grand scale, the Nordic Region follows an often-seen pattern in their economic structure where the shift in employment from the agriculture and goods-producing sectors towards the service sector is advanced. The Nordic Region has a low share of employment in agriculture and industry compared with the EU. Especially in urban areas, there is a general change from having heavily industrialised areas inside the cities to focusing on industries such as tourism, finance, etc.

The exception to this is the sparsely populated areas and the sequestrated areas, such as the most northern - arctic areas - as well as some of the island regions - Iceland, Faroe Islands and Greenland, e.g., - where sectors such as the fisheries still constitute a significant part of the economy. Generally, the sparsely populated areas are dominated more by agriculture, smaller towns by industry and larger urban areas by business services.

Not only in the administrative part can there be found similarities within the Nordic Region. Most of the largest and growing cities in the Nordics are located by the sea, with few exceptions, often placed close to larger lakes and or with a direct canal/waterbody connecting to the sea. This proximity to the sea means that most cities of the north have a coastal climate: a climate where the sea softens and evens out the expected annual maximum and minimum temperatures. The golf streams further enhance this relatively mild climate along the sea borders, despite the wide variety in latitude and the very northern latitudinal position of some urban areas. Without the Gulf Stream and the westerly wind belt, Tromsø, i.e., would be around 10–15 degrees colder. All of the Nordic Region's major cities are placed within the temperate climate and plant belt. According to Martin Vahl's climate and plant belts, temperate climates are defined by the fact that there is an actual summer where trees can grow; this requires the warmest month to have an average temperature of more than 10 ° C.

While the Nordic national climate policies are relatively similar and supportive of local action, they leave detailed formulation of climate strategies to the discretion of the local government. Moreover, it is this local possibility which makes me think that since they are close enough in the make-up of municipal structures, looking into similarities, despite differences, within the Nordic countries is possible.

3.2 Strategic choices: CPH, Tromsø & Reykjavik

I could have focused on the four major capitals. However, most of these are located at almost the same latitude and even somewhat the same area within the Nordic Region. Thus, it would not represent the Nordic Region and the cities this encompasses. I have therefore chosen to focus on three cities, each representing a geographically, climatically, or environmentally distinct situation. Case studies and comparative studies produce context-dependent knowledge close to reality and can have a diverse wealth of detail. The generalisability of case studies can be increased by strategically selecting the cases and thus elucidating the deeper causes behind a given problem and its consequences rather than describing the symptoms and the frequency with which they occur. The more study objects are compared, the fewer variables are comparable and vice versa. Thus, it is impossible to look at all urban areas of the north, so dividing the Nordic into sub-regions with specific characteristics is a way to delimit this number. I have identified three sub-regions and chosen one urban area to represent each sub-

region - the Arctic region (Tromsø), the southern densely populated area (CPH), and the island states (Reykjavik).

I was looking for differences yet similar enough to be compared, so preferably only picking capitals, as the power relation to national governance levels might influence what they consider possible. However, there are no capitals within the arctic zone. Because Tromsø has other direct links to supra-national entities (the arctic council), the city would still have some form of greater political influence than other smaller cities; therefore, I count it as a 'capital'. One could argue that size could matter greatly, and it would definitely if it was not because I am looking for uneven grounds; I aim at the similarities despite the differences.

I have chosen the most extreme cases because these would be the most likely to differ. They would be what Flyvebjerg (1991) define as a critical case. A critical case is a case that has strategic importance in relation to an overall issue. A critical case is selected according to how to obtain the largest possible amount of information. No universal methodological principles are given, the observance of which ensures that one ends up with a critical case. The only general thing that can be said, according to Flyvbjerg (1991), is that you generally have to search for the 'most likely' or the 'least likely'. That is cases which must be expected to be able to confirm or respectively disprove statements and theses.

Atypical and extreme cases often provide more information because they activate more actors and/or fundamental mechanisms in the studied situation. This is the fundamental strategy behind my choice of cases. When choosing, I have considered elements including temperature, city locations, population/density, climate and plant zones, energy sources, transportation options and sequestration.

Due to their geographical positions, CPH, Tromsø and Reykjavik have access to widely differing energy sources; they are placed somewhat within the same boreal climate zone, but on each end of it, and with a big difference in the environmental situations. Through these cities, there is simultaneously a consistency and a huge difference. Each climatic zone within the Nordic Region is represented, and each 'extreme' typography and interconnectedness is represented. I would therefore expect that what can be seen as possible and what is found in the strategies should be different. Leaning on Flyvbjerg's assessment of case studies in power and relations (1991), he describes how within the social sciences, a case's strategic choice can contribute significantly to the generalizability of a case study. He argues that if any thesis can be falsified for the most auspicious cases, it would likely also prove false for other, more

average cases. The same idea goes with my thesis; if I can find similarities within these vastly different cases, I will also be able to find them anywhere else in the Nordic Region.

Through these cities, there is a variation in the supra-national associations of the represented countries. Denmark is the only member state among these three; the other two are part of EFTA. Because of this, it could be assumed that I would find more connection to any EU protocols within the CPH strategies than the other, and it is exactly this which will give a window into the contemporary institutional configurations and circumstances that have allowed the problem representations to become, a comparative analysis relates similar or diametrically different study objects to understand deviations and comparability, making it possible to give perspective, show a tendency to some development, or see that a change does not necessarily lead to a set outcome. This study makes it possible to see that there are rationalities behind our policies which come from somewhere else, limiting the roam of possibilities.

4 Climate change and what else?

In the current section, I will concentrate on displaying the differences and the similarities in the visioning of the future carbon-neutral cities in CPH, Tromsø and Reykjavik. Specifically, the focus lies on the representation of the carbon-neutral city and what is problematized in the strategies of the three cities. As described in chapter 2, Bacchi describes the essential in rejecting the exogenous understanding of the 'problem(s)' problems do not exist in the world but rather are they created through our conduct and the representations of 'problems'. Problems or aims can then be explicitly represented, or they can be implied by the measures proposed. This section examines the endogenic problems by finding the exogenic representations of problems and trying to understand the rationales behind these. This will be done by looking into binaries, dichotomies, keywords, and categorizations to understand the conceptual premise of the problem represented in the policies to become carbon-neutral cities. Simultaneously I seek to understand the similarities in their imaginaries of the carbon-neutral city together with the proposed fixes to the 'problems' as this can inform us about the travelling patterns of rationales.

The strategies differ somewhat from each other in their composition, legal guidance, as well as their relationship to regional plans and other municipal visions and strategies. For example, for CPH, the climate strategy is a separate vision going from 2012 to 2025, with allocated roadmaps for every 3-4 years, going through every action of reducing carbon emissions and working primarily with the concept of climate change; for Tromsø and Reykjavik, the strategies are built into a vision of environmental and climate issues. The 'green deal' is the general plan for Reykjavik until 2030, and then they have the "climate action plan", which is more specifically about their CN and is only planned for four years. For Tromsø, it is an environmental and climate plan, with many other plans like it – e.g., the strategy for sustainable urban development. It was created in 2018 before the municipality's climate goal became CN by 2030 (which happened when it was politically decided to apply for the EU' CN and smart city project' in 2020), as all other plans and visions have to account for what is written in the municipal plan; therefore, the "Kommuneplanens sammnsdel med arealstrategi 2020 – 2032" (municipal plan's community section with area strategy) is used as the long vision for Tromsø.

4.1 Carbon neutral Strategies placed geographically and historically

This chapter will specifically answer the question: *how are represented problems in the three cities' climate strategies defined by their particular geographical, historical, and social position?*

As strategies seek to visualise future semblances of the city, the following section will contextualise these visions, in the current physical forms of the three cities. While technological inventions have indisputably advanced as far as they have, choosing which technology to invest in and employ – or when it is deemed 'effective' enough to install, e.g., energy, transport – are politically contestable conducts and have a historical and geographical context. These differences in the cities' geographical and historical positions will be where we have to find the correlation between the commonly used 'sustainable city' as a goal for reaching CN and the vastly different focuses and representations of the problems relevant to meet the goal of the CN city. By questioning whether choice and specific differences in choices are decided by historical, social, geographical, or climatic circumstances, it is possible to clarify the underlying rationales and discourses that help to form the image of the CN city.

4.1.1 Available energy forms carving the way

The socio-technical solutions which are deemed most beneficial to the cities' CN projects are influenced by the energy sources available to each city; geographical specificities alongside technological advancements, dictate what fossil-free energy sources are possible. This is reflected in the prioritisations and focuses on the CN strategies of each city.

In CPH, the primary source of emissions is electricity use (34%) (København Kommune, (n.d.). KBH 2025, 2012) with electricity being produced largely by fossil fuel energy plants located outside the city boundaries. Reykjavik's (55%) (Reykjavíkurborg, 2021. Loftslagsáætlun 2021-2025) and Tromsø's (42%) (Tromsø_Kommune, 2018. Klima-, miljø- og energiplan 2018-2025) most extensive source of emissions is transportation, reflecting that the two cities' electricity is supplied mainly by wind power, hydropower, and geothermal energy. Where the others focus on creating better opportunities to use green forms of transport – as for example through the installation of chargers for electric cars - CPH has a focus on changing the production of energy itself to a greener alternative, primarily through wind power and by installing new more efficient and less polluting heating systems. However, in reality, the highest priority for CPH is an efficiency improvement in energy-production and consumption, as they

are hoping to "eventually reduce the need for production capacity [red.] in a growing city" (Copenhagen, 2016, *Roadmap 2017-2020*, p. 19).

Reykjavik and Tromsø categorise waste and waste management as an environment and pollution issue, while CPH has put these elements in the energy production and consumption category (See Appendix). Creating biofuels and using waste as an energy source is a part of initiatives in all three cities. However, for CPH, the focus is energy-fixed, whereas, within Reykjavik's CN strategy, it is almost excluded to be for biofuels for reducing transport-induced-emissions and to get an environmentally- and carbon-friendly resource efficient reduction in waste and treatment of waste. Tromsø is somewhere in between, prioritising improving the environmental state; reducing pollution by removing plastics from garbage while simultaneously initiatives put waste management as a part of their plan for district heating. This is presented as a concern about the future need for energy consumption as Tromsø does not have available geothermal energy/heat production, while the physical positioning of the city requires available heat distribution and a growing population. Because of hydropower, the primary use of energy is considered CN already. There is a focus on biofuels, but primarily for bigger vehicles, sea transport and the possibility of air transport. Norway is the country in the world with the most electric cars, thus reducing the focus on the need for biofuels, at least for private vehicles. Simultaneously, because of their geographic location (and the walkable city focus), removing snow from walkways is a high priority; thus, they have heated pavements.

4.1.2 Transport ways through history

Transportation is presented as the most significant problem to solve for Reykjavik and Tromsø. Transportation is the most prioritised topic in the strategies, with several described benefits following mobility efforts. The first measures described in Tromsø's carbon reduction revolve around transport issues: in total, 28 out of 40 measures surround a form of mobility issues or solutions. Comparable trends can be seen in Reykjavik, which has divided its main objectives for the climate action plan into six parts, of which the first three refer to transport: the walkable city, energy exchange in vehicle transportation, and health-promoting modes of travel. CPH stands out, as it has divided its objectives into four groups; transport is one of them, but it does not take precedence in the plan, based on both length and placement of the chapter. Concurrently, many of the sub-categories and initiatives within the categories 'Energy consumption' and 'CPH as a company' revolve around transport elements, and the theme is recurring throughout the text but put in relation to the possibility of saving energy. The majority

of these initiatives and 'fixes' are to encourage the use of public transport and non-motorised transport. CPH, Tromsø and Reykjavik have all set quantitative goals on how much the use of these transportation modes will be increased within the next five years and how to achieve it.

Walking and cycling are portrayed as the hallmark of transport. The proposed measures serve primarily to give cycling more space and parking opportunities, promoting increased use. Extending, widening, and building new cycle tracks are described as the necessary ways to encourage more cycling. Green or non-motorised transport is used as a replacement for biking or walking. Thereby, green is represented as the opposite to personal fossil-fuelled vehicles. Cycling is the most strongly supported and most invested in of the non-motorised transport modes, as well as the most mentioned in all three strategies. Other electric bike-sized transport forms are presented as a parking issue. This preoccupation with the biking and walking aspect of green transport, despite the rise in electric bikes and other cycling-lane-using motorised vehicles, might indicate a certain amount of path dependency. In light of the cities' willingness to introduce parking for electric cars, there is no mention of changing traffic structures to encourage or include these in the physical structures apart from parking opportunities. CPH CN strategy mentions it as a possibility for longer trips.

Hence, what does the focus on the dichotomy between green transport and private vehicles say about the cities' representations of transport and issues revolving around transport in relation to CN? There is a significant focus on public transport. In Reykjavik and Tromsø, public transport refers specifically to buses. The problems represented in their strategies centres on the need to become green and to be interconnected enough for people to choose public rather than private transport modes. In contrast to Reykjavik and Tromsø, trains In CPH strategies are mentioned, primarily as part of a cycling strategy, to make it easier to park bicycles nearby or concerning the fact that they are already electric and that buses must follow. There is no mention of an expansion of the train network or attempts to get more trains running on the tracks, but a focus on making the metro and S-train operate more energy efficiently. Simultaneously there is a focus on getting more interlinked and better-connected infrastructure systems for bikes, pedestrians, and the respective public transport system in all three cities. In Reykjavik's mobility strategy, many other aspects of life are used as an argument alongside the carbon-neutral transition. They describe measures directed at reducing the availability and increasing the cost of fossil-fuelled car parking, designing pedestrian-friendly and cycling-friendly mobility infrastructure, achieving optimum levels of residential density, reducing the distance

to public transport, and enhancing the desirability of active travel modes. With words such as healthier, sustainable, active, and desirable, Reykjavík's representation of carbon-neutral choices greatly emphasises the social aspect of sustainability.

The long life of physical infrastructure may lock societies into carbon-intensive emissions pathways that are difficult and/or costly to change, possibly delineating the realm of possibilities for solutions that already have a presence in the physical structure (Seto, 2016). There is a larger support given to cycling over walking when looking at initiatives. Considering that an extended network of pavements has been around for as long as the city, this might explain why making investments in cycle paths seem more necessary and relevant. Roads are likewise already built and invested in. The mentioned cycle paths are primarily part of an already established road network. Large portions of the cities' infrastructures were built when fossil fuels were seen as not just a social but also an economic good, laying a pathway towards a road-friendly choice, i.e., in 1972, the last tram ran in CPH. The decision to choose buses over trams in CPH, therefore, comes before a significant focus was placed on environmental conditions in the UN (See the description of sustainability) before Denmark had an environment ministry (this happened in 1972) and before the first oil crises (first occurring in 1973) – this being while the car was viewed solely as a means to creating opportunities and liberating the private individual and not as a contributor to pollution and climate change.

The whole of Tromsø extends over several detached landmasses. The fishing industry has historically been a central part of the local livelihood. All goods are transported to Tromsø by road from the mainland or by sea (same as Reykjavik) due to their geographical location, characterised by remoteness from international markets and a lack of fast and direct transport forms. The focus from their side on biofuels both for extending the pedestrian range through busses and in their public transport is therefore a clear feature of the historical and geographical situation, and a consequent possible path-dependency. Stability and path-dependency are intrinsic parts of sociotechnical imaginaries that both enable and restrict the scope for individual and collective action. Consequently, the scope of action is demarcated by existing imaginaries that delineate what is presently conceived of as legitimate and possible. There is, moreover, a tendency towards path dependency and stability within these imaginaries. Although, change may occur as new elements are interwoven into existing imaginaries (Felt, 2015). Despite the focus on bikes and bike-friendly infrastructure, there is little to no mention of a connection between cycling and buses to extend the range of the bikeable city get or adjust for commuters

living outside the cities. Considering how CPH misses addressing the many forms of bikes and bike-like transportation (likewise with the two other cities), it expresses a preoccupation with tested and tried solutions for physical infrastructure. This dependency is possibly as a cost-concern or as a lack of thinking it a possibility. CPH is understood as an extreme case here (Flyvbjerg, 1991) as they are known to be the city of bikes and have multiple examples of divergent bikes being invented and manufactured within the city (two of the most known examples are the Christiania bike and the bikes the post office uses).

4.1.3 Infrastructure and technical implementations as solutions

Transport is used as a solution to various other problems. "Health-promoting or active modes of travel entail various benefits besides reducing greenhouse gases. The increased physical activity of the inhabitants improves public health, and when the number of those who walk increases, the safety of pedestrians and residents will increase" (Reykjavíkurborg, 2021, *Loftslagsáætlun 2021-2025.* (City of Reykjavik Climate Action Plan for 2021-2025), p. 15). The much larger support given to cycling over walking could imply a preoccupation with distance, although this focus on the non-motorised bike would suggest a still limited distance. There is an assumption that many commutes will be for distances where going by foot is inadequate and inefficient, regardless of the intention to make the city 'walkable'. Simultaneously, these commutes are assumed to be made primarily within the confines of the city. All three cities present a walkable city and better cycling possibilities, as a way to reduce emissions, but this fixation on distance juxtaposes the priority of CN goals and the wish to accommodate for city development. All three cities have an understanding of the needed physical growth; there is an acknowledged fact that people will have to transport themselves further in a growing city, as most available land is further away from the centre.

Tromsø and Reykjavik's preoccupation with distance may have something to do with their currently sprawling urban development. Both cities have an articulated desire to build densely and see the dense city as part of the solutions for the sustainable city. Policy and practice suggest that the walkable city's central feature is housing density and public transport access. The master plan for Reykjavik points out that densifying urban areas creates 'more habitable and diverse neighbourhoods' but also makes 'better use of investments in roads, schools and other service facilities' (Reykjavíkurborg, 2021. Loftslagsáætlun 2021-2025). It is simultaneously represented as an environmental consideration; with a dense city, you can have more space for green areas, "Dense cities are linked to, among other things, the loss of biological diversity"

(Tromsø_Kommune, 2018, *Klima-, miljø- og energiplan 2018-2025*, p. 53). In CPH's considerations, this need for densification is articulated more as a preoccupation with space and lack thereof. The differences among the three cities in their relations to space results from the markedly varied land available in relation to the sizes of their populations. The way in which they present their relation to space and distance is dictated by their geographic location and spatial circumstance and form.

The attention to space is reflected in the mention of electricity and energy. For example, to reduce carbon emissions in traffic, CPH municipality is facilitating the conversion towards electric vehicles both personal and public. The conundrum emerges in the ever-growing need for renewable energy to meet growing demands. They are already occupied with optimising and reducing energy consumption, which means a greater need for energy requires new energy sources, which again requires space. However, the pressure on the infrastructure is not only seen in the mentions of energy consumption and production but also in the mobility category. Congestion in city traffic is represented as both polluting and emitting extra carbon. The best solution for this is either public traffic, thus highly effective transport with the limited space or smart solutions, such as smart-signals and eco-driving, to form traffic after peoples' use, and create a 'smooth' transit through the city (Copenhagen, 2016, *Roadmap 2017-2020*, p. 47). Throughout the city plan, there is a great deal of attention given to the dire need to accommodate urban growth. With growing populations, the transport mode with the highest capacity is given precedence over spatial efficiency. Alternative utilisation of transport forms in place are being promoted in a similar notion, notably in CPH municipality's description of mobility planning as to "support the spread of alternative forms of car such as car sharing and carpooling" (Copenhagen, 2016, *Roadmap 2017-2020*, p. 48). Within this 'problem' representation of insufficient urban space, sentences like "Congestion on the cycle paths' grow as both the city's population and the increase in vocations rise. There is, therefore, a need to develop and improve the possibilities for using the bicycles" (KBH plan p. 44.). In light of the measures to increase road fixed transport (busses) and the mentioning of longer possible distances with electric bikes, the 'walkable city', 'bikeable' is easily read as a means to make room for more people in the streets first, and a means of reducing emissions or preserving green areas second.

4.1.4 Different focus areas

There is an overall articulated focus in Reykjavik and Tromsø on all three parts of sustainability. Reykjavik and Tromsø's focus on the green, healthy, non-polluting leans towards linking

climate policy, environmental policy, and equality in the legitimisation of initiatives. In comparison, CPH relates more to CN than increased environmental considerations. There is a tendency for CPH's planning structures to focus less on safety and health benefits, deriving from a presumption that living in CPH already is 'good', 'healthy' and 'easy to get around': "there is a high standard of living in CPH" (København Kommune. (n.d.). *KBH 2025 Klimaplanen. København skal i 2025 være verdens første CO$_2$ neutrale hovedstad)*. Many of the problems are focused on the future and the inevitable effects of population growth. On the other hand, the other two cities have a greater focus on also changing the city that is there now, regardless of future growth. They therefore see a need to improve what has already been established. This can be seen, among other things, in the categorisation of main objectives in the plans, where both Tromsø and Reykjavik have assigned direct categories with names such as "health promoting modes of transport", "a walkable city" and "Dust and noise", "pollution", "plastic-free city, clean coast and sustainable tourism". In Reykjavik's representation in carbon-neutral elections, there is a great emphasis on the social sustainability aspect. In their mobility strategy, many other aspects of life are used as an argument alongside the carbon-neutral transition. For example, they have a section about 'Equality in climate actions' where they describe their attempts to counteract the unequal impact on different groups in society by climate actions (Reykjavíkurborg, 2021, p. 16, 31-33).

Both in Tromsø and CPH, there is a description of wanting to be pioneers with their solutions: With the use of words such as 'innovative', 'demonstrating', and "developing further through lighthouse projects" in a context of "climate neutral pioneers" – they indicate a need for knowledge that does not yet exist. In this representation, the problem with achieving their goals is that the necessary knowledge has not been created. On the other hand, the reaction to change towards CN now can be advantageous in the long run. "Not because we have to, but because it gives us great opportunities to be first out" (Tromsø kommune, 2020. *Kommuneplanens samfunnsdel 2020-2032*). A large part of the strategies in Tromsø and CPH is to seek knowledge and a networks of climate-active cities and organisations. CPH expresses it as being ready to perform as a laboratory. Here the urban area becomes "innovation labs where the world's climate solutions will be pioneered" (København Kommune, (n.d.). *KBH 2025 Klimaplanen. København skal i 2025 være verdens første CO$_2$ neutrale hovedstad*). CPH writes the word 'smart' 30 times in the climate strategy. It is used in the context of smart city, smart-buildings, smart-grid, and smart-CPH/Tromsø. Tromsø describes their strategy to achieve the climate

goals they have set as "cooperate more closely with research and industry in order to be able to develop and use climate-smart solutions that give a competitive advantage" (Tromsø kommune, 2020. *Kommuneplanens samfunnsdel 2020-2032*, p. 11). For CPH and Tromsø, 'CN' is equated to 'smart' solutions or the 'smart city'. The word itself is defuse and vague. However, in the context in which 'smart' is used, such as flexible consumption, monitoring and management of energy consumption, a picture is formed of what elements are prioritised to achieve the climate goal, technological solutions. They describe initiatives for 'smart technology' and 'big data' to improve the efficiency of municipal buildings by implementing a network of sensors to constantly review energy and water consumption rates to minimise pressure, waste, and the associated CO2 emissions.

4.1.5 Representation of problems regarding their purview

A difference that occurs both because of historical conditions and geographical location is how they relate to national and international actors. CPH is the only city more ambitious than their respective national CN targets. In contrast, both Reykjavik and Tromsø follow the set CN goals of their respective nations. Moreover, all three cities are advocating for climate action to higher levels of government for policy change to support low-carbon initiatives as well as other stakeholders for support and participation. All of the cities participate in one or more city networks or international campaigns. In Tromsø and CPH, a need has been expressed to change either legislation or the commitment of other national or international actors included in their strategy to become CO2 neutral. This is seen specifically in the establishment of major energy projects for both cities. CPH has specified that they need HOFOR (Water, wastewater, city-gas and district heating distribution company owned by in part by CPH municipality, together with seven other municipalities in the vicinity) for the possibility of establishing wind turbines, both to meet Copenhagener's' energy needs and to be able to dispense with traffic or other things that are also beyond their capacity for change. The problem is presented in relation to national legislation and frameworks for companies, citizens and municipalities to act more climate friendly. In Tromsø, the problem is represented a little more indirectly, such as the mentioning of trains or other rail transport serving an initiative to continue lobbying for a train connection between Oslo and Tromsø (Tromsø_Kommune, 2018). *Klima-, miljø- og energiplan 2018-202*). However, for example a problem with the electricity network is made clear: not enough electricity is produced to cover the growing need in Tromsø, which they primarily try to remedy by reducing consumption through smart solutions, which they in turn present as the reason that Tromsø itself is not responsible for establishing new energy projects. It is for the same reason

that Tromsø is trying to apply to become part of the EU's project on 100 climate-neutral cities (for which they were not selected). In addition, there is a large focus on the lack of funding. Part of the represented problem here is Tromsø's taxation base. In contrast, Reykjavik consists of over a third of the population; although they describe how there are parts of the planning where they have to deal with what they can, several initiatives involve lobbying for their laws to be changed or their frameworks to adhere more to their goals.

4.1.6 Locally specific history and social conditions

4.1.6.1 Copenhagen

As previously described, CPH has less focus on social and environmental aspects of sustainability in its strategy; at the same time, the future has a more prominent placement. One way of understanding this could lie in the context of their use of 'sustainability' to describe the future city which they are seeking to reach. CPH has transformed rapidly over the last 50 years from being an industrial, polluted city to a jointly formulated narrative of CPH as a mobile, green, liveable, and growing city. In the 1980s and 1990s, CPH struggled with a pending economic crash and people moving to the suburbs because of social and environmental decay, little space, and more opportunities outside. Today it is renowned for its architectural features, such as its bicycle bridges and a comprehensive green infrastructure through the district heating system and transport (Hansen et al., 2022). Already in 2006 CPH won awards for their environmental positioning, the *European Environmental Management Award*, (WaybackMachine, 2006). Newer articles and rewards likewise mention CPH as a 'world-class' green or cycle city, the latest being in 2017, by C40, rewarding the city as the world's greenest city. The city has a history of 'effective' spatial planning in support of its environmental performance. With a widespread and highly accessible public transportation infrastructure and a large proportion, around 62% of its inhabitants use bicycles as their primary means of transport (Gössling, 2013; Damsø et al., 2017).

Apart from cycling CPH and Denmark has been endorsed for its high proportion of distributed energy generation and low energy intensity (Damsø et al., 2017). In CPH, 98% of households were already connected to the district heating system by 2014, for which the energy supply was primarily a combination of heat and power (CHP) plants and waste-to-energy facilities (Damsø et al., 2017). This storyline is not centred only around CPH, but as a trademark of Denmark. Primarily as a result of the oil crisis in 1973, Denmark has undergone a significant energy

transition since the mid-1970s, moving towards a decentralised sustainable energy system (Damsø et al., 2017). In light of their presented problems and their image of the future city, there is an assumed achieved social and environmental sustainability, whereas their energy sector makes them more vulnerable than other Nordic countries in relation to the climate and future crises and they are therefore trying to pre-empt future crises.

4.1.6.2 Tromsø

Tromsø does not have a marked history of environmental development. On the contrary, with a history as a heavily industrial city, various pollution risks have been a living condition. Simultaneously rapid urbanisation has occurred at the expense of green areas; they have an equal fixation on environmental and climate aspects. Fishing and shipping still play an essential role, but Tromsø is primarily an administrative, commercial, and service city today. It is simultaneously a tourist spot and a knowledge hub through the university. Norway has, to a larger extent than the other Nordic countries, developed a market-led planning system (Nordahl, 2013; Falleth et al., 2011) Tromsø describes national support schemes as crucial and presents a problem with the cities being defined as the main instrument for achieving global climate neutrality without climate targeting regulation by the national and regional policy. Norway no longer has a public planning monopoly. Tromsø further criticises an increased restriction on municipal purview as problematic in relation to a need for support for research, education, and financial instruments, which they do not have the opportunity to decide for themselves. Private (and even some public) land developers have acquired a principal role in planning and implementation.

The distinction between private, public, or semi-public developers is no longer apparent in terms of authority in planning, and all these developers act more or less as private actors in terms of land market considerations. Therefore, the local government of Tromsø depend on private actors and their market considerations and private investments to implement land-use plans. Their plan is highly focused on acreage planning, as this is one of the places, they have legal authority and connecting with the regional and supra-national (i.e., EU, the arctic council). In general, Tromsø represents one of their major problems in becoming CN as the legal frameworks and decision-making competence on the national level are not encouraging, which is challenging to engage with, as Tromsø and Northern Norway are very far away from Oslo and the space of power. This, together with its historical positioning, creates the need for

Tromsø to sell itself as being innovative and creating opportunities for other, often private, actors.

4.1.6.3 Reykjavik

Reykjavik's is the only plan that seems to focus on the past. The City of Reykjavik issued the Reykjavik Green Deal as its roadmap to economic recovery after COVID-19. The geological situation in which Reykjavik is placed renders much of the energy consumption almost entirely carbon-free. On top of this, there is a unique possibility readily available for car sequestration by using this inexpensive energy source, to turn carbon into stones. Notwithstanding, they do not, as the other two cities, promote themselves in the same way as the frontrunner, as on the contrary, they focus on the social and environmental aspects of sustainability.

One of the reasons for this tendency to focus on environmental and social sustainability possibly has to do with their periods of massive expansion. The first was around the early 1960s when the first master plan was created, and it was assumed that every household would have its own car. The second time was in the 2000s, ending with the financial crash in 2008. The effects of the global financial crisis of 2007 and 2008 were more pronounced in Iceland than in the other Nordic countries, culminating in the crash of the Icelandic banking sector in the autumn of 2008 (Hreinsson, 2010). The housing sector came to a standstill, and the severe overproduction affected the building sector over the next five years; this brought a shift in the relationship to housing and the need for affordable and more densely built housing (Kristjánsdóttir & Sveinsson, 2016) The economic crash made tripartite sustainability's ecological and social side evidently lacking. As they write themselves into the latest crisis (COVID-19), Reykjavik's CN strategy focuses on precaution and preparedness towards the next crisis.

4.1.7 Part conclusion

The energy sources each city has available is a dominant factor for their categorisations in their CN strategies. Tromsø and Reykjavik focus on green sustainability and environmental issues, amongst other things because of their established access to excessive renewable energy. CPH diverges from the environmental aspect and puts emphasis on urban and technological elements in forming the picture of a future CN city.

All three cities focus on the walkable and cyclable city. CPH has a broader focus on their public transport. There is a likeness in Reykjavik and Tromsø's focus when describing presenting problems and issues for transport; where they are preoccupied with their remoteness and need for biofuels to meet the need for transportation of goods. The other trajectory is the incentive

to densify their urban areas, because of a historical sprawling tendency. Again, the environmental and social aspect is present in their presentation by an approach towards green, healthy, safe. CPH is again diverging from these trajectories as theirs is a location of high interconnection, with many transport options and a more densely populated area, which results in the focus of densification due to limited space, and a greater focus on efficiency. In connection to other actors and presenting themselves outwards, CPH and Tromsø seek to use their CN strategies as technological advancements and present themselves as pioneers. They also articulate problems regarding their purview and the framework with which their respective national level has given them. In contrast Reykjavik continues focusing on social and environmental benefits for their initiatives, but neither's present themselves as frontrunners nor as discouraged by nationally set frames. The "green city" of Reykjavik concentrates more on the social-eco realms of the tripartite relationship in sustainability, while "smart city" has a more technological genesis and deals more with the climate-economic realms of cities and the idea of a more efficient way of using resources or infrastructure already in place like Tromsø and CPH. The carbon strategies are presented differently in view of their social and historical position: CPH as the first city of the future, already a beacon of hope to the rest. Tromsø as a small place with much potential, with possibilities of innovation in the now, and Reykjavik as a remedy for the past and a securement for the future.

5 But where does it come from?

As the previous chapter points out, the three cities have three very different historically and geographically moored building blocks for the carbon-neutral city. Nevertheless, the future they envision is not so far from each other; it is 'sustainable', 'green', 'smart' and 'dynamic'.

Particular visions of the future are a momentary equilibrium of cultural, historical, and physical relations. Specific socio-technical choices gain traction through acts of power, technical solutions and fostering innovation.

In this chapter, the concept of socio-technical imaginaries will be used to bridge the underlying rationalities and discourses with the technological and physical, more indisputable realities. Hence, I will scrutinise the three vastly different situated cities' conceptual premises and rationales underlying their representation of problems. What is apparent already is an implicit and, in some instances, explicit notion running through all strategies that engaging in CN and sustainability means measuring impacts in an expanded context: global crises, social justice, economic opportunity, ecological degradation and historically situated development. External developments and conditions that the cities have little opportunity to affect become a prerequisite and fundamental element in the CN strategies.

5.1.1 A trajectory of sustainability

The context of the carbon-neutral strategies is the carbon emission-induced global climate change. Illustrated by all the policies having a piece on climate change and how it affects the local and global weather patterns and environment in their introduction. The introduction of Tromsø's strategy revolves around Norway's agreed climate goals of the Paris agreement and the IPCC report made in 2018 (Tromsø_Kommune, 2018). *Klima-, miljø- og energiplan 2018-2025*). Reykjavik describes the changing local weather patterns (Reykjavíkurborg, 2021. *Loftslagsáætlun 2021-2025*), and CPH, although less explicitly proclaimed, writes about the needed extension of their climate plan from 2009, adopted when CPH was the host city of COP 15 (København Kommune, (n.d.). *KBH 2025 Klimaplanen. København skal i 2025 være verdens første CO₂ neutrale hovedstad*. The endogenic problem represented is a worldwide lack of knowledge and solutions for a growing and more modernised (technological) development, drawing in investors and entrepreneurs for the cities, maintaining or elevating the quality of life, all whilst reaching CN.

What rudimentary conceptions of the future CN city and its contexts lie behind the different trajectories in the solutions and fixes to the problem?

Consequently, the starting point must be to understand descriptions which do not have an explicit connection to the primary problem of the climate crisis – thereby, the goal of CN. CPH introduces its plan by writing that it "must combine growth, development, and quality of life with CO2 reductions" (SOURCE). In the first chapter, the future city is introduced as "A green and smart city" despite it being the climate plan to reach CN. Similarly, the climate vision of Tromsø is introduced by the description, "Tromsø in 2030 shall be smart, safe and green" (source), while Reykjavik mentions a focus on the quality of life and engagement in urban and green development in a competitive and growing city: "Reykjavík has dynamic green growth, a competitive urban community and fertile ground for creative ideas that attract people to live, visit and do activities" (source Reykjavik green deal). They introduce a parade of new words to describe a future image of the urban with words and word combinations such as 'smart', 'safe', 'green', 'development', 'dynamic', 'green growth', 'liveable' 'active' 'healthy' 'city for the people', 'eco-friendly', 'walkable city', 'dense' which are not directly correlating to CN nor the climate crisis. While these terms provide an understandable image in relation to the city, they are enigmatic and undefined in further consideration.

A further focus on what is lodged within problem representations is needed to discern the shape of the endogenic problem. What makes these particular representations 'smart', 'safe', and 'green' in coherence with CN possible? Perhaps more relevant; what understandings and assumptions about the 'future city' and the 'current city' must be in place for these descriptions of the cities to cohere with CN?

Despite differences in the presentation, the categorisation and described words point toward a commonality in words used to give meaning to the world. As was lightly touched upon in the last chapter, there is a centration around the concept of sustainability in a way which seems almost undefined in the many ways that it is utilised yet simultaneously predefined. In each presentation of the cities' visions the word 'sustainable' is used repeatedly in all different contexts. "Sustainable treatment of trash" (Reykjavíkurborg, 2021. *Loftslagsáætlun 2021-2025*) to "Sustainable design of the city" (Ibid.). CPH describes how they want to make "showrooms of sustainable solutions". Just the word sustainable (sjálfbær) is used 16 times in Reykjavik's green deal, while variations of it is used 21 times in CPH and at least 14 times in Tromø's CEE plan.

As seen in the previous section, they focus on different aspects of sustainability due to historically and geographically laid trajectories and technical possibilities, but the discourse of the tripartite sustainable city to make sense of the world seems the same. Alike in the three cities is that 'green', 'healthy', 'safe', 'smart', 'CN' and 'sustainable' can be used almost interchangeably as a dichotomy against the polluting, unhealthy, carbon emitting, and unsustainable city. This way of presenting problems in the city requires assumed correlations between climate problems, environment, economy, pollution, and general health conditions in the city. What is then an accepted premise is the tripartite of the word sustainability: it is social, economic, and ecological (or environmental). This requires an understanding of the environment and climate to be correlating and interlinked. Reykjavik and Tromsø's focus on the green, non-polluting clearly leans towards linking climate policy and environmental policy. They both divide the sustainable city into three, where environmental and climate issues are considered one and the same. Because CPH's strategy is solely presented as a plan to become CN, CPH has a less direct interconnection between the environment and the climate crisis. However, as the previous exposition of CPH's situation revealed, there is a more significant focus on CN due to the understanding that CPH is, in many ways, a sustainable city in other regards. We need to look no further than the municipality plan (2019) to find their description of the continued city development: "rests on an economically, socially and environmentally sustainable foundation" (København, 2019). The joint link between environment and climate is epitomised by the term 'green', as both a description of reintroducing nature to the city and as a way to describe emission-free transport devices.

In the vision for the carbon-neutral city for all three cities, the need for the city to remain vibrant and pleasant to live in is clear – less noise, cleaner air, better housing and green mobility. These notions are expressed through words such as "safe", "living city" "healthy city" "healthy mobility" "city for people", appearing in all three strategies. For example, Reykjavík itself as a "thriving, fun and healthy city that will be CO2 neutral by 2040 […] A green and ecological Reykjavík that meets climate challenges is exactly the city we should want to create together. A city that is alive, fun, diverse and fair simultaneously" (Reykjavík C. o., u.d.). Tromsø's overall focus in the "Climate, Environment and Energy" action plan is on what would be encompassed by environmental sustainability, including lowering carbon emission, climate change effect mitigation and ecological degradation measures. The Green Deal and the accompanying climate action plan were issued as Reykjavik city's roadmap to economic recovery after COVID-19, with a pressing centration around trifold sustainability – economic,

social, and environmental. Independent from the cities' environmental imperative or a more singular focus on CN, there is an assumed direct correlation between benefiting one form of sustainability, to any other form of sustainability; they become interdependent as they are all part of forming the path for the sustainable city.

This tripartite understanding of sustainability gained recognition in the 1970s. Sustainability appeared as a central point of departure in urban policy at the 1972 United Nations' (UN) Conference on the Human Environment in Stockholm. For the first time, environmental issues were placed high on the UNs' and, thus, the international political agenda. The sustainability goals at this point included a social, environmental, and economic dimension. Moreover, from this, there is an intrinsic environmental element to how sustainability is understood, as it was introduced as a lesson of fossil fuel limits, acid rain, phosphate, pesticides, and industrial chemicals reducing people's life expectancy and polluting the cities. The recognition of the term came in the light of an awareness of dangerous substances, pollution, and degradation of the ecosystems due to human behaviour, and sustainable development became fundamentally oriented towards managing physical resources and avoiding environmental problems. Sustainability has been the goal for urban development before the climate became urgent, and especially the Brundtland Commission's definition of sustainability as development that meets the needs of the present without compromising the ability of future generations to meet their own needs sets the frame in which we can understand the sustainable city (McCormack & Anielski, 2017).

From the report came the notion of tripartite sustainability and the interrelationship between and co-dependence of environmental, economic, and social dimensions (de Jong et al., 2015) – a conceptual premise in mainstream research, policy and practice and thus also a tacit understanding of why specific words are passed under the umbrella of sustainability like 'eco' and 'liveable'. Climate change, like environmental degradation, is anthropogenic; it is directly linked to fossil fuels and the overuse of physical resources, and thus these two are put together as one, used in some cases interchangeably. From this perspective, the plurality of terms observed can be seen as repeated attempts to articulate and specify the concept of sustainable urban development within each city. Tripartite sustainability is the framework in which the cities form their strategies, but how it is applied to each urban context is different, as we have seen, because of their historical situation and geographical positions.

The term 'sustainable city' is not just a descriptor for what the city should be but for 'CN'. CN and sustainable become interdependent: the city must be sustainable to be able to reach CN, and the sustainable city is CN as the climate crisis threatens the city's livelihood. The way we have constructed the city, each other crisis illustrates how the road to CN is enabled by a sustainable economy, and to invest in and create the future, citizens are provided with the possibility of the 'good' choices – the CN choices.

The three (four) elements of sustainability are interlinked but not understood as equal. "It is a political ambition that CPH, as a large city and capital, must and will take responsibility for the climate and show that it is possible to create growth and development while reducing CO2 emissions."(København Kommune. (n.d.). *KBH 2025 Klimaplanen. København skal i 2025 være verdens første CO₂ neutrale hovedstad*, *p. 8)* Changing to greener and CO2-friendly cities must not come at the city's expense and the ongoing development. "Green solutions which create increased employment and green growth" (København Kommune. (n.d.). *KBH 2025 Klimaplanen. København skal i 2025 være verdens første CO₂ neutrale hovedstad*, *p. 8*). Reducing the pressure on resources already occurring whilst incorporating the prognosed growth of the population and the increased pressure on resources and infrastructures is all encompassed by the idea of sustainable growth, but how the cities plan for this sustainable growth is, as we have seen, often quite different.

The cities correlate sustainability and growth, where sustainable growth is a prerequisite to achieving climate goals. This rationale is written out directly in the municipal plan of Tromsø: "Sustainable growth in cities is a condition for reaching Norway's climate goals" (source). Growth is both a premise and a goal for the cities. This growth is expressed in all the different categorisations and problematisations that are in the strategies: a need for more built material, better infrastructure, more energy, and green-fuel availability, and plans to combat greater pressure on wastewater and waste management are presented as the main objectives to be solved by each CN-strategy because of the growth and development. In particular, inexpensive and reliable energy and fuel are central to the techno-institutional complex that underpins all urban development and growth discourses.

Against this background, it is easy to understand the focus on technology in transport and energy as both a problem and solution. The infamous Brundtland Report of 1987 laid the grounds for technological innovation and economic growth as the critical tools of sustainability politics. The economic imperative is put in a governmentality context, therefore, placed as a

premise for the other two forms. Growth is a conceptual premise for the problem representation of finding solutions for the extra pressure increasing populations will unquestionably place on the cities. The conceptual premise is understanding a city as a physical manifestation of economic and social progress and development. There is a common theme around urbanisation. It is part of each city's exogenic goals, but it is also assumed as fact, which the cities cannot do anything about. It is explained as something unquestionable, like "Tromsø has since 2009 grown with 1000 inhabitants a year, in the period between 2008-2019" (Tromsø_Kommune, 2018. *Klima-, miljø- og energiplan 2018-2025*), alongside the assumption that these developments will continue.

There is a common denominator with many of the keywords; they are coupled with 'city'. The future city is a 'smart city', 'technological city', 'modern city', 'walkable city', 'green city', or 'sustainable city'.

The represented 'problem'-themes of, i.e., inadequate infrastructure and too little urban space are rooted in a discourse of determinism: The enlargement of all infrastructural systems' capacity is couched in a narrative of a larger future population putting pressure on the urban system. The growing city is never represented or discussed as a dependent variable, affected by policies made by the national or local governments, only as a given. The discourse of determinism constructs the governing actors – municipalities – as powerless in the face of a development which functions as natural law. The city is, in this narrative, not unlike a magnet, inexorably drawing subjects to it by the inherent pull factors of social and economic development.

An apparent trajectory is that growth and development are one and the same. Urbanisation is the inevitable result of social and economic development and the performance and manifestation of social progress—an assumed correlation with development and economic sustainability. The city is understood as an economic centre, it drives the economic development of neighbouring areas, and simultaneously, the improvement of the regional economic level will, in turn, promote the development of the city.

5.2 In the role as facilitator

Problem representations regarding energy and transport have incorporated several assumptions and underlying rationales that conduct the possibilities and focus on how the cities shape their physical infrastructure. In each strategy, it is described that there is a decrease in the number of

routes driven per person in the city but that the total amount of kilometres driven will remain the same as it stands now due to population growth. It is presented as an undeniable reality that the population needs to transport itself and have full opportunity to reach every part of the city quickly and without complications. There are no explicit nor seemingly hidden hopes that the traffic will be reduced; on the contrary, more of all kinds of traffic is expected and accommodated for. In the representation of solutions, congestion and smart technologies used to make mobility faster and more efficient is used, and an attempt to bring together infrastructure and important urban spaces is described. A conceptual interconnection is created in the mobility strategies as better connections become faster, smarter, and greener connections, equalling healthier connections and, therefore, better for the city. Talk of greening and emission-free transport points towards an entrenched and deeply held cultural proclivity towards freedom of movement. Neither of these features or issues precludes travel nor makes it unnecessary. Modern people are expected to move across the cities, between cities and countries, and modern urban constructions must enable this. Therefore, the first presiding premise for the strategies must be that people aspire towards increasing mobility. The continuous rationales around mobility, specifically free mobility, are a prerequisite for the modern city - encapsulated by the strategies describing the future cities as dynamic and connected.

As described in the section about modes of transport through history, there is a chance of path dependency against solutions that have already been implemented before on a larger scale due to the long life of physical infrastructure, which is both challenging and costly to change. In that lies an economic rationale and a time perspective that comes before environmental and climate considerations.

Immediately, the focus on frontrunners and the desire to open the city to 'laboratories' for new technological fixes and projects to be showcased seems to be in contrast to avoiding costly permanent structures. However, quick, and small fixes seem to be the intended path.

Small fixes and innovative demonstrations fit the story of limited space as an efficiency and innovation approach is occurring as part of a lack of space and the need for growth but an inability to act.

A conceptual premise is an acknowledgement that the decision-making power is not solely in the hands of the cities, if in the cities' hands at all. Exemplified in their need to "Collaborate more closely with research and business to develop and adopt climate-smart solutions that provide a competitive advantage" (Tromsø_Kommune, 2018. *Klima-, miljø- og energiplan*

2018-2025). The urban infrastructure of energy, heat, waste, wastewater/water, transport, and communication is simultaneously largely privatised or in non-publicly controlled hands, with frames set by national or supra-national governmental entities. Local governmental authorities might have more political agility for deciding areal use, making smaller projects easier to develop.

There is a general attempt to reframe the climate challenge in more market-oriented terms and present it as an opportunity to market the city. There is a tendency to represent the climate crisis simultaneously, the problems occurring and solutions in consensual managerial and techno-rational terms. Through a discourse of flexibility, innovation, and pioneers in the urban, there is a notion of a transition towards the sustainable city realised through the viral spread of city-level initiatives set up by 'enlightened' city councils collaborating with citizens, entrepreneurs, and other frontrunners willing to perform their bits for the global challenge. The city's physical space and urban processes are offered to public and private actors for climate governance experimentation: "CPH is ready to make the city available as a green laboratory" (København Kommune, (n.d.). *KBH 2025, 2012*).

Each city presents the goal of getting the municipalities' buildings, transport and food CN as a pathway laid out for others to follow. The assumption is that a solution, although possibly initiated by the municipality, can only work, or be continued by private hands. Decentralisation from central to local governments without an attendant augmentation in their revenues or capacities leads to chronic service and infrastructure underfunding those drives demands for private business or non-profit responses (Peck, 2012).

Visions of scientific and technological progress carry implicit ideas about public purposes, collective futures, and the common good. There is an assumption that smart solutions, renewable energy sources and green fuels will help cities mitigate climate change while simultaneously building resilience to socio-economic backlash like volatile price fluctuations and help benefit and robust cities; this is an acceptance of the repeated recessions endemic to neo-liberal capitalist economies. Economic resilience is prioritised over social and environmental sustainability because the need for funding and investment, jobs and the future livelihoods for inhabitants are paramount to reach the other two strands of sustainability.

Resilience is related to flexibility in planning, and it is associated with the dichotomy of reliability versus efficiency. Recessions instigate reflection on what makes cities vulnerable, on

resilient welfare policies, and on the means and ends of public planning when bounce-back to a growth pattern seems to be of most importance. Most systems of material flow are inextricably linked to the site, bounded by the geographical placement, and therefore bound by property ownership. So even if they have the legal planning competence, they are bound to work within the other actors' terms. The municipalities thereby have the opportunity to influence or decide on what scale a sector is operating. This is the frame in which these strategies are written, where they have to act as facilitators of space and resources, where the governmental tools are primarily vision and strategy. Where carbon emissions, energy consumption and technical instruments consist of objective and natural processes, it is made sense of and governed in terms of discursively constituted representations. Representation rendered possible within the framework of the sustainability discourse formed by the definition of the Brundtland report, where economic sustainability is understood as the primary governmentality tool.

The conditions for environmental sustainability follow a similar cyclical movement as the need for resilience to the inevitable economic crisis.

From this emanates a tension between engaging in the global economy on one side and sustainable policies and planning on the other side. The tension comes into view when efficiency-oriented neo-liberal growth policies are juxtaposed with reliability-oriented policies for resilient cities. They write themselves into a global reality. Where the problem is global, and international conglomerates of cities and nations set goals for all, but the responsibility is put on cities. Another side to this is the possibility of cities losing stature internationally if they fail to technologically upgrade the urban built environment in terms of energy efficiency, innovative technology and/or renewable energy generation.

Constantly seeking funding, and connections, bettering the lives of citizens and opening up to innovative solutions.

The discursive frame is ongoing urbanism, but there is an underlying discourse of determinism: the urban population will grow, and the modern city is a connected and flexible agglomeration of possibilities. There is a focus on technological fixes and innovation as solutions. When talking about energy and transport, there is an understanding and a tendency that initiatives are not punitive but informing and encouraging, thus fixated on influencing and changing the behaviour of citizens towards carbon-neutral choices, like recycling and walking/biking. Private capital is enlisted as a partner in developing and delivering solutions (e.g., city as a laboratory for corporations) as opposed to responses that might have been more controlling or

punitive. Citizens are made to bear personal responsibility for carbon reduction, while private companies are supported to make money through the transformation. Furthermore, the most dominant incorporation of equity was concerned with equitable access, creating jobs, and reducing the risk of citizens' inability to choose CN.

On the contrary, the tone becomes quite different when the focus shifts to the transport of goods. In Tromsø, goods transport is specifically referred to as an area that must not be hampered by how the city will try to change the population's behaviour patterns. There is thus an ambiguous relationship with growth. The word is often used as a collective term, i.e., green growth. Nevertheless, what it entails, and what kind of growth this should be understood as is neither explicitly clear nor uniform in reading the strategies. In general, there is a great focus on the fact that private motoring needs to be reduced, not the transport of goods and goods, and with this, we must understand growth as both growth in the population and growth in the economic sense at the same time.

5.3 The dyad of the city and country.

There is a common denominator with many of the keywords: they are placed together with 'city'. So, it is a 'smart city', a 'technological city', a 'modern city', a 'walkable city', a 'green city', or a 'sustainable city'. All three cities mention becoming part of different consortiums of cities or international groups, which can elevate the change towards a carbon-neutral city.

The delineation of the areas and concept of the city is ubiquitous in the presentation of the CN strategies. Policy frequently refers to smart solutions and choices without further specifying what 'smart' means. It is mentioned together with technological solutions, such as information technology, where it is predicted to implement and improve efficiency and gather information. It is evenly mentioned in correlation with 'smart cycling', 'Smart city', 'smart innovation' ', 'smart green city', and 'climate smartness'. With these, the notion of smart is put in context with 'modern', 'circular economy', and 'innovative solutions' for the population-growth problems and pressures on city systems. The words linked to this concept demonstrate the use of 'climate' and 'smart' as buzzwords in a context outside of direct logical linkage to the content of the climate-neutral strategies. The city must be *climate-smart* to be considered green, innovative, and modern climate smartness is automatically urban given the way it is constructed as a matter of technology and large-scale solutions based on aggregations of people and resources. The city is constructed as the most space- and resource-efficient constellation for achieving CN.

On the one hand, urban areas are more densely populated, which allows for efficient high-capacity transport systems and resource-efficient distribution systems.

The habitual way we understand the relationship between cities and nature was imprinted on us mainly by the Anglo-Saxon culture of the industrial revolution (Kwinter, 2010). Upheavals in social, economic, and political life transformed the very landscape around us and our relationship to it irreversibly (Ibid.). However, with the introduction of the modern green sustainable city, the binary of city and nature have been overthrown. By turning the city into an artificial ecosystem, nature becomes part of the city as a means to solve the problems of the growing city.

The carbon-neutral cities present themselves as green and the connection between the urban and nature, but in an urban way: with gardens, green roofs, parks, and designated spaces within the urban framework, for 'nature'. There is a dichotomy between cities and nature written into the strategies, between the needed built material for people to live and act in the urban and spaces of nature. On the one hand, the focus on 'greening' every part of the city makes it seem as if nature and flora might have more precedence in the future city. At the same time, the word is used in a context such as 'green' transportation, which consists of cycling and walking and requires (at least if one reads the measures proposed) paved cycling/pedestrian designated areas, thus creating an enigmatic notion of the word green. Green presumably refers to nature or is something environmental, like with 'green roofs'. However, in phrases like green infrastructure or green technology, green is suddenly a presumed benefit for the local and global environment, not a physical attribute. Green is put up against fossil fuel; it is opposing pollution. Windmills, hydropower, and geothermal energy are all categorised as green. There is an intrinsic connection between the word green and CN. Consistent with ecological modernisation, 'green' economic development goals not only become compatible with CN but the essential means through which CN will be achieved.

Nevertheless, nature, the physical attribute of green, is generally understood as either disposable or a possible space of development and efficiency improvements for the city to reach set goals. This is epitomised in the delineation of the city area, where everything outside of the city border can be seen as a possible improvement possibility for the cities. Reykjavik proposes increasing biogas production locally, encouraged by land reserved for the purpose and an increased collection of organic material and food outside of the city, to encourage and enable healthier and 'greener' food sources for the people in Reykjavik. Tromsø presents the closeness of nature as a resource unique to the city for tourism and recreational purposes. They also encourage the production of food locally. CPH describes the need for more space for windmills and the

creation of green energy in the vicinity of the city (but outside city borders) as an essential part of reaching the goal of CN. In all these presentations, nature is understood in its relation and value to the urban and its population.

Likewise, here is a representation that the same polluters and carbon emitters emit more pollution and CO2 within the city than outside. Consider the 'walkable city', in part designed to achieve climate targets beneficial for climate targets by moving cars out of the congested city. The same car is represented to be less harmful to the environment outside of city borders than within them. In this way, the policy represents CO2 emissions from urban sources and use in the city to be more harmful and urgent to remove. The way that the 'modern green city' is constructed leads to the initiative of innovation and technological fixes within the city and larger constructions of green energy, carbon sequestration and 'local' food or biofuel production to the peri-urban or non-urban areas – areas where nature is not yet efficient.

5.4 Part conclusion:

An argument sustainability was a concept that urban governments were adhering to and planning for before climate change became a pressing issue and ultimately the crisis that it is. One of the conceptual premises is that green and smart practices will lead to carbon neutrality.

Urbanisation is a presumed fact of cities today. As a result, it is clear from the plans that growth is being implemented into the sustainability practices. It is therefore that smart and green development is codependent with economic and social development. Because of the historical introduction of sustainability in the global arena, by the Brundtland report, the tools of governmentality for sustainability are understood as economic in planning and practice. Sustainability is therefore necessarily tied to growth, reflected in the number of climate-oriented terminologies applied to ideas of continuous development.

What finally becomes apparent is that decision-making power is moved away from municipal governments. Firstly, in the sense that frames for sustainable/climate-oriented decision-making derives in its infancy from national and international guidelines. Furthermore, it is argued here that Citizens are understood as resources that have to be provided with possibilities to enact the 'good' climate friendly choices, while private companies are supported to make money through the transformation. The result of structures already in place wherein municipalities rely on a

plethora of non-governmental bodies to see their projects realised. A managerial rationale wherein frameworks come from the top (national/international) and the way by which processes are realised and maintained in practice is through a body of actors outside of the municipalities' decision-making structures. This all leads to the main endogenous problem represented in the policies against solving the climate crisis is "how do we constitute an image of a carbon-neutral city whilst maintaining or continuing the development of the modern liveable Nordic city?"

6 What is silenced?

The starting point of the thesis was to address how the carbon-neutral concept is part of constructing and transforming the physical build of the cities and the externalities on a larger scale and scrutinise what notions of carbon neutrality create a tendency to perform solutions and fixes through technological devices, a shift in energy sources and a focus on transportation in particular ways transcending national borders. As part of the literature research for this report, a plethora of techno-rational literature was assessed. Here, the end and aims were left unquestioned and instead centred around the road towards carbon neutrality. What has been questioned is not the road to carbon neutrality but how decisions come about in the current form. Part of this requires asking about the limitations to the problem representation which occurs. One of the omitted paths is the failure to examine the resources needed to install smart technology when the 'problem' is the overconsumption of energy. The question of silences and omissions shall be understood and discussed through the rationalities, binaries and discursive premises found in the previous chapters.

The commencement to this must be the endogenous problem of the climate crisis: how does the respective city build the carbon-neutral city to avoid the global climate crisis whilst maintaining and continuing the development of the modern, dynamic, liveable and sustainable city?

6.1 Historically, economically and geographically created situation

To understand what is left out in this question, one must once again look at the historically, economically and geographically created situation.

The combined area of the north, 3,425,804 km², would form the seventh-largest nation in the world. However, the Nordic region is very sparsely populated, as the population amounts to around 27,36 million, only equivalent to about 0,35 % of the world's population (Nordic council). Uninhabitable icecaps and glaciers comprise about half of the total area (predominantly in Greenland) and a vast nature and climate variety containing huge expanses of unspoiled wilderness within the unfrozen landmasses, consisting of forests, fjords, meadows, mountains, wetlands, and small islands. The exception is the flatter southern region, specifically the most densely populated part, the Øresund Region, which has 130 inhabitants per km2 (Ibid). Despite the small population, together, the Nordic countries still comprise the 12th largest economy in the world (World Bank, 2019). In chapter four, the geographic and historical basis

has been established as a factor in creating these cities as frontrunners and throwing them on a fast track towards a future sustainable city. When they write themselves into an international context of the global climate crisis while defining the limits of the emission reduction to within the physical limits of the city, one has to question the likelihood of cities in Bangladesh or other heavily industrialised areas possibility to follow.

Simultaneously, a question of the unmentioned resources and the extended areas which are needed to sustain the livelihood of a dynamic and growing city arises. The Nordic countries, especially bigger cities, are not industrialised anymore. They focus on tourism or knowledge services and rely on worldwide goods and services distribution systems. This inequality and historical situation is not recognised in the representation of the global climate crisis as a problem for encapsulated cities to solve.

In exploring the emergent concept of the sustainable urban in the global urban era and the limitless city (while being very delineated), Neil Brenner specifies what is to be understood by the globalised urban or planetary urban and how that inflicts the idea of sustainable urbanisation (Brenner, 2014). Central to this definition is to understand cities still as fixed spatial agglomerations affected by a reconfiguration, as a consequence of globalisation and not as dissolving into placeless societies of global flows; nor does he render phenomena such as agglomeration effects or infrastructural concentration and accumulation of populations, traditionally associated with the idea of a city, operationally. The process of globalisation is of a dialectical morphology, subsisting on continuous expansion and acceleration of the movements of commodities, insignificant features in contemporary economy and society, capital, people and information over large geographic distances, as simultaneously relatively fixed and immobile spatial infrastructures (i.e., roads, housing) are designed to empower this expanding and accelerating global movement (Brenner & Schmid, 2014).

This empowering and expanding of spatial infrastructures are not only seen to accommodate for the global movement – although the preoccupation with biofuels and general emission-free power sources for transport devices such as aircrafts, container vessels and cruise ships is part of such a movement but instead a focus in the strategy to encompass the national urbanisation. Many of the solutions for carbon neutrality have discussed a polycentric focus in their presentation and constitution. This focus on reaching specific goals and the centration on a techno-rational efficiency discourse has an inbuilt risk of path dependency. What seems efficient within one representation of a problem might render itself problematic in the near or distant future. Many consumption-based carbon footprint studies have, for example, explored

the greenhouse gas emissions from the consumption of services, goods and energy and their relation to urban structures. They found no clear evidence that dense urban structures and technological 'smart' systems are sustainable. Rather, the question of sustainable urban structures becomes complicated and multi-faceted once consumer goods are added to the equation (Kristjánsdóttir et al., 2017).

Are notions of the emission-free and eco-city just oxymorons? How can the modern city, with all its mechanisms of consumption, devouring of goods, its insatiable demand for energy and constant need for transference, ever be carbon neutral? It is relatively easy to imagine a more resource-effective city than what is currently the norm, maybe with fewer cars or perhaps windmills on the hill in the background, but this is vastly different from what is promised when cities conceive a CN future. Mike Davis (2010) describes the paradoxical position that urbanisation – the potentially principal solution for human survival in the later twenty-first century – has become, when it is now the dominant cause of global warming. Cities have been portrayed and are still portrayed as beacons of hope, yet he argues that the cities of poverty will almost certainly become the coffins of hope. In this regard, the Nordic cities, while hoping to see themselves as frontrunners carving the path for sustainable cities throughout the world, is showcasing the incomplete picture of an unequal standing ground for which cities are fixed to when creating their CN futures.

6.2 A transnational discourse creating the space of political competence

There are clear nationally transcending notions, discourses, rationales and regulatory trajectories, so is this the time to wonder how a contingent global governmentality could define the local realm of possibilities? Methmann (2011) asks the question, "is there such a thing as global governmentality?", understood as a general global economy of power, forming the conducts of national states and actors within.

Some academics have argued that, as a concept, governmentality is not equally applicable to all parts of the world, given that the traditional foci of government involving the general population and civil society does not exist similarly outside the institutions of the Western world (Methmann, 2011).

The construction of global warming as an inherently global field of visibility through international consortium of local governmental actors such as C40, Covenant of Mayors, CNCA and ICLEI and Climate convention, extends according to Methmann, "biopolitics from

the care for the population to the management of the entire planet" (2011). Epitomised in the UN's Race to Zero campaign, a global campaign to "rally leadership and support from businesses, cities, regions, investors" (Mohieldin & Topping, 2022) to perform as the governors of sustainable growth in the fight against the climate crisis.

From early on in GHG emission accounting, it was decided to acknowledge bio-gas and bio-fuels as carbon-neutral energy and fuel sources. This carbon governmentality not only affects international politics but can also 'conduct the conduct' of subjects on various spatial and political levels. Still, we see this path followed and sought after by all three cities. There is little traction towards less flying or an international push for cheap train journeys, so we stay on the road of ignition for heat and transport (Vaden et al., 2019).

A large part of public space in cities is often dedicated to motorised traffic such as cars and trucks. Nello-Deakin (2019) illustrates how a parked vehicle requires at least three times more space than public transport and ten times more than a bicycle. When a car is driven at 50 km/h, it requires 70 times more space than a cyclist or pedestrian. It is an entirely different built environment when the car is centric, so the car-centric planning we have done significantly impacts the city's image (Gehl, 2010). As we have already seen, none of the three cities questions the need for roads or the creation of cyclable and walkable green spaces in the city. Most interesting is that car centricity is a politically decided choice everywhere, at least where historic city construction has not made it impossible. While it still also impacts our carbon strategies, such as focusing on either bus rather than trains, accessibility of shared cars or electric car charging facilities. The tools for carbon neutrality are conceived as possible in the context of carbon accounting, and thus the frame of what is included in this account has a deciding effect on the conduct of cities.

Urban brands have developed in conjunction with the well-established entrepreneurial mechanisms of urban governance systems. Liberalised markets and business-friendly urban landscapes provide the foundation for welcoming business and the establishment of market players. Within these confines, however, urban governments seeking to attract business and investment are found racing to gain the competitive edge (Greenberg, 2015). Melissa Checker et al., exploring the relationship between sustainability discourses and cities' branding strategies, argues that "[i]n some ways, urban governments have far more power over constructing their images than they do over making a substantial difference in climate change" (Checker et al., 2015, p. 4).

What becomes apparent through this analysis and discussion is that the image of the carbon-neutral city is situation specific. Each city's historical development and geographical location

(the resources, the location compared to other cities) is the foundation for what is deemed possible. The social, economic and locally specific regulatory frameworks are part of deciding the realm of possibilities and the envisioned future. The local specificity is a deciding factor in what transnational rationalities and conceptual premises take root. Simultaneously, national frameworks and an international panoply of actors are part of creating the knowledge and truths on which the cities have to act within. They enact and create the legally binding categorisations of carbon neutrality, like adding biofuels to the green choices, or only having a bipartite understanding of GHG emission accounting, (which arguably is part of the same problem representation, fossil fuels becomes the problem, not the i.e., increasing consumption) – either green or fossil fueled, sustainable or unsustainable, accounting for emission or not. I will not conclude from this the possibility of global governmentality, but rather acknowledge that discourses are created globally (or at least Western world) as a result of the globally placed problem of climate crisis, thereby creating the understood realm of possibilities for each city. It is important to remember here that regimes of governance do not determine forms of subjectivity; they elicit them (Dean, 1999, p. 32).

6.3 An aspect of time

The focus on sustainability in terms of its nature as tripartite makes it appear neutral and apolitical. According to Kenis & Levis (2017), it risks silencing competing understandings of sustainable development, sustainability and the causes of unsustainability. The prevalence of sustainability in urban discourses has developed in relation to a pervasive consciousness of the city's role in assisting in the accelerated deterioration of the planet. We have to understand the urban area as limitless in so far as the capital, the population and commodities to sustain the city come from anywhere in the world (Brenner, 2014). Kenis & Lievens (2016) describe how the change toward carbon neutrality starts with an enthusiastic ideal image of the city: the future city is sustainable but still rooted in contemporary developments and realities. This is more apparent in CPH, and in the aspirations of Tromsø. However, apparent in strategies and this method for planning lies a focus on the future. Only through vision can the municipality change towards the desired form of the city. With the diminishing planning role and the emerging guiding role of a facilitator among municipalities, there is a shift from laying out the physical structures of tomorrow, to informing actors and stakeholders of the importance in their engagement.

Additionally to this change the techno-rational discourse, focusing on the most efficient and cost-beneficial solutions, adhere to the future as the dominant category. We live in a fast moving technological era of big data and new, cheaper technological solutions around the corner leaving the facilitating municipalities to have to choose when to invest and constrict themselves to specific solutions. The visions are all eight years or longer, with an inbuilt revision to accommodate for change and be flexible if new solutions occur. Kenis & Leivens draw upon Daniel Bensaïd (1995) as they describe how having a future as the dominant category might lead to a loss of political intensity in the present, resulting from an attitude of patience inspired by a future utopian image, unlike politicised conceptions where the present is the dominant category. There is a tension between the longer-term transition planning and the short-term crisis management (within which all carbon-neutrality plans are rooted), which might obscure and render many political decisions invisible or self-evident by a scientific or technical discourse legitimised by the utopian future image.

This is exemplified by CPH's failure to comply with their vision. The requirement of carbon sequestration technology which was not yet fully developed as they started, and now three years till they are supposed to be carbon free, the failure of the technological solution, has made a lack of fundamental changes to the physical structures of the city apparent.

Within this idea that climate neutrality is to be built step by step, and what cannot be done today can possibly be solved tomorrow, is an engraved acknowledgement for technological improvements that will deliver the solutions. This bet on the future relies on an empty and non-political conception of time and de-politicising the concept of a carbon-neutral city, as the cities are left as cities patiently waiting for the right, most rational, solutions (Jasanoff & Kim, 2015).

6.4 The natural world and the city detached

The dichotomy between city and nature is rooted in narratives depoliticising the terrain of environmental degradation. There is a decoupling of environmental benefit from ecologically harmful current development models, relocating it within the politically neutral spaces of technological development and population quality.

Descriptions like 'green smart transport' or 'sustainable city development' are all written indisputably, and in a sense, what could be wrong with green transport? The plans are revised according to the accounting measures and the knowledge gathered, not according to new political circumstances. The fastest and most inexpensive practices are indisputably the best. The link between development and growth in the urban era has enforced a habitual understanding of the relationship between cities and nature. Solutions for carbon neutrality as

we have put them forth require a transformation of the countryside/nature once again either to consume the excess carbon emissions the city cannot or enable a transition towards the carbon neutral city through, i.e., energy plants or wastewater treatment plants or other essential elements of the urban, has rendered our relationship with nature irreversibly to be valued by how it is beneficial specifically to the urban population.

They fail to see in the sustainability representation that any natural ecosystem is more resilient than artificial 'efficient' and human 'accommodating' ecosystems such as agriculture, forestry and other monocultures.

David Harvey writes in "Cities or urbanisation?" (1996) that cities were forced to be sustainable and dependent on their hinterlands for agricultural reasons and for the removal of urban wastes in "the release of urbanisation from limitations" after the 19th century (Ibid.: 44). This initial constraint was limited by the metabolic relationship that existed between cities and the productive capacities of their regional hinterlands. A dire dependency best describes this relationship as the city's sustainability (or even survival) was committed to the sustainability of its regional biosphere. Are we on the way to the same when the focus moves towards localised food production and reforestation? Or could these possibilities be made possible by creating an understanding of the city *as* nature?

There is of course talk of greening and reforestation. If the problem of the climate crisis was understood as urban construction, could the introduction of green then be seen as an introduction of the natural world, and therefore understood in contrast to the synthetic form of the city today? There is an argument to be had here, as the city of today encompasses nature but in an altogether urban and detrimentally artificial way.

6.5 Part conclusion:

In the representation of the problem as a global lack of knowledge and path, and their solution to carve said path for the future carbon neutral cities of the world, lies an omitted local context for the rest of the world, specifically any highly industrialised. In this representation the responsibility of the climate crisis is put equally on each city alone, disregarding that it is the historical/economic position and the geographic attributes that have created the realm of possibilities for the Nordic cities to become frontrunners. These are not applicable to all parts of the world, which leaves the Nordic cities not so much as an example but rather privileged in their circumstance. This apparent inequality in the possibilities to develop an urban CN future is however not mentioned or adhered to within the plans. Whether many of the assumed rationales and discursive conceptualisations of the problem is a matter of global

governmentality is up to debate. However, what is apparent is that the placing of the problem as a global situation creates an inability for even the privileged municipalities of the Nordics to overcome or circumvent the international imaginaries and processes for CN futures. What is to be remembered here is that no governmentality - be it global or national - is a strict binding power. There is however an element of choice to adhere to the frame. Additionally, there is a silent depoliticisation. Furthermore, the time perspective gives leeway for depoliticisation and inaction, further enhanced by an understanding of the carbon emission from the city as limited, while the externalities of the city are limitless.

The extent of the urban reach into the realm of the natural world in its need for resources and energy goes beyond its confines. The city's relationship to nature showcases how the way that we have understood the city as limitless, a place of opportunity and beacon of hope has created a singular, path-dependent manner of physically constructing the world around us. This assumed dichotomy between nature and cities is not a law of nature, but a political choice.

..

7 Conclusion

Due to the available energy sources and their location-specific circumstances each city is placed within a dominant factor for how they enact and conceive the possibilities of the CN city and thus also the problems to get there. The likeness in Reykjavik and Tromsø's focuses are predetermined by the remoteness of their position and a historic trend of sprawling in the cities. This has led to an environmental and social aspect present in their presentation by an approach towards 'green', 'healthy', 'safe'. Copenhagen diverges from these trajectories because of their geographic situation, placement and the structure of the city. As it is placed in a location of high interconnection, with many transport options and a more densely populated area, they have become preoccupied with limited space, efficiency and smart solutions. As a result of their social and recent historical development Copenhagen and Tromsø seek to use their carbon neutrality strategies as technological advancements and present themselves as pioneers. The 'green city' of Reykjavik concentrates more on the social-eco realms of the tripartite relationship in sustainability (owing partially to the 2008 economic crisis and in light of COVID-19), while 'smart city' has a more technological genesis and deals more with the climate-economic realms of cities and the idea of a more efficient way of using resources or infrastructure already in place like Tromsø and Copenhagen. Much of the conceptual framework is created by the meaning to which sustainability was given as a concept before urban governments were adhering to and planning for climate change. As a result of this, one of the conceptual premises all cities work within is that green practices, independent of their carbon emission reduction ability, are understood to lead to carbon neutrality, as climate crisis and environmental issues are seen and used interchangeably. Urbanisation is a presumed fact of cities today. As a result, it is clear from the plans that growth is being implemented into the sustainability practices. Because of the historical introduction of sustainability in the global arena, by the Brundtland report, the tools of governmentality for sustainability are understood as economic in planning and practice. It is therefore that smart and green development is codependent with economic and social development. The sustainable city is tied to growth and development. Frames for sustainable/climate-oriented decision-making derives in its infancy from national and international guidelines. The result of structures already in place wherein municipalities rely on a plethora of non-governmental bodies to see their projects realised creates a specific subjectification of these actors. Citizens are understood as resources that have to be provided with possibilities to enact the 'good' climate friendly choices, while private companies are supported to earn profits through the transformation.

Further, as a global lock of knowledge for how best to combat carbon and to create CN neutral cities throughout the world, what remains omitted from the discussion is the impact that local context places on the ability to tackle the issue at hand. What comes forth is the consideration of responsibility to be placed on each municipal government, paying little heed to the historical, economic and geographic circumstances that facilitate the possibility for the Nordic cities to consider themselves as leading the way. As a result, the argument is that the Nordic cities are comparatively privileged in comparison to many other cities of the world – a fact that it is not evident has been understood in the Nordic context. However, what further becomes apparent is that while CN remains a global problem, and therefore decided upon on the national and international level, even the Nordic cities are unable to to circumvent the binding structures of a global governmentality that wishes to promote a global strategy that pays little attention to the specificities of place that determine the manner and practice of municipal governments (although there is of course the possibility to adhere in the manner they see fit). There is however an element of choice to adhere to the frame. Additionally there is a silent depoliticisation. Furthermore, the time perspective gives leeway for depoliticisation and inaction, further enhanced by an understanding of the carbon emission from the city as limited, while the externalities of the city are limitless. These externalities encroach on the natural world, a fact that is obvious but not entirely understood and accepted as a detrimental quality of the resource-dependent, globalised mesh of cities. The city's relationship to nature exemplifies how the way that we have understood the city as limitless, a place of opportunity and beacon of hope has created a path-dependent method of physically constructing the city. Although the assumed dichotomy between nature and cities is not a law of nature, but a political choice, it is presented as a fact and is part of how each city relates to nature in their execution of the carbon neutral image.

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Appendix

Copenhagen	Reykjavik	Tromsø
Energy consumption - Improvement of the construction framework and conditions - Energy-efficient buildings in Copenhagen - Spread of solar cells - Innovation and profiling - The smart city Energy production - Wind turbines on land within the municipal boundary - Wind turbines in other municipalities Coastal offshore wind turbines - Partnership for bids on government offshore wind turbine projects - Biomass at the cogeneration plants - New heat production units in Copenhagen - Conversion of peak load to CO2-neutral fuels	The walkable city - 15-minute district - Green city development Energy exchange - Energy exchange everywhere Health enhancing commutes - World class cycling city - Borgarlína (Cityline) and improved public transportation Circular thinking - Zero waste - Green food policy Eco-friendly structures - Green construction industry Carbon sequestration - Turn CO" into stone - Reclamation of wetlands - Reykjavik climate forests	Reduction of Climate gas emissions - Goal management - Tenk Tromsø - Electrification of road traffic - Service trips in the municipality - Electrification of sea transport - Environmentally friendly transport - Emissions from the construction sector - Ownership and network - Acquisitions - Food in municipal service - Mobility solutions and parking Climate adaptation - Climate adaption Environment Measures - Dust and noise - nature and environment - contamination

- New waste treatment plant - Treatment of organic waste - Sorting out plastic in the waste Mobility - City of bicycles - New fuels in the transport sector (electricity, hydrogen, biofuels) - Collective transport Intelligent traffic management - Mobility planning Copenhagen municipality as a company - Systematic consumption mapping and energy management - Energy efficient buildings - Solar cells on Copenhagen Municipality's properties - Conversion of the vehicle fleet to new fuels Purchase - Behaviour and education - Energy-efficient Street lighting	Adaptation to climate change - Fossil fuel free by 2025 Awakening and innovation - Blue-green surface water solutions - Flood control installations to become recreational areas and parks Operations of the City of Reykjavik - Collaboration with business and industry	- waste - environmental suffering - construction projects - support and awarding - plastic-free city, clean coast and sustainable tourism