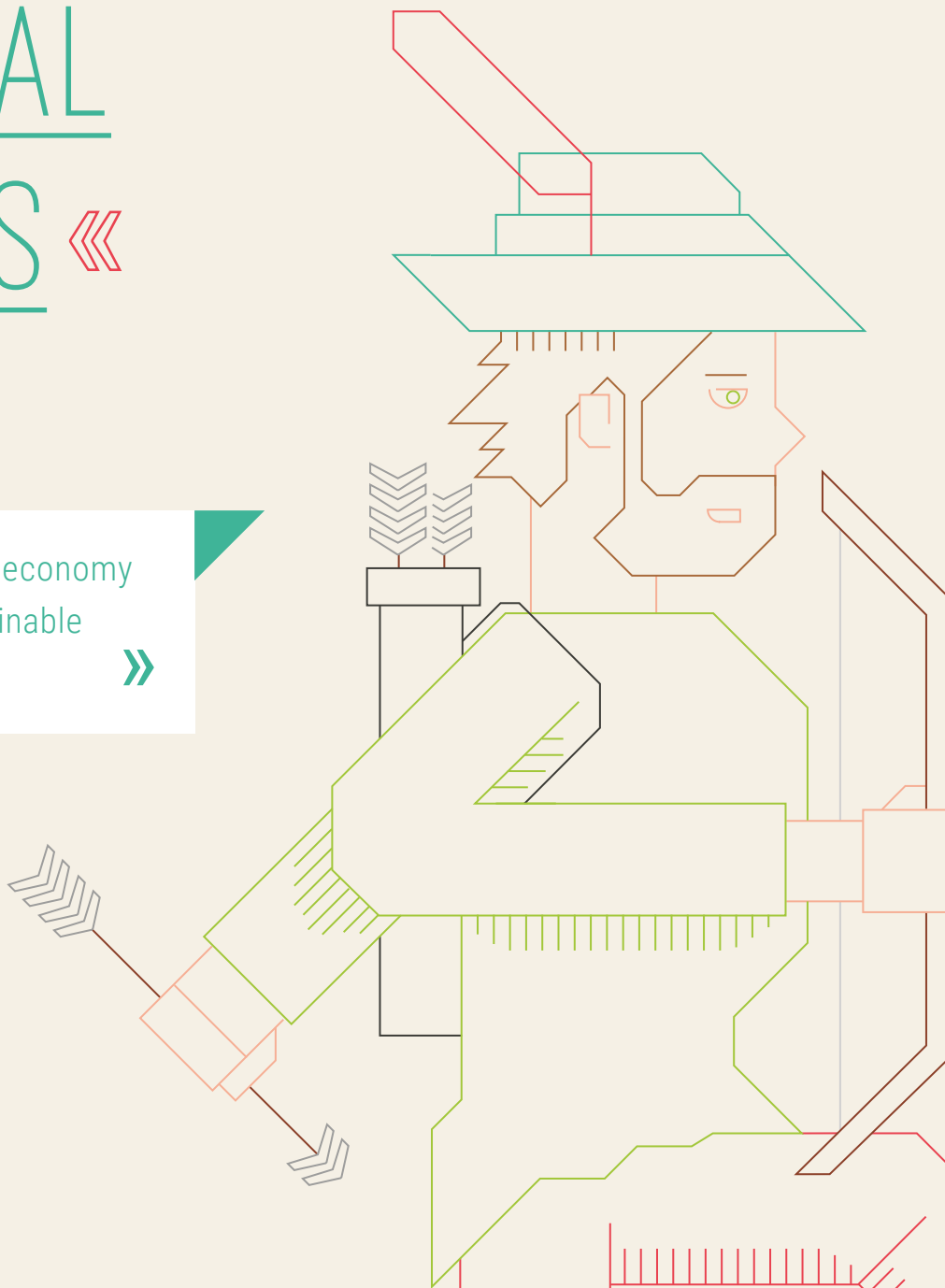
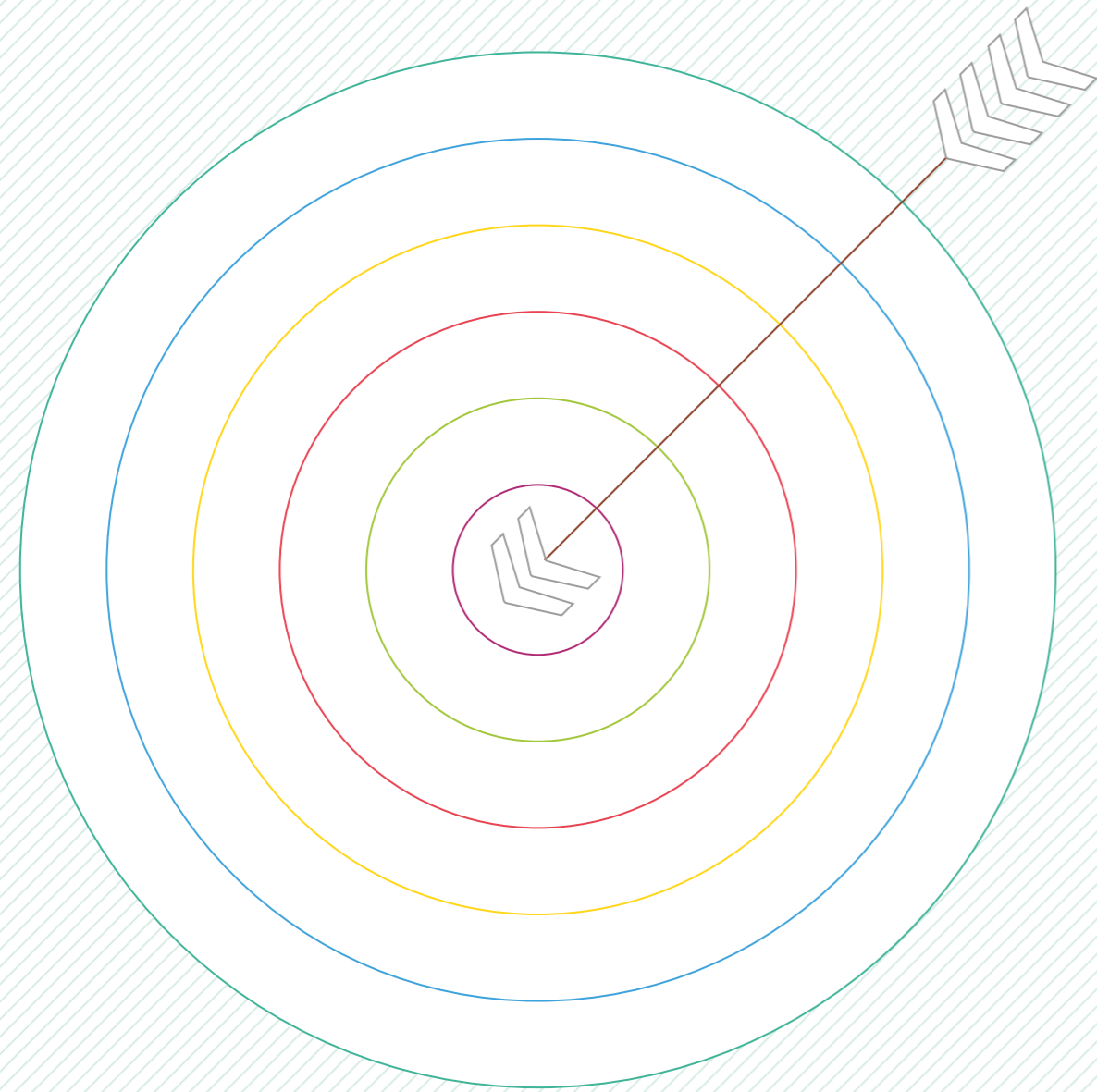


# » CLIMATE- MAINSTREAMING MUNICIPAL BUDGETS «

Taking from a fossil fuel economy  
to reinvest in local sustainable  
communities »





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# INTRODUCTION

» The importance of sub-national governments in achieving international and European climate goals in line with the 2015 Paris Agreement has been highlighted countless times, showing that “over a third of the EU’s 2020 emission reduction target will be delivered by cities”<sup>1</sup>, to give just one example. But despite the high degree of awareness regarding their role in meeting the environmental challenges among local authorities themselves, the responsibility for achieving their energy and climate targets still lies overwhelmingly on the shoulders of the Energy and Climate Departments of the cities’ administrations. Other departments and agencies, including the Financial Departments and City Treasuries, often do not feel concerned or do not see how they can contribute to attaining climate goals.

Similarly, apart from the expenditure directly attributed to climate and energy projects, most cities do not monitor the climate impacts of their expenditure and investments. The potential impacts – both negative and positive – that cities’ finances have on the success of the energy transition are not well understood

but extremely significant. Spending by local and regional authorities represents an important part of the European economy; sub-national government expenditure represented 15.9% of EU GDP in 2016<sup>2</sup> and “55% of the total public direct investment was carried out by sub-national governments”<sup>3</sup> in 2014. And it makes a crucial difference to the whole region whether these resources are being channelled into climate-destructive or climate-protecting projects and investments.

Consequently, this guidebook aims to address the lack of awareness of the role of public finance in the energy transition within municipal administrations. It does so in anticipation of declining local budgets, raising the question of **how cities can efficiently channel finances to achieve their climate goals. It contains a collection of case studies, best practices and tools, which can help local authorities align their expenditure and investments with the Paris Agreement objective to limit global warming well below 2°C by climate-mainstreaming in their budgetary and financial planning.**

There is a multitude of strategies and tools, which cities of various sizes are pioneering, touching upon all of a city’s financial assets and allowing local administrations to account for climate impacts at every step of their financial and budgetary planning. These strategies are developed around five main focuses:

#### » Environmental reporting and budgeting:

There is a necessity to change the way municipal budgets are presented in order to account for climate impacts and the costs needed to attain cities’ climate goals. Combining environmental with financial reporting leads to better informed decision-making about investments and fund allocation and gets the attention of financial staff when climate and energy data is presented in a form they are familiar with.

#### » Green public procurement:

Municipal procurement budgets represent a significant leverage opportunity for working towards sustainable and innovative market practices. City staff has to engage with the local economic actors in order to ensure that their ecological standards are being met, but also to better understand what is already possible on the market today. Setting high standards triggers innovation.

#### » Divestment of municipal funds from fossil fuels:

Cities may not even know what companies and projects the money they hold in funds and saving accounts is being invested in. Local authorities need to be demanding in relation to their banks and fund managers, urging transparency about how these financial service providers manage the city’s money in terms of environmental investment criteria and climate risk.

#### » Green municipal bonds:

Not simply a source of financing for energy and climate projects, green bonds also present an opportunity for the city’s administration to develop capacity building among environmental staff, extend cooperation by breaking down silos and elaborate detailed monitoring and reporting mechanisms, which force the city to stay on top of the climate impacts of their investment projects. Conversely, cities with a sophisticated environmental reporting system, as well as high degrees of

cooperation between financial and environmental departments have easier access to finance for energy and climate projects.

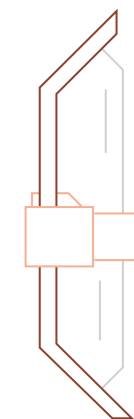
#### » Earmarking local revenues and other financial instruments:

Several cities have established funds for energy efficiency or sustainable transport projects financed by environmental taxes. Through such taxes or even more innovative financial tools such as carbon-offsetting, local authorities seek to raise awareness among citizens and companies of the need to change habits and mobilise their resources to invest in energy and climate projects.

What all these strategies have in common is that climate-mainstreaming public finances is not only about the flow of money but also very much about the flow of information inside the local authority. The exchange of information is crucial in order to align decision-making about spending with the environmental agenda, from the multi-year strategic planning of the city’s investment priorities at the political level to the every-day decisions and purchases made in the different administrative units, and even by the citizens themselves.

It is difficult to make recommendations which are relevant to all local authorities, as there are large disparities between the financial resources available to different cities, their competences in terms of generating and managing revenues, as well as the size of the investment projects and purchases they undertake. Another divergence is the level of environmental consciousness already present in the administration, whether there is information exchange and collaboration between departments, and whether cooperation between financial and environmental staff is in place or not.

While this guidebook aims to show innovative examples and forerunners in the field of climate-proofed local finances to demonstrate what can be done and achieved, it also wishes to show what first steps cities with more limited capacities can take to initiate similar processes even under more restrictive conditions, contributing to capacity building of environmental staff, as well as of the administration as a whole.



<sup>1</sup> JRC. (2016). ‘Covenant of Mayors: Greenhouse Gas Emissions Achievements and Projections’ in ‘JRC Science for Policy Report’.

<sup>2</sup> [https://read.oecd-ilibrary.org/governance/oecd-regions-at-a-glance-2016/subnational-government-expenditure-as-a-percentage-of-gdp-and-total-public-expenditure-2014\\_reg\\_glance-2016-graph89-en#page1](https://read.oecd-ilibrary.org/governance/oecd-regions-at-a-glance-2016/subnational-government-expenditure-as-a-percentage-of-gdp-and-total-public-expenditure-2014_reg_glance-2016-graph89-en#page1)

<sup>3</sup> OECD. (2014). ‘Effective Public Investment Across Levels of Government: European Union’. Available at: <http://www.oecd.org/effective-public-investment-toolkit/european-union.pdf>

# THE MUNICIPAL BUDGET CYCLE

» Many of the strategies presented in this guidebook follow the logic of the municipal budgetary planning cycle, beginning with a political ambition at the top, through which an overall multi-year strategy and priorities for the city are developed. These priorities are then translated into targets and measures under the responsibility of the city's different administrative units, where the budget is executed and information on the spending in the specific sectors is collected. This data, following up on the progress

of projects financed by the city, has to be extracted from the different departments and aggregated into a form of reporting used to assess the alignment or non-alignment of the city's expenditure with its climate objectives. These reports then form the basis for updating the political priorities and strategic planning at the beginning of the next cycle – going full circle.

## 1. Defining the macroeconomic outlook: Priority-setting at the political level

### Strategic planning:

Budget preparation begins with the formulation of long-term goals and short-term objectives, priority setting and elaboration of action plans. The political vision is described through mission statements, which are based on what has been achieved so far or shortcomings in the past cycle. Performance indicators for these objectives are set in order to measure what success looks like. The main steps at this stage are:

- » Establishment of the financial principles to guide investment decisions
- » Identification of projects and new activities that may affect the municipality's finances and a simulation of their impact on the local economy
- » Stakeholder input from external actors to understand their needs and priorities

## 2. Budget formulation: Translating the political priorities into budgetary terms

A distinction is made between a city's capital budget and its operating budget. In European cities there is no uniform system governing the frequency of budgetary planning cycles. Operating budgets are mostly annual budgets, however, several administrations, e.g. in Belgium, Italy or the Czech Republic, have a budget planning which takes place up to 2–3 times a year, while some cities in Germany only conduct budget planning every 2 years. Capital budgets are generally multi-year budgets, which are usually formulated for 4–5 but in some cities up to 10–15 years.

### Multi-year capital budgets

are long-term estimates of potential large expenses or investments for the creation of assets whose benefits extend beyond one year.

**Expenditure:** goods and services whose benefits extend beyond one year (creation of long-term assets, e.g.. roads, pipes, schools, wastewater treatment plants)

**Revenue:** from capital transactions (e.g. the sale or lease of assets, land, or other property)

### Capital Investment Plan

The multi-year capital investment plan establishes the time schedule and costs for all capital investment projects under consideration. It outlines the public facilities, infrastructure and land purchases that the administration intends to implement during a multi-year period. The availability of funds determines the scope of the projects to be realised. Capital investments are generally financed through grants from the national government, loans, bonds or the municipality's own reserves if any exist.

### Assembling the budget

Finally, after review of the department budget plans and of the cost estimates, the budget estimates are finalised and put together in the overall budget proposal.

### Annual operating budgets

short-term budgets based on estimates of income and expenses associated with the administration's operations

**Expenditure:** the regular day-to-day operation of services (wages and salaries, office supplies, maintenance expenditure, the servicing of long-term debt)

**Revenue:** current year transactions (tax collections, rents received)

### Annual budgeting

**Needs assessment:** Providing an overview of expected revenue and determining the global level of expenditure

**Budget Circular:** is sent out by the finance department to all local government departments or agencies. It contains instructions for department budget plans. These plans estimate the budget needs of the department for the coming fiscal year and any revenue anticipated to be collected by the department. The instructions also indicate what funds are likely to be available, as well as the overall priority directions developed by the executive leadership.

## 3. Legislative approval of the budget

The budget is then presented to the City Council, where it is discussed and adopted.

## 4. Execution

The budget is executed by the different departments or agencies in the city's administration. Through apportionment, funds are allocated to the departments to finance the projects outlined in their budget plans. Public procurement procedures are used to access the goods and services necessary for the functioning of the administration and to undertake the different departments' activities. The departments are also responsible for their revenue management, through the collection of revenues (i.e. taxes or charges) that fall within their responsibility, and all revenue and expenditure are recorded. All this financial information is entered into the department's accounting documents.

## 5. Reporting, monitoring, evaluation, audit

The financial information compiled in the department's accounts is the basis for creating an overall budget report. Accounting, monitoring as well as financial and budgetary reporting are financial control instruments and allow a balance sheet to be drawn up at the end of the fiscal year, listing the city's assets and liabilities. The balance sheet provides a snapshot of the city's equity or net worth at a particular moment. In addition, auditing aims to verify the reliability of the financial reports and evaluates the financial activities on which they are based. These documents, such as the financial report or the audit report, then complete the circle as they inform the decision-making in the strategic planning phase of the next cycle.

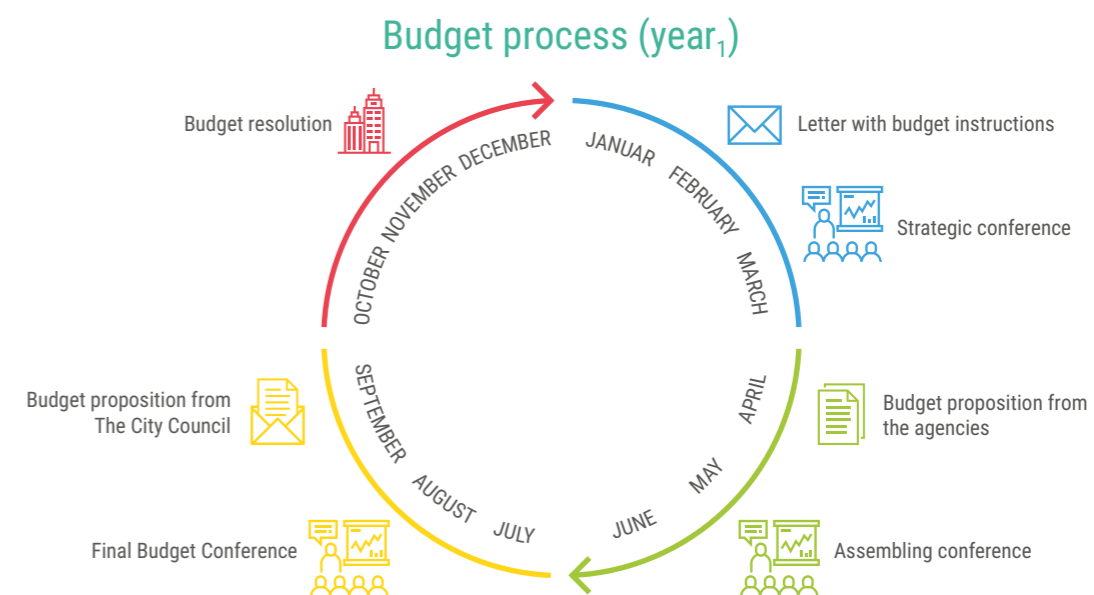
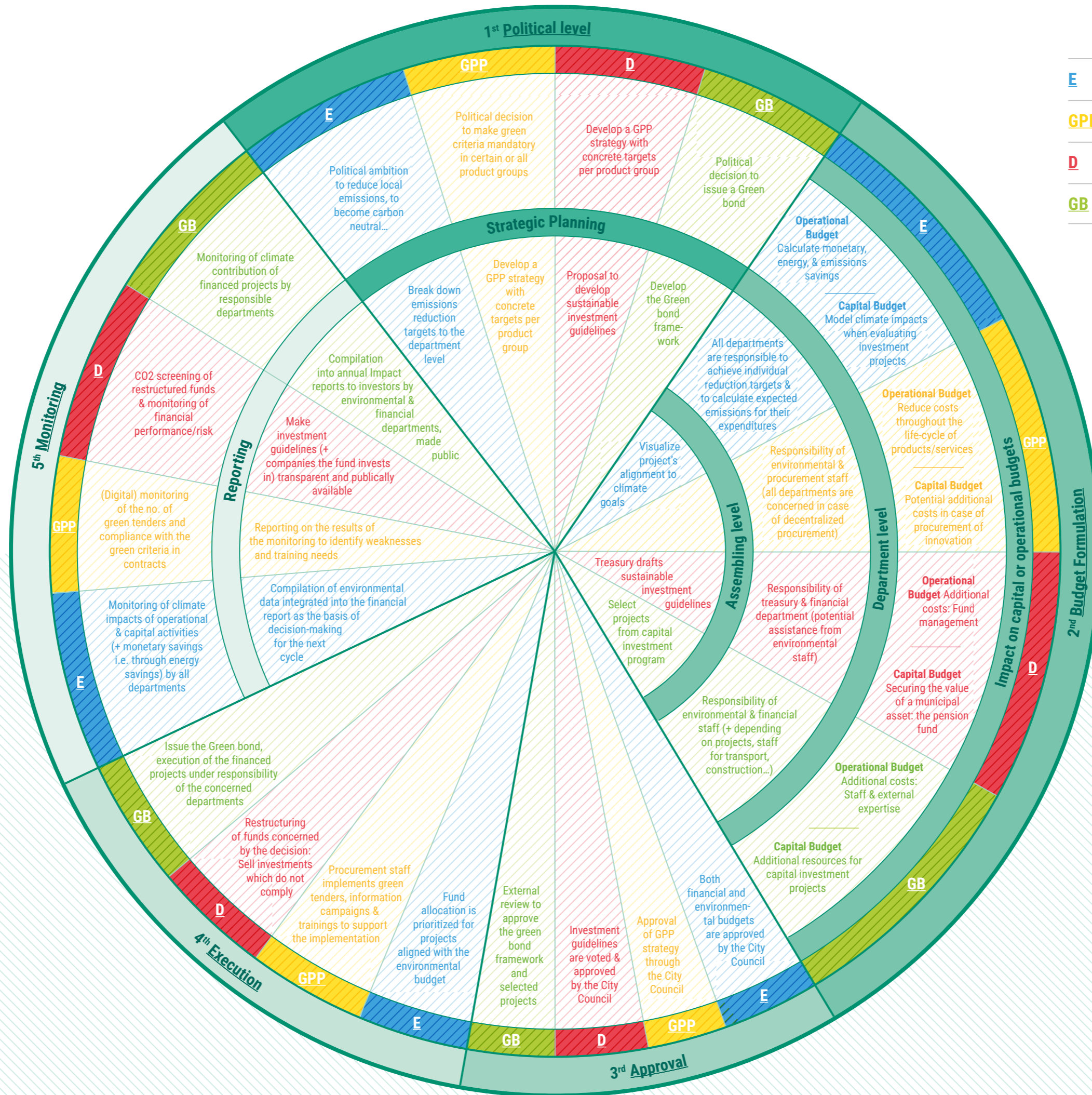
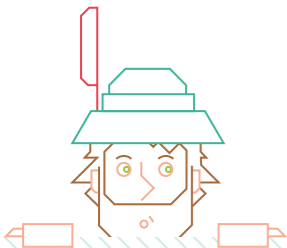


Image 1. The budget cycle of the City of Oslo (Norway)<sup>4</sup>

<sup>4</sup>City of Oslo. (2018). 'Oslo's Climate Budget: Innovation in Climate Change Governance'. Presented by M. Nordskog, September 25.



- E** Environmental budgeting & reporting
- GPP** Green Public Procurement
- D** Divestment
- GB** Green bonds



# CHAPTER I

## ENVIRONMENTAL BUDGETING AND REPORTING SYSTEMS

### Introduction

Access to up-to-date, comprehensive information and data is crucial in order to determine the cost of measures needed to meet cities' climate objectives and to plan for them effectively in the budgeting cycle. The environmental budgeting, reporting and accounting systems adopted by cities aim to collect and connect data across departments. They provide answers to the questions arising from sustainable action plans: How are objectives set? How are objectives tracked and followed up? What indicators are used to measure the current situation? How do we distribute responsibility for achieving set objectives and raise awareness? How can a holistic approach towards climate and energy issues be developed?

The policy tools presented in this chapter characterise the variety of approaches and methodologies used by municipalities. Their objectives are however mostly the same: To connect data collected in different departments of the city administration, determine indicators for the performance of the city in terms of a specific variable and monitor its evolution.

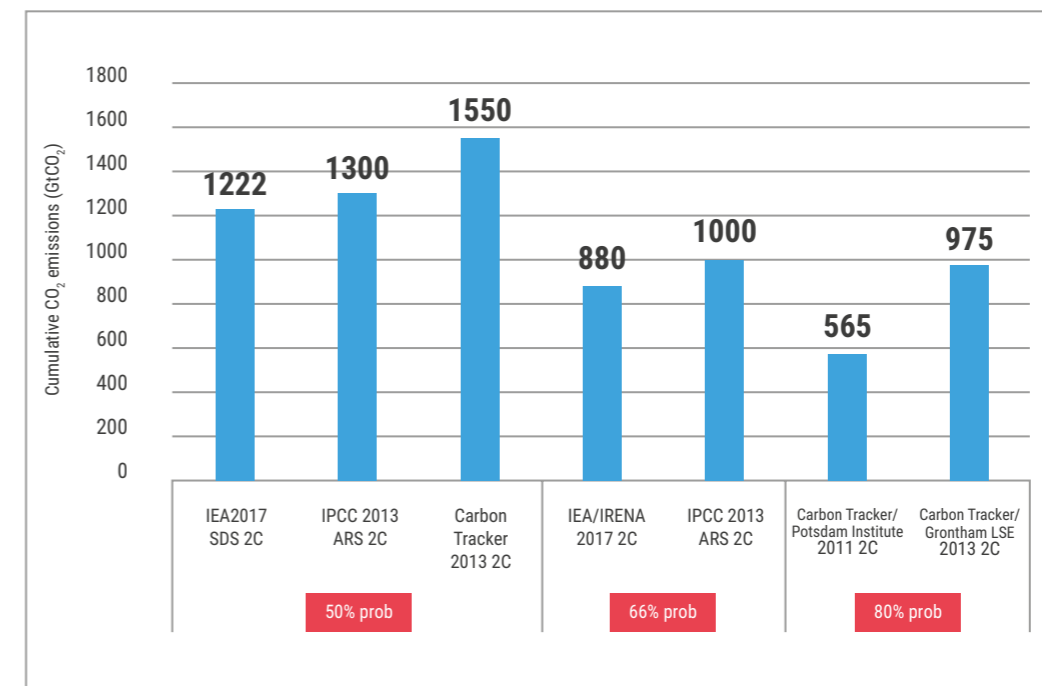
The examples given in this chapter show that reporting on environmental data is often connected with budgetary planning to ensure that intelligent investment decisions are made, which are aligned with the city's climate objectives. Feedback from the cities shows similar patterns, notably in terms of how such reporting systems are used to extract large amounts of data from the different departments and fields of activity the city engages in, in order to be able to plan appropriate measures, calculate the resources necessary to achieve the objectives and follow up on how efficiently these resources are being spent and possibly on the budgetary savings achieved through energy efficiency or other climate and energy actions.

When formulating recommendations on how local authorities can optimize their budgets in light of the significant investments necessary to achieve the Paris Agreement objectives, WWF France highlights the importance of allocation of the sectoral budgets as a first step. The actions planned by all sectors of the local administration "should ideally be defined according to an analysis of their cost/efficiency ratio, comparing, according to an overall cost rationale, the cost of the action and the revenue/savings it generates. The cost of the action would also benefit from being weighed against the cost of inaction, which would take into account the vulnerability of the territory to climate change and its necessary changes. However, this cost of inaction is only rarely – if ever – evaluated<sup>5</sup>."

<sup>5</sup> WWF France. (2018). 'Le défi climatique des villes'.

### 1. Carbon budgeting

Carbon budgets emerged as a scientific concept from the IPCC's 2014 Synthesis report on Climate Change<sup>6</sup> and relates to the "cumulative amount of CO<sub>2</sub> emissions permitted over a period of time to keep within a certain temperature threshold"<sup>7</sup>. This framing allows to inform local and national climate strategies using the 1.5°C or 2°C temperature targets as enshrined in international goals.



**Figure 1.** "A number of differences lie beneath 2°C budgets published by different institutions"<sup>8</sup>

At the national level, some states have adopted carbon budgets in line with the 2015 Paris Agreement, whose global objective is to "keep the increase in global average temperature to well below 2 °C above pre-industrial levels and to pursue efforts to limit the temperature increase to 1.5 °C above pre-industrial levels"<sup>9</sup>. One such example is France, which has determined three carbon budgets over the 2015 – 2028 timeframe in its Stratégie Nationale Bas-Carbone (SNBC)<sup>10</sup>. France's carbon budget limits the country's overall CO<sub>2</sub> emissions to 442 MtCO<sub>2</sub>e between 2015 and 2018, gradually reducing the budget to 399 MtCO<sub>2</sub>e between 2019 and 2023, and 358 MtCO<sub>2</sub>e between 2024 and 2028.<sup>11</sup> The French SNBC also sets carbon budgets for the various emitting sectors, such as transport, buildings, agriculture, the energy industry etc.

<sup>6</sup> Anderson et al. (2017). 'Carbon budget and pathways to a fossil-free future in Järfälla Municipality'  
<sup>7</sup> <https://www.carbontracker.org/carbon-budgets-explained/>  
<sup>8</sup> <https://www.carbontracker.org/carbon-budgets-explained/>  
<sup>9</sup> Paris Agreement (2015)  
<sup>10</sup> <https://www.ecologique-solidaire.gouv.fr/strategie-nationale-bas-carbone-snbc>  
<sup>11</sup> <https://www.citepa.org/fr/air-et-climat/la-france-face-a-ses-objectifs>

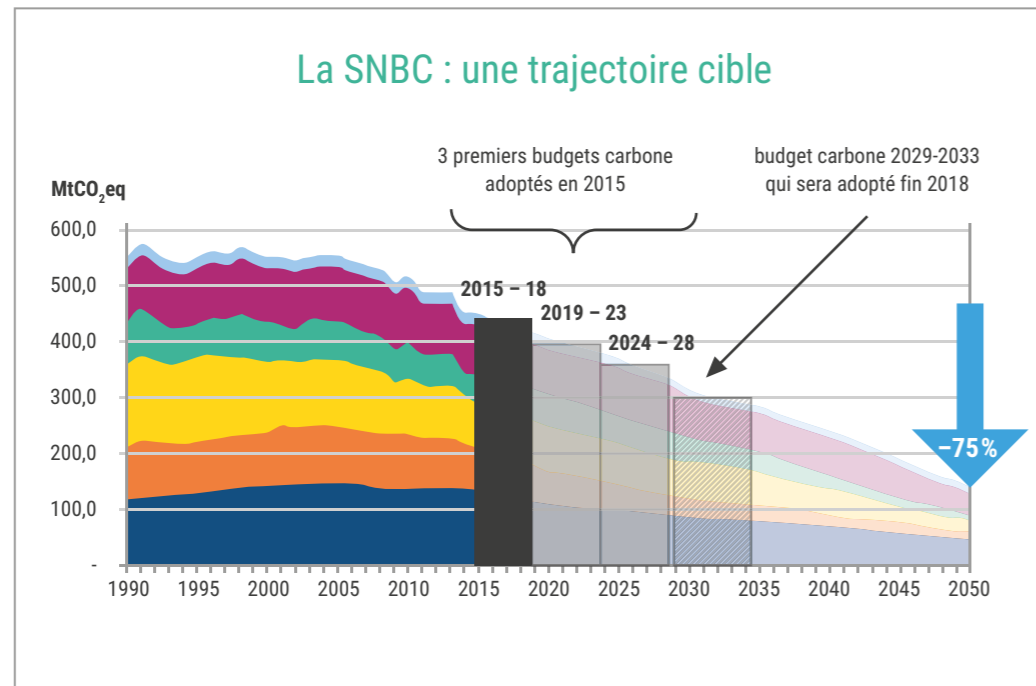


Figure 2. Overview of the French national carbon budgets<sup>12</sup>

Starting even earlier, the United Kingdom has been calculating legally binding carbon budgets every five years since the 2008 Climate Change Act.

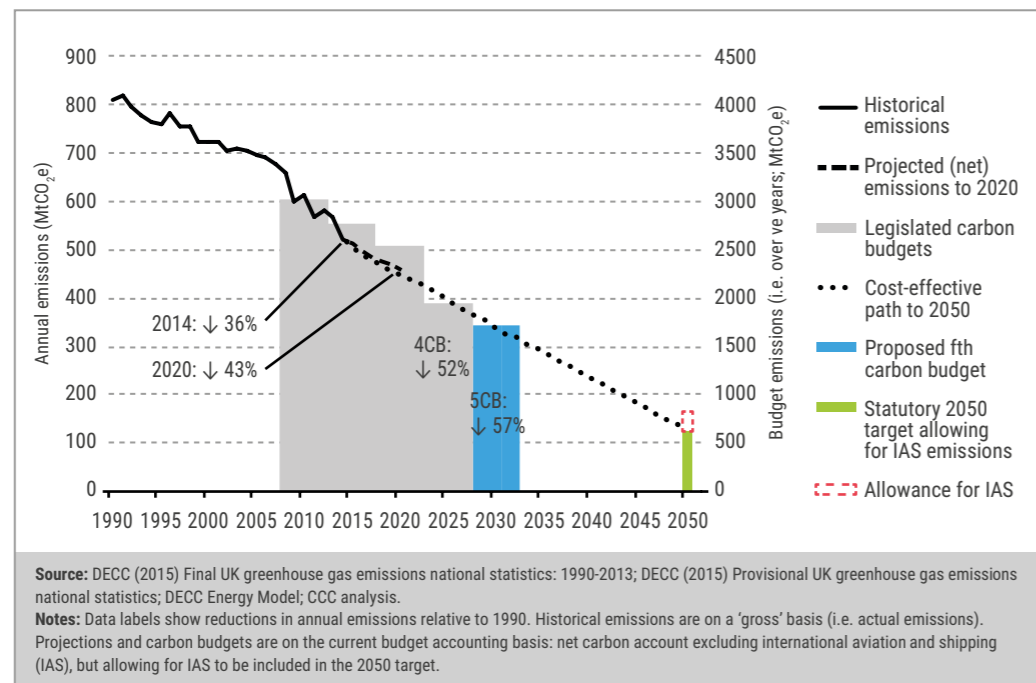


Figure 3. Past carbon budgets for the United Kingdom and the proposed fifth carbon budget by the Committee on Climate Change in 2015, adopted in 2016<sup>13</sup>

These two examples of carbon budgets on a national level demonstrate two major problems: Firstly, even though the carbon budgets are supposed to be “legally binding”, there are no consequences when they are not respected, and the yearly cap fixed by the French carbon budget was already exceeded by 3.6% in 2016. Secondly, these carbon budgets are not necessarily in line with the Paris Agreement

commitments, notably as regards the allocation of emissions between OECD and non-OECD countries on the basis of equity. The Tyndall Manchester research centre on climate change has criticised the fact that “UK budgets under-represent the equity steer of the Paris Agreement by setting a UK path that delays annual global emissions parity until 2050, despite our historic responsibility<sup>14</sup>”.

<sup>12</sup> <https://www.ecologique-solaire.gouv.fr/strategie-nationale-bas-carbone-snbc>

<sup>13</sup> <https://carboncredentials.com/uk-government-approves-5th-carbon-budget/>

<sup>14</sup> Kuriakose et al. (2018). ‘Quantifying the implications of the Paris Agreement for Greater Manchester’. Tyndall Centre Manchester.

There are still few examples of carbon budgets broken down at the city level. Nevertheless, the idea of using carbon budgets as a local policy tool has gained support in academic circles.

“The city carbon budgets approach would make local governments accountable for greenhouse gas emissions that are under their control – either directly through city operations or indirectly through land use and other locally held powers. Under city carbon budgets, local governments would be assigned an annual emissions ‘budget’ and would be required to keep local transport and buildings emissions within this budget.”<sup>15</sup>

### Case study State of California (USA)

A first tentative approach towards carbon budgets at the local level was made by the State of California in 2008, in the form of California’s Senate Bill 375 which imposed GHG emission targets on regional governments, focusing on emissions from vehicle travel<sup>16</sup>. The targets were developed with the help of a Regional Targets Advisory Committee including city and county officials, and local authorities were required to prepare ‘Sustainable Community Strategies’ as part of their transportation planning, identifying a set of actions to reduce local emissions.

In the Californian case, implementation of the action plan was not mandatory. However, what is interesting are the tools which the State provided to its regional authorities: The first step that the local administrations had to take was to calculate the GHG emission inventory of their city or county. In order to transform the targets into concrete measures, emissions were forecast under a Business-as-usual scenario, to see what reductions had to be made to reach the targets. The different modelling and calculation tools are still available at:

<https://coolcalifornia.arb.ca.gov/local-government/toolkit>

While the case of California is an example of how emissions can be calculated and reduction objectives set at the local level, it does not follow the carbon budgeting approach described above. Rather than just setting local targets, a carbon budget sets comprehensive CO<sub>2</sub> emission boundaries which should not be exceeded inside a certain territory. The carbon budget must be set in relation to the global carbon budget which is broken down first at the national and then at the sub-national level. Since that time, both carbon budgeting methodologies and cities’ ambitions have evolved considerably and recently there has been a push for local carbon budgets in a number of European cities, which are often much more ambitious than the national objectives.

Researchers from the University of Uppsala in Sweden have come up with a model on how to break down Sweden’s carbon budget at the municipal level. In cooperation with the City of Järfälla, they have developed a city carbon budget framework for Järfälla Municipality and are now reaching out to other cities and regions to implement a project under the title: “The Swedish Carbon Budget Challenge 2018”<sup>17</sup>, in partnership with the Ramböll consultancy.

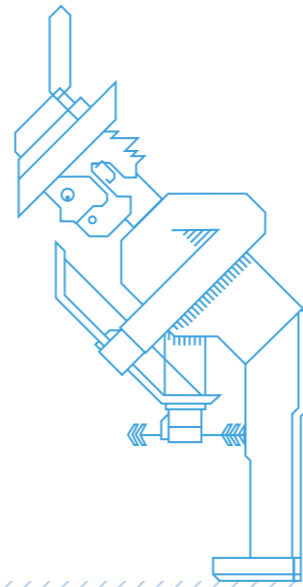
Using a similar methodology, the French branch of WWF has calculated carbon budgets for the 10 biggest French Metropolitan areas, both under a 1.5°C and a 2°C scenario, in its most recent report entitled “Cities’ Climate Challenges”<sup>18</sup>.

<sup>15</sup> Salon et al. (2010). ‘City carbon budgets: A proposal to align incentives for climate-friendly communities’. Energy Policy, Vol. 38, pp. 2032–2041.

<sup>16</sup> Salon et al. (2010). ‘City carbon budgets: A proposal to align incentives for climate-friendly communities’. Energy Policy, Vol. 38, pp. 2032–2041.

<sup>17</sup> <http://www.web.cemus.se/invitation-calculation-of-regional-carbon-budgets/>

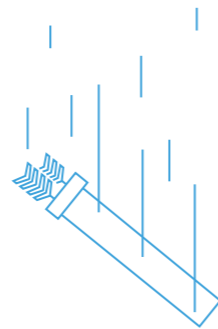
» The report begins with a detailed analysis of the climate action plans of these 10 cities and clearly shows how their current political ambitions are far from sufficient to maintain them on the reduction trajectories proposed in line with the Paris Agreement commitments. Unless they immediately begin making radical yearly cuts in emissions, their entire carbon budget allocation until 2100 will have been used up within the next 13 years.



	1.5°C Scenario (50% probability)		2°C Scenario (66% probability)	
	Carbon budget (MTCO <sub>2</sub> e) 2016 – 2100	Number of emission years at the corresponding annual rhythm	Carbon budget (MTCO <sub>2</sub> e) 2016 – 2100	Number of emission years at the corresponding annual rhythm
Métropole du Grand Paris	250	3	682	9
Métropole Aix Marseille Provence	72	2	197	5
Métropole de Lyon	51	5	139	14
Métropole Européenne de Lille	47	5	128	13
Bordeaux Métropole	37	7	101	18
Toulouse Métropole	34	8	94	21
Nantes Métropole	26	7	70	20
Métropole Nice Côte d'Azur	20	6	55	16
Eurométropole de Strasbourg	19	6	53	16
Métropole Rouen Normandie	19	4	52	11
<b>Total</b>	<b>577</b>	<b>5</b>	<b>1571</b>	<b>13</b>

**Table 1.** Carbon budgets calculated by WWF France for the 10 biggest French Metropolitan areas<sup>19</sup> (Translated from French)

» Two case studies of UK local authorities which have most recently developed carbon budgets for their territory are presented below. The Climate Budget of the Norwegian capital of Oslo is discussed in the following section, as it uses a different methodology.



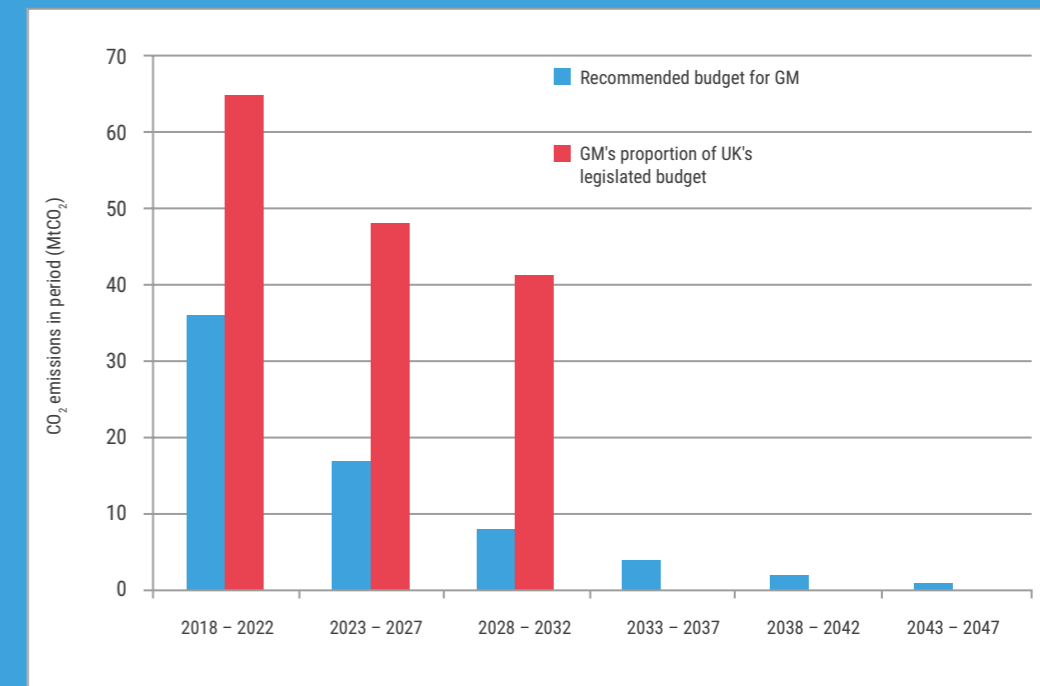
## Case study City of Manchester (United Kingdom)



In the context of its 'Climate Change Strategy 2017-2050' Manchester's City Council will decide this year whether or not to adopt a carbon budget as a formal policy<sup>20</sup> with the objective of achieving carbon neutrality by 2038 as proposed by the Tyndall Manchester climate change research centre.

In two reports 'Quantifying the implications of the Paris Agreement for Manchester', researchers from Tyndall Manchester detail the methodology used to calculate the proposed carbon budget both for the Greater Manchester region<sup>21</sup> and for the City of Manchester<sup>22</sup>. The result is a recommended cap of 71 million tonnes of cumulative carbon dioxide emissions for the period between 2018 and 2100. "For the period from 2018 to 2038, inclusive, total emissions from GM should not exceed 67 MtCO<sub>2</sub>, with the remaining 4 MtCO<sub>2</sub> allocated to the period 2039 – 2100."<sup>23</sup> The carbon budgets are sub-divided into carbon budget periods and should be reviewed on a five yearly basis in order to adjust for potential changes in science, global mitigation agreements or progress in negative emissions technologies.

Manchester's carbon budget only applies to carbon dioxide emissions from the energy system. Nevertheless, the report also addresses emissions from land use, aviation and shipping, saying that it is equally crucial for these emissions to be tracked and aligned with the carbon neutrality trajectory.



**Figure 4.** Recommended carbon budgets for Greater Manchester from 2018 to 2047 by Tyndall Manchester<sup>24</sup>

In the figure above, Manchester's carbon budget is compared to the UK's legislated budget which was presented at the beginning of this chapter. However, it is important to understand that Manchester's science-based budget is not derived from the UK's legislated budget, but is actually significantly smaller than the national requirements.

<sup>18</sup> WWF France. (2018). 'Le défi climatique des villes'.  
<sup>19</sup> WWF France. (2018). 'Le défi climatique des villes'. [https://www.wwf.fr/sites/default/files/doc-2018-07/20180704\\_Etude-defi-climatique-villes.pdf](https://www.wwf.fr/sites/default/files/doc-2018-07/20180704_Etude-defi-climatique-villes.pdf)

<sup>20</sup> WWF France. (2018). 'Le défi climatique des villes'.  
<sup>21</sup> WWF France. (2018). 'Le défi climatique des villes'. [https://www.wwf.fr/sites/default/files/doc-2018-07/20180704\\_Etude-defi-climatique-villes.pdf](https://www.wwf.fr/sites/default/files/doc-2018-07/20180704_Etude-defi-climatique-villes.pdf)  
<sup>22</sup> Available at: <http://www.manchesterclimate.com/sites/default/files/Greater%20Manchester%20Carbon%20Budget.pdf>  
<sup>23</sup> Available at: <http://www.manchesterclimate.com/sites/default/files/Manchester%20Carbon%20Budget.pdf>  
<sup>24</sup> Kuriakose et al. (2018). 'Quantifying the implications of the Paris Agreement for Greater Manchester'. Tyndall Centre Manchester. <http://www.manchesterclimate.com/sites/default/files/Greater%20Manchester%20Carbon%20Budget.pdf>



This is due to the fact that the methodology used by Tyndall Manchester’s researchers aligns the carbon budget with the Paris Agreement rather than with national targets. The method used to derive the carbon budget for Manchester is detailed in the report and summarised here in three steps:

- 1) The starting point is the IPCC global carbon budget for a 2°C scenario. In order to account for equity between nations and the historic responsibility of the industrialised countries, an allocation is made to non-OECD nations leaving a remainder for the richer OECD members.
- 2) The second step is the calculation of a national cap for the UK, derived as a share of the OECD budget on the basis of two parameters: Population and ‘Grandfathering’<sup>25</sup> of recent emissions (2010 to 2015).
- 3) Finally, from this budget for the UK the Greater Manchester carbon budget is derived, on the basis of three parameters: Population, Grandfathering and Gross Value Added<sup>26</sup>.

Calculating a science-based carbon budget for Manchester has illustrated the urgent need to take immediate action to achieve yearly emission reductions of 15% from 2018. If Greater Manchester continued to emit CO<sub>2</sub> at 2015 levels, the entire budget allocation until 2100 would be used up within four to eight years.

### SCATTER: ‘Setting City Area Targets and Trajectories for Emission Reduction’

SCATTER is a toolkit for local authorities in the UK, developed in partnership with the Greater Manchester Combined Authority, the Tyndall Centre and Anthesis Group (a sustainability consultancy) and launched by the Mayor of Manchester in March 2018<sup>27</sup>.

#### SCATTER allows local authorities to

- a) calculate the greenhouse gas emissions inventory of their territory aligned with the Global Protocol for Community-scale Greenhouse Gas Emissions Inventories;
- b) forecast emission scenarios up to 2050 and to model the environmental as well as relative social and economic effects of mitigation actions in different sectors;
- c) report on the set emissions target<sup>28</sup>.

The data obtained through the SCATTER model should assist local authorities in developing their own science-based carbon budgets and inform them about the most effective and relevant reduction targets in the areas of energy supply, energy demand from buildings, energy demand from transport, and natural capital – based on the experiences in other territories<sup>29</sup>. After adopting its carbon budget, Manchester aims to use SCATTER to allow other local authorities in the UK to benefit from its experience.



<sup>25</sup> Grandfathering determines that territories are entitled to emit the same percentage of total emissions as they previously emitted, meaning that “prior emissions increase entitlements to future emissions” (Knight C, 2013).

<sup>26</sup> Gross value added refers to the value of goods and services which are produced in the territory.

<sup>27</sup> <https://tyndall.ac.uk/news/mayor-manchester-launches-low-carbon-city-toolkit-tyndall-manchester>

<sup>28</sup> <https://www.anthesisgroup.com/scatter-carbon-footprint-reduction-tool>

<sup>29</sup> <http://www.manchesterclimate.com/manchester-2038>



### Case study Greater London Authority (United Kingdom)

In its London Environment Strategy drafted in 2017, the Greater London Authority under Mayor Sadiq Khan proposes the introduction of three five-year carbon budgets from 2018 to 2032 determining the city’s emissions pathway to zero carbon by 2050. Different to the carbon budget for Manchester, London’s carbon budgets are aligned with the legislated carbon budgets of the United Kingdom, though the details of the methodology are less clear.

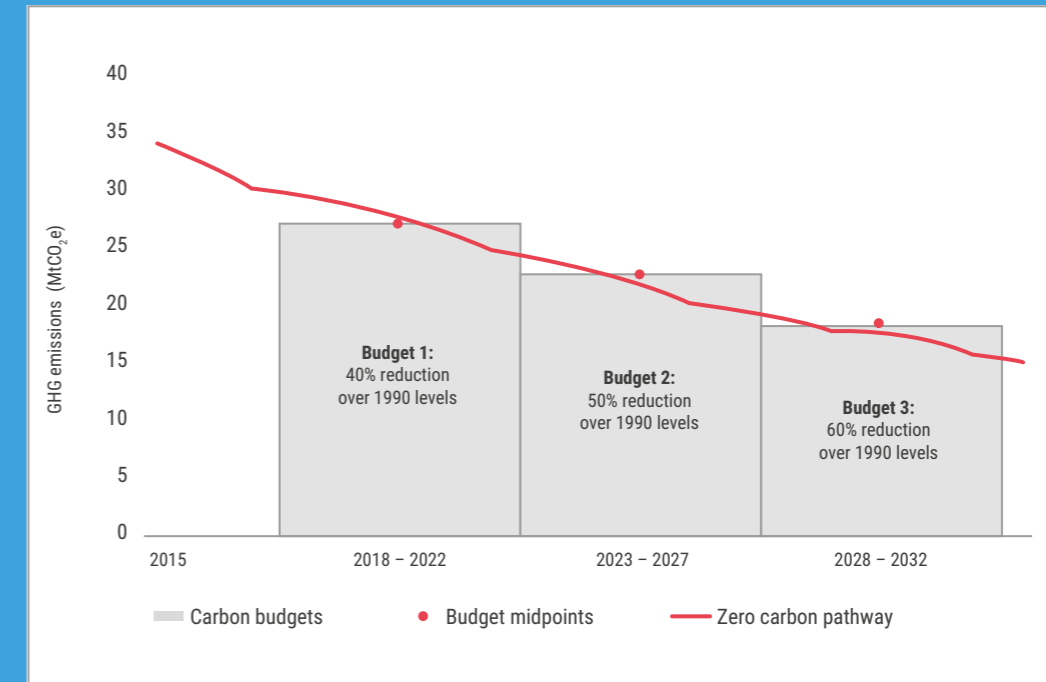


Figure 5.  
Carbon budgets  
for the Greater  
London Authority<sup>30</sup>

The motivation for London to move towards a carbon budget approach was the realisation that emission reductions in all sectors apart from the power sector were stagnating and not in line with the city’s objectives. Therefore, the city wanted to shift towards a more detailed model which would allow for “a shorter term, but also more flexible path towards zero carbon”<sup>31</sup>. The measures aimed at remaining inside the budget focus mainly on grid decarbonisation and retrofit action, as well as the electrification of heat and transport.

<sup>30</sup> Covenant of Mayors. (2018). Webinar: ‘Planning a sustainable city through carbon budgets’, September 25 (presented by Clare Silcock and Matthew Thomas).

<sup>31</sup> Covenant of Mayors. (2018). Webinar: ‘Planning a sustainable city through carbon budgets’, September 25 (presented by Clare Silcock and Matthew Thomas).

## Greenhouse Gas Emissions Inventories

The most important first step when developing a carbon budget or other environmental reporting systems is to calculate the carbon footprint or make a greenhouse gas emissions inventory for the territory in question. However, currently no universal methodology on how to calculate a city's carbon footprint exists. There are different approaches as to which emissions should be included and thus which emissions the city is responsible for or can take action on.

A study of greenhouse gas accounting methods in the cities of Helsinki, Stockholm and Copenhagen, conducted by the University of Helsinki, identifies three different approaches to counting a city's CO<sub>2</sub> emissions<sup>32</sup>:

- 1. Territorial-based emissions accounting systems:** emissions occurring within the city's boundaries and offshore areas falling within its jurisdiction, excluding emissions from national and international trade
- 2. Production-based emissions accounting systems:** emissions from economic activities by resident companies and households in specific sectors regardless of where these activities take place, including emissions generated beyond the city's boundaries related to the economic output of companies physically situated within the city
- 3. Consumption-based emissions accounting systems:** emissions generated from the consumption of goods and services within an area regardless of where the production of such goods and services takes place – this method is the most comprehensive and is not adopted by cities

As a universal methodology for local greenhouse gas inventories is currently lacking, it is difficult to make comparisons between cities in terms of their emission mitigation efforts. However there are attempts to develop global standards for calculating the local emission footprint.

In its guidebook on "how to develop a sustainable energy action plan", the Covenant of Mayors has also developed a framework enabling local authorities to produce greenhouse gas inventories. The Covenant encourages its members to create a Sustainable Energy and Climate Action Plan (SECAP) and to report regularly on its implementation by submitting a full monitoring report containing an emission monitoring inventory at least every four years<sup>33</sup>. For more information on the methodology used by the Covenant of Mayors, the guidebook is available from:

[www.eumayors.eu/support/library.html](http://www.eumayors.eu/support/library.html)

Another example is the 'Global Protocol for Community-Scale Greenhouse Gas Emissions Inventories' established by the C40 group, the World Resources Institute and ICLEI. For more information the guidebook is available from:

<https://ghgprotocol.org/greenhouse-gas-protocol-accounting-reporting-standard-cities>

<sup>32</sup> Dahal and Niemelä. (2017). 'Cities' Greenhouse Gas Accounting Methods: A Study of Helsinki, Stockholm and Copenhagen'. Energy, 5:31.

<sup>33</sup> [http://edgar.jrc.ec.europa.eu/covenant\\_of\\_mayors\\_approach.php](http://edgar.jrc.ec.europa.eu/covenant_of_mayors_approach.php)

## 2. Environmental budgeting and reporting

» Measuring and following up on the evolution of the city's CO<sub>2</sub> emissions is essential for identifying the most polluting sectors and the most efficient mitigation measures. This helps prioritise investments and ensures that the city's money is being spent in accordance with its commitments. Following this logic and the concept of a limited carbon budget, several

cities have developed their own budgeting and reporting mechanisms with the objective of calculating CO<sub>2</sub> emissions and putting climate-related data at the centre of the city's strategic planning – aligning their investments and actions around the reduction of CO<sub>2</sub> emissions. Some of the most innovative examples are presented below.

### Case Study City of Oslo (Norway) – Climate budget

Oslo City Council adopted its first Climate Budget in 2016, under the motto "we'll count carbon dioxide the same way we count money"<sup>34</sup>. Under the responsibility of the Department of Finance and the City Council for Environment and Transport, the updated second generation of the Climate Budget provides an overview of 36 measures that the City Government is planning to implement within the period covered by its current economic plan in order to achieve Oslo's climate goals. The Climate Budget includes measures under municipal control and measures implemented or funded by the national government that have a direct impact on GHG emissions in Oslo.

One drawback of this approach that should be noted is that the emissions included in the Climate Budget only relate to Oslo's scope 1 emissions, i.e. emissions from sources under direct control of the administration, and do not include scope 2 and 3 emissions<sup>35</sup>. Consequently, emissions related to oil and gas extraction are not included, even though they represent a significant share of revenue for most Norwegian municipalities.

CO<sub>2</sub> emissions and the costs of reducing them are **reported at the same time as the regular budget report, thus making the Climate Budget "an integral component of the overall city budget" which presents and budgets "the city's CO<sub>2</sub> emissions in a similar manner to the city's finances"**<sup>36</sup>.

For this reason, reports on the Climate Budget are presented during the three key steps of the budget cycle. The first report is issued in March to April between the first strategic conference and the assembling conference of the budget planning. A second report is then presented in August/September at the same time as the final budget conference and the budget proposition of the City Council. Finally, a third report is issued at the end of the year after the budget resolution and before the strategic conference for the next cycle.

Morten Nordskog from Oslo's Department of Environment and Transport highlights that this system of reporting has the advantage of identifying gaps between the measures planned and the city's objectives. It immediately triggers a need to take action to close these gaps. Most recently Oslo has identified such a gap, realising that the measures currently comprising the Climate Budget are insufficient to attain the goals set for 2020 and 2030. In order to close this gap, the city is currently conducting four new studies to help identify supplementary measures, mainly concentrated on the transport sector, which will allow the city to attain its planned emission reductions.<sup>37</sup>

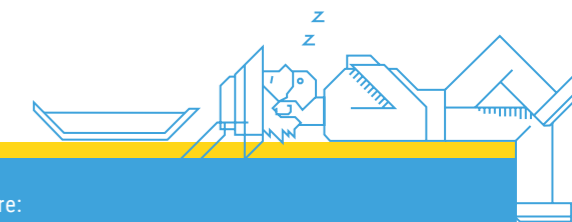
Linking environmental and financial reporting facilitates informed decision-making about the investments necessary to reach Oslo's objectives. An important aspect is that the Climate Budget assigns responsibility for the attainment of goals to the various departments thereby not only involving the environmental staff in the city's administration. By specifying the costs and timeframe for all the measures it includes, there is greater transparency on what the city is doing to achieve its objectives.

<sup>34</sup> <https://www.oslo.kommune.no/english/politics-and-administration/green-oslo/best-practices/climate-budget/#gref>

<sup>35</sup> Scope 2: Emissions from electricity consumed by the organisation, though emissions may be produced elsewhere; Scope 3: Upstream emissions associated with extraction, production, transportation of products, or services used by the organisation (World Bank. (2010). 'Part III: Cities' Contribution to Climate Change' in 'Cities and Climate Change: An Urgent Agenda'. Available at: <http://siteresources.worldbank.org/INTUWM/Resources/340232-1205330656272/4768406-1291309208465/PartIII.pdf>

<sup>36</sup> [http://ec.europa.eu/environment/europeangreencapital/wp-content/uploads/2018/05/Oslo\\_Climate\\_Budget.pdf](http://ec.europa.eu/environment/europeangreencapital/wp-content/uploads/2018/05/Oslo_Climate_Budget.pdf)

<sup>37</sup> Covenant of Mayors. (2018). Webinar: 'Planning a sustainable city through carbon budgets', September 25 (presented by Morten Nordskog).



**The main steps and components for setting up the City of Oslo's Climate Budget are the following (on the basis of the 2018 Climate Budget):**

1. Set targets for CO<sub>2</sub> reduction
  - » Reduction of 50% of emissions by 2020
  - » Reduction of 95% of emissions by 2030
2. Quantify the amounts of CO<sub>2</sub> emissions that have to be reduced to attain the target
  - » GHG emissions in the years from 2015 to 2020 must be reduced by approximately 460 000 tonnes CO<sub>2</sub>e
  - » The City Government has set goals of reducing the city's emissions to 1 054 000 tonnes CO<sub>2</sub>e in 2018 and 765 000 tonnes CO<sub>2</sub>e by 2020 (1 226 000 tonnes CO<sub>2</sub>e in 2015)
3. Identify measures with the biggest CO<sub>2</sub> impact and implement measures to reduce the emissions of the sectors concerned in the long and the short terms
4. Quantify the estimated CO<sub>2</sub> emission reduction for each measure (and the timeframe in which they will do so) as well as the overall reduction of all measures and compare the numbers to the targets
  - » Measures for which CO<sub>2</sub> emission reductions can be estimated (12 measures with an approximate effect of 360 000 tonnes CO<sub>2</sub>e)
  - » Measures with unallocated CO<sub>2</sub> emission reductions, as they are not easily quantifiable (measures with an anticipated overall effect of well over 100 000 tonnes CO<sub>2</sub>e)
5. Specify how these measures will be financed and what agencies will be responsible for implementing and reporting on them

MEASURES	Responsibility for implementation (Responsibility for reporting in parentheses)	Estimated effect of measure, 2015 – 2020 (tonnes CO <sub>2</sub> e)
Phase out the use of heating oil in municipal buildings and undertakings	Undertakings that use heating oil (KLI)	121 450
Phase out the use of fossil fuel in privately owned buildings by 2020 through a combination of bans and subsidies (Climate and Energy Fund and Enova)	KLI	
Reduced emissions of landfill gas from Grønmo and Rommen	EGE and EBY	6 900
Phase out the use of fossil fuel and gas in district heating (peak load)	NOE	5 600
Increase material recycling of household waste and boost re-use	REN	4 300
Conclude documentation of nitrous oxide volumes in wastewater, with the aim of correcting figures supplied by Statistics Norway'	VAV	20 500
Introduce a new toll-ring payment system, including new toll stations, in 2019. Note that the effect assumes the implementation of the measures listed below in italics:	MOS	93 300
<i>Installation of new charging stations for passenger and commercial vehicles, including a pilot project for car-sharing schemes</i>	BYM	
<i>Increase public transport capacity to cope with population growth and reduction in private vehicle traffic</i>	Ruter	

Table 2. Measures with estimated emission-reducing effect (Oslo's Climate Budget, 2018)



Read the European Commission's factsheet on Oslo's Climate Budget here:

[http://ec.europa.eu/environment/europeangreencapital/wp-content/uploads/2018/05/Oslo\\_Climate\\_Budget.pdf](http://ec.europa.eu/environment/europeangreencapital/wp-content/uploads/2018/05/Oslo_Climate_Budget.pdf)

**Oslo Municipality Climate Barometer (The Smart City Dashboard)**

In order to determine the most effective measures necessary to remain within the limits of its climate budget, Oslo needed an overview of the city's traffic patterns according to pedestrian, cyclist and car counts. They also wanted an overview of climate indicators like electric vehicle charging capacity and utilisation, as well as the ratio of electric cars, fossil-fuel cars and heavy vehicles.

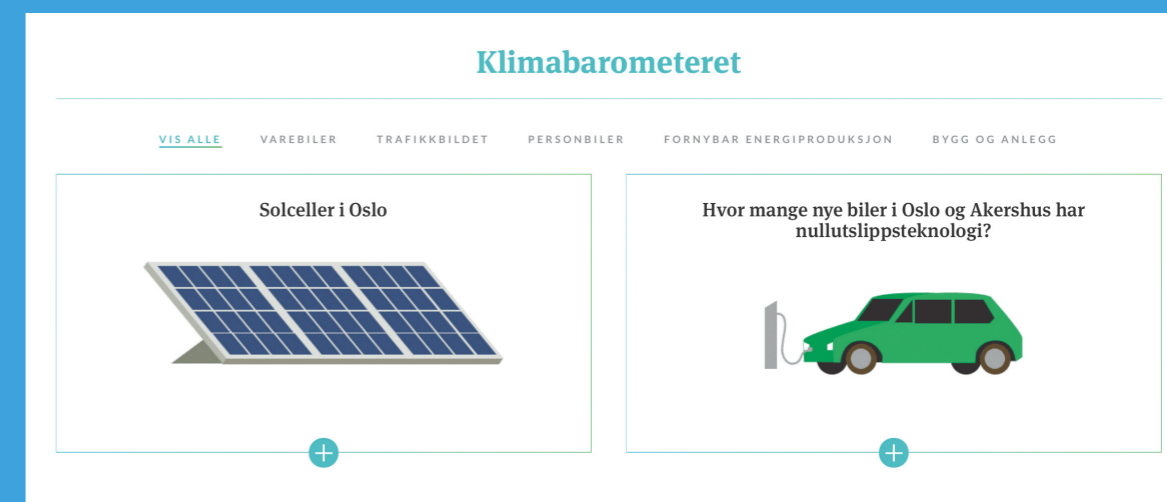


Image 2. Oslo Climate Barometer<sup>38</sup>

The municipality organised a competition, inviting solution providers to develop a new system of data aggregation and visualisation. The winner, eSmart Systems developed the dashboard, which allows data from different departments to be connected, whereby both real time and historic data are visualised, showing the correlations between different variables (GHG emissions, traffic, weather, use of electric vehicle charging points, well-being, etc.). The data collected allows Oslo to calculate emissions and to forecast the impact of measures to reduce emissions. One example of such an indicator is that the city collects data on how much fuel is transported to construction sites in order to anticipate emissions in this sector. Such a use of cross-sectoral data allows for decision-making on appropriate measures to attain climate goals, reporting on progress, modelling through machine learning and public engagement by making data more accessible and understandable. The Climate Barometer is updated three times a year and made publically available at:

<https://www.klimaoslo.no/klimabarometeret/>

<sup>38</sup> <https://blogs.esmartsystems.com/smart-city-dashboards-help-municipalities-achieve-climate-goals>

## Case study City of Paris (France) – Bleu Climat Energie

The 'Bleu Climat Energie' is an annual report adopted by the City Council every December at the same time as the preliminary annual budget. Its objective is to follow up the various actions decided in the city's Climate and Energy Plan and to indicate budgetary, energy and emission savings that have been achieved thanks to these actions.

**A similar logic to Oslo's, linking extensive environmental reporting to the budget planning phase, is used to align investment decisions with the state of advancement of climate and energy actions, as well as to account for the additional costs and savings these actions entail, while distributing responsibility across relevant sectors and actors.**

A team of five members from Paris' Climate and Energy department is responsible for the reporting operations. However all of the city's agencies and departments have coordinators who must contribute by providing data inputs about their respective activities and services.

In this sense the annual preparation of the 'Bleu Climat Energie' is a collective responsibility involving both internal actors and external partners of the city. In order to share the financial and energy data collected by these different actors, an online dashboard has been created making it easy for information to be uploaded with regard to the various sectors of activity present in the city. The information is collected by the Climate and Energy department and is evaluated by a cross-sectoral team with competences in terms of climate, energy, adaptation/vulnerability and GHG emissions<sup>39</sup>. The dashboard is updated every three months, allowing for a realistic representation of the state of advancement of the different actions and measures carried out by the city's partners. It also ensures that extensive and up-to-date data is readily available when it comes to preparing the city's budget plan.

Due to the fact that so many different people are involved in the reporting, it is important to increase awareness in departments which are not directly concerned by the environmental impacts of their activities (construction of social housing, tertiary sector, public catering and other procurement activities) and to ensure that they collect data on energy consumption and CO<sub>2</sub> emissions. While this entails a great amount of work, the reporting has the positive side effect of raising awareness among staff and partners of the objectives and actions defined by the Paris Climate and Energy Plan, coordinating the city's approach to climate and energy across all fields of its activity.

The 'Bleu Climat Energie' includes information about the city's energy consumption and costs, CO<sub>2</sub> emissions, the share of green public procurement, energy efficiency renovations, the share of renewable energy, air quality, public transportation use by its citizens, waste and water consumption.

### CONSOMMATIONS ÉNERGÉTIQUES

#### ▲ CARBURANTS

	CONSOMMATION CARBURANTS DPE				CONSOMMATION CARBURANTS TAM				
	Litres	€	GES 2016	Évolution GES 2015 – 2016	Litres	€	GES 2016	Évolution GES 2015 – 2016	
Gazole	2 123 791	2 437 701	6 726	↘ 12%	Gazole	850 421	873 383	2 693	↘ 9%
Essence	269 802	358 957	757	↗ 2%	Essence	1 185 633	1 416 832	3 328	↗ 14%
GPL	1 451	1 057	3	↘ 25%	GPL	20 415	14 291	38	↘ 19%
Diester 30	471 890	575 693	1 352	↘ 15%	Diester 30	24 994	25 919	72	↘ 45%
GNV (NM <sup>3</sup> )	2 014 995	2 035 147	2 212	↘ 52%	<b>Total</b>	<b>2 081 463</b>	<b>2 330 425</b>	<b>6 131</b>	↗ 1%
<b>Total</b>	<b>4 881 929</b>	<b>5 408 555</b>	<b>10 050</b>	↘ 22%					

#### ▲ FLUIDES BATIMENTS

	Fioul	Vapeur	Gaz	Électricité chauffage	Chauffage seul	Électricité autres usages	Consommation totale	Facture
Consommation réelle (GWh)	1,9	173,2	189,5	25,0	389,6	222,1	611,7	58,65 M€
Consommation normal (GWh DJU)	1,9	175,6	192,0	25,3	394,8		616,9	
Évolution 2015 – 2016	↘ 14%	↘ 7%	↘ 9%	↗ 30%	↘ 6%	↗ 4%	↘ 3%	↗ 1%

Image 2. Overview of energy consumption, 'Bleu Climat Energie' (2017) of the City of Paris

Some categories, such as social housing or the development of public transportation, cannot be reduced to their energy dimension and in these cases, the report measures the additional costs necessary for the city to include climate and energy related considerations into projects. For activities which originate exclusively from the implementation of the Climate Plan, such as the energy refurbishments of the building stock, they are evaluated in terms of their gross cost.<sup>40</sup>

As for Oslo's Climate budget, GHG emissions generated by the city's activities are quantified and their evolution measured in comparison to Paris' objectives. The information about the city's emissions is provided by the energy operators, the city's internal services in contact with the French energy companies EDF and ENGIE and by the individual departments and agencies<sup>41</sup>.

For every indicator used in the report – which are of both a qualitative and quantitative nature (financial and human resources, emission reductions, etc.) – there is a set updating frequency, a target value, an initial value, as well as an indicated data source<sup>42</sup>.

## 3.Green Accounting

» Green or environmental accounting methods reflect efforts to revise "income accounts to incorporate environmental externalities helping us to better understand how our social, political, and economic actions impact the environment"<sup>43</sup>.

The European project CLEAR – City and Local Environmental Accounting and Reporting – explains environmental accounting as "all the systems that allow detecting, organising, managing and communicating environmental information and data, these last ones expressed in monetary and physic units"<sup>44</sup>.

The traditional financial and budgetary planning documents are the most important tools for political decision-making, however, they are mostly not structured to take into account the environmental costs related to the destruction and degradation of natural resources and the costs of pollution, disease, reconstruction and compensation for damage after disasters. For traditional accounting these environmental costs are simply "hidden costs" which are not presented in the balance sheet<sup>45</sup>.

Like the concept of having an alternative to GDP as the measurement of countries' wealth based on a broader range of indicators than simply economic performance, green accounting is the idea that environmental and climate indicators should be included in the government's balance sheet – be it at the national or local level – as a measurement of performance of its investment choices and budgetary planning.

In order to support capacity building for municipal staff in terms of environmental accounting and reporting, the CLEAR project was launched in 2001 with the participation of 12 Italian municipalities and 6 provinces. Together they developed an environmental budgeting methodology, which was then implemented in the municipality of Ferrara – the main coordinator of the project – together with 17 other Italian municipalities and provinces<sup>46</sup>. The result was the creation of regular environmental reports, which not only present data on the state of the environment in the municipality's territory but also reclassify the data to reflect the relationships between the economy and the environment. The intended purpose was to ensure that the environmental report would enter fully into the institutional decision-making process on an equal footing with the budget report. The methodology used thus has a structure that can be easily understood by the elected officials and the administration and compared to the municipality's economic-financial balance sheet<sup>47</sup>.

The municipality of Ferrara has continued its environmental reporting practices beyond the end of the project and issues both a detailed environmental report (the most recent one for the period of 2014 – 2016<sup>48</sup>), as well as a shorter visual representation of the data, colour-coded to indicate the state of advancement of the municipality in a certain sector. This form of representation makes it transparent where the municipality currently stands and where more efforts have to be invested.

<sup>39</sup> <http://observatoire.pcet-ademe.fr/action/fiche/88/bleu-climat>

<sup>40</sup> <http://observatoire.pcet-ademe.fr/action/fiche/88/bleu-climat>

<sup>41</sup> <http://observatoire.pcet-ademe.fr/action/fiche/88/bleu-climat>

<sup>42</sup> <http://observatoire.pcet-ademe.fr/action/fiche/88/bleu-climat>

<sup>43</sup> <https://www.nap.edu/read/4844/chapter/7>

<sup>44</sup> [http://ec.europa.eu/environment/life/project/Projects/index.cfm?fuseaction=search.dspPage&n\\_proj\\_id=1873&docType=pdf](http://ec.europa.eu/environment/life/project/Projects/index.cfm?fuseaction=search.dspPage&n_proj_id=1873&docType=pdf)

<sup>45</sup> Edizioni Ambiente. (2003). 'Metodo CLEAR: dalla contabilità alla politica ambientale'.

<sup>46</sup> [http://ec.europa.eu/environment/life/project/Projects/index.cfm?fuseaction=search.dspPage&n\\_proj\\_id=1873&docType=pdf](http://ec.europa.eu/environment/life/project/Projects/index.cfm?fuseaction=search.dspPage&n_proj_id=1873&docType=pdf)

<sup>47</sup> Edizioni Ambiente. (2003). 'Metodo CLEAR: dalla contabilità alla politica ambientale'.

<sup>48</sup> <http://servizi.comune.fe.it/4160/bilancio-ambientale>

» Another environmental accounting methodology which was developed almost at the same time – and again with the participation of the municipality of Ferrara – was the ecoBudget, developed by ICLEI, UN Habitat and UNEP. EcoBudget aimed to “plan, monitor, report on and evaluate the consumption of natural resources (such as climate stability, air quality, land, water, raw materials and biodiversity)<sup>49</sup>”, thereby keeping environmental spending within set limits with indicators for short and long-term environmental targets.

The ecoBudget cycle mirrors the three phases of the municipal financial budgeting cycle: budget planning (i.e. the preparation of an environmental budget), budget spending (i.e. the implementation of planned measures to meet the budget) and budget balancing (i.e. balancing the annual environmental accounts)<sup>50</sup>. As a result, an annual budget balance is created at the end of the budgetary year, presenting to what extent the budget’s targets and limits have been respected or not.

By following the annual budget cycle, the ecoBudget system ensures that environmental concerns are regularly addressed in the decision-making process, so that the implications of policies and capital investment decisions for resources are considered at the relevant steps of the budgetary planning

process. In this way, the full cost of municipal activities is monitored. This means that beyond the financial costs of the construction work, e.g. of a road, consideration should be given to how much land the construction will take and how much clean air or tranquillity will be lost through its use<sup>51</sup>.

Both the CLEAR and the ecoBudget methodologies were supported through the European IDEMS<sup>52</sup> project which aimed to help local governments integrate these environmental management systems into their planning and reporting processes. The project took place from 2005 to 2009 with the participation of the Italian municipalities of Ravenna, Ferrara, Mantova, Modena, the Greek municipality of Amaroussion, the German cities of Dresden and Heidelberg, and the Swedish municipality of Växjö.

Even though it is very complex to express environmental data in monetary terms, and most cities have so far not chosen to do so, it is interesting to see how the environmental management systems based on the green accounting approach have had very positive effects in terms of capacity building and cooperation between staff from different departments (notably the environmental and finance staff) around environmental concerns.



## Case Study City of Växjö (Sweden) – ecoBudget

Växjö began working on the development and implementation of the ecoBudget in 2003. It was the first time that the city had defined clear environmental targets, an initial challenge but a necessary first step in developing an environmental programme for the municipality’s territory. The targets developed within the ecoBudget system were for a long-term timeframe, up to 2010 (and more recently up to 2020) and covered Växjö as both a geographical entity and a municipal organisation.

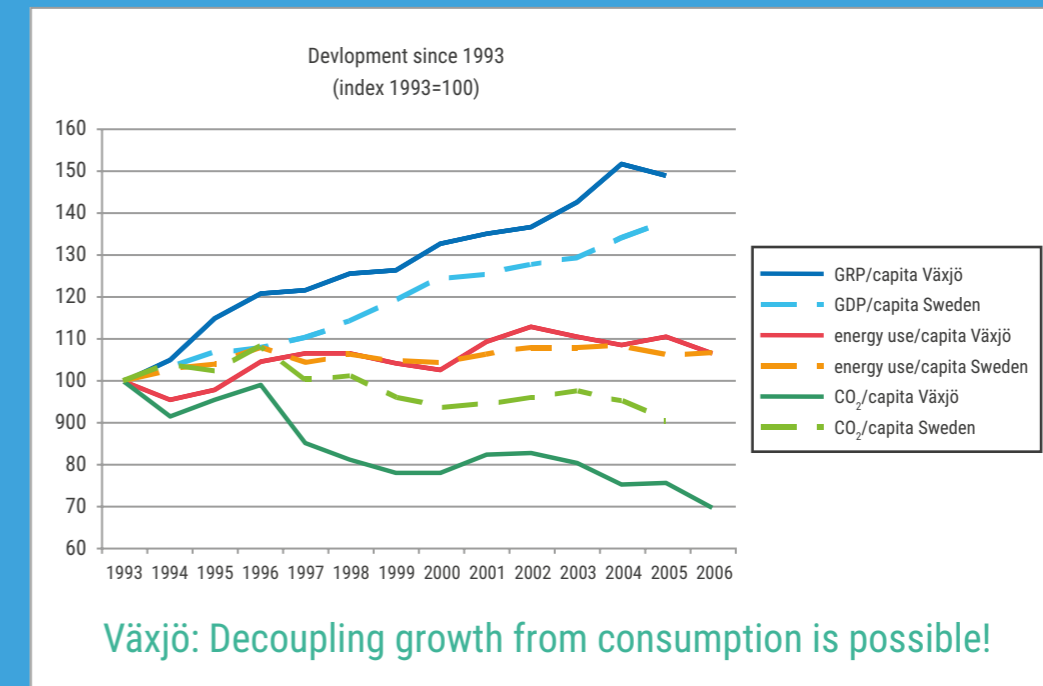
In 2006, Växjö replaced its Local Agenda 21 strategy and environmental policy with a new Environmental Programme including only measurable, long-term targets covering three areas: Living Life (focusing on consumption and waste issues), Our Nature (focusing on water and conservation issues), and Fossil Fuel Free Växjö (focusing on transportation and energy issues)<sup>53</sup>. EcoBudget was used to follow up and steer progress towards the programme’s targets.

In the initial phase when ecoBudget was implemented, a specific Växjö ecoBudget manager was appointed, who presented a report to the City Council every six months thus allowing for the possibility to take “appropriate measures in case that a target might be missed, dealing with events not budgeted for, and keeping politicians informed about budget implementation”<sup>54</sup>. The annual targets were approved by the City Council at the same time as the budget, and also reported simultaneously alongside the annual financial report. In 2008, the environmental and the financial budgets and reports were integrated into a single document. Symbols such as smileys and arrows were developed to monitor the progress of the ecoBudget, and soon this reporting style was expanded beyond solely ecological concerns, towards more general sustainability targets, including democracy, equality and health.

Today, the city of Växjö has a long experience in environmental reporting and its methodology has evolved. The city identified the elements of the ecoBudget which have proved to be most relevant and useful in the context of the city’s administration. Växjö is currently developing a Sustainability Programme with a 2030 horizon in order to have a common methodology for ecological, social and governance issues, instead of focusing on just one of these aspects. “In the most recent environmental budgets and reports, stronger emphasis has been laid on indicators and their development, without specifying how much they should change, but if the change is not sufficient, we clearly mark it with red symbols, and then we take action”, Henrik Johannson, Växjö’s environmental coordinator explains.

For him, the main result the municipality achieved through its use of the ecoBudget was the involvement of the various departments following the target breakdown, as they had to take concrete actions to reach the CO<sub>2</sub> emission budget which was assigned to them. Targets for Växjö as a municipal organisation were easier to follow up on and assign to departments, unlike the geographical targets which most departments could not easily influence. Departments had to report regularly what actions they were taking to reach their individual targets.

As Johannson puts it, for Växjö “ecoBudget was simply a way of following up the environmental programme – making sure that there was progress” and that all the work would not have to be done later. By reassessing the relationship between economic and environmental data, Växjö was able to realise how successful the city had been in decoupling CO<sub>2</sub> emissions from economic growth.



**Figure 6.** Development of energy use, CO<sub>2</sub> emissions and GDP in Växjö and Sweden between 1993 and 2008 <sup>55</sup>

<sup>49</sup> UN-HABITAT, UNEP, ICLEI. (2008). 'ecoBudget: Introduction for Mayors and Municipal Councillors'  
<sup>50</sup> UN-HABITAT, UNEP, ICLEI. (2008). 'ecoBudget: Introduction for Mayors and Municipal Councillors'  
<sup>51</sup> UN-HABITAT, UNEP, ICLEI. (2008). 'ecoBudget: Introduction for Mayors and Municipal Councillors'  
<sup>52</sup> [http://www.idems.it/en/?Consultation\\_material:Output\\_of\\_the\\_project:Results\\_of\\_the\\_project](http://www.idems.it/en/?Consultation_material:Output_of_the_project:Results_of_the_project)  
<sup>53</sup> UN-HABITAT, UNEP, ICLEI. (2008). 'ecoBudget: Introduction for Mayors and Municipal Councillors'

<sup>54</sup> UN-HABITAT, UNEP, ICLEI. (2008). 'ecoBudget: Introduction for Mayors and Municipal Councillors'  
<sup>55</sup> UN-HABITAT, UNEP, ICLEI. (2008). 'ecoBudget: Introduction for Mayors and Municipal Councillors'

## 4. An Economy for the Common Good – Becoming a Common Good Municipality

» The concept of an Economy for the Common Good goes beyond simply environmental concerns and aims to offer a holistic approach to sustainability. Similar to the reasoning behind the concept of green accounting, the Economy for the Common Good refers to the inclusion of a variety of performance indicators in an organisation's balance sheet which are not solely of a financial nature but also cover concerns of social justice, human dignity, solidarity, ecology and democratic governance.

The Economy for the Common Good was developed by the Austrian activist Christian Felber as an alternative economic system which has the common good of all members of society at its centre, rather than monetary profits. In order to concretely achieve such a shift, Felber and the Economy for the

Common Good associations developed a balance sheet in 2010 which organisations can use to evaluate where they stand in terms of the common good indicators, as well as an external audit system.

Originally these tools were developed for companies. However, in 2011 four municipalities from the Vinschgau region in South Tyrol, Italy – Laas, Latsch, Mals and Schlanders – applied this balance sheet to evaluate the performance of the municipality as an organisation in terms of the common good economy. In 2015 a revised balance sheet for certifying municipalities was developed and the Austrian towns of Nenzing and Mäder in the region of Vorarlberg were the first to be certified as Common Good Municipalities on the basis of the new balance sheet<sup>56</sup>.

### Common Good Municipality – Actions

» The Economy for the Common Good describes the following three first steps to becoming a 'Common Good Municipality'<sup>57</sup>:

#### 1) Common Good Balance Sheet:

Municipalities can create a Common Good Balance Sheet for the departments of their administration, as well as for city-owned businesses and other city-owned organisations (a guide can be downloaded in German from: [https://www.ecogood.org/media/filer\\_public/7e/de/7ede8f5a-269a-4bc7-a4ef-4968df260358/handbuch-gemeinden-v1-0.pdf](https://www.ecogood.org/media/filer_public/7e/de/7ede8f5a-269a-4bc7-a4ef-4968df260358/handbuch-gemeinden-v1-0.pdf)). To ensure transparency, municipalities must publish their balance sheets and can receive peer-certification through another city or an external audit certifying them as a Common Good Municipality.

#### 2) Promote Common Good Companies:

Local authorities have a high degree of influence on the local economy through the conditions they create for companies and the standards they set for public procurement.

To achieve a shift towards an Economy for the Common Good, companies who engage in sustainable and ethical production should no longer be penalised through higher costs hindering their competitiveness in comparison to companies that have exploitive and unsustainable processes. Local authorities have the option to encourage and reward sustainable behaviour through tax advantages, favourable public loans or grants, and through public tenders<sup>58</sup>. Such forms of benefits for companies with sustainable practices have already been established in the Spanish autonomous community of Valencia.

#### 3) Introduce a Local Common Good Index:

Determining the most important quality of life indicators through a process of citizen participation. Citizens should have a platform to discuss what they define as the 'Common Good' and what indicators to prioritise. Ideally, these indicators should be adopted by referendum and confirmed through annual polls.

### Case study Municipalities of Nenzing and Mäder (Austria)

The municipalities of Nenzing and Mäder in the Austrian federated state of Vorarlberg were pioneers in creating a Common Good Balance Sheet designed specifically for municipalities. Information for the balance sheet was collected between 2015 and 2016 and subsequently certification as a 'Common Good Municipality' was awarded through an external audit. When creating the balance sheet all activities of the towns' administrations were examined, ranging from "the de-icing salt used on the roads to the toys in the municipal kindergarten, and including the forms of their financial investments and insurance policies"<sup>59</sup>. A special focus of the analysis was placed on the suppliers employed by the municipality. Now, after creating the balance sheet, the municipality of Nenzing is planning to deduct or reduce the municipal tax for companies which have especially sustainable practices. The administrative staff emphasised that since the process of the Common Good Balance Sheet has been launched, "awareness in our everyday work has increased"<sup>60</sup>.

### Case study Cities of Breklum, Klixbüll and Bordelum (Germany)

The three towns of Breklum, Klixbüll and Bordelum, located in the northern German region of Schleswig-Holstein, are currently undergoing the process of becoming Common Good Municipalities by creating a Common Good Balance Sheet. The process was initiated by organising a residents' meeting in January 2018 where the concept of the Common Good Balance Sheet was presented and discussed.

In February, data concerning municipal financial management and citizen participation was collected. The objective was to take a close look at where the municipality's money comes from and how investments are managed<sup>61</sup>.

### Sustainable financial management for municipalities in the Economy for the Common Good

» The dimension of the balance sheet which is most interesting in the context of this study is the ethical and sustainable financial management of municipalities. The Economy for the Common Good sees local authorities as important players capable of leading the transition on the financial markets.

Local authorities have a choice about which financial service providers and what financial products they use and can be forerunners in shaping the local markets towards more sustainable practices, as the chapters on divestment and green public procurement of this study demonstrate. The focus is set by Christian Felber on a movement away from finance provided through conventional banks and towards more participatory

and low-interest funding which engages citizens in the territory. This, on the one hand, allows municipalities to rely less on bank loans and to reduce their debts and, on the other hand, also offers citizens the opportunity to invest their savings in local projects which are of a direct benefit to them, rather than in investment portfolios funding fossil fuel production or other unsustainable practices around the world.

In order to evaluate a municipality's financial management, the Economy for the Common Good applied to local authorities includes a scoreboard with four indicators for different degrees of sustainable practices in financial management.

<sup>56</sup> Balance Sheet for Common Good Municipalities, Version 1.0 (2015) is accessible in German from: [https://www.ecogood.org/media/filer\\_public/e5/08/e5088d78-38cf-41e5-b23c-c58c3acd2dd4/matrix-gwoe-gemeinden-1-0-de.pdf](https://www.ecogood.org/media/filer_public/e5/08/e5088d78-38cf-41e5-b23c-c58c3acd2dd4/matrix-gwoe-gemeinden-1-0-de.pdf)

<sup>57</sup> <https://www.ecogood.org/en/common-good-balance-sheet/municipalities/>

<sup>58</sup> <http://valenciaplaza.com/la-comunitat-va-puede-aplicar-el-balance-del-bien-comun>

<sup>59</sup> <https://www.suedkurier.de/ueberregional/themen-des-tages/Gemeinwohlökonomie-Was-taugt-dieses-alternative-Wirtschaftskonzept;art1350068,9760651>

<sup>60</sup> <https://www.suedkurier.de/ueberregional/themen-des-tages/Gemeinwohlökonomie-Was-taugt-dieses-alternative-Wirtschaftskonzept;art1350068,9760651>

<sup>61</sup> <https://www.shz.de/lokales/husumer-nachrichten/einwohner-entscheiden-mit-id18827096.html>

Sub-indicator	First steps	Advanced	Experienced	Pioneer
Institutionalisation (Relevance: medium)	Anchoring ethical financial management in the guiding principles of the municipality	Implementation of ethical financial management in a few of the municipal activities <sup>a</sup>	Implementation of ethical financial management in many of the municipal activities	Implementation of ethical financial management in all of the municipal activities
Ethical-sustainable quality of the financial service provider (Relevance: low)	Conventional bank with its own ethical sustainable financial products (<5% of credit/savings volume) No investment in critical projects <sup>b</sup>	Conventional bank with a broad offer of ethical and sustainable financial products (>5% of credit/savings volume)	Bank mainly specialised in sustainable financial services	Exclusively ethical-sustainable financial service provider
Investments oriented towards the common good <sup>c</sup> (Relevance: high)	Partial investment in ethical-sustainable projects, however not following Best-in-Class	Investment in ethical-sustainable projects <sup>d</sup> Negative criteria + Use of capital gains for social/ecological investments	Exclusive investment in ethical-sustainable projects Negative criteria + partial dividend renunciation/waiver of interest in investments	Exclusive investment in ethical-sustainable projects Shareholder advocacy + total dividend renunciation/waiver of interest in investments
Community financing oriented towards the common good (Relevance: low)	Conventional municipal financing through local banks	Financing attempt through contact groups or loans from a non-profit distributing bank	Successful beginning of financing through contact groups <sup>e</sup> or from bank loans leading to partial waiver of interest	Interest-free financing mainly with help from contact groups or bank loans which no longer entail savings interest

a) e.g. ethical training of financial control staff; information events on ethical sustainable financial management for staff, etc.  
 b) A source for research on large financial institutions can be e.g. Banktrack (www.banktrack.org)  
 c) e.g. through a transparent financing policy of the bank; Definition of clear exclusion criteria e.g. on the basis of the Frankfurt-Hohenheim Leitfaden (<http://www.ethisch-oekologisches-rating.org/veroeffentlichungen/frankfurt-hohenheimer-leitfaden>); No use of speculative financial derivatives, etc.  
 d) e.g. loans for ethical-ecological projects, investments in renewable energies, energy refurbishments, research and development oriented towards the common good  
 e) Staff or citizen participation (e.g. local participation of citizens in the sustainable energy sector)

Table 3. Criteria for the evaluation of the financial management of a municipality<sup>62</sup> (translation from German)

» The feedback from the cities which have gone through the process of creating a common good balance sheet shows that while the balance sheet in itself will not resolve existing inconsistencies in terms of ecological and ethical practices, it raises awareness of the impact the municipality's actions have and helps the staff think differently. The balance sheet also presents an opportunity to take a closer look at the city's finances and financial management. For this study, it is of particular interest to understand

the methodology used to examine municipal financial management, and what alternative models can be proposed or are already being implemented elsewhere, particularly the shift away from financing through conventional bank loans towards greater participation of citizens in the municipal finances. It is also interesting as it gives a sense of how the municipality can invest resources in changing general practices present in the local economy and steering them towards sustainability.

<sup>62</sup> Handbuch zur Gemeinwohl-Bilanz für Gemeinden und Regionen (2015)

# CONCLUSION

## VISUALIZE HOW "GREEN" YOUR BUDGET IS

» The 2017 final report of the European Commission on how to climate mainstream the EU budget in preparation of the multiannual financial framework<sup>63</sup> suggests the introduction of a "traffic-light system" as a tool to analyse the different EU programmes and their budgets in order to determine which ones are capable of delivering significant climate contributions in the short and long-term. Marking programmes in this way allows the identification and visualisation of priorities for expenditure in line with mitigation and adaptation targets.

A similar methodology has been developed in the context of green bond reviews by the Norwegian research organisation CICERO in the form of a "shades of green rating system". This rating system is used to evaluate projects financed through an issuer's green bond in order to determine whether the selected projects truly "realise the long-term vision of a low-carbon and climate-resilient future already today".

<b>Dark green</b>	Projects and solutions that realise the long-term vision of a low-carbon and climate-resilient future already today. Typically, this will entail zero-emission solutions and governance structures that integrate environmental concerns into all activities. Example projects include renewable energy projects such as solar or wind.
<b>Medium green</b>	Projects and solutions that represent steps towards the long-term vision, but are not quite there yet. Example projects include sustainable buildings with good (but not excellent) energy efficiency ratings.
<b>Light green</b>	Projects and solutions that are environmentally friendly but are not by themselves a part of the long-term vision. Example projects include energy efficiency improvements in fossil-based industry that result in short-term reductions of greenhouse gas emissions, and diesel-fuelled buses.
<b>Brown</b>	Projects that are in opposition to the long-term vision of a low carbon and climate-resilient future.

Table 4. CICERO's Shades of Green rating system<sup>64</sup>

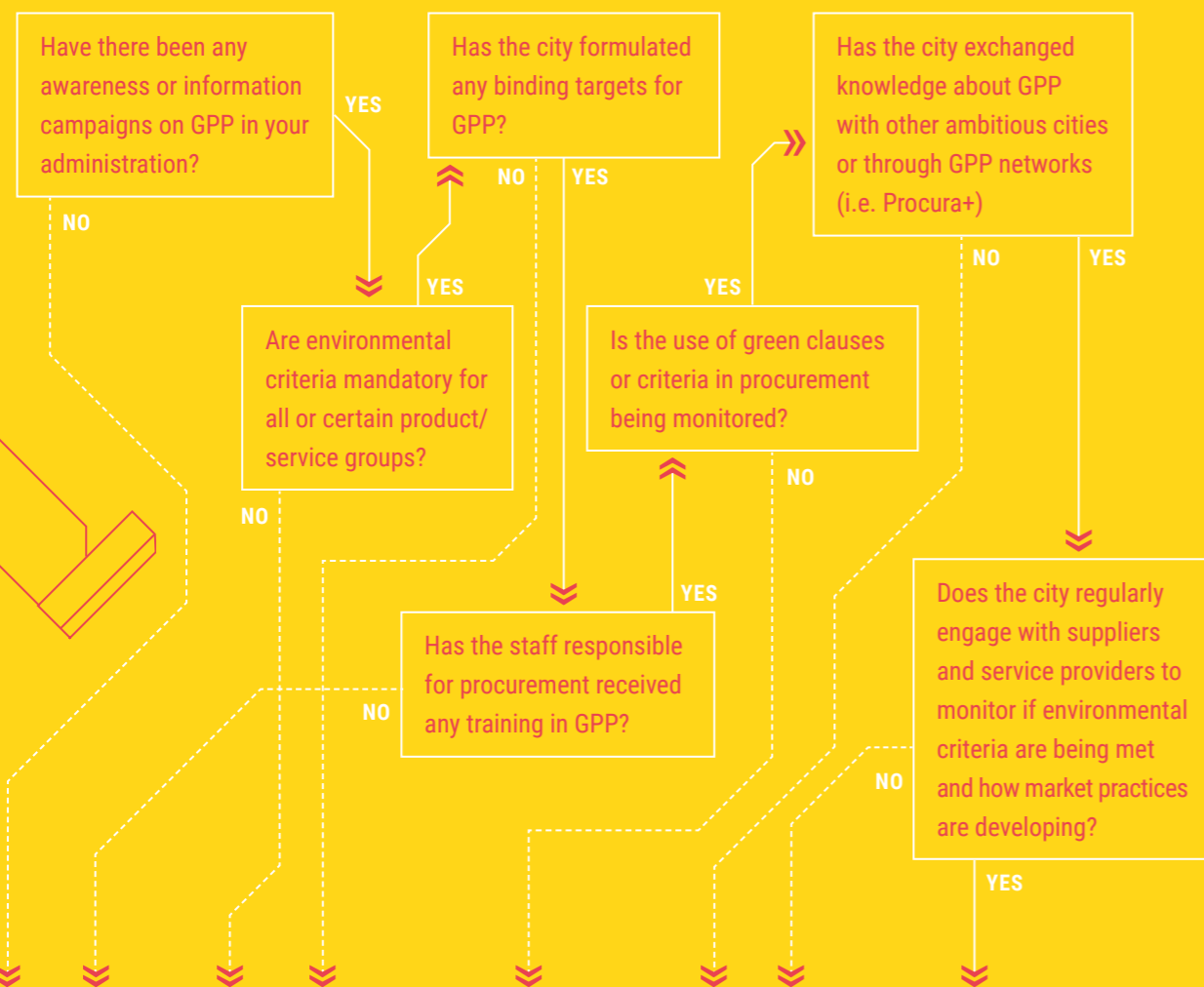
» The municipality of Ferrara in Italy and the municipality of Växjö in Sweden (presented in the section on green accounting) have also used visual markers such as smileys and colours to follow-up on the advancements and climate contributions of projects in their budget or environmental reports.

Along the same lines as these various methodologies, we recommend that local authorities also adopt a system which allows them to go through the various budget proposals at the assembly stage of the budget cycle and colour-code projects in accordance with their climate impacts, in order to prioritise the allocation of funds. This would allow the city to better

understand the extent to which fossil-fuel intensive, highly emitting projects (e.g. the construction of highways or investment in fossil energy infrastructure) cancel out the impact of mitigation efforts. It can also allow local authorities to identify projects which may no longer be relevant or more costly to maintain in 10 to 20 years' time due to predicted changes in climate (ski resorts in areas where snow is disappearing, coastal areas in danger of flooding). As a next step, such a rating system could be improved by making it compulsory for departments to calculate climate impacts such as GHG emissions and energy consumption in their project proposals.

<sup>63</sup> European Commission. (2017). 'Climate mainstreaming in the EU Budget: preparing for the next MFF'.  
<sup>64</sup> CICERO. (2016). 'Green Bonds and Environmental Integrity: Insights from CICERO Second Opinions'.

# CHAPTER II GREEN PUBLIC PROCUREMENT



<p><b>Awareness campaigns and trainings for procurement staff</b> is the first step in the transition towards sustainable procurement and at the same time the most crucial element determining its success or failure.</p>	<p><b>Develop a strategy for GPP</b> which formulates concrete targets for the administration, and engage with the departments concerned to define how these targets can be reached. Read the case study of the City of Copenhagen for an example of an ambitious GPP strategy.</p>	<p><b>Introduce a system to monitor the use of GPP</b> so you can follow up on targets and identify the weaknesses of the procurement staff which can be addressed through training. See the section 'Monitoring and e-procurement' for best practices.</p>	<p><b>Organize in a network:</b> Find other cities with similar ambitions to cooperate on developing environmental requirements and pool resources to achieve cost savings and more consistency when pushing for sustainable market practices, market engagement becomes less costly and time-consuming. See the section 'Partnerships and networks' for examples.</p>	<p><b>Try yourself at the procurement of innovation:</b> Engage with the market to develop innovative green technologies through public-private partnerships.</p>
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## What is Green Public Procurement?

» According to the definition by the European Commission, Green Public Procurement (GPP) is the process by which public authorities "integrate environmental criteria into all stages of their procurement process, thus encouraging the spread of environmental technologies and the development of environmentally sound products, by seeking and choosing outcomes and solutions that have a reduced environmental impact throughout their whole life cycle<sup>65</sup>".

public purchasers represent a large share of the market, such as construction or transport – sectors which in turn are major GHG emitters and (fossil) energy consumers. Accordingly, procured goods and services also represent a major share of municipalities' overall CO<sub>2</sub> emissions. Therefore, high environmental standards in procurement processes are essential if municipalities are to reduce their carbon footprint.

Public procurement is a substantial market force in most OECD countries, with the European Commission estimating that public authorities in the EU spend 14% of GDP on procurement – of which cities represent a big part. Major European cities such as Copenhagen have annual procurement budgets of around EUR 1.5 billion<sup>67</sup>, giving them important leverage to encourage market actors to develop more sustainable and innovative products and services, in order to meet the cities' needs and standards. Their impact is especially high in sectors where

In addition to contributing towards the municipality's climate goals, GPP offers opportunities for overall cost reductions both through energy-savings thanks to efficient equipment, and by considering the entire life-cycle costs of a contract, rather than just the purchase price (i.e. taking into account maintenance or the cost of disposal). As an example: through its sustainable procurement of utilities since 1999, the German City of Regensburg managed to save EUR 10 million on energy and water costs over a 15 year period<sup>68</sup>.

## What is the legal framework for environmental considerations in public tenders

» The adoption of the 2014 EU Procurement Directives<sup>69</sup> aimed to allow for greater flexibility to include common societal goals, notably environmental protection and combating climate change, in the procurement process, without endangering the main public procurement objectives of cost-effectiveness and non-discrimination of tenders.

In accordance with the EU directives, public authorities can integrate environmental considerations at multiple stages of the procurement process, during pre-procurement, formulation of the tender, selection and award of the bidder, and the monitoring of contract performance.

### Pre-procurement: The directives allow...

- » **Preliminary market consultation** with suppliers to get advice, prepare the procedure and determine requirements on the basis of what the market can deliver. (What actors are operating in this sector, what technologies are available on the market?)
- » **Innovation partnerships** between public authorities and one or more partners in order to purchase goods or services which are not currently available on the market (research and development, piloting and subsequent purchase of a new product, service or work)

» **The selection of bidders** based on their **technical ability and previous experience** to provide the product/service in a sustainable manner. (Inclusion of a pre-qualification stage where bidders must demonstrate their ability or evaluation of their environmental management systems)

» **Definition of technical specifications** (binding requirements) of a contract addressing **sustainability impacts at any stage of the life cycle** of a product. (Either in the form of performance-based specifications<sup>70</sup> or by referring to existing standards and labels)

» **The use of environmental award criteria**, attributing points to bidders on the basis of environmental considerations relating to the entire life-cycle of their product/service (i.e. to what extent bidders outperform minimum environmental requirements in terms of GHG emissions, energy use, the extraction of raw materials, etc.)

### Procurement process: The directives allow...

- » **The use of environmental label criteria** (i.e. EU Ecolabel, Energy Star etc.) as minimum requirements in the tender. (Exclusion of all bidders which do not abide by these criteria)

<sup>65</sup> The European Commission. (2016). 'Buying green! A Handbook on Environmental Public Procurement'. 3rd Edition.  
<sup>66</sup> Michelsen O, De Boer L. (2009). 'Green procurement in Norway; a survey of practices at the municipal and county level'. Journal of Environmental Management.  
<sup>67</sup> The European Commission. (2016). 'GPP in Practice: Strategy and Approach to SPP in the Municipality of Copenhagen'  
<sup>68</sup> European Commission. (2016). 'Buying green! A handbook on green public procurement'. 3rd Edition.  
<sup>69</sup> [http://ec.europa.eu/environment/gpp/eu\\_public\\_directives\\_en.htm](http://ec.europa.eu/environment/gpp/eu_public_directives_en.htm)  
<sup>70</sup> Meaning that only the outcome to be achieved is determined but not the technical means to achieve it, thus allowing companies to propose innovative solutions.



» **Life-cycle costing** to award public contracts to the most economically advantageous tender based on the entire life-cycle costs, rather than on the basis of purchase price alone. The life-cycle costs include: transport, installation, operation, maintenance and disposal. Additionally the residual value is also considered, meaning the “revenue from the sale of the product after the end of the period of use and value of the object after the end of the useful life of the life cycle cost calculation, if this can still be used further<sup>71</sup>”.

**Delivery of the contract: The directives allow...**

» **Contract performance clauses and monitoring** addressing how the product/service will be provided in a sustainable manner. (Including terms and conditions on the management of waste, water, energy... and their regular verification)

In addition to the EU directives, regulations regarding public procurement may apply at the national level.

Some municipalities, e.g. Oslo, Rotterdam, have set up a special agency or team which acts as an advisory unit for procurement to the various departments. In the absence of a central procurement unit, it will assist the departments in selecting goods and services and developing tools and best practices to support tender and contract formulations.

On the national level, many countries have developed digital public procurement platforms to assist local authorities in their procurement process. In Denmark, the national government has developed a webpage specifically for GPP – the Responsible Procurer – a webpage where local procurers can find green criteria ready to copy and paste into tender documents for different product areas and digital tools to calculate the Total cost of ownership of products<sup>74</sup>.

## Differentiating between Life-cycle costing, Life-cycle analysis and Total cost of ownership:

**Life-cycle costing (LCC):**

Calculating the costs related to the entire life-cycle of a product or service from price of acquisition and including transportation, installation, operation and maintenance to the final disposal costs.

**Life-cycle analysis (LCA):**

Does not focus on the financial costs of a product or service’s life-cycle but calculates the resources it consumes, GHG emissions, environmental and health impacts, and resource depletion (internationally standardised in ISO 14040 and 14044)<sup>72</sup>.

**Total cost of ownership (TCO):**

Estimates the costs associated with the entire supply chain for a given product or service, which are weighted depending on the relative importance of those costs for the product/service purchased.<sup>73</sup>

## Who is responsible for procurement in the municipality?

» At the head of the municipal procurement process are the department of finance and the finance committee of the City Council who have the political responsibility for developing the city’s overall procurement strategy. Some cities, such as Oslo or Barcelona, have included environmental considerations as direct sub-objectives in their procurement strategy, Agenda 21 or energy and climate action plan. In this context, many cities have also formulated concrete quantitative targets for green public procurement in specific sectors (e.g. percentage of organic food in public canteens, percentage of low-emission vehicles in the city’s car fleet, etc.) and some cities additionally establish goals for individual departments in terms of CO<sub>2</sub> emissions or the energy consumption of their procurement.

The municipal procurement system can be centralised or decentralised. In a centralised system, there is one purchasing department which is responsible for procurement in all sectors. In a decentralised system the individual agencies

or departments of the city are responsible for making the purchases necessary for their everyday operations within their respective budgets. A non-representative survey among members of Energy Cities has shown that many European cities have a hybrid procurement system, with one central procurement unit responsible for large purchases or certain product groups, and decentralised procurement for the departments’ regular operations.

When this is the case, awareness raising and capacity building must be conducted for the entire municipal staff and across department lines. In order to make individual departments feel more responsible for the achievement of GPP goals, local action plans or internal sustainability plans are an important tool when they require every department to make risk assessments and to account for environmental impacts regarding their procurement, as is the case in Barcelona and Oslo.

### Case Study City of Copenhagen (Denmark)

All of Copenhagen’s agencies are required to integrate environmental and climate requirements in their procurement, where applicable. In order to support the municipality’s procurement staff, Copenhagen has established a permanent ‘**Team Green Public Procurement**’, made up of four environmental and climate advisors. Team GPP works across all administrative and strategic procurement units to provide support for sustainable procurement and market engagement activities regarding environmental and climate issues. Its activities consist of the following:

- » Provide coordination and support of strategies and policies
- » Ensure that procurement remains part of all relevant strategies and policies developed by the city
- » Ensure that procurement can be used as a tool for fostering green growth by setting appropriate minimum criteria
- » Use award criteria which benefit suppliers with green products or services
- » Capacity building actions for the various units/departments, in order to further support them in managing environmental requirements of purchasing processes
- » Work with suppliers through market engagement processes

### Case Study City of Barcelona (Spain)

Barcelona is the forerunner city of GPP in Spain, launching its first programme on sustainable purchasing in 2001. What started as the ‘Green Office programme’ focusing on environmental criteria in the procurement of office supplies was expanded in 2006 to become the ‘**+ Sustainable City Council programme**’<sup>75</sup> (+SCC) and to include all municipal procurement activities, such as public works.

A central element of the +SCC programme’s activities is communication work to ensure awareness raising and capacity building across units and agencies. It also informs the departments about the different regulations and tools for GPP that the city has set up and provides support for the establishment of Strategic Internal Sustainability Plans.

Crucial for Barcelona’s success in establishing sustainable procurement practices was firstly the high level of technical support, awareness raising, training activities and networking provided to the city’s staff through the +SCC programme, and secondly the participatory nature of its implementation, involving both the main procurement and sustainability stakeholders.

Since 2017, sustainable public procurement that takes into account both environmental and social impacts is mandatory across sectors and beyond the originally defined 12 priority areas.

<sup>71</sup> SPP Regions. (2017). ‘Life Cycle Costing: State of the art report’.

<sup>72</sup> SPP Regions. (2017). ‘Life Cycle Costing: State of the art report’.

<sup>73</sup> SPP Regions. (2017). ‘Life Cycle Costing: State of the art report’.

<sup>74</sup> The European Commission. (2016). ‘GPP Interview: Strengthening action on GPP – the Danish approach’

<sup>75</sup> [http://www.ajsosteniblebcn.cat/en/-scc-programme\\_1367](http://www.ajsosteniblebcn.cat/en/-scc-programme_1367)

## Best practices and recommendations

**Creation of concrete targets**, including compulsory timeframes for the different sectors (office supplies, catering, public works, public vehicles, etc.) requiring all departments and agencies to contribute to achieving them.

### Case Study City of Copenhagen

GOALS FOR 2025	MAIN INITIATIVES UP TO 2025	INITIATIVES UP TO AND INCLUDING 2016
All City of Copenhagen vehicles to run on new fuels such as electricity, hydrogen or biofuels	Conversion of car fleet to electricity and hydrogen	Develop and implementing conversion plan Implement management system Establish infrastructure of charging stations for municipal vehicles
All external transport contracts for the City Administration to preclude the use of fossil fuels	New fuels for vehicles exceeding 3,500kg External suppliers will be required to use electricity, hydro-gen or biofuels when driving for the City of Copenhagen	Establish pilot and demonstration projects for fuel technologies for heavy vehicles Formulate requirements in connection with tendering

Copenhagen has created detailed action plans and timeframes for green procurement targets for public works in municipal buildings and the city's car fleet as part of the city's climate plan which presents Copenhagen's climate objectives until 2025. The action plans include quantitative targets by 2025 as well as the various immediate and medium-term actions that will be taken to achieve these targets.

Table 5. Example of the action plan for the procurement of low carbon vehicles for the City of Copenhagen<sup>76</sup>

**Creation of concrete targets**, including compulsory timeframes for the different sectors (office supplies, catering, public works, public vehicles, etc.) requiring all departments and agencies to contribute to achieving them.

**Leadership support for capacity-building** of the internal organisation of the municipality is important for the successful implementation of a GPP strategy. An important signal that the executive leadership can give is to recognise the role of GPP in the city's climate action plan and to highlight cost savings that can be achieved, in order to increase understanding of why GPP is being implemented.

**Training and awareness-raising** among city staff, especially the staff responsible for procurement. A study<sup>77</sup>, conducted in 2011 among 81 municipalities in the Italian region of Tuscany, confirmed that training in GPP techniques, information campaigns inside the municipal office, and mature, well-integrated environmental management systems are central to overcoming the barriers of sustainable procurement.

**Close cooperation between procurement and environmental staff** during the tendering process. The case studies of Copenhagen and Barcelona show how such cooperation can be successfully implemented. In Denmark, the City of Copenhagen has made an environmental expert a compulsory member of any working group set up before a tendering procedure is launched and in the City of Aalborg the Procurement office sends its tender proposals to the Environmental office where sustainability requirements are then integrated into the technical specifications<sup>78</sup>.

**A communication platform** can be set up where departments or administrations exchange information on material and equipment which is needed, in order to coordinate whether certain equipment items can be used collectively or even exchanged when they are no longer needed in one department<sup>79</sup>. Such a platform allows for unnecessary procurements to be avoided in the first place, reducing both costs and environmental impacts. It could also be used to jointly procure larger quantities of the same good through a single tender, facilitating cost savings as well as a consistent use of environmental criteria in a product group across administrations. See the example of the West Intermunicipal Community of Portugal in the 'Partnerships and Networks' section.

**Definition of selection criteria:** Environmental criteria can be applied to the tender in the form of award criteria or minimum criteria. The City of Copenhagen has concluded that environmental award criteria are often weighted too low in relation to cost in the evaluation process, so that companies rarely win on the basis of their environmental features. Therefore, minimum criteria, excluding all tenderers which do not abide by the minimum environmental requirements, are preferred. As more criteria results in more work in the procurement process, the price of the bid can rise, in line with the workload associated with documentation. Accordingly, the minimum criteria included need to have a significant environmental impact or potential life cycle cost savings in order to meet the requirement for proportionality, and the use of labels and existing standards can contribute to reducing the workload.

**Use of contract clauses for continuous improvements**, whereby the supplier commits to continuous improvement by reducing the negative environmental impacts of its products or work. Such clauses give the city a platform for engaging with their suppliers and encouraging them to develop capacity building and innovative solutions in order to meet the city's requirements.

**Encourage SMEs** to bid in public tenders and thus promote innovation and competitiveness. It is not permitted to express a direct preference for SMEs in procurement, but it is however possible to reduce the barriers preventing SMEs from tendering. Such barriers include highly bureaucratic tender processes and large contracts that are awarded to a single tenderer. If contracts are divided up and awarded to several bidders, their requirements become more accessible to SMEs. To make public tenders more feasible for SMEs it is also important to ensure that payments will be delivered on time or even in advance, as cash flow can be a challenge for smaller companies.<sup>80</sup>



### Monitoring and e-procurement

Monitoring is essential in order to follow-up on GPP targets and to understand how GPP criteria and procedures are being taken up by the relevant staff across departments. Data collection on these points is facilitated when an online procurement platform is used. Digitalisation of procurement or 'e-procurement' implies that tender opportunities and tender documents

are made electronically available. This form of digitalisation is strongly encouraged by the European Union, where electronic bid submissions are to become mandatory by October 2018<sup>81</sup>. E-procurement and digital monitoring not only reduce costs for local authorities but also improve visibility through reporting green outcomes and impacts.

### Case Study Metropolitan City of Rome Capital (Italy)

The Metropolitan City of Rome Capital has linked a digital monitoring system for GPP to its e-procurement platform since 2016<sup>82</sup>.

Rome developed its first action plan for green procurement in 2009, which established a manual monitoring system, whereby the procurement staff in each individual department had to send a form to the GPP Coordination Office whenever they completed a green purchase. The action plan also set up a Green Purchasing Workgroup composed of members of the office for promoting sustainable development, the general purchasing department, the office for electronic informative systems and the department for school services, working to support the GPP Coordination Office in monitoring and annual reporting. While Rome's green procurement strategy successfully brought environmental and procurement staff together, the manual monitoring system was far from ideal, as forms were often handed in late, were incomplete or contained inaccurate information, making data collection and reporting more difficult. Nevertheless, the monitoring system showed that GPP resulted in a reduction in CO<sub>2</sub> emissions estimated at 749 tonnes<sup>83</sup> over the period from 2011 to 2014.

<sup>76</sup> City of Copenhagen. (2012). 'CPH 2025 Climate Plan: A Green, Smart and Carbon Neutral City'.

<sup>77</sup> Tesca et al. (2016). 'Drawbacks and opportunities of green public procurement: an effective tool for sustainable production'. Journal of Cleaner Production 112.

<sup>78</sup> European Commission. (2015). 'GPP in Practice: Sustainability Strategy 2013 – 2016 of the City of Aalborg, Denmark'.

<sup>79</sup> Setting up such a communication platform is e.g. proposed for the City of Berlin in Germany in its 2016 guidelines on the "Implementation of the administrative regulation for the application of environmental protection requirements in procurement", accessible at: <https://www.berlin.de/senuvk/service/gesetzestexte/de/download/beschaffung/Handlungslaufplan.pdf> for supply, construction and services

<sup>80</sup> ICLEI. (2016). 'A Guide to Implementing Sustainable Procurement, 3rd Edition'

<sup>81</sup> [http://ec.europa.eu/growth/single-market/public-procurement/e-procurement\\_en](http://ec.europa.eu/growth/single-market/public-procurement/e-procurement_en)

<sup>82</sup> [http://www.procuraplus.org/fileadmin/user\\_upload/Procura\\_case\\_studies/Procuraplus\\_case\\_study\\_Rome.pdf](http://www.procuraplus.org/fileadmin/user_upload/Procura_case_studies/Procuraplus_case_study_Rome.pdf)

<sup>83</sup> [http://www.patodeisindaci.provincia.roma.it/pagina115\\_monitoraggio-gpp.html](http://www.patodeisindaci.provincia.roma.it/pagina115_monitoraggio-gpp.html)

In order to address the difficulties described above, the Metropolitan City of Rome Capital integrated GPP monitoring into its accounting system in 2014 and launched a digital version in 2016, in cooperation with the Accounting department and the GPP Coordination Office. The new monitoring system enables the municipality's staff to perform sample checks on the input of technical requirements, to obtain real-time reports (on the basis of year, amount procured, department, awarding procedure, product group etc.), and to receive support on how to check GPP products, especially when official label criteria are lacking<sup>84</sup>. In order to assist capacity building around the new monitoring system, Rome has also set up a telephone helpdesk, an updated online library of laws and regulations concerning GPP, a supporting guide and training for staff across departments.

Concretely, the e-procurement platform allows procurers to select a GPP purchasing option in which case relevant information such as product group, amount and year, must be provided by the procurer in a 'GPP product groups attachment' (see image 3 below). In order to ensure that the staff will take the time to enter the necessary data, the purchasing procedure cannot be validated before the attachment is complete<sup>85</sup>.

The digital monitoring system has facilitated access to data about GPP practices in the municipality, allowing Rome to monitor the advancement of its targets and to calculate energy savings and CO<sub>2</sub> emission reductions.

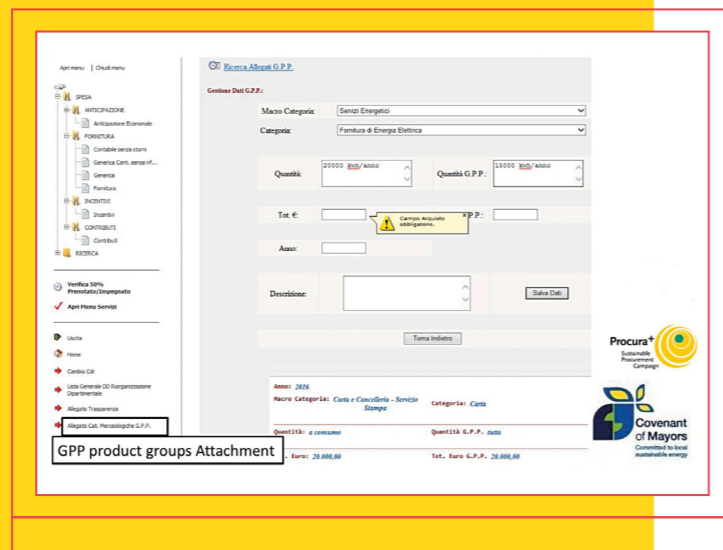


Image 3. Screenshot of the GPP products group attachment from the e-procurement site of the Metropolitan City of Rome Capital

## Case Study Flanders (Belgium)

Flanders employs 640 procurement staff who work in 12 divisions and 10 locations<sup>86</sup>. In order to ensure that green procurement criteria are internalised by all staff in such a diverse and dispersed environment, and in order to track the target of 100% sustainable public procurement (SPP – accounting not only for ecological but also for social/ethical criteria) by 2020 for all product groups with available criteria, effective monitoring is a crucial tool.

Since 2015, the Flemish government has been using a digital monitoring system which allows procurers to report on sustainable procurement through a project code categorising the product group and a short description of the purchase. Not only is data on sustainable procurement gathered in this way, but in addition the system monitors how many errors are made by the procurement staff in terms of product group chosen and sustainable procurement criteria used, by taking samples from the purchase description and the tender document.

Through the monitoring system, the Flemish government now knows what errors are most commonly made by the procurement staff, what areas need to be extended or specified and what training needs exist in the administration. The monitoring system has shown that a large number of procurements were not registered as such, because the purchasers thought they were 'other expenses' not bound to procurement criteria, especially for expenses under EUR 8,500 (which represent 96% of all procurements)<sup>87</sup>. In order to assist procurers in their sustainable purchasing, especially for product groups for which sustainability criteria are not available, the government of Flanders set up a central contact point for sustainable public procurement<sup>88</sup> in 2009.

## Partnership and Networks

» Many cities have also come together to form GPP partnerships inside and beyond national borders in order to exchange knowledge and best practices, but also to jointly increase their market power in order to steer the market towards more sustainable practices.

### National networks

The Danish Partnership for Green Public Procurement was originally established in 2006 by the Ministry of Environment and Food with the three largest Danish cities Copenhagen, Aarhus and Odense, and has since expanded to include twelve municipalities, two regions and a water supply company, representing 17% of all public procurement in Denmark (around DKK 50 billion)<sup>89</sup> and around one third of the total procurement volume of Danish local governments<sup>90</sup>.

Together the members establish common goals for increasing green procurement and common green procurement criteria which can function as a guide for municipalities where the incorporation of environmental requirements in the procurement process is less developed. The partnership also establishes working groups that share knowledge between the cities to solve joint procurement challenges and develop specific criteria within different product areas<sup>91</sup>.

### Transnational networks

#### Nordic Capitals for green growth

Under the Nordic Council, six Nordic cities – Oslo, Copenhagen, Stockholm and the three Finnish cities of Helsinki, Espoo and Vantaa – have established a capacity building network and a peer-to-peer collaboration on how to develop sustainable

supply chains through public procurement. The declared objective of the initiative is "creating a green market through public procurement"<sup>92</sup>.

#### Scandinavian GPP Alliance on Non-Road Mobile Machinery

United by their ambition to become carbon neutral in the next few years, the Scandinavian capital cities Oslo, Copenhagen and Stockholm are all members of the Carbon Neutral Cities Alliance – a collaboration of cities around the world who are actively working to cut their emissions by 80% or more, by 2050 or sooner<sup>93</sup>. The alliance is composed of 20 cities from the US, Canada, Brazil, Europe, Australia and Japan. Financed by the Carbon Neutral Cities Alliance, the three Scandinavian cities have formed the Scandinavian GPP Alliance on Non-Road Mobile Machinery, whose goal is the joint procurement of emission-free wheel loaders for public construction works.

The sector has not yet received any attention for its low-emission potential, even though in the EU Non-Road Mobile Machinery is responsible for around 15% of total NOx emissions, 5% of the total emission of particulates and represents about 2% of total annual greenhouse gas emissions<sup>94</sup>. Therefore, pre-procurement is an important part of the projects, due to the products' innovative nature. The cities have conducted a large amount of market research to understand what technical possibilities currently exist or are under development, so that actual procurement is planned to go ahead in 2019.

### Advantages of partnerships

Joint procurement through networks between cities inside and across national borders presents three major advantages for local authorities:

1. Joint procurement can bring about significant cost reductions: A good example is the joint procurement of LED lighting in the West Intermunicipal Community of Portugal (OesteCIM) – a collective organisation of 12 Portuguese municipalities whose objective is to promote sustainable development and increase quality of life through innovation and energy efficiency. The community has established both

its own Portuguese West Region Energy and Environmental Agency and a Regional Public Procurement Central Unit, which organised the funding and joint procurement of LED lighting for all 12 member municipalities. By issuing a single tender for such a large territory, price reductions of between 20% and 60% were achieved, with potential savings of more than EUR 70,000<sup>95</sup>. »

<sup>82</sup> [https://www.motiva.fi/files/15106/Nordic\\_Capitals\\_green\\_growth\\_Final.pdf](https://www.motiva.fi/files/15106/Nordic_Capitals_green_growth_Final.pdf)

<sup>83</sup> <https://carbonneutralcities.org/>

<sup>84</sup> <https://www.gate21.dk/project/scandinavian-green-public-procurement-alliance-on-non-road-mobile-machinery/>

<sup>85</sup> <http://www.procuraplus.org/public-authorities/west-intermunicipal-community>

<sup>86</sup> Plastic ZERO. (2014). 'Green Public Procurement analysed in Denmark. Case: City of Copenhagen'.

<sup>87</sup> [http://ec.europa.eu/environment/gpp/pdf/news\\_alert/Issue61\\_NewsAlert\\_Interview.pdf](http://ec.europa.eu/environment/gpp/pdf/news_alert/Issue61_NewsAlert_Interview.pdf)

<sup>88</sup> <http://www.oneplanetnetwork.org/initiative/partnership-green-public-procurement-denmark>

<sup>84</sup> <http://www.procuraplus.org/public-authorities/metropolitan-area-of-rome%0D>

<sup>85</sup> [http://www.procuraplus.org/fileadmin/user\\_upload/Activities\\_files/Events/Webinar\\_May\\_2016/PROCURA\\_Webinar\\_T1\\_05\\_2016\\_Rome.pdf](http://www.procuraplus.org/fileadmin/user_upload/Activities_files/Events/Webinar_May_2016/PROCURA_Webinar_T1_05_2016_Rome.pdf)

<sup>86</sup> ICFEI. (2016). 'A Guide to Implementing Sustainable Procurement, 3rd Edition'.

<sup>87</sup> Government of Flanders: Environment, Nature and Energy Department. (2016). 'Report: Analysis of SPP'.

<sup>88</sup> <https://overheid.vlaanderen.be/aanspreekpunt-duurzame-overheidsopdrachten>

» 2. When cities develop common green procurement criteria it helps them increase their market power through their combined resources and makes it easier for the market to respond to their demands. The more public authorities use GPP criteria the bigger the effect it will have on the market. Networks are a powerful tool for knowledge exchange allowing the development of consistent green criteria. When local authorities in a region or country work together to set and use uniform criteria it becomes easier for suppliers to comply with the criteria, and there is a bigger chance that sustainable practices will be integrated into a large share of the market.

3. Similarly, cooperation between cities even across national borders also increases the cities' leverage to procure innovation. Public procurement of innovation requires considerable amounts of additional work and possibly additional costs stemming from the need to conduct extensive market research and to coordinate with suppliers. A network of partnerships can reduce the workload for individual cities, and have a bigger effect in bringing innovative technologies onto the market. Offering a new sustainable technology a larger market through transnational networks, such as the Scandinavian GPP Alliance on Non-Road Mobile Machinery, is also beneficial to the long-term success of an innovative technology or product.

## Barriers and Challenges

» A study<sup>96</sup> conducted in 2013 on the challenges of implementing GPP in the 29 municipalities within the Capital Region of Denmark has identified the major barriers GPP poses to municipal administrations across Europe<sup>97</sup>:

### » Lack of links between the procurement and environmental departments:

Communication and knowledge-exchange between sectors is often not well developed in city administrations and there is a lack of standardised procedures on how and when to include environmental criteria into the procurement process. An effective solution is demonstrated in the examples of Copenhagen and Barcelona where several members of the environmental staff have the specific mission of working with and supporting procurement staff in their GPP – in Copenhagen an environmental expert is a compulsory member of any working group for procurement.

### » Separating procurement and maintenance budgets:

If these elements are split, procurement staff will focus exclusively on the purchase cost of a product or service without feeling responsible for reducing the operating or maintenance cost, or the environmental impacts operation of the product may have. To prevent this behaviour, it is important to train procurement staff about life-cycle costing when selecting offers. ICLEI offers online tools to support life-cycle costing for local procurement staff (see the Toolbox in the next section).

### » The challenge in getting started:

When GPP is first introduced in a city's administration, it is difficult to figure out where to start and procurement staff often lack knowledge on green criteria and how to integrate them into their tenders. In addition it can be very time-consuming to put in place tools and methods for green criteria, their evaluation and documentation. Training procurement staff to understand the utility and methods of GPP is crucial. It can also be helpful to begin by implementing GPP in a

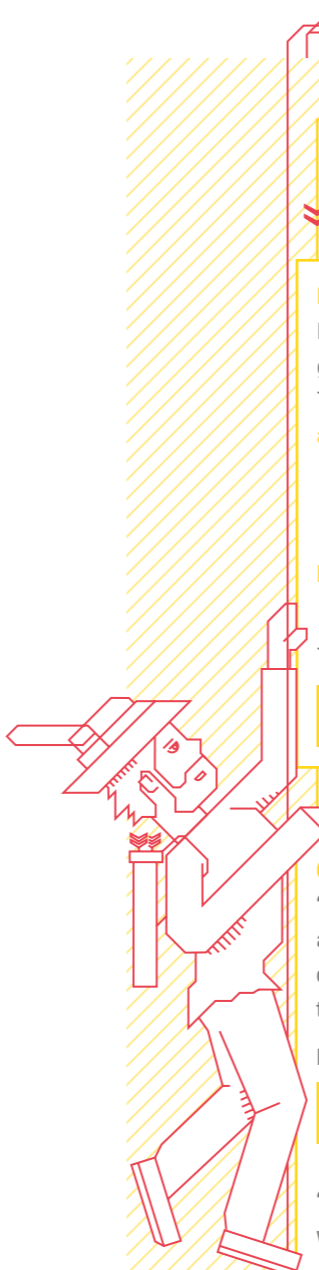
specific product category (e.g. office supplies in Barcelona) and then expand over time. Neither do local authorities have to develop GPP criteria and clauses from scratch, as they can rely on existing and tested expertise acquired in the form of manuals and online tools provided by the EU and other actors (ICLEI, GPP2020, etc.).

### » Documentation and evaluation of GPP:

City administrations often lack the tools and methods to help evaluate and visualise the benefits of GPP, such as product longevity, energy or water savings, reduced amounts of waste, improved working conditions, etc. E-procurement combined with digital monitoring is an effective method of collecting data across departments to follow-up on the benefits achieved through GPP. It also identifies the weaknesses of the administrations and allows them to be addressed with training and awareness campaigns targeting the actual mistakes made by staff in relation to GPP.

### » Lack of financial means and economic prioritisation:

Since traditionally procurement's main objective is cost efficient management of public money focusing on the purchase price of products and services rather than on the total cost of ownership<sup>98</sup>, environmental criteria have not been prioritised. At the same time, "many public procurement bodies are under constant requirements to streamline budgets"<sup>99</sup> whereby additional steps to include green criteria in tenders can easily be considered as an unnecessary complication. For this reason it is essential that a green procurement strategy is developed at the top management levels of the city administration and made clearly visible as a political priority for the city.



## Toolbox

### Tools provided by the European Union

#### EU criteria for GPP

Information on detailed green criteria by category of procured good or service. There are two types of criteria for each of the product groups:

- a) core criteria which should ideally be fulfilled by every public purchasing authority (addressing the main negative environmental impacts while generating minimal additional costs and paperwork);
- b) comprehensive criteria identifying the most environmentally friendly products available on the market.

They are available from:

[http://ec.europa.eu/environment/gpp/eu\\_gpp\\_criteria\\_en.htm](http://ec.europa.eu/environment/gpp/eu_gpp_criteria_en.htm)

#### EU Helpdesk for GPP

The European Commission has established a Helpdesk to disseminate information about GPP and to provide answers to stakeholder enquiries. Contact details are available on the GPP website at

<http://ec.europa.eu/environment/gpp/helpdesk.htm>

#### Guidebooks

'Buying green! A handbook on green public procurement' (3rd edition, 2016) is the main EU manual for GPP for public authorities, giving guidance on green criteria can be included at each stage of the procurement process in line with the current EU legal framework, approaches to GPP in different product sectors (buildings, food and catering services, road transport vehicles...), and providing practical case studies across Member States. It can be downloaded in all official EU languages from:

[http://ec.europa.eu/environment/gpp/buying\\_handbook\\_en.htm](http://ec.europa.eu/environment/gpp/buying_handbook_en.htm)

'Plastic ZERO: Green Public Procurement Manual on Plastic Waste Prevention' (2014) is focused specifically on how waste can be reduced in the procurement process through public-private partnerships. Available in English from

[http://www.plastic-zero.com/media/50849/green\\_public\\_procurement\\_manual\\_on\\_plastic\\_waste\\_prevention\\_final\\_.pdf](http://www.plastic-zero.com/media/50849/green_public_procurement_manual_on_plastic_waste_prevention_final_.pdf)

#### GPP2020 Project

The GPP2020 project aimed to improve implementation of GPP – with a focus on low-carbon procurement – among both local and national procurement bodies in Austria, Croatia, Germany, Italy, the Netherlands, Portugal, Slovenia and Spain. The project was coordinated by ICLEI and co-financed by the Intelligent Energy Europe programme of the European Commission. Even though the project officially ended in 2016, the online tools developed in its process are still openly available on its website. It offers a collection of examples and case studies of tender implementation plans in different EU states and in different product categories.

#### Training material and webinars

available for procurement staff in the 9 languages of the project from:

<http://www.gpp2020.eu/events-and-training/training-materials/>

#### Low-carbon tender impact calculator

is a tool available to calculate energy and CO<sub>2</sub> savings achieved through GPP. The calculator is in the form of a spreadsheet accompanied by a video tutorial. Access the calculator tool from

<http://www.gpp2020.eu/low-carbon-tenders/measuring-savings/>

<sup>96</sup> Niras. (2013): Klimavenligt indkøb og forbrug i kommunerne – en analyse af det operationelle og strategiske arbejde, a report carried out for the Capital Region of Denmark. In Danish only. Available at: <http://www.regionh.dk/NR/rdonlyres/A9F35B7C-4041-4407BDED-91A260C1FA96/0/KommuneanalyseKlimavenligtIndkoebogForbrugendellig.pdf>

<sup>97</sup> Plastic Zero. (2014). 'Green Public Procurement analysed in Denmark Case: City of Copenhagen'.

<sup>98</sup> The Total Cost of Ownership analysis estimates the various lifecycle costs for a given product

<sup>99</sup> Plastic Zero. (2014). 'Green Public Procurement analysed in Denmark Case: City of Copenhagen'.

## Toolbox

### SPP Regions: Regional Networks for Sustainable Procurement

The SPP Regions is an EU Horizon 2020 financed project “aimed at promoting the creation and expansion of European regional networks of municipalities working together on sustainable public procurement and public procurement of innovation”. With participation of municipalities from seven EU countries, the project has developed useful tools and case studies to assist local authorities with their sustainable procurement.

#### Tender Models

Models and case examples of eco-innovative tenders in the categories of food and catering, low emission vehicles, green energy, energy savings in public buildings, and lighting are available at:

<http://www.sppregions.eu/tenders/tender-models/>

#### Guidebooks

The project’s website also features a number of publications compiling best practices which can assist local authorities in market engagement, the formulation of tender specifications, life-cycle costing and circular procurement. Available at:

<http://www.sppregions.eu/resources/publications/>

#### Tools to measure CO<sub>2</sub> and energy savings

Based on the methodology of the GPP2020 project presented above, SPP Regions has developed tools to calculate CO<sub>2</sub> emissions and energy consumption savings to be achieved through green tenders for the categories of vehicles, catering and buildings:

<http://www.sppregions.eu/tenders/measuring-savings/>

### Tools provided by ICLEI

#### Procura+ Network

is the European Sustainable Procurement Network developed by ICLEI for public authorities. It is based on knowledge exchange between members, with a number of services provided to support capacity building and to strengthen sustainable procurement practices in the EU.

For its members it offers:

- » **Training and capacity building services:**  
Procura+ organizes webinars, seminars, and conferences in order to exchange best practices in sustainable procurement between members.
- » **Peer-to-peer learning:**  
The Procura+ Network Twinning Programme: involves two Procura+ Participants who work in partnership to support each other in implementing sustainable procurement.
- » **Procura+ Helpdesk:**  
Offers expert advice for individual support with policies, strategies, as well as ongoing and upcoming tenders.

ICLEI also provides a number of tools which can be openly accessed by both members and non-members:

#### Life-cycle cost assessment tool

ICLEI has developed an online tool to calculate the Life-cycle cost – including GHG emissions – of products and services for public procurement. Registration is necessary to access the tool, which is available from:

<http://tool.smart-spp.eu/smartspp-tool/registration/login.php>

#### ICLEI guidelines for GPP

‘Procura+ Manual’ (3<sup>rd</sup> edition, 2016) Offers step-by-step guidelines for each part of the GPP management cycle, best practice case studies and formulation for tenders, list of criteria and guidance material for specific sectors, as well as contract clauses ready to copy-paste. Access from:

<http://www.procuraplus.org/manual/>

### Others

The German capital and federal state Berlin has also developed useful **calculation tools** in order to assist its administrations in conducting **life-cycle analysis** in the product groups of electrical devices, passenger and freight lifts, road vehicles, and data centres. The corresponding spreadsheets (Anhang 3-6) can be accessed freely (in German) from:

<https://www.berlin.de/senuvk/service/gesetzentexte/de/beschaffung/>

# CONCLUSION

## THE THREE MAIN BENEFITS OF GPP IN A NUTSHELL

1. Achieve cost savings throughout the product life-cycle
2. Reduce the local administration’s GHG emissions and energy consumption
3. Incentivise the development of innovation and sustainable market practices in the local economy

» In order to go further, find additional information and orientation or seek peer-to-peer advice, here is an overview of three local authorities who have developed successful GPP strategies over time, and therefore gained experience that other cities can benefit from.



#### City of Barcelona

Is the Spanish forerunner in GPP. It is a perfect example of how GPP can be gradually implemented, while focusing on capacity building and a high degree of cooperation between city staff.



#### City of Copenhagen

Has an ambitious GPP strategy, with detailed goals and time-frames across sectors ( reduce energy consumption of the city administration’s buildings by 40% by 2025, use only electric, hydrogen or biofuel-run vehicles by 2025, etc.) To achieve these objectives, Copenhagen has created a ‘Team GPP’ consisting of environmental staff which supports and advises the administration’s procurement staff



#### Metropolitan City of Rome Capital

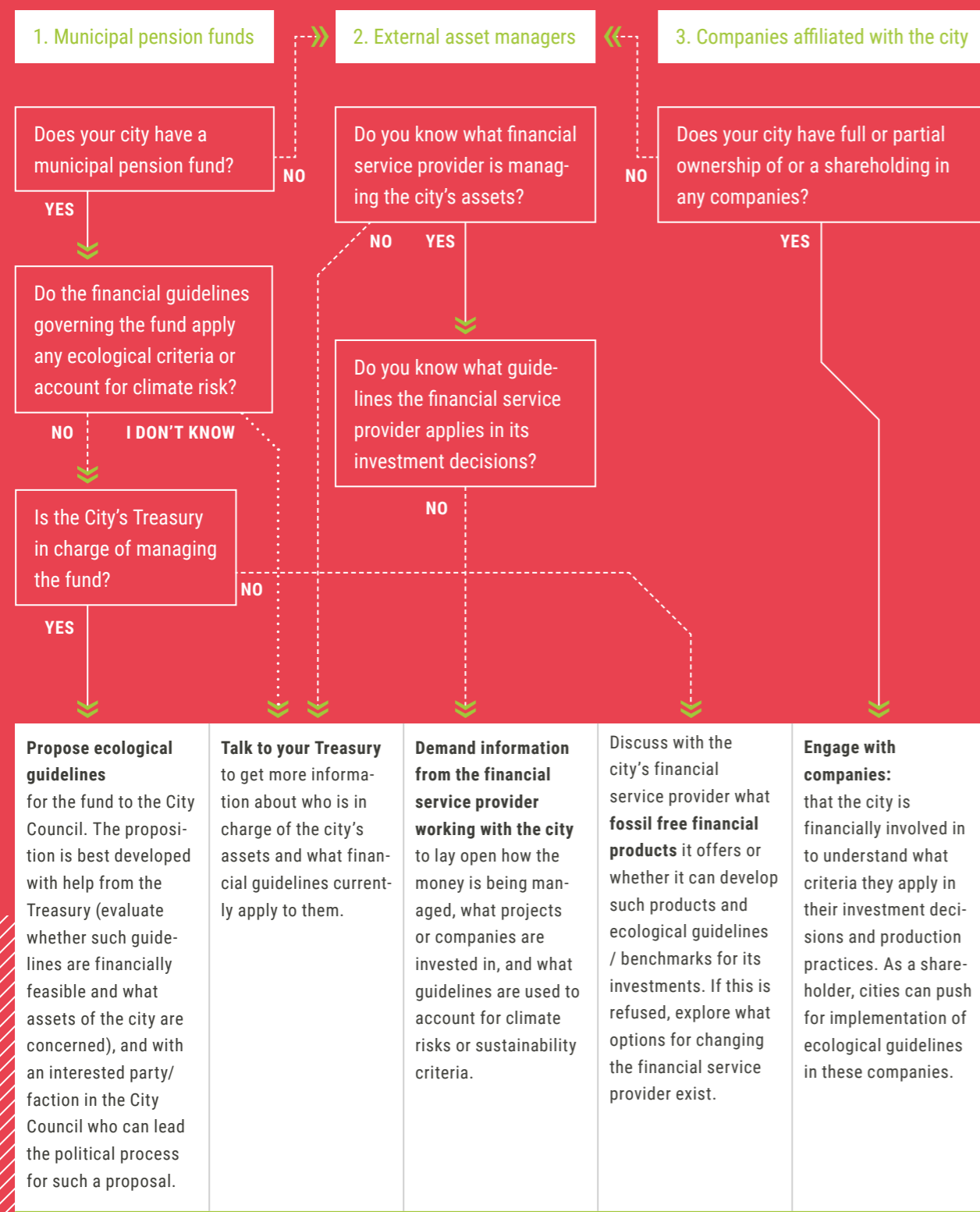
Has been successful in transitioning towards e-procurement and combining this with a digital monitoring system which allows the administration to follow up on its achievements in terms of energy savings and emission reductions.

#### Suggested resources

- » Nordic Council. (2017). ‘Nordic capitals for Green Growth’.
- » Alhola K, Salmenperä H, Ryding SO, Busch NJ. (2017). ‘Circular Public Procurement in the Nordic Countries’. Nordic Council of Ministers.
- » Testa F, Annunziata E, Iraldo F, Frey M. (2016). ‘Drawbacks and opportunities of green public procurement: an effective tool for sustainable production’. Journal of Cleaner Production. Vol. 112, pp. 1893 – 1900.

# CHAPTER III

## DIVESTING MUNICIPAL FUNDS FROM FOSSIL FUELS



### What is Divestment?

» Divestment describes the process of selling investments, such as shares or bonds, with direct or indirect exposure to fossil fuels, in order to make sure that financial assets under the city's control are not financing projects which contradict its climate commitments.

Maybe when reading this definition you believe that your city has no financial connections to the fossil fuel industry, but take a moment to consider the following questions:

- » Does the city or municipality have a pension fund scheme for its employees?
- » What financial service provider is managing the financial assets or providing loans for the city?
- » What guidelines does the financial service provider apply when investing the city's money?
- » Does the city or municipality have any publicly-owned companies or hold shares in private companies, e.g. utility companies.
- » What guidelines do these companies apply in their investment decisions?

If you do not know the answers to all of these questions it may be well worth continuing to read this chapter and afterwards do some more research within your own administration to find out whether you can confidently rule out all involvement of your administration with the fossil fuel sector.

The Divestment movement started as civil society initiatives in different cities throughout the United States and has since been formalised through the creation of several international NGOs, most notably 350.org and gofossilfree.org, with national branches supporting divestment campaigns around the world. Multiple public and private institutions (such as religious organisations, universities, national and municipal pension funds, banks, NGOs, etc.) have made vows and taken concrete actions to exclude companies that make profit from fossil fuels from their investment universe (for a more extensive list, see <https://gofossilfree.org/divestment/commitments/>).

Aside from the moral argument for divestment from fossil fuels, there are also important economic arguments which justify reducing the fossil fuel exposure of investment portfolios:

- » **Stranded assets:** In order to meet the Paris Agreement objective of limiting global warming to below 2°C, more than 75% of currently known fossil fuel reserves will have to remain in the ground. This means that if governments follow through with stricter environmental regulations, the majority of these reserves will become worthless in the future.

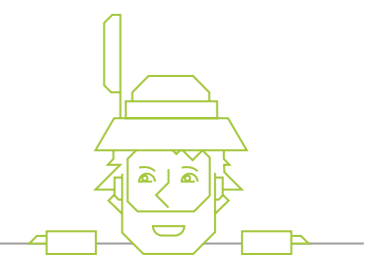
» **Carbon bubble:** Consequently, assets in fossil fuels are currently overvalued creating a financial bubble which can burst through a sudden drop in demand that is predicted to occur before 2035. This would lead to USD 33 trillion of lost revenue for fossil-fuel companies, implying substantial losses for all investors. A study published in 2018 in the journal 'Nature Climate Change' finds that "the demand drop would take place even if major nations undertake no new climate policies, or reverse some previous commitments", due to the technological advances that have made low-carbon energy more economically attractive.

» **Climate Risk:** Traditionally asset managers consider risk and the return on their investment decisions, however more recently, some financial institutions have started to evaluate climate change related risks in their investment approach. Climate risk can be a) policy-related (stranded assets of fossil-fuel companies through environmental regulations) or b) physical (damage to assets through climate change-related natural hazards). In order to responsibly handle public money, municipalities need to understand the exposure of their finances to climate risks.

For more information on the financial risks associated with fossil fuel investments, see Mercure et al. (2018). 'Macroeconomic impact of stranded fossil fuel assets' (available from: <https://www.nature.com/articles/s41558-018-0182-1>) or see the Guardian article 'Carbon bubble could spark global financial crisis, study warns' (available from: <https://www.theguardian.com/environment/2018/jun/04/carbon-bubble-could-spark-global-financial-crisis-study-warns>)

For these reasons, a growing number of cities around the world has joined the divestment movement and made efforts to shift their financial assets away from the funding of fossil-fuel companies. On the occasion of the 2015 Paris Climate Conference a group of 12 Mayors (representing cities from Europe, the USA and Australia) addressed a letter to their colleagues around the world, urging them to divest from fossil-fuels to "demonstrate how local actors can be at the forefront in achieving global goals", stating that "if it is wrong to wreck the climate, it is wrong to invest in its destruction".<sup>100</sup>

<sup>100</sup> Read the entire letter at: <https://350.org/mayors-divestment-letter/>.



## What does fossil fuel divestment mean for cities?

- » When local authorities divest, there are primarily three main asset groups which need to be examined and which will potentially be affected by the divestment decision:
- » The equity component of the municipal pension funds (meaning the part of the fund's assets which may be invested on the stock market)
  - » City-owned shares in companies
  - » Banks responsible for managing/storing the city's assets and on the basis of which municipalities take out loans or engage in other financial transactions.

These three points can be addressed by **a)** including sustainability criteria in investment guidelines for the municipal pension funds; **b)** selling shares in companies<sup>101</sup> (especially utility companies) that make profits from fossil fuels; **c)** demanding that the banks<sup>102</sup> lay open information on how they integrate climate risks and what guidelines apply to their investment decisions and possibly changing the financial service provider if the bank is not willing to offer or capable of offering fossil-fuel free financial products. (These strategies will be presented in detail in the step-by-step recommendations in the next section).

Different cities have decided on different degrees of divestment in terms of the scope of their commitments and in terms of the energy types they exclude. The global campaign, [gofossilfree.org](http://gofossilfree.org), has classified divestment commitments in three categories:

- » **Fossil-free:** to sell all investments in companies of the fossil-fuel industry with an explicit exclusion commitment for the future (e.g. the City of Münster).
- » **Full:** to sell all existing investments in fossil-fuel companies but with no explicit commitment for the future (represents the majority of divestment commitments, e.g. the City of Copenhagen).
- » **Partial:** to exclude only certain fossil energy sources (e.g. only coal) or when the divestment is not consistent along the value chain (mining of fossil fuels is excluded but conventional power plants are not). For example the Norwegian national pension fund only excludes investments in coal but not in oil and gas and the City of Stuttgart continues to invest in natural gas.

Cities that want to divest have to keep in mind that there are usually regulations in place limiting the equity component of their pension funds and obliging their asset managers to diversify their investments in order to limit risks as much as possible and to obtain at least average returns. This is why it is important to evaluate how different divestment strategies will affect the city's capacities to fulfil its obligations in terms of risk and returns.

### Case Study City of Zurich (Switzerland)

Administration of the CHF 15 billion pension fund of the City of Zurich (Pensionskasse Stadt Zurich – PKZH) is handled by asset managers from external companies. They are entrusted with tracking the big stock market indices in order to assure a high level of diversification: Security is achieved by following the behaviour of the majority. Using this investment strategy the PKZH had invested around CHF 700 million in oil, gas and coal companies, representing 4.5% of the fund's investment capital.

After publication of a newspaper article<sup>103</sup> in 2015 on how the oil company Shell uses institutional investors such as national or municipal pension funds on the Swiss bond market to obtain money at extremely low interest, Zurich's City Parliament requested the City Council in April 2017 to examine how the funds' investment guidelines can be changed to exclude climate-damaging investments. Shell's bonds attract these public investors in particular because new investment opportunities which offer good returns while maintaining a high level of diversification are scarce on the market.

<sup>101</sup> This is not always a feasible option for municipalities which share the profits of utility companies or other public or semi-public enterprises. As a shareholder the municipality has the ability to influence the company's agenda to a certain extent, therefore Engagement is also an important strategy, aiming at pushing the company's behaviour in a more sustainable direction. For more information, see the 'Additional steps' section.

<sup>102</sup> One example is a number of German cities which made the decision to sell their shares in the electric utility company RWE due to its declining value in the context of the energy transition. Read more (in German) at: <https://www.greenpeace-koeln.de/kommunen-bereiten-verkauf-von-rwe-aktien-vor/>

<sup>103</sup> <https://www.woz.ch/1535/shells-finanzen/schweizer-pensionsgelder-befeuern-den-klimawandel>

## How to Divest? Step-by-step recommendations

- » The political decision to divest is usually initiated by either the Mayor (as in the City of Copenhagen) or by a political faction inside the city council (the green parties in the Cities of Oslo and Münster), who submit a proposal for revising investment guidelines that is debated, voted and adopted by the city council. The actual revision of the guidelines is then prepared by the city's administrative staff, which have the financial expertise to do so. In this sense, the divestment process has both a political and a technical dimension.
- (e.g. the mayor; the city council, specifically the budget and finance committee)
- 2) **Non-elected administrative actors** responsible for the elaboration, assessment and implementation of such sustainable investment guidelines (e.g. finance department; treasury)
  - 3) **Actors outside the city administration capable** of impacting on the decision-making process through stakeholder input, lobbying and elections (e.g. citizens; civil society groups; research institutions; trade unions; companies, etc.)

A study developing a divestment concept for the German city of Kassel identifies three groups of actors involved in the divestment process<sup>104</sup>:

- 1) **Political/elected actors** responsible for the political initiative and for adopting the commitment as legally binding

To this we should add a fourth category, i.e. **private and municipal or national banks and funds** that are connected to the city as asset managers or financial advisors.

### Case Study Region of Romandy (Switzerland)

Several civil society groups in the French-speaking region of Romandy in western Switzerland have come together in May 2018 to set up a network in support of fossil fuel divestment: Réseau Divest Romandie. In order to launch the divestment movement in Switzerland, the network is engaging with three Swiss cities – Geneva, Lausanne and Nyon – to encourage them to deliver a divestment commitment during the COP24 summit in November. The network is also working to develop a toolbox that assists investors in their divestment.

### The political process:

#### Case Study City of Münster (Germany)

The political process leading to the adoption and implementation of the divestment commitment can be illustrated through a case study of the City of Münster, the first city in Germany to adopt sustainability criteria for the investment of its municipal pension fund.

- 1) After the municipal elections in May 2014, the Green party and the Social democrat party (SPD) conducted an initial examination of the city's pension funds (amounting to a total of EUR 66.8 million, with an equity component of 30%) and what possibilities were available to restructure them according to ethical and ecological criteria.
- 2) Both factions then issued a request to the finance department to revise the binding investment guidelines for capital investments in order to exclude companies that allow child labour, produce or sell weapons, produce nuclear energy and rely on non-sustainable or climate-damaging energy sources, or conduct fracking. Rather than conducting a

<sup>104</sup> Bauckloh T, Drempetic S, Klein C. (2017). 'Entwicklung eines Konzepts zur Implementierung einer Nachhaltigen Anlagerichtlinie für die Stadt Kassel'. Universität Kassel.

CO<sub>2</sub> screening of the fund, the decision was made to focus on the composition of the fund and to identify particular companies to be excluded through the new guidelines. The result was a negative list of companies, which do not fulfil ethic and ecological standards (concretely RWE, E.ON, Total, Shell and BASF).

- 3) In November 2015 the revised guideline prepared by the finance department was presented to the city council and all political factions voted to adopt them. The decision states that if the funds currently responsible for the municipal pensions (one city-owned fund and one fund collectively-owned by several cities in the region) are not willing to or capable of realigning the city's investments with the new guidelines, the city's financial assets would be assigned to a new asset manager. The original ambition of 100% exclusion of fossil fuels in the fund ultimately has to be nuanced, as it becomes clear that the interdependence of companies and industries makes this impossible.
- 4) The other cities agreed for the revised guidelines to be applied to the collectively-owned fund and both pension funds of the City of Münster were aligned with the new ecological criteria on the basis of the Euro Stoxx Sustainability ex AG-TAFA benchmark (with an investment universe representing the largest European sustainability leaders in the Eurozone, while also excluding companies which generate revenues from alcohol, gambling, tobacco, armaments, firearms and adult entertainment<sup>105</sup>). In addition to the benchmark, the negative list excluding the fossil fuel companies mentioned above was applied.
- 5) These guidelines became effective in April 2016. Since then the representative of the Green Party behind the divestment decision has ensured that the performance and returns of the funds are not negatively affected. On the contrary, in fact the performance has been kept stable although potentially it would have been at risk if the divestment had not been made, as the excluded energy company RWE suffered high losses in value shortly afterwards<sup>106</sup>, which would have negatively impacted the funds. After implementing the divestment guidelines it had been planned to conduct a fossil fuel and CO<sub>2</sub> screening of the funds, however no results are currently available.

## The technical process:

The technical process of elaborating the scope and the criteria for the divestment guidelines is done by the finance department and the city's treasury, whereby financial institutions and financial/environmental experts can be consulted and other external actors can organise themselves to influence the process.

### 1) Inventory of the city's current investment approach

- » What financial assets does the city currently possess? (i.e. shares in companies, fixed-income securities, special assets including the municipal pension fund, the equity component of the pension fund, etc.)

### Case Study France

The 2015 French energy transition law for green growth provides local authorities with a legal basis to demand information from their asset managers on the exposure of the bank's investments to fossil fuels. Article 173 obliges public and private financial institutions to provide their clients with information on the integration of ESG criteria in their investment policy and the CO<sub>2</sub> impact of financed activities.

- » How are these assets currently being managed? Where is the city investing?
- » What investment guidelines currently exist for municipal assets at the national, regional or city level? Can they be easily expanded or must they be formulated anew to include sustainability criteria?

<sup>105</sup> <https://www.stoxx.com/index-details?symbol=SUYE>

<sup>106</sup> In 2016, as a result of the energy transition in Germany, RWE suffered a record loss of almost EUR 6 billion. As a result, the company halted the distribution of dividends to its shareholders, creating financial difficulties for many municipal treasuries in a time of decreased budgets. Since then several municipalities have decided to sell or considered selling their shares in RWE.

### 2) Choice of a divestment strategy

- » What weight should be given to sustainability in relation to other financial criteria such as profitability, liquidity and security of the investments? As most municipal pension funds have high obligations to prioritise the security of their investments (risk-adverse investment approach), a compromise has to be struck between sustainability and the maximal feasible limitation of the investment universe.

- » What sustainable investment strategies exist?

a) **Positive criteria** which an investment has to fulfil (e.g. ESG criteria)

b) **Negative criteria** which exclude investments with unwanted sustainability impacts

The Australia Institute in partnership with 350.org has developed a classification<sup>107</sup> of companies based on their exposure to fossil fuels:

1. Companies substantially involved in fossil fuel extraction
2. Companies with large 'downstream' fossil fuel exposure
3. Companies with large absolute direct fossil fuel exposure but less significant relative exposure
4. Companies with indirect fossil fuel exposure

Cities can then decide which categories of companies to exclude while maintaining a realistic investment universe<sup>108</sup>.

Other examples of negative criteria are quantitative measurements; for example the City of Copenhagen excludes all companies that gain more than 5% of their revenue from coal, oil and gas.

### ESG Criteria

Environmental, Social and Governance (ESG) criteria are "a set of standards for a company's operations that socially conscious investors use to screen potential investments"<sup>109</sup>. Environmental criteria refer to the company's pollution, energy consumption and natural resource management. Social criteria refer to the company's relationships and treatment of employees, suppliers and customers, as well as the effect its activities have on the communities where it operates. Governance criteria refer to how the company's leadership is organised and its level of transparency and stakeholder participation.

c) Best-In-Class, where the companies classified as most sustainable in their sector are considered investable, based on ESG criteria. This approach may not lead to divestment from all fossil-fuel companies, as the companies with the highest ESG score in their sector will be considered investable. In Europe the Euro Stoxx ESG Leaders 50 benchmark<sup>110</sup> follows this approach including only companies which are at least in the top 50% in their domain regarding the 3 ESG indicators and at least in the top 25% regarding at least one of the indicators.

d) Inclusion of a climate-risk analysis in the investment decisions: The City of Oslo's pension fund manager Pensjonsforsikring AS evaluates climate risk of investments by calculating a company's greenhouse gas emissions from production and energy consumption and then looking at how much the company will lose if the price of CO<sub>2</sub> quotas rises sharply or oil prices fall accordingly.

- » The divestment strategy chosen can be a combination of the different approaches described above, i.e. a Best-in-Class approach combined with a negative list, as was done by the City of Münster.

<sup>107</sup> The Australia Institute. (2014). 'Screening out fossil fuel exposure from the ASX 200'.

<sup>108</sup> The investment universe or universe of securities refers to a set of securities that share a common feature, such as geographic location or sector/industry. The parameters of the index define the investment universe, whereby most investors choose a broad investment universe to diversify their portfolio and therefore to minimise risks. If the universe is too limited through strict parameters, the number of companies that can be invested in becomes very small, resulting in higher risks for the investor. In the case of divestment, investors have to compromise between their ecological ambitions and the risk/performance of their portfolio.

<sup>109</sup> <https://www.investopedia.com/terms/e/environmental-social-and-governance-esg-criteria.asp>

<sup>110</sup> <https://www.stoxx.com/index-details?symbol=SXXESGE>



### 3) Choice or design of an appropriate financial product

- » What financial products, such as sustainability benchmarks, exist and are they sufficient to achieve my divestment goals?
- » Does the municipality's asset manager have experience in integrating sustainability criteria and climate risk analysis in its portfolio compositions?

#### Case Study City of Copenhagen (Denmark)

Copenhagen's divestment experience highlights the importance of close cooperation between the city and the financial institutions it works with to develop a feasible investment scheme that lives up to both ecological and economic standards. It also illustrates the positive effect a city's divestment decision can have on the regional financial environment, as before Copenhagen divested its pension fund in 2016, none of its asset managers – Jyske Bank, Maj Invest, Danske Capital and Nordea – offered fossil-free products. "Eight months later, Jyske Bank and Danske Capital had set up such products, reporting they did not expect to see a decline in performance. Today, several more Danish asset managers offer fossil-fuel free products"<sup>111</sup>.

#### Case Study City of Münster (Germany)

The Treasury of Münster also consulted external advisors to determine their sustainable investment guidelines. For the fund exclusively owned by the city, Münster engaged the external consultant IMUG based in Hanover and specialised in sustainability, who conducted a Best-in-Class rating for the fund. In the case of the collectively-owned fund shared between several municipalities in the region, it was the Bank Saraffin which conducted a sustainability rating.

#### Case Study City of Leipzig (Germany)

In December 2017 the city council adopted a divestment commitment, consisting of a negative list of companies producing nuclear and coal energy, and which are involved in fracking. The commitment decision also specifies the timeframe over which the complete divestment from the listed companies is to be achieved, stating that the percentage of sustainable investments will be increased and reach 100% over 3 – 5 years. To achieve this, regular half-yearly controls of the investment strategy as well as monitoring of whether the market conditions allow an increase in the level of divestment are also specified in order to ensure its economic feasibility.

## Regaining control: Cities and banks

» As explained in the beginning of this chapter, divestment for municipalities can go beyond just the municipal pension fund. In the United States the divestment movement started through cities that decided to withdraw their assets from the Wells Fargo bank in protest at the bank's financing of the highly contentious Dakota Access Pipeline project, a 1,886 km-long oil pipeline which poses environmental threats through water pollution in the territories it crosses.

Seattle was the first city to commit to divesting from Wells Fargo, a decision which was adopted by the city council in early 2017, leading the city to withdraw its USD 3 billion in

assets which were under management of the bank. However, this raised the problem of where Seattle would invest its money in the future, as most of the big US American banks (Bank of America, Chase, CitiBank, ING, etc.) are also investing in the pipeline. For this reason, a number of US American cities are now looking into the idea of setting up new city-owned public banks, with an ethics and sustainability charter, which would allow more transparency and the investment of public finances in the local economy. The cities of Santa Fe, Washington DC and Oakland are already working on feasibility studies for such a project<sup>112</sup>.

#### Case Study Autonomous Province of South Tyrol (Italy)

In order to relieve local governments from their dependence on bank loans and their growing indebtedness, due to the interest charges for financing capital investment projects, in 2008 the province established a revolving fund to finance the construction projects of its municipalities. The fund was set up with EUR 50 million from the collective municipal finances, to which the province government added another EUR 50 million, which can be used for the construction of schools, kindergartens, drinking and wastewater pipes, nursing homes or flats for elderly people.<sup>113</sup> To keep the fund revolving, municipalities have to pay back the funding they receive, with different payback periods which differ between and are adapted to the different types of investment projects conducted.

» In Germany public municipal credit institutes have existed for a long time in the form of public saving banks or 'Sparkassen'. They are set up as public law institutions held by municipalities, and their activities are restricted to the area of the holding municipality<sup>114</sup>. They are characterised by their public mandate, meaning that generating profit is not their main purpose, but rather to provide financial services to the local population and small businesses. Following this logic of the role attributed to the Sparkassen in their respective municipalities, the City of Münster, when determining its divestment strategy, discussed the possibility of the municipality imposing sustainability

guidelines on the local saving banks. However, it became clear that the degree of influence municipalities can take on the investment policies of the local banks is currently limited and the legal framework does not allow the local authority to impose sustainability criteria on the Sparkassen they hold. Otto Reiners, representative of the Green Party in Münster and at the origin of the city's divestment decision, encourages citizens to demand greater transparency and accountability of the climate risk from their Sparkassen, as responsible handling of their savings is the primary mandate of these local banks.

### 4) Determination of timeframe and verification mechanisms

- » Over what timeframe will the divestment criteria be implemented?
- » How can an impact assessment be conducted in both economic and environmental terms?
- » How can the sustainability guidelines be adapted to include new innovative financial products and benchmarks?
- » How can the investment strategy be improved through regular controls?

<sup>111</sup> Harrison T. (2018). 'How to Divest Invest: A guide for institutional investors'. Divestinvest.org

<sup>112</sup> For more information, see: <https://www.fastcompany.com/40512552/the-growing-movement-to-create-city-run-public-banks>

<sup>113</sup> [http://www.provinz.bz.it/news/de/news.asp?news\\_action=4&news\\_article\\_id=229374](http://www.provinz.bz.it/news/de/news.asp?news_action=4&news_article_id=229374)

<sup>114</sup> Iris Kemmler. (2016). 'Öffentlich-rechtliche Sparkassen: Trägerschaft und Aufsicht im Umbruch?'. Die Verwaltung: Vol. 49 (Verwaltungsrecht und Finanzmärkte), pp. 397-426.

» In France a similar development took place more recently in the form of the 'livret régional' – a regional savings account – proposed by the French savings bank Caisse d'Épargne, through which citizens can invest their savings into local projects. A local community can create a savings account in its name and then encourage its citizens to invest in the account to finance sustainable infrastructure and other regional green growth investment projects. The livret régional was first launched in 2014 on a trial basis in the Bourgogne Franche-Comté pilot region in Eastern France. On the occasion of a conference organised in 2014 by the French energy agency ADEME on the topic of innovative financial instruments to finance regional sustainable energy and climate action plans, Jean-Baptiste Sarlat, representative of the Caisse d'Épargne, presented the concept of the livret régional and stressed that French municipalities "should be more demanding towards their financial service providers"<sup>115</sup> to develop appropriate financial products which can be used to finance sustainable local investment projects.

maintains its "light structure" which is currently composed of "about forty people and based on a digital communication system, comparable to the new start-up banks"<sup>117</sup>.

The creation of the AFL was inspired by the Scandinavian local government funding agencies<sup>118</sup>, which have long been the primary financing bodies of local authorities in the Scandinavian countries. Based on the same system which aggregates the credit worthiness of its members, these organisations provide credit at improved rates. This form of collectively financing municipal projects is an important added-value for expensive infrastructure investments in times of declining municipal budgets. In the Scandinavian context, these local government funding agencies have been particularly involved in financing local climate and energy projects as the Scandinavian green bond market demonstrates (For more information on the Scandinavian local government funding agencies, see chapter IV, 'Green municipal bonds').

To provide an alternative to the conventional banking sector, a number of financial institutions have come together to form the European Federation of Ethical and Alternative Banks (FEBEA). Ethical banks have the objective to "work for the common good and ensure the right to receive credit"<sup>119</sup> rather than simply accumulating profit. They meet the increasing demand from savers and investors to know where their money is going with transparency and with strict ecologically and socially responsible guidelines for their investments. While cooperation between local authorities and these alternative banks appears to be marginal for the moment, there are some concrete examples of ethical banks providing finance for concrete municipal projects.

Most recently, a large number of French local authorities have joined the young local credit institution 'Agence France Locale' (AFL), which was originally founded by 11 municipalities in 2013. Since 2015 the agency has been competent to borrow on the capital markets and then issue loans to its member municipalities – at much lower interest rates than conventional banks would offer. Municipalities which want to join must pay an initial capital contribution to the AFL fund, which is calculated in consideration of the municipality's financial situation. Today more than 200 French local authorities have joined Agence France Locale as members<sup>116</sup>. Despite this growing number, the AFL president Yves Millardet emphasises that the agency itself

### Case Study Brussels Capital Region (Belgium)

In 2008, Brussels Capital Region set up a green loan scheme 'Brussels Green Loan' to help homeowners pre-finance high-performance energy refurbishments of their homes. To increase the number of energy retrofits, the environment and energy administration Brussels Environment identified the need to provide low-interest loans to middle- and low-income households who do not easily have access to credit. For this project, Brussels Capital Region needed financial institutions as partners to provide these zero to low-interest loans subsidised by the region and to manage the guaranty fund set up in case homeowners default on their repayments. However, commercial banks were not interested in participating in such a scheme which did not appear profitable to them. As a result the region found a partner in the financial cooperative Crédal SC, an alternative and professional financial institution created in 1984<sup>120</sup> through citizens putting together their savings and based on the values of transparency, solidarity and ethics. Thanks to this cooperation between Brussels Capital Region and Crédal, 857 loans for more than EUR 8 million have financed energy efficiency measures in the residential sector<sup>121</sup> since 2008.



<sup>115</sup> <http://www.territoires-climat.ademe.fr/content/de-nouveaux-outils-de-financement#prettyPhoto>

<sup>116</sup> [http://www.agence-france-locale.fr/sites/afi/files/base\\_documentaire/2018-05/AFL\\_membres-par-regions-23052018.pdf](http://www.agence-france-locale.fr/sites/afi/files/base_documentaire/2018-05/AFL_membres-par-regions-23052018.pdf)

<sup>117</sup> [https://www.lesechos.fr/10/04/2018/lesechos.fr/0301538694504\\_une-certaine-de-collectivites-renforce-l-agence-france-locale.htm](https://www.lesechos.fr/10/04/2018/lesechos.fr/0301538694504_une-certaine-de-collectivites-renforce-l-agence-france-locale.htm)

<sup>118</sup> [https://www.lesechos.fr/23/10/2013/lesechos/21549-120-ECH\\_l-agence-france-locale-est-nee.htm](https://www.lesechos.fr/23/10/2013/lesechos/21549-120-ECH_l-agence-france-locale-est-nee.htm)

<sup>119</sup> <http://www.febea.org/en/febea/news/ethical-finance-0>

<sup>120</sup> <http://www.credal.be/node/110>

<sup>121</sup> Energy Cities and Vesta Conseil et Finance. (2018). 'INNOVATE: Inventory of best practices for setting up integrated energy efficiency service package including access to long-term financing to homeowners'.

## What else can the city do?

To go even further in their ambitions to align the city's finances with their climate objectives, municipalities can also consider:

- » **Engagement:** Reach out to companies and banks with activities inside your city and start a dialogue on sustainability and energy transition as a way to discuss the changes in behaviour necessary for the company to improve its carbon footprint and transparency.
- » **Exercise voting rights at shareholders' meetings:** As a shareholder, the city has the right to participate in shareholders' meetings where it should actively push for sustainability

criteria to be put on the agenda and participate in votes on the company's policies.

- » **Impact Investment:** If economically feasible, it is also possible to give more weight in your portfolio to companies with especially high climate scores or which are frontrunners in innovation in sustainable technologies and energies. Another possibility is to channel part of your investments specifically into green bonds (green bonds of other municipalities are evoked as a low-risk investment choice<sup>122</sup> for pension funds).

## Barriers and challenges

The following illustrates some of the major barriers cities have to overcome in order to implement their divestment decision:

- » **Lack of awareness** about the impact of investments on sustainability goals: Traditionally the finance department does not feel it is an actor responsible for the city's energy and climate action plan. Therefore, it is crucial for the local government to assign responsibilities for the attainment of climate goals across departments and to include the investment of its assets as a factor influencing its carbon footprint.
- » **Prejudice** about the incompatibility of sustainability criteria and economic performance. Many people expect a divested fund to suffer from lower economic performance, however several studies have been conducted<sup>123</sup> which come to the conclusion that "fossil fuel divestment does not seem to impair portfolio performance". In order to overcome this prejudice, it is important to argue divestment on financial rather than primarily on environmental grounds, such as the risks of the carbon bubble and recent examples of high value losses for fossil fuel companies<sup>124</sup>. This was also highlighted by the representative of the City of Münster where throughout the divestment process, financial concerns were put to the fore, rather than environmental ones.
- » **Lack of information** about the investment of municipal assets on the financial market. Cities need to actively reach out to their asset managers and demand they provide detailed information on the fossil fuel exposure of their portfolios.

- » **Divestment can involve conflicts of interest** with industry groups and labour unions, especially in countries where fossil-fuel companies are an important sector of the economy or large regional employers (e.g. coal production in Germany and oil and gas in Norway). Therefore, divestment combined with engagement is most effective, so that companies can shift their activities towards renewable energy production and create new employment in this sector.

- » **Additional cost and effort** can be involved for the treasury, especially in the initial phases of the transition. The City of Münster for example indicated that the funds' administrative costs increased through their divestment decision and the Mayor of Copenhagen Frank Jensen has stated that the divestment cost an estimated one million kroner in fees<sup>125</sup>. Close cooperation with financial partners can reduce the workload by taking advantage of their expertise and finding existing benchmarks rather than developing new ones from scratch.

- » **Unclear impact assessment** of the divestment in both economic and environmental terms. The execution of the sustainable guideline should be accompanied with a monitoring system which transparently reports on the city's divestment strategy and what effects it has in terms of CO<sub>2</sub> emissions and returns/risk for the fund.

<sup>122</sup> <http://www.govtech.com/fs/What-are-Green-Bonds-and-Why-are-Cities-so-Excited-About-Them.html>

<sup>123</sup> Trinks et al. (2018). 'Fossil Fuel Divestment and Portfolio Performance'. Ecological Economics.

Zhang C and Li L. (2016). 'The impact of ethical investing on returns, volatility and income'. Newton Investment Management.

<sup>124</sup> See also: The Australia Institute. (2014). 'Screening out fossil fuel exposure from the ASX 200'.

<sup>125</sup> e.g. losses of several hundred million pounds for British local pensions funds in 2015 through high value losses in the coal industry. Read more at: <https://www.theguardian.com/environment/2015/oct/12/millions-wiped-off-uk-local-government-pensions-due-to-coal-crash-analysis-shows>

<sup>126</sup> [http://www.climateactionprogramme.org/news/copenhagen\\_to\\_divest\\_all\\_fossil\\_fuel\\_investments\\_from\\_700m\\_fund](http://www.climateactionprogramme.org/news/copenhagen_to_divest_all_fossil_fuel_investments_from_700m_fund)

## Toolbox

### Overview of existing sustainability indices

Index providers, such as the STOXX Limited Index family, classify and define the market and provide a performance benchmark for that market. Different indices can classify companies inside a given market according to not only their economic but also their ESG performance or carbon footprint. Some indices also have exclusion criteria, further limiting the sector of the market that can be invested in. Basing their investment guidelines on existing indices saves municipal treasuries the effort of developing a personalised portfolio.

The two indices mentioned above, Euro Stoxx Sustainability ex AGTAF and Euro Stoxx ESG Leaders 50, do not exclude fossil-fuel companies per se but provide a best-in-class approach, where the investment universe is composed of companies with leading ESG scores, thereby lowering the overall carbon exposure of the portfolio (as higher emissions or other forms of pollution lower the ESG score of the company). A personalised exclusion list can also be added to the index (as was the case in the City of Münster).

STOXX Limited launched a Low Carbon Index Family in 2016 and evaluated both economic performance and returns and the carbon footprints of their indices. Only two indices are presented below, but an exhaustive list and detailed information can be accessed from:

<https://www.stoxx.com/pulse-details?articleId=314632193>

#### EURO STOXX 50 Low Carbon Index

comprised of the EURO STOXX 50 (made up of fifty of the largest and most liquid stocks of the Eurozone) but that have been "carbon-tilted", meaning that companies with lower carbon footprints are given extra weight. According to STOXX Limited, this index has achieved a carbon footprint 55% lower than the EURO STOXX 50 index, while maintaining a similar level of risk and even slightly higher returns.

#### STOXX Europe Low Carbon Footprint Index

is based on the STOXX Europe 600 benchmark index of 600 companies across 17 countries of the European region, however excluding the most carbon-intensive super-sectors and 10% of the highest emitters among the remaining companies (around 1/3 of the original index was excluded, leaving about 400 components). As a result, the Low Carbon Footprint Index achieved a carbon footprint 90% lower than the STOXX Europe 600, while maintaining a similar level of risk and higher returns.

A detailed database of sustainable indices across index providers is provided in both German and English at:

<http://www.nachhaltiges-investment.org/Indizes/Datenbank.aspx>

#### Forum Nachhaltige Geldanlagen

The 'Forum for Sustainable Investments' is a specialist association for sustainable investments in the German-speaking region and for Europe in general. In German and English, it provides useful tools and expertise to evaluate companies, indices and funds according to ecological criteria.

<https://www.forum-ng.org/de/>

## Toolbox

### CO<sub>2</sub> screening tools

CO<sub>2</sub> screenings can be a starting point for municipalities for developing a divestment strategy by understanding where they stand in terms of the CO<sub>2</sub> footprint of their portfolio. A CO<sub>2</sub> screening is even more relevant when used as a monitoring tool after the divestment has been implemented, to assess the climate impact of the chosen strategy.

#### Paris Agreement Capital Transition Assessment (PACTA):

Is a portfolio assessment tool developed by the 2° Investing Initiative think tank in partnership with the Frankfurt School of Finance and Management, WWF, financial advisory company Kepler-Chevreux, and others. The PACTA measures the alignment of the portfolios' current and future production capacity with 2°C decarbonisation scenarios. The assessment is conducted by submitting an input template with portfolio holdings data, whereby confidentiality of the data can be guaranteed through the signature of a non-disclosure agreement. The online tool can be accessed from:

<http://seimetrics.org/portfolio-assessment-tool/>

#### Transition Pathway Initiative

in cooperation with FTSE Russell, the Grantham Research Centre for Climate Change and the Environment, London School of Economics, and Principles for Responsible Investment, has developed a tool allowing investors to evaluate companies' carbon management quality and carbon performance, within a given sector. It provides information on the extent to which different companies' CO<sub>2</sub> trajectories in a selected sector are aligned with the objectives of the Paris Agreement climate objectives. The online tool can be accessed openly from:

<http://www.lse.ac.uk/GranthamInstitute/tpi/the-toolkit/>

### Carbon Performance: Automobile sector

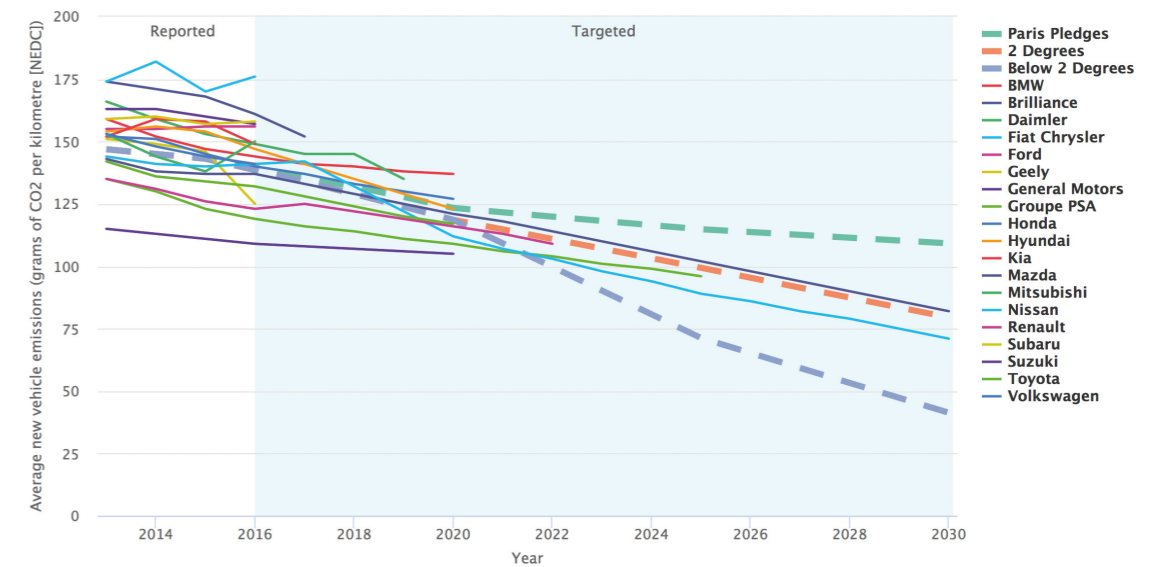


Image 4. Example of the Transition Pathway Initiative tool: The carbon performance of automobile companies in comparison to the carbon trajectories necessary to keep to the Paris Agreement commitments and other 2°C scenarios<sup>126</sup>

<sup>126</sup> <http://www.lse.ac.uk/GranthamInstitute/tpi/the-toolkit/>

## Toolbox

### Case Study City of London (United Kingdom)



In March 2018, the Mayor of London Sadiq Khan encouraged the local authorities in the different boroughs of the city to divest their respective pension funds from fossil fuels<sup>127</sup> as part of his environmental strategy to make London a zero-carbon city by the year 2050. In line with the Mayor's ambitions, the London Pension Fund Authority (LPFA) adopted a climate change policy and started divesting its assets from fossil fuels in 2017 – the city's objective being that London's funds will be completely divested by 2020. Under the new climate change policy, the LPFA is most concerned about how companies it invests in are planning for a transition aligned with the Paris Agreement. For this reason, it is planning to use the Transition Pathway Initiative as a main tool for its future investment decisions<sup>128</sup>.

### Guidebooks

Some guidebooks for institutional investors or/and specifically for local authorities have been developed collating divestment experiences and case studies in different countries.

#### International

'How to Divest Invest: A guide for institutional investors' (2018) is not exclusively targeted at local authorities but presents a detailed collection of practical information on how to develop and implement a divestment strategy with various case studies of cities, banks, faith-based organisations, etc. that have already divested. Access from:

<http://www.divestinvest.org/guide/>

Divest Invest is a global network of individuals and organisations committed to shifting their capital in support of the Paris Agreement by divesting from fossil fuels, and investing in climate solutions.

#### France

'Désinvestissement carbone: Vers des collectivités locales #zerofossile' (2015) is a kit for local officials developed by the Fédération des élu/es Verts et Ecologiques (la feve) to explain how the 2015 French energy transition law for green growth provides a basis for French local authorities to engage in a better understanding and transparency of their finances. It also provides guidelines for a divestment commitment to be presented to the city council and a map of French municipalities which have already voted for divestment commitments. Access from:

[http://lafefe.fr/-Le-Desinvestissement-carbone-#pagination\\_unerub](http://lafefe.fr/-Le-Desinvestissement-carbone-#pagination_unerub)

#### Germany

'A Handy Guide to Divesting from Fossil Fuels' or in German 'Kleine Anleitung zum Divestment aus fossiler Energie' (2015) is a manual published by the European Green Party with practical information for both local authorities and citizens about the divestment movement and how they can join. Interviews with local politicians from Münster, Berlin and Austria who have actively supported or implemented divestment efforts in their communities represent illustrative case studies of what has to be considered when cities divest.

Access from (English version):

<https://europeangreens.eu/handydivestguide>

or (German version):

<https://reinhardbuetikofer.eu/2015/11/18/ab- sofort-verfuegbar-kleine-anleitung-zum-divestment-aus-fossiler-energie/>

# CONCLUSION

## THREE REASONS WHY YOUR CITY SHOULD DIVEST NOW



1. Carbon bubble: assets in fossil fuels are currently overvalued creating a financial bubble which will entail significant financial losses for investors when it bursts
2. Municipalities need to understand the exposure of their finances to both policy-related and physical climate risks
3. Local authorities must be morally consistent in their climate commitments vis-à-vis their citizens: "if it is wrong to wreck the climate, it is wrong to invest in its destruction"

In order to go further, find additional information and orientation or seek peer-to-peer advice, here is an overview of three cities involved in the divestment movement, with knowledge and experience that cities can benefit from.



#### City of Oslo and City of Copenhagen

Were the first capital cities to divest from fossil fuels in 2015. For the city of Oslo the decision was especially surprising, as the original plan was to divest only from coal (as is the case for the Norwegian national pension fund) given the country's own important oil and gas industry. However, when the Green Party became the third strongest party in Oslo's City Council, the fund's investments in all fossil energies were sold off (3% of the fund's total assets equivalent to USD 0.3 billion). Both cities worked closely with Norwegian and Danish banks on their divestment strategy, and in the case of Copenhagen this co-operation even resulted in the banks offering new fossil free products for all its customers.



#### City of Münster

As the forerunner of the municipal divestment movement in Germany since its decision to divest in 2015, the city has been very transparent about its divestment strategy and process. Most recently, the city's divestment has also been a factor earning Münster the distinction as 'Germany's most sustainable major city 2019'<sup>129</sup> from the German Sustainability Award under the patronage of the Federal President.

#### Suggested resources

- » Bauckloh T, Drempeit S, Klein C. (2017). 'Entwicklung eines Konzepts zur Implementierung einer Nachhaltigen Anlagerichtlinie für die Stadt Kassel'. Universität Kassel. (German)
- » Mercure JF, Pollitt H, Viñuales JE, Edwards NR, Holden PB, Chewprecha U, Salas P, Sognaes I, Lam A, Knobloch F. (2018). 'Macroeconomic impact of stranded fossil fuel assets'. Nature Climate Change, Vol. 8, pp. 588–593.
- » Carbone 4. (2016). 'Carbon Impact Analytics: Designing low carbon indices based on Carbon Impact Analytics indicators'.
- » BlackRock Investment Institute. (2016). 'Adapting portfolios to climate change: Implications and strategies for all investors'.

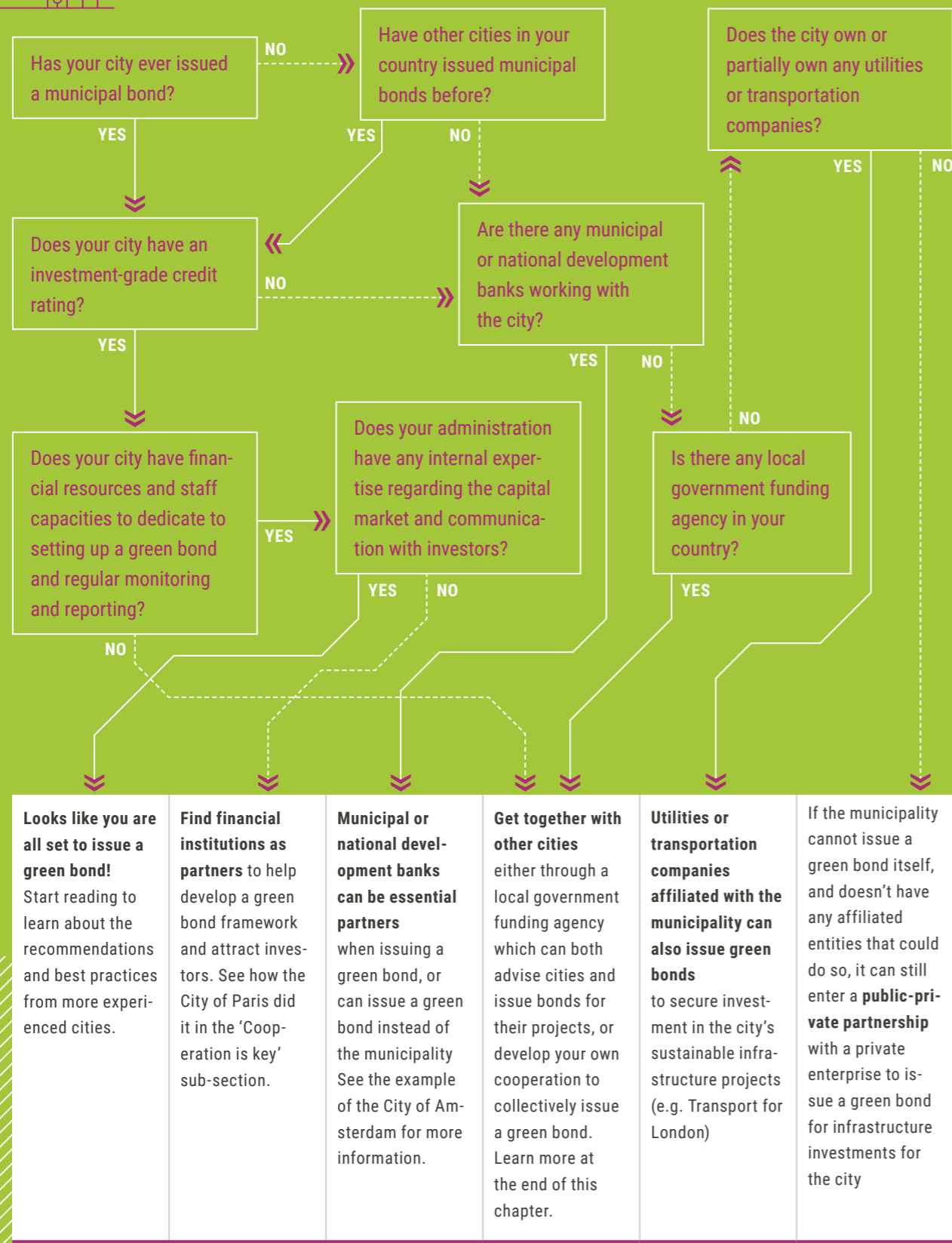
<sup>129</sup> [https://www.nachhaltigkeitspreis.de/wettbewerbe/ staedte-und-gemeinden/nominierte- staedte-und-gemeinden-2019/grossstaedte/muenster/](https://www.nachhaltigkeitspreis.de/wettbewerbe/staedte-und-gemeinden/nominierte- staedte-und-gemeinden-2019/grossstaedte/muenster/)

<sup>127</sup> <https://www.london.gov.uk/press-releases/mayoral/mayor-calls-for-boroughs-to-divest-pension-funds>

<sup>128</sup> Letter from the Mayor of London and the Chairman of the London Pension Fund Authority to the Chair of the Environmental Audit Committee in response to an enquiry on pension funds and climate risk (April 2018)

# CHAPTER IV

## GREEN MUNICIPAL BONDS



### What is a Green bond?

» A green bond is a bond where proceeds are earmarked to finance or re-finance new or existing climate change mitigation or adaptation-related projects and programmes and which can be issued by either a public or a private entity. As a financial instrument a green bond issued by a city is not any different from an ordinary municipal bond: a form of loan where

*“the holder of the bond is the lender (creditor) and the issuer of the bond is the borrower (debtor). Bonds provide the borrower with external funds to finance long-term investments. The issuer owes the holders a debt and, depending on the terms of the bond, is obliged to pay them interest (the coupon) and/or to repay the principal at a later date.”<sup>130</sup>*

» The main specificities of a green bond vis-à-vis any other municipal bond are the range of projects which it can finance, and the additional degree of transparency and reporting necessary to assure investors of the ‘greenness’ of the selected projects.

Agreement, which was also a starting point for many cities to issue their first green bonds (both Oslo and Paris launched green bonds in 2015, Johannesburg and Stockholm slightly earlier in 2014). They follow in the footsteps of the French Region of Ile-de-France and the Swedish City of Gothenburg, which were the forerunners of green municipal bonds, with their first green bonds issued in 2012 and 2013 respectively. In 2016, municipalities represented 13% of the global green bond market<sup>131</sup>.

The green bond market is still very young: it was the European Investment Bank that issued the very first green bond in 2007, followed by the World Bank in 2008. However, despite its young age the market has been swiftly growing since the 2015 Paris

### Municipal bonds: an overview

Not all local authorities have experience in issuing bonds at the municipal or regional level and the legal conditions framing local authority borrowing on the capital market vary between countries. Therefore, it is important to understand what national regulations or other conditions may limit a municipality’s capacity to independently issue a (green) municipal bond.

The municipal bond market is most developed in the United States, where “municipal bonds represent the most important channel used by local units for financing local infrastructure on a local level<sup>134</sup>.” In Europe, the situation is quite different and there is no uniform framework for issuing bonds at the municipal level, as fiscal policies and the degree of centralisation in the territorial organisation of the states diverge. Nevertheless, municipal bonds represent an important market in Europe with “almost USD 500 billion of bonds issued by European cities and regions<sup>135</sup> in circulation in 2015. This shows the potential of green bonds to steer significant financial resources towards climate and energy projects at the European local level.

Two types of municipal bonds exist: general obligation bonds and revenue bonds. In the first category ‘general obligation bonds’ general tax revenues are used to make “full and timely payments to investors<sup>132</sup>”, meaning that the bond is guaranteed by the assets of the municipality. In the case of revenue bonds, interest and the principal<sup>133</sup> are backed by the revenues generated by the projects funded by the bond.

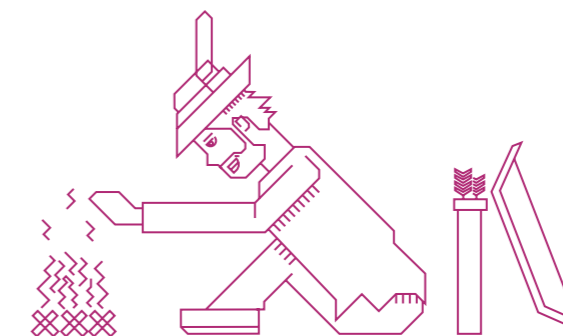
<sup>130</sup> <https://climate-adapt.eea.europa.eu/metadata/case-studies/climate-bond-financing-adaptation-actions-in-paris>  
<sup>131</sup> Climate-KIC: LoCaL Training HUB – Green Bonds for Cities, accessible from: <https://learning.climate-kic.org/local-training-hub/local-training-hub-green-bonds-for-cities/local-training-hub-gbc-course/green-bonds-for-cities-gbc>  
<sup>132</sup> <http://www.blueoceanprtnrs.com/resource-center/investment/all-muni-bonds-are-not-created-equal>  
<sup>133</sup> The principal (or ‘face value’) is the amount paid to investors when the bond reaches maturity.  
<sup>134</sup> <ftp://ftp.repec.org/opt/ReDIF/RePEc/osi/journal/PDF/InterdisciplinaryManagementResearchVI/IMR6a46.pdf>  
<sup>135</sup> <https://www.businessinsider.com/r-exclusive-ecb-mulls-buying-debt-of-cities-and-regions-sources-2015-11?IR=T>

» The OECD has published a series of fact sheets<sup>136</sup> summarising facts and figures on the organisation of sub-national governments in its member countries. These fact sheets provide detailed data on the composition of sub-national government debt in the OECD countries. The following table gives an

overview of the conditions for bond issuance in different European countries and of the role bonds play in municipal debt financing on the basis of the OECD data. The last column of the table indicates whether any local government entities in the given country have issued green bonds specifically.

Country	Conditions of bond issuance	Percentage of sub-national government debt financed by bonds	Sub-national green bond issuance
Austria	Federated states and municipalities can freely issue bonds	44% for federated states 11% for municipalities	
Belgium	Provinces and municipalities can issue bonds for investment projects after authorisation by the Ministry of Finance	38% for provinces <5% for municipalities	
Czech Republic	Statute cities can issue bonds after authorisation from the Ministry of Finance	9% for municipalities	
Denmark	All municipal borrowing is limited to certain purposes and supervised and approved by the central government	Bonds are rarely issued by municipalities directly	Local government funding agency Kommunekredit
Estonia	Municipalities can freely issue bonds to fund investment projects	22% for municipalities	
Finland	Municipalities can freely issue bonds	11% for municipalities	Local government funding agency MuniFin
France	Regions and municipalities can issue bonds for investment projects	4.9% for municipalities	Ile-de-France Region, City of Paris
Germany	Federated states and municipalities can issue bonds, with borrowing restrictions determined by each federated state	60% for federated states Marginal for municipalities	State of North-Rhine Westphalia, City of Hanover
Greece	Since the 2010 Kallikratis reform, sub-national debt is highly regulated	No bonds issued by sub-national governments	
Hungary	After large state reforms in 2013 local debt was recentralised by the central government	3% for municipalities in 2014, compared to 26% in 2013	
Ireland	Local authorities can issue bonds for investment projects after authorisation from the central government, under strict limitations for annual borrowing	No bonds issued by sub-national governments	
Italy	Regions, provinces and municipalities can issue bonds	Bonds are marginal	
Latvia	Limited access to the capital market requiring authorisation from the State Treasury and Ministry of Finance, strict limitations on borrowing	No bonds issued by sub-national governments	

<sup>136</sup> <https://www.oecd.org/regional/regional-policy/country-profiles.htm>



Country	Conditions of bond issuance	Percentage of sub-national government debt financed by bonds	Sub-national green bond issuance
Lithuania	No bonds issued by sub-national governments		
Luxembourg	Issuing bonds is allowed but never used		
Netherlands	Municipalities can freely issue bonds	1% for municipalities	Local government funding agency NWB, the City of Rotterdam has issued a social bond <sup>137</sup>
Norway	Sub-national governments can issue bonds for investment projects	24% for all sub-national governments	City of Oslo, Local government funding agency Kommunalbanken
Poland	Sub-national governments can issue bonds but all borrowing is subject to limitations	6% for all sub-national governments	
Portugal	No bonds issued by sub-national governments		
Slovakia	Municipalities can issue bonds for investment projects	No bonds issued by sub-national governments	
Slovenia	Municipalities can issue bonds for investment projects after authorisation from the Ministry of Finance	No bonds issued by sub-national governments	
Spain	Municipalities can issue bonds but debt ceilings apply for all local government borrowing	2.5% for municipalities 20% for other sub-national governments	The Community of Madrid and the City of Barcelona have issued sustainability bonds <sup>138</sup>
Sweden	Counties and municipalities can issue bonds for investment projects	17% for all sub-national governments	The cities of Gothenburg, Lund, Malmö, Örebro, Stockholm, and Västerås Local government funding agency Kommuninvest
Switzerland	Cantons and municipalities can issue bonds, borrowing restrictions are determined by each canton	20% for all sub-national governments	Canton of Geneva
United Kingdom	In England, Scotland and Wales, municipalities can issue bonds for investment projects, in Northern Ireland bonds require authorisation from the Ministry of the Environment, in 2014 a municipal bond agency was created	Bonds are marginal, however the municipal bond agency launched its first bond in 2018 <sup>139</sup>	Local government-owned transport authority Transport for London

Table 6. Overview of the municipal bond market in Europe

<sup>137</sup> Whereby proceeds are earmarked for projects with a positive social impact (e.g. access to employment, education, housing, etc.). For more information, see the social bond guidelines available at: <https://www.icmagroup.org/green-social-and-sustainability-bonds/social-bond-principles-sbp/>  
<sup>138</sup> The main focus of the bonds issued by the Spanish local authorities are projects with social rather than environmental outcomes, which is why the Climate Bond Initiative does not count them as green bonds in their state of the market report 'The Green Bond Market in Europe' (2018), available at: [https://www.climatebonds.net/files/reports/the\\_green\\_bond\\_market\\_in\\_europe.pdf](https://www.climatebonds.net/files/reports/the_green_bond_market_in_europe.pdf)  
<sup>139</sup> <https://www.fn.london.com/articles/uk-councils-to-raise-tens-of-millions-in-first-joint-bond-20180320>

For the more recent EU member states, notably Bulgaria, Croatia and Romania which are not OECD members, data was not collected; however, municipal bonds are an important opportunity for local authorities in this region to finance infrastructure investments. Municipal bonds represent a push factor for local development in these economies “where local development opportunities are several, yet the financial resources required for investment are insufficient”<sup>140</sup>.

The development of the municipal bond market in these countries has been limited by the low fiscal capacity of their local governments<sup>141</sup>, legal or budgetary restrictions, and lack of awareness among local authorities concerning the opportunities and feasibility of a bond issue. Nevertheless, the improving economic situation since the early 2000s has

allowed several cities with the necessary financial strength to issue municipal bonds – seven cities and one county in Croatia have issued municipal bonds since 2004<sup>142</sup>, and in Bulgaria six cities issued bonds as early as 2002<sup>143</sup>.

One example to highlight in this context is the municipal bond issued by the Bulgarian city of Varna in 2002 which raised EUR 3 million over two years and nine months for the energy efficient retrofit and modernisation of the city’s street lighting. The municipal bond was in the form of a revenue bond which was mainly paid back through the savings achieved in terms of energy costs<sup>144</sup>. While not explicitly branded as “green” at the time, the bond issued by Varna shows that many municipal bonds already fit the criteria for green bonds even if they are not certified as such.

## How can cities issue Green bonds?

» Despite the obstacles some cities may face in issuing a municipal bond, such as lack of experience and national budgetary limitations, this does not mean that no other options exist for these cities to access finance from green municipal bonds. It is not only cities or municipalities themselves which can issue bonds earmarked for climate-related urban infrastructure projects. There are a variety of actors which can become green city bond issuers<sup>145</sup>:

**1. Cities or other local and regional authorities:** Through ‘general obligation bonds’ earmarked for green investments (e.g. the cities of Gothenburg, Paris, Johannesburg, the Commonwealth of Massachusetts, etc.)

**2. National governments or development banks:** Through the issuance of a green bond earmarked for a particular city, when the city in question cannot issue the bond directly (for the City of Amsterdam “Dutch municipal banks and funding agencies issue bonds collectively for certain infrastructure projects”<sup>146</sup>)

**3. Local government funding agencies:** Through their high creditworthiness these institutions can issue green bonds to finance climate and energy projects in their member municipalities (local government funding agencies exist in the Scandinavian countries, the Netherlands, France, the UK, etc.)

**4. City-owned companies such as energy or transport utilities:** Through corporate bonds or revenue bonds and with authorisation from the city (e.g. Transport for London)

**5. Private corporations with authorisation from the city:** Through public-private partnerships to develop green infrastructure for the city.

Overall, Europe – as the birthplace of the green bond – has also remained the most active region in terms of the green bond market, representing 57% of the bonds issued<sup>147</sup>. According to the organisation Climate Bonds Initiative, 50% of green bonds are currently issued by the public sector (national and local governments), 30% are issued by companies, and 20% by financial institutions<sup>148</sup>.

## Emission of a green municipal bond: Best practices

» To issue a green bond it is necessary for the city’s financial and environmental departments to work closely together in order to gather the information needed for both the work intensive preparation before the issuance of the bond and the regular monitoring and reporting afterwards. The main steps in the two phases are illustrated in the figure below.



Figure 7.  
How to issue a green city bond: Main steps<sup>149</sup>

### Identification of projects to be financed by the Green bond:

» In order to define what projects will be eligible for finance from the green bond, cities develop their own Green Bond Framework which determines how much of the proceeds can be spent on what type of projects.

#### Case Study City of Oslo (Norway)

The City of Oslo issued a green bond of NOK 1.5 billion in 2015 with an interest rate of 2.35% and a maturity date in 2024. Its Green Bond Framework declares the following projects eligible for financing:

- a) Mitigation of climate change, including investments in low-carbon and clean technologies, such as energy efficiency and renewable energy programmes and projects (“Mitigation Projects”)
- b) Adaptation to climate change, including investments in climate-resilient growth (“Adaptation Projects”)
- c) To a lesser extent (max 20%) projects which are related to a sustainable environment rather than directly climate related.

Other Scandinavian cities, such as the Swedish City of Gothenburg, also use a similar Green Bond Framework to that of Oslo.

Another example is the municipality of Örebro (also located in Sweden), which has included life-cycle analysis in its green project selection process<sup>150</sup>.

<sup>140</sup> <http://www.revecon.ro/articles/2010-1/2010-1-6.pdf>

<sup>141</sup> <http://www.managementdynamics.ro/index.php/journal/article/viewFile/190/169>

<sup>142</sup> <http://www.managementdynamics.ro/index.php/journal/article/viewFile/190/169>

<sup>143</sup> European Commission. (2010). ‘Financing Energy Efficiency: Forging the link between financing and project implementation’.

<sup>144</sup> European Commission. (2010). ‘Financing Energy Efficiency: Forging the link between financing and project implementation’.

<sup>145</sup> [http://www.kas.de/wf/doc/kas\\_19172-1442-4-30.pdf?160511221536](http://www.kas.de/wf/doc/kas_19172-1442-4-30.pdf?160511221536)

<sup>146</sup> [https://www.climatebonds.net/files/files/CBI-SotM\\_2017-Bonds%26ClimateChange.pdf](https://www.climatebonds.net/files/files/CBI-SotM_2017-Bonds%26ClimateChange.pdf)

<sup>147</sup> <https://start.lesechos.fr/actu-entreprises/finance-banque-assurance/finance-verte-tout-ce-qu-il-faut-savoir-sur-les-green-bonds-10378.php>

<sup>148</sup> <https://start.lesechos.fr/actu-entreprises/finance-banque-assurance/finance-verte-tout-ce-qu-il-faut-savoir-sur-les-green-bonds-10378.php>

<sup>149</sup> Green City Bonds Coalition. (2015). ‘How to issue a green muni bond: The green muni bonds playbook’

<sup>150</sup> CICERO. (2016). ‘Green Bonds and Environmental Integrity: Insights from CICERO Second Opinions’.

## Case Study City of Paris (France)

The city of Paris has so far issued two green bonds, the first one in 2015 for a total of EUR 300 million and an interest rate of 1.75% and the second one of EUR 320 million and an interest rate of 1.428% in 2017. The green bonds can be renewed every year, allowing new money to be raised for more projects.

Paris was successful in getting more than 30 investors involved into its green bond. While a majority of investors (83%) are domestic, the bond's investor base includes a diverse amount of international institutional accounts from Benelux (9%), Switzerland (3%) and the Nordic countries (3%). There are more insurers and pension funds (51%) than asset managers (49%).<sup>151</sup>

Projects are selected on the basis of the 'Plan Climat-Energie' of the city. The projects financed through the green bonds must cover at least one of the 4 objectives of Paris' climate plan: Reduction of GHG emissions, reduction of energy consumption, production of renewable energy or energy recovery systems, and climate change adaptation of the territory (as detailed in the table below).

Based on these four categories, for the city's first green bond EUR 120 million were allocated for the reduction of greenhouse gas emissions, EUR 115 million for energy efficiency, EUR 5 million for the production of renewable and/or recovered energy and EUR 60 million for adaptation to climate change.

Categories	Sub-categories
<b>Reduction of greenhouse gas emissions</b>	<b>Public Transport:</b> Bus rapid transit system, extension of the tramway line <b>Alternative modes of transport:</b> Bicycle plan <b>Electric vehicles:</b> » Encourage their development for private and business car fleets through incentives » Network of charging stations for electric vehicles
<b>Reduction of energy consumption</b>	<b>Sustainable buildings:</b> Constructions with high energy performance and thermal isolation (schools, social housing, kindergartens, etc.) <b>Public lighting:</b> Replacement of equipment consuming more energy than necessary <b>Renovation of heating systems</b>
<b>Renewable energy production or energy recovery</b>	<b>Renewable energy sources</b> (solar panels) <b>Geothermal energy</b> <b>Energy recovery</b> (from wastewater, data centres, etc.) <b>Municipal district heating networks</b>
<b>Adaptation strategy of the territory</b>	<b>New green spaces:</b> public spaces, greening walls, facades and roofs <b>Tree planting programme</b>

Table 7. Overview of projects to be financed by the Paris green bonds<sup>152</sup> (Translated from French)

In accordance with the French legal framework that local authorities are subject to (Code général des collectivités territoriales), revenues from green bonds can only be assigned to the city's capital investments and not to its operating budgets. The proceeds are considered as a form of non-tax revenues from an investment, meaning that green bonds cannot be used to pay for operational expenditure like the maintenance or operating costs of green bond projects<sup>153</sup>. However, the investment projects do not imperatively have to be implemented within the territory of Paris. It is sufficient that the City of Paris is a direct paying agent and the prime contractor.

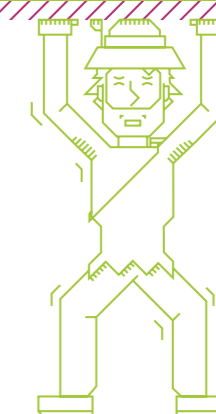
In addition to this, Paris has decided that "only projects of the investment programme that have not already been initiated are financed ('new' projects), as they are more attractive to investors, easier for annual reporting and show the prospective approach of the City of Paris"<sup>154</sup>.



## Case Study Kommuninvest (Sweden)

Kommuninvest is a municipal collaboration for sustainable financing, which acts as one of Sweden's largest credit institutions. Kommuninvest issued four green bonds between 2015 and 2018 in order to raise capital to finance 146 eligible projects across 80 Swedish cities and regions<sup>155</sup>. The latest green bond was issued in April 2018 and amounted to SEK 3 billion<sup>156</sup>. In one of its impact reports, Kommuninvest declared that the projects financed by the bonds achieved reductions of 515,000 tonnes in annual carbon dioxide emissions.

Kommuninvest's Green Bond Framework includes fossil fuel restrictions for the projects it finances, explaining that it will not approve "investment projects that lead to a lock-in of fossil energy-based infrastructure"<sup>157</sup>. While projects may be eligible despite a fossil energy component "if the project enables the transition to a climate-neutral infrastructure and similar solutions, whilst reducing climate impact", they may not exceed a 10% maximum share of fossil energy content, if waste is not included (20% if it is), and a 20% maximum share for public transport projects.



### Municipal actors involved in the selection of projects:

## Case Study City of Oslo (Norway)

The City Council decides on the project investments through the City of Oslo's annual budget, taking into consideration its adopted climate and energy strategy, but it is the Finance Department and the Environmental Affairs Department which jointly select eligible projects which comply with the categories listed in the green bond framework.

Through the green bond Oslo issued in 2015, the following four projects were selected for financing:

- » **Midgardsormen:** Adaptation of the sewage network to handle spill-overs from heavy rainfalls (amount financed: NOK 365 million)
- » **Bekkelaget Sewage Treatment Plant:** Expansion of the publicly-owned treatment works in the eastern part of the city in order to adapt to the increased population and to improve water quality (amount financed: NOK 100 million)
- » **Avløs Metro Depot:** Construction of a new metro depot in order to improve operational and maintenance works on the metro train stock and as an infrastructure investment for handling the increase in public transport capacity between 2008 and 2014 (amount financed: NOK 660 million)
- » **Teglverket Primary School:** Construction of a new primary school meeting the Passive House requirements, resulting in 43 % lower greenhouse gas emissions than the reference value (amount financed: NOK 375 million)

Different to the City of Paris, which made the choice to only finance new projects through its green bonds, Oslo has used the proceeds from its bond to finance already existing projects.



<sup>151</sup> <https://climate-adapt.eea.europa.eu/metadata/case-studies/climate-bond-financing-adaptation-actions-in-paris>

<sup>152</sup> Mairie de Paris. (2015). 'Ville de Paris – Climate Bond : Présentation investisseurs'.

<sup>153</sup> <https://climate-adapt.eea.europa.eu/metadata/case-studies/climate-bond-financing-adaptation-actions-in-paris>

<sup>154</sup> <https://climate-adapt.eea.europa.eu/metadata/case-studies/climate-bond-financing-adaptation-actions-in-paris>

<sup>155</sup> <http://www.mynewsdesk.com/kommuninvest/pressreleases/kommuninvest-green-bonds-help-to-avoid-515000-tonnes-of-co2-2473270>

<sup>156</sup> <https://nordsip.com/2018/04/27/new-green-bond-program-at-kommuninvest/>

<sup>157</sup> Kommuninvest. (2018). 'Green Bonds Presentation'



## Case Study City of Paris (France)

In Paris, the green bond was initiated by both the Finance and Procurement Department and the Parks and Environment Department. The city's investment programme, from which the projects are selected, is derived from the elected Mayor's political vision at the beginning of each election term with approval from the City Council. Once the city's political priorities are financially translated into concrete investment projects, it is the Finance Management Support Service in collaboration with the Urban Ecology Agency of Paris and under supervision of Vigeo Eiris, the city's external reviewer (see 'External reviews') that chooses the projects to be included in the green bond<sup>158</sup>.

In addition to the internal municipal criteria presented above, the City of Paris also abides by criteria for Socially Responsible Investments and the Green Bond Principles (see 'Existing standards') in its selection decision. In order to verify compliance with these criteria, the Finance Management Support Service and the Urban Ecology Agency hold meetings with project managers in order to get an accurate picture of what exactly will be done in the project, and of the planning and monitoring required. Together with representatives from Vigeo Eiris, the Urban Ecology Agency makes sure (e.g. through a carbon evaluation) that the selected projects contain environmental benefits which can be measured by the city through existing or implementable tools.

## Labels and Reviews for Green Bonds

» As explained in the introduction, the green bond market is still relatively young and has only gained momentum in the last 5 years. For this reason, the market is still characterised by a lack of universal definitions and rules to determine what exactly a green bond is and what kind of projects it should include. The current situation therefore runs the risk that investors invest in 'green-washed' bonds – that is to say projects which are marketed as green but do not actually contain significant or measurable environmental benefits.

As a result, cities that issue green bonds have a significant workload, monitoring and issuing detailed reports on the projects' environmental consequences, in order to reassure investors of the legitimacy of their green bond. However, the city does not have to set up its green bond framework, monitoring and reporting from scratch. There are now a number of tools and frameworks which – even though they are at present only voluntary – have developed into current market practice. Most notable are external or independent reviews and non-mandatory but frequently employed frameworks, such as the Green Bond Principles, and certification standards, such as the Climate Bond Standard.

### Identification of projects to be financed by the Green bond:

#### Green Bond Principles:

» The Green Bond Principles, developed in 2014 by the International Capital Market Organisation and regularly updated (most recently in 2018), are voluntary guidelines concerning the design and reporting of green bonds, with a focus on the use of the proceeds of green assets<sup>159</sup>. The Green Bond Principles are composed of recommendations and best practices for green bond issuers, which are divided into four core components<sup>160</sup>:

#### 1. Use of Proceeds:

"All designated Green Projects should provide clear environmental benefits, which will be assessed and, where feasible, quantified by the issuer."

The broad categories of eligibility for green projects are: (a) climate change mitigation, (b) climate change adaptation, (c) natural resource conservation, (d) biodiversity conservation, (e) pollution prevention and control. The principles also include a list of project categories most commonly supported by or expected to be supported by the green bond market.

#### 2. Process for Project Evaluation and Selection:

"The issuer of a Green Bond should clearly communicate to investors: (a) the environmental sustainability objectives; (b) the process by which the issuer determines how the projects fit within the eligible Green Projects categories identified above; (c) the related eligibility criteria, including, if applicable, exclusion criteria or any other process applied to identify and manage potentially material environmental and social risks associated with the projects."

#### 3. Management of Proceeds:

The Green Bond Principles encourage a high level of transparency and stipulate that "an issuer's management of proceeds be supplemented by the use of an auditor, or other third party, to verify the internal tracking method and the allocation of funds from the Green Bond proceeds."

#### 4. Reporting:

"Issuers should make, and keep, readily available up-to-date information on the use of proceeds to be renewed annually until full allocation. The annual report should include a list of the projects to which Green Bond proceeds have been allocated, as well as a brief description of the projects and the amounts allocated, and their expected impact."

Declaring commitment to the Green Bond Principles and having this commitment verified by an external agency is an important step in issuing a green bond which is recognised as legitimate by investors. A number of cities have already issued bonds aligned with the Green Bond Principles: the City of Oslo (NO), the City of Paris (FR), the City of Gothenburg (SE), the City of Lund (SE), the City of Västerås (SE), Mexico City (MX), as well as the Scandinavian local authority funding agencies Kommuninvest (SE), Kommunalbanken (NO) and KommuneKredit (DK)<sup>161</sup>.

#### External reviews:

» As described above, external or independent reviews are "an assurance process of the environmental integrity of the bond"<sup>162</sup>. As of 2017, about 70%<sup>163</sup> of all green bond issuances have undergone an external review. Independent reviews boost

investor confidence in green city bonds, as demonstrated by the City of Paris, which was rated by its second opinion provider Vigeo Eiris as the leading local authority in green bonds, making the bond especially attractive for investors<sup>164</sup>.

## Case Study City of Paris (France)

How to choose an agency to provide an external review of the city's green bond? Before issuing its initial green bond in 2015, the City of Paris used the public procurement process to select a second opinion provider that would assist the city throughout the preparation, selection and reporting stages of the green bond. It was the non-financial rating and research agency Vigeo Eiris specialised in assessing and assisting public and private institutions with the integration of ESG criteria that won the bid and helped develop Paris' green bond framework. Vigeo's expertise in ESG frameworks helped assure that these criteria were respected in the eligible green projects.

#### The Green Bond Principles differentiate between four types of external reviews:

#### 1. Second Party Opinion:

conducted by an independent organisation with environmental expertise. Most European cities organising green bond issuances have received second party opinions from the Norwegian research centre CICERO (like the cities of Oslo, Gothenburg, Örebro) or from the French rating and research agency Vigeo Eiris (e.g. the City of Paris). Another second opinion provider is the German ESG rating and research agency, Oekom.

#### 2. Verification:

in order to verify compliance with the standard or criteria that the issuer has committed to abide by.

#### 3. Certification:

through a recognised external standard or label. One example is the Climate Bond Standard certification scheme, conducted by the Climate Bonds Initiative which plays an important role on the green city bond market in the United States. »

<sup>158</sup> <https://climate-adapt.eea.europa.eu/metadata/case-studies/climate-bond-financing-adaptation-actions-in-paris>.

<sup>159</sup> CICERO. (2016). 'Green Bonds and Environmental Integrity: Insights from CICERO Second Opinions'.

<sup>160</sup> <https://www.icmagroup.org/green-social-and-sustainability-bonds/green-bond-principles-gbp/>

<sup>161</sup> <https://www.icmagroup.org/green-social-and-sustainability-bonds/resource-centre/>

<sup>162</sup> CICERO. (2016). 'Green Bonds and Environmental Integrity: Insights from CICERO Second Opinions'.

<sup>163</sup> <http://clgchile.cl/wp-content/uploads/2018/05/green-bonds-review-2017.pdf>

<sup>164</sup> <https://climate-adapt.eea.europa.eu/metadata/case-studies/climate-bond-financing-adaptation-actions-in-paris>

» 4. Green Bond Scoring/Rating:

assesses the issuer's use of proceeds on the basis of benchmarks such as the Green Bond Principles and can be conducted by rating agencies such as Moody's Analytics.

External reviewers can use a variety of approaches and methodologies to assess an issuer's green bond framework. While

some simply assess alignment with the Green Bond Principles or other ESG frameworks, others have developed their own "technical standards for categories of projects and assets against which they verify a green bond"<sup>165</sup>. As CICERO is one of the most consulted external review suppliers among European cities, their methodology will be examined in greater detail.

**CICERO: Centre for International Climate Research**

» CICERO is a Norwegian independent non-profit climate research organisation which has provided over 60 second opinions on green bonds since the beginning of the green bond market in 2008. In order to rate the green bonds they examine, CICERO has developed a 'Shades of Green' methodology which

categorises the projects to be financed by the bond according to their alignment with "the long-term vision of a low-carbon and climate-resilient future".

The different categories of the rating system are detailed in the table below.

<b>Dark green</b>	Projects and solutions that realise the long-term vision of a low-carbon and climate-resilient future already today. Typically, this will entail zero-emission solutions and governance structures that integrate environmental concerns into all activities. Example projects include renewable energy projects such as solar or wind.
<b>Medium green</b>	Projects and solutions that represent steps towards the long-term vision, but are not quite there yet. Example projects include sustainable buildings with good (but not excellent) energy efficiency ratings.
<b>Light green</b>	Projects and solutions that are environmentally friendly but are not by themselves a part of the long-term vision. Example projects include energy efficiency improvements in fossil-based industry that result in short-term reductions of greenhouse gas emissions, and diesel-fuelled buses.
<b>Brown</b>	Projects that are in opposition to the long-term vision of a low carbon and climate-resilient future.

Table 8.  
CICERO's Shades of Green rating system

Case Study  
City of Oslo (Norway)

When providing a second opinion for Oslo's Green Bond Framework, CICERO assessed the environmental benefits and potential risks of the different projects or project categories that the city was planning to finance through the bond, as well as the overall quality of the governance structure of the framework. Projects related to low-emission public transport and energy efficient housing (e.g. the construction of a school with passive house quality or investments in the metro infrastructure, as detailed above in the overview of Oslo's green bond projects) received a 'Dark green' rating because of their direct contribution to a low-carbon future. On the other hand, the projects related to adaptation, which involve water management and cleaning facilities, only received a medium green rating, showing some reservations regarding the likelihood that the objectives set could be met. Overall, the City of Oslo's Green Bond Framework received a 'Dark green' rating.



Cooperation is key

The need to mobilise resources in terms of staff, upfront costs for setting up external reviews, monitoring and reporting, as well as obtaining a level of investment projects that is of interest for the bond market, is a major challenge especially for smaller cities. However, the heavy workload associated with green bonds in terms of building investor confidence through project selection and monitoring, and regular communication with investors through reporting, can be more easily overcome when cities have close partners – ideally with strong financial expertise.

One example is the City of Paris, which has worked closely with several commercial banks for its green bond issue. The city used competitive tendering in order to select three banks – Credit Agricole CIB, HSBC and Société Générale CIB – to assist the green bond process with their "expertise on investor expectations (e.g. to validate the use of proceeds, the framework and the selection of the bond's projects), their network and marketing services (media relations, help in the organisation of the roadshow, etc.)"<sup>166</sup>.

On the very active Nordic market, several banks working with Swedish or Norwegian municipalities have expanded their activities to provide high-level environmental assessment services to the increased number of municipal green bond issuers<sup>167</sup>.

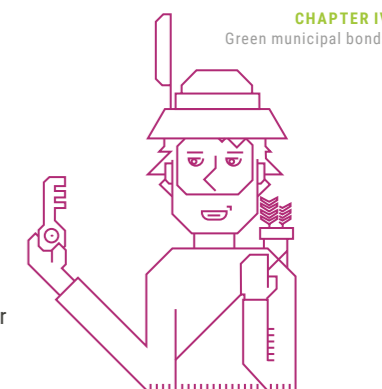
Local government funding agencies:

» The model for local government funding agencies in Europe is the Scandinavian publicly-owned credit institutions for local authorities, which act as municipality debt aggregators to assist municipalities in their access to finance, but also through knowledge exchange. This enables particularly smaller municipalities to access low-cost capital by issuing senior unsecured bonds that are backed by a highly-rated aggregator. These entities – Kommuninvest in Sweden, Kommunalbanken in Norway, Kommunekredit in Denmark, MuniFin in Finland – are the most important actors on the green city bond market in their respective countries.

Joint Funding Platforms for two or several cities that collectively issue a green bond containing projects divided between them can also be an opportunity for cities to reduce the high upfront costs related to certification and set-up of the bond. While no such a joint initiative currently exists, a recent publication<sup>168</sup> from the Climate Bond Initiative suggests that the Finish '6 Aika' – the Six City Strategy – between the cities of Helsinki, Espoo, Tampere, Vantaa, Oulu and Turku, which have agreed to cooperate to tackle their common urban challenges, could act as an appropriate platform for a joint green city bond issuance.

In one of its most recent reports "Cities' Climate Challenge"<sup>169</sup>, WWF France discusses the potential of green bonds for French local authorities and highlights that the biggest barrier preventing widespread green city bond issuance in France is "the need to present a sufficiently large amount of borrowing because financing by the traditional bond market is only of interest from an amount starting in the hundreds of millions of euros"<sup>170</sup>. Cooperation between local authorities to jointly issue green bonds is therefore the most important strategy for smaller or medium-sized cities to gain access to the bond market. The perfect platform for such cooperation is offered in the form of local government funding agencies. A model which has long been most developed in the North of Europe.

Sweden's Kommuninvest is a perfect example of how cooperation between municipalities allows them to access finance through loans on more favourable terms than they possibly could individually. 288 out of all 310 Swedish municipalities form the Kommuninvest cooperation, with total assets of around SEK 360 billion<sup>171</sup>. As part of its mission to improve market conditions for municipal loan financing, Kommuninvest has also actively issued a total of four green bonds to finance green infrastructure projects in its member municipalities, and has been assisting Swedish cities in developing their own green bonds. For the green bonds issued by Kommuninvest, it is a 'Green Bonds Environmental Committee', consisting of Kommuninvest's management and environmental staff »



<sup>165</sup> CICERO. (2016). 'Green Bonds and Environmental Integrity: Insights from CICERO Second Opinions'.

<sup>166</sup> <https://climate-adapt.eea.europa.eu/metadata/case-studies/climate-bond-financing-adaptation-actions-in-paris>

<sup>167</sup> Climate Bond Initiative. (2018). 'The Green Bond Market in the Nordics'

<sup>168</sup> Climate Bond Initiative. (2018). 'The Green Bond Market in the Nordics'

<sup>169</sup> WWF France. (2018). 'Le défi climatique des villes'.

<sup>170</sup> WWF France. (2018). 'Le défi climatique des villes'.

<sup>171</sup> <http://www.mynewsdesk.com/kommuninvest/pressreleases/kommuninvest-green-bonds-help-to-avoid-515000-tonnes-of-co2-2473270>

» from the members' municipal councils as well as experts from the public, NGO or academic sectors, which reviews and approves by consensus vote which projects are selected to be financed<sup>172</sup>. The composition of the Committee has proven very valuable for the member municipalities as a channel of knowledge exchange, both between cities and with environmental and financial experts.

The Norwegian Kommunalbanken has issued green bonds since 2010 and currently has four outstanding green bonds issued between 2015 and 2018. Thanks to the credit institute's highest possible credit rating, the green bonds it has issued have been highly over-subscribed, meaning that investor demand for the bond is higher than the bond can fulfil. Despite the low interest rate of the Kommunalbanken's green bond of only 0.75% in 2013<sup>173</sup> high demand was maintained, allowing Norwegian municipalities to benefit from this cheap Kommunalbanken credit for their green projects.

Through their cooperative nature, these Scandinavian models attract higher numbers of investors and provide cheaper loans than individual (especially small) cities would ever be capable

of. At the same time they can reduce workload for municipal staff through knowledge exchange and by creating a common framework which cities can apply when issuing their own bonds.

Another example is the Nederlandse Waterschapsbank (NWB) which has issued green bonds in support of the Dutch regional water authorities. In addition to provinces and municipalities, the regional water authorities are a third functional layer at the regional level of the sub-national government system in the Netherlands<sup>174</sup>. This specific system of financing water management is provided by NWB, which has issued three green bonds since 2014<sup>175</sup> to finance climate change adaptation projects – especially flood prevention – undertaken by the district water boards, part of the regional water authorities which work in direct cooperation with the Dutch municipalities.

As mentioned above, more recently France, but also the United Kingdom have set up similar bodies in the form of the 'Agence France Locale' and the 'UK Municipal Bond Agency', which have a potential to play an important role in developing the green bond market in both countries.

## Impact Reporting

» As explained throughout this chapter, monitoring and annual reporting to investors about the projects financed is a crucial element in a green bond issue, but it also represents a significant workload for municipal staff – in both its financial and environmental aspects.

In order to assist local authorities in their reporting, a number of public sector green bond issuers from the Nordic states have collectively published a 'Position Paper on Green Bonds Impact Reporting'. The project to establish a common approach to green bonds impact reporting was initiated by the Swedish Kommuninvest in 2016 and launched at the 2017 OECD Green Investment Financing Forum in Paris, with a series of meetings taking place in London, Stockholm, Oslo and Helsinki. The members include: the City of Gothenburg (SE), Kommunalbanken (NO), Kommuninvest (SE), MuniFin (FI), the Municipality of Norrköping (SE), the Municipality of Örebro (SE), Stockholm County Council (SE), the Swedish Export Credit Corporation and SEK, the Swedish Export Credit Corporation (SE). The guide offers both general recommendations for projects financed by green bonds, as well as specific recommendations for the project categories: renewable energy, green buildings, clean transportation, water management and waste management.

Strong cooperation between financial and environmental staff is essential for green bond reporting. In the City of Oslo, environmental impact assessment and reporting are carried out by The Finance Department in cooperation with the Department of Environmental Affairs and the Climate and Energy agency. Financial institutions in Norway have also started to provide environmental assessment services to cities.

In Paris, the city staff have been successful in connecting data and knowledge between departments, mainly thanks to the high level of internal skills present in the city's administration. Cities with no such internal expertise and needing assistance must hire external experts who are likely to be expensive, a situation that may frustrate the city's ambition of issuing a green bond.<sup>176</sup>

In order to reduce costs cities can ask universities and other research institutions to support them in their reporting. This was done in the City of Gothenburg where Gothenburg University helped the city improve its green bond impact reporting<sup>177</sup>.

## Challenges and Opportunities of Green Bonds for Cities

### Challenges:

» **Only sufficiently large investment projects are attractive on the bond market:** The green projects the city wants to finance through a bond need to add up to an amount of borrowing which is sufficiently large to interest investors on the bond market – meaning sums in the hundreds of millions of euros. This is not always possible for smaller cities to achieve individually.

» **High up-front and ongoing transaction costs:** Mainly due to labelling and associated administrative, certification, reporting, verification and monitoring requirements (transparency is crucial for investor confidence, as currently no universal and binding framework exists). Ratings, support and advice services and skills which the city lacks (e.g. in terms of environmental assessment) must be purchased externally.

» **Issuing green bonds creates extra work for city staff:** Issuing a green bond is a long process. Before the issuance, the city's capital investment plans are scanned to identify projects that qualify as green, which then have to be aligned with various criteria. Afterwards, there is work involved in tracking the use of proceeds and reporting that information to investors. The green bond process may also require new procedures and tools which the city has little previous experience of (e.g. for budget monitoring<sup>178</sup>).

» **Lack of knowledge regarding investor's preferences:** Most cities probably have little experience of the extensive marketing and communications aimed at investors, necessary for a green bond. Many cities – especially their environmental staff – lack knowledge of investor expectations or of what is valued on the market.

### Opportunities:

» **Green bonds are a marketing tool:** Labelling a bond as green makes it more appealing to investors. A growing number of investors want to see their money going towards environmentally sustainable projects (some are motivated by the fight against climate change; others are hedging climate risks in their portfolios). The Financial Times reported in 2014 that a rapidly increasing number of fund managers are mandated to invest in climate-friendly projects<sup>179</sup>.

» **Strong investor demand:** Cities benefit from strong investor demand because they can attract new kinds of investors, diversifying the pool of people and institutions with an interest in their city. Local authorities can use their leverage to increase the size of their offering, demand a longer payback period or seek better pricing. In the Swedish City of Gothenburg, the city's green bonds had been heavily oversubscribed since their first issuance in 2013.

» **Getting citizens involved into the city's green projects:** There are several examples of municipal bonds which have attracted the interest of the general public in the city or region. This was the case in Gothenburg where citizens contacted the city's administration to ask whether they could also buy green bonds. In the Commonwealth of Massachusetts (US) over 1,000 individuals asked to be involved in the green bond. Residents and local retail investors who had

not considered buying municipal bonds before showed an interest in the green bond. "These new investors reported that they appreciated knowing the specific projects their investments were funding, as well as the fact that, as residents, they would experience the benefits of the projects first-hand in the future."<sup>180</sup>

» **Helping align the local government around the environmental agenda:** The rigorous reporting requirements may have the positive side effect of forcing people to work across silos: finance staff have to collaborate closely with staff responsible for transport or environment. According to the Mayor of Johannesburg: "We are able to say to the institution, actually, the bulk of our capital program is going to be about sustainability."<sup>181</sup> This need for cooperation has been illustrated by all the case studies throughout this chapter, and especially in the City of Gothenburg where green bond eligible projects are selected in consultation between the Environment and Treasury Departments, before being finally approved by the City Council. Gothenburg Head of Finance Magnus Borelius explains: "We at the Treasury actually wanted to do more work than we needed to but we realized very soon that (...) it's not the point that you at the Treasury should be experts in environmental questions or vice versa. You should be two different experts (from the treasury and the environmental staff) working together."<sup>182</sup>

<sup>172</sup> CICERO. (2016). 'Green Bonds and Environmental Integrity: Insights from CICERO Second Opinions'.

<sup>173</sup> <https://www.climatebonds.net/2014/05/yes-another-over-subscription-norways-kommunalbanken-closes-its-usd500m-aaa-3yr-green>.

<sup>174</sup> <https://www.oecd.org/regional/regional-policy/profile-Netherlands.pdf>

<sup>175</sup> <https://www.nwbbank.com/green-bond>

<sup>176</sup> <https://climate-adapt.eea.europa.eu/metadata/case-studies/climate-bond-financing-adaptation-actions-in-paris>.

<sup>177</sup> Climate Bonds Initiative. (2016). Green City Bonds Roundtable. Available from: <https://www.youtube.com/watch?v=RV6msvewMc&t=1170s>

<sup>178</sup> <https://climate-adapt.eea.europa.eu/metadata/case-studies/climate-bond-financing-adaptation-actions-in-paris>

<sup>179</sup> <https://www.smartcitiesdive.com/ex/sustainablecitiescollective/more-cities-are-issuing-green-bonds-finance-climate-friendly-expansion/260466/>

<sup>180</sup> Green City Bonds Coalition. (2015). 'How to issue a green muni bond: The green muni bonds playbook'

<sup>181</sup> <http://www.govtech.com/fs/What-are-Green-Bonds-and-Why-are-Cities-so-Excited-About-Them.html>

<sup>182</sup> Magnus Borelius at the 2016 Green City Bonds Roundtable organized by Climate Bonds Initiative, video available from: <https://www.youtube.com/watch?v=RV6msvewMc&t=1170s>

## Toolbox

### The Green City Bonds Coalition

set up by Climate Bonds Initiative, C40, CDP, ICLEI and ICMIF, “helps municipalities tap into the green bond opportunity”<sup>183</sup> (mainly operating in the United States). Information about participation can be obtained from:

[info@climatebonds.net](mailto:info@climatebonds.net)

### 'Nordic Public Sector Issuers Position Paper on Green Bonds Impact Reporting'

(2017) is “the most comprehensive guideline on impact reporting currently available”<sup>184</sup>. The guidebook presents a common Nordic approach to green bond impact reporting developed by a group of Nordic public sector issuers of green bonds. The paper is available from:

[http://www.icmagroup.org/assets/documents/Regulatory/Green-Bonds/NPSI\\_Position\\_paper\\_2017\\_Final-261017.pdf](http://www.icmagroup.org/assets/documents/Regulatory/Green-Bonds/NPSI_Position_paper_2017_Final-261017.pdf)

### 'Post-issuance Reporting in the Green Bond Market'

(2017): Climate Bonds Initiative, an international not-for-profit organisation, has also published an overview of reporting practices of green bond issuers around the world. The paper is available from:

[https://www.climatebonds.net/files/files/UoP\\_FINAL\\_120717.pdf](https://www.climatebonds.net/files/files/UoP_FINAL_120717.pdf)

### The Green Bond Principles

are voluntary guidelines developed by the International Capital Market Association (ICMA) aiming at a harmonised green bond framework which are regularly updated and available in 22 languages from:

<https://www.icmagroup.org/green-social-and-sustainability-bonds/green-bond-principles-gbp/>

ICMA also provides a digital Resource Centre in combination with the Green Bond Principles, consisting of a database of green bond issuers, as well as suggested impact reporting metrics for the project categories: energy efficiency, renewable energy, water and wastewater projects and waste management projects. It includes templates for impact reporting at the project and the portfolio levels. All of the online resources are available from:

<https://www.icmagroup.org/green-social-and-sustainability-bonds/resource-centre/>

### The Green Bonds for Cities project

set up by Climate-KIC, ICLEI, Climate Bonds Initiative, Climate Policy Initiative and South Pole Group in 2016 aims at developing a toolkit and training for cities in developing countries to access green finance. The major success of the project has been in assisting Mexico City to issue the first green bond in Latin America in December 2016<sup>185</sup>.

More information from:

<http://local.climate-kic.org/projects/green-bonds-cities/>

In the context of this project, an e-learning course for cities has been created: LoCaL TRAINING HUB – Green Bonds for Cities. The modules for the course can be accessed from:

<https://learning.climate-kic.org/local-training-hub/local-training-hub-green-bonds-for-cities>

# CONCLUSION

## THE FOUR MAIN OPPORTUNITIES GREEN BONDS REPRESENT FOR CITIES



1. Strengthening investor demand
2. A powerful marketing tool for the city
3. Getting citizens involved in the city's green projects
4. Bringing the local administration together around the environmental agenda

» In order to go further, find additional information and orientation or seek peer-to-peer advice, here is an overview of two cities involved in the green bond market, with knowledge and experience that cities can benefit from.



### City of Gothenburg

Is the ultimate forerunner in terms of green city bonds, as it was the first city in the world to issue a green bond in 2013<sup>186</sup>. Since then, Gothenburg has issued a new green bond every year and has rich experience in terms of reporting and communication with investors. Generally, the Scandinavian green bond market is highly developed and very active, characterised by good cooperation between municipal and financial institutions.



### City of Paris

Since its first green bond issue in 2015, Paris has the ambition of becoming a world leader in terms of green finance and has also shown an interest in mentoring other cities about its green bond experiences through peer mentoring in the context of the PROSPECT project (Horizon 2020 funding).

### Suggested resources

- » Climate Bonds Initiative. (2016): Video recording of the Green City Bonds Roundtable, accessible from: <https://www.youtube.com/watch?v=RV6msvwevMc&t=1170s>
- » Climate Bonds Initiative. (2018). 'The Green Bond Market in Europe'.

<sup>183</sup> <https://www.climatebonds.net/get-involved/green-city-bond-campaign/us>

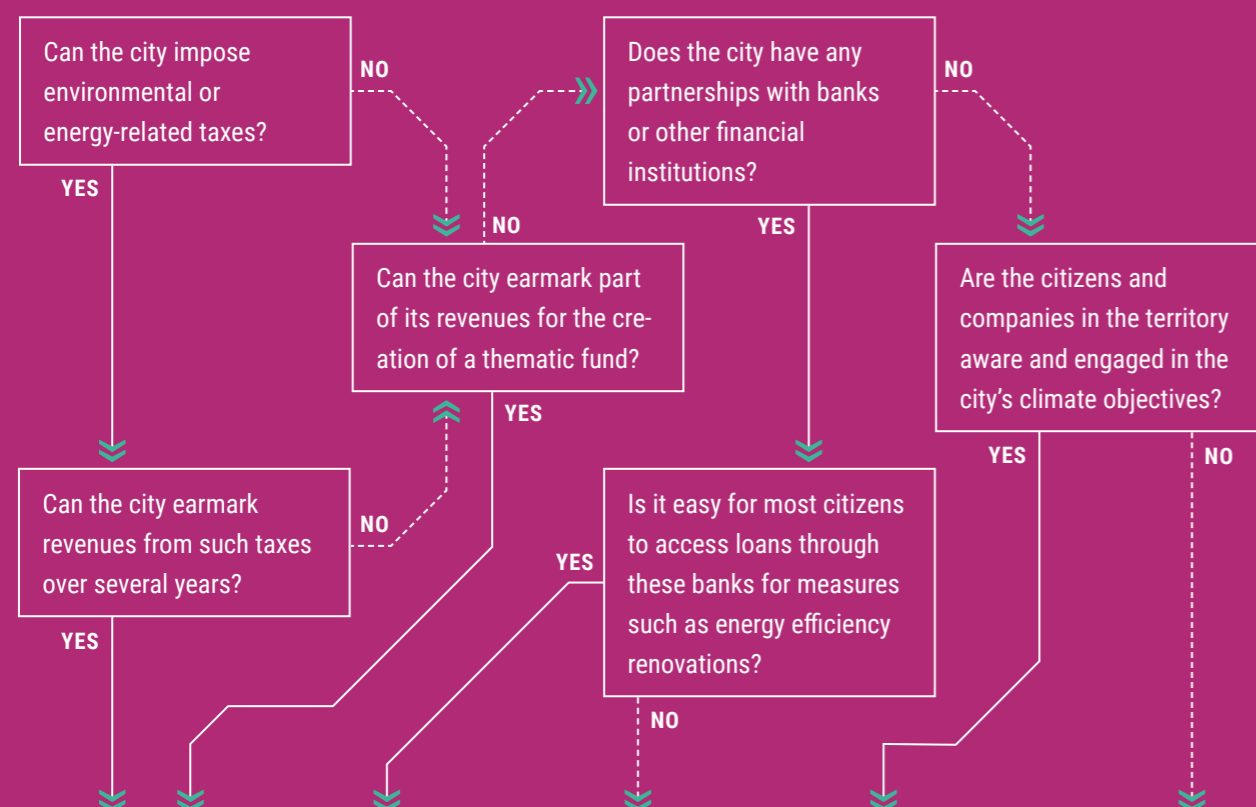
<sup>184</sup> <https://www.environmental-finance.com/content/the-green-bond-hub/impact-reporting-introducing-the-nordic-model.html>

<sup>185</sup> <http://www.bnamericas.com/en/news/waterandwaste/mexico-city-to-use-green-bond-proceeds-for-sustainable-infra-projects1>

<sup>186</sup> <https://unfccc.int/climate-action/momentum-for-change/financing-for-climate-friendly/gothenburg-green-bonds>

# CHAPTER V

## EARMARKING LOCAL REVENUES AND OTHER FINANCIAL INSTRUMENTS



**Why not explore the possibility of setting up an energy and climate fund?**  
Learn in this chapter how the cities of Milan, Lausanne and Oslo successfully finance their energy and climate projects through environmental taxes. If your city cannot impose such taxes, the Infinite Solutions guidebook in the bibliography can show you how to set up a revolving fund!

If your City wants to incentivise its citizens to invest into energy efficiency or renewable energies, then a **soft loan scheme developed through cooperation with one or more banks** can be a way to go. Read the section 'Helping citizens access finance to invest in the energy transition' to learn about best practices.

**Setting up a guarantee fund to allow low-income citizens to access bank loans on better terms** when investing in energy efficiency can be an option to increase energy refurbishments and deployment of renewables in your territory – simultaneously reducing costs for the local authority compared to subsidy schemes.

When local stakeholders are sensitive to the climate and energy challenges the territory is facing, they are most often willing to contribute. **Through participatory financing schemes even small contributions can add up** to finance projects with significant benefits for the territory and its citizens. Read our case studies of the City of Križevci and Zeeland Province to learn more.

**If lack of awareness is still a major barrier in your city, then that is where your action should start.** Awareness campaigns and initiatives to give visibility to sustainable practices can incentivise companies and citizens to align their expenditure and behaviours with the local climate ambitions. Find out how the French City of Lille is encouraging local products in catering!

### Earmarking local revenues and other financial instruments: Challenges and opportunities

» When it comes to local authorities' fiscal powers, there are significant differences between European countries in terms of what taxes or charges sub-national governments can impose and collect, and whether they can earmark local revenues to create a fund dedicated to climate and energy-related projects.

A non-representative survey conducted among members of Energy Cities revealed that there are a number of constraints limiting cities' freedom to develop schemes such as environmental taxes, climate and energy funds financed through energy savings or other earmarked municipal revenues, loans, grants and subsidies targeting citizens, businesses or other local stakeholders. The constraints that local authorities mention are a) too limited budgetary resources (e.g. Poprad, Slovakia; Karlovac, Croatia), b) limitations imposed by the central government, like predetermined budget lines which leave no room for manoeuvre (e.g. Komotini, Greece; Sutton, United Kingdom) and c) the fact that resources (e.g. from energy savings) cannot be built up over time but like the budget itself have to be spent during the budget cycle – mostly one or two years (e.g. Växjö, Sweden).

As well as these structural barriers, perception and lack of awareness is another major challenge in many local administrations. They may be quite conservative when allocating funds and not willing to explore what options for alternative financing schemes could be legally feasible.

However, developing innovative financial instruments as part of the local environmental policy can present an opportunity for local authorities to firstly generate additional revenues to be invested in climate and energy projects and secondly mobilise stakeholders such as citizens and businesses to invest their own resources in municipal projects or actions in line with the municipality's climate goals.

The advantage is that local authorities do not alone have to bear the full weight of financing the local energy transition but can access forms of participatory funding and have certain measures paid for through private resources rather than public budgets. In addition, this contributes to raising awareness of the financial challenges the energy transition represents and can set a course for local stakeholders to follow to change their behaviour, by better aligning their own finances with the territory's climate commitments.

The question then is how – despite their many constraints – cities can design financial instruments which will be most effective in mobilising citizens to invest their own resources in climate and sustainable energy-related actions. As it is difficult to formulate general tools which would assist local authorities in developing such policies, this chapter instead contains a collection of case studies which show the range of solutions that can be developed and what characterises their success.

### Local environmental taxes earmarked for energy and climate projects

» Environmental taxation can be used to dissuade certain climate-harming behaviours (for example through congestion charges) but when revenues are earmarked, they can also be invested in the form of grants, loans or subsidies which in turn encourage citizens to mobilise part of their own resources e.g. for energy efficiency.

Even though imposing fees and taxes and earmarking them for climate and energy projects may be difficult to justify both inside the local administration and vis-à-vis the citizens, these three case studies from three different European countries illustrate how such a scheme can be implemented successfully.

## Case Study City of Milan (Italy)

Between 2008 and 2011 the City of Milan imposed a Limited Traffic Zone (LTZ) scheme in the form of the 'Ecopass' system which charged fees on vehicles entering the area based on their emission standards. In 2010 an impact assessment of the Ecopass was conducted and it was found to be extremely inefficient especially in terms of its impact on air quality and insufficient in terms of the revenue it generated for the municipality.

Therefore, in 2011 the local authority held a referendum asking its citizens whether they would "like to extend the charge zone to the whole city and to all vehicle categories to fund policies for sustainable mobility"<sup>187</sup>. With 80% approval<sup>188</sup> the citizens of Milan overwhelmingly voted in favour of an extended congestion charge the revenue from which would be earmarked for sustainable transport projects.

As a result, the department responsible for transportation developed five new congestion charge scenarios which were all modelled to estimate their impact on both traffic and emissions. The scenarios varied from simply increasing the charges under the Ecopass model, to different types of congestion charges, either time or season-dependent, and with different levels of fees charged (between EUR 5 – 10 for 12 hours).

Finally, the most effective scheme was chosen which resulted in the adoption of the Area C Milano congestion charge which entered into force in January 2012. The new congestion charge is EUR 5 which must be paid on workdays (excluding Saturdays) between 7:30am and 7:30pm by all vehicles entering the central ring. Exceptions are electric and hybrid vehicles which have free entry; petrol pre-euro, diesel pre-euro and Euro I and II vehicles are completely banned from the area. Residents received 40 free entries, with any additional entries charged EUR 2 and for goods vehicles the congestion charge included free parking for a 6 month transition period. Later on this scheme was slightly revised, allowing free entry 1.5 hours earlier on Thursday evenings so as not to interfere with shopping activities.

As the charge is enforced through 43 electronic gates equipped with automatic number plate recognition technology, it results in an annual cost of EUR 7 million for the municipality, which however is completely offset by the revenues received: EUR 27 million in 2012 and EUR 29.4 million in 2013<sup>189</sup>. As promised, revenues from the Area C congestion charge are earmarked for sustainable mobility projects with fixed targets for the administration and have so far been invested in financing a new Park and Ride system connected to the metro (for EUR 3.8 million), improvement of the bike sharing system (for EUR 3 million) and improvement of public transport through fleet renewal and increased frequency (for EUR 10 million)<sup>190</sup>.

The results after just one year of operation included a decrease of 31% in traffic and a 49% decrease in high pollutant vehicles<sup>191</sup>.

### Three lessons to be learned from the Milan case study:

- 1) The importance of monitoring and assessment in order to evaluate effectiveness and be able to improve environmental taxation schemes: Milan took the opportunity to learn from its past shortcomings.
- 2) The involvement of the citizens in the decision: The referendum helped give legitimacy to the new stricter system and the transparency of the process contributed to building awareness among the population.
- 3) Earmarking the congestion charge created additional revenue specifically for sustainable transport projects: When citizens can follow the results and understand on what projects the money generated is being spent, this can enhance acceptance of the scheme.

<sup>187</sup> TRT Trasporti e Territorio. (2012). 'Milano, from pollution charge to congestion charge'.

<sup>188</sup> Participation: 49%

<sup>189</sup> <http://nws.eurocities.eu/MediaShell/media/Milan%20congestion%20charge.pdf>

<sup>190</sup> Eltis. (2015). 'Area C in Milan: from pollution charge to congestion charge (Italy)'. Available at: <http://www.eltis.org/discover/case-studies/area-c-milan-pollution-charge-congestion-charge-italy>

<sup>191</sup> <http://nws.eurocities.eu/MediaShell/media/Milan%20congestion%20charge.pdf>

## Case Study City of Lausanne (Switzerland)

In Switzerland, a cantonal decree regarding the electricity sector (DSecEI) specifically allows municipalities to impose taxes in support of the energy transition: "Municipalities are entitled to levy specific, transparent and clearly defined municipal taxes to support renewable energies, public lighting, energy efficiency and sustainable development".

On this legal basis, the City of Lausanne collects two different taxes per Kwh consumed in every household, which are then fed into two funds, one earmarked for energy efficiency and one for sustainable development in general. The amount of the taxes is determined from year to year by municipal decree. For 2018, both the energy efficiency tax and the sustainable development tax are set at 0.3 ct/kWh each (compared to 0.25 ct/kWh in 2017)<sup>192</sup>. The taxes are levied directly by the grid operator and included on the electricity bill, and then the amounts are transferred to the municipality. Apart from just the tax on electricity, there are other taxes on gas sales by the Gas and District Heating Service (0.1 ct/kWh) and on water sales (3 cts/m<sup>3</sup>) which feed into the sustainable development fund<sup>193</sup>.

As the monetary amounts levied are minimal for the individual consumer, the objective of the tax is not to impact citizens' energy consumption, but "rather, the tax has a redistributive effect, in a spirit of green taxation"<sup>194</sup>. For the energy efficiency fund, all of Lausanne's municipal services can apply for project funding, as well as the universities of applied sciences involved in research projects related to this field. In addition, community or private projects can equally be supported through the sustainable development fund.

The conditions attached to accessing the two funds are decided from project to project, and can range from loans with or without interest payments, to non-repayable grants. Energy contracting operations, for example, can be financed through loans from the Energy efficiency fund, but the entire amount granted must be repaid to the fund in principle over 20 years with an interest rate of 1.5%<sup>195</sup>.

The management of the Energy efficiency fund is under the responsibility of the municipal utility company, Services industriels de Lausanne, while the sustainable development fund is managed by the department responsible for urban development and communication. For the selection of projects admissible for funding, two committees are set up by the Municipality. For the Sustainable development fund, representatives from each municipal department are designated as members of the committee at the beginning of every legislature. For the Energy efficiency fund, the selection committee is composed of three to five members, including the Director of Services industriels as the chairman, and two to three representatives of the municipal administration or universities concerned by the aims of the fund.

The projects financed through the Energy efficiency fund include actions directed at citizens and businesses as well as the municipal administration itself. The actions funded thus range from LED lighting in public buildings, efficient refrigeration equipment for companies to a subsidy for electric bicycles and bicycle batteries which has been used to subsidise 4000 bicycles between 2009 and 2017<sup>196</sup>. The fund furthermore supports innovative businesses such as the Aurora's Grid start-up, which is currently working with the Swiss Federal Office of Energy in order to design the next generation of Swiss power infrastructure and help renewable energies achieve a breakthrough by optimising and integrating a range of sustainable energy networks and by improving their components<sup>197</sup>.

<sup>192</sup> Municipalité de Lausanne. (2017). 'Tarif municipal des taxes communales liées à la distribution de l'électricité'.

<sup>193</sup> Conseil communal de Lausanne. (2012). 'Règlement d'utilisation du Fonds communal pour le développement durable du 25 septembre 2012'.

<sup>194</sup> Nicolas Waelti, Secrétaire général des Services industriels de Lausanne

<sup>195</sup> Conseil communal de Lausanne. (2012). 'Règlement sur le Fonds communal pour l'efficacité énergétique (Fonds pour l'utilisation rationnelle de l'électricité et la promotion des énergies renouvelables) du 25 septembre 2012'.

<sup>196</sup> <http://www.lausanne.ch/thematiques/services-industriels/les-sil/nous-connaître/politique/fonds-pr-efficacite-energetique.html>

<sup>197</sup> VAUD. (2018). 'Energy Efficiency: An innovation domain of the canton of Vaud'.

The most important action in terms of funding from the earmarked fund is the equiwatt programme, encouraging energy efficiency and reduced energy consumption in private households. The programme includes different measures, such as subsidies for purchasing household appliances with the highest energy performance and LED light bulbs. The city has also set up a digital platform [www.equiwatt.ch](http://www.equiwatt.ch) where citizens can calculate their energy savings potential and receive advice on how to reduce their energy consumption. Equiwatt also provides personalised advice to both households and companies in the form of home visits or through the equiwattmobile providing energy advice in different neighbourhoods<sup>198</sup>.

Energy savings achieved through the equiwatt programme are monitored and all projects which apply for support from the Energy efficiency fund must also indicate the energy savings they will lead to and how these will be monitored. However, there is no general monitoring to quantify the accumulated energy and emissions savings generated from all the actions supported, but the decreasing emissions of the territory of Lausanne monitored in the city's SEAP are an indicator of the success of the fund.

### Case Study City of Oslo (Norway)



Already in the 1980s the City of Oslo established the similar Oslo Climate and Energy Fund which is financed through a tax of 1 øre per Kwh of electricity paid by every household. The revenues from this small tax on energy consumption amount to NOK 60 million (around EUR 6.3 million) per year, which are earmarked for the fund.

The fund is used to issue loans and grants for households and businesses to facilitate energy-saving measures that reduce carbon emissions from buildings and technical facilities in Oslo, as well as measures that result in more efficient energy consumption (such as renewable energy production, sustainable heating or insulation).

Since 2008, approximately 1500 oil-fired boilers in private buildings have been replaced by heating from renewable energy sources, such as heat pumps and district heating, with grants worth EUR 8.3 million financed through the Climate and Energy fund. This support for households to phase out oil boilers is especially relevant in light of the Norwegian national ban on oil heating which will enter into force in 2020.

Replacing the boilers has saved the equivalent of 80,000 tonnes of CO<sub>2</sub> and the support scheme has contributed to a significant drop in the sales of fossil heating oil. Overall the investments made from the Oslo Climate and Energy Fund have contributed to accumulated energy savings of approximately 1.6 TWh since it began in 1983.

#### Lesson to be learned from the Oslo case study:

The ambitious local policy to phase out fossil heating with financial support from a small tax on household energy consumption sparked developments at the national level – Oslo's 'Oil-free' campaign convinced the Norwegian Parliament to impose a ban on oil-heating.<sup>199</sup>

## Mobilising the resources of local stakeholders for municipal climate and energy projects

» Apart from the municipal budget, there are often significant resources available in the territory, in the form of the financial resources held by citizens and local companies that could be invested in local sustainable energy projects.

If the local authority manages to design convincing sustainability programmes, it can mobilise the resources of local stakeholders which collectively can help them realise their energy and climate projects.

### Financing projects through CO<sub>2</sub> offsetting:

CO<sub>2</sub> or Carbon offsetting refers to the situation whereby individuals or organisations compensate for the CO<sub>2</sub> emissions created through activities such as travel by paying the monetary value of the emissions for a given activity (e.g. taking a flight) which is then invested in mitigation projects which save an equivalent amount of CO<sub>2</sub>.

While most carbon offsetting schemes are aimed at financing projects in the developing world, this system can also be used at the local level, where following up on projects and their results is easier and more direct. The example of the Zeeland Climate Fund from the Dutch Province of Zeeland illustrates how such a scheme can also help local authorities access financing for their climate and energy projects.

### Case Study Province of Zeeland (The Netherlands)

The Zeeland Climate Fund is a foundation established in 2009 under the executive agency AdFair – a Dutch consultancy and development agency for sustainable development projects. It was set up for companies, local governments, non-governmental organisations and event organisers operating in the Province of Zeeland. On the fund's website [www.zeeuwsklimaatfonds.nl](http://www.zeeuwsklimaatfonds.nl) they can calculate the annual CO<sub>2</sub> emissions related to their activities which can then be compensated through payments of EUR 25 per tonne of CO<sub>2</sub> emitted. Participants in the fund can also contact the Zeeland Climate Fund directly to receive support for more precise calculations<sup>200</sup>. To a more limited extent, individual citizens and households can also offset their CO<sub>2</sub> emissions via the Zeeland Climate Fund.

This money is then made available for project applications from municipalities or citizen cooperatives for sustainable energy. In 2017, 25 project applications were submitted for which the fund made EUR 87,000 available to contribute to their financing. Most of the projects that have been financed up to now relate to solar energy but projects are diversifying, including LED lighting for sports facilities and heat pumps. The accumulated projects financed through the Climate Fund will help compensate about 3500 tonnes of CO<sub>2</sub> emissions in future years<sup>201</sup>.

The Municipalities in Zeeland have benefited greatly from the Climate Fund contributing to financing sustainable energy projects. However, up to now, only three of the thirteen Zeeland municipalities<sup>202</sup> have also contributed to the fund by offsetting their own emissions, whereas a much larger number accesses it to make their projects financially feasible. This behaviour is a threat to the survival of the fund, which is now spending more money than it is receiving through carbon compensation. In response to this bad news, some Zeeland municipalities have promised to contribute more to the fund in the future.

Whereas the Zeeland carbon offsetting fund was set up by a non-governmental entity, the Swedish City of Växjö has established a CO<sub>2</sub> offsetting scheme which operates internally within the municipal administration in the form of a climate trading account. All city departments contribute by compensating their CO<sub>2</sub> emissions through payments to the

internal fund to which they can then apply for money to finance their climate-related activities. While Växjö's climate trading account does not involve citizens or other stakeholders, it has the advantage of making departments keep track of their CO<sub>2</sub> emissions and making them more aware of the emission price.

<sup>198</sup> <http://www.lausanne.ch/thematiques/services-industriels/equiwatt.html>

<sup>199</sup> [https://norwegen.ahk.de/fileadmin/AHK\\_Norwegen/Veranstaltungen/Rueckblick/2017\\_EE\\_Beheizung\\_und\\_Kuehlung/EE\\_Skagestad\\_2017.pdf](https://norwegen.ahk.de/fileadmin/AHK_Norwegen/Veranstaltungen/Rueckblick/2017_EE_Beheizung_und_Kuehlung/EE_Skagestad_2017.pdf)

<sup>200</sup> <http://www.zeeuwsklimaatfonds.nl/bereken-je-co2>

<sup>201</sup> <https://www.renewables-networking.eu/documents/NL-Zeeland.pdf>

<sup>202</sup> <https://www.pzc.nl/zeeuws-nieuws/zeeuws-klimaatfonds-raakt-leeg-a1772142/>

## Financing local sustainable energy projects through crowdinvesting and crowdfunding

Crowdfunding platforms financing renewable energy projects have gained momentum as local and citizen initiatives and cooperatives for the deployment of renewables have been encouraged and facilitated through the energy transition in many European countries. One example is the French platform 'Lumo' ([www.lumo-france.com](http://www.lumo-france.com)) which in several cases has been endorsed by local authorities because of its successful contribution to the development of renewable energy in their territories.

Today, it is important to differentiate between traditional crowdfunding, a model mainly adopted for financing citizen-held renewable energy cooperatives where participants

generally are not financially rewarded for their investment, and equity-based crowdfunding or crowdinvesting where investors receive interest payments<sup>203</sup>. As contributions can be very small, mostly starting at around EUR 100 or 200, crowdfunding can be an opportunity to mobilise a broad range of citizens to participate in the local energy transition.

This is why different European cities and their municipality-affiliated entities such as municipality-owned utility companies have also begun to experiment with this model by launching their own campaigns to attract finance for local sustainable energy projects.

### Case Study City of Križevci (Croatia)

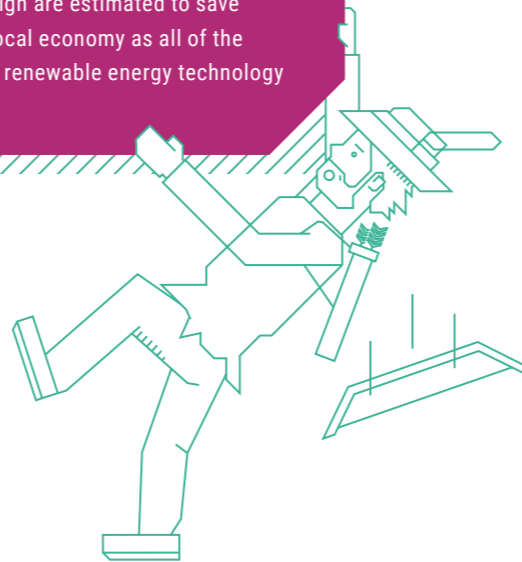
While renewable energy cooperatives are commonplace in many Western European countries as described above, the City of Križevci is a forerunner in Croatia and the Balkans for supporting the creation of the 'Green Energy Cooperative' which launched its first crowdinvestment campaign in May 2018. While the energy cooperative is an independent social enterprise, it receives administrative support from the municipality<sup>204</sup> and its crowdinvestment initiative 'Solar roofs for Križevci' is in line with the city's strategy of encouraging citizens to invest into renewable energies.

In ten days the EUR 31,000 needed to finance a 30 kW PV system on a public building for its own-consumption was funded through 53 citizens<sup>205</sup> in the form of micro-loans to the cooperative – averaging around EUR 500 per investor<sup>206</sup>. These micro-loans will then be returned to the citizens over a ten-year period and at an annual interest rate of 4.5%, financed through the monetary savings achieved on the public building's electricity bill by generating its own electricity.

The success of the project is illustrated by the fact that twice the number of people necessary to finance the PV project expressed an interest in investing in the scheme. The solar panels deployed via the campaign are estimated to save around 55 tonnes of CO<sub>2</sub> per year and the scheme has even more positive impacts on the local economy as all of the equipment used was supplied by a Croatian company, thereby supporting the expansion of renewable energy technology in the region<sup>207</sup>.

In Switzerland there has also been increased interest in experimenting with crowdfunding schemes to finance renewable energy projects. The City of Lausanne is currently piloting an initiative for solar crowdfunding through the municipally-owned company SI-REN which in coordination with the city's utility company (Services industriels de Lausanne) organises the production of and investment in renewable energy in the territory. Right next to Lausanne, the City

of Renens is also launching a participatory grant to finance the deployment of solar panels, this time mainly on private buildings. The city has contributed CHF 17,000 as seed capital that is expected to grow through crowdfunding<sup>208</sup>. As the local authority lacks a utility company to sell the electricity produced through the project, citizens who fund the project will not be refunded their contributions as in the case of Križevci.



## Helping citizens access finance to invest in the energy transition

» However, not all citizens have the capital necessary to invest in sustainable energy or energy efficiency, even in their homes. Existing financial products such as bank loans or mortgages are often not suitable for the long payback periods of energy refurbishments and in many countries a significant proportion of citizens cannot access these forms of finance because they are not deemed credit-worthy or because they cannot afford to pay high interest rates. This applies particularly to low-income households who would benefit most from energy-related interventions aimed at decreasing their energy bills.

In this case, local authorities can facilitate access to finance on better terms for their citizens, simultaneously making sure that this money will be spent on measures supporting their local energy transition. While handing out grants directly is expensive for cities and often makes citizens dependent on subsidies to take any action at all, finding more innovative schemes for citizens to access private finance can reduce costs for local authorities and help trigger higher amounts of investment. It should be noted that although these schemes can help reduce public financing through complementary private investment, many of the most vulnerable and low-income households will, to a certain extent, continue to depend on public subsidies.

### Setting up a municipal guarantee fund

Local authorities can set up guarantee funds to support loan schemes distributed by private credit institutions in order to facilitate access for citizens to whom banks would usually not be willing to lend because the risk of defaulting on the loan is assessed as too high<sup>209</sup>. It is then the local authority which

is liable in case of non-payment and in some cases the high credit-worthiness of the municipality can persuade banks to grant loans on better terms (longer repayment periods, lower interest rate) than they usually would have done for the individuals.

### Case Study Brussels Capital Region (Belgium)

The Brussels Capital Region found that such a guarantee fund actually represented a very low risk for the regional authority and the cases of default by citizens were marginal.

In 2008 the region's environmental agency Brussels Environment set up the 'Brussels Green Loan' scheme to support energy refurbishments in private homes. In order to allow low-income households to access the loan scheme, handled in cooperation with the Belgium cooperative credit institution Crédal, the region acted as a guarantor for citizens receiving loans. A guarantee fund was thus set up by the Brussels Capital Region to cover any payment defaults related to the loan, which was managed by Crédal and to which the region allocated between EUR 12,000 and EUR 24,000 per year starting in 2008. The balance of the guarantee fund represents around 2% of the total amount lent through the scheme<sup>211</sup>.

As it became apparent that the risk of citizens defaulting was minimal, with only one single case of non-payment on 857 loans in almost ten years, the region stopped feeding the guarantee fund in 2016 whereas the Brussels Green Loan scheme is continuing.

<sup>203</sup> <https://www.bundesverband-crowdfunding.de/crowdfunding-und-erneuerbare-energien/>

<sup>204</sup> Renewables Networking Platform. (2018). 'Case study: Crowdinvesting for solar energy - Križevci hosts the first crowdinvesting initiative in Croatia'.

<sup>205</sup> <https://balkangreenenergynews.com/renewable-energy-cooperatives-herald-regions-true-energy-transition/>

<sup>206</sup> Renewables Networking Platform. (2018). 'Case study: Crowdinvesting for solar energy - Križevci hosts the first crowdinvesting initiative in Croatia'.

<sup>207</sup> <https://balkangreenenergynews.com/renewable-energy-cooperatives-herald-regions-true-energy-transition/>

<sup>208</sup> <https://www.24heures.ch/val-de-romandie/lausanne-region/crowdfunding-doit-renens-ville-solaire/story/10542588?track>

<sup>209</sup> Vesta Conseil et Finance. (2018). 'Inventory of best practices for setting up integrated energy efficiency service package including access to long-term financing to homeowners'

<sup>210</sup> <https://environnement.brussels/thematiques/energie/primaires-et-incitants/pre-vert-bruxellois>

<sup>211</sup> Energy Cities. (2017). 'Infinite Solutions Guidebook: Financing the energy renovation of residential buildings through soft loans and third-party investment schemes'.



Between 2008 and 2017 Crédal issued green loans for over EUR 8 million to households for energy efficiency measures. For the region, the results have been successful, where EUR 1 invested by the local authority in the loan scheme has triggered EUR 4.8 of private investment in energy efficiency<sup>212</sup>.

**The lesson to be learned from the Brussels' case study:**

Brussels' experience shows that setting up a guarantee fund can be necessary to gain the confidence of the financial institutions the city is cooperating with when developing such green loan schemes, especially when granting low-interest loans to low-income households. However, the financial risk for the local authority is very low and the resources it has to use to back up its guarantee are limited in comparison to the total amount mobilised through the loans.

### Cooperation with banks to develop loan schemes

As mentioned above, there is currently a lack of financial products offered by banks to help citizens finance extensive energy efficiency renovations. Considering the importance of private residential energy consumption in urban greenhouse gas emissions, a number of cities have entered into negotiations with banks to set up soft loan schemes to enable citizens to borrow money and carry out energy-efficient renovation work in their homes at lower interest rates than standard market conditions. This is an important incentive when trying to mobilise citizens to invest in the energy transition.

Local authorities can convince banks of the opportunities that such a scheme represents for them, as it gives them access

to a new market and increases revenue for local companies as well. The experience of the Danish city of Frederikshavn has shown that cooperating with several banks to develop specific loans at reduced interest rates and longer maturity may lead to competition between the banks resulting in loan terms for customers improving spontaneously<sup>213</sup>.

Another option for the municipality is to subsidise loans in order to lower the interest rate paid by the citizens. While this still represents a subsidy which the municipality has to pay for, subsidising loans is cheaper than handing out grants directly, and helps mobilise private investment.

### Case Study City of Aradippou (Cyprus)

When setting up a soft loan scheme for photovoltaics in cooperation with the Cyprus Cooperative Bank, the City of Aradippou found that citizens were not very attracted to a scheme by which the municipality negotiated improved loan terms with a particular bank on their behalf. Many citizens preferred to negotiate better terms by themselves, using the conditions obtained by the municipality as a starting point for their own negotiation. Although this scheme helped citizens access finance more easily, the municipality had no way of knowing whether, in return, the money would actually be spent on measures which fulfilled its ambitions in terms of renewable energies.

This is why Aradippou is now working to set up a new scheme allowing citizens to access zero-interest loans for energy refurbishments, by subsidising the interest rate of loans to homeowners who carry out renovations according to a 'Near Zero Energy Building Roadmap'<sup>214</sup>. This way the municipality can monitor how the money it invests triggers further private investment in energy efficiency, at lower cost for the municipality than a direct subsidy for renovation would do. The municipality of Aradippou calculates that in the case of a EUR 20,000 10-year loan for renovation and an interest rate of 4%, the subsidy paid by the municipality amounts to EUR 4,300 as compared to a 50% grant for the total investment which amounts to EUR 10,000<sup>215</sup>. Subsidising the interest rate also has the advantage that all banks can become partners of the scheme, thereby avoiding any market distortions.

<sup>213</sup> <http://www.financingbuildingrenovation.eu/cases/innovative-partners/>

<sup>214</sup> <http://www.financingbuildingrenovation.eu/cases/aradippou-cyprus/>

<sup>215</sup> INNOVATE. (2018). 'Aradippou Business Model'.

Apart from mobilising private investment in the energy transition, making it easier for citizens to access finance provided by banks also has an important social dimension. It helps especially low-income citizens, who are often considered too

risky or not profitable for banks, to access the resources which can allow them to improve their comfort and reduce their energy bill.

## How the municipality can encourage sustainability in the local economy

» Finally, it is important to understand that the territory in question is not only an administrative unit but represents a local economy whose activities greatly impact the territory's emissions and energy consumption, even if these are often not accounted for in the municipality's inventories. Through engagement with local companies, local authorities can orient the local economy into developing more sustainable practices and reducing its impact on the territory in terms of emissions, waste and resource consumption. Public procurement has a large part to play in this, as discussed in the relevant chapter, but there are municipalities that also use other instruments to incentivise changes in mentality and behaviour in the local marketplace.

Here, the objective is primarily to reward companies for sustainable behaviours that currently may still be more expensive and therefore threaten the competitiveness of the business. The role of the municipality, in this case, is to find ways to compensate for these costs (and not only in monetary terms) through their support, showing that sustainable practices actually pay off.

The creation of financial incentives is one option to reward these behaviours. The City of Heidelberg in Germany for example gives grants for energy savings achieved by private companies, and in the Vorarlberg region of Austria the town of Nenzing is planning to deduct or reduce the municipal tax for companies which are especially sustainable in their practices. The Spanish region of Valencia has developed an entire grant scheme in support of a more sustainable economy.

### Case Study Autonomous Community of Valencia (Spain)

In 2017 the Regional Ministry of Sustainable Economy, Productive Sectors, Commerce and Employment of Valencia issued a decree to set out "the regulatory basis for the allocation of grants for the promotion of a sustainable economy"<sup>216</sup>. The decree reflects Valencia's political decision to provide financial support to companies and organisations which engage in sustainable economic practices. This support can be accessed by three groups of entities registered within the territory of the Valencian Community: associations and non-profit organisations, SMES, as well as research institutes and universities – since they practice and promote social enterprise and the Economy of the Common Good (Economía del Bien Común).<sup>217</sup>

The different entities have to submit a grant application which is assessed using a set of criteria (established in Chapter II of Title II of Order 2/2017 of February 1) defined around the notion of sustainable economy on the basis of a scoring system which determines the amount of the subsidy a given organisation will receive. The maximum amount allocated to a single entity cannot exceed EUR 20,000 for non-profit organisations and universities, and EUR 3,000 for SMEs.<sup>218</sup>

These examples however, may appear difficult to copy or to justify for many local authorities at a time when local public budgets are decreasing and are subject to strict regulations. Rather than simply focusing on financial incentives, there are also other forms of initiatives based more on soft power, i.e. attractiveness associated with sustainability on the market.

Municipalities can help improve the visibility of companies which are aligned with their climate plans, and raise ambitions. Such "softer" incentives create fewer costs for the municipalities but can nevertheless positively impact the local economy of their territories.

<sup>216</sup> <https://www.ecogood.org/en/meta-navigation-top/blog/economy-common-good-spanish-legislation-promotion-businesses/>

<sup>217</sup> <https://www.divaladl.es/es/noticia/ver/ayudas-destinadas-promocion-economia-sostenible-comunitat-valenciana-ejercicio-2018/15664>

<sup>218</sup> <https://www.divaladl.es/es/noticia/ver/ayudas-destinadas-promocion-economia-sostenible-comunitat-valenciana-ejercicio-2018/15664>

## Case Study Metropolitan Area of Lille (France)

The Metropolitan Area of Lille (MEL – Métropole Européenne de Lille) in the North of France is working with caterers and local suppliers to increase the consumption of local and organic food in its territory. With over 40 million meals served every year by caterers in the Hauts-de-France Region<sup>219</sup>, shifting the supply towards local production has a significant environmental and economic impact, which is why the local authorities have been working to address this issue in their public procurement, but also for external actors – for example by organising meetings between local producers and catering suppliers.

For this purpose, MEL has launched the label “Ici je mange local” (Here I eat locally) developed for schools, medical and welfare establishments, and collective catering services where at least 20% of the food served is sourced from local farms. In October 2018 the label scheme was initiated with 182 participating institutions in the Hauts-de-France Region which developed the label collectively with MEL, the Chamber of Agriculture and the Mayors of the Département du Nord.

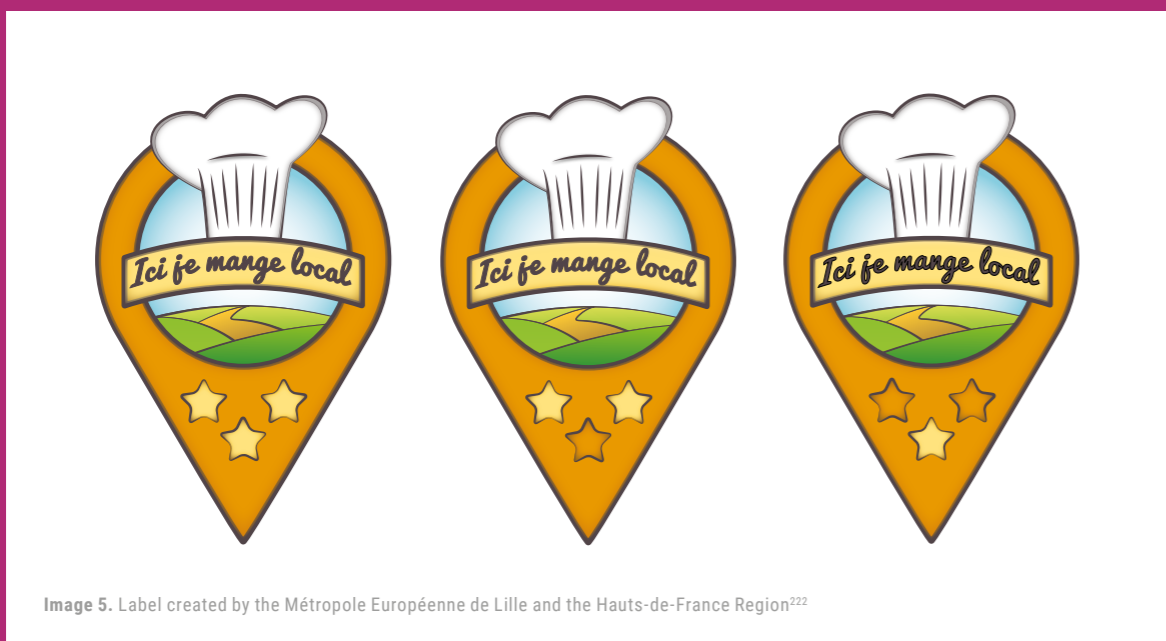


Image 5. Label created by the Métropole Européenne de Lille and the Hauts-de-France Region<sup>222</sup>

The label has three levels based on the percentage of locally supplied products in financial value and the number of product sectors concerned (i.e. vegetables, fruit, meat, dairy products, etc.)<sup>220</sup>. Based on these criteria, stars are awarded as part of the label. Thereby, one star has so far been awarded to 54 establishments in the region which use at least 20% of local products in two product sub-groups, and 11 others received two stars meaning that at least 40% across 3 product sub-groups of their food comes from local farms<sup>221</sup>. The final level awarded with three stars, which none of the region's catering services has yet achieved, requires 60% of local products of which at least 10% are also organic.

This project is moreover assisted by a digital platform [www.approlocal.fr](http://www.approlocal.fr) (short for 'approvisionnement local' meaning local supply) created by the region's Chamber of Agriculture whose objective is to easily connect local suppliers to the catering sector<sup>223</sup>. Through the platform caterers can directly order their products from local farmers and artisanal processors.

<sup>219</sup> <http://www.lillemetropole.fr/mel/actualites-metropole-lille/info-metropole/ici-je-mange-local.html>

<sup>220</sup> [https://lenord.fr/jcms/prd1\\_584051/l-approvisionnement-local-a-son-label](https://lenord.fr/jcms/prd1_584051/l-approvisionnement-local-a-son-label)

<sup>221</sup> <http://www.lavoixdunord.fr/464408/article/2018-10-07/un-label-pour-favoriser-l-approvisionnement-local-dans-la-restauration>

<sup>222</sup> [https://lenord.fr/jcms/prd1\\_584051/l-approvisionnement-local-a-son-label](https://lenord.fr/jcms/prd1_584051/l-approvisionnement-local-a-son-label)

<sup>223</sup> <http://choisirloos.over-blog.com/2018/10/beaucoup-de-local-et-du-bio-a-la-cantine.html>

# CONCLUSION THROUGH THESE INNOVATIVE FINANCIAL INSTRUMENTS AND STAKEHOLDER ENGAGEMENT, YOUR CITY CAN:

1. Raise awareness among local stakeholders motivating them to invest in the energy transition at their own level
2. Reduce costs for the local authority by mobilising the private resources present in the territory for local energy and climate projects
3. Shift priorities in the local economy towards more environmentally-friendly practices by improving conditions for sustainable businesses

» In order to go further, find additional information and orientation or seek peer-to-peer advice, here is an overview of three local authorities who are engaging with local stakeholders and have set up schemes to channel their territory's resources towards sustainability.



### City of Lausanne

Through the municipal utility company, Lausanne has been able to set up two funds financing energy and climate-related campaigns on the basis of a small tax on citizens' electricity consumption. The fund for energy efficiency has allowed a holistic programme of advice and incentives for households and businesses to be set up, reducing energy use in the territory.



### Brussels Capital Region

With its Brussels Green Loan scheme the region has gained experience in the development of financial instruments through cooperation with alternative financial service providers (Crédal cooperative credit institution) to assist its citizens in implementing sustainable energy measures in their private homes. Citizens benefit from finance at improved terms in the form of soft loans and a guarantee fund backed by the local authority.



### Autonomous Community of Valencia

Valencia shows how local authorities can take measures to promote a sustainable economy in their territories. By allocating grants to businesses and organisations that practice and foster sustainability, the regional authority tries to offset the disadvantages sustainable businesses face in the economy, like higher non-competitive production costs, and instead reward them.

### Suggested resources

- » Vesta Conseil et Finance. (2018). 'Inventory of best practices for setting up an integrated energy efficiency service package including access to long-term financing to homeowners'.
- » Energy Cities. (2017). 'Infinite Solutions Guidebook. Financing the energy renovation of residential buildings through soft loans and third-party investment scheme'.

# COMMON CONCLUSIONS

1.

## Cooperation and knowledge exchange between environmental and financial staff is key:

Financial departments and Treasuries have their part to play in the local energy transition by supporting environmental staff in accessing innovative financing frameworks and aligning the allocation of funds with the local climate targets.

2.

## Following the data-flow across departments is just as important as following the flow of money:

Digital tools can be used to extract, connect and visualise information collected at department level, ensuring that gaps and weaknesses are identified and effectively addressed.

3.

## Combining environmental and financial reporting visualises the relationships between the city's finances and its climate action:

Reporting on the climate impact of the city's investments and activities, as well as on the additional environmental revenues and expenditure, allows for well-informed decision making from the top to the bottom.

4.

## Transparency is essential to get the citizens involved:

Cities need to be aware of how and where their money is being spent so as to be able to justify their activities to their citizens and this transparency can motivate citizens themselves to become involved in financing the cities' climate projects.

5.

## Financial institutions are valuable partners but they must align themselves with the city's environmental standards:

Cooperation with financial institutions (municipal, national or commercial) can make up for a lack of expertise inside the city administration, but cities with strong ambitions and demands are also able to encourage these institutions to develop more sustainable financial products.

6.

## Regular engagement with the local economy allows cities to push for more sustainable market practices:

Local procurement budgets represent significant leverage which cities should use consciously and purposefully to surpass existing environmental standards. Cities can reward sustainable market practices both financially and symbolically.

# BIBLIOGRAPHY

This section supplements the guidebook with a bibliography consisting of documents related to the different strategies for climate-mainstreaming municipal finances presented here and gives an overview of other tools which are either beyond the scope of this study or are related to it but have already been presented in great detail in other publications.

## General

Title	Economic impact of the energy transition at the local level: Methodologies and case studies
Author	Energy Cities
Language	English
Year	2014
Geographical scope	International
Key words	Green growth, indicators for green economy, economic evaluation methods
Web link	<a href="http://www.energy-cities.eu/IMG/pdf/impact_energy-transition_energy-cities_2014_en.pdf">http://www.energy-cities.eu/IMG/pdf/impact_energy-transition_energy-cities_2014_en.pdf</a>

This report presents different methodologies to model, assess and monitor the local economic benefits of the energy transition. Through case studies of cities from around the world, the study shows what different economic evaluation methods are being used by local authorities to model what impact their investments in the energy transition have on jobs, growth and innovation in their territory. These methodologies, ranging from simple input-output models and scoreboards to more complex econometric tools, can help cities optimise their investment decisions by modelling what level of investment in which sector will maximise benefits for the region. They also allow environmental staff to better defend their projects on economic and not only environmental grounds.

Title	Greening national budget processes, in 'Greening Development: Enhancing Capacity for Environmental Management and Governance'
Author	OECD
Language	English
Year	2012
Geographical scope	International
Key words	Capacity building, budget planning
Web link	<a href="https://www.oecd-ilibrary.org/development/greening-development/greening-national-budget-processes_9789264167896-7-en">https://www.oecd-ilibrary.org/development/greening-development/greening-national-budget-processes_9789264167896-7-en</a>

With a focus on developing countries, this chapter from a larger OECD publication on 'Greening development' provides guidance on how to develop the capacities required for greening national budgets. Among these capacities needing to be developed are good fiscal knowledge, appropriate engagement of key actors, training and human resource development, targeting weaknesses and exploiting synergies and cross-sectoral links. Even though the document focuses on budgets at a national level, many of the recommendations for capacity building of environmental staff and the environmental implications of fiscal policies are relevant to all levels of government – national or subnational.

## Environmental reporting and budgeting

Title	Le défi climatique des villes: Vers des métropoles françaises alignées avec l'Accord de Paris
Author	WWF France
Language	French
Year	2018
Geographical scope	France
Key words	Carbon budgets, PCAET, budget optimisation
Web link	<a href="https://www.wwf.fr/sites/default/files/doc-2018-07/20180704_Etude-defi-climatique-villes.pdf">https://www.wwf.fr/sites/default/files/doc-2018-07/20180704_Etude-defi-climatique-villes.pdf</a>

WWF France takes a close look at the climate objectives of the ten biggest French Metropolitan areas: Paris, Aix Marseille Provence, Lyon, Lille, Bordeaux, Toulouse, Nantes, Nice, Strasbourg and Rouen. The report shows that the current ambitions in terms of emission reductions are far from being aligned to a 1.5°C or even a 2°C scenario. It calculates respective carbon budgets for each of the Metropolitan Areas which illustrate the urgency of taking radical measures to cut greenhouse gas emissions in these territories: if they continue to emit at current rates they will use up their entire carbon budget until 2100 in an average of 13 years. Apart from presenting a methodology for French local authorities to calculate their carbon budgets, the report also gives recommendations on how cities can mobilise the significant financial resources necessary to finance these large-scale interventions through budget optimisation, green bonds and other innovative financing models.

Title	Carbon budget and pathways to a fossil-free future in Järfälla Municipality
Author	Anderson K, Stoddard I, Schrage J
Language	English, Swedish
Year	2017
Geographical scope	Schweden
Key words	Carbon budgets, fossil-free cities
Web link	<a href="http://www.web.cemus.se/wp-content/uploads/2018/05/Carbon-Budget-and-Pathways-to-a-Fossil-Free-J%C3%A4rf%C3%A4lla_CEMUS.pdf">http://www.web.cemus.se/wp-content/uploads/2018/05/Carbon-Budget-and-Pathways-to-a-Fossil-Free-J%C3%A4rf%C3%A4lla_CEMUS.pdf</a>

This report illustrates the methodology used by the researchers from the Centre for Sustainable Development (CEMUS) of Uppsala University when calculating a carbon budget and the associated emission reduction for the Swedish municipality of Järfälla. The report highlights Sweden's and Järfälla Municipality's responsibility in supporting developing nations in their energy transitions by broadening their climate responsibility beyond geographical borders in the form of both financial and technical support.

## Green Public Procurement

Title	Circular Public Procurement in the Nordic Countries
Author	Alhola K, Salmenperä H, Ryding S, Busch N
Language	English
Year	2017
Geographical scope	Europe
Key words	GPP, circular economy
Web link	<a href="https://norden.diva-portal.org/smash/get/diva2:1092366/FULLTEXT01.pdf">https://norden.diva-portal.org/smash/get/diva2:1092366/FULLTEXT01.pdf</a>

As a dimension of green public procurement, circular public procurement favours the remanufacture and reuse of products and materials in a circular manner. This report not only addresses the procurement of circular products but also introduces business concepts in favour of the circular economy, as well as investments in circular ecosystems. Focusing on the Nordic countries, this publication by the Nordic Council presents best practices and case studies from Denmark, Finland and Sweden at both the national and local levels. These case studies show that in some product categories, such as paper, information and communications technology, and metal products, circular procurement is already a well-developed practice. However, for most goods, it is still not systematically applied, e.g. through life-cycle costing in public tenders.

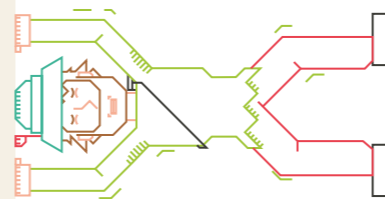
Title	Drawbacks and opportunities of green public procurement: an effective tool for sustainable production
Author	Testa F, Annunziata E, Iraldo F, Frey M
Language	English
Year	2016
Geographical scope	Europe
Key words	GPP, capacity building
Web link	<a href="https://www.sciencedirect.com/science/article/pii/S0959652614010312">https://www.sciencedirect.com/science/article/pii/S0959652614010312</a>

The authors conducted a questionnaire survey among 62 Italian municipalities in the region of Tuscany to understand if and how green public procurement is being implemented in Italian local authorities. The findings of the survey show that information and awareness campaigns inside local administrations are crucial for the successful development of public green tenders. The study also analyses the correlation between certified Environmental Management Systems (EMS) and the adoption of green procurement practices, showing that administrations with a mature and well-integrated EMS are more advanced in their GPP performance. It highlights the importance of supporting initiatives, e.g. for capacity building of the procurement staff, at the local, national and European levels, as such support can help especially small local authorities overcome the challenges related to their size.

## Fossil fuel divestment of municipal funds

Title	Entwicklung eines Konzepts zur Implementierung einer Nachhaltigen Anlagerichtlinie für die Stadt Kassel
Author	Bauckloh T, Drempetic S, Klein C
Language	German
Year	2017
Geographical scope	Germany
Key words	Divestment, pension funds, treasury
Web link	<a href="http://divestkassel.blogspot.eu/files/2017/11/projektbericht-nachhaltige-anlagerichtlinie-stadt-kassel.pdf">http://divestkassel.blogspot.eu/files/2017/11/projektbericht-nachhaltige-anlagerichtlinie-stadt-kassel.pdf</a>

In this project report developed by researchers from the University of Kassel, the options for sustainable financial investments for the city of Kassel are explored and a strategy for developing sustainable financial guidelines is proposed. The report includes an overview of the municipal divestment movement in Germany and takes a closer look at the city of Kassel's financial assets to identify which part of them would be affected by the creation of sustainable investment guidelines. The report concludes that the City of Kassel, as is the case for many other public authorities in Germany, is an active participant in the capital market through its "special pension reserve fund" which invests billions in the redemption of pension obligations. Therefore, there is a need to discuss how the investment of these funds can be aligned with ecological, social and corporate management criteria. Through the example of the city of Kassel, it shows in detail how local authorities can elaborate sustainable investment guidelines.



## Green municipal bonds

Title	The Green Bond Market in Europe
Author	Climate Bonds Initiative
Language	English
Year	2018
Geographical scope	Europe
Key words	Green bonds
Web link	<a href="https://www.climatebonds.net/files/reports/the_green_bond_market_in_europe.pdf">https://www.climatebonds.net/files/reports/the_green_bond_market_in_europe.pdf</a>

The state of the market report for green bonds in Europe gives an overview of how fast the European green bond market is growing and diversifying. It takes a detailed look at the European green bond market currently sporting 145 green bond issuers, ranging from companies in the energy sector, financial institutions and property companies, to local and national governments. This report by Climate Bonds Initiative is the most complete data collection on both bond issuers (by country and by type of entity) and on the projects financed. With a detailed snapshot of the state of the market in every country, it also looks to the future, identifying those entities which appear the most promising to begin issuing green bonds in the future. While France, Germany and the Netherlands are Europe's top three in terms of green bond issuance, the public sector has been especially active in the Nordic countries, which have also contributed strongly to defining the green bond market.

Title	Adapting portfolios to climate change: Implications and strategies for all investors
Author	BlackRock Investment Institute
Language	English
Year	2016
Geographical scope	International
Key words	Divestment, portfolios, climate risk
Web link	<a href="https://www.blackrock.com/corporate/literature/whitepaper/bii-climate-change-2016-us.pdf">https://www.blackrock.com/corporate/literature/whitepaper/bii-climate-change-2016-us.pdf</a>

The report addresses the physical, technological, regulatory and social risks of climate change for investment portfolios and asset owners. It explains how investors can gradually implement climate considerations in their portfolios, for example through a 'Climate change rulebook' with rules used to make an insurer's corporate bond portfolio climate-friendly. It shows which companies or sectors to exclude but also which investments to include to maximise the climate benefits of the portfolio, e.g. through investment in green bonds or clean tech companies. Finally, it discusses how higher carbon prices can be a cost-effective way to achieve emission-reduction goals and what such a change in carbon prices would entail for investors.

## Climate funds and innovative financial instruments

Title	Scalable Innovative Financing for Smart Buildings
Author	smartEn – SMART ENERGY EUROPE
Language	English
Year	2018
Geographical scope	Europe
Key words	Energy efficiency financing, crowdfunding, innovative finance
Web link	<a href="https://uploads.strikinglycdn.com/files/81aeb047-99ee-40e8-9104-26d629b33715/20181012_Smart-Financing-publication_final.pdf">https://uploads.strikinglycdn.com/files/81aeb047-99ee-40e8-9104-26d629b33715/20181012_Smart-Financing-publication_final.pdf</a>

This white paper addresses several innovative financing mechanisms that have the potential to dramatically increase the volume of building renovation projects and improve energy efficiency: Energy Performance Contracting (EPC), on-tax financing, on-bill programmes, crowd financing mechanisms for local projects and energy efficiency mortgages. When presenting on-tax financing, the paper mentions the EuroPACE project which is a Horizon 2020 project currently under development to implement the American on-tax financing model called PACE in cities in five European pilot countries: Belgium, Spain, Italy, Poland and Romania. In the PACE model, energy efficiency renovations are repaid through a special assessment added to a property tax bill over a term of up to 20 years. The EuroPACE project is currently looking for leading cities in the five identified Member States to pilot and test out this scheme.

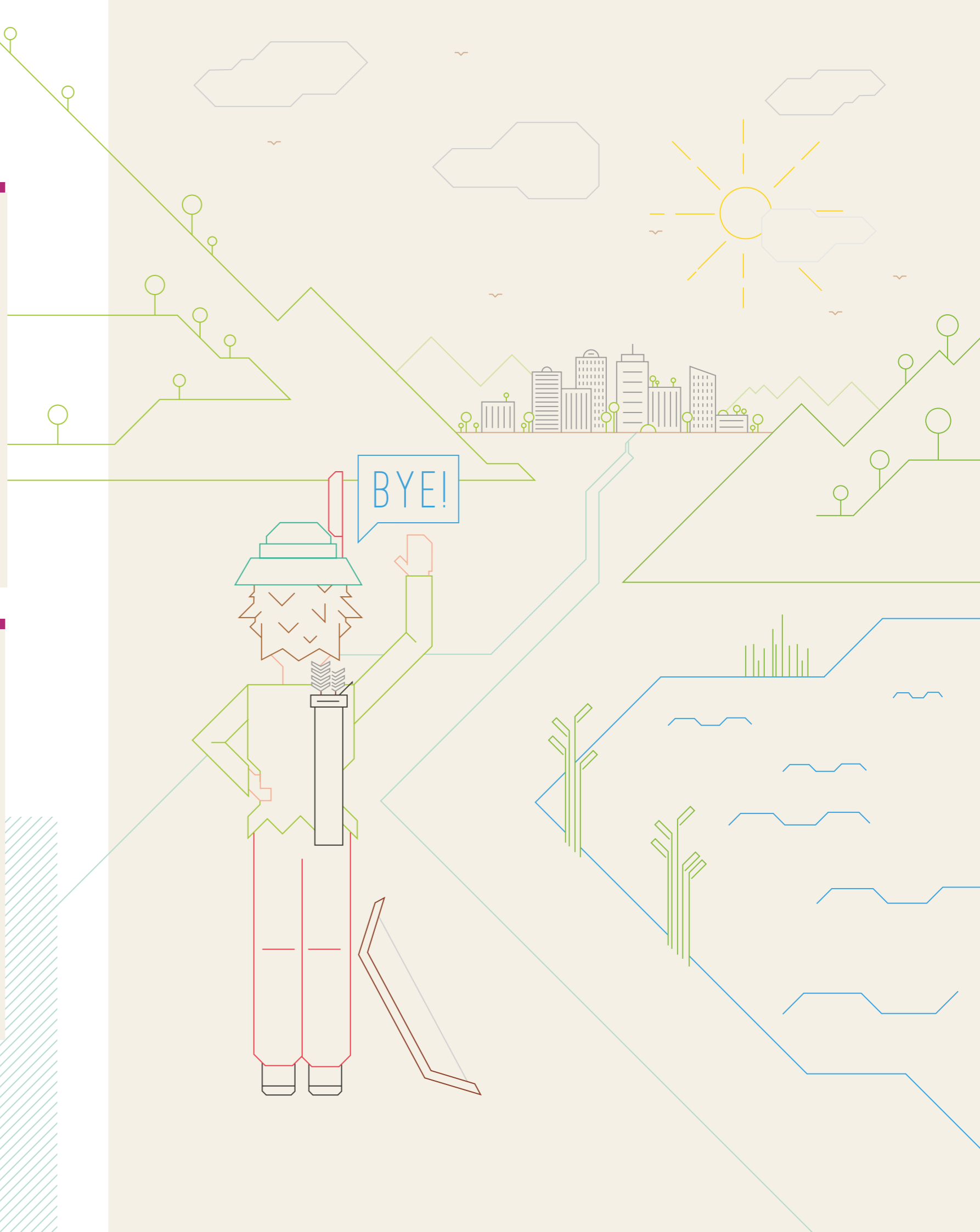
## Climate funds and innovative financial instruments

Title	Inventory of best practices for setting up an integrated energy efficiency service package including access to long-term financing to homeowners
Author	Vesta Conseil et Finance
Language	English
Year	2018
Geographical scope	Europe
Key words	Energy efficiency financing, partnership with banks, soft loans
Web link	<a href="http://www.financingbuildingrenovation.eu/wp-content/uploads/2017/08/Innovate_Inventory-of-best-practices_public-version_Final-version.pdf">http://www.financingbuildingrenovation.eu/wp-content/uploads/2017/08/Innovate_Inventory-of-best-practices_public-version_Final-version.pdf</a>

The European project INNOVATE aims to create one-stop-shops and innovative financing schemes for energy efficiency in the private residential sector. In its 'Inventory of best practices' case studies illustrate how local authorities can successfully mobilise citizens to invest in energy efficiency. This is achieved through engagement with financial service providers that municipalities have to train or incentivise to provide appropriate financial products (such as soft or zero-interest loans) and financing plans to citizens that are willing to undertake energy efficiency action. The case studies show wide experience in the use of different strategies, ranging from guarantee funds backed by a local authority, to cooperation with ethical or alternative financial institutions.

Title	Infinite Solutions Guidebook: Financing the energy renovation of public buildings through Internal Contracting
Author	Energy Cities
Language	English
Year	2017
Geographical scope	Europe
Key words	Energy efficiency financing, revolving fund
Web link	<a href="http://www.energy-cities.eu/IMG/pdf/guidebook_intracting_web.pdf">http://www.energy-cities.eu/IMG/pdf/guidebook_intracting_web.pdf</a>

The Infinite Solutions Guidebook presents the case studies of the municipalities of Almada (Portugal), Águeda (Portugal), Koprivnica (Croatia) and Udine (Italy) which have tested out internal contracting schemes under the Infinite Solutions project. The idea of Internal Contracting (or Intracting) is to enable the municipality to finance multiple investments for energy savings without being tied to an external contractor. This requires a revolving fund to be set up from which the municipal departments can borrow money to finance energy efficiency measures. This scheme was piloted by the German city of Stuttgart which helped coordinate the project and assisted the learning partners in setting up their own revolving funds. The guidebook provides detailed advice and tools on how public authorities can successfully replicate the internal contracting model.



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Energy Cities is the European association of local authorities in energy transition. For over 30 years – and with now over 1,000 member cities and networks from 30 countries – it has been advocating for a democratic, decentralised energy transition led by the local and regional level.

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