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SONNET - SOCIAL INNOVATION IN ENERGY TRANSITIONS

Co-creating a rich understanding of the diversity, processes, contributions, success and future potentials of social innovation in the energy sector

D4.5 (D16): Report on the SIE City Lab in Grenoble

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Work Package: 4

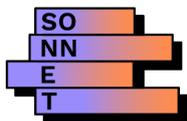
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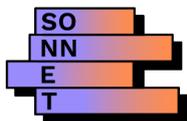
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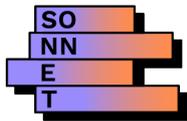
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12	City of Warsaw	WARS	PL	CITY OF WARSAW
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Executive Summary

This report presents the experience of Grenoble City Lab with developing its energy sufficiency actions with users of its municipal buildings. The aim of the lab was to test new action methods to save energy in public buildings and encourage eco-responsibility through behaviour changes, awareness, and accountability. Most of these actions were developed in collaboration with building users and through the observation of daily practices.

During the city lab, various actions were carried out, such as the design of graphic supports to raise awareness of eco-gestures in a school, the test of an eco-responsibility charter with six associations (users of city buildings), the design of nudges to encourage users of an administrative building to take the stairs rather than the elevators.

Although we faced constraints related to the lack of human resources and the health situation, the experiences carried out during the city lab were well received by the people concerned. They appreciated the discussions and explanations provided on ecological issues and "good practices" (eco-gestures, useful resources, contacts). On the other hand, the city lab has also shown us that it is necessary to put in place several conditions in order to be able to deploy large-scale actions aimed at energy sufficiency (ES) and eco-responsibility (ER). These conditions are as follows: ensure correct energy quality and proper maintenance of buildings, have dedicated and / or trained human resources to carry out support actions, go through managerial support and hierarchy to mobilize city employees, and adapt messages to the target audiences.

The report is structured like this: it first presents the understanding of social innovation in energy (SIE) for the City Lab and the actions carried out by the City of Grenoble in connection with the subject of the city lab. Secondly, the report presents the process of defining the experiments as well as their implementation. The third part of the report explains the evaluation process carried out with the help of Grenoble Ecole de Management, before ending with an overall analysis.

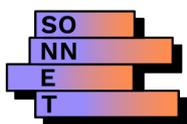
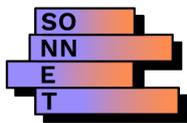


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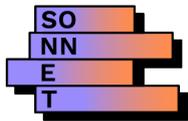


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Glossary

SIE: Social Innovation in Energy

ES: Energy sufficiency

ER: Eco-responsibility

CL: City Lab

HVAC: Heating, Ventilation and Air Conditioning

GEM: Grenoble Ecole de Management

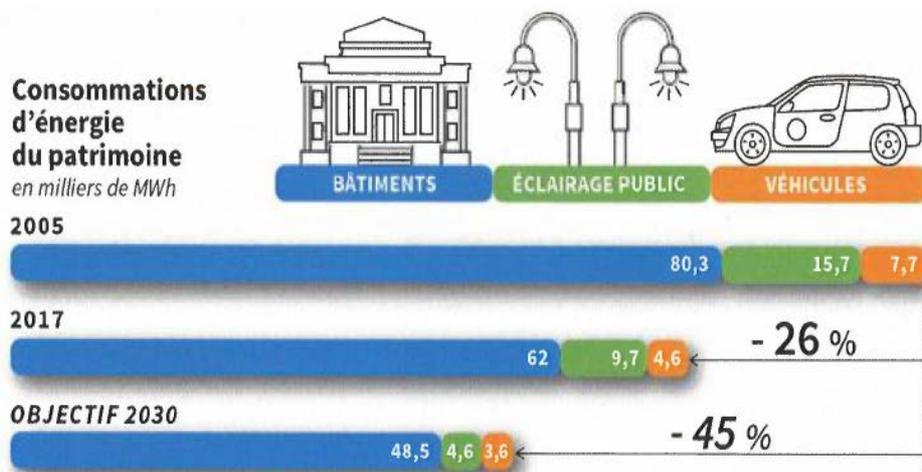
1 INTRODUCTION

Grenoble is a city of 163 000 inhabitants, at the heart of a large alpine metropolitan area with 450 000 inhabitants (49 towns). The city has a strong tradition of innovation combining industry and engineering communities, academics and researchers. The city also intends to be a “city in transition” demonstrator, technologically smart but above all inclusive and creative.

To lead this transition, Grenoble is committed to a comprehensive air-energy-climate-health policy:

- [2020-2030 Metropolitan Climate Air Energy Plan](#) (territorial level ; 450 000 inhabitants): commitment of the city since 2005
- [City of Grenoble air-energy-climate action plan](#) : cross-cutting and multi-thematic action plan 2019-2025 (territorial level)
 - o Efforts already made on city heritage (2005 --> 2019):
 - Energy cons. : buildings -25%; public lighting -50%; vehicles -41%
 - GHG emissions (scopes 1-2): approximately -50%
 - o “low-carbon approach” since 2020: roadmap, [assessment of emissions](#) (direct and indirect, scopes 1-2-3), decision support, mobilization
- Grenoble is labelled European Energy Award “Gold” since 2019
- [Grenoble is « European Green Capital 2022 »](#)

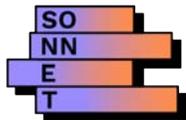
Figure 1: Energy consumption of the City of Grenoble's heritage 2005→2017 & 2030 objectives



Source: Graphic scheme made by the city of Grenoble for presentations of its air-energy-climate action plan 2019-2025

Here are also 2 pages of resources on eco-responsibility and on environmental issues (understanding the issues, tools, guides, eco-actions, and useful links) accessible from the city's website:

- [Useful links - eco-citizen actions](#)
- [Eco-responsibility page](#)

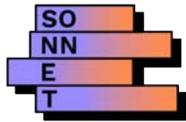


1.1 Information about City Lab-like activities before SONNET

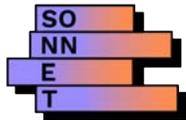
Due to the fact that the City of Grenoble leads a wide variety of projects in favour of energy and ecological transition, the activities and initiatives that will be presented below are those in connection with the activities of the City Lab (CL); the City Lab of Grenoble focuses on energy sufficiency in municipal buildings (with building users), with a perspective of overall eco-responsibility.

Table 1: Energy sufficiency city initiatives

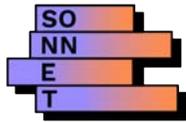
Projects - initiatives	Tackled topics - targets	Lead	Status	Outcomes up to date	Lessons learnt	Connection with CL activities
"Eco-agent" approach	Develop eco-citizen behaviours in the office	City	Past (2010)	Implementation of annual eco-agent action plans with logistics services (reprography, catering, mechanical workshops, internal communication, training, IT)	<p>Difficulties encountered:</p> <ul style="list-style-type: none"> - Find relays by site; involve volunteers in concrete actions - Lack of communication of the results obtained - With a small group of motivated people, after a while all the subjects have been explored; issue of dissemination rather than completeness in the subjects <p>Tips:</p> <ul style="list-style-type: none"> - Mention eco-agent missions in the job profiles; define action leaders - Ensure better communication at all levels - Regularly display levels of energy consumption 	Important
"Positive energy schools challenge" in 5 schools/year (some classes every time, not all the school)	Energy sufficiency in public buildings - School users	City + Local Energy Agency	Current	<ul style="list-style-type: none"> - Low measurable consumption gains (sometimes seen on electricity and heating) - Appropriation, enforcement and linking students (seize eco-gestures), operators, teachers, city staff 	<p>Difficulties encountered:</p> <ul style="list-style-type: none"> - Contradictions between "uses" oriented action and the problems of energy performance of the building (insulation), that are difficult to solve (necessary investments) - Teachers generally lack agency during this challenge and are less motivated to participate than students <p>Tips:</p> <ul style="list-style-type: none"> - Show consumption gains (monitoring) - Explain the operation of equipment (e.g. ovens, dishwashers) and its consumption compared to other "classic" uses 	Important



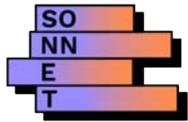
Projects - initiatives	Tackled topics - targets	Lead	Status	Outcomes up to date	Lessons learnt	Connection with CL activities
Energy diagnosis and coaching : 5 sites/season	Energy sufficiency in public buildings - Associations (occupying City buildings)	City	Current	<ul style="list-style-type: none"> - 5 to 20% of energy savings observed - some priority actions taken: eco-gestures, vigilance on the functioning of heating, ventilation, lighting, water systems, etc. - better knowledge by the user of systems & equipment - exchanges between the association and city services 	<p>Difficulties encountered:</p> <ul style="list-style-type: none"> - Very time-consuming support <p>Tips:</p> <ul style="list-style-type: none"> - Requires finding a "referent" person to follow the process on the side of the association, ensuring that this person can transmit the relevant information to building users. Indeed, we can note that when a referent person is motivated, the process continues over time and is internally led, with new actions carried out 	Important
Eco-gestures display + broadcasting; awareness sessions; technical and educational visits	Energy sufficiency in public buildings - Civil servants (administrative buildings)	City	Current; Continuously	<ul style="list-style-type: none"> - Posters made in various buildings: town hall, sports facilities, associations; - Awareness sessions conducted with the services using the Town Hall in 2019-2020 + specific sessions on digital sufficiency - No specific evaluation of the results of these actions 	<p>Difficulties encountered:</p> <ul style="list-style-type: none"> - Find common availabilities with the departments concerned - Difficulties in observing changes in consumption <p>Tips:</p> <ul style="list-style-type: none"> - Make people understand the difference between energy efficiency and energy sufficiency (gateway to individual responsibility, lifestyles, uses) - Adapt media to situations and audiences - Make regular reminders using various communication channels: intranet, display media, information sessions, support 	Important
Dissemination of eco-responsibility advice on the intranet and on the City's website; for agents, users	Eco-gestures and resources on energy, water, digital, movement	City	Current; Continuously	<ul style="list-style-type: none"> - Creation of an "eco-gestures" space on the intranet of the city, update and publication of regular information - Creation of a "useful links for information, training and action" page - Creation of an eco- 	<p>Difficulties encountered:</p> <ul style="list-style-type: none"> - Time-consuming support - Requiring a planned organization to predict updates <p>Tips:</p> <ul style="list-style-type: none"> - Measure the attendance of pages - Put reminders to make the additions and updates - Rely on the expert organizations, institutional actors who already have usable resources 	Important



Projects - initiatives	Tackled topics - targets	Lead	Status	Outcomes up to date	Lessons learnt	Connection with CL activities
of buildings and inhabitants	s, waste-, purchases, events...			responsibility space on the grenoble.fr website		
Integration of energy sufficiency into the procedures for providing buildings	In model agreements	City	Past (2020)	Integration of paragraphs on eco-gestures and responsibilities (maintenance) of the occupants	Difficulties encountered: - Adaptation of the text to the format of documents Tips: - Rely on departments that manage the provision of buildings - Rely on political orientations and feedback from accompaniment experiences to convince that it is useful and important	Important
	Support for entry	City	Current	Provide information times, awareness of eco-gestures and the operation of equipment when entering the places of new occupants of a building; Work in progress with colleagues from the Department of Municipal Buildings	Difficulties encountered: - Validate the necessary involvement of colleagues in charge of these visits (management) Tips: - Rely on departments that manage the provision of buildings	Important

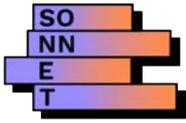


<p>Regular energy consumption reporting & alerts</p>	<p>Monitoring of heating, water, electricity and refreshment consumption</p>	<p>City</p>	<p>Current; Continuously</p>	<ul style="list-style-type: none"> - Monitoring of weekly / monthly consumption, systematic alerts to operators and / or users of equipment, continuous correction of malfunctions - Specific monitoring and / or remote consumption reading for "large" buildings (administrative, cultural, swimming pools...) - Monitoring of alerts and resolution actions, "heating season" reports, etc. 	<p>Difficulties encountered: Even if the City of Grenoble has the particularity of having around 30 agents operating its HVAC installations under management (while most organizations use an external service provider), we can notice:</p> <ul style="list-style-type: none"> - Lack of involvement of operation teams in monitoring consumption, as well as in human relations with users on uses (energy sufficiency) - Fear of criticism when an error (generating overconsumption) is made <p>Tips:</p> <ul style="list-style-type: none"> - Show consumption gains (monitoring ...) coming from corrections, follow up on an alert - Rely on management to empower the technical teams - Integrate these subjects into job descriptions and the recruitment process 	<p>Medium</p>
<p>Settings, temperature adjustment, programming of HVAC systems</p>	<p>Find the right compromise between comfort and energy savings in city buildings</p>	<p>City</p>	<p>Current; Continuously</p>	<p>Continuous adjustments, in particular via:</p> <ul style="list-style-type: none"> - a centralized technical management system to which most of the buildings are connected (HVAC installations) - technical agents who will regularly check the functioning of the installations - regular exchanges (procedure, annual visit, etc.) between users of buildings and operators of HVAC installations 	<p>Difficulties encountered:</p> <ul style="list-style-type: none"> - Very different feelings of "thermal comfort" of people; very heterogeneous awareness of good practices (eco-gestures) - In some buildings, HVAC networks that supply heterogeneous areas (insulation, uses, sunshine, losses, etc.) - Sometimes, lack of honesty in the occupancy schedules of the premises (for fear of lack of heating, which generates overconsumption) - Sometimes incomprehension, on the part of the users, of the operating process (responsiveness) of the technical operating teams (brake on continuous adjustments) <p>Tips:</p> <ul style="list-style-type: none"> - Continuous user awareness-raising (see actions above + actions within the framework of Sonnet) - Maintenance interventions, work on HVAC networks - Discussion with users: operation, recommended temperature settings 	<p>Medium</p>



Other actions carried out by the City on eco-responsibility, not detailed here: Mobility plan; Setting up selective waste collection; "Eco-event" approach under construction; Staff training (in the continuing training plan): training in energy-climate issues and in personal and work-related actions, specific environmental training (construction and renovation of buildings, digital, etc.), eco-driving training; Environmental education (e.g. schools, public spaces); Waste collection in public spaces; Site visits; Eco-responsibility for major utilities in political roadmaps (buildings, sports, territorial action, digital, purchasing, culture, events, food), Eco-responsibility stories and representations in major projects.	Weak to Medium
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The experience acquired through the implementation of these various actions has enabled us to adjust the planning and conducting of our City Lab. We have learned that the following actions are the most useful: finding relay people in the buildings, adapting support actions to targets and their use of the building, explaining the function of energy systems (heating, ventilation, lighting, etc.) to users, and raising users' awareness of energy-climate issues. Additionally, it is important to highlight the potential savings in consumption, to raise users' awareness of energy-climate issues and to establish conditions allowing the continuation of actions over time; this can be done by involving the technical upkeep-maintenance services and hierarchical management in the accountability for energy and water savings.



1.2 Understanding of SIE for SONNET

As defined in the proposal, social innovations in the energy sector are (combinations of) ideas, objects and/or activities that change social relations and involve new ways of doing, thinking and organizing energy. Based on the typology developed in Work Package 1, we consider that the City Lab of Grenoble encompasses several types of SIE:

- Doing: action against specific energy pathway
- Thinking: advocacy for specific energy pathway, energy education, non-profit consulting, peer-to-peer learning
- Organizing: participatory energy dialogues, energy gamification and nudges

Those SIEs involve particularly new ways of thinking about energy and a social relation characterised by an exchange.

Indeed, the city of Grenoble wishes to develop its actions aimed at saving energy in public buildings and eco-responsibility through behaviour changes, awareness and accountability.

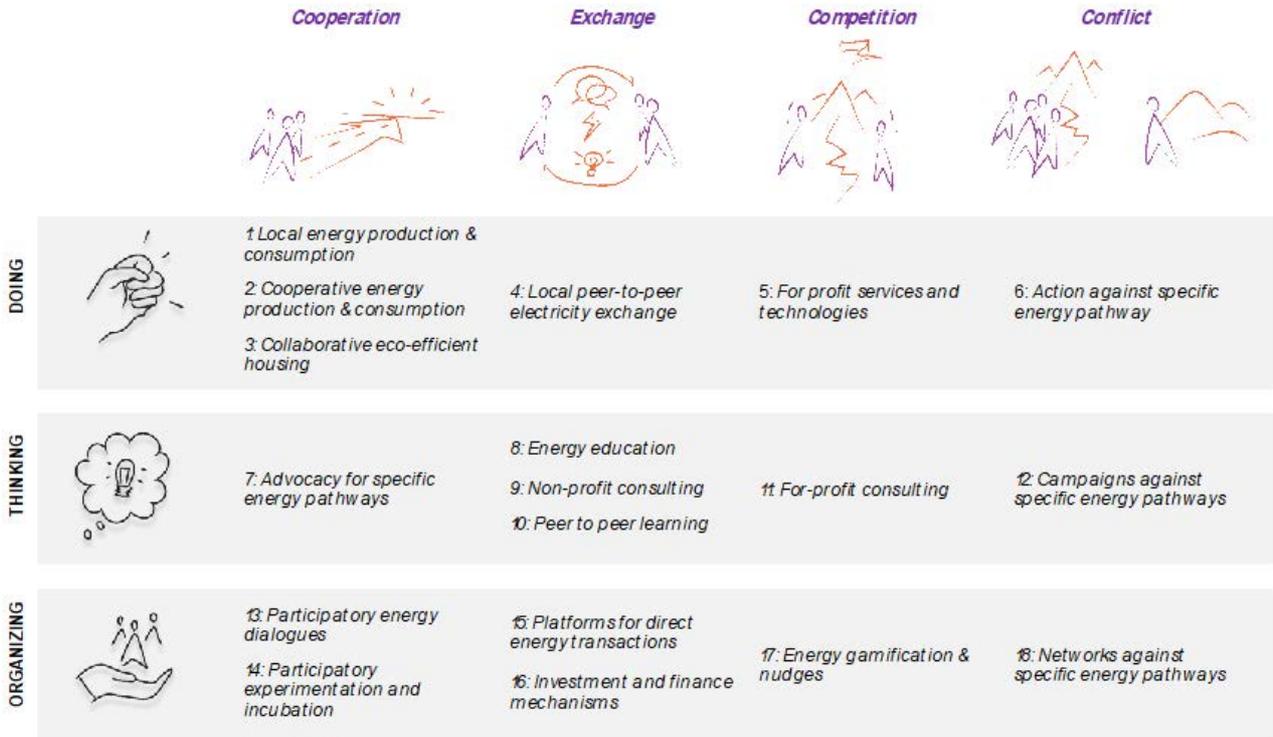
The City Lab also has a more distant goal of wondering how we can generalize eco-friendly behaviours without having to accompany (individually or in groups) all buildings users, whether agents or external; for example through management, exemplarity, procedures, a network of referents...

Here the social innovation consists of:

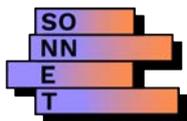
- Changing the relation between building owners and users, looking at energy sufficiency rather than just efficiency
- Instead of proposing ready-made solutions, observing needs and conditions first; co-creating, co-constructing actions with building users
- A non-profit consulting as the municipality will coach building users (employees and associations), empower them to change their routines in consuming energy in buildings and encourage overall eco-responsibility / reduction of carbon footprint

This work of interpretation, of "local" definition of SIE was carried out by Grenoble Ecole de Management and the City of Grenoble throughout various meetings (no local definition for social innovation in energy existed before the SONNET project).

Figure 2: SIE typology (Work Package 1)



Source: SONNET Deliverable D1.1 - Report on preliminary typology of social innovation in the energy sector



2 SONNET CITY LAB PROCESS

2.1 Setting the stage and challenge structuring

2.1.1 Identification of an issue

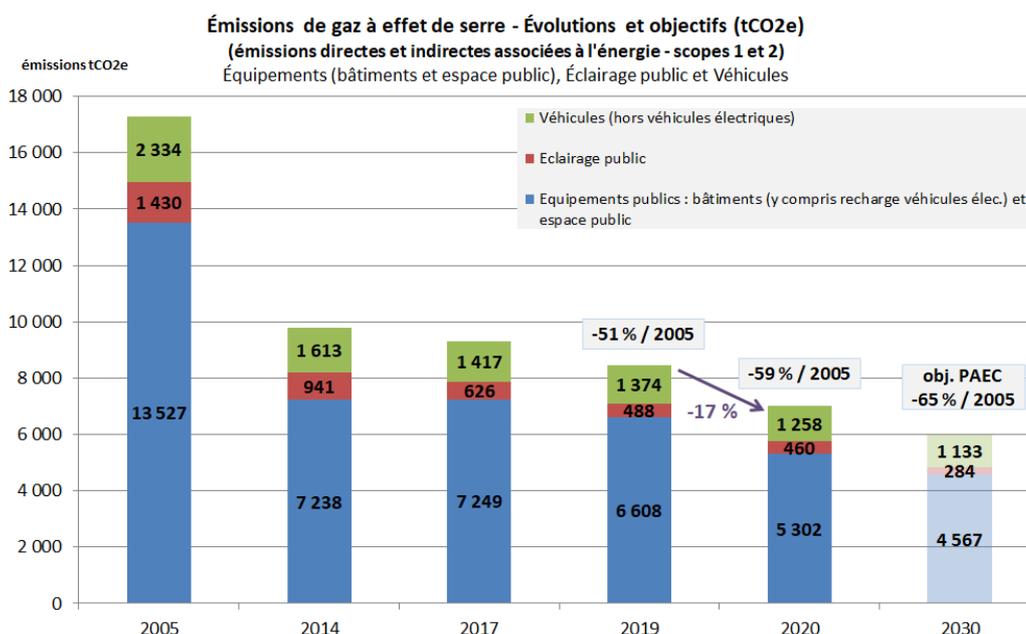
The City of Grenoble is already carrying out a number of actions to reduce the energy consumption of its buildings

- Energy renovation of old buildings
- Rationalization of the use / pooling of buildings
- Optimization of the operation of HVAC installations (the City of Grenoble has the particularity of having around 30 agents operating its HVAC installations under management)
- Uses: awareness, support, empowerment of building users in energy management

The City of Grenoble wishes to continue and strengthen its actions on these sub-themes, in particular by orienting its actions towards energy-users (the principle of energy sufficiency actions).

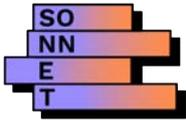
Figure 3: Direct and indirect GHG emissions (scope 1-2) 2005→2020 & 2030 objectives

GHG emissions due to the energy consumption of buildings, vehicles and public lighting managed by the City of Grenoble



Source: <https://www.grenoble.fr/1455-plan-d-action-air-energie-climat-2019-2025.htm>

As indicated above, the City of Grenoble is already carrying out actions aimed at the development of renewable energies, the energy efficiency of its buildings and the control of

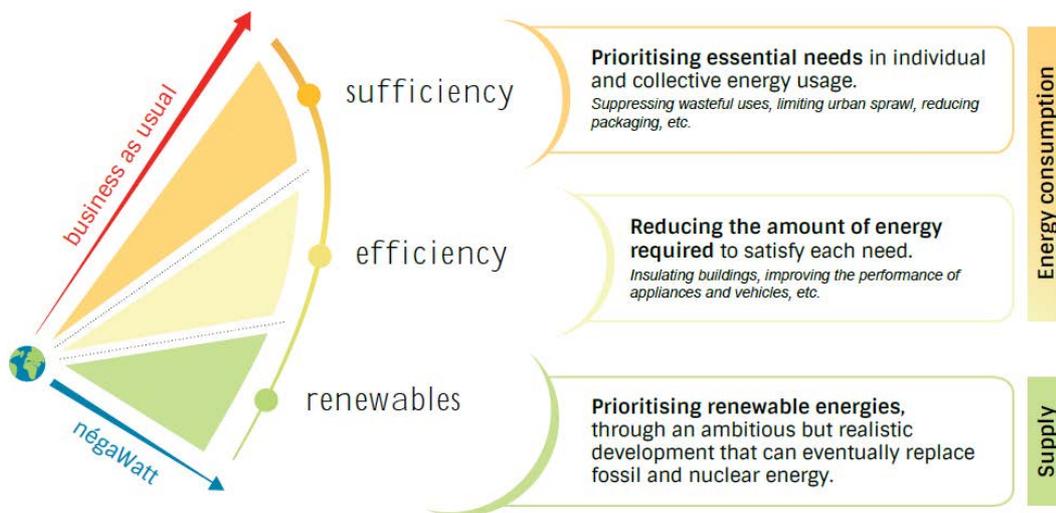


energy consumption through uses (energy sufficiency). The city has chosen to strengthen its energy sufficiency (ES) actions within the framework of this City Lab to experiment with new intervention methods, to gain skills in the relationship with users and to identify optimization levers. These objectives strive to encourage the appropriation of eco-responsibility (RE) by the target audiences (users of buildings) and by the city organization. There were no other issues considered and dropped.

Definition of energy sufficiency (ES):

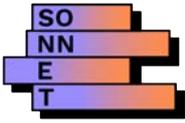
- “NégaWatt” definitions (<https://negawatt.org/Energy-sufficiency-towards-a-more-sustainable-and-fair-society-557>):
“The négaWatt association is a non-governmental French think tank involving around twenty experts in energy issues with strong field experience and complementary skills. Established in 2001, it is supported by more than 1,200 individual members. Its main purpose is to recommend solutions on energy demand and supply to implement an energy transition in France, reducing as much as possible all the detrimental risks and impacts of the national energy system (greenhouse gas emissions, air pollution, resource depletion, energy poverty, nuclear accident risks, etc.).”

Figure 4: Importance of sufficiency according to the NégaWatt Institute (1/2)



Source: <https://negawatt.org/The-negaWatt-2050-energy-scenario>

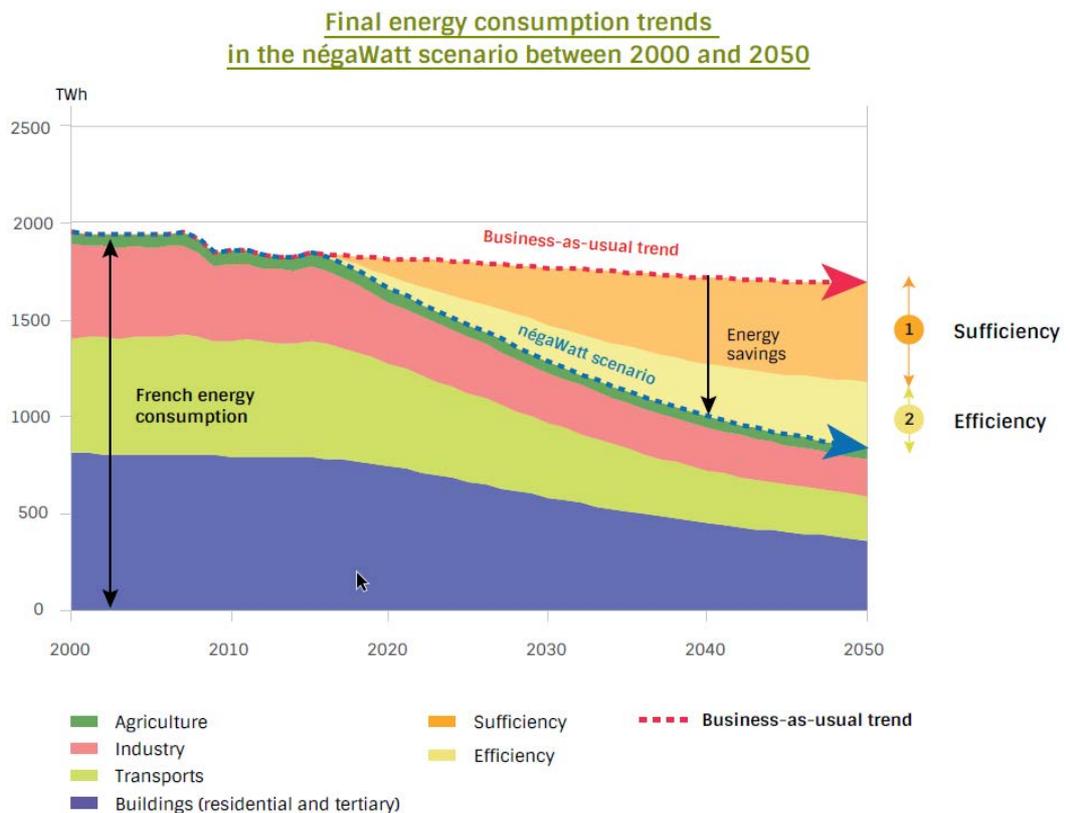
- o “Sufficiency is one of the three main pillars of the approach promoted by the French négaWatt Association since its establishment in 2001. It is an essential part of the energy transition scenario developed by this think tank.”
- o Energy sufficiency is “an individual and collective approach”, aims to “a fairer consumption”, is “a necessity for the climate and resources”
- o Sufficiency means “questioning our needs and then acting through individual behaviour and collective organization on our different uses of energy, to favour the most useful, restrict the most extravagant and eliminate the most harmful (with strong environmental damage)”
- o Dimensional sufficiency: size, just sizing



- o Sufficiency of use: Level and duration of use and operation
- o Cooperative sufficiency: Collective organization of territory and town planning, pooling
- Several definitions, depending on the scale we are interested in:
 - o macro: systemic reflection on a new society. This society is founded on different values, representations, and practices.
 - o meso: frugal innovations, when trying to use few resources to meet the basic needs of a community; social innovation within the framework of public policies to face the weaknesses of communities and budget cuts; citizens' initiatives
 - o micro: the adoption of a lifestyle that can be characterized by 3 trends: frugality (acquiring less), voluntary simplicity (material dispossession, quality versus quantity) and anti-consumption (boycotting products).

In general, we could say that, for a user of a building, **energy sufficiency consists of adopting eco-friendly actions related to energy. Eco-gestures mean eco-responsible actions that can be taken by users to save energy**, e.g. reduce the heating temperature, turn off the printer, systematically turn off the lighting in unoccupied spaces (Cf. Figure 17: “eco-gesture” posters)

Figure 5: Importance of sufficiency according to the Négawatt Institute (2/2)



- “The energy sufficiency project” (<https://www.energysufficiency.org>) definitions:

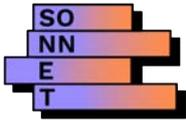
- “Energy sufficiency goes beyond energy efficiency: it’s about having enough but not using too much. It’s about doing things differently; about living well, within the limits.”
- “Energy sufficiency describes the situation where everyone has access to all the energy services they need and a fair share of the energy services they want whilst, at the same time, the impacts of the energy system do not exceed environmental limits.”
- Moral, social dimension: “Sufficiency could then be defined as a voluntary process of social negotiation to reduce energy consumption, but which cannot however be understood independently of the global context undergone by energy and economic contraction which is imposed on the actors. Consequently, this process can only be meaningful if it is accompanied by a properly political reflection on the conditions for an equitable sharing of the energy resource”(Semal, Szuba, Villalba, 2014).
- Other sources, studies:
 - “Energy-Sufficiency for a Just Transition: A Systematic Review”, May 2020: <https://www.mdpi.com/1996-1073/13/10/2444/htm>
 - “Energy sufficiency: an introduction - Concept paper, ECEEE”, 2018: <https://www.energysufficiency.org/static/media/uploads/site-8/library/papers/sufficiency-introduction-final-oct2018.pdf>

Definition of eco-responsibility (ER): “refers to all actions aimed at limiting the environmental impacts of the daily activity of communities - goes by new management choices, purchases, work organization, investments and awareness of staff.” (ADEME)

Figure 6: Illustrations of energy sufficiency (ES) and eco-responsibility (ER) actions



Source: illustrations taken from this publication https://negawatt.org/IMG/pdf/181029_energy-sufficiency_negawatt-scenario_eng.pdf



This subject (EF & ER) was chosen through a shared reflection process, led by the City of Grenoble (City of Tomorrow department, Energy Transition Service) and Grenoble Ecole de Management, with the help of ALEC (Local Energy and Climate Agency). This topic was chosen because of:

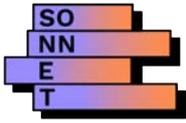
- the political will to progress on this subject and to implement new actions contributing to the reduction of the administration's environmental footprint
- human resources available to the city to carry out actions (existence of an energy sufficiency project manager position)

Besides, this subject is fully related to the city's current strategies and policies. Indeed, energy sufficiency actions are part of the city's air-energy-climate policy (see section 1). They tend to strengthen its internal and external mobilization component, through raising awareness, support, ownership, and empowerment of stakeholders. Moreover, the objective of generalizing eco-responsible behavior appears:

- in the city's political project "exemplary public service in environmental matters"
- in the Air-Energy-Climate Action Plan 2019-2025

Furthermore, energy sufficiency could be considered as an imperative for climate and resources:

- GDP-CO2 decoupling does not exist (or almost does not)
 - Planetary limits are already crossed for some
 - Sufficiency is essential to "reach" carbon neutrality (Cf. Paris Agreement)
 - Moral duty to slow down the destruction of our environment
- Energy sufficiency efforts are also strongly encouraged by the European Energy Award (Cit'ergie) approach. Indeed, this approach encourages the cities to offer awareness and training sessions on controlling energy consumption for its elected officials and all of its employees (technicians, directors, etc.). The City Lab is an opportunity to implement actions aimed at energy sufficiency, by calling on various skills (internal and external), to learn thanks to feedback from experiences of the members of the consortium, betting on the involvement of several departments concerned.
- The City Lab is an opportunity to work differently, to experiment new methods, in particular by integrating contributions from the social sciences.



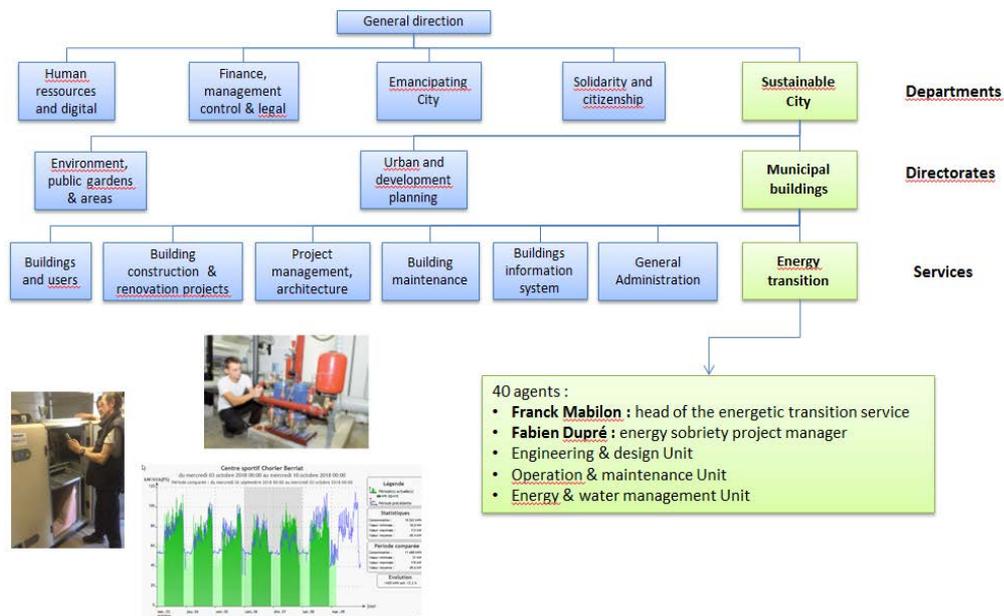
2.1.2 Team formation

The project team is made up of:

- City of Grenoble:
 - o Fabien Dupré, energy sufficiency & carbon footprint project manager, as part of the Energy Transition department: project leader, in charge of the relationship with the consortium, the main actions, the writing of the report
 - o Franck Mabilon, head of the Energy Transition department: coordination, participation in reflections on actions, financial follow-up
 - o Magali Guêné, management of energy consumption and expenditure, as part of the Energy Transition department; in charge of the "Community centre" accompanying action, participation in reflections on actions
 - o Dominique Renault, management of energy consumption and expenditure, as part of the Energy Transition department; participation in reflections on actions
 - o Theo Menassol, Heritage Department and Users: active participation in association support action (eco-responsibility charter)
 - o Nathalie Moyon (administrative support), European projects manager
 - o Anne Delauné, director of Municipal Buildings department: information, exchanges
 - o Other colleagues in the city, who work in other departments: participation in the launch event, facilitation.

- Grenoble Ecole de Management, our local partner (evaluation and support): Carine Sebi, Anne-Lorène Vernay, Marie-Charlotte Guetlein, Adélie Ranville

Figure 7: Organization chart extract that presents the operation of the energy transition service



Source: diagram made by the Energy Transition department

The "City of Tomorrow" city department, in partnership with Grenoble Ecole de Management and with the Local Energy and Climate Agency (ALEC) was initially responsible for the city's interest in being part of the consortium of European partners, with the aim of participating in the SONNET project. Subsequently, when the project started, it was agreed that it would be the Energy Transition department which would oversee carry out the actions of the City Lab, because of its skills in energy management, and its position in the organization of the city (municipal buildings' department).

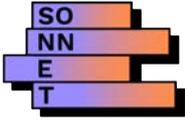
The diagnosis of needs, adapted to the identified problem, was carried out through informal exchanges between the "City of tomorrow" department and the Energy Transition department. In addition, due to the actions already carried out on energy sufficiency in municipal buildings (eco-friendly displays, support for energy management, monitoring of consumption and alerts, etc.), it was decided that the officers in charge of these actions could, within the framework of the SONNET project, test new means of intervention.

2.2 Agenda and goal(s) setting, ex-ante analysis

2.2.1 Goal choosing process

The main directions were decided through different methods, and in several successive and / or parallel stages:

- Taking into account the actions already carried out (feedback, see part 1.1); thanks to the skills acquired within the energy transition department



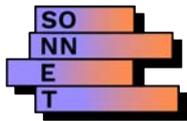
- During a meeting on January 14, 2020 with our director of municipal buildings. This meeting consisted in discussing together proposals for experiences that could be tested within the City Lab
- Via 3 co-construction workshops with participants of the City Lab launch event, in February 2020

2.2.2 Ex-ante analysis of enabling and impeding conditions (institutional, social, economic, individual) and identification of milestones and bottlenecks

2.2.2.1 Specific regulatory context regarding energy sufficiency

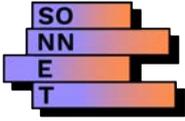
- Taking into account of the concept of energy sufficiency in French regulatory texts
 - o All sectors:
 - [Law of August 2015 relating to energy transition](#): *“the State, in coherence with local authorities and their groups and by mobilizing companies, associations and citizens, ensure, in particular, to: 1 ° Control energy demand and promote energy efficiency and sobriety; ...”*
 - [National low carbon strategy \(SNBC, April 2020\)](#) orientations (sufficiency, mobilization, etc.): *“promote a change in lifestyles and consumption towards greater energy sobriety, through information and awareness campaigns, by encouraging households to use equipment better or less, by limiting over-equipment, and by providing for support for users following the work, in order to reduce the risk of misuse and rebound effects”*
 - o [“Climate resilience law”](#) of July 2021 “accelerate the ecological transition in all areas of our daily lives”(Use; Produce and work; Move; Housing; To eat; Strengthen judicial protection of the environment)
 - o Buildings: Decree for reducing consumption in existing tertiary buildings; 2020 environmental law for new buildings, taking into account the carbon footprint and the life of the structure (consumption)
- [New European climate law](#): recommendations to Member States whose actions are incompatible with the objective of climate neutrality, and they will have the obligation to follow up or justify their inaction?

On the subjects of energy sufficiency (ES) and eco-responsibility (ER), existing regulatory texts focus on encouraging and promoting awareness and acculturation of users and residents. With recent texts, a positive evolution can be seen with the integration of proof of ways to achieve the objectives and with new measures aimed in particular to guide / to regulate the consumption of goods and services. However, it is questionable how these measures will be implemented: control, deployment, follow-up

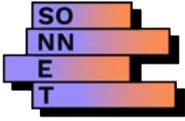


2.2.2.2 Enabling and impeding factors for our City Lab

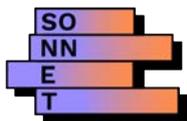
- **Problems we face / where we meet barriers:** (personal summary prepared by the City of Grenoble, based on the literature on sufficiency and eco-responsibility)
 - o General obstacles and problems posed by the environmental question
 - The subjects relating to the environmental situation, to the recommendations of the IPCC (food, transport, reduction of international trade, energy, preservation of natural spaces, agriculture, etc.) are often treated in a simplistic and emotional way in the media and by most official policies. These are complex issues, which take time to be dealt with properly. Thinking correctly, isn't that accepting to see the problem in its complexity?
 - Understanding of the greenhouse effect, climate change and the concept of an environmental footprint is not generally widespread.
 - The problems linked to human activity, the depletion of resources (energy, metals, etc.), the collapse of biodiversity and global warming are real (are the subject of a scientific consensus) but are the subject of a material disclaimer. These problems call into question the social gains, certain "freedoms", even democracy. They are sometimes considered as science fiction, and those who warn about these questions are seen as lesson-givers, totalitarians. The recommendations which consist in reducing trade, relocating activities (therefore consequently to a form of protectionism) are opposed to the "dominant neoliberal ideology" which is to pacify the world with free and undistorted trade.
 - The policies generally used to tackle an environmental nuisance are to subsidize (the "good behavior") and to tax (problematic behaviour).
 - What is done much less: regulate (prohibit, standardize, oblige).
 - Problem: We encourage supposedly good consumption without sufficiently penalizing / preventing the problematic one, this does not guarantee a relevant overall result (if the goal was to reduce the nuisance)
 - Individuals, consumers, for the most part consider the fulfilment of their desires to be more important than the common good. This is encouraged by marketing, the media, consumerism, policies that play on these desires to get elected, ...
 - Individuals do not want to be affected in their consumption, even if a French person who earns a minimum wage is very much more privileged than the majority (oppressor because of his wealth?).
 - Accepting the idea of a constrained world is indirectly accepting that our standard of living may decline.
 - The lack of responsibility for environmental problems is very strong, thanks in particular to inexpensive energy: we learn to delegate thanks to our "tertiary" skills, we do not know how to build, ensure our food autonomy. In buildings, offices, this is also the case: "someone takes care of it", "I have the right to my comfort".



- The disconnection is almost total about physical realities thanks to machines and technology; egoism, narcissism, feeling of power reinforced by digital tools (smartphones, etc.),
- Cultural issues:
 - The concept of energy sufficiency (sufficiency means: I deliberately use fewer services, and therefore it takes less energy to provide them to me) challenges the model of economic growth. There is also a question of social justice also linked to energy consumption. How to distribute energy more equitably, knowing that some may overconsume while others do not have access to the subsistence minimum?
 - Indeed, this concept, which by definition clashes with that of economic growth, which involves dealing with distributive issues (or even social justice), is not the subject of a common narrative, of a shared discourse that would encourage everyone to contribute to (make an effort to) reduce water and energy consumption. The language elements used recently are: "support change", "encourage energy savings"
 - Importance of dealing with the distributive question: if we reduce consumption, who will be able to continue consuming so much? Who will have to reduce their consumption?
 - Frugality, asceticism are often seen as a regression
- Criticism of eco-gestures is legitimate (greenwashing, response to political inaction), even if eco-friendly actions, and as a consequence individualized support, can have a direct or indirect impact on:
 - our entourage (social norms): social norms (injunctive: what we should do, descriptive: what people do), central in our decisions; influence of social groups to which one belongs → contagion effect, social tipping points
 - our own political commitment
 - the legitimacy of climate policies
- Problems posed by energy sufficiency, in particular for public buildings:
 - Most of the buildings are old, have poor energy efficiency and the financial means available to the community are insufficient to be able to carry out sufficient thermal renovations and achieve the announced objectives of reducing energy consumption, all other things being equal (number of buildings, surfaces, level of public service, operating hours, etc.)
 - There are many maintenance-servicing problems, insulation defects, design and choice of equipment (lighting, water, heating, ventilation, etc.). These malfunctions constitute a major obstacle to accountability, user engagement in eco-responsible behavior; the conditions for the proper functioning of the equipment are not met.
 - The building is often considered as an available means (to work), a due service with specific comfort expectations, for which I do not feel responsible, which may be linked to the employer-employee relationship.
 - For agents, no impact of overconsumption on their service activity (not in their profession, no accountability)



- In general, users have no direct interest in saving energy (comfort VS effort): Users do not pay for consumption or overconsumption; For agents, no impact of overconsumption on their service activity (not in their profession, no accountability).
 - There is a great diversity of sensitivity of agents and users to eco-responsible behavior, energy savings, sorting of waste.
 - Users have energy-intensive habits of comfort in their daily uses related to heating and air conditioning at home, in their vehicle, in shops.
 - Knowledge of the energy consumption and expenditure of buildings, their environmental impact, user responsibilities for energy management, are not widespread.
 - Lack of accountability of management, of the various departments for the achievement of energy sufficiency objectives.
- Managerial issues: Lack of human resources / managerial portage: energy / environmental sufficiency is mainly treated by individualized support provided by specialists (environment and social sciences), which makes it possible to act on number of acculturated people pushing for managerial support and elected officials to a courageous policy. However, to act on the scale of the climate emergency, collective transformative action is essential: to go from 11t to 2 tCO₂e / inhabitant / year (carbon neutrality objective), it is considered that 2/3 of the effort must be done by collective action and 1/3 by individual actions (Source: [Carbone 4 "Faire sa part"](#)).



Summary of enabling and impeding factors for our City Lab

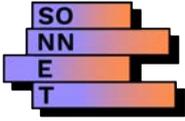
Table 2: Summary table of enabling and impeding factors for our City Lab

This summary was drawn up based on the skills and experiences of the city of Grenoble on energy efficiency and sufficiency:

	Enabling factors for our City Lab	Impeding factors for our City Lab
Economic	<ul style="list-style-type: none"> - eco-incentive (financial support from the City to associations) for associations - the funding obtained within the framework of the Sonnet project makes it possible to call on third-party skills (social psychology, design of graphic supports, etc.) 	<ul style="list-style-type: none"> - lack of investment in energy efficiency (renovation); even if this is changing, this subject is becoming a higher priority than in the past - lack of human resources, in terms of people working in this subject of energy sufficiency
Institutional	<ul style="list-style-type: none"> - the city can act independently (no action imposed by region e.g.) - coherence of past actions / consistency of the evolution of actions - the wish of the city to steer environmental objectives (political orientations) 	<ul style="list-style-type: none"> - poor energy efficiency of buildings make behavioural changes difficult - some buildings (especially schools) have been closed during 2020 because of Covid19 - the health context which puts this subject of energy sufficiency, and in general that of ecological transition "in the background"
Cultural	Ideas are overall well received by open-minded and favourable environment	<ul style="list-style-type: none"> - often individual responsibility for energy sufficiency not recognized - heterogeneity knowledge about energy, sustainability; difficult to adapt communication - energy sufficiency is generally considered as one subject among others (not a priority)
Individual	a few people involved in the administration who can help "relay" to other departments and users of buildings	<ul style="list-style-type: none"> - In general, users have no direct interest in saving energy (comfort VS effort) - Great diversity of sensitivity of agents and users to energy savings and eco-responsible behaviour
Social	<ul style="list-style-type: none"> - "Green" DNA of the city - Many associations, historically rich social environment 	The lack of responsibility for environmental problems is very strong; thanks in particular to inexpensive energy

- **How do we deal with these factors:**

- o By trying different approaches, with help from social psychology (process of behavior change)
- o By identifying and empowering relay persons
- o By following-up and intensifying ongoing actions



- **But (bottlenecks – vigilant point):**

- o We appeal more and more to the unconscious (nudges) so as not to offend anyone
- o The Energy transition service acts alone to carry out these actions. To change this fact, we could bet on:
 - the empowerment of other actors
 - try to convince other departments that they must help us carry out these actions
 - the wish of the city to steer environmental objectives: opportunity to empower people on energy sufficiency

2.3 Experimenting

2.3.1 Opening event – launch event

The launch event took place on February 18, 2020 from 9 a.m. to 12:30 p.m. at the association house in Grenoble (municipal building)

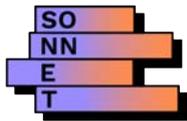
Presentation time objectives (52 participants)

- to make the participants aware of the SONNET program and the involvement of the City of Grenoble ; Mr. Vincent Fristot, deputy mayor at Town Planning, Housing and Energy Transition, was present for the launch event, and made an introductory speech.
- to share the findings, in particular around environmental and energy issues, that prompt us to act in favour of energy sufficiency, and more particularly in public buildings (the subject of the Grenoble City Lab)
- to give keys to understanding and to inspire collective action to find and implement solutions, via several feedbacks from experience in the field of support for energy management; also via social psychology and cognitive psychology, to try to understand "why do people do what they do?" (theories of decision, conditioning, behavior, etc.)

Figure 8: Photos of the launch event presentation time



Source: photos taken by the energy transition service



Workshops / co-construction time (around 40 participants)

The co-construction times took place during 3 workshops with the participants: The 1st workshop focused on actions for schools, the 2nd on associations, the 3rd on administrative buildings.

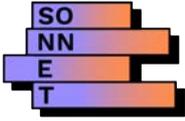
The objectives of each workshop were (taking into account the calendar, the resources, the context) to propose one or more ideas of action(s) aimed at energy sufficiency (to be tested during the "City Lab"), and to review the idea proposed by the city.

There were many actions proposed by participants during those workshops:

- Associative buildings:
 - o Strengthen support for people who educate users: provide the means to support change; sociological approach to human behavior
 - o Offer personalized awareness-raising to all categories of associations, taking into account the different activities and building functions
 - o Energy sufficiency contract: integration of energy sufficiency and eco-responsibility in the contracting of the provision of buildings
- Administrative buildings:
 - o Observe the practices, the uses of a building to understand what motivates the practices
 - o Organize a game to encourage people to adopt good habits when entering the building (building that will open in late 2020 or early 2021, which will bring together various services)
 - o Spread eco-gestures across a service
 - o Encourage online / remote meetings
- Schools:
 - o Propose a "global" support approach: information, awareness, empowerment, co-construction, promotion, concrete actions (maintenance, heating, lighting)
 - o Empower each user / each group of users so that they act or help other users to act (give each group its place as an actor, make known what is done, listen to feedback from the field)

Besides, workshop participants made many interesting comments and suggestions on the ideas proposed by the city. Here are the 3 actions (one for each target) which were proposed by the city, and which were debated with the participants

- A- Associative buildings: "Energy sufficiency / responsible building management" kit for associations and/or Commitment charter, including awareness-raising tools (eco-gesture displays, specific displays, external supports), monitoring & measurement (thermometers, water flow measurement, etc.), summary of the occupant's responsibilities, template of action plan and consumption monitoring table



- B- Administrative buildings: Specific action on the Claudel building (grouping of services dispersed from summer 2021), for example via awareness sessions when entering the premises, permanence of the energy transition service during the first 3 months, regular interventions
- C- Schools: Based on an observation of city workers (maintenance and catering workers, nursery school specialists) practices, analysis of their interactions with energy uses, highlighting certain malfunctions (windows, lighting, kitchen equipment, etc.) and suggestions for improvements; co-construction of eco-gesture posters

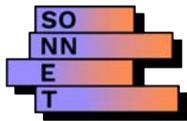
Subcontracting: Presentation of Xavier Brisbois, Doctor of Social Psychology, changes in behaviour: theory, process, brakes and levers.

Following the launch event, these actions (the participants' proposals and the actions previously proposed by the City), have been discussed with the departments concerned and the city general management, which allowed us to prioritize according to the context (availability constraints of the teams, social context, past difficulties) and to decide on the four actions implemented during the City Lab.

Figure 9: Photos of the launch event workshops

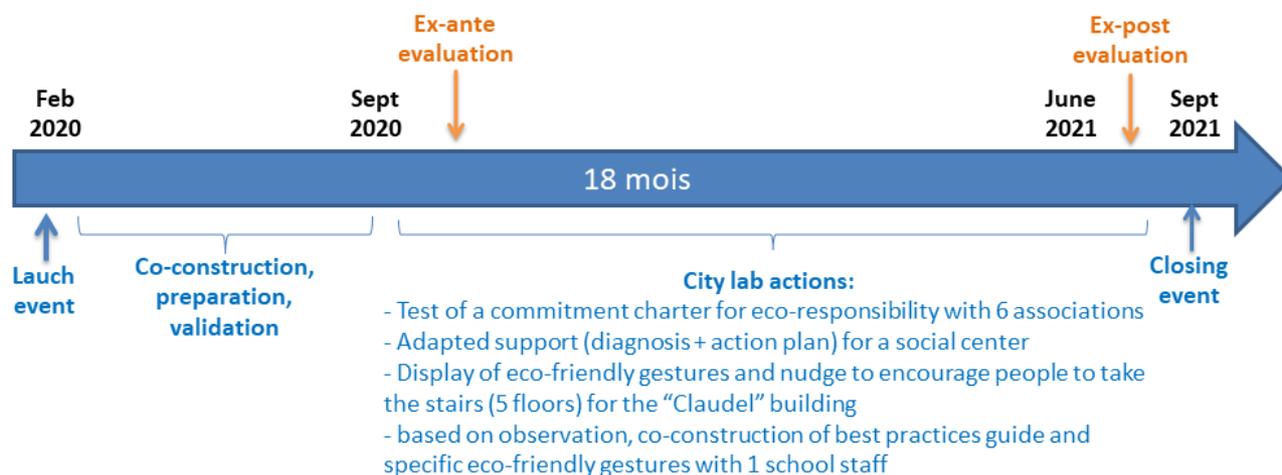


Source: photos taken by the energy transition service



2.3.2 Calendar, main stages of the City Lab

Figure 10: City Lab calendar



Source: diagram made by the Energy Transition department

Construction & definition of a support methodology / Process of experimentation

During December 2020, at the Energy Transition department, we worked at designing an "ideal", "complete" action to support energy sufficiency for the users of a building. This work made it possible to constitute a common methodological basis, the idea being that for each experiment set up, the main stages and objectives of this methodology are put in place and adapted to the specific context of the interventions.

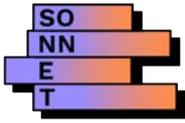


Figure 11: Common methodological basis for an energy sufficiency support with building users

→ objectives: to have a solid methodology, approved tools on which we can rely

Attempt to define an "ideal - complete" accompanying action for a building

- ✓ Clarify the challenges and objectives of the process
- ✓ Contact and identification of the interlocutor (s)
- ✓ Data collection
- ✓ Upstream diagnosis and assessment
- ✓ Co-construction of an action plan
- ✓ Monitoring of the implementation of the action plan
- ✓ Balance sheet, restitution

Continuously:
 -info / awareness
 -evaluation
 -taking into account the contributions of social psychology (behavioral changes): inhibiting the habit, providing reasons to act, facilitating the passage to the act

→ Adaptation to the context, co-constructed actions, without losing sight of the broader objective of generalization, dissemination

Source: diagram made by the Energy Transition department

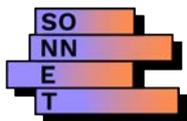
Summary table of actions carried out during the City Lab

Figure 12: For each "target", summary table of actions already implemented and City Lab actions

Targets	Already implemented before SONNET - continuous actions	SONNET Grenoble city proposal – "city lab" actions
Associations (occupying City buildings)	Energy diagnosis and coaching: 5 sites/season (average reduction of energy cons. -10 %)	<ul style="list-style-type: none"> • Test, with 6 associations, of an Association-City commitment charter for eco-responsibility, (in the context of the provision of buildings), with progressiveness in the possible commitment - objective: to propose a project generalization after the test phase
Social center ("multi-purpose" building)	Energy diagnosis and coaching: see above	<ul style="list-style-type: none"> • Adapted support (diagnosis + action plan) for a social center
Civil servants (administrative buildings)	Eco-gestures display + broadcasting; awareness sessions; technical and educational visits	<ul style="list-style-type: none"> • "Claudel" building (grouping of various services) display of eco-friendly gestures, nudge to encourage people to take the stairs (5 floors) ...
School users: agents, teaching staff and pupils	"Positive energy schools challenge" in 5 schools/year	<ul style="list-style-type: none"> • In 1 school, with specialized agents for maintenance, cleaning, catering / canteen, nursery school : observation-support (daily route analysis) ; co-construction of supports: best practices guide, specific eco-friendly gestures + empowerment: vigilance on malfunctions, force of proposals, relay to other users ...

Source: summary table made by the Energy Transition department

→ See below for the details of the actions carried out



2.3.3 Associations (occupying City buildings) – Test of an Association-City commitment charter for eco-responsibility

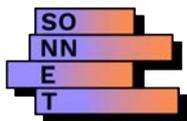
This action consisted in testing, with 6 associations, an Association-City commitment charter for eco-responsibility, (in the context of the provision of buildings), with progressiveness in the possible commitment - objective: to propose a project generalization after the test phase.

Key facts and figures about associations:

- About 300 associations benefit from the provision of premises on an exclusive basis + associations housed through a framework deliberation
- 400 premises distributed in 277 addresses, 82,000 m² made available / 650,000 m² total heritage
- Water and energy expenditure (associations): amount invoiced by the city of approximately € 86,000 for the year 2018, out of a total expenditure of € 950,000 (total public buildings: approximately 7,500,000 € in 2018)
- Management of fluids: cohabitation of different schemes (Total, partial free, full or partial re-invoicing, direct support)

Table 3: Main steps, calendar of the experiment (charter for eco-responsibility)

	3 sports associations	3 cultural associations
Put in contact with associations by other Departments	During December 2020	Between January and April 2021 to establish this contact, this delay being probably due to several reasons: organization of the department, difficulties related to Covid19, sensitivity of the agents)
1st meeting with associations	In February 2021	In May 2021
	Presentation of the charter; time for discussion on support needs; asks voluntary associations to commit to guidelines; definition of next steps + transmission of practice assessment questionnaires	
2 nd meeting with associations	In March 2021	In June 2021
	Dissemination of useful materials and resources; update on the progress of the choices of orientations and translation into actions (require discussions, internal associations deliberations); details on "deadline" for returning signed charters (with choice of orientations / actions) and timetable for developing action plans; identification of short and medium-term support needs; focus / information-awareness session on digital sufficiency (uses and equipment)	
Shared assessment and evaluation:	<ul style="list-style-type: none"> - August-September 2021: Preliminary assessment at the end of August among the buildings' departments. - Next steps: see below "planned follow up" 	



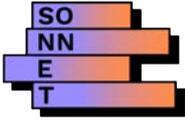
Description of the experiment and modalities of this test phase: In order to find associations for this test phase, a list of associations concerned by an upcoming renewal has been compiled (from the renewal schedule of the premises provision agreements). Then the thematic departments (Sports, Culture, Territorial Action) which are in charge of the relationship with the associations involved were contacted, in order to validate which associates we could offer this experiment, depending on the context, their motivation. ... The Sports Department, as well as the Cultural Affairs Department responded to us and put us in contact with six associations: three sports associations and three cultural associations.

Content of the charter:

- Page 1: objectives of the approach, commitment of the association (formalization and implementation of concrete actions), commitment of the City (provision of information, devices, tools, meetings, sharing, synthesis, animation)
- Page 2: 4 themes, 25 guidelines / actions. The principle being that a signatory association must select at least one guideline / action per theme, and implement it

Table 4: Themes and examples of guidelines / actions (charter for eco-responsibility)

Themes	Examples of guidelines / actions
Involvement of all members of the association: governance, awareness, promotion	<ul style="list-style-type: none"> - Register eco-citizenship (and / or the low-carbon transition) as one (of) value (s) of the association - Encourage members, members (+ artists, athletes ...), the public to know their carbon
Good building management and optimization of operating resources	<ul style="list-style-type: none"> - Control the use of water and save energy by adopting eco-friendly actions: lighting, heating, water, digital, electricity and IT - Be vigilant with the sufficiency of digital uses: attachments, video streams, IT-telephony, cloud...; Progressively dematerialize communication with members
Reduction of the environmental impact of purchases, waste and travel	<ul style="list-style-type: none"> - For purchases of goods and services, favour those with a moderate impact on the environment: low carbon footprint, local economy, reused, reconditioned products ... (recycling and reuse) - Join several associations for the purchase of heavy or infrequently used equipment (pooling of resources, group purchases)
Events, eco-responsible events	<ul style="list-style-type: none"> - For meals, favour vegetarian and/or vegan menus, local products (short circuit), seasonal, organic; limit the use of packaging, for products purchased as well as for meals served; limit food waste by redistributing uneaten food - For the reception of the public, encourage and / or facilitate access via public transport and soft-active mobility, for example by defining the location of the event according to the service possibilities, by facilitating access to the event via public transport and soft-active modes, in collaboration with local stakeholders, by informing / encouraging the public: communication, registration of access possibilities via public transport and soft-active modes, organization of bicycle rentals, reduced prices, etc. - Provide reusable glasses and eco-event sorting bins



More distant goal: to propose a project generalization after the test phase

This approach has been co-constructed by considering the opinions of various stakeholders. Indeed, the content of the charter (orientations, actions, themes) has been inspired by several existing approaches; and has been submitted for the opinion of associations and city colleagues during several common working times: discussion during the City Lab launch event, co-construction meeting with 3 voluntary associations in August 2020, during a consultation phase by email with city colleagues in June 2021.

Preparation and validation phases: Following the launch event of February 2020, it was agreed, within the municipal real estate department (and a brief exchange with our elected representative) that this approach would be tested with a few associations. This test phase being considered as a prior to starting a reflection on the feasibility of generalization to all associations using city buildings.

Specific goals, expected results:

- The main objective of this charter is to help user associations to structure their eco-responsibility approach by relying on the mechanism for making municipal premises available.
- Principles:
 - Associative commitment: in a minimum orientation by theme and translation into actions
 - City commitment: provision of resources (useful links, tools, guides, contacts), workshops and meetings (collective times), annual monitoring of action commitments and assistance / improvement proposals
 - Duration of engagement: a few months for the test phase with 6 associations (until June 2021), 3 years for the generalization project (because this is the duration of the contract of the provision of buildings)

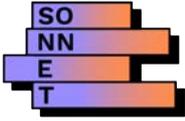
Other actions in progress:

- Energy diagnosis and coaching: 5 sites/season (average reduction of energy cons. -10 %)
→ See 1.1

People involved:

- one or two representatives for each association
- two colleagues from the Culture department, one colleague from the Sport Department (departments that manage the relationship of the city to associations (linking, facilitation of trade))
- In charge of the experiment, led by the municipal real estate department: Fabien Dupré + Théo Ménassol (Municipal Buildings Department)
- Hierarchical monitoring and validation: Franck Mabilon (head of the Energy Transition Department), Anne Delauné (director of Municipal Buildings Department)

Monitoring indicators: experiment with six associations, over 330 in total



Adjustments (particularly related to the "Covid-19" health situation): in 2020, we had to manage some additional delays to be able to plan meetings with associations, most of which had urgent difficulties to manage due to the health crisis.

Results, lessons learned: We have seen a strong interest in this approach on the part of the accompanied associations (interest for the actions of the charter and for explanations on the implementation of the actions). However, we have encountered the following difficulties: some associations have highlighted the low energy quality of the buildings used, others have asked to what the city could do to help them carry out certain actions (financial support for actions requiring an investment, etc.)

Planned follow-up: Internally (hierarchy, other departments), presentation of the project and needs for generalization:

- To define what future stages will be (deployment to other associations, mobilizing human resources for monitoring, communication and decision-making), we will take into account the following criteria:
 - Compatibility and justifiability of time spent with the results achieved
 - Identified support requirements for the associations to translate the guidelines into concrete actions
 - Role of management departments, in charge of the relationship with associations
 - Brakes, difficulties encountered
- Validation of the content (orientations, commitments) and alignment with other initiatives carried out by the City:
 - Generalization of an eco-event approach
 - Eco-responsibility in various political orientations: culture, sports, buildings, supplies, food.
 - European Green Capital 2022: opportunity to mobilize associations because it is a challenge that is part of the objectives of "[Grenoble European Green Capital 2022](#)"
- Proposed next steps:
 - posting of the guidelines table with "what the city does", contacts and feedback from associations
 - valuation of the commitment of associations on the online directory of associations
- Proposals to meet the objectives of this approach: scope, joint support, framework deliberation, animation-monitoring, mobilization of human resources, training, etc.
→ it is expected that this project will be presented in various decision-making bodies between September and December 2021

Illustrations:

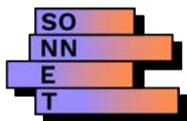


Figure 13: Example of a completed charter, in French (made anonymous)



Charte d'engagement commun Ville-associations pour la sobriété énergétique et le respect de l'environnement

La Ville de Grenoble s'est engagée, à travers sa politique air-énergie-climat, à lutter contre le dérèglement climatique et à réduire sa dépendance à l'énergie. Que cela soit au niveau individuel, associatif, institutionnel, économique, nous pouvons tous agir pour contribuer à la préservation de l'environnement.*

Phase test – expérimentation

Objectifs : La présente charte a pour objectifs :

- d'inciter les utilisateurs des bâtiments municipaux à la sobriété énergétique,
- d'encourager les associations à la maîtrise de leur empreinte carbone et de les accompagner dans leur transition bas-carbone,
- de partager une culture commune « bas-carbone », de l'« éco-citoyenneté », via la connaissance des outils et dispositifs existants sur le territoire et/ou libres d'accès.

Durée de l'engagement : à compter de la signature, jusqu'au 30 juin 2021 ; renouvelable si accord de la Ville et de l'(les)association(s)

Fréquence de suivi : mensuel (en cours de définition)

Via l'engagement dans cette charte, l'(les) association(s) signataire(s) s'engage(nt)

- à mettre en œuvre des actions concrètes en cohérence avec les engagements pris en page 2 de cette charte ;
- à formaliser ces actions dans un document permettant leur suivi (par exemple dans un plan d'actions).

La Ville de Grenoble proposera à l'(aux) association(s) signataire(s) :

- des informations sur les outils et dispositifs existants pouvant aider à la mise en œuvre des actions
- une (des) rencontre(s) de revue commune des actions mises en œuvre (orientations traduites en actions concrètes dans un plan d'actions)
- des temps de synthèse, de mise en commun des actions menées par les associations

La signature de cette charte se fera à l'occasion d'une rencontre Ville-association(s), ou dans les jours qui suivent cette rencontre. Cette rencontre permettra des échanges sur le contexte, le contenu de cette charte/ de ce contrat (thématiques, actions, outils et dispositifs) et l'animation de la démarche.

Date : 21 avril 2021

Signatures (nom-prénom, fonction et signature) 

Pour chacune des quatre thématiques, l'association doit sélectionner à minima une orientation / action qu'elle s'engage à mettre en œuvre :

Thématique	Orientations / Actions	Engagement « X »
Implication de l'ensemble des membres de l'association : gouvernance, sensibilisation, valorisation <i>Une orientation / action à cocher à minima</i>	Inscrire l'écocitoyenneté et/ou la transition bas carbone comme une(des) valeur(s) de l'association	X
	Organiser des temps d'échange entre les adhérents sur l'écocitoyenneté et l'empreinte carbone	
	Réaliser une évaluation de l'empreinte carbone de l'association (partielle ou complète), et élaborer un plan d'actions de réduction des émissions de gaz à effet de serre	
	Inciter les membres, les adhérents, le public à la connaissance de leur empreinte carbone ainsi qu'aux possibilités de la réduire via des comportements/gestes individuels	X
	Mener des actions de sensibilisation concrètes au cours de l'année (enjeux climat et énergie, biodiversité, éco-gestes, comment passer à l'action...)	
	Valoriser les actions réalisées dans l'année lors de l'Assemblée Générale	X
	Encourager chaque adhérent à avoir une pratique responsable et « écocitoyenne » et/ou instaurer un code de bonnes conduites de l'association	
Bonne gestion du bâtiment et optimisation des moyens de fonctionnement <i>Une orientation / action à cocher à minima</i>	Maîtriser l'utilisation de l'eau et faire des économies d'énergie en adoptant les éco-gestes : éclairage, chauffage, eau, numérique, électricité et informatique	X
	Limiter l'usage des équipements électriques annexes (réfrigérateurs, petit électroménager, chargeurs, ventilateurs, ...)	
	Prévenir les surconsommations d'énergie et d'eau, en apportant une vigilance particulière sur les éléments constitutifs du bâtiment qui pourraient les causer (étanchéité à l'air, eau chaude sanitaire, détection/temporisation, ventilation, chauffage, climatisation, équipements électriques, eau froide)	
	Privilégier les équipements « sobres » en cas de remplacement : mousseurs-aérateurs de type « éco » ; éclairage « basse consommation », de faible puissance...	
	Dématérialiser progressivement la communication auprès des adhérents, en étant vigilant à la sobriété des usages numériques	
	Rationaliser les impressions papier, utiliser des tirages recto/verso et du papier recyclé...	X
Réduction de l'impact sur l'environnement des achats, des déchets et des déplacements <i>Une orientation / action à cocher à minima</i>	Pour les achats de biens et services, privilégier ceux ayant un impact modéré sur l'environnement : empreinte carbone faible, circuits courts / économie locale, produits réutilisés, reconditionnés... (recyclage et réemploi)	X
	Se regrouper à plusieurs associations pour l'achat de matériels lourds ou peu souvent utilisés (mutualisation de moyens, achats groupés)	
	Privilégier une deuxième vie des matériaux usagers ; contacter des structures favorisant le recyclage ; confier les déchets électroniques à des acteurs locaux : ateliers de réparation, ressources...	
	Limiter la production de déchets et organiser le tri et la gestion responsable des déchets : poubelle verte, poubelle grise, déchets alimentaires, déchets spéciaux...	
Evénements, manifestations écoresponsables <i>Une orientation / action à cocher à minima</i>	Favoriser l'utilisation, pour les déplacements domicile-travail des salariés et bénévoles, ainsi que pour le public reçu, des modes de déplacements les moins carbonés / les moins polluants : doux-actifs (vélo, marche, roller...), transports en commun et véhicules les moins polluants	
	S'appuyer sur les démarches existantes pour faire de toute manifestation un éco-événement	
	Supprimer la viande des repas proposés et privilégier un approvisionnement en produits biologiques, de saison, en circuit court / locaux et limitant les emballages	
	Pour l'accueil des publics, être en lien étroit avec les acteurs locaux pour faciliter l'accès via les transports en commun ; encourager également les mobilités douces et les moins carbonées	
	Avoir recours systématiquement aux ressources pour la création et la fin de vie des décors et scénographies (cela participera au développement des réseaux de réserves scénographiques)	
	Mettre à disposition des verres réutilisables et des poubelles de tri éco-événement	X
Ne pas utiliser de groupe électrogène pour ses besoins électriques et favoriser le branchement au réseau électrique local		
Bannir la vaisselle jetable ainsi que la décoration à usage unique	X	



Ce projet a reçu un financement du programme de recherche et d'innovation Horizon 2020 de l'Union européenne dans le cadre de la convention de subvention N° 837498.

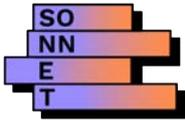


Figure 14: Extracts from the "eco-responsibility" and "eco-citizen actions" internet pages

(Available on the grenoble.fr site, these pages listing tools, resources, useful links which can help association structures to implement certain guidelines of the charter)

Gestes éco-citoyens

Vous trouverez dans cette rubrique quelques liens qui peuvent être utiles pour comprendre les enjeux et agir au quotidien.

— Les enjeux énergie / climat	— Mobilité - déplacements
— L’empreinte carbone : qu’est-ce-que c’est ?	— Éco-événements
— Comment évaluer et réduire son empreinte carbone ?	— Déchets
— Structures nationales, réseaux	— Numérique & Communication
— Structures et démarches territoriales (Région, Métro, Ville)	— Divers
	— Contact

➤ [Plateforme de lutte contre la précarité énergétique \(CARS de Grenoble\)](#)

➤ [Pôle AlpEn](#) : Pôle Territorial de Coopération Economique « filière maîtrise de l’énergie dans les logements »

➤ [Alpes Solidaires](#) : économie sociale et solidaire & entrepreneuriat social de l’agglomération grenobloise

➤ [Centre de ressources AURAE](#) (Auvergne Rhône-Alpes Énergie Environnement) ; [ORCAE](#) (Observatoire Régional Climat Air Énergie)

➤ [FNE](#) : France Nature Environnement Isère

➤ [MNEI](#) : Maison de la Nature et de l’Environnement de l’Isère

➤ [SERA](#) : Santé Environnement Auvergne Rhône Alpes

Mobilité - déplacements

➤ [Métromobilité](#) : toute la mobilité sur la Métropole Grenobloise

➤ [M’Covoit’Lignes+](#) : service de covoiturage (trajets quotidiens sur le Voironnais, le Grésivaudan et la métropole grenobloise)

➤ [Mov’ici](#) : covoiturage du quotidien en Auvergne Rhône-Alpes et plus localement sur le Département de l’Isère

➤ [Citiz Alpes Loire](#) : service d’autopartage

Grenoble.fr

Biennale des villes en transition

La Biennale Programme Les replays Invité-es Boîtes à outils Actualité Eco-responsabilité Archives Contact

Eco-responsabilité

Bienvenue dans cet espace d'informations ludiques de sensibilisation à l'éco-responsabilité.

Démarche d'événement éco-responsable

Nos gestes climat

Mon impact transport

Mes fruits et légumes de saison

Mon convertisseur CO2

Gestes éco-citoyens

Les défis de la transition

Source: <https://www.grenoble.fr/2495-eco-responsabilite.htm>

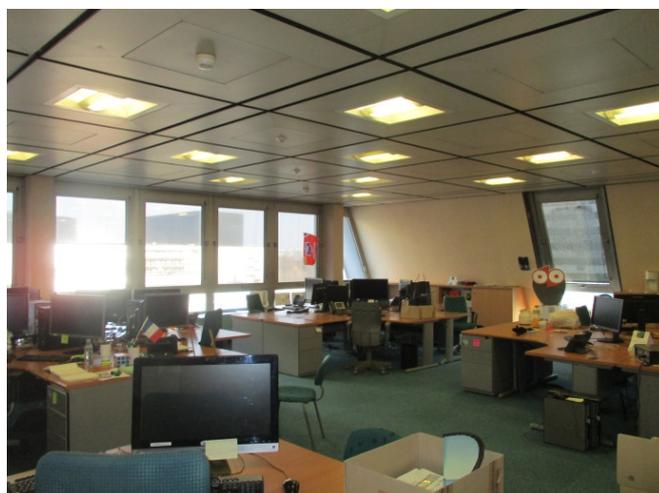
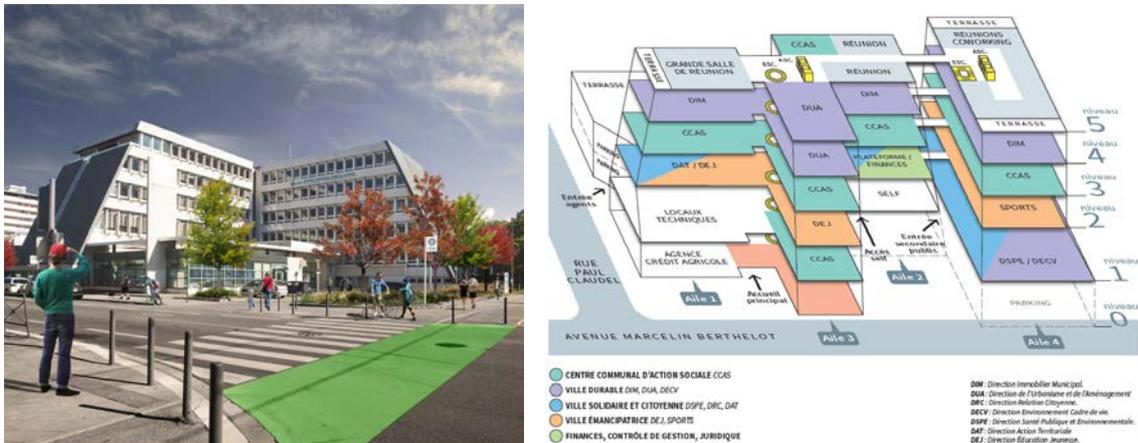
2.3.4 Civil servants (administrative buildings) – Claudel building “display”

This action consisted in proposing several display and awareness solutions for the “Claudel” building (grouping of various services): “eco-gesture” cards, “eco-gesture” posters, nudge to encourage people to take the stairs.

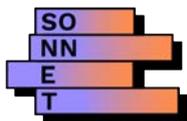
Key facts and figures about administrative buildings:

- 28 buildings: Hôtel de Ville, Mallifaud, Desaix, Alliés, Jacquard, Balzac, Auto garage, ... + Claudel from the end of April 2020
- Surface areas: 55,000 m² / total 650,000 m²
- The “Claudel” building: 490 agents, 12,000 m²; creation of 270 personal and professional bike spaces in the car park; collective spaces for four to twenty people; collective management of heating and lighting (detection + manual)

Figure 15: Various illustrations of the "Claudel" building



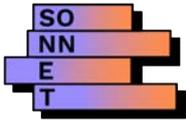
Sources: 3D illustrations and photos taken by the Energy Transition department



Preparation and validation phases: these actions were scheduled during various meetings within the municipal real estate department, as well as with the Skills Development department, in charge of scheduling the entry into the premises of agents, "control of uses" and building arrangements.

Table 5: Description of the experiment conducted on "Claudel" building

		Actions	
	Integration of "eco-gesture" "cards" into a set of thematic information cards for Claudel building officials; card game distributed on the intranet and made available in the building	Eco-gesture display in the common areas of the building: A2 posters placed in the corridors, at the exit of the stairs, near the "coffee break" areas ... (continued posting planned for the coming months)	Nudge and eco-gesture display: signs on the ground (arrows) and posters to raise awareness to encourage people to take the stairs (5 floors): instead of elevators
Specific goals, expected results	Seize the opportunity of this support, designed to facilitate entry into the premises for new occupants, to encourage building users to adopt eco-responsible behaviour as soon as they enter the premises	Strategically position posters "eco-gestures" in places of passage, break, to raise awareness and inform about eco-gestures: water, heating, air conditioning, lighting, printers, electrical devices, digital uses	Encourage users to take the stairs (5 floors) instead of elevators using various "nudge" type messages and displays: "environmental impact", "health", "moral standpoint of change", "mood - well-being"
Main steps, calendar	From February to April 2021: content proposals to the communication department then joint validation; printing and distribution of card games in the building	- April/May 2021: Posting of the first posters on the supports available: minimum three per floor - coming soon (as of September 2021): posting of posters in the remaining areas, for which the mounting brackets have not yet been installed	- From March to April 2021: tours of the building, identification of staircase-elevator passage areas, design of messages for posters, definition of areas for placing arrows on the ground - End of April-beginning of May: printing and installation of posters and arrows
People involved	- design and production: energy transition service (four agents), communication service (two agents), use control service (two agents); - target audience: all Claudel building staff (490 staff)	Installation: Fabien Dupré (pre-existing "eco-gestures" poster reused)	- coordination, proposal of messages, follow-up, poster installation: Fabien Dupré (+opinion of colleagues from the energy transition service) - graphic design of supports and installation: subcontracting
Subcontracting	Action not concerned	Action not concerned	- diagnosis, advice, support for the implementation: Diane Roubert, Positive Nudge - creation and realization of arrows and posters; printing and placing of arrows: Alexia Argento



Adjustments (particularly related to the "Covid-19" health situation):

- The opening of the building was delayed by almost a year for reasons of renovations and Covid-19 restrictions. It was initially scheduled for summer 2020 and the effective opening took place at the end of April 2021, which resulted in various adjustments to the schedule
- We also face other difficulties linked to the health context (Covid-19): fewer people on site, little opportunity to mobilize collectively on this subject

Results, lessons learned:

- Due to various operating problems (heating, ventilation and air-conditioning), it is difficult to be able to communicate coherently with users on the operation of the systems
- Because of the various emergencies on the fitting out of the building, it was difficult to mobilize the "usage control" service on the installation of fixing brackets for the posters (some could not be installed; this is scheduled for the start of the school year in September)
- Due to the absence of an individualized evaluation process, the impact of the actions carried out is difficult to measure; we hope this has a positive impact
- In general, we can see that the only users who make comments on these media make positive comments (that's good, visible, educational); but one may wonder what those who have a different opinion think

Figure 16: "Energy and water" and "eco-gesture" cards – Set of thematic information cards



Source: pages of a "card game" intended for employees of the Claudel building internal City of Grenoble documents)

Figure 17: A2 “eco-gesture” posters placed in the corridors

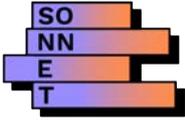


Source: digital document "eco-gesture poster" and photo of a poster placed in the building

Figure 18: Nudges to encourage people to take the stairs: arrows and posters



Source: photos taken by the Energy Transition department; graphic documents in digital version



Planned follow-up, from September 2021:

- Continuation of the installation of supports (posters), when all the locations identified will be equipped with fixed supports allowing the installation of posters;
- Enhancement of the staircase, for example with photos, plants to further encourage its use
- Installation and distribution of notices on heating and air conditioning operating controls, following adjustments and corrections made to the operation of HVAC systems during the summer
- Adjustment of the heating and air conditioning operating hours according to the office hours of use
- Instructional video explaining the operation of HVAC systems by technical agents; publication on the intranet
- Times of events and workshops with the agents on eco-gestures and good practices

2.3.5 Community centre (multi-purpose building) – Adapted support (diagnosis + action plan) for the community centre “Bois d’Artas”

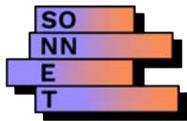
This action consists (action in progress) in supporting users of the community centre "Bois d'Artas" in the co-construction of an action plan aimed at the adoption of energy-saving practices, based on a diagnosis of the building and its uses and on the observation of practices.

Key facts and figures about the community centre “Bois d’Artas”:

- The community centre has a surface area of 448.40 m² and occupies part of the ground floor of the building
- Specific energy case for building: this is the most recent building housing a community centre (11 community centres in total)
- Used by 20 to 25 people for various activities: access to the toy library, distribution of solidarity baskets (Tuesday morning), yoga session for residents on Friday morning, school registration and school catering, resident tickets, Intergenerational activities, baby massage once per month, theater workshop on Monday morning, lunchtime catering for the elderly; activities organized by associations in the evening, activities offered by the inhabitants; collective garden

Preparation and validation phases:

- Via methodological group work “construction / definition of a support methodology”, conducted within the energy transition service (working group led by 4 agents)
- Via design of "tailor-made" support for the community centre by Magali
- Via making contact with one motivated community centre, making first appointments



Specific goals, expected results:

- Common knowledge of the building with those who work there, the agents who maintain and operate the equipment, the energy "experts"
- highlight the eco-friendly actions adapted to the building

Description of the experiment (in progress: phase 2 underway in September 2021):

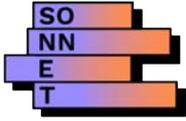
- Support focused on life in the building, in connection with energy and water uses
- Observations, complete inventory: occupancies, uses, energy, technical data on the functioning of the building (HVAC systems)
- Steps:
 1. Making contact: identification of one or more referees and first meeting
 2. A diagnosis of the use of energy in the building constructed from the following 3 phases:
 - Exchanges, meetings and visits on the context of the community centre (activities, agents, schedules, users, heating operators, energy sources, equipment using energy)
 - A phase of observation of uses
 - Collection of information on building energy → sharing and validation of this inventory to be planned
 3. Building an action plan for low-energy practices
 4. The implementation and monitoring of actions, with evaluation
 5. The balance sheet

People involved:

- The community centre users:
 - City agents of the Territorial Action Department
 - Members of associations carrying out activities and events within the community centre
 - Residents (occasional users)
- City agents of the services intervening on site (HVAC, upkeep and maintenance of premises, computer systems)
- Magali Guêné (Energy Transition Department), in charge of support

Approach co-constructed by taking into account the opinions of various stakeholders:

This support action has been inspired by support for associations (five sites per year), previously carried out by the energy transition service; adapted by Magali Guêné at the community centre.



Adjustments (particularly related to the "Covid-19" health situation):

- Health situation (covid-19) which leads to changes in the "usual" activity of the community centre and therefore a different use of energy and water
- Difficulties encountered in organizing meetings and mobilizing associations

Results, lessons learned (ongoing action)

- Community centre: for the moment no porting / clear order; projects initiated by "motivated" people, but no human resources identified...
- Support provided with voluntary centre; 2/11 community centres were motivated
- Very good reception, desire of most occupants to learn more, to be accompanied
- Limited human resources to carrying out this support

Planned follow-up:

- In the coming months, continuation of the support action of the "Bois d'Artas" community centre (phases 3, 4, 5)
- Capitalize on this experiment, to provide other support to be deployed for other community centres, halfway in "complete" personalized and "simplified / standardized" support
- Make this possibility known to other Community centres
- Identify relays within the Territorial Action Department; integration of the subject "sufficiency" in the programming of projects in the community centre (carried / proposed by them?)
- Arouse the interest of stakeholders (operators in particular) and reflect on who can do what next

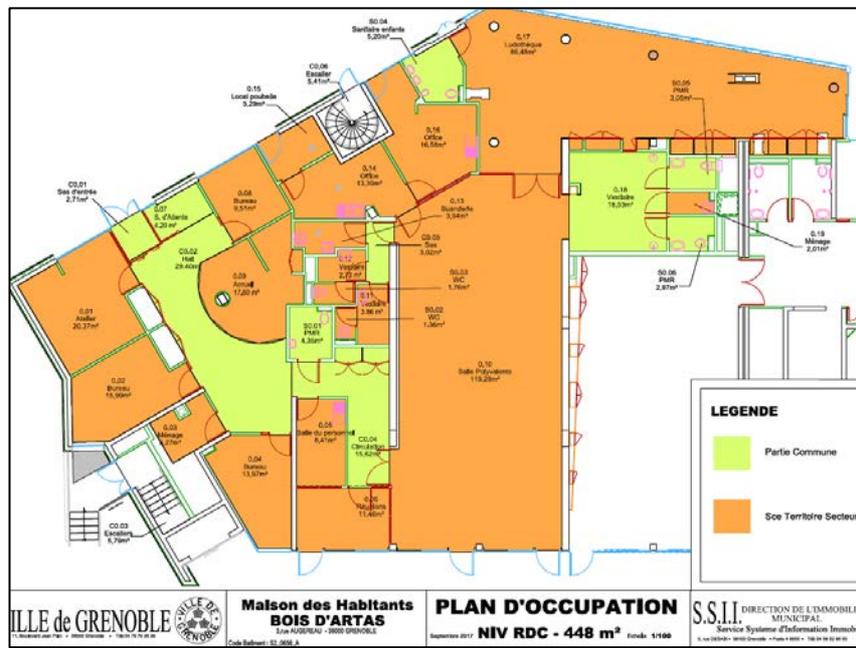
Illustrations:

Figure 19: Photo of the building (Community centre “Bois d’Artas” from the outside)

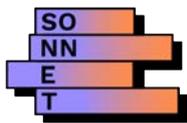


Source: photo taken by the Energy Transition department

Figure 20: Plan of the community centre “Bois d’Artas”



Source: digital plan (internal document of the City of Grenoble)



2.3.6 In the school “Elisée Chatin”, co-construction of posters with city staff (cleaning, catering and nursery school)

This action consisted of co-constructing information and awareness documents with specialized agents for maintenance, cleaning, catering / canteen, nursery school. This co-construction has been based on the observation and analysis of their daily routine. Information-awareness documents designed: an "eco-friendly" poster, a "lighting" poster, a "kitchen" poster, a best practices guide.

Key facts and figures about schools of the city of Grenoble (2019)

- 39 elementary schools + 42 nursery schools
- 12,860 pupils (schoolchildren)
- About 2,000 employees (teachers, support staff)
 - 190 staff members for kindergarten, 250 permanent maintenance and office staff + many non-permanent staff (temporary reinforcements)
 - 59 school principals, around 500 teachers
 - 78 referent animators and relays (coordinators of extracurricular in elementary and kindergarten) and 600 different animators (450 at the highest at noon)
- 116,000 m² (18% of the building heritage of the city of Grenoble)
- Energy and water expenditure € 1,290,000 (13% of the city's fluid expenditure), according to the monitoring of energy consumption and expenditure of the City (monitoring by building)
- Heterogeneity: the energy performance of buildings (some are recent, some have been recently renovated, some are little / not thermally insulated), size and occupancy rate (some schools were said to be denser than others in population)

Key facts and figures about “Elisée Chatin” school

- Surface area: 4,700 m² (2,862 m² for elementary)
- Construction: 1956
- Use: teaching (elementary and kindergarten)
- Renovation work carried out in 2018-2019: wall and roof insulation, replacement of windows, heat distribution, ventilation, lighting, accessibility

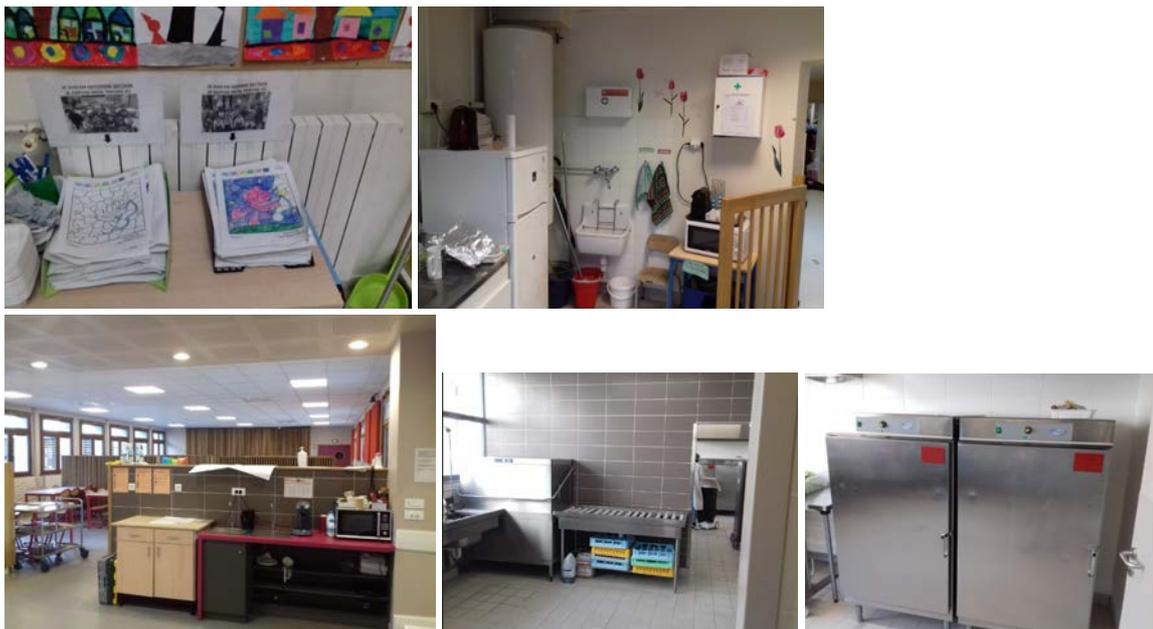
Figure 21: Elisée Chatin School before and after renovation works (2018-2019)



Source : photos taken from a document presenting the renovation work (internal document at the City of Grenoble)

Figure 22: Other illustrations of Elisée Chatin School

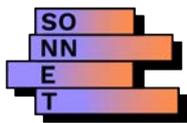
A heater covered by drawings and furniture, kitchenette of the "kindergarten school" part, "primary" school canteen, kitchen (dishwasher and oven)



Source: photos taken by the Energy Transition department

Preparation and validation phases:

- September / October 2020: preparatory meetings with the "youth education" department to present a proposal for intervention in some schools in the city
- During October / November 2020: meetings with three correspondents of school life to define in which schools it was possible to intervene, in particular in view of the health context, the atmosphere of the team...



Specific goals, expected results:

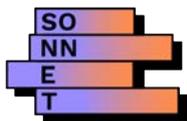
- Note the dysfunctions and contradictions in the practices; report these dysfunctions and try to resolve them with the relevant stakeholders
- Transmit "good practices", "eco-gestures" to the teams
- Develop the skills (knowledge, responsibility) of the team on its ability to be vigilant to dysfunctions, to be a force of proposal and relay of good practices to other users.

Description of the experiment

- January 2021: meeting to launch the action in the school with the small team (school life correspondent, maintenance-catering team leader, maintenance-catering agent, specialist nursery school agent); presentation of the action, explanations given on the work by a representative of the company that led them, joint visit of the school and discussion on energy practices leading to a first shared diagnosis (main problems), definition of the schedule for the following observation phases
- End of January / beginning of February 2021: 3 observation and discussion sessions with these agents during their activity in the school "class cleaning", "meal preparation", "nursery school" + practice assessment questionnaires sent to the team via the team leader
- From February to May 2021: transmission of alerts on certain dysfunctional uses (computer equipment not switched off in certain common areas, certain heaters not accessible and hidden in the classrooms by furniture, etc.), design of a first version of the supports "eco-gestures"
- May 2021: pre-restitution 1 with the small team; awareness of energy-climate issues and time for discussion on the proposed media (quantities, formats, etc.)
- May-June 2021: correction of the supports, design of the supports by a graphic designer ("subcontracting")
- End of June 2021: pre-restitution 2 with extended team (15 people); raising awareness of energy and climate issues presentation of the proposed media
- September 2021: installation of supports in the school, feedback with the full team (around 20 people), sharing and dissemination to other school users (principal, teachers, students, parents of students)

People involved:

- People directly involved in the accompaniment:
 - "Small team": school life correspondent, maintenance-catering team leader, maintenance-catering agent, specialist nursery school staff
 - Fabien Dupré, in charge of support



- Indirectly involved:
 - Youth education department (coordination, follow-up)
 - Other school users: teachers (non-employees of the City; employees of the Ministry of National Education), pupils
 - Colleagues from the Energy Transition Department (for advice, follow-up)

Long term goal:

- Try to influence a change in practices on a larger scale, namely in all schools, by: the distribution of materials (usable in other schools), the integration of certain eco-gestures in the intervention procedures of services (cleaning in particular), regular reminders
- Ensure that the Youth Education Department advances on this subject to pilot, lead, initiate environmental education and energy sufficiency actions in schools, by relying on resource persons; to transition from individual support to the generalization of practices

Approach co-constructed by considering the opinions of various stakeholders:

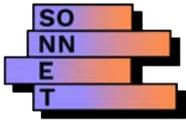
This support action for city employees working in a school was imagined and designed by the Energy Transition Department based on various feedback, contextual elements, and theoretical knowledge:

- Benefit of relying on city employees due to their daily interactions with energy consuming equipment as well as with school users
- Contributions of knowledge of social psychology: observe before acting, rely on daily paths, give reasons to change, show that it is possible

In addition, this support was subject to discussions during the "launch event", in order to receive various remarks and opinions from the participants, who encouraged us ("give each group its place as an actor", "listen to feedbacks from the field", "proposes a global support approach") in this action and did not allow to refine it. Finally, the precise modalities (calendar, small team, specific constraints, etc.) of the action carried out with the Elisée Chatin School were defined with the youth education department, as well as with the school life correspondent in charge of monitoring of this school.

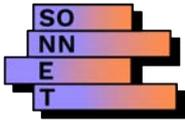
Adjustments (particularly related to the "Covid-19" health situation):

During discussions with the youth education department and with the three correspondents of school life, it was planned that this process could be carried out in three schools. Due to the health situation (school closures, small teams, etc.), it was only possible to carry out this process in one school. For the action carried out with the team from the Elisée Chatin School, the health situation did not cause major difficulties, because the teams were very receptive, and quickly involved themselves in the subject.



Results, lessons learned (ongoing action)

- Even for a recently renovated building, it is important to explain to users the interest of the work, the functioning of the systems and to support users in "good practices"
- Interest of individual support to take action (quote from a staff member "now we think of lights, windows ...")
- Impossibility of supporting all schools with existing human resources, without having relays within the youth education department
- Not taking into account the energy sufficiency in the cleaning procedures (heating on when the windows are open); need to rely on the Youth Education Department to integrate these practices into procedures
- The teachers are not necessarily exemplary: computer equipment not switched off, lights on. We can deduce that they should also be made aware and / or that they be given regular reminders on good energy practices



Detail of graphic documents designed - laying documents in the school scheduled for the start of the school year in September 2021

Figure 23: Eco-friendly gesture poster:

Eco-gestures on lighting, heating, ventilation, electrical appliances, printer, curtains, water, IT, digital and internet; energy consumption and expenditure of the Elisée Chatin School + explanations of the energy supply (renewable in particular); a version was also designed for schools in general (without details on consumption and expenditure), for distribution to other schools via the youth education department A2 format; 10 copies for kindergarten, the two canteens, the two rooms for elementary and kindergarten teachers, the entrance to each corridor / landing, south entrance



À l'école, chaque geste compte

La Ville de Grenoble s'est engagée, à travers sa politique air-énergie-climat*, à lutter contre le dérèglement climatique et à réduire sa dépendance à l'énergie. Pour les bâtiments munis d'eau, cela signifie, pour la période 2017-2030 : réduire les consommations d'énergie de 22 %, les émissions de gaz à effet de serre engendrées de 39 %, optimiser et limiter les consommations d'eau (objectif chiffré non défini). L'implication des utilisateurs et utilisatrices, par des comportements éco-responsables, est indispensable pour atteindre ces objectifs.

ÉCLAIRAGE

10 minutes d'éclairage inutile 3 fois par jour, c'est l'équivalent de 5 jours d'éclairage en continu au bout d'un an

- J'éteins la lumière dans les pièces non occupées : classes, préaux, bureaux...
- J'éteins la lumière si l'éclairage naturel est suffisant

CHAUFFAGE

Réduire la température d'1°C permet de réduire de 7% (en moyenne) la consommation de chauffage

- J'adapte ma tenue vestimentaire à la saison
- Je peux fermer les robinets des radiateurs situés dans les zones non utilisées (ou uniquement pour rangement...)
- Je fais attention à ne pas couvrir ou masquer les radiateurs. Cela gêne le fonctionnement et entraîne un risque d'échauffement voire de combustion !

2 TYPES DE ROBINETS	Réglage recommandé, fenêtres fermées	Pendant l'ouverture des fenêtres - aération
Robinet thermostatique : réglage possible de 1 à 5	Régler le robinet en position 3 (20-21°)	Fermer le robinet en position 0
Robinet « simple réglage », sans chiffres	Position « ouvert à fond » : 5 tours max. dans le sens inverse des aiguilles d'une montre	Fermer le robinet complètement : 5 tours max. dans le sens des aiguilles d'une montre

AÉRATION

L'aération, c'est radiateurs fermés pour éviter de gaspiller l'énergie !

- En temps « normal », 10 à 15 minutes d'aération par jour suffisent à renouveler l'air. C'est nécessaire seulement si il n'y a pas de système de ventilation actif (ex. : VMC double-flux.)
- En été, en cas de vague de chaleur ou canicule, aérer tôt le matin et tard le soir (ou la nuit)

APPAREILS ÉLECTRIQUES

- J'éteins tous les appareils que je n'utilise pas (bouilloire, cafetière...)
- Si je dispose d'une multiprise avec interrupteur, je l'utilise pour arrêter plusieurs appareils en même temps
- J'entretiens le réfrigérateur : dégivrage, dépoussiérage de la grille arrière, espace minimum avec le mur = 10 cm, réglage de la température 4-5°C, vérification de l'étanchéité du joint de porte ; je le débranche si il n'est pas utilisé

IMPRIMANTE

- J'imprime uniquement si c'est nécessaire, en recto-verso, en noir et blanc / mode brouillon quand c'est possible.
- Si je suis le dernier ou la dernière à partir, j'éteins l'imprimante

RIDEAUX - STORES

- En hiver : j'ouvre les stores dans la journée pour bénéficier des apports solaires ; je ferme les stores la nuit pour réduire les pertes de chaleur
- En été : quand c'est possible, je ferme les stores dans la journée pour réduire les apports solaires

INFORMATIQUE

Un ordinateur en veille utilise encore 20 à 40% de sa consommation en marche

- Pour une courte pause d'utilisation (moins de 30 minutes), je peux « mettre en veille » l'ordinateur. Pour tous les autres cas, j'éteins l'ordinateur en cliquant sur « Arrêter »
- J'éteins mon écran dès que je ne l'utilise pas
- Je peux régler les paramètres de mise en veille de l'ordinateur et réduire la luminosité de l'écran

EAU

- Je fais couler l'eau uniquement quand j'en ai besoin et je laisse le mitigeur en position froide après utilisation
- Si je constate une fuite, je la signale à l'unité contact de la direction de l'immobilier municipal

MESSAGERIE ET NAVIGATION INTERNET

Un courriel avec une pièce jointe représente une heure de consommation d'une ampoule électrique

- Je supprime mes anciens courriels et ne stocke que les fichiers nécessaires
- Pour envoyer un document, j'utilise un lien hypertexte plutôt que la fonction « Joindre un fichier »
- J'enregistre en favori les sites que je consulte fréquemment pour y accéder sans passer par une recherche internet

Pour tout problème de chauffage/climatisation, d'électricité, éclairage, eau
 → Unité contact de la DIM : contact.batiment@grenoble.fr
 En cas d'urgence uniquement : 04 76 76 39 99 (n° interne : 3 3999), lundi au vendredi - 7h30 à 16h30

Source: eco-friendly gesture poster produced by the Energy Transition department

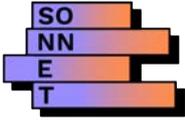


Figure 24: "Lighting" eco-friendly gesture poster

Turn off the light when leaving a room / when natural light is sufficient; A5 format; 35 copies for classes, courtyard, gymnasium, lunchroom, traffic areas without detection lighting systems

The poster features logos for Grenoble Air-Energie-Climat, Cit'ergie (European Energy Award), and the City of Grenoble. The main title is "À l'école, chaque geste compte". The text explains the city's commitment to fighting climate change and reducing energy consumption. It provides two key actions: turning off lights in unoccupied rooms and turning off lights when natural light is sufficient. A "BON À SAVOIR" section states that 10 minutes of unnecessary lighting 3 times a day is equivalent to 5 days of continuous lighting. Contact information for the municipal housing department is provided, along with a phone number for emergencies. The poster also includes the SO NET logo and the European Union flag.

GRENOBLE
AIR • ÉNERGIE • CLIMAT

Cit'ergie
European Energy Award

VILLE DE GRENOBLE

À l'école, chaque geste compte

La Ville de Grenoble s'est engagée, à travers sa politique air-énergie-climat, à lutter contre le dérèglement climatique et à réduire ses consommations d'énergie et ses émissions de gaz à effet de serre.

Nous pouvons toutes et tous agir, par des comportements écoresponsables, pour contribuer à la préservation de l'environnement.

Éclairage

J'éteins la lumière dans les **pièces non occupées** : classes, préaux, bureaux...

J'éteins la lumière si l'**éclairage naturel est suffisant**

BON À SAVOIR
10 minutes d'éclairage inutile 3 fois par jour, c'est l'équivalent de 5 jours d'éclairage en continu au bout d'un an

Pour tout problème de chauffage/climatisation, d'électricité, éclairage, eau
→ Unité contact de la direction de l'immobilier municipal : contact.batiment@grenoble.fr
En cas d'urgence uniquement : 04 76 76 39 99, lundi au vendredi - 7h30 à 16h30

Source: poster produced by the Energy Transition department

Figure 25: "Kitchen" eco-friendly gesture poster:

Only start specific kitchen equipment when necessary (ovens, dishwashers);
A4 format; one copy for kitchen



Source: poster produced by the Energy Transition department

Figure 26: Guide to good practices

Eco-actions, occupant and owner responsibilities, details on the 2018-2019 renovation, energy-climate issues, the city's air-energy-health-climate policy, information on the schools of the City of Grenoble, specific information on the Elisée Chatin School, definitions, useful links and resources, contacts A4 format; 20 pages (see extracts below); ten copies.

À l'école, chaque geste compte
Guide de bonnes pratiques : éco-gestes - pratiques écoresponsables
→ École Elisée Chatin

La Ville de Grenoble s'est engagée, à travers sa politique air-énergie-climat, à lutter contre le dérèglement climatique et à réduire ses consommations d'énergie et ses émissions de gaz à effet de serre. Nous pouvons toutes et tous agir, par des comportements écoresponsables, pour contribuer à la préservation de l'environnement.

1 Gestes éco-citoyens, éco-gestes : à l'école, chaque geste compte !

APPAREILS ÉLECTRIQUES

- J'éteins tous les appareils que je n'utilise pas (bouilloire, cafetière...)
- Si je dispose d'une multiprise avec interrupteur, je l'utilise pour arrêter plusieurs appareils en même temps
- J'entretiens le réfrigérateur : dégivrage, dépolluissage de la grille arrière, espace minimum avec le mur = 10 cm, réglage de la température 4-5°C, vérification de l'étanchéité du joint de porte ; je le débranche si il n'est pas utilisé

USAGES NUMÉRIQUES

Si internet était un pays, il serait le 3ème plus gros consommateur d'électricité au monde avec 1500 TWh par an, derrière la Chine et les États-Unis. Au total, le numérique consomme 10 à 15 % de l'électricité mondiale, soit l'équivalent de 100 réacteurs nucléaires. Et cette consommation double tous les 4 ans !

La plupart d'entre nous utilisons les appareils numériques (smartphone, tablettes, ordinateurs) pour nos usages personnels et/ou professionnels. Nous pouvons toutes et tous agir pour réduire l'impact environnemental de nos usages numériques.

- J'utilise un moteur de recherche « responsable », par exemple qui compense les émissions carbonées. C'est le cas de lilo ou du français Ecogène, qui financent des projets sociaux et environnementaux ou encore d'Ecocita, qui plante un arbre toutes les 7 secondes
- Je limite mon utilisation du streaming. Regarder un film en streaming nécessite la connexion avec un serveur pendant toute la durée du visionnage

L'impact énergétique du visionnage de la vidéo est environ 1.500 fois plus grand que la simple consommation électrique du smartphone lui-même

IMPRIMANTE

- J'imprime seulement quand c'est nécessaire en recto-verso, en noir et blanc et/ou mode brouillon quand c'est possible
- Si je suis le dernier ou la dernière à partir, j'éteins l'imprimante

INFORMATIQUE

- Pour une courte pause d'utilisation (moins de 30 minutes), je peux « mettre en veille » l'ordinateur. Pour tous les autres cas, j'éteins l'ordinateur en cliquant sur « Arrêter »
- J'éteins mon écran dès que je ne l'utilise pas.
- Je peux régler les paramètres de mise en veille de l'ordinateur et réduire la luminosité de l'écran

Un ordinateur en veille utilise encore 20 à 40% de sa consommation en marche

MESSAGERIE ET NAVIGATION INTERNET

- Je supprime mes anciens courriels et ne stocke que les fichiers nécessaires
- Pour envoyer un document, j'utilise un lien hypertexte plutôt que la fonction « joindre un fichier »
- J'enregistre en favori les sites que je consulte fréquemment pour y accéder sans passer par une recherche internet

Un courriel avec une pièce jointe représente une heure de consommation d'une ampoule électrique

Sur la plupart des sites de vidéos en streaming (comme YouTube), vous pouvez réduire la qualité de la vidéo, cela permet de faire des économies d'énergie

- Je ne garde sur le cloud que les fichiers importants

Le stockage de données sur Internet est en forte croissance, prenant peu à peu la forme d'un nuage de pollution. L'apparence infinie du cloud entraîne le dépôt de fichiers souvent lourds, qui nécessitent l'utilisation 34h/24 de serveurs pour les stocker.

3 Récapitulatif des travaux 2018-2019

Voici quelques éléments récapitulatifs sur les travaux de rénovation effectués en 2018-2019, ayant pour objet l'amélioration de l'efficacité énergétique, de la qualité d'air intérieur et du confort d'été. Ils comprennent une mise aux normes concernant l'accessibilité et la sécurité incendie. Le projet intègre une garantie de résultats dans le cadre d'un Contrat de Performance Énergétique (CPE), signé entre la SPL OSER et un groupement d'entreprises, pour une durée de 6 ans.

AVANT

Consommation et coûts énergétiques
Consommation d'énergie primaire : 502 kWh/m²/an
Coût énergétique à l'année : 68 176 € TTC
Émissions de CO₂ : 114 kg eq CO₂/m²

APRÈS

Consommation et coûts énergétiques
Consommation d'énergie primaire : 402 kWh/m²/an
Coût énergétique à l'année : 57 176 € TTC
Émissions de CO₂ : 114 kg eq CO₂/m²
Bât : 80% de réduction des consommations d'énergie primaire sur l'école élémentaire - Niveau BEC amélioré pour l'école élémentaire

« Seule l'école élémentaire est rénovée, mais la garantie de performance énergétique porte sur l'ensemble de groupe scolaire et la crèche maternelle. Le projet de rénovation énergétique s'accompagne d'une requalification architecturale, dans une démarche bioclimatique, modifiant les ouvertures et les orientations. Un des défis conducteurs de ce projet est le recours au bois. »

« L'émission de CO₂ évitée annuellement est de 53 tonnes ce qui correspond à 480 000 km parcourus par une voiture soit près de 9 700 000 km sur une durée de 20 ans (hypothèse de 110 km parcouru qui correspond au niveau moyen d'émission des véhicules neufs vendus en France en 2018 selon l'ADEME). »

DESRIPTIF DES ACTIONS DE RÉNOVATION

Mur	Isolation intérieure des circulations du rez-de-chaussée avec 14 cm de polystyrène (P+M+X/W), isolation extérieure pour le rez avec un ITE de 12cm en polystyrène (P+M+X/W) avec isolation des encadrements de baies
Plafond	Coilobas isolation par 10 cm de laine minérale (P+M+X/W)
Menuiserie	Remplacement des surfaces vitrées de circulation, mise en place de menuiserie bois-alu avec plus performante (6e entré 1,2 et 1,5 W/m².K)
Protection solaire	Bois, persiennes motorisées sur rose protection fixe en bois sur vit et brise soleil fixe sur les salles polyvalentes
Protections extérieures	Dépose, Conquête bois-alu et autres matériaux au sol, volets motorisés motorisés à l'est et à l'ouest.
Disposition de chemin	Reboute les moulures, démontage des aisses, remplacement de quelques radiateurs par des panneaux rayonnants en plâtre. Recouvrement des CTA au niveau de chauffage
Ventilation	Ventilation double flux des classes, bureaux, salles polyvalentes et restaurant via extractifs. Filtration F7 bruyant.
Éclairage	Remplacement de toutes les circulations avec mise en place d'éclairage LED.
Accessibilité	Célébration d'un ascenseur et de WC PMR

LES AGENT-ES DU SERVICE TRANSITION ÉNERGÉTIQUE (STE)

- assurent le bon fonctionnement, l'entretien et la maintenance des installations de chauffage, climatisation et ventilation
- suivent en continu les consommations des différents usages pour intervenir rapidement en cas d'anomalies
- réalisent les études et travaux sur les systèmes énergétiques

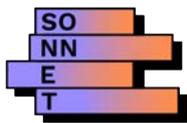
CONTACTS

Pour tout signalement de situations telles que décharges d'eau, justifiant une intervention des Services de la Ville, contacter l'unité contact de la direction de l'immobilier municipal : contact.immobilier@grenoble.fr ou le 04 78 16 20 00

Pour obtenir plus d'informations sur les éco-gestes et la prévention des consommations, contacter le service Transition Énergétique : energie.adm@grenoble.fr

À l'école, chaque geste compte - École Elisée Chatin

Source: guide made by the Energy Transition department



Planned follow-up:

- Discussions with the Youth Education Department on next steps: dissemination of materials to other schools, specific support in other schools, integration of "eco-gestures" reflexes in the cleaning procedures of the premises
- Definition of other "climate-energy" actions intended for the school environment (in particular in the perspective of ["Grenoble European Green Capital 2022"](#))

2.3.7 Separate summary and review meetings (instead of a single closing event)

Seeing as it was impossible to organize events with a large audience, we decided to organize separate presentations and summary meetings with the target audiences and the city departments involved: associations, schools, administrative buildings (building "Claudel").

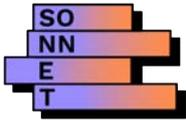
In addition, due to the diversity of actions carried out and the necessary personalization of action plans for each target, it seemed more relevant to us to prioritize the organization of these separate meetings over a more "general" event.

For associations, a meeting was held at the end of August 2021 within the Municipal Buildings Department. This meeting consisted of making a summary of the test phase of the association-city charter for eco-responsibility, of pre-defining the next stages of this project (presentation to elected officials, deployment to other associations, human resources). In addition, this meeting made it possible to plan other energy sufficiency actions targeting associations from the end of 2021: general information, visits to technical rooms (HVAC), support for energy savings when an association moves into a building. A summary meeting must also be scheduled soon with the associations that participated in this test phase.

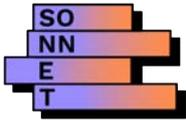
For the administrative buildings (in particular for the "Claudel" building), we organized a meeting with the Skills Development Department and the Communication Department at the beginning of September 2021. This meeting made it possible to summarize the actions carried out since the opening of the Claudel building (end of April 2021), to co-decide on the actions to be pursued and to prioritize the next actions to be implemented (display, animation, info-awareness of the teams)

For schools, the restitution of the action carried out with the Elisée Chatin School and the installation of information-awareness supports took place on 22/09/2021 with the supported team (agents specializing in maintenance, canteen, kindergarten), also in the presence of the school principal. An article in the internal newspaper (intended for city staff) is also planned to promote this process and the staff members who were involved.

Furthermore, a summary and review meeting was organized in early September 2021 with the Youth Education Department. This consisted in sharing the main results and lessons of actions carried out over the past few years with schools (in particular the action on the E. Chatin School during the City Lab) and in defining the next steps: information, training and support actions, integration of "good practices" related to energy into procedures.



Additionally, at the political level, a “resilience” working group was held in September 2021 with several elected representatives of the city, during which the energy sufficiency actions carried out during the City Lab were notably addressed and encouraged. Indeed, this type of action must be developed to improve the appropriation of eco-responsible practices, eco-responsibility awareness being one of the objectives of the air-energy-climate policy of the city of Grenoble.



3 EVALUATION

3.1 Overview of the evaluation process

The Grenoble City Lab contained four distinct target groups and specific actions have been deployed for each of these target groups. The target groups were the following:

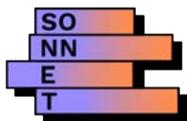
- Associations using public buildings (sports and cultural associations)
- Civil servants working in public administration buildings, in particular the “Claudel” building
- Staff working in public school buildings (teaching staff, pupils and other school agents, including e.g. maintenance and catering)
- Users of the city-owned multi-purpose building and community centre “Bois d’Artas”

Actions targeting the users of the city-owned multi-purpose building and community centre are still under development and cannot be evaluated, yet. The evaluation report thus focusses on the three remaining targets for which actions have been deployed.

For each of these three target groups, processes, (ongoing) actions and methods, as well as outcomes are evaluated. Processes are evaluated primarily through observation of procedures that were implemented to involve relevant parties and ensure transparent and participatory decision-making regarding the City Lab actions. The evaluation of actions and methods looks at how actions and interventions for each target group were selected and designed and whether the actions were implemented as planned. Comparing methods across target groups is not feasible as parties involved and objectives were vastly different across the three target groups. Finally, the outcomes of the City Lab are evaluated by looking at whether or not the short and medium-term goals for each target group were reached and what the chances are that long-term goals will be reached in the future (i.e. chances of scaling up successful actions). This also includes a brief discussion of the most important lessons learnt throughout the City Lab experience. Enabling and impeding factors are analysed where relevant.

To evaluate actions, methods and outcomes, different approaches were combined for each target group, taking into consideration the specific context for each of the three targets. For associations, the following are indicators: energy-sufficiency charter that was developed, the number of associations that were coached and the number of associations that signed and energy-sufficiency charter during the City Lab. In addition, the action and outcome evaluations consider feedback from associations collected through questionnaires and a semi-structured interview with the representative of the Sport Department at the city of Grenoble.

For the second target group, civil servants working in public administration buildings, the main evaluation indicator is the number and diversity of actions (e.g. nudges) that were implemented. They are complemented by a semi-structured interview with the project manager in charge of usage control and managerial innovation at the city of Grenoble.



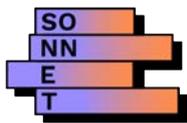
For the third target (staff working in public school buildings), the evaluation indicators are: the number and diversity of parties (e.g., teaching staff, maintenance staff) consulted and actively involved in the City Lab; the guide to good practices and other display solutions on eco-gestures. In addition, a semi-structured interview with the school life correspondent provides further insights, particularly regarding goal achievement and potential for scaling up actions in the future.

Table 6: Overview of the methods and indicators used across the three target groups.

Target group	Methods and indicators
Associations using public buildings (sports and cultural associations)	<ul style="list-style-type: none"> • Eco-responsibility charter • Number of associations coached • Number of associations that signed the eco-responsibility charter • Questionnaires addressed to associations • Semi-structured interview with the representative of the Sport and Culture Department at the city of Grenoble
Civil servants working in public administration buildings, in particular the “Claudel” building	<ul style="list-style-type: none"> • Number and diversity of actions (e.g. nudges) • Semi-structured interview with the project manager in charge of usage control and managerial innovation at the city of Grenoble
Staff working in public school buildings (teaching staff, pupils and other school agents, including e.g. maintenance and catering)	<ul style="list-style-type: none"> • Number and diversity of parties (e.g., teaching staff, maintenance staff) consulted, coached and actively involved • Guide to good practices and display solutions for eco-gestures • Semi-structured interview with the school life correspondent at the school Elise Chatin

The overarching goal of the Grenoble City Lab is to increase eco-responsibility and promote energy sufficiency across the target groups. Unfortunately, no available indicators allowed us to directly measure changes in eco-responsibility or energy sufficiency. For instance, it is not possible to compare energy consumption of target groups before, during, and after the City Lab actions as was planned at the beginning of the City Lab. Due to the Covid-19 pandemic, building usage patterns of all three target groups changed dramatically over the course of the Grenoble City Lab. Thus, even when information on energy consumption in buildings is available, differences over time are strongly influenced by these changes in usage patterns and cannot be linked back to the City Lab actions. Against this background, the evaluation methods implemented take an alternative approach and aim to capture the diversity of actions implemented, providing insights on how the City Lab actions were perceived by the target groups.

The evaluation report concludes with summary reflections regarding the City Lab.



3.2 Ongoing evaluation

3.2.1 Ongoing evaluation of the process

3.2.1.1 Identification and engagement of all relevant parties

The overarching goal of the Grenoble City Lab is to increase eco-responsibility and promote energy sufficiency among different users of municipal buildings. The Grenoble City Lab was led by the Energy Transition Department of the city of Grenoble. The department was best suited to implement the Grenoble City Lab, as it had already initiated actions on energy sufficiency in municipal building similar to some of the actions implemented during City Lab. Within the Energy Transition Department, Fabien Dupré, who had already overseen previous actions on energy sufficiency, was in charge of supervising the Grenoble City Lab.

For the Grenoble City Lab, four distinct target groups had been identified for actions to increase eco-responsibility and promote energy sufficiency:

- Associations using public buildings (sports and cultural associations)
- Civil servants working in public administration buildings, in particular the “Claudel” building
- Staff working in public school buildings (teaching staff, pupils and other school agents, including e.g. maintenance and catering)
- Users of the city-owned multi-purpose building and community centre “Bois d’Artas”

The target groups were selected based on experience from previous energy sufficiency actions, taking into consideration their specific needs. More precisely, the selection had been based on previous coaching experiences that identified interesting and urgent targets for the SONNET City Lab experiment. Objectives were to first test the effectiveness of different actions (e.g. eco-responsibility charter, nudges, information campaigns) on a subset of the targets, and then eventually deploy those actions to further municipal buildings / users after SONNET.

Voices and interests from relevant parties within all three target groups were acknowledged during both the Grenoble City Lab launch event in February 2020 and the following co-construction and consultation phases; these took place several times between Fabien Dupré and representatives from the target groups (i.e. representatives from associations, staff working in the “Claudel” building, staff working in public school buildings). These meetings took place online during Covid-19 lockdowns and in person whenever possible given the pandemic restrictions. These meetings were also a good opportunity for Fabien Dupré to deploy the questionnaires aimed at assessing the level of knowledge/implication regarding energy sufficiency actions of each target (prior to the City Lab actions). The table below provides a more detailed overview on the communication process implemented during these co-construction phases, for each target.

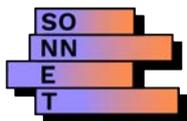


Table 7: Overview of targets and contacts for the Grenoble City Lab

Target	Contacts	Type of meetings
Associations	The Sports and Culture Department representative who also facilitated communication with Fabien Dupré	Emails, phone, videoconferences and several in-person meetings
Staff working at the school “Elise Chatin”	The school life correspondent, who facilitated communication with the staff on site (maintenance-catering-nursery) and Fabien Dupré	Several in-person meetings with staff members
Civil servants working in the public administration main building “Claudel”	The project manager in charge of usage control and managerial innovation at the city of Grenoble who is working within the Skills Evolution Department and is also responsible for managing the Claudel building	Two in-person meetings

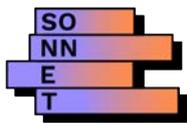
The Grenoble City Lab launch event gathered 52 participants and allowed interested parties to make proposals for action to be implemented within the Grenoble City Lab. For this purpose, the launch event included workshops for each target group, which were facilitated by members of the Energy Transition Department and researchers from Grenoble Ecole de Management (GEM). Proposals that emerged during the launch event were further discussed during the co-construction phases between the city of Grenoble and representatives from the target groups. The Grenoble City Lab was thus built from an iterative process that aimed at involving all relevant actors from the very beginning.

During each co-construction phase, Fabien Dupré, who oversaw the Grenoble City Lab, scheduled informal sessions to collect feedback on planned and ongoing actions from all relevant actors and to adjust the City Lab experiments when needed. Parties were always encouraged to express themselves freely during the whole process.

3.2.1.2 Identification of novelties and surprises

The launch event was held in February 2020, shortly before Covid-19 led to severe restrictions in France. The City Lab process following the launch event was considerably delayed due to these restrictions. Besides, the Covid-19 pandemic led to re-hierarchized priorities. Consequently, less importance was given to energy sufficiency actions on the city level as illustrated by this quote collected from an interview with the Sports Department’s city representative: “Why implement such actions when these buildings are empty and when departments have other emergencies [...]?”. Similarly, the different target groups were most likely less receptive to energy sufficiency actions as they could not or only partially use the municipal buildings or the target groups faced other emergencies (the case for city staff and school staff).

Before Covid-19, the city of Grenoble was interested in energy sufficiency actions for municipal buildings, but already lacked human resources to implement such actions. Covid-19 further complicated the process and led to another decrease in allocated resources (mainly human



resources). To make up for these constraints, the colleagues who helped Fabien Dupré in the City Lab actions were flexible and adjusted actions to match the difficult context. For instance, the actions planned in the schools were adapted (taking more time and reducing the number of targeted schools) but still took place. For administrative buildings and buildings used by associations, notably the evaluation of actions and outcomes was revised. Because of the lockdowns, these buildings were most often empty. Thus, it became obvious that it would not be possible to compare energy consumption in these buildings before, during, and after the City Lab actions as initially planned. It was thus decided that alternative evaluation methods would be implemented, aimed at capturing the diversity of actions done and providing insights on their accountability by users.

3.2.1.3 Identification of obstacles and shortcomings

“The intentions are good but the resources are limited” is a quote from one of the semi-structured interviews that reveals the gap between discourse and the reality regarding resources available for energy sufficiency actions.

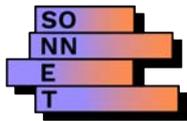
This gap is illustrated with the example of the eco-responsibility charter for associations, which was developed during the Grenoble City Lab: The charter is based on voluntary engagement/agreement by associations using municipal buildings. The initial aim of the Grenoble City Lab was to test the charter with a small group of associations and then extend it to a much larger number of associations. However, when the charter was proposed to the city elected official representative in charge of energy, we received an authorization to test this charter only with a limited number of associations. As a result, the experiment could not be scaled up and deployed to other associations (at least not within the timeframe of the SONNET project). Even obtaining permission for the testing phase took a long time (more than three months) because of the hierarchical inertia.

Overall, it was not possible to actively involve elected representatives or other departments in the process of co-constructing and building this charter. Hence, the experiment was only implemented at the civil servant level without active support by elected representatives or the city Deputy Director Generals (for sports, culture, territorial actions, etc.). Support of the latter would have been necessary for a large-scale roll-out of City Lab actions in general, and the eco-responsibility charter in particular.

Today, the successful implementation of energy sufficiency / eco-responsibility actions on a larger scale seems to depend on the good will or personal motivation of colleagues and higher-ups across different departments, and necessary support is difficult to obtain.

3.2.2 Ongoing evaluation of experiments

This section presents an evaluation of (ongoing) actions for the following three target groups: associations using public buildings, civil servants working in public administration buildings (in particular the “Claudel” building), and staff working in public school buildings (in particular the school “Elisée Chatin”). The actions targeting the users of the city-owned community centre “Bois d’Artas” are still under development and cannot be evaluated yet. The evaluation report thus focusses on the three remaining targets for which actions have been deployed.



Associations using public buildings

Actions and interventions for the Grenoble City Lab were chosen and designed based on past experiences with energy sufficiency actions by the Energy Transition Department. In particular, the Energy Transition Department had realised that an individual energy coaching / diagnosis for an association is very time-consuming, and allows for the coaching of only five associations per year (there are over 300 associations using municipal buildings in Grenoble).

Overall, one of the objectives of the Grenoble City Lab was to propose and implement an approach which could apply to all associations. This eco-responsibility charter is intended for use at this scale in the future. During the Grenoble City Lab, appropriate actions to reach this goal were implemented in the following ways: the charter was developed in cooperation with several associations and city departments and tested by six sports and cultural associations. The associations for this test phase were chosen because of their representatives' availabilities; the chosen associations are known to be proactive and have human resources available (volunteers or in some rare cases paid employees). Out of the six associations, five signed the charter. One association went further compared to the others and specified in the charter a very detailed description of its commitment and targets for the coming year. One association ultimately did not participate to the charter for lack of time (or lack of "interest" as stated by the Sports Department's representative in an interview).

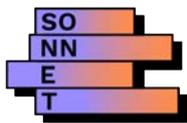
Throughout the process of the City Lab, associations were encouraged to communicate their needs and suggestions and co-construct the eco-responsibility charter with the city of Grenoble.

3.2.2.1 Civil servants working in public administration buildings, in particular the "Caudel" building

When several hundred city employees moved from various administrative buildings to the Claudel building (intended as a make-shift city hall), the main objective of the Grenoble City Lab was to set up new energy sufficiency actions aimed at the employees working in this building. The move to a new building was an excellent opportunity to implement these actions from the beginning, thus potentially creating energy sufficient routines (i.e. since employees moved to a new building, this presented an opportunity to encourage agents into new, more energy-sufficient routines without having to overcome at least some of the routines in place in the previous building).

To improve energy-sufficiency among civil servants, different information campaigns and nudges (e.g. floor displays to incentivize staff to use stairs instead of elevators, posters explaining the benefits of energy sufficiency) were put in place. Other actions to support goal-achievement consisted in reducing the number of electrical appliances (e.g. fridges and coffee machines) by installing them in central places like break rooms, automatic lighting and automatic air conditioning (AC).

These measures targeted all employees working in the Claudel building (~490 agents). While employees working in the Claudel building were not actively involved in the design of these measures, they will be invited to provide feedback on the measures soon.



3.2.2.2 Staff working in public school buildings

Due to Covid-19 restrictions, only one school, “Elisée Chatin”, participated in the Grenoble City Lab (the initial goal was three schools). Elisée Chatin School was selected for the following reasons:

- according to the youth education department, the school staff wanted explanations on the good ways to use the building, in particular with regard to the renovations (and the changes made to the heating, ventilation and lighting systems) carried out a few years ago
- the school staff has become available to participate in this action.

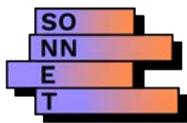
The targeted users were the staff working in the school building and using appliances (e.g. space heating, lights). The overall aim was to enable staff to identify, understand and implement eco-gestures. The City Lab actions were supported by the Youth Education Department who found that the Grenoble City Lab was a good way to involve its staff into the air-energy-climate city policy. The Grenoble City Lab intentionally did not include pupils and teachers in the experiment, as many actions have been implemented with them in the frame of the ‘positive energy school’¹ approach since 2013.

The objective of the City Lab was to follow an inclusive approach and form a partnership between Fabien Dupré for the city of Grenoble and the specialized agents for maintenance, cleaning, catering/canteen and nursery school. To do so, a group was formed with four employees (the “school life” correspondent, the maintenance-catering team leader, one maintenance-catering agent, and one specialist nursery school staff) who participated voluntarily in the Grenoble City Lab. This group worked – under the guidance of Fabien Dupré – on:

- observing employees’ routines in the different rooms (kitchen, canteen, classrooms, etc.) and their interactions with energy
- identifying bad habits and advice respective teams on good habits / eco-friendly gestures,
- empowering a small group of staff volunteers to issue warnings about malfunctions or good habits, and train them to relay recommendations to the whole school staff. These actions appear effective in identifying organizational or behavioral changes to improve energy sufficiency in schools (as well as potential barriers to the implementation of these changes).

Ultimately, the identification of possible changes (and barriers) results in the co-construction of the guide to good practices on energy sufficiency and specific displays solutions for eco-gestures. This guide and these display solutions were distributed / posted in September 2021 with the school staff.

¹ <https://www.alec-grenoble.org/6150-defi-ecoles-a-energie-positive.htm>



3.2.3 Methods evaluation

Each implemented action was adapted to the target and its context, as described in the previous sections (see more details in the summarising table in Appendix). Comparing methods across target groups is not feasible as parties involved and objectives were vastly different across the three target groups. We will thus move directly to evaluating the City Lab outcomes in the next section.

3.3 Outcomes evaluation

The overarching goal of the Grenoble City Lab is to increase eco-responsibility and promote energy sufficiency across the three target groups. Unfortunately, no available indicators allowed us to directly measure changes in eco-responsibility or energy sufficiency. For instance, it has not been possible to compare energy consumption of target groups before, during, and after the City Lab actions as we wanted to at the beginning of the City Lab. Due to the Covid-19 pandemic, building usage patterns of all three target groups changed significantly over the course of the Grenoble City Lab. Thus, even when information on energy consumption in buildings is available, differences over time are strongly influenced by these changes in usage patterns and cannot be linked back to the City Lab actions. Thereby, we used an alternative approach, consisting of capturing the diversity of actions tested and providing insights on how those actions were perceived by the target groups.

In short, our evaluation methods consisted in:

- Short questionnaires that Fabien Dupré addressed to the targeted users (association, civil servants, school staff) before implementing the City Lab to better design the City Lab experiment. Questionnaires were deployed in the form of structured interviews. Questions addressed participants' level of knowledge about eco-gestures, their level of engagement about the city's energy/climate strategy, their knowledge about the water and energy consumption of the building they are working in, their role and their colleagues' role regarding the energy management of their building; their energy efficiency behaviours at work (lighting, computers, space heating, etc.), and their willingness to participate in the City Lab actions.
- Semi-structured interviews with each of the three target contact points (see Table 2) and with Fabien Dupré conducted by GEM during July-September 2021 by phone. Each interview took about 45 minutes. The interview rubric included three main questions: 1) What were the actions implemented? 2) What is your feedback/analysis of the actions implemented? 3) What are your recommendations to strengthen the process or successfully scale-up the actions?

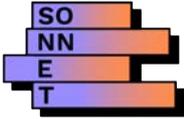


Figure 27: Extracts from the questionnaire



Projets SOBRIETE ENERGETIQUE et SONNET
Questionnaire « école » (avant-projet)



Traitement des données et confidentialité

- En répondant à ce questionnaire, j'accepte de participer au projet SONNET : projet européen d'innovation sociale pour la transition énergétique.
- Je comprends que, sauf autorisation explicite de ma part, les réponses fournies dans ce questionnaire seront gardées anonymes et confidentielles.
- Je comprends que les réponses fournies dans ce questionnaire pourront être utilisées pour la recherche et publiées sur le site Web SONNET (<https://sonnet-energy.eu/>), les blogs de recherche et les revues universitaires.
- Je comprends que ma participation est volontaire et que je peux arrêter de participer à tout moment.

Cochez la colonne qui correspond à votre réponse et notez un commentaire, une précision si vous le souhaitez

A. Je connais les éco-gestes, énergie et eau, pour les bâtiments publics de la Ville

1 – pas du tout d'accord	2 – plutôt pas d'accord	3 – sans opinion	4 – plutôt d'accord	5 – tout à fait d'accord
--------------------------	-------------------------	------------------	---------------------	--------------------------

.....

B. Je me sens concerné-e et impliqué-e dans les actions air-énergie-climat de la Ville

1 – pas du tout d'accord	2 – plutôt pas d'accord	3 – sans opinion	4 – plutôt d'accord	5 – tout à fait d'accord
--------------------------	-------------------------	------------------	---------------------	--------------------------

Peut être pas sur toute la ville mais j'essaie de me tenir informée

.....

C. Je connais les consommations d'énergie et d'eau du bâtiment

1 – pas du tout d'accord	2 – plutôt pas d'accord	3 – sans opinion	4 – plutôt d'accord	5 – tout à fait d'accord
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En tant que remplaçante, il n'est pas possible pour moi de me tenir au courant de ces détails précis, mais j'agis à mon niveau

.....



Ce projet a reçu un financement du programme de recherche et d'innovation Horizon 2020 de l'Union européenne dans le cadre de la convention de subvention N° 837498.



Projets SOBRIETE ENERGETIQUE et SONNET
Questionnaire « MDH » (avant-projet)



Traitement des données et confidentialité

- En répondant à ce questionnaire, j'accepte de participer au projet SONNET : projet européen d'innovation sociale pour la transition énergétique.
- Je comprends que, sauf autorisation explicite de ma part, les réponses fournies dans ce questionnaire seront gardées anonymes et confidentielles.
- Je comprends que les réponses fournies dans ce questionnaire pourront être utilisées pour la recherche et publiées sur le site Web SONNET (<https://sonnet-energy.eu/>), les blogs de recherche et les revues universitaires.
- Je comprends que ma participation est volontaire et que je peux arrêter de participer à tout moment.

MON UTILISATION DU BATIMENT :

Utilisation du bâtiment en tant que (agent-e, membre d'association, habitant-e...):

Nombre d'heures (environ) d'utilisation par semaine: *2h*

MES PRATIQUES ENERGETIQUES :

Cochez la colonne qui correspond à votre réponse et notez un commentaire si vous le souhaitez

A. Je connais les éco-gestes, énergie et eau, pour les bâtiments publics de la Ville

1 – pas du tout d'accord	2 – plutôt pas d'accord	3 – sans opinion	4 – plutôt d'accord	5 – tout à fait d'accord
--------------------------	-------------------------	------------------	---------------------	--------------------------

.....

B. Je me sens concerné-e et impliqué-e dans les actions air-énergie-climat de la Ville

1 – pas du tout d'accord	2 – plutôt pas d'accord	3 – sans opinion	4 – plutôt d'accord	5 – tout à fait d'accord
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Source: questionnaires (anonymized) used by the energy transition service to question users of the Elisée Chatin school and the Bois d'Artas community center

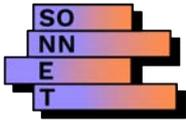
For associations using public buildings, the indicators used were the number of associations that were coached (six associations) and the number of associations that signed the eco-responsibility charter (five associations).

For the Claudel building city employees, the indicator was the diversity of actions that were tested during the City Lab: floor displays to incentivize staff to use stairs instead of elevators, display eco-gesture posters, reduction of the number of electrical appliances, automatic lighting, and automatic AC.

For Elisée Chatin School staff, the indicator was the diversity of parties consulted and actively involved in the City Lab.

3.3.1.1 Associations using public buildings

Despite the Covid-19 restrictions, many actions were successfully implemented with associations to meet the set goals; an eco-responsibility charter was elaborated with associations and signed by five associations.



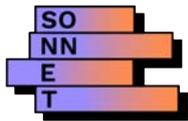
While a scaling up of the charter was not possible during the Grenoble City Lab (see description of obstacles in section 3.2.1.3) the long-term objective remains to obtain support by elected officials and roll-out the charter to all 300 associations using city-owned buildings. To achieve this aim, several lessons learnt during the Grenoble City Lab should be kept in mind, however.

Firstly, we notice from the semi-structured interview that the implementation of the charter asks for human resources that associations do not necessarily have. This could prevent the application of the charter to other associations in the future. Another important remark that came from our exchanges with the Sports Department representative concerns the motivation of targeted users (sports associations). Our interviewee pointed out that “users primarily want to do sport, not save energy”. Besides, energy bills are rather low for each association and / or some associations benefit from partial / total support of expenses by the city, which does not encourage saving energy. Yet, the charter focuses mainly on user behaviours. On the other hand, many of the municipal buildings - and this is a problematic point for the city of Grenoble in general - are old and energy-intensive and were never retrofitted / renovated. Even if associations are keen to make an effort to save energy, the interviewee points out that many are wondering what the city is doing to improve the quality of the buildings.

The development and take-up process of the charter with a small group of associations clearly revealed that to get all 300 associations involved, the city of Grenoble needs to prioritize this subject, to implement an agenda that is much more developed, to receive support at the political and management levels, and to involve more human resources. Otherwise, according to Fabien Dupré, “the risk is to continue to provide individual support - association by association or department by department - while never having the organizational and human resources to go to the next level [i.e. reach the aim of all 300 associations]”.

More precisely, during the evaluation we identified the following potential improvements regarding the implementation process (from interview with the Sports Departments’ representative):

- For the motivation of associations, it seems preferable that the engagement process be voluntary and not compulsory. On the other hand, systematization / eco-conditionality through a mandatory commitment and / or restrictions on association’s energy consumption could be an effective means of improving the accountability of energy sufficiency and eco-responsibility.
- For measures to be efficient, an annual follow-up with associations is not enough. There should be at least three annual meetings per association (at least at the beginning) to get a better knowledge on the issue, and a stronger involvement and motivation.
- The city could use more efficient communication channels like the “city sport office” that gathers and represents all sports associations at the city to promote eco-responsibility and energy efficiency actions.
- In addition to association members, one important target is also city staff managing or operating the buildings. The city of Grenoble could train / empower its building staff to better use and save energy in buildings used by associations (like what is implemented at the school Elisée Chatin in the Grenoble City Lab).



3.3.1.2 City employees working in public administration buildings, in particular the “Claudel” building

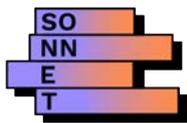
The Grenoble City Lab has tested a way of putting in place energy sufficient behaviours via nudges, when employees relocated to the “Claudel” building. While employees in the “Claudel” building were exposed to nudges and eco-gesture posters, the impact that these measures had on energy-sufficiency behaviours seems limited. Nudges and posters that focus mainly on energy sufficiency actions without considering a larger context are likely not enough to scale up results and achieve considerable reductions in energy consumption.

In particular, concerning the measures implemented to get people to take the stairs more frequently, the nudging seems to have had a very limited effect. Our interviewee observes that “most of the time, people take the lift instead of the stairs”. According to the interviewee, “we need to tell them [city employees in the Claudel building] a story [...] for instance some information should be only available in the stairs like the daily joke or the canteen menu”.

Similarly, the posters put in strategic areas of the building (to describe and educate city employees about eco-gestures) had limited effect. According to the interviewee this is because “people implement what they understand, and there is obviously a lack of knowledge. People need to be trained or at least informed”. Posters need to display very simple and attractive messages. “The messages need to be simple or direct, otherwise people don’t read it”. He added that it would also be important that actions are presented and explained to civil servants directly by an expert.

Another interviewee expressed, that institutions are increasingly involved in nudging, but wondered if “resources spent on nudging [can] take away from other stricter and more organizational actions?”. The interviewee suggested that this trend of nudging risks directing human resources away from more structural actions, even if “nudges” are considered less guilt inducing for the population and easier to implement because they are highly accepted. “What is the hierarchy of priorities? Do we want to tackle the problem of energy transition head on or do we want to go step by step?”. Fabien Dupré is the only civil servant dealing with energy sufficiency at the city of Grenoble, and he is not a nudge specialist. If the city gathered a team of five people, including one specialized in nudging and psychosocial or solution design, it would allow Fabien Dupré to focus on more structural actions. The interviewee also highlights that this type of action is pushed by certain elected representatives who are very committed to social innovation and for whom nudges are simply fashionable.

The interview further revealed that to scale up, the city of Grenoble should not limit communication to only energy sufficiency, but expand these actions to something more inclusive, like the city of Grenoble societal project; the latter initiative incorporates different issues: ecology, environment, air, inequalities, etc. “Energy sufficiency is not only about an energy bill reduction for the city, it is also about the well-being of the whole population, starting with its employees”, explained one interviewee. The city of Grenoble Skills Evolution Department, for instance, is working on a governance project for the Claudel building. The objective is to set up a user committee with civil servants who would decide on the organizations and awareness-raising activities to be carried out in the building. SONNET energy sufficiency actions could be integrated into this larger project.



3.3.1.3 Staff working in public school buildings

Grenoble City Lab actions were co-constructed and co-conducted with school staff members. For the moment, concrete outcomes are limited because measures were implemented recently, through a “guide to good practices” for school users (staff, teachers...) and eco-gesture specific display solutions. The plan is to deploy these solutions to other schools, with adjustments when necessary.

The City Lab experiment consisted in coaching staff to adopt eco-gestures and to co-construct display solutions. The feedback collected during the interview with the representative of the school employees (the school life correspondent), showed that the approach was well-perceived by the parties involved. In particular, the following points were mentioned:

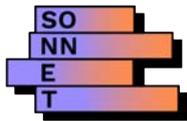
- The Grenoble City Lab highlighted key issues that civil servants never identified before, likewise “Who is managing and controlling the space heating boiler?”, or “Who’s in charge of turning off lighting in open spaces like the canteen?”
- It also pointed out issues identified by the staff but for which they had no solution, such as “Considering Covid and how it is mandatory to ventilate classrooms as much as possible, how to save the most heat (in winter)?”
- The activities are useful, not really time-consuming and should be applied (with school-specific tailoring as was done during the City Lab for the school Elisée Chatin) to all schools in the city of Grenoble.

The guide to good practices will allow staff teams (e.g. canteen staff) to discuss energy sufficiency with their staff teams and other school users. The expected outcomes are difficult to assess, but the main objective is to get spill-over effects through the different services/staff teams using the school building. This guide has been complemented by “display solutions for eco-gestures” that has been put in the school and geared towards all staff members.

3.4 Analytical reflection as a summary

SONNET conducts six transdisciplinary SIE City Labs to experiment with new forms of SIE and learn how multiple actors can harness the potential of SIE. The Grenoble City Lab - in line with the city’s overall willingness to engage its citizen in energy transition actions – studies the behaviours of users of buildings owned by the city of Grenoble. It intends to overcome the following obstacle: “how to incentivise private third parties to opt for eco-gestures in public buildings they occupy but don’t own?” The management of municipal buildings is operated by the city of Grenoble, which is willing to better involve, empower and increase awareness of building users regarding their energy consumption, in order to meet the city’s energy targets. With this in mind, the Grenoble City Lab focusses on engaging specific target groups (associations, public servants, school staff) in actions to increase energy sufficiency in public buildings.

Initially the methodology of this experiment was twofold. On the one hand, we planned to analyse and influence behaviours of the different target groups through workshops and information campaigns (i.e. via nudges). The communication process would be adapted

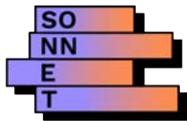


according to the target groups as presented above. On the other hand, we aimed at monitoring (before, during and after) the energy consumption of the targeted municipal buildings to assess the impact of the Grenoble City Lab. While the first objective was achieved, the second could not be implemented due to the Covid-19 situation.

In the case of associations, the Grenoble City Lab focussed on a co-construction approach between the city and associations using city-owned buildings. Within the City Lab, associations were actively involved in the development of a (voluntary) eco-responsibility charter. Concurrently, associations received coaching on eco-responsibility actions. Associations were thus made aware of the role they can play in saving energy and what concrete actions they can do. Through the charter, the chances that associations adhere to these actions were increased, without actually imposing them. City Lab results suggest that this collaborative approach (opposed to a top-down approach where actions are mandatory) can be successful. However, hard indicators (in particular actual energy savings) need to be evaluated in the future to draw definite conclusions.

For the second target – city employees working in public administration buildings – the Grenoble City Lab experimented with different nudges and display / awareness solutions (aimed at changing daily energy practices). Energy practices are typically part of a person's daily routine and are difficult to change, partially due to different behavioural biases (e.g., status quo bias, inertia, present bias). Nudges are designed to help overcome these biases. In the case of the Grenoble City Lab, the move to a new administration building was an opportune moment to implement these measures: civil servants were forced to change their daily routines due to the move. Encouraging changes in energy practices (through nudges and display solutions) at the same time can be expected to increase chances of success. At the same time, the simultaneous move and implementation of nudges and awareness posters makes the evaluation of the impact of the latter very difficult; even if some changes to energy practices are observed (the semi-structured interview suggests that such changes were limited albeit not completely absent), it is unclear if those changes are caused by the nudge / awareness posters or are a direct consequence of the move and would have been observed even in the absence of the nudge / awareness posters. Feedback from an interview with a city representative suggests that the nudges and awareness posters were well visible to civil servants working in the new building. In other terms, civil servants were successfully exposed to the nudges and awareness posters. On the other hand, the interviewee believes behavioural changes were small. The interviewee points out that both solutions could have been more successful if they had not only sought to change energy practices, but also behaviour in favour of health benefits. The takeaway message from the interview is that behavioural changes are more likely if messages are simple and if different aims – for example, decreasing energy consumption and improving health – are combined.

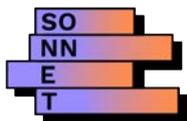
The third project is a study and experiment with the commitment and responsibility of the staff working in the public school “Elisée Chatin” (maintenance, cleaning, catering and teaching assistance) through awareness and training programmes. Within the City Lab, a small group of volunteers (representative for the staff in the school), were actively involved in the development of good practice guides. These practice guides were distributed within the school in September 2021. In addition, posters targeting different rooms or usages (e.g. kitchen, canteen, open classrooms, etc.) have been displayed in the buildings; these are designed to raise awareness of



working staff on eco-gestures. Within the school Elisée Chatin, the City Lab experiment was successful in getting different staff members involved. Deploying similar actions in other schools seems feasible. At the same time, scaling-up actions to different schools would require some school-specific tailoring to take into account the different school profiles and the varied roles of the staff teams. Lastly, as with the previous targets, hard indicators (in particular actual energy savings) need to be evaluated in the future, in order to draw definite conclusions.

To conclude, the main outcomes of the Grenoble City Lab are:

- The implementation of programmes for energy sufficiency in Grenoble (e.g. Positive energy schools). The city of Grenoble has been responsible for the majority of public services and urban planning issues locally since the 60's, which has enabled Grenoble to become a leader in sustainable programmes in Europe. The city is involved in several European and national programs on sustainable energy policy and urban development through the rational use of energy and increased use of renewable energies. The city of Grenoble is a leader in citizen involvement and the improvement of quality of life, which are concerns of "smart cities". The Grenoble City Lab contributed to this, especially through users' engagement.
- The qualitative observation and evaluation of the impact of awareness campaigns (e.g. nudging), the implementation of an engaging document (e.g. charter) and of the implementation of dedicated trainings/diagnosis through interviews/workshops;
- The encouragement of the deployment of these programs across the city. The experiment demonstrated the necessity and the importance of enacting these initiatives, starting with three target groups of the Grenoble City Lab, with a long-term generalization objective in mind. However, all interviewees mentioned the need to for tailored instructions in addition to information campaigns. The nudging information should only accompany tailored training or dedicated sessions organized by the Energy transition Department (in charge of disseminating energy sufficiency actions in public buildings and/or with different users). Seen as behaviours change over time, these coaching/training sessions should occur more than once a year. Such instruction would necessitate substantial human resources, which the city of Grenoble is not currently able to supply.

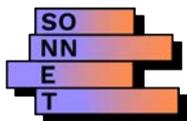


3.5 Self-evaluation made by the city of Grenoble

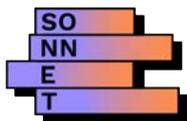
This Grenoble City Lab evaluation report prepared by Grenoble Ecole de Management has been based on the self-evaluation made by the city of Grenoble, summarised in the table and the text below.

Table 8: Self-evaluation by the city partner Grenoble

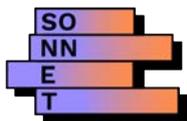
		Actions-experiments			
		Test of a charter for eco-responsibility with 6 associations	Claudel building "display" – nudge and eco-gesture	Adapted support for the community centre "Bois d'Artas"	Co-construction of eco-gesture supports with the school "Elisée Chatin"
Overview of the evaluation process (ongoing and outcomes)	Evaluation criteria-indicators	- Number of associations - Involvement in the air-energy-climate policy - Knowledge of eco-actions - Understanding / appropriation of the process - Support needs and expectations	/	- Number of people / departments involved - Involvement in the air-energy-climate policy - Knowledge of eco-actions	- Number of agents involved in the process - Involvement in the air-energy-climate policy - Knowledge of eco-actions - Understanding / appropriation of the process
	Evaluation methods	Questionnaires (ex-ante & ex-post) and interviews	/	Questionnaires (ex-ante & ex-post) and interviews	Questionnaires (ex-ante & ex-post) and interviews
Ongoing evaluation of the process	Engagement of all relevant parties	- Co-construction with other departments and several associations - Involvement of 1 or 2 representatives for each association	Involvement of the communication department, "nudging" specialists, the service in charge of controlling uses	Involvement of the various occupants (agents, associations, residents, etc.) and upkeep-maintenance teams	- Involvement of the youth education department in the validation of the process - Action carried out with City agents to be able to rely on the hierarchical link
	Novelties and surprises	Personal involvement of a colleague (user heritage department)	/	Spontaneous involvement of the building manager	Good appropriation of the subject by the supported agents
	Obstacles and shortcomings	Lack of involvement from some colleagues (other departments)	Emergencies on the fitting out of the building, HVAC operating problems...	Difficulties in devoting sufficient time to this action	Other priorities (covid-19), complicated human context for 2 other schools (support not carried out)
Ongoing evaluation of the experiment	How were actions and interventions chosen and designed	The main directions were decided through different methods, and in several successive and / or parallel stages; see part 2.1			
	Actions	"Energy sufficiency	"Eco-gestures"	Support for 1	Support for 2 other



		Actions-experiments			
		Test of a charter for eco-responsibility with 6 associations	Claudel building "display" – nudge and eco-gesture	Adapted support for the community centre "Bois d'Artas"	Co-construction of eco-gesture supports with the school "Elisée Chatin"
	considered and dropped	/ responsible building management" kit to distribute to all associations;	animation at the entrance to the premises	other community centre	schools
	Corrections , repetitions	/	/	/	/
	Direct results	- Test of this charter with 6 associations - Awareness raising, direct exchanges - Specific awareness sessions (especially on digital)	Supports co-designed, produced, installed	Support in progress	- Supports co-designed, produced (installation of supports scheduled for September) - Awareness raising, direct exchanges, messages sent to other users (teachers)
	Evaluation method of results	Questionnaires (ex-ante & ex-post) and interviews	/	To define	Questionnaires (ex-ante & ex-post) and interviews
	Difficulties and/or constraints; Anticipation, solving, addressing	- Difficulties in getting people to understand the necessary mobilization of other departments to carry out this action - Contradictions: energy quality of certain buildings - Support, training, educational needs ...	Time to devote to the production of supports in a short time so that these supports are placed for the entry of agents into the premises	- Due to Covid-19, changes in the "usual" activity of the community centre - Postponement, extension of the inventory stage	Temporary school closures due to the health situation
Methods evaluation	Which methods worked best and for what purposes	Live meetings with associations, organized through thematic services, making it possible to give direct explanations, to debate, to collect needs ...	Production of supports, relying on various expertise (eco-responsibility, nudging); collaboration with support services	Support in progress	- Direct dialogue on daily practices (time spent with people to discuss) - Identification of eco-gestures adapted to specific situations
Outcomes evaluation	How was the evaluation conducted	Questionnaires (ex-ante & ex-post) and interviews	/	To be defined	Questionnaires (ex-ante & ex-post) and interviews
	City Lab results, incl. use of indicators	- Test of this charter with 6 associations - Interest in themes, actions - Expectations	Supports co-designed, produced, installed	Support in progress	- Support carried out with the small team - Sharing of results with the full team - Production of display materials and the best



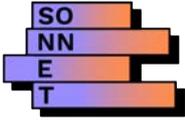
		Actions-experiments			
		Test of a charter for eco-responsibility with 6 associations	Claudel building "display" – nudge and eco-gesture	Adapted support for the community centre "Bois d'Artas"	Co-construction of eco-gesture supports with the school "Elisée Chatin"
		generated: support, financial means			practice guide - No significant change observed for the energy consumption (electricity and heating) of the school group, due to too recent awareness actions, the Covid-19 context making it difficult to monitor consumption (school closures, ventilation of classes ...)
	Scope of the results and chances for scaling up	- Objective of generalization to the 300 associations that use municipal buildings - Alignment with other initiatives carried out by the City (eco-events, European Green Capital 2022, etc.)	Objective: continuation of information and awareness actions "continuously". .. by relying on "ambassadors"	- Planned steps: shared inventory, co-constructed action plan, user awareness, change in consumption, highlighting of the results achieved ... - Distant goal of providing support for other community centres, halfway in "complete" personalized and "simplified / standardized" support	- Planned steps: installation of display materials and distribution of the guide, time for animation and sharing with other users of the school, dissemination of materials to other schools - More distant goals: integration of "eco-gestures" reflexes in the cleaning procedures of the premises; definition of other "climate-energy" actions intended for the school environment
	Most important lessons learnt	- For the generalization of this approach, need to have a shared decision process at the level of the departments on which we must rely to carry it out (animation and the implementation of the actions) - Significant training and skills development needs for colleagues (other	- Need to have a stable operation of HVAC systems to be able to provide coherent information on good practices (settings by zone) - Need to offer regular information and awareness	- Very time-consuming support (in progress) - Need one or more relays to deploy support - Need to involve the technical service-maintenance teams so that they themselves carry energy	- Need for support through a dialogue constructed and adapted to personal and professional situations - Need to rely on the youth education department to deploy actions that can be generalized to schools ; to integrate good practices into procedures (cleaning, cooking...) - Need for substantial human resources to be



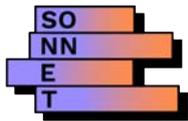
		Actions-experiments			
		Test of a charter for eco-responsibility with 6 associations	Claudel building "display" – nudge and eco-gesture	Adapted support for the community centre "Bois d'Artas"	Co-construction of eco-gesture supports with the school "Elisée Chatin"
		departments) - High expectations of associations to be supported on eco-responsibility	times to remind people of good practices - Need for support from referents and ambassadors to disseminate good practices and resolve dysfunctions	sufficiency messages - Need for substantial human resources to be able to carry out this type of support	able to carry out this type of support - Even for a recently renovated building, it is important to explain to users the interest of the work, the functioning of the systems and to support users in "good practices"

Common main lessons learned:

- Support actions are always well received by users.
- People appreciate that they are offered time for discussion, explanations on ecological issues and on "good practices", daily and professional advice (eco-gestures, useful resources, contacts).
- An initial support generally creates expectations in order to be able to explore this subject in more depth, this highlighting the lack of visibility and consistency of this subject (ES & ER) in the societal context.
- Even if we renovate more buildings, it will be useful to coach users: operation of systems, settings, uses, responsibilities. Besides, it is useful to take into account the needs and constraints of users upstream of renovation works / before entering the premises to anticipate potential energy-related problems.
- The health context (Covid-19) constitutes a constraint for the mobilization of users (civil servants and others) on a common project: fewer people in the buildings, inability to organize gatherings, delays in renovation on the buildings.
- To ensure consistency, it is important to devote sufficient resources to the maintenance of buildings as well as to their energy and environmental quality.
- For the City of Grenoble, the problem is rather on the side of the lack of human resources (quantities, structuring, and organization) to be able to implement energy sufficiency (ES) and eco-responsibility (ER) actions with many users. Indeed, we could do more actions by having more positions / jobs dedicated to ES and ER actions.
- On this subject (ES & ER), it is difficult to mobilize people for whom it is not their job, which is why it is necessary, to achieve this, to go through managerial support, training, organization, hierarchical responsibilities.



- It is also useful to include this subject (ES & ER) in various procedures: provision of buildings, maintenance of HVAC equipment, eco-conditionality in purchases and support for associative activities, awareness of residents, partnerships with other stakeholders in the territory, support for businesses.
- This subject (ES & ER) can be politically sensitive (sufficiency VS progress) and guilt-inducing (more responsibilities?). Therefore, it is necessary to adapt messages to the target audiences, to work on speeches to find the right balance between fun awareness (by nudges, games) and real awareness (based on a deep understanding of ecological issues).



4 ANALYTICAL REFLECTION AS A SUMMARY

In general, the City Lab allowed us, despite ambitions thwarted by the health situation, to reflect on our energy sufficiency (ES) and eco-responsibility (ER) actions and take them further.

This reflection and these developments have been made possible, in particular by:

- various feedbacks, external opinions, a "socio-cultural" vision of energy transition actions by members of the Sonnet consortium and by participants in the launch event
- external contributions (subcontracting) on social psychology, behavior changes and on "nudging" methods; while our internal skills are more oriented towards energy management
- work to design, internally, an "ideal" support methodology for action

These contributions have enabled us to evolve in our practices, to test different methods, to take more into account the day-to-day experience of building workers and users, and to mobilize colleagues to help us put in place concrete actions. These external contributions, as well as these changes in our support practices have brought us new knowledge, experience acquired to deploy new actions on different targets, by fitting into the context

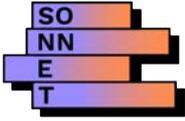
- of "European Green Capital 2022": mobilization of regional stakeholders on eco-responsibility, reduction of energy consumption and carbon footprint: inhabitants, citizens, associations, companies, administrations
- of the City administration project, under development during 2021-2022: "carbon accounting", "decision support taking into account planetary limits" defined as essential bases

In addition, for the actions carried out during the City Lab, evaluation meetings are in the process of being carried out with other city departments. These meetings will allow us to co-define and plan future ES and ER actions, based on this acquired experience. At the same time, we hope that changes will soon take place at the managerial level (mobilization of departments, network of referents, training courses, etc.), which would facilitate the multiplication of actions and the dissemination of good practices.

As detailed in this report, we encounter various obstacles and barriers to carrying out energy sufficiency (ES) and eco-responsibility (ER) actions. Those obstacles are cultural issues, inertia of behavioral change, poor energy efficiency of buildings, lack of financial and human resources, and managerial issues. So far, the city of Grenoble has tried to deal with these obstacles through different approaches, with help from social psychology (theoretical and concrete contributions), by identifying and empowering relay persons, and by following-up and intensifying ongoing actions.

But it seems important today to question this type of intervention, for the following reasons:

- On one side, we could consider that criticism of eco-gestures is legitimate (response to political inaction, greenwashing); energy sufficiency actions / individual coaching are a way to bypass the absence of managerial support. Besides, the current trend (non-guilt-



inducing communication, social innovation, individualization, etc.) is pushing us to appeal more and more to the unconscious (nudges) so as not to offend anyone. That highlights a problem in the hierarchy of priorities, doesn't it?

- On the other side, eco-friendly actions, and consequently individualized support, can have a direct or indirect impact on our entourage (social norms), our own political commitment, and the legitimacy of climate policies.

Indeed, SIEs, especially "action and campaigns against specific energy pathways", "energy education", "peer-to-peer learning" and "participatory energy dialogues" can have an impact on socio-cultural and socio-political relations, by disseminating knowledge and raising awareness among actors, inhabitants and stakeholders (through various techniques and methodologies). This is truer when these SIEs contribute to increase the number of people who are educated and part of an active community capable of exerting pressure on politicians.

However, it is important not to communicate only in a "positive" way, around contradictory stories (greenwashing), which can be counterproductive for real awareness. Indeed, these positive messages can contain induced social violence. "Look, we the rich are going to choose sufficiency", "preserve the environment", while the poor suffer daily from forced sufficiency. Additionally, we cannot "preserve the environment", but only minimize our impacts.

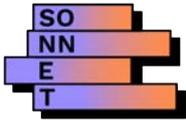
- To act on the scale of the climate emergency, individual action and collective transformation are essential!
- So why is sufficiency not at the center of territorial public policies? Why do we focus mainly our efforts on one-off actions and not on the implementation of strong measures: support, control, compulsory training, referents, job descriptions, systematic visits, accountability...?
- Wouldn't the real innovation, rather than the "fun", "small step" individual support, be that the organizations take up this subject in a courageous and ambitious way?

Based on these considerations, we can deduce that the main social innovation of the Grenoble City Lab consists of acting on the number of acculturated (awareness, knowledge and skills) employees / users. This means of action can contribute to building a balance of power, pushing for the following:

- managerial support: training, consistency, exemplarity, ambitious objectives
- elected officials to a courageous policy: carbon neutrality and what that requires - comfort, standard of living, effort, etc. by confronting the distributive question (who wins, who loses, who must make what efforts)

Currently, for the city of Grenoble, there are several opportunities to evolve in our means of action, moving towards more shared support and consistency:

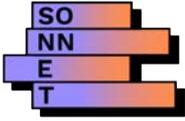
- Energy sufficiency efforts are strongly encouraged by the European Energy Award approach
- Eco-responsibility is part of the political roadmaps for the main public policies, is already being experimented in multiple initiatives and local projects (buildings, sports, territorial action, digital, purchasing, culture, events, food...)



- Eco-responsibility is included in various internal procedures, in major projects through stories and representations (with debates and co-construction to involve inhabitants)
- Administration project (start-up construction): "carbon accounting", "decision support taking into account planetary limits" defined as essential bases
- European Green Capital 2022: mobilization of local stakeholders around challenges to accelerate ecological and energy transitions

Whether for the city of Grenoble but also for other public organizations, we could conclude by giving some recommendations so that an energy sufficiency (ES) and eco-responsibility (ER) policy is coherent and on the scale of environmental issues (climate emergency, planetary limits, biodiversity, resources):

- Carry out individual support actions, but keeping the generalization of practices, led and implemented by an active community, as an objective
- Mobilize agents (users, maintenance agents, cleaning agents, etc.) who have an interaction with energy consuming equipment by trying to make them become vigilant actors and relays of good practices, via specific training, management, clear procedures, encouragement, promotion, communication
- Make people understand the difference between energy sufficiency and energy efficiency, this understanding being a "gateway" to individual responsibility, the link between lifestyles (uses) - energy & planetary limits
- Act at various levels through information, awareness, monitoring, control and prevention but also through accountability, control, managerial support, training, facilitation and communication
- To make sufficiency desirable (make people want to act and to contribute), rely on social psychology and public innovation, showing:
 - that it is possible to get things done, by facilitating the transition to action and promoting skills and the practice of eco-responsible behavior
 - co-benefits: improvement of the resilience of the administration and the territory, lifestyle...
- Make energy sufficiency (ES) and eco-responsibility (ER) a basis for action, by not being afraid to go against the tide:
 - including ES & ER into the values and managerial ethics of the organization, for example in an administration project
 - defining ES & ER as one of the strongest and most visible cross-cutting themes in air-energy-climate policies
 - integrating stories and representations on ES & ER into public policies and major projects
 - taking ES & ER into account in the development of professions, skills and work organization
 - increasing the level of awareness, knowledge, and know-how related to ES & ER issues
 - involving various stakeholders in ES & ER city policies development and implementation
- Evaluate and minimize the environmental impact (GHG emissions, ecological accounting) of actions and projects carried out, by systematic evaluation, advice on eco-



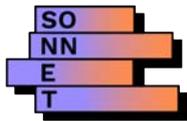
responsibility, eco-conditionality, training, support for project managers and promoters, etc.

- Have an “eco-responsibility” active community within the city administration, supported by elected officials and general management, which could:
 - relay good practices (eco-gestures and responsibilities), update supports, animate workshops, etc.
 - identify dysfunctions and propose improvement actions
- Set up an organization and a project management to coordinate "together" the subjects "eco-responsibility" & "carbon-ecological accounting" (common objectives of ecological redirection)
- Coordinate its actions with other territorial actors on energy sufficiency: communities, associations, citizen movements; with the objective of building, defining a common territorial policy of sufficiency

To carry out this type of action, cities can be helped by:

- Participation in networks: European projects, Energy cities...
- Support on coherent institutional discourse
- Incentives for environmental labeling (European Energy Award approach, etc.) and financing

Individual actions can have, beyond their own environmental impact, a social impact (leading by example) even at the political level. However, collective action, driven courageously by effective political support, is preponderant. New practices will further spread if public authorities support them, and if our economy shifts towards the development of less energy-intensive services and more sustainable goods.



Appendix 1: EC summary requirements

Changes with respect to the DoA

In general, we have not deviated from our objectives since the start of the project. However, because of the health situation (covid-19), we had to address some challenges and asked for a three month extension. First, while the start of the actions was initially scheduled for September 2020, we were only able to start them in November 2020. Second, for the action carried out with the Elisée Chatin School, we initially planned to offer this support to two or three schools, but this was not possible. Third, for the eco-responsibility charter (tested with six associations), making contact with the associations was made difficult because some of them encountered significant financial / activity difficulties. In addition, instead of face-to-face meetings, we had to organize remote meetings (video-conference) with associations. Fourth, regarding the actions carried out for the Claudel building, seeing the entry of employees was delayed, we were only able to plan the information-awareness actions at the end of April 2021. In addition, some face-to-face information-awareness actions could not be carried out during the city lab since many employees were teleworking. Fifth, another covid-19 related challenge was that it was impossible to organize events with a large audience, and therefore we decided to organize separate presentations and summary meetings with the target audiences and the city departments involved (associations, schools, administrative buildings) instead of a single closing event.

Dissemination and uptake

This deliverable will be made publicly available on the SONNET website (<https://sonnet-energy.eu>) as well as via Zenodo.

Short Summary of results

The aim of the lab was to test new action methods to save energy in public buildings and encourage eco-responsibility through behaviour changes, awareness, and accountability. Most of these actions were developed in collaboration with building users and through the observation of daily practices. During the city lab various actions were carried out, such as the design of graphic supports to raise awareness of eco-gestures in a school, the test of an eco-responsibility charter with six associations (users of city buildings), the design of nudges to encourage users of an administrative building to take the stairs rather than the elevators. The experiences carried out during the city lab were well received by the people concerned. They appreciated the discussions and explanations provided on ecological issues and "good practices" (eco-gestures, useful resources, contacts). On the other hand, the city lab has also shown us that it is necessary to put in place several conditions in order to be able to deploy large-scale actions aimed at energy sufficiency (ES) and eco-responsibility (ER). These conditions are as followed: ensure correct energy quality and proper maintenance of buildings, have dedicated and / or trained human resources to carry out support actions, go through managerial support and hierarchy to mobilize city employees, and adapt messages to the target audiences.

Evidence of accomplishment

This document.