

Stakeholder engagement in energy data collection: a case study on the implication of landlords and tenants to comply with the French obligation to reduce final energy consumption

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Abstract — Reducing the energy consumption in the tertiary sector is an objective towards net-zero carbon cities. In this regard, governments have set ambitious legislation to drive the real estate actors to renovate their building stock. In 2019, a French decree on the obligation to reduce final energy consumption in service sector buildings requires both landlords and tenants to implement actions to reduce energy consumption by 40% by 2030. As there is shared responsibility on the management and use of the building, a strong collaboration between landlords and tenants is necessary to achieve these energy objectives. This paper analyses a stakeholder engagement process between landlords and tenants to respond to the decree, as the two actors have access to different energy data, ways to collect it, and responsibilities to comply. The engagement process aims to increase the response rate for energy data collection. Based on a communication plan that targeted the landlords and tenants of over 1000 buildings (approximately 8 million m²), a difference in response rate between the different typology of users (single and multi-tenants' assets) was observed. The results highlight the challenge to get stakeholders on board, fully understand their role and responsibilities and the need for continuous engagement between the parties. Nevertheless, it was observed that an appropriate communication and awareness raising campaign can increase the data collection response rates by 80%.

Keywords— data collection, energy efficiency awareness, stakeholder engagement.

I. INTRODUCTION

Stakeholder engagement has become an important strategy to address multiple parties with different knowledge levels or support roles. In real estate projects, this type of engagement is mostly observed, and required, in urban-scale projects where community stakeholders need to be involved.

In contrast, when addressing technical aspects such as energy data collection, there might be an assumption that all parties involved understand what is needed and can provide access to data seamlessly. Nonetheless, there are still non-technical gaps, and questions, to address in order to implement a data collection process. For example, are all the stakeholders that handle (directly or indirectly) the data identified?, are there legal constraints to obtain the data?, or what is the level of support by stakeholders to provide access to the data?. These are some of the questions that can bring uncertainty to the data collection process. [1]

A stakeholder engagement strategy can increase the involvement of landlords and tenants (among other stakeholders), and reduce potential obstacles to the data collection and treatment process [2]. Furthermore, this will clarify the organization for data collection, actions implementation (e.g. renovation work, training, equipment regulation, etc), energy management of the systems, and achieve the objective of reduction of final energy consumption of the buildings.

This article presents the results of a stakeholder engagement process with landlords and tenants in order to inform, create awareness and improve the collection of energy data in order to comply with the French decree n°2019-771 of July 23 2019. The decree aims to reduce energy consumption of tertiary buildings by 40% by 2030, 50% by 2040 and 60% by 2050. [3] [4] [5]

The case study highlights the actions put in place to inform and integrate stakeholders to improve the energy data collection process of tertiary buildings.

II. CONTEXT OF PROJECT

In November 2018, the law n°2018-1021 concerning Evolution of Housing, Development and Digital, was adopted in France. This law set up new guidelines in order to build more, better and less expensive building, develop social housing, encourage social diversity and enhance the living environment [6]. In line with these ambitious legal provisions, the decree n°2019-771 of 23th July 2019 on

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“Obligations to reduce final energy consumption in service sector buildings” requires landlords and tenants of buildings, parts of building and building complexes over 1 000 m² to implement actions to reduce final energy consumption by 40% by 2030, 50% by 2040 and 50% by 2060 compared to a reference year up to 2010.

To achieve these objectives, the decree promotes four types of actions: a) building renovation works (e.g., insulation, windows and facades, sealing); b) renew equipment with higher performance (e.g. air handling unit, boiler, lighting); c) system regulation and maintenance (e.g. BMS, care frequency); and d) promote behaviour change of the occupants towards an energy-efficient use. All stakeholders are concerned by the actions, and the decree encourages a direct dialogue between landlords and tenants to reduce energy consumption.

If the objectives of reduction are not achieved, the French government applies administrative sanctions such as: 1 500 euros for physical persons and 7 500 euros for legal entities, whilst the most important penalty is the public communication of their non-conformity by the principle of “name and shame”.

For each concerned building, historical energy consumption data and technical building information are necessary to carry out a diagnostic to define the energy objectives and a corresponding action plan. For each functional entity, at least the following data must be collected:

- Name of owner(s) and tenant(s) of the building.
- Historical final energy consumption and energy mix from 2010.
- Occupied surface(s).
- Occupancy schedules and hours of use.
- Technical characteristics of the building and equipment.

The data can be obtained from different actors: the owner, the fund manager, the asset manager, the property manager, the facility manager and/or the occupier/tenant, depending on the type of the ownership or tenancy. To support this data collection process, these actors usually request the technical and organisational support of external energy consulting companies to accompany them in this process.

The decree covers all types of tertiary service sector buildings (office, retail, hospitality, healthcare, logistics, etc) from both public and private entities, and all types of occupation and ownership (single-occupancy, multi-occupancy, single-ownership, co-ownership). Thus, the energy obligation to reduce final energy consumption, requires the involvement of different parties and a communication plan adjusted to the type(s) of stakeholder(s).

For this case study aggregate results of six client’s multi-tenants building stock (totalling 1108 assets) with a single-owner were analysed.

III. METHODOLOGY

An energy management process is paramount to achieve and maintain energy reduction. The process requires the need to monitor energy data (among other indicators) to later evaluate and set recommendations via an action plan. This process is forward in single building with few stakeholders (i.e., single owner with few tenants) as it is easier to collect energy data and technical information.

However, when addressing large building stocks with multiple parties involved, the scope is greater, the data collection requirements also become a methodological challenge.

At the beginning of the data collection process, challenges were determined as a result of a preliminary analysis based on an information campaign, using different communication channels, such as mails and calls

TABLE I
MAIN CHALLENGES IN DATA COLLECTION PROCESS

Challenges identified	
1	Reliability of address book, landlord/tenant relationship, and availability of actors
2	Respect of data collection deadline (specially affected by the confinement period).
3	Inefficient communication channels or format
4	Lack of general information on the energy obligation, and accessibility to the totality of data

These difficulties were identified after initial outreach to stakeholders.

both referring to an online survey. About 750 contacts were established, and resulted in 4 main challenges indicated in Table I. Each of these challenges affected the adequate data collection as it: a) provided incomplete information on the landlord and tenant, b) delayed in planning, c) diffculted access or resulted in low level of responses, and d) lacked understanding on the energy decree.

TABLE II
COMMUNICATION ACTIONS AND OBJECTIVES

Actions	Common objectives
1. CRM (Customer Relationship Management) Improvement and outreach	a) Assess tenants’ knowledge on building energy performance and on the decree requirements. b) Create awareness on tenants’ role and responsibilities and the legal and technical implications of the decree.
2. Creation of information material	c) Engage both landlords and tenants to exchange on how the decree impacts their contractual agreement.
3. Live engagement sessions	
4. Surveys and questionnaires	

To address these challenges, after unsuccessful initial data gathering initiatives, a methodology was implemented to improve engagement with landlords and tenants. To improve the engagement for data collection several actions were explored to address the challenges

identified and achieve three specific objectives and, over the course of 8 months. These actions are presented in Table II.

On the buildings analysed, the data collection process was initiated from the landlord(s) requesting data to the tenant(s), either directly or via a property manager (Figure 1), represented by the green arrows. In both cases, an energy consultant, contracted by the landlord, played a key role in the data collection process. In particular, in the ongoing communication via the deployment of survey questionnaire, interviews, and eventually advising the

Office, 33% Retail, 16% Healthcare, 9% Hospitality, 3% Logistics, 1% Education and 4% Mixed.

The methodology (engagement approach and communication plan) aimed to increase the level of participation of tenants to comply with the regulation, and thus increase and support the rate and quality of data collection.

IV. IMPLEMENTATION

The engagement and communication plan for data collection was set up for six clients' building stock, as presented in table III. The assets varied in typology, surface, and type of occupancy. The data presented cover a period of eight months until June 2021. For each communication action the aim was to interact with the correct stakeholder responsible of data collection, increase their awareness on the roles and responsibilities to comply with the decree, and promote more exchanges between landlords and tenants in relation to the data collection process and their legal responsibilities. Some examples for engagement were taken from other experiences [7]. The following actions were carried out:

A. CRM improvement and outreach

The objective of this action was to build a complete database of contacts to assure the reception of all communications and events requests. The CRM was divided in two groups in order to identify the correct person in charge of energy invoices: a) the person responsible of collecting the energy invoices, and b) the person responsible for all technical information. Many times, this role would fall on the property manager. Nonetheless, while analysing the CRM there were information gaps in regards to the role of the contact person, i.e., lack of clarity of who is responsible for the energy expenses. Also, even for single tenants' assets, the building could be occupied by different departments of the same company thus there could be several points of contacts with unclear roles in regards to the energy data.

Moreover, it was found that the database of landlords and property managers showing the contact person from the tenant side, it was usually the person responsible for the contractual signature and didn't specify the person in charge of energy management (e.g., energy manager, technical operator, invoicing). So, follow up communication via the CRM was adjusted to reach the 'energy responsible'.

These databases were used for the mailings campaigns, whose frequency was adjusted to the type of client and rate of response (sent either monthly, or weekly when there was no answer for long period). The message conveyed in the campaign was progressive, that is, the first email introduced information the regulation and the overall request process for data collection, and a second email with the request of energy and technical data. Any follow up campaign reiterated the technical request.

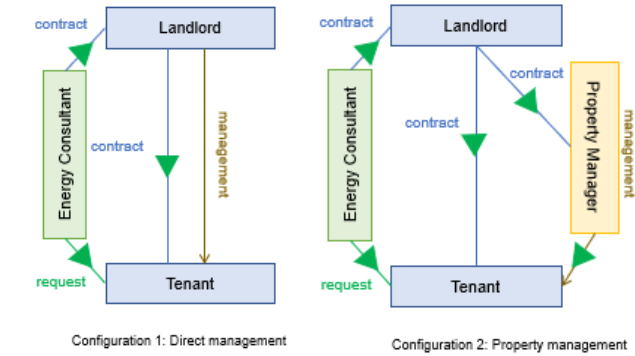


Fig. 1. Communication organisation in place during the case study, where the landlord demanded the data information from the tenants, either directly (configuration 1) or via a property manager (configuration 2).

landlord for the best energy strategy. There could be another scenario where the tenant, as they are also obliged to comply with the decree, could initiate the data request toward the tenant and thus modifications to the engagement and communication plan would be needed. In this latter case, the green arrows would point in the opposite direction.

The 1108 assets, owned by six different landlords, from which data was obtained is described in Table III. The table shows the distribution of these assets, indicating the

TABLE III
CHARACTERISTICS OF BUILDING STOCK ADDRESSED
TO COLLECT ENERGY DATA

Client	Nb. of assets	Surface in '000 m2	Predominant Use ¹	Occupancy Type (Single tenant / Multi tenant)
1	414	1,327	O R Ho L E M	205 / 209
2	44	0,343	O R	17 / 27
3	40	0,634	O R M	12 / 28
4	18	0,125	O R He Ho L	4 / 14
5	484	3,341	O R Ho E	298 / 186
6	108	2,244	O R He Ho L M	54 / 54

¹Description of the predominant user: O (Office) R (Retail) He (Healthcare) Ho (Hospitality) L (Logistic) E (Education) M (Mixed).

number of assets per client, the main typology of building (office, retail, healthcare, hospitality, logistics, Education and Mixed) and type of occupancy (single tenant / multi-tenant). All 1108 building represent a surface of approximately 8 million m². Of this number, 34% were



Fig. 2. Infographic created for internal dissemination to inform on the decree and guide on next steps (client logo and contact information were removed).

When no response was obtained from the tenant via mail, phone calls were arranged to explain the process and their critical role. In specific cases, site visits were coordinated to meet the tenant's team and introduce the energy approach and data request. These visits also served to understand any blocking points in the data gathering process. Lastly, social media was used where some landlords and tenants would communicate their involvement and process to comply with the decree.

B. Communication material

Different types of communication material were created to address the knowledge level of the tenants, based on the official public guidelines [8] [9]. Overall, there were four types of material developed:

- General mail with reference to the legal documents.
- An infographic explaining the phases of the decree and the technical documentation required.
- An infographic for general awareness to be shared in social media and internal communication (Fig. 2).
- A webinar with the key messages for tenants and property managers.

The communication material was prepared to explain the regulation, its ambitions, the responsibilities of stakeholders, and highlight opportunities around it. Specially the actions related to behavioural change of the occupants towards an energy-efficient use.

As the data collection was initiated by the landlords, their expectations were clarified on lease contracts in regards to energy ambitions, plan of renovation foreseen, and potential impact.

C. Live engagement

As the engagement with landlords and tenants occurred during the 2020 lockdown, must of the live interactions

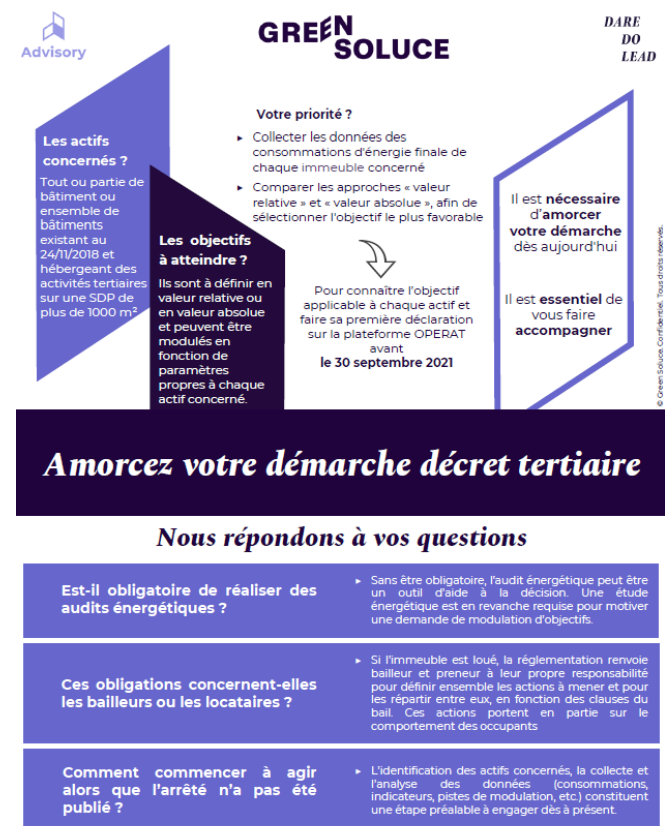


Fig. 3. Infographic used to promote the participation of stakeholder for the webinars.

were done online. In May 2021, webinars for the different clients were coordinated as to reach a maximum of people across the assets located throughout France. For one client, from a total list of 982 tenants 577 (58%) were invited to the webinars, conveying information to seek participation

(Fig.3). The information to promote the webinar reinforced the need to take action and be aware of all the phases. The difference in number of invitations was due to the lack of accurate contacts in the CRM database.

The webinars lasted around 45 min and included a general presentation of the decree, the general approach by the landlord to collect and treat data, and timeline to provide the documentation to the respective ministry authority. At the end, a questions and answers session between the tenants with participation of the landlords reinforced the message, requesting an increase in the frequency of webinars in order to remind all stakeholders of their obligations and get updates on the process of data collection.

Similarly, live sessions serve to address tenants of multinational companies whose employees were expatriates and either didn't understand the landlord request or were not fully aware of the decree. In this regard, webinars, or on-sites visits were organized for clarity of communication. An example was a visit to a commercial centre with more than 15 tenants jointly with the property manager and the landlord. During this visit, a one-to-one session was carried out with each tenant to explain the data collection process, their role, and other questions related to decree activities.

D. Surveys and questionnaires

To complement the technical request for data collection on energy consumption, of the common areas (by property manager of single-tenant) and private areas (by tenants), survey and questionnaires were sent to gather other complementary data in order to recommend additional energy actions.

There were two types of questionnaires: one for property managers about the building's technical characteristics (envelope, insulation, systems, equipment, lighting, HVAC, BMS) and their condition (new, used or dysfunctional). Another questionnaire for tenants about the user schedule of the areas (number of people per area, hours of occupation, usage of equipment like printers, lighting), and if there were existing awareness-raising actions on energy reduction for employees.

The surveys also served to identify if landlords had already collected data from their property managers and tenants, either fully or partially. This in turn helped to create pre-filled questionnaires with already existing documents available such as energy audits, diagnosis of energy performance, building plans, and maintenance documents, etc. The surveys made it simpler to collect specific tenant information, whereas it took more time to collect all historical data on energy consumptions and the equipment and technical characteristics.

V. RESULTS

The implementation of a stakeholder engagement and communication plan allowed the different parties to better understand their role, and highlighted the challenge to get

the tenants on board. A different engagement plan was deployed per client depending on the stage of discussions in regards to the data collection, Table IV shows a synthesis of the results. The communication for each client was as follow:

- Client 1: Communication only with the property managers or asset managers to collect technical data (behaviour and usage data not yet concerned).
- Client 2: Communication with the property managers and tenants on energy consumption, technical data and usage data.
- Client 3: Communication via a third party to the property managers and tenants for technical data and usage data.
- Client 4: Not concerned due to low number of buildings to analyse.
- Client 5: Communication with the property managers (on-site meeting), and webinar with the tenants for energy consumption data.
- Client 6: Communication with the property managers by email with implication of the client for the technical data.

3) Better response rate from single tenant buildings

There was a difference in response between single and multi-tenants' assets, where single-tenants are inclined to

TABLE IV
DATA COLLECTION RESPONSE FROM COMMUNICATION PLAN

Client	Nb. of contacts (tenant or PM)	Response rate for data collection ¹	Single-tenant response rate for data collection ²	Response delay (months) ³
1	410	4%	NA	6 months
2	334	87%	100%	8 months
3	183	34%	NA	NA
4	4	100%	100%	2 months
5	982	38%	NA	6 months
6	7	100%	100%	1 month

¹Response rate until last check in June 2021. ² NA (not possible to evaluate as of June 2021), ³ NA (not available as data was collected by another third party).

share data due to the fact of having one energy supplier for the whole building, and fewer stakeholders involved. Whereas multi-tenants' buildings share common spaces with other tenants, and are less involved in the building's operational activities, thus more complex to gather information on its energy performance. An evident aspect with client 2, where 100% of single-tenant provided information on data collection.

Also, from the surveys with landlords, they informed that dialogue with single-tenants is easier, as they are responsible of the whole building. They are also often responsible for the maintenance schedule, and have direct access to the consumption data, even if sometimes the property manager or the landlord are responsible for some expenses.

4) Importance of frequency of communication campaigns

Initially a simple communication action was planned for client 1, based on a general email requesting data information to the property managers. This format resulted in a low response. On the other hand, for client 2 (and based on the experience of client 1), a weekly communication plan was implemented resulting in a high rate of responses from both property managers and tenants, and higher involvement of the landlord in conversations.

5) Challenges with multi-tenant

Response rate from buildings with high number of multi-tenants showed a low response rate. Due to the unreliability of contact address book to identify the responsible persons. For client 3, two thirds of the scope were multi-tenant and only 34% had responded to the data collection request. For such typology a frequent communication campaign is required.

6) Access to historical data remains an issue

Even when tenants and property managers were engaged, collecting historical energy bills was complex. This process was easier when both landlords and tenants provided legal mandates to contact the energy providers for historical energy consumption. Nevertheless, for several stakeholders, historical data dating back to 2010 was only available in paper format or not available.

7) Webinars as a means to build communication

Based on the surveys, tenants found the webinars as a positive activity to address the topic with the landlord and/or property manager. They indicated that the presentation and a questions session allowed to communicate shared environmental ambitions and responsibilities to comply with the decree.

VI. CONCLUSION

The results show the challenges and output of a stakeholder engagement process for data collection. Nonetheless, after the data collection and treatment phase, a calculation phase will be carried out to evaluate how the building stocks are aligned, or not, with the 40% reduction objective for 2030. Based on these evaluations' renovation plans will be defined. Another issue that arose during the exchanges, was on the contractual responsibility of financing these renovation actions, that is: will CAPEX and OPEX be shared, and will rent be affected as a result of the financing to achieve these energy improvement measures.

Finally, as the work is ongoing, future actions on data collection are planned in 2022: additional surveys with additional 50 different property managers, asset managers and tenants to evaluate the engagement and communication plan.

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