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The Urban Lab of Europe !

The CORDEES project Journal N° 3

Project led by the city of Paris



**ENERGY
TRANSITION**



European Union
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Development Fund



Région
Hauts-de-France

The CoRDEES project

With this CoRDEES project, the City of Paris aims to achieve a breakthrough by creating a new energy ecosystem at Clichy-Batignolles, a 54 hectares eco-district under construction. The aim is to reach the energy efficiency objectives: 50 kWh per square meter and 90% less CO₂ emissions.

CoRDEES proposes to combine three main solutions in an integrated approach.

The project will establish a first of its kind multi-stakeholders energy governance system: the Urban Energy New Deal (UEND). This new deal will define on a collective basis the energy commitments and the contractual, financial and regulatory conditions necessary to its successful implementation.

The project partners will develop a Community Energy Management Platform (CEMP) to analyse and consolidate, in real time, energy data from buildings (electricity and heat) and public facilities (electric vehicle stations, street lighting and automated waste collection) in the area covered by the project. Project partners will use this consolidated data to define optimisation scenarios for the energy management of these buildings and facilities.

Finally, CoRDEES will test out new services to empower stakeholders and target groups to achieve energy efficiency goals. The set-up of an Urban Sustainability Trustee Facilitator (USTF), a new actor, will bring together all these solutions to provide technical recommendations, ensure stakeholder cooperation, end user empowerment and coordinate the creation and implementation of the different services.

Partnership:

- Ville de Paris
- Une autre ville (UAV) - Private Company
- PARIS BATIGNOLLES AMENAGEMENT (PBA)- Private Company
- ARMINES - Research centre
- EMBIX - Private Company

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1. Executive summary

All activities are under a well-advanced deployment phase, the Project team is progressing in all open fronts, and the most important milestone has been accomplished in these past months. In this third journal, we can proudly confirm that the first inhabitants have moved to their new homes at Clichy Batignolles.

In general, the different works are starting to provide the real dimension of the Project; similar to a puzzle under construction, some areas are already clear in content, and some others yet need to confirm their identity. By this, all is starting to take shape, as the different activities, which are running in parallel, will necessarily merge in the coming months, into a holistic final result, still to be reported in the coming Journals.

Going down into some details, further to be explained in this Journal, the technical challenges are being overcome every week since the past journal edition: the software platform to be used by inhabitants to have real access to their energy use profiles has already been developed. Its design is counting on some tenants' feedback, for it to be clear, intuitive and useful. The Urban Energy Services are underway to being totally operative in the coming months, with many sensors already in place, and some more ready to be installed during the winter. Two companies have already started to train tenants, and the "CORDEES Ambassadors" are already having meetings with inhabitants, to teach them how to behave efficiently and pay less for energy every month. In line with this, the monitoring platform is already operative, and real and estimated data are providing valuable information to the

most interested parties; the network operators, the building operators, and also, of course, the tenants. All is yet to be polished before shining, but the working open fronts are moving forward with a positive pace.

With regards to the Implementation Related Challenges, the impression is that the different pieces of the engine start to connect together, and somehow they now seem, once connected, to have been designed to work together: The Eco-public procurement challenge has proven to be solved by the implementation of actions focused on a results-oriented participative approach, where different stakeholders (public, private, small, large) find common points of interest, and work together to boost benefits in those common areas of interest. On the other hand, the cross department working has proven to be softened by the identification of a clear common goal, established again by all parties involved, which have demonstrated that pursuing this common target is the best way to keep the Project on good track, under a clearly established leadership.

The next journal will be published in spring, and promises to be full of news related to a fully operative set of CORDEES buildings, inhabited by well-trained tenants, and connected to the ITC platform which will allow to monitor the Project success. It will be next spring when we will be able to see if these past months have been as promising as they look today, with regards to a successful roll-out phase for the CORDEES Project.

2. The technical challenges

After the publication of the second journal, the spring and summer works start to provide their first results in the field of the technical challenges. All partners are consolidating part of the compromises acquired in the kick-off meeting, and the results of all communications start to be a reality.

The most important milestone occurred since then, which has given the Project a realistic dimension, is the reception of the first inhabitants in some of the Clichy-Batignolles buildings of the CORDEES Project. This is, by far, the most significant step forward, as it is now that the consortium starts to operate under real life conditions, and moreover, with real citizens.



2.1. The Community Energy Management Platform (CEMP)

During the past six months, Partner EMBIX together with other stakeholders, had an intense user interface (UI) design work going on, which enabled them to set the final User Interface design of the CEMP.

To get this done, they organised 2 workshops with partners to sum up the information collected during the first and a half year of the project, towards stakeholders needs from the CEMP. They also paid particular attention to the needs of

the Energy Facilitator, so far represented by the CORDEES consortium.

Three main types of users were chosen: Energy facilitators (CORDEES Consortium), building managers and network operators (ENEDIS for electricity and CPCU for district heating). In order to facilitate the agreements, for each group, they tried to identify which specific data was needed, which similar energy platforms they already had, and if it was important for them to communicate among each other in order to benefit the energy efficiency strategies behind the platform.

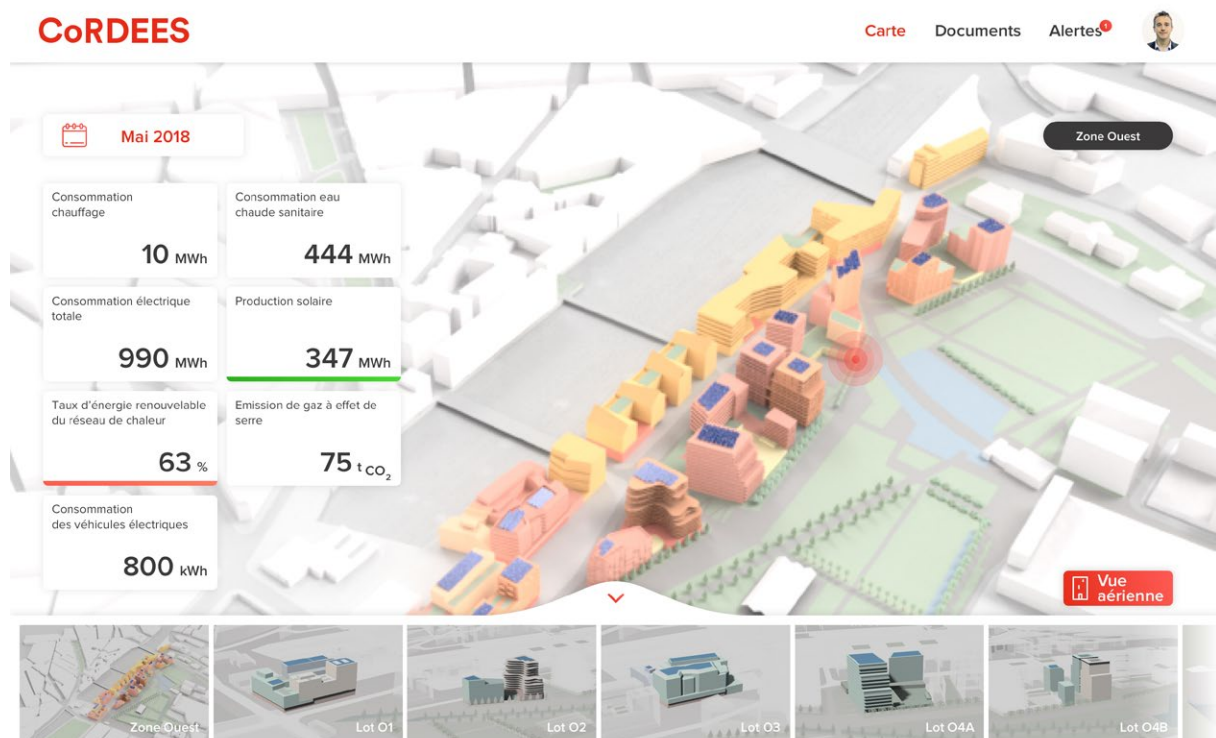
The design of the UI was subcontracted to a software company, and communication with this company has been clear and smooth, as the main interlocutor was EMBIX. One of the outcomes of this workshops was that information available shall be shared with tenants, and will be at building and district level, comparing the behavior of the building with the targets previously established by EMBIX

(not by anyone else). This is on behalf of raising awareness among inhabitants, as somehow it becomes a challenge to reduce energy use thanks to having the information accessible.

After these two workshops, stakeholders involved progressively defined the design of the UI, adapting its functionalities to the real needs of its final users: All these works enabled EMBIX to sketch a first version of the UI design.

Based on this design, EMBIX gave shape to a first model to test it with stakeholders and partners, and get their feedback on usability and to evaluate if the information was accessible, easy to understand and practical to have an impact on user behavior. Building managers and network operators, and CPCU and EAU de Paris participated in the tests, providing their feedback.

All these factors considered, the tests campaign (in the form of two workshops) was performed in June. The most relevant feedback received was related to improving the design, giving the future



Main screen of the final design of the User Interface (source: EMBIX).

users access to specific sections, modifying some wording for clarity, and also changing the color of the buildings (to identify different building uses). Moreover, a 3D option to show the district was also implemented for those who had requested it.

With all these valuable ideas, stakeholders and partners provided enough feedback for EMBIX to give the tool a final shape, which can be accessed [here](#) in the form of a web APP.

2.2. The Urban Energy New Deal (UNED)

During the past months, the most remarkable milestone with regards to the Urban Energy New Deal coordinated by Paris Batignolles Aménagement, has been the deployment of the instrumentation plan of the buildings. Sensors and meters have been installed by the selected

companies for the monitoring of the energy consumption patterns of the tenants, at dwelling and building level.

In the following table, there is a presentation of all works done up to date in this regards in the residential areas monitored:

Date	Building	IT deployments
April 2018	O6b "ALLURE"	SENSORS INSTALLED: Scope:all building à 118 flats <ul style="list-style-type: none"> - 118 radio-connected eco meters (Legrand) reading the electricity and heat consumption from the measuring units for each apartments - 117 ultrasonic compact energy meters (Diehl Sharky 775) measuring heat consumption. - 1 wired bus system interconnecting the 16 electricity meters (lightning, ventilation...) in the common areas. - 2 firewalls - 1 collection server centralizing, aggregating and uploading the data.
June 2018	O4b "EMERGENCE"	For this building, smart meters have been deployed by the developer. The landlords have contracted with a company (Proxiserve) for remote reading the meters and bill each tenant for their share. A data-sharing convention is under discussion between the landlords, the CoRDEES consortium and the sub-metering provider responsible for measuring the individual consumptions.
October 2018	O3 "GRAPHITE"	SENSORS INSTALLED: Scope:100% social housing, 33% student housing à 131 flats: <ul style="list-style-type: none"> - 114 radio-connected eco meters (Legrand). - 129 ultrasonic compact energy meters (Diehl Sharky 775) measuring heat consumption.

These works are in full progress during these days, and there is a plan to keep installing the remaining devices for the full monitoring for the full identification of the required data. Works are therefore estimated to continue for three more months, and the coordination among PBA and the involved stakeholders is fully active.

Tenants, technology providers, service providers and the technicians in charge of placing each sensor where it corresponds are bringing useful

feedback to CORDEES; In general, it seems that inhabitants are welcoming the IT measures deployment; as long as they are informed of the goals of the project and the benefits CORDEES can bring them in terms of energy and economic savings, people are willing to forget the inconvenience of the hardware installation in their homes and buildings, as they somehow understand that there is an individual benefit out of it, for them and for the community in general.



Legrand eco-meter installed in several CORDEES Blocks, to gather heat and electric individual consumption.

2.3. The Urban Energy Services (UES)

During the past six months, the urban Energy Services works have had a significant outcome; works have switched from exploratory to operational phase. This can be reflected in an evidence manner as the first tenants have moved

to their new homes during the period, and also some office spaces have already been delivered.

More specifically, the following spaces have been inhabited by real citizens:

Date	Building code and “name” Developer		Space type Total surface
April 2018	O6b “ALLURE” OGIC + Demathieu Bard Immobilier		56 private flats <i>(4,021m²)</i> 65 capped-rent flats <i>(3,760m²)</i>
June 2018	O4b “EMERGENCE” Kaufman & Broad		120 private flats <i>(8,548m²)</i> 50 capped-rent flats <i>(3,607m²)</i>
October 2018	O3 “GRAPHITE” Bowfonds Marignan + Groupe Financiere Duval		153 student housing flats <i>(4,624m²)</i> 79 social housing flats <i>(5,949m²)</i> Office space <i>(4,801m²)</i>
September 2018	O5 “SEASON” Sefri Cime		Office space <i>(20,113m²)</i>
July 2018	O7 “JAVA” Emerige		Office space <i>(23,050m²)</i>

Regarding the BtoB services, the company Inddigo carried out the expertise of the collective boiler plants, worked on the proposal of performance warrantee and interest clauses for the EMERGENCE and ALLURE buildings exploitation contracts and began, in early June, the commissioning of the EMERGENCE block.

Regarding the energy coaching, Partner UAV drafted, with the City of Paris, the call for tender for residents and employee’s energy coaching. The tenders were published in early May 2018 and the providers were selected mid-July:

- **E3D-environment** is the winner for the coaching of the inhabitant’s contract and
- **eGreen** for the coaching of the office spaces employees.

The coaching methodology has been defined and the mobilization is planned to start at the beginning of November 2018.

Training for inhabitants is already under deployment phase (E3D-Environnement). This training has been divided in three phases:

i. Phase 1: Mobilization 1 – (3 weeks’ duration, finished): Select the first group of inhabitants among 3 buildings (GRAPHITE, EMERGENCE and ALLURE), around 600 inhabitants included, from which 400 are hoped to be part of the training.

This phase consists of ten-minute interview by the “CORDEES ambassador”. There are 6 ambassadors from E3D who knock on every door and call for volunteers (they sign a paper with their “compromise”), and explain the CORDEES Initiative to citizens, showing them how they can reduce energy use with the reference of their actual consumption profiles. The ambassador asks the citizens if they wish to be involved in CORDEES, to save energy and change their behavior, as they may have access to their own consumptions, and to their buildings’ consumptions.

ii. Phase 2: Coaching the first group (ongoing): Once the citizens on board the training program, every 6 weeks the ambassador calls them for a five-minute interview to talk about how to improve and to check compromises or intentions of new behavior. If all goes well, E3D gives them the opportunity to choose 3 more actions –like switching off TV stand-by mode, or using the washing machine during the night– for the next 6 weeks and increase the savings.

iii. Phase 3: Consists on another round of tenant involvement, to be carried out after the delivery of this journal.

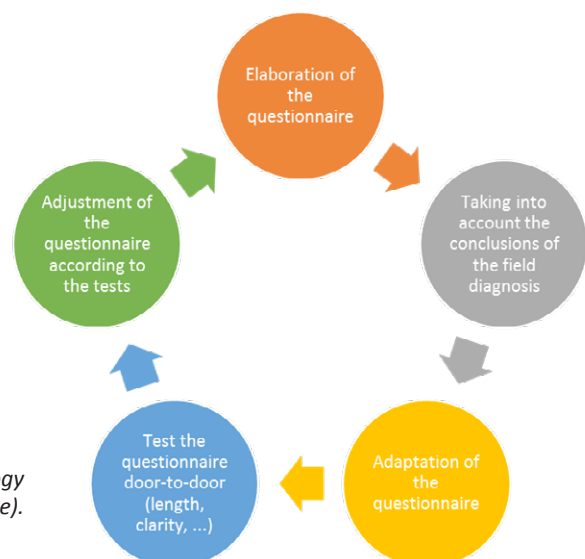


Diagram showing the coaching methodology for inhabitants (Source: Une Autre Ville).

2.4. The Monitoring and Evaluation

The past months made it possible to propose a **new method for evaluating district energy performance** based on simulation. The West zone of Clichy-Batignolles district, where all CORDEES buildings are placed, has been simulated. The rest of the district areas (East, North and Saussure) will be simulated by the end of 2018.

The scientific objective of this “new evaluation method” is twofold:

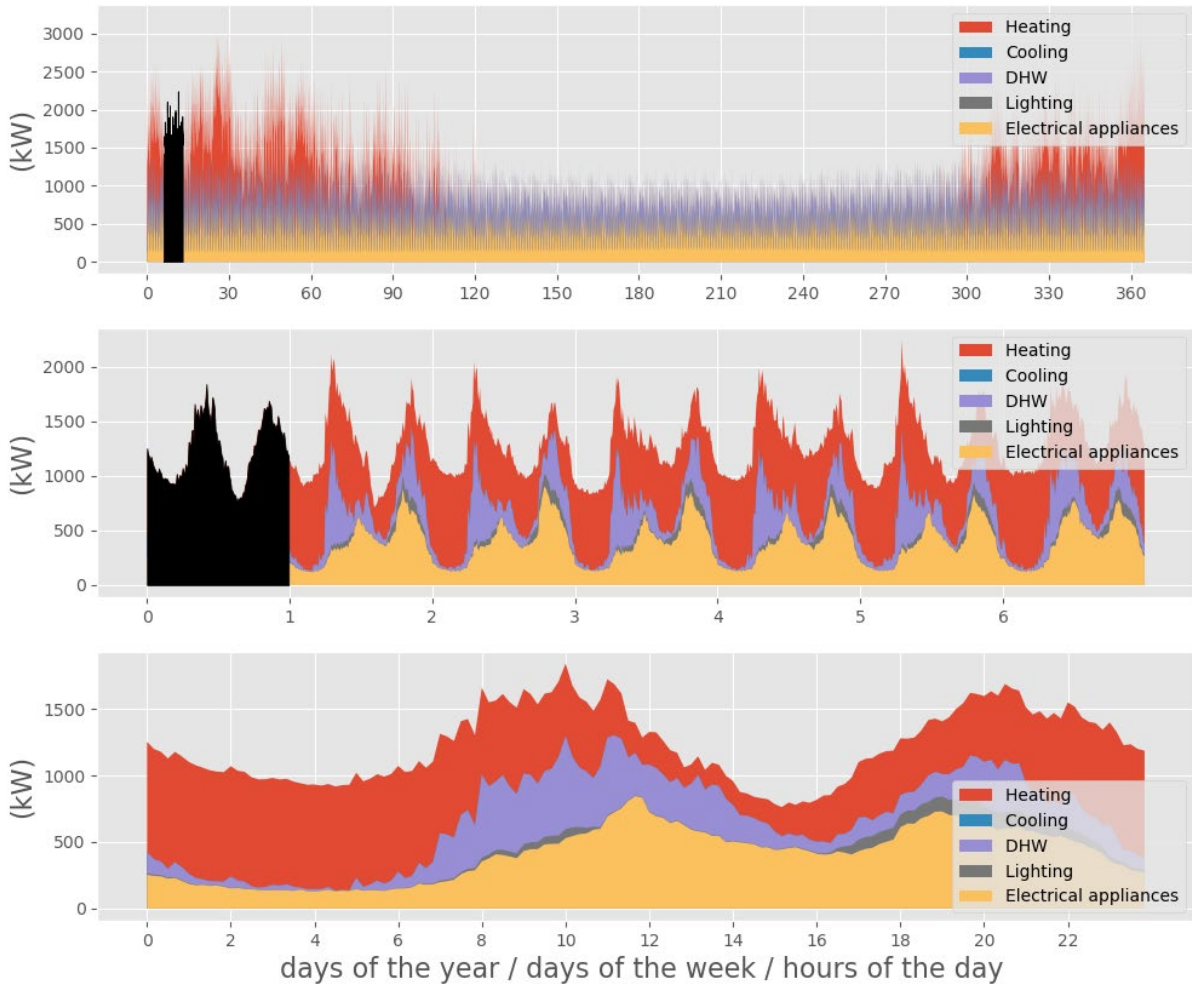
- The evaluation method should be adapted to the district scale in the context of a shared energy system.
- The evaluation method should be easily replicable to any district in France and Europe.

This dual scientific objective strongly constrains the model for energy performance evaluation of the district, as a versatile and replicable method is facing several challenges to be overcome. From several meetings and based on the works done in the past months, here is the list of the main boundary conditions identified:

- Model adapted to the district scale: easily configurable, if possible, with public data and available throughout the metropolitan area.

- Dynamic model to evaluate consumption, production system performance, flexibility (thermal or electrical) and comfort.
- Model adapted to calibration in terms of simulation cost (or calculation time) and number of parameters to be optimized.
- Model that can be replicated in any neighborhood in France and Europe with a minimum of knowledge for configuration and calibration.
- The modeling process is carried out in two stages linked to two levels of data availability.
- Modeling and calibration of the West zone using all available data (ideal situation).
- Modeling and calibration of East/North/Shore zones using data “readily available at the national level” (realistic situation).

The calibration of the model is the next step to be accomplished. It has not started, as the energy consumption and indoor temperature data are not available yet.



Cumulative power for all energy end-uses in the residential blocks of the West sector of Clichy-Batignolles (Source: ARMINES)

3. Implementation-related challenges

3.1. Leadership for implementation

In order to pursue effective and efficient work progress, where different areas of expertise are involved in a certain piece of work, subcontracting a specific company to carry out a specific task can be a good decision; for the case of the User Interface, for instance, a software company was subcontracted, and communication with this company was clear and smooth, thanks to the fact that there was only a single interlocutor, which was Partner EMBIX. This led the Project to have an outcome in line with the specifications requested, and in a short period of time, with minimal iterative work.

In relation to the Energy Services, a powerful tool to lead implementation is the prize-based contract signed with the coaching service provider; The company in charge of training the inhabitants will have a bonus if they manage to recruit over 60% (750 people) of the inhabitants, and they will reimburse money to the City of Paris if they get less than 40% (500 people). As for the engagement tools for citizens being part of the program, less bills and better environmental benefits (climate

change, sustainability...), people are generally happy to welcome water and energy saving and recycling measures; it is to be mentioned that their social profiles is over the average in terms of economic levels, as selling price of the flats is quite high, as well as social housing cost, being this a new built with high energy standards (with selling price between 9,000 and 12,000€/m² and rental social price around 20€/m²).

Another piece of good work delivered during the past month is the specifications for the “Hub des initiatives”, the common web space to share energy saving ideas, which were established after some meetings with the teams of the City of Paris, who will host the website. The coordination between both parties took place during the summer, and the website hosting the “hubs des initiatives” for citizens to upload their ideas, will be operational by the end of 2018. The implementation of this common space to share ideas is considered to be key when pursuing implementation of energy saving measures, as it is a source of good practices for citizens.

3.2. Public procurement

It is clear that, when several public bodies are involved in a work where thousands of private data from citizens are shared, progress can be slow due to bureaucracy and lack of clear communications. In order to **define the legal framework around personal data**, it was valuable to establish a collaborative relation among a legal firm (subcontractor for legal issues) and the French National Centre for Data Privacy (CNIL). In order to comply with the Regulation on

Data Protection, a PIA (Private Impact Analysis) and an information guideline for the inhabitants were prepared, to explain them the process and their rights. Moreover, in order to filter the information flow and the access to specific data by specific viewers, a deep analysis of the Regulation is a must, and for this, one needs to count on experts in the field. All in all, a key issue to pave the way is to involve key stakeholders:

- The CNIL participated, and the relations with them was in the form of several meetings supported by officially written outcomes.
- The Energy Coach (the company E3D Environment) was involved.
- All partners were involved.

Convention with electric network operator (ENEDIS): Partner EMBIX signed a global convention with the Enedis Distribution Grid Operator and the City of Paris to act the fact that ENEDIS will provide energy data from their smart meters. In this convention, two specific agreements corresponding to two data solutions were signed:

- Agreement 1, called “SGE Tiers”, enables EMBIX to receive directly from the ENEDIS the total electric consumption of a consumer that has agreed to participate.
- Agreement 2, called “Agrégats J+2” enables EMBIX to receive on a daily basis, without end user agreement collection, aggregates of consumption of 101 consumers. Basically, this is to get an overview of the total electric consumptions of residential building blocks.

Convention with district heating network operator (CPCU and Eau de Paris): EMBIX connected the CEMP to the CPCU information

system. To get this done, three steps were followed:

In step 1, EMBIX started collecting data from the exchange station of CPCU where the heat production from Eau de Paris meets the heat complement from CPCU before being delivered to the buildings.

In step 2, EMBIX had the first agreement on data collection from substations, by the City of Paris and the Social Landlords “Paris Habitat”, based on the form defined with CPCU and FIDAL (subcontractor for legal issues).

In step 3, once all agreed, the information was distributed to the involved stakeholders (data providers): Forms to collect agreement of stakeholders to collect their data were distributed, but only after presenting them the Project in meetings and presentations. Paris Habitat, OVH (company in the office of building block O3), I3F, City of Paris (as public building manager) have been the first stakeholders to be solicited to give their agreement.

All in all, the involvement of all interested stakeholders, the participative approach to find common fields of interest, the transparency and the fluent communications have been key issues to promote a soft and diligent procurement.

3.3. Cross-department working

For the development of the User Interface, a transversal lesson can be drawn: Conversations with the energy providers (ENEDIS, CPCU) were held before the workshops in order to gather the required information and limitations in advance, and be prepared to defend the Projects’ interests. These companies provided one only interlocutor to facilitate cross department frictions internally, this made things easy.

As for the formulas to increase synergies among negotiating parties, in the definition of the Urban Energy services, both economic and service targeted-strategies were screened. Three offers presented, really similar one to the other, to train the citizens, and a human approach was considered on top of the technical and economic parameters. Experience in relation to the communication with inhabitants was also

considered to choose the company to talk with tenants, and in relation to the office workers, the experience with these social profiles was also considered to select the winning trainer.

Three criterions were considered to compare the offers: Methodology, price and results on energy reduction (target of 5%) thanks to the tenants coaching. To get this done, discussions among Une Autre Ville and the City of Paris departments (Smart City and the Call for Tenders) took place, with a predominant role of the City of Paris, who pays directly to the contractors. Three offers were presented, and 2 companies selected: Final quotation 180.000€ to coach around 1,500 homes and 46,000m2 of office personnel.

In relation to the monitoring, the methodology developed by Partner ARMINES brings to the table an interesting outcome with regards to the cross department working, concerning the information flows. The origin and possible use of the information related to real and estimated data needs to be cross-checked, as its availability for the stakeholders needs to be properly organized, in order to meet the legal and IPR restrictions. In the table below, there is an interesting identification of these restrictions, to the **West Side (real monitored data, CORDEES blocks)** and the rest of the district (estimated data based on national data bases and other listed sources).

	Origin of the information	Availability of the information	Terms and conditions of use
Model inputs	National institute of geography - GIS databases (IGN, BDtopo)	National scale and geo-localized	Free, but for research use only
	National household census (INSEE)	National scale and geo-localized	Open-data
	National time table census (INSEE)	National statistics	Free but for research use only
	Survey on household budget	National statistics	Free but for research use only
	Weather information (Météo France)	National scale and geo-localized	Free but for research use only
	Business registration databases (INSEE, SIREN)	National scale and geo-localized	Open-data
	On-site information (photo, specific architecture identification)	West part of Clichy-Batignolles only	CoRDEES consortium only
	Outputs from previous thermal simulation, buildings plans	West part of Clichy-Batignolles only	CoRDEES consortium only
Data for calibration	Data from smart meters (ENEDIS, CPCU)	National scale and geo-localized	Free for urban authorities and data owners
	Data from sensors (EMBIX portal)	West par of Clichy-Batignolles only	CoRDEES consortium only

3.4. Participative approach

For the decision making processes, it is clear that all partners need to be involved during the participative workshops. In the case of the CEMS, just as an example, the following list

of stakeholders and partners were present, with a variety of profiles, responsibilities and expenditure levels:

Number of people	User profile	Company	Position
1	Network operator / heat producer	Eau de Paris	Manager
1	Building managers	City of Paris (public equipments)	Maintenace manager of public equipments
1		Elogie -SIEMP	Building manager of the social housing of GRAPHITE building
1	Energy Facilitators	City of Paris	Head of Smart City direction
1		Iddigo	Technical subcontractor of PBA
1		UAV	Project manager
1		PBA	Project manager
1		UAV	CEO
1		Armines	Researcher
1		PBA	Project manager



One of the workshops organized in the District.

In the field of the importance of the relations among stakeholders during the past months, it is of great importance to highlight that relations with stakeholders outside the CORDEES Consortium have been numerous, so Partners have the perception to be on an exploratory phase of the relations. This leads to get two specific outcomes depending on the relation type. To summarize,

- For the **BtoB** services, the recurring actors are the members of the consortium and Inddigo (energy and ICT installer, elaborates check lists for promoters). The specific actors are those of the buildings (trustees, promoters and technical teams), each of which has a different approach of work: (i) Trustees and

union councils are very demanding of services, because they want to know how to save money by using less energy and they want to fix maintenance problems; (ii) Promoters are not so demanding, as they want to deliver good quality buildings (with good quality in HVAC and ICTs), and once delivered, they cannot do anything. Both profiles, however, accept the services proposed in CORDEES and helped the Consortium to get things done.

- As far as **BtoC** services are concerned, for the moment we only see our service providers, E3D-environnement and eGreen. Outcomes of their relation with the district citizens will come in the next Journal.

3.5. Quantification of the results

Due to the complexity of some of the actions being carried out in the district, and to the large number of stakeholders involved, we may consider that the works done are similar to a puzzle, where you cannot see the final result until it is totally finished. In this regards, the Project is in a phase where you can already identify what is behind the pieces which integrate it, but there are yet a lot of areas to fill-up.

The User Interface for tenants to see what happens in their blocks is almost ready, however, it won't be until the IT platform is fully operational that they will be able to monitor real data. The tenant coaching is already started, and its success is already positive; however, the total impact of such education sessions will not be fully impacting their behavior until the coaching sessions are totally finished, and the new "energy habits" are embedded in the inhabitants day-to-day life.

All in all, the Project is under a positive implementation phase, which indeed is a positive result to be considered. Moreover, some actions are already receiving a warm welcome among inhabitants, which makes the Consortium optimistic, as the next phases to be carried out, mainly the real monitoring and the real impact of all measures deployed, are to be providing satisfactory outcomes, if all keeps moving forward as it is now.

4. What to see next spring in Clichy-Batignolles

In relation to the Community Energy Management Platform, for next spring, data collection will be a key topic on the table during the next months. As the Users interface has already been designed, and it will have to be presented in the form of an accessible Web APP also in the coming months. On the other hand, all agreements for data privacy, data collection and distribution are already signed, so the next step will be to collect data from the real sensors of the district. Moreover, these data will have to be analyzed, and KPIs will be chosen to provide evidence of the CORDEES implementation benefits to each of the key stakeholders involved.

The Urban Energy Services Phase 2 will start next spring: 4 building lots, around 800 people targeting around 600 or 700. Finally, for the Hub des Initiatives (participative approach), since the 5th of November it is active to collect ideas from citizens of the neighborhood. UAV works closely with the teams of the City of Paris (Idée Paris) who are very motivated and have helped a lot.

In the next six months, UAV hopes to launch the following activities:

- Large-scale commissioning on all buildings.
- Mobilization of the inhabitants' coaching; aiming for at least 60% of housing inhabitants.

Finally, UAV hopes to launch the "Hub of Initiatives" by the end of 2018. If the calendar is not modified, the end of the projects filing will be done in January. The collection of ideas should begin mid-February.

In relation to the monitoring works, the calibration phase of the model should start in early 2019, once the consumption data become available. This will allow the consortium to obtain 10 months of data for the test phase of the model. Moreover, in relation to the inhabitants' behavior towards energy use and the network optimization, two energy efficiency actions are planned for next spring:

- The first is an awareness campaign for the inhabitants and employees of the western side of the District, aiming at changing lifestyle habits (at home or at work) in order to use less energy (cooking, DHW, lighting, heating...).
- The second is the optimization of the heat production mix of the local district heating network. The aim is to produce as much heat as possible using the least polluting systems (geothermal heat pump), for this reason, the heating demands of the buildings connected to the network will be deeply controlled and optimized.

The sensors are being installed continuously, and they will all be providing data in the coming months. All these data, at different levels of aggregation, and related to different tenant typologies, will be added to the information already gathered, and an analysis on behavior and involvement will be carried out to measure the real impact of all works done in the district.

Urban Innovative Actions (UIA) is an Initiative of the European Union that provides urban areas throughout Europe with resources to test new and unproven solutions to address urban challenges. Based on article 8 of ERDF, the Initiative has a total ERDF budget of EUR 372 million for 2014-2020.

UIA projects will produce a wealth of knowledge stemming from the implementation of the innovative solutions for sustainable urban development that are of interest for city practitioners and stakeholders across the EU. This journal is a paper written by a UIA Expert that captures and disseminates the lessons learnt from the project implementation and the good practices identified. The journals will be structured around the main challenges of implementation identified and faced at local level by UIA projects. They will be published on a regular basis on the UIA website.



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