



## SEBR

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100% Renewable Energy Supply in Buildings

## D1.4b PCP End of Phase I Report

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### Statement of originality

This deliverable contains original unpublished work except where clearly indicated otherwise. Acknowledgement of previously published material and of the work of others has been made through appropriate citation, quotation or both.

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# 1 The innovative solution

## *The innovative solution (in its current form)*

The SEBR ( Smart Energy Building Renovation ) Consortia is formed by several partners providing different technologies & solutions. We have in common though RES of buildings and lowering energy demand. We've 'merged' these different technologies into a single SaaS platform. Any pair of parameters can be sync'd or cross checked to find a pattern including temperature, humidity data & weather forecasts. This allows Facility Managers to decide saving strategies based on data, and generate automatic decision algorithms that achieve savings without compromising user satisfaction.

## *Where exactly lies the innovativeness in the solution*

The key word to describe the innovation is integration. All the elements we provide in the renovation approach exist as single, isolated solution in the market. And they deliver in terms of reducing energy consumption, water usage, less power required from the grid, smart battery management...

The integration of most important buildings' signals into a SaaS Platform allow correlate any 2 given parameters that might or not be apparently related.

For example meteorological forecasts with battery charging percentage...because low radiation would probably suggest to charge the batteries to maximum levels (including night charging at lower tariffs)

In a hotel we could recommend how to assign rooms not randomly, but more efficiently (for example south oriented in winter and north oriented in summer, first floor to minimise elevator usage...). Could I reduce the contracted power?

In a school is it more convenient to turn the DHW heater off on Fridays at 17 & on next Monday at 5AM or to leave a minimum threshold temperature value over the weekend?

In a household, is it necessary to keep the DHW tank warm at the pre-set temperature value? Or having 60% full would suffice?

Buildings grow in number of users, sometimes interiors are refurbished according to new owners or new functions. This means the original equipment (HVAC, water usage, free night cooling, lights etc ) might not be the most convenient any longer.

We provide real time data so Facility Managers can decide on facts and make the right choices.

According to many studies the likelihood of extreme weather patterns is about to triple by 2030 and we need to act accordingly. The recent war and the relationship with RUS is just accelerating the energy transition to eliminate fossil fuels.

The data we provide, interpreted correctly, can provide additional savings, not just the first year, but year over year by capturing the main signals, personalising the dashboard according to each buildings' needs, setting the alarm thresholds and correct configuration of parameters.

Not two buildings are the same. Our solution is flexible, modular and scalable. Tailored.

### ***The degree of innovation***

We provide a new combination of existing products & services which is unique. Preserving protected GDPR data (owner, builder, developers...) the Saas platform could perform a virtual energy audit just by comparing similar buildings. For example hotel chains tend to replicate similar buildings worldwide. Just by comparison we could detect energy parameters "out of range". Same goes for water, gas. Overconsumption (kwh / m2 or kwh / user ) can be easily checked and if not justified countermeasures can be taken. A non-visible underground water leak in the garden could be detected so, or just by comparing historic data.

The preset DHW temperature is 45°C. If the comfort showering temperature proves it we could probably reduce the preset value in summer 2-4°C for 4-5 months!

According to Water UK users without a (water) meter paying a flat rate reduced their consumption by 20% after adding a meter. According to Waterwise UK a typical school could save 3m<sup>3</sup> / day with behaviour changes.

These are typical examples where energy & water can be saved. That's why we focus on technology but putting the people (end users) in the centre and provide training to raise awareness.

All consortia members are young innovative companies (Submer, Sunaitec, Sunthalpy, Taurus, Lancey, Mondas, Indresmat, Inbiot, Defcon8...) just 5-6 years old with hi tech products. Each providing innovative solutions, generating a bigger ripple effect combined together.

To make this Synchronisation possible, Mondas has to adapt their platform to receive & interpret the signals, Lancey has introduced new metering standards according to European Directives (for example for district heating) and Defcon8 will also introduce new features in it's Smart Water Flow Meter. Signals coming from other devices manufactured by subcontracted suppliers (Sunaitec, Sunthalpy, Taurus ) need to be adapted as well.

## 2 Commercialisation success

We have contacted Rabobank ( NL ) and Österreich Werbung ( A ). Both entities are searching for innovative solutions to make their existing buildings more sustainable. Rabobank for their HQ in Utrecht is looking for energy harvesting solutions as their available rooftop space does not cover their energy demand with PV only. Österreich Werbung is searching for energy monitoring systems for hospitality business. We are expecting feedback from both in September.

### ***How mature is the innovative solution in terms of its readiness to commercialise widely?***

A beta version will be available by the end of ph2. In terms of TRL we'd rate it as 7-8. We will test it in real environment (demo sites ) and do debugging hardware adaptations. At the end of ph3 we plan to be at TRL8-9.

Feedback from end users and facility managers during field tests done for summer / winter in different climate zones (Atlantic, Mediterranean, interior) will be very useful to make changes & improvements accordingly. As requested by Procure, existing installation will be removed only after end of ph3 to ensure heating, cooling, DHW.. will still be available as a backup plan if needed.

Most of the solutions have already IP rights granted as a single isolated solutions by the respective companies of our SEBR Consortia. We need to check, how this integrated solution can be patented without interfering existing rights.

Key members of this consortia are located in Germany, France and Spain. These are the countries where we'll put initially our efforts as they represent a large percentage of Europe's population and GDP. Also, speaking a local language and knowing local market is an asset.

### ***What is the current commercialisation success of the solution?***

Just starting phase 2 now, where dissemination and communication tasks will begin in LinkedIn , and specialized e-magazines. Budget has been allocated for this. So far we've concentrated on the R&D & technology.

### **3 Other benefits obtained**

#### ***Getting easier access to (a new segment of) the public procurement market***

We've known procurers from 6 cities and we look forward to work with them in the demo sites and in other future projects. As the Procure family grows with the addition of more cities (Logroño, Frankfurt, Antalya, Maintal, etc ) we expect to know other buyers and participate in future bids. Also, deployment of our solutions in these cities will give us more visibility, credibility and reliability for future projects.

Also, Procure itself has planned Dissemination / communications activities; on the 9<sup>th</sup> Sept there is an online presentation planned of our Consortia.

#### ***Growing your business across borders and/or to other markets***

We are expecting feedback from two private entities ( Rabobank & Österreich Werbung ). Also, from now on we'll start DCE activities which will help us generate more traction. There are also public domain websites where open market licitations are published. We'll start checking them regularly.

#### ***Shortening the time-to-market for your innovation thanks to early customer/end-user feedback***

End user feedback is very important to us. The VOC (voice of customer) will be taken into consideration during & after deployment of our solution to improve our proposal, add new features / functionalities & corrections if required.

#### ***Other benefits / lessons learnt***

This Consortium would not have been created without Procure initiative. As we move on to ph2 & 3 sure we'll go through experiences that will enrich and improve our consortia.

## 4 Business growth

### ***How much has your business already grown during the procurement***

DCE will start now and we expect to participate in some bids in the following months. During this 3 months of ph1. we've been focusing on the tech solution proposal ( renovation approach ) and R&D development.

### ***What are the prospects to grow your business via wider commercialisation of the solution:***

TAM (Total addressable market) : According to EU commission the Renovation Wave strategy promotes the large scale renovation of 35M buildings across Europe over the next 10 years.

We initially consider 10% Serviceable addressable Market (SAM) : 3,5M buildings

0,001% of this market share (SOM, serviceable obtainable market) would still represent 35 buildings / yr.

This market is clearly growing due to Europe's strategy on reducing GHG emissions.

Commercialisation could start after deployment of demo sites where we'd have tested and fine-tuned our solution.

The construction sector is extremely fragmented, where more than 95% of manufacturers and professionals operate as SMEs , most in separate & local markets.

Our consortia has members from France, Portugal, Germany, Spain, ....speaking local language and knowing market regulations & contacts, should be an asset during the bidding process.

### ***Which future steps do you plan to take to further grow your business?***

We have allocated budget for DCE in phase 2. Which means we'll start working on our landing page, develop the exploitation strategy and ensure the successful exploitation of the project results, evaluate the market potential,, perspectives and opportunities. Also, we'll identify & analyse the most suitable business models / cases to ensure economic sustainability of the solutions proposed. Targeted campaigns and ads will be implemented in LinkedIn and the project will seek to publish articles & ads in specialised e-magazines.

Participation in EU Construction Fairs (Futurebuild / Construmat / Rebuild / Architect@work...) as visitors or exhibitors will also be considered.

Of course business mergers / acquisitions / joint ventures / spin-offs / IPO / distribution channels / marketing activities, expanding to other countries are open options on the table we'll consider when it's the right timing. But before that stage we need to deliver, win bids, deploy, and grow.