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ALDREN Logo

**ALLiance for Deep RENovation
in buildings**

ALDREN

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IVE

**Roadmap for
implementation and
market uptake of the
project results (V.01)**

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19.12.2017	V01	IVE, Carolina MATEO		Draft ready for external revision.

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ABBREVIATIONS

Acronym	Full name
AA	ALDREN Alliance
CA	Consortium Agreement
CWS	Collaborative Work Space
DoA	Description of Activities
ECTP	European Construction Technology Platform
EVCS	European Common Voluntray Certification Scheme set up by the European Comission according Article 11 (9) of EPBD
GA	Grant Agreement
PC	Project Coordinator
PSC	Project Steering Committee
QA	Quality Assurance
WP	Work Package
WPL	Work Package Leader

Abbreviations:

Dissemination Level

PU | PP | RE | CO

EXECUTIVE SUMMARY

The Roadmap for implementation and market uptake of the project results is a public document of the ALDREN project, delivered in the context of WP3 Dissemination, communication and market uptake, Task T3.3 Dissemination activities.

The ALDREN Roadmap is drafted for efficient working and communication during the project but also beyond the project duration. Its key elements (e.g. management responsibilities, roles, technical organisation, efforts, meetings, project reporting, etc) are described, along with quality lines for project organisational aspects and project management.

This first 01 draft needs to be taken as a starting document, which will be updated periodically according to the project demands. It constitutes a memorandum to be used internally as a reference guide by the consortium members and especially by the task leaders. This document explains basic issues about management procedures & quality assurance. These internal working rules do not have a contractual status because the document is not signed by the consortium members.

1. INTRODUCTION

The Roadmap for implementation and market uptake of the project results is produced in the context of WP3 Dissemination, communication and market uptake, Task T3.3 Dissemination activities, which runs over the whole project period from month 1 to month 30.

According to GA, article 28, each beneficiary must — up to four years after the project duration — take measures aiming to ensure ‘exploitation’ of its results (either directly or indirectly, in particular through transfer or licensing by:

- (a) using them in further research activities (outside the action);
- (b) developing, creating or marketing a product or process;
- (c) creating and providing a service, or
- (d) using them in standardisation activities.

If results are incorporated in a standard, the beneficiary concerned must — unless the Agency requests or agrees otherwise or unless it is impossible — ask the standardisation body to include the following statement in (information related to) the standard:

“Results incorporated in this standard received funding from the European Union’s Horizon 2020 research and innovation programme under grant agreement No 754159”.

This document will provide the guidelines for developing a business plan for market deployment.

The Roadmap Results will be available to the project participants on the project *collaborative work space (CWS)* (ALDREN SharePoint <https://sts.ait.dtu.dk>) in a folder under “WP3 Deliverables” called “D_3_3_Roadmap_Results”.

The Roadmap Results corresponds to the deliverable D3.3 called “Roadmap for implementation and market uptake of the project results” with the due date month 2.

The Roadmap Results is a “living document” which will be maintained and updated whenever useful, throughout the entire duration of ALDREN project by the WP3-T3.3 task leader.

Progress and changes in the Roadmap Results will be documented in a sequence of the ALDREN Roadmap versions.

2. ROADMAP FOR IMPLEMENTATION AND MARKET UPTAKE OF THE PROJECT RESULTS

The partners of the project place significant emphasis on dissemination activities. In the ALDREN project it is estimated that dissemination activities include: improving business skills of VCS developers and applicators, implementing EVCS in a cascade of pilots in different geographies, upscaling with ALDREN Alliance the implementation of EVCS.

WP3 is devoted to test and promote the procedure, train the experts and professionals on how to use it and it is finally devoted to the overall dissemination of the project's scope, outcomes and results.

2.1. Main project results: overview of the ALDREN market uptake at project level

In the framework of ALDREN project, the market uptake is split in two parts:

- 1st Part: orientated to certification bodies (WP3-T3.1) on how to implement the **ALDREN procedure**;
- 2nd Part: orientated to the **experts** (WP3-T3.2).

Therefore, the implementation of the ALDREN procedure starts with a well delimited pilot phase (WP3-T3.1/3.2), using the infield experience and contact of existing certification bodies (CERTIVEA, IVE) and the support of contributing stakeholder (property owners). The ALDREN procedure should be integrated as modules in the existing scheme.

Market uptake through certifying bodies: implementation and testing on the non-residential sector (offices and hotels)

To favour the market uptake, the ALDREN project focus during the project phase on the implementation of VCS through project partners implementation in different geographies and its inclusion in the existing environmental scheme operators HQE, BREAM, DGBN, IVE, members of the Sustainable Building Alliance.

Within this task, the ALDREN procedure will be implemented on 15 pilot buildings (offices, hotels), located at least in 3 different countries. The implementation will offer the ALDREN partners, acting as certification bodies, an opportunity to work on the integration of ALDREN outcomes in their certification schemes and their evolution.

An important additional result will be the recommendations for update and improvement of EVCS.

To serve the dissemination and market uptake, all partners involved in technical testing work in WP3 will contribute and report on the implementation of the ALDREN procedure on pilot sites and communicate at national level.

Market uptake through building experts: Professional training

But also, the market uptake includes the professional training related to the energy assessment on the buildings. REHVA, Federation of European Heating, Ventilation and Air Conditioning Associations representing a network of more than 100.000 engineers from 26 European countries, and partner is the ALDREN project will lead this activity. In addition, for the dissemination, and especially for the

activities related to, a cooperation with RICS, the world's leading professional status in land, real estate, infrastructure and construction is also foreseen.

To disseminate the ALDREN procedure, to overcome the tailor-made approach and to increase the renovation quality, well-trained professionals for energy performance assessment are needed. The basic materials supporting the training and assessment tasks have to be prepared.

The implementation of the ALDREN procedure will be done also in cooperation with the existing actors to train these building professionals as The ALDREN partners are already familiar with the training sessions and related quality procedure.

This task will include the preparation of training materials and some first training sessions (2-3) to confirm the adaptation and relevancy of the contents to the targeted audience.

2.2. Involvement of target groups

The building owners (end users, property investors and developers)

The ALDREN project is focused deliberately on the private non-residential sector, which is also the target of the EVCS, and especially on commercial investors operating in multiple countries or all over Europe (e.g. European Property Federation).

These investors represent strategic market players as motivated front runners, early-adapters able to experiment and widespread innovative approaches. Most of them are already using existing (environmental) leading schemes (e.g. BREEAM, DGNB, HQE,) to gain recognition for good performance. They also own large groups of building units rather standardized and are able to take advantage of harmonization, simplification and cost reduction and the potential for further replication (snow-ball effect).

How to implement the EVCS in the property managers' decision process?

The AA will get involved through the property owners' group and existing certification schemes operators, whose support and cooperation will contribute to collect building energy data, so as to set the correction and decomposition factors generally needed to exploit energy consumption measurements and cross-analyse calculated EP. The ALDREN Alliance and the pilot sites (T3.1) will also allow describing the current market status and consolidating the methodological approach and its integration in the overall ALDREN procedure.

One of purposes of EVCS is to inform the consumer or end-user about the energy performance and energy quality of the building, on a stable and standardized basis, at European level (see EPBD on reporting energy class in advertisement). Besides, the predicted energy savings will often not happen due to changes in occupant behaviour, like typical increase of thermostat settings in winter. The project will provide methods for user feed-back to obtain a more energy efficient user behaviour.

In the perspective of a building passport, the ALDREN project will also deliver recommended cost-effective actions for building management, adapted to the considered building, with indications about their interactions with traditional maintenance and replacement works.

The ALDREN project is explicitly targeting international investors working European wide in the non-residential building sector. Indeed, these property managers represent strategic market payers, being

both early adapters and motivated front runners able to experiment and widespread innovative approaches over Europe. Commercial office take-up of the ALDREN approach will be driven by recognition of the association between verified EP level and financial yield. In the commercial hotel market, the same dynamic would manifest if EP level can be shown to correlate with bedroom occupancy rates, driven by guest satisfaction.

The financial sector

Financial institutions interested in setting and driving new smart financing instruments for energy efficiency investments (e.g. Energy Efficiency Financial Institutions Group) will be the targeted group in this project.

They will profit from harmonized procedures for financing renovation based on reliable benchmarking rules for investment, better tailored made public procurement rules, or monitoring of real energy performance for better predictability of investment performances in energy savings. Investor focus is on buildings as an asset.

Building owners and financial sector are important stakeholders also invited by European Commission to participate in the EVCS development (stakeholders meetings, European Commission consultancy) where they showed big interest in EVCS and provided active contribution.

A link will be established between existing financial mechanisms and the energy performance of building via mortgage and asset value evaluation leading to pre-standardized procedures for financing building renovation (e.g. agreed protocols and benchmarking rules for private capital investment, 'ready to use' financial products, widely available).

Building professionals

Among the building professionals, several target sub-groups are represented in the ALDREN consortium:

- Potential EVCS scheme operators, as existing voluntary environmental scheme operators (e.g. French HQE, German DGNB, UK BREEAM, Spanish IVE), applying harmonized energy performance evaluation in existing schemes, training experts for energy certification, designers and all professionals included in the chain for investment projects and contributing to rising the awareness of building owners and end-user.

The involvement of voluntary certification schemes operators is essential because they cooperate with networks of building assessors, representing third parties, required by businesses to conduct transparent certification and declare higher performance standards;

The ALDREN procedure and EVCS assessment methods are not to be positioned as potential competitors for the existing environmental voluntary schemes. They represent consolidated assessment modules for energy performance assessment to be proposed to the market as stand-alone procedures or merged (as evolutions) into broader existing voluntary schemes. Indeed, existing scheme operators keen to address perceived shortcomings in their products

arising from design to reality performance gaps will welcome the opportunity to adopt the ALDREN approach with its recognition of verified performance.

Existing voluntary environmental scheme operators (French HQE, Spanish IVE) are also involved in the principles for EVCS development. Their European Association Sustainable Building Alliance is supporting the project (see letter of interest).

- National assessors, experts, currently working with mandatory national EPCs. Involving these actors in the project allows identifying and facilitating synergies between the two schemes (the mandatory and the voluntary). Moreover, these actors may allow an easier uptake of the ALDREN scheme by taking it as additional activity and further support for the future merging of the two systems.
- Standard writers and technical building institutes, universities and designers able to integrate existing results into a common methodology and define the indicators. Getting some experts familiar with both schemes (mandatory national and EVCS) would even facilitate further integration, within mandatory national EPCs planned revision cycles.

To determine the future demands/needs for skilled professionals/assessors/experts a so called Skills Mapping could be executed in each in PROF/TRAC participating member state [4]. In other words, the mapping of professions and professionals involved in EVCS, the skill mapping would define the skills needed. This includes the mapping of existing qualifications, knowledge sources, education programmes, post-initial training supply and accreditation and certification structures. A common methodology, based on the BUILDUP-skills and PROF/TRAC experiences, could be used.

In the common Skills Mapping methodology, ALDREN could take as a starting point the list of professions used in PROF/TRAC H2020 project [4]:

Definition of professions in Prof/Trac

Profession	Definition of the professions
Architect	The designer of buildings for human occupancy or use, who: a) visualises the design and; b) supervises the building construction process
Engineer*	The designer of materials, structures and systems while considering the limitations imposed by practicality, regulation, safety, and cost
Project manager	The person responsible for the planning, execution and closing of any (nZEB) building project
Project developer	The project developer takes response for the associated risks involved in the building process for the customer and hands over the project to the tenant / buyer after completion and use of the building
Building manager	The person responsible for quality assurance during on-site construction works in the realization of EVCS buildings

Building owner	The person responsible to maintain the real estate as it was realized at the end of the EVCS building process (including facility management)
Financial manager	The person responsible for all finances involved during planning, execution and closing of any (EVCS) building project
Procurer	The person responsible for facilitating the process of EVCS tenders and (sub)contracts

Interdisciplinary skills	Skills definition
Communication	Being able to listen and summarize conversations (in common language) Realizing common understanding and involving other people in the project objectives.
Information management	Understanding technical drawings (2D/3D) and texts. Being able to interpret information (also in BIM-models). Understanding of the complete EVCS building process.
Collaboration (teamwork & facilitation)	Working together in cross-trade settings, in other words, with all involved EVCS building disciplines. Being able to connect the individual performance to a team performance. Can enthusiasm for sustainable EVCS buildings.
Quality assurance	Taking responsibility in assuring quality of its own work. Being aware of the consequences of his actions on the energy performance of the EVCS building and the building process. Able to implement and assess self-inspection methodologies. Skills on commissioning and maintenance.
Sustainable architectural design	Being able to design with all partners a EVCS building with comfort and sustainability as starting point. Having a clear view on energetic consequences with every choice made in the design process.
Integrated design	Can design integrally with the other involved EVCS building disciplines
Sustainable building materials	Being able to assess building materials on sustainability and make the right selections in the design
Sustainable installation materials	Being able to assess installation materials on sustainability and make the right selections in the design.
Environmental (indoor) quality	Having a clear view on indoor environmental consequences with every choice made in the design process.
Economics	Having a clear view of issues on finance, costing, LCC analysis during the EVCS building process
Procurement	Being able to facilitate the process of EVCS tenders and (sub)contracts

Getting these stakeholders involved in the ALDREN project will not only improve its quality, but also facilitates its delivery and implementation. Indeed, these stakeholders will be involved and contribute

to the development and implementation of the methodology in their renovation process, either as building owners or investors, or as building professionals or developers of national strategies and methodologies.

2.3. General drivers

In general terms, incentives are seen as a driver. They are an effective solution to motivate building professional, so they want to participate and engage in ALDREN procedure. As the EVCS is an EU policy instrument and based on international standards (CEN, ISO) it is possible to create incentives.

There are different types of incentives; they can be direct or indirect. For instance, direct benefits come directly from free taxes of the procedure while indirect benefits come from recognition, Corporate Social Responsibility (CSR), etc.

The following paragraphs describe some of the foreseen incentives for implementing ALDREN procedure:

- The implementation of ALDREN procedure can lead to a EU recognition focused on EVCS. The professionals gravitating around the ALDREN platform are supposed to have an added value, as they offer services that have been promoted in the framework of an important EU H2020 project as they have ALDREN endorsement. This aspect could be seen as a factor which characterises and differentiates their services.
- ALDREN procedure can offer added value for professionals as they will be trained at a harmonized Energy performance rating based on the European Voluntary Certification Scheme (EVCS) verified by measurements to increase comparability, confidence and market uptake by standardized solutions (CEN / ISO).
- CSR is about business and industry taking responsibilities beyond that of creating economic value. According to the European Commission, it is “a concept whereby companies integrate social and environmental concerns in their business operations and in their interaction with their stakeholders on a voluntary basis”. ALDREN gives a main contribution to close the gap between energy performance at design stage and the real energy performance in practice and real operational performance. Therefore, it can be assumed as a green label. This type of green labels opens the door to clients/customers. There is a growing trend in asking for some environmental requirements to the company that is being contracted.
- A strong point of ALDREN project is that it is based on relevant previous projects or activities so that errors from the past and good practices can be encouraged in order to reach the different target groups. For instance, NEZEH (Nearly zero energy hotels), PROF/TRAC (Professional multi-disciplinary training and continuing development in skills for NZEB principles) and QUANTUM (Quality management for building performance - improving energy performance by life cycle quality management) projects among others.

- Bring together, within a European Alliance, the main stakeholders and market players, in order to make them collaborate, to specify their needs and organize the market uptake of a common language based on the EVCS to overcome the traditional market barriers to deep renovation is something must be seen as an opportunity for professionals as they can become pioneers of the “ALDREN movement” if they want to. They will receive all the updates and they will be able to spread all the information at European level and at a national level. This is an opportunity as none can trigger the process alone; collaboration is needed to structure and promote a rational and comprehensive procedure, and this is their opportunity to do it.
- Another added value is that ALDREN project will be among the first applications of the EVCS, either as an energy module in existing schemes, as standalone, or to be overtaken by the Member States. This is an opportunity for frontrunners to take advantage in order to promote themselves.
- Moreover, the EVCS (energy) will be completed by other modules, as on health and well-being and the verified performance, because the energy savings alone do not motivate the building owners in non-residential sector to trigger deep renovation. Therefore, as special attention is to be paid on indoor air quality, health and comfort so as to ensure that energy improvement preserves or, more likely improves these aspects, additional indicators in the EVCS will be an outcome that should motivate stakeholders to implement ALDREN procedure.
- Finally, to link building ratings to private, or public national or European financing instruments (loans with favourable interest rates, reduced taxes, incentives) in order to mobilize financing and investment through a broader financial and economic valuation of building assets, in line with energy and sustainable performance. Beyond the estimation of savings, the interaction in between energy performance, deep renovation and financing remain very poor at present time. Developing a broader appreciation of deep renovation benefits in terms of financial issues (risk reduction, property value/yield, rental income, lease length, voids, etc.) represents one of the keys to the scale up.

To sum up, ALDREN procedure gives added value for society, building professionals, property owners and the financial sector.

2.4. General guidelines for developing a business plan

Introduction

A business plan is a written document that describes a business, its objectives, its strategies, its market and its financial forecasts. It is also a helpful tool to monitor the business performance to stay on track.

Executive Summary

It is a summary of the entire plan and should include highlights from each section of the document. It is aimed at explaining the basics of the business in a way to inform and interest the reader.

Business Summary

Describe the vision of the business related to initiative. Information about the company, management, products and services should be included. In our case, about the project.

Market Analysis

It should include the analysis of the current situation: where are you? Analysis of both demand and supply. Bearing this in mind, it should provide an answer to the following questions: Which is our market? How do the distribution channels work, i.e. how do the customers receive our products? Which are our segments? How are our segments? In what position are our competitors?

A SWOT Analysis is a helpful tool for this. It analyses:

- Strengths: company internal factors that are helpful to achieve the objectives;
- Weaknesses: company internal factors that are harmful to achieve the objectives;
- Opportunities: external factors out of the company's control that are helpful to achieve the objectives;
- Threats: external factors, out of the company's control, that are harmful to achieve the objectives.

Strategy and Implementation

Describe how we intend to act in the market: objectives and strategy to follow.

Objectives must be set. Where do we want to go? Usually, target results are related to increase the market share, the profitability, the sales volume (quantity) and to improve the image of the product as well as its relative position on the market (quality). They are also a consequence of the more general objectives of the General Management, the marketing management, the sales management, the communication management and the product management. In general terms, all these objectives have to be precise (quantifiable as much as possible), realistic and coherent.

Financial Plan

How to provide all the required financial resources? To that extent, possible assumptions have to be included underlying our figures projection, both in terms of costs and revenues so as to clarify the thinking behind the numbers.

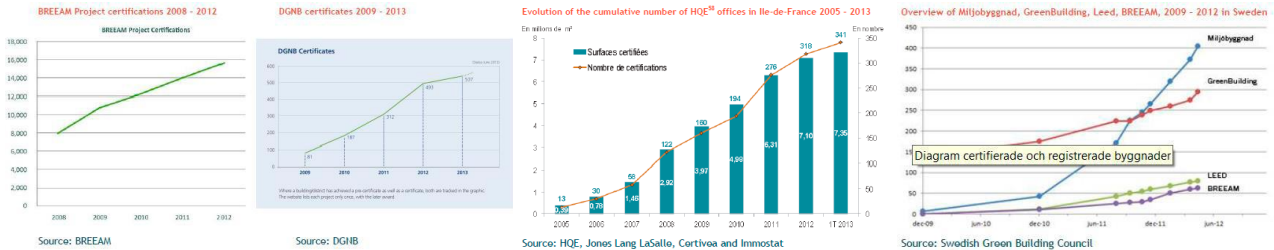
Monitoring

The obtained results need to be assessed in order to measure any possible deviation from initial forecasts, and if so, to analyse the causes of this deviation and take the appropriate corrective actions. Moreover, knowing that markets change over time, it is necessary to control and re-evaluate the realisation of the business plan. If necessary, it may even be advisable to change the objectives initially set.

2.5.Path to the market after the project: The ALDREN self-funded Business case

A business plan was estimated as follows.

The market estimated is based on the historical trends of the major voluntary certification schemes for commercial buildings.



Source: 1 „Market study for a voluntary common European Union certification scheme for the energy performance of non-residential buildings“, Final report, by Triple E Consulting – Energy, Environment & Economics B.V. , Ecofys, TNO, 2014

Based on these data the yearly market of buildings in EU 28 to be certified is estimated at 2 500 buildings (average area per building: 10 000 m2).

Market estimated for ALDREN for the first 3 years after the project

The yearly turn-over of the different actors is estimated based on the following hypotheses:

Year 1:

It is estimated that during the first year the number of certified buildings is limited by the number of experts to be trained.

- 50 buildings should be evaluated in the following 5 countries with different climate: Germany (EU-north), Spain (EU-south), UK (EU-west), Slovakia (EU-east), France (EU-middle)
- 4 scheme operators should be "accredited" BREEAM, DGNB, IVE, HQE
- 12 experts (3 per SO) should be trained and certified in 1 training session

These trained experts could be the trainers for the next sessions.

Year 2 / Year 3

Year 2 was just estimated as the intermediate stage between the first and the third year. In the third year it was estimated that the ALDREN could reach 500 buildings/per year (20% of the market).

Based on this volume:

- the Central scheme operator (collecting European wide the data of each scheme operator) will have a yearly income of 500 000 € after 3 years (500 k€/year is estimated to be needed for self-funding);
- each Scheme operator (certification body) will reach a yearly income of 125 000 € after 2 years;
- each energy assessor will reach a yearly income of 37 500 € after 2 years

		Year 1	Year 2	Year 3
Number of certified buildings	market: 2500	50	250	500
Central scheme operator		1	1	1
Number of scheme operators		4	4	8
Number of energy assessors		12	40	80

Yearly income (€)

Number of certified buildings	1	50	250	500
Total	9 000	450 000	2 250 000	4 500 000
Central scheme operator	1 000	50 000	250 000	500 000
Scheme operator	2 000	25 000	125 000	125 000
Energy assessors	6 000	25 000	37 500	37 500
Software	2 000	24 000	80 000	160 000
Training	2 500	30 000	100 000	200 000

The number of assessors (from 12 to 80) has to be compared to about 2000 energy assessors for the existing environmental schemes (HQE:200, DGNB:400, BREEAM:2 000).

3. REFERENCES

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