



WP 6 - EFFICIENCY

ENERBUILD Tool: Transnational Pilot Testing on 46 Buildings and Experiences on Advisory Services

ANNEX 3:

Evaluation Reports of 5 Pilot Advisory and Certification Bodies

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Contents

A	Evaluation ENERBUILD WP6.4 Certification Service AUSTRIA - Vorarlberg	3
	1 Basic information	3
	2 Establishment of a certification service.....	3
	3 Prescription of the certification service	4
	4 Work done in WP 6.4.....	5
	5 Experiences	5
	6 Next steps.....	5
	7 Suggestions for improvement of the ENERBUILD-Process	6
B	Evaluation ENERBUILD WP6.4 Advisory Service FRANCE - Lyon	7
	1 Basic information	7
	2 Establishment of a advisory service	7
	3 Prescription of the certification service	8
	4 Work done in WP 6.4.....	9
	5 Experiences	9
	6 Next steps.....	10
	7 Suggestions for improvement of the ENERBUILD-Process	10
C	Evaluation ENERBUILD WP6.4 Certification service ITALY - Alessandria	11
	1 Basic information	11
	2 Establishment of a certification service.....	11
	3 Prescription of the certification service	12
	4 Work done in WP 6.4.....	12
	5 Experiences	12
	6 Next steps.....	12
	7 Suggestions for improvement of ENERBUILD – process.....	12
D	Evaluation ENERBUILD WP6.4 Advisory Service AUSTRIA - Styria	13
	1 Basic information	13
	2 Establishment of an advisory service	13
	3 Prescription of the service	13
	4 Work done in WP 6.4.....	14
	5 Experiences	14
	6 Next steps.....	14
	7 Suggestions for improvement of the ENERBUILD-Process	15
E	Evaluation ENERBUILD WP6.4 Advisory Service Italy - Piemonte	16
	1 Basic information	16
	2 Establishment of an advisory service	16
	3 Description of the service	16
	4 Work done in WP 6.4.....	17
	5 Experiences	17
	7 Suggestions for improvement of the ENERBUILD-Process	18

A Evaluation ENERBUILD WP6.4 Certification Service AUSTRIA - Vorarlberg

1 Basic information

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2 Establishment of a certification service

Since the end of the 1990 years private builders in Vorarlberg receive housing subsidies, in case a high energetic and ecological standard is converted. Due to this long experience of the consideration of energetic and ecological building criteria the planners and craftsmen are familiar with it.

In the past years the call became loud for an adjustment of the guidelines for the payment of state promotions for municipalities for building above ground level. Municipalities, which generate a higher energetic and ecological building standard than others should receive higher subsidies.

Since 2006 an “advisory service” exists as support for public building projects on community-level. Therefore a “certification service” was established in the ENERBUILD project. Object and task of the certification service is to issue an independent building certification “Kommunalgebäudeausweis - KGA”. The KGA is a local adjustment of the ENERBUILD tool in cooperation with the Vorarlberg federal state government. The state subsidies for community buildings depend on the results (points) of the KGA certification. An annual exchange between the KGA issuer and the public authorities secure the quality of the certifications.

3 Prescription of the certification service

Under the leadership of the “Environmental Federation of Vorarlberg” (Umweltverband Vorarlberg) as an association of all 96 municipalities in Vorarlberg 6 private technical offices¹ were trained to offer this certification service. This small offices (less than 10 employees) are authorized to issue an official and promotion-relevant KGA. All selected offices do have an affinity for the contents and goals of the KGA. They are not involved in the planning and execution process of the respective building. For Vorarlberg it seems to be sufficient to design altogether 6 technical offices as certification services.

The ENERBUILD tool was developed together with transnational project partners within the ENERBUILD project. It was adjusted to the basic conditions of Vorarlberg in coordination with the local and federal state authorities. The result is an independent building certification “Kommunalgebäudeausweis - KGA”.²

In December 2010 the Vorarlberg federal state government decided the adjustment of the guidelines for the grant of federal state subsidies concordantly. The basis promotion according to different building types was reduced by 2%. In reverse extra amounts up to 4% can be generated in dependence of the energetic and ecological performance of the buildings (calculated points in the KGA). Additionally the height of the upper limit of the accepted building costs has been increased in dependence of the points in the KGA.

Step 1: The municipality/city defines in advance an appropriate number of points to achieve in the KGA as an “ecological goal”.

Step 2: During the planning and execution process of the building-project the appropriate measures are converted. If desired the environmental federation of Vorarlberg supports the municipality/city.

Step 3: Within 3 months after deployment of the building the KGA certification document has to be submitted. While facilitating all relevant documents the costs for the KGA certification are limited to 1,600 Euros.

1 Following 6 technical offices are allowed to offer the certification on KGA:

DI Erich Reiner - Ingenieurbüro für Holzwirtschaft und Bauphysik
Platz 39, 6870 Bezau DI Erich Reiner erich@reiner.at 05514/4170

Bertsch Gebhard - Ökoberatung
Raiffeisenstraße 58, 6713 Ludesch Gebi Bertsch g.bertsch@oekoberatung.at 05550/23666

DI Siegfried Lerchbaumer - Technische Büro
Brunnenfeldstraße 23, 6700 Bludenz DI Siegi Lerchbaumer siegfried.lerchbaumer@bau-oekologie.at 05552/66115

Weithas Bernhard Dipl.-Ing - Bauphysik-Bauberatung
Grafenweg 16, 6971 Hard DI Bernd Niehoff office@weithas.com 05574/86568

Dipl. MC Ing. Wolfgang Caser - Technisches Büro
Steinebach 13, 6850 Dornbirn Wolfgang Caser wolfgang.caser@zeitbewusst.net 05572/55166

Spektrum - Zentrum f Umwelttechnik & -management Gesellschaft mbH Lustenauer Straße 64, 6850 Dornbirn DI Markus Landgrebe markus.landgrebe@spektrum.co.at 05572/208008

2 <http://www.umweltverband.at/index.php?id=392>

4 Work done in WP 6.4

A high affinity and familiarity with energy efficiency and building ecology in the building sector was important for addressing and selection of the offices. In a first step the requirements were defined together with the technical offices, which should be trained for the certification service.

The concept for the training was provided including an appropriate agenda for a two-day workshop. During the 2-day workshop in September 2010 all ENERBUILD criteria as well as the concept of the planned promotion handling was discussed in detail with the participants.

To become familiar with the regionally adapted ENERBUILD tool, each participant issued a laboratory KGA certification on the basis of a project already realized. The ENERBUILD project-team was available for support. The experiences made thereby were discussed at a further one-day workshop in November 2010. Numerous optimizations of the tools resulted.

The organizational procedure for the issuance of the KGA and the handling of the promotion was discussed with the Vorarlberg federal state government and the local Municipality Association of Vorarlberg. After weighing different models an obligatory procedure was fixed.

5 Experiences

For a broad application of a certification tool for buildings it is important that the criterion set is not too complex. The process should be highly cost effective. The criteria should be generally understandable and be clearly described in the application explanations. If possible common building calculation methods should be used. A special challenge was to guarantee the greatest possible simplification with as less losses of the content as possible.

During the establishment of the certification service it appears very important, that the persons, which should be trained, are familiar with the contents „energy efficiency“ and „building ecology “. Appropriate practice tests (application of the tools) during the training appeared to be as essentially important.

The result with the conversion to the guideline for the grant of federal state subsidies was taken up so far very positively of all involved parties (municipalities, Federal State of Vorarlberg, planners). The application of the KGA led to an improvement of the energetic and build-ecological standard of municipal building projects.

6 Next steps

It is planned to further use the KGA as a tool for public subsidies and other promotions of ecological buildings. A continuous improvement of the local building standard, both in the new building and reconstruction sector is aimed.

Due to experience data there is an annually (slight) adjustment of the criteria and their weighting within a multi stakeholder process scheduled. The guidelines for the grant of subsidies will be decided also annually by the Vorarlberg Federal State Government.

There should be an expansion of the application of the KGA tools to other building types (e.g. kindergartens, fire stations etc.), which were so far not promoted with federal state subsidies.

7 Suggestions for improvement of the ENERBUILD-Process

Due to technical developments and changes of the legal basic conditions it appears necessary to hold contents of the ENERBUILD tools updated. Constant adjustments and coordination of regional and national activities are necessary. For this synergies can be used and a drifting apart of the used tools can be avoided at a long-term transnational exchange. The goal should be an international platform, on which all regionally used building rating tools are shown.

Pilot applications of the ENERBUILD tools - special for outstanding projects - should be further supported and marketed.

Regionally (in Vorarlberg) the tool should be used also for non-municipality public buildings (e.g. national- and federal schools). This should be promoted accordingly.

The public work inclusive marketing of the results should be forced.

B Evaluation ENERBUILD WP6.4 Advisory Service FRANCE - Lyon

1 Basic information

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2 Establishment of a advisory service

Metropole Savoie (grouping of 120 local authorities of Savoie among which Chambéry), observer of ENERBUILD project, decided in 2009 to advise projects to be energy efficient. Metropole Savoie had also the will to implement an eco-conditionality of public subsidies at the same time.

Rhônealénergie-Environnement, through ENERBUILD project, added to this “energy target” the concept of Environmental Quality of Building (EQB), which goes much further than the classical energy target. This EQB could also help Metropole Savoie to define some criteria of eco-conditionality for public subsidies.

The first steps of an advisory service had been established. Metropole Savoie implemented an energy advisory service for schools and public buildings. ENERBUILD:

- convinced Metropole Savoie to go further towards EQB
- trained the 3 local energy agencies (ASDER, ALEC, AGEDEN), who was the traditional structure of energy advisory, to EQB through the tests of 8 buildings.
- implemented the advisory service through the local energy agency. This advisory went further than the 8 building tested with ENERBUILD tool, with 12 buildings advised in the framework of a call for project “Sustainable buildings 2011-2015”, and 3 more schools.

For the moment, only the advisory service is implemented.

3 Prescription of the certification service

The advisory service is implemented through the local energy agency of Savoie, ASDER. It is a 30 years old association, which works in the fields of rational use of energy and development of renewable energy sources.

20 people work in the ASDER. It is involved in three main fields;

- Training: ASDER developed a 9 months training since 15 years, which gives a graduation in “project manager in RES and rational use of energy”. Every year, 40 people are trained in this training. ASDER is also involved in short training sessions, all year long. The training section employs 6 persons.
- Awareness, information and advisory for individuals in energy efficient buildings (new and refurbishment). This section employs 8 persons.
- Awareness and advisory in energy efficient buildings for local authorities and social housing. This section employs 6 persons.

ASDER is an independent association, financed by public bodies such as local authorities, general council (“Département” level), regional council and also the national agency for energy and environment. ASDER has missions of public interest, with a budget of about 1,2 Million € in 2011.

In 2010, ASDER organized visits and conferences, more than 2700 people attended these events. 11 exemplary buildings were visited by more than 360 people. ASDER organized 30 information’s meeting about energy efficiency, with more than 1100 people who attended these meetings.

The service is paid by Metropole Savoie to advise their member municipalities.
Association savoyarde de développement des énergies renouvelables (ASDER)
562 Avenue du Grand Ariétaz
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73094 Chambéry Cedex 9
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Director: Alain WEBER
Person in charge of advisory service for Environmental Quality of Building: Delphine MUGNIER

Implementing an advisory service about Environmental Quality of Building with an Local Energy Agency such as ASDER and through tools like ENERBUILD Tool is an innovation in the Rhône-Alpes Region and it could grow easily.

The works started with Metropole savoie and could easily be extended to the whole part of Savoie territory (200 municipalities). It could also be extended to other territories of Rhône-Alpes, because there are already local energy agencies in all *Départements* (8 *Départements*, 12 local structures). These local energy agencies are organised through a network, and work together in many fields. What ASDER learnt and implemented in advisory services will be an example for other structures and can be disseminated.

4 Work done in WP 6.4

RAEE helped Metropole Savoie to add in its call for project “ Construire durablement “ (Build in a sustainable way) all the aspects of environmental quality of building. This target of EQB was not in the call for project at the beginning, but Metropole savoie wanted to go further about local criteria and eco-conditionality of public subsidies. Metropole Savoie accepted but was wondering on the way to do it, because it is not in its traditional domain of activity: which criteria? Which tools? Which structure can give such information? The local level is the good scale for giving advices, but is not the good scale to define a tool.

ASDER has always advised Metropole Savoie in the Energy field. We convinced them that working on tools such as ENERBUILD was very interesting, and RAEE trained them to ENERBUILD tool, but also about all the reflection about EQB as criteria for public subsidies. ASDER developed skills about this subject and is now convinced of the interest of tools.

During the ENERBUILD project we discovered that an EQB assessment tool must be elaborated at regional level and not at municipal level. So RAEE started discussion with the regional council to implement a tool on the ENERBUILD frame, at the regional level. This regional tool could be therefore adopted by local authorities.

RAEE also started an inter-regional discussion with technicians of other French regions, to implement a collective platform, which could be the structure for a collective tool. This work was done with BDM, from Provence Alpes Côte d’Azur region.

RAEE also started some discussions with other EU projects, and meet 2 times French representatives of EU project (IRH, Superbuilding, OpenHouse, Construction21) to implement a European platform.

5 Experiences

The sooner a building benefits from advice from an advisory structure, the best chances it has to have a good score at the ENERBUILD tool. It means that the establishment of an advisory service is crucial for the results, and this advisory service has to be involved since the beginning of the project. And it’s more complicated to operate as advisory service when the project is already started.

The definition of a set of criteria must come from a public authority bigger than a local authority. Indeed, architects, engineers and companies working on the buildings usually works at a much wider scale than the local authority, at least at the regional level. Because all actors of building have a range of action wider, they must not be in front of many different tools.

What is a great strength of ENERBUILD tool is its compactness, with a limited number of criteria and simple to use.

To calculate the OI3 index was quite difficult, because the calculation of embodied energy is not usually made by engineers in France. It takes time, meaning money. Using such tools raises the question of tools and databases of products at European level.

Some criteria can take a lot of time to be assessed, meaning that the process of evaluation is more expensive.

6 Next steps

Results of the tests were disseminated to contracting authorities, local authorities, project managers, local representatives in presence of the Vice-president of the regional Council in charge of health and Environment on December 7th, 2011. There was a presentation of ENERBUILD project, a presentation of the tested building with results of the ENERBUILD tool, a presentation of what could be a regional tool, and a discussion/debate on what is the importance of such a tool, at which level it should be decided, who has to participate in the definition of criteria. The presentation was also an opportunity to strengthen the position of the local energy agency as advisory service.

We will present in January/February 2012 all the works done and results to the whole regional network of local energy agencies to extend that competency in EQB to all these actors.

We have suggested to the regional Council to implement a regional EQB assessment tool in 2012.

We will work in 2012 at the French inter-regional level, trying to get the same approach in all French regions, to get a *shared* tool. This tool would be the basis for an eco-conditionality of subsidies.

7 Suggestions for improvement of the ENERBUILD-Process

An environmental quality of building tool should be shared by all actors of buildings, meaning that in the definition of criteria should be involved professional such as architects, engineers, craftsmen, companies and users. This is an important question of governance of such a tool, and in the certification process, all these actors should be also involved.

The time spent to collect all data can be very long in some cases (data for the transport criteria for instance).

When there is no PHPP calculation on the building, if another software is used for the passive conception, it is very difficult to make the link between the software used and the points scored.

There should be a pedagogic work done towards the contacting authority, especially if the building comes from a small local authority, with not so many competencies in low energy building. It's important to "train" the contracting authority (we did this job in WP4), and to provide them some pedagogical material.

The calculation of the OI3 index is based on German or Austrian projects, not for other countries (at least France). The tool should allow the calculation with national tool, giving the same hypothesis for all tool (life duration of the building, scope of the calculation etc...). It is mainly suited to projects with the approach used by passive PHPP. In another approach, adjustments are sources of approximations to fit the local context and makes the comparison difficult with European projects (energy mix for CO2 emissions, primary energy/final energy...)

The evaluation of the planning process is not obvious because the main criteria are based on the presence or absence of planning documents (not precisely defined) without actually assessing the relevance of their contents into the decision support. This does not necessarily reflect the exchange "man to man" made during the preliminary design phase of the operation. It is necessary to list before documents, studies and specifications necessary to achieve in order to facilitate subsequent assessment.

C Evaluation ENERBUILD WP6.4 Certification service ITALY - Alessandria

1 Basic information

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Website	

2 Establishment of a certification service

Within the scope of the country's administrative structure, our Local Government (Province of Alessandria) owns an abundant real estate property made up of schools, public office premises and other types of buildings. The management and construction of these categories of buildings falls under the jurisdiction of the Province.

More specifically, for what concerns the planning of extraordinary building maintenance, the Region of Piedmont partly contributes to the financing of a number of preliminary projects that are developed by the Province of Alessandria and address maintenance-related and planning-related issues (building safety, fire prevention in buildings, architectural barriers).

Similarly, the Region of Piedmont periodically issues calls for proposals in the field of energy efficiency measures. The Provinces participate in the calls by submitting their own proposals, which are then evaluated and, if approved, receive funds from the Region.

One such example is the energy efficiency reclamation of the building that hosts one of the seats of the Province of Alessandria. In this case the Region of Piedmont grants a percentage (E 846.393,00) of the total project amount (E 1.680.000,00) and the Province of Alessandria co-finances the remaining amount (E 833.607,00).

Because the calculations performed by the Region of Piedmont for energy efficiency evaluation of this building are based on the ITACA Protocol, the Province of Alessandria has instructed its technicians to use ENERBUILD-Tool as a modelling instrument for the reclamation project.

In recent years the Region of Piedmont, like other Italian regions, has started performing energy saving assessments on buildings based on the ITACA Protocol. The awarding of financial grants from the Region is subject to the attainment of a determined score fixed by the ITACA Protocol.

The Province of Alessandria does not have juridical power to enforce a new certification system based on the ENERBUILD-Tool or to propose its enforcement at a Regional level, except in special cases as is the one reported above, in which the buildings are owned by the Province. For these buildings, the Province of Alessandria has chosen to apply the ENERBUILD-Tool in addition to the ITACA Protocol.

Future reflections will facilitate decision on whether or not the criteria introduced by the ENERBUILD Tool can be suitable for the Region of Piedmont and the Province of Alessandria.

3 Prescription of the certification service

The experience gained in evaluating sample buildings through the use of the ENERBUILD-Tool within the activity of WP6.3 has resulted in a close cooperation with a number of professionals and firms (1 to 5 staff members each) who have developed the capacity to provide assistance in the use of the ENERBUILD-Tool as a certification tool for buildings. The professionals and firms involved in the certification service are:

- Fraternali & Quattrocolo Associated Architects, Turin,
- Collegio Costruttori ANCE (Builders' Association)
- Environment Park, Turin
- Sacco Engineering - Alessandria

4 Work done in WP 6.4

In November/December 2010 the Province of Alessandria organised a series of meetings aimed at making local professionals familiar with the ENERBUILD-Tool prototype, which at that time was still under evaluation before being issued in its definitive version in May 2011.

5 Experiences

At this stage, it is important to disseminate the results obtained through the calculations of energy efficiency performed on the sample buildings selected by the Province of Alessandria.

6 Next steps

For this reason, a series of meetings will be held in the autumn and winter of 2011, which will promote the ENERBUILD-Tool as a working instrument for the professionals involved in the energy reclamation projects that the Province of Alessandria is planning to submit. The evaluation of the project results will be carried out by any of the consultants quoted in the previous paragraphs.

7 Suggestions for improvement of ENERBUILD – process

Technical developments and changes in the legal groundwork impose that the content of the ENERBUILD-Tool be regularly updated. Constant adjustments and coordination of regional and national activities are necessary. To this end, synergies are recommended to prevent the tools from “drifting apart” in a long-term transnational exchange. The goal should be to create an international platform, displaying all the evaluations tools used at regional levels. Pilot applications of the ENERBUILD-Tools should be further promoted and supported. The Province of Alessandria will take action to disseminate the ENERBUILD-Tool among the communes comprised in its jurisdiction.

D Evaluation ENERBUILD WP6.4 Advisory Service AUSTRIA - Styria

1 Basic information

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2 Establishment of an advisory service

EAO was founded under the EC-SAVE II program in 1998. The energy agency is a public association, owned by 50 municipalities. EAO is responsible for assisting our target region, NUTS3 Upper Styria West, in energy planning, energy advice and consulting, project development and awareness creation. The experienced and well trained staffs of EAO work in the field of renewable energy, energy efficiency in buildings and municipal/regional energy planning. The ENERBUILD project has given us the opportunity to further educate our own advisors, particularly on passive house and ESAP building technology. These have been previously neglected technologies, since there is a lack of awareness about them in our region. The EAO has planned to improve that awareness along with the development of our advisory service within the framework of ENERBUILD.

3 Prescription of the service

The EAO is well received in the region as an independent advisory service body on the application of RES (Renewable Energy Sources) and RUE (Rational Use of Energy) technologies. The EAO is a public association with 50 municipalities as paying members. The current size of the staff accounts for 6 employees. The EAO is established in the innovation center of the Holzinnovationszentrum, HIZ; (Wood Innovation Centre) and staffed with qualified energy consultants. The advisory service is open for private persons as well as business enterprises during the office hours from 8 am to 4 pm. Due to the financing of the association through municipalities; the energy counseling on basic level is free of charge for citizens of member communities. However, special or more extensive advisory service is liable for costs. The EAO also cooperates with regional institutes like the HIZ and the Holzcluster (Wood Cluster). Both organizations offer technical advice on wood construction with their own experts, complemented by the expertise of the EAO for energy consulting where applicable. The EAO also maintains good relationships with the municipalities in our region. The EAO supports municipalities and regional initiatives as advisor for energy related solutions from public building energy analysis to support in regional development planning. Our experts also give lectures on passive house building, high ecological reconstruction and the use of passive technologies and components in reconstruction on energy days in municipalities, local bank branches and, of course, in the seminar rooms of the HIZ. Our continual advisory service in the application of RES and RUE technology in buildings has raised the awareness in the

population about its advantages. Customers as well as enterprises in the building sector and related businesses have come to expect a high standard of energy efficiency and ecological sustainability in materials and workmanship in building and reconstruction.

4 Work done in WP 6.4

The work with the ENERBUILD Tool prototype has led to the adoption of the PHPP-Program for the calculation of buildings. The test of the tool and the improved advisory service suitable for ESAP buildings has led to a new calculation scheme for planned building and reconstruction projects. The extensive and detailed data, derived from the tool, are very helpful for the comparison between different possibilities of implementation. The gained insight also inspired a new consultation approach on municipalities. Initial meetings with 10 municipalities aroused strong interest in the target communities. The EAO conducted until now 5 pilot consultations about ESAP-buildings in the municipalities St. Anna am Lavantberg, Amering, Scheifling, Bretstein and St. Oswald Möderbrugg. More consultations are expected to follow.

5 Experiences

The advisory service with the energy tool was overall very fruitful and informative. The municipalities showed great interest on the possibilities of ESAP buildings during the initial meetings as well as in the more concrete pilot consultations. The improved advisory service is also well received by private customers. The ENERBUILD-Tool is very extensive and yields results on a very detailed level. This creates awareness for building technology that has hitherto not existed in our region. The good acceptance of solutions on such a high level is also owed to our good personal contacts to regional businesses. This has led to a network of innovative companies that are committed to the development of new tools and products. Outside of this area, ESAP building technology is met with prejudices and misunderstandings by customers as well as by enterprises. The EAO works on correcting these misconceptions. The “Killer Arguments” collected and prepared in WP5.3 has proven to be most helpful in this task.

6 Next steps

The information, communicated in the advisory service and the extensive and detailed data provided by the ENERBUILD-Tool will stimulate the market for ESAP building technologies by creating exacting demand from private and public building owners. The EAO contributes to this development through measures of awareness creation in form of public lectures and trainings for craftsmen in the building sector and related businesses. Our location, the HIZ, serves as best practice example for ESAP building technology with applied solar cooling and a connection to the local biomass CHP heating grid. The visibility of our commitment will increase significantly with the realization of a photovoltaic plant, financed by a public participation model. The continued advisory service itself will raise the awareness of builders directly. The sum of all our activities will promote the application of ESAP building technology in the region sustainably and provide incentive for a higher quality in house building and house reconstruction in the region overall.

7 Suggestions for improvement of the ENERBUILD-Process

1. The analysis of settlements, the incorporation of a closer look of the infrastructure in the area of the analyzed building would be the consequent extension of for the evaluation of the impact of an ESAP building on the environment. Many benefits can be gained through the conception of not only an ESAP building but a whole settlement on a high level of sustainability. The efficiency of RES technology increases significantly with the scale of application. Measures of RUE have more scope in the context of additional building units. The use of the ENERBUILD-Tool on such settlements would create awareness of its benefits and promote this approach for further application.

2. An ecological analysis in form of lifecycle analysis would put into account the otherwise external costs of production, transportation and disposal of all building components. This improvement would put more emphasis on the use of regionally available, renewable resources and local know-how on the processing of such goods. Since the cooperation with local companies is essential for the successful implementation of the ENERBUILD process in the region the highlighting of regional, eco-friendly components for ESAP buildings would not only complement the purpose of ENERBUILD but would also be very well received.

3. Even though it's most difficult to implement, the acceptance of ENERBUILD-Tool evaluation for subsidy application would be of greatest significance for the improvement of the ENERBUILD-Process in our region. This point has been proven in the district Vorarlberg, where the subsidy for building measures depends on the rating of the respective building through the ENERBUILD-Tool.

E Evaluation ENERBUILD WP6.4 Advisory Service Italy - Piemonte

1 Basic information

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2 Establishment of an advisory service

An advisory service has been established by Regione Piemonte to support the use of ENERBUILD Tool in the region. On a base of a specific agreement, the service has been operated by ITACA (Federal Association of the Italian Regions) that already has the responsibility of an advisory service for Protocollo ITACA assessments on public buildings in Regione Piemonte.

The advisory service has been established to achieve different objectives:

- to facilitate the assessment of public buildings with ENERBUILD Tool through a technical support;
- to validate the results of the assessments carried out with ENERBUILD Tool on public buildings;
- to carry out information / training activities targeted to designers and construction companies.

The advisory service has also acted as contact point for the ENERBUILD Tool, providing information to interested professionals and organizations. The service has been established also to check the feasibility of a possible future certification process based on ENERBUILD Tool approach.

3 Description of the service

The advisory service has been operated by 4 architects/engineers skilled in the use of ENERBUILD Tool.

The members are: Andrea Moro (Architect), Cristiano Gastaldi (Environmental Engineer), Valentina Colaleo (Building Engineer) and Giulia Barbano (Building Engineer), Andrea Moro has been the referent and coordinator of the service. Gastaldi, Colaleo and Barbano carried out the technical support activity mainly focused on the calculation method of indicators.

The advisory activities have been carried out in three different modalities:

- phone – a dedicated number has been associated to the advisory service. The service has been operated every Monday, Wednesday and Friday from 10 am to 12.30 pm;
- e-mail – a specific e-mail address has been associated to the advisory service;

- meetings – several meeting with the designers and organizations involved in the application of ENERBUILD Tool have been carried out.

The advisory service has been affiliated to the Regione Piemonte department “Direzione Programmazione Strategica, Politiche Territoriali ed Edilizia”, that is the regional sector participating to the ENERBUILD project. The advisory office has been located at the Science and Technology Park of Torino, Environment Park.

The service has contributed, through the ENERBUILD Tool, to disseminate the sustainable building principles among the main stakeholder of the building sector. In particular designers (architects and engineer firms) and construction companies. The service was available for any interested professional and organization. In particular the main results in the region has been the dissemination of the passive house design concept, not only from the point of view of the technical solutions but also from the one of procedures. This last aspect has been appreciated from different involved public organizations that now intends to use the ENERBUILD approach to assure the process and planning quality of future buildings.

4 Work done in WP 6.4

The advisory service has carried out three different kind of activities based on ENERBUILD Tool:

- support in ENERBUILD Tool application. Designers and organizations involved in the application of ENERBUILD Tool have been supported to facilitate the evaluation of the building's performance;
- training for professionals. Training sessions have been organized with 5 design team involved in the ENERBUILD project on the application and use of ENERBUILD Tool. The assessment criteria have been analyzed as the calculation method and the technical documentation to produce;
- validation of the assessments carried out. The service has validated and controlled the assessment carried out on a selection of public buildings. This has been the occasion to taste a schematic certification process based on ENERBUILD Tool;
- production of technical documents. Specific technical notes in Italian have been delivered to facilitate the application of ENERBUILD Tool.

5 Experiences

Five design teams and organizations have been introduced to ENERBUILD Tool and the assessment process. The design process of three buildings has been supported. The achievement of the fixed environmental and energy targets has been monitored by means of ENERBUILD Tool. The assessment of two existing buildings has been validated and the assessment process supported. Of particular interest has been the interaction with both the designers and their public clients (Municipalities or Social Housing Companies). The importance of the synergy between the technical work of designers and the quality of process managed by the organizations to assure an high level performance of the building emerged clearly. The application of ENERBUILD Tool to existing buildings has given the possibility to identify possible improvement in the design quality for the future buildings and also in the whole planning process. From this point of view the experience gained by all the participants to the initiative has been recognized of high value.

6 Next steps

The experience carried out with ENERBUILD Tool will allow to improve the regional tool for building assessment – Protocollo ITACA. Criteria from ENERBUILD Tool will be implemented in the future versions of Protocollo ITACA for public buildings, in particular with regard to the process and the construction materials performance. The assessment system used in Regione Piemonte is actually not including criteria on the process and planning quality, neither criteria based on the LCA approach. For this reason the assessment activities carried out in ENERBUILD have given the possibility to experiment new indicators that will be proposed to the Italian regions through Itaca for their inclusion in Protocollo ITACA. Regione Piemonte intends also to promote ENERBUILD Tool at international level in the way to recognize it as a possible common platform for sustainable building assessment in the European regions. From this point of view the Region has facilitated the interaction with ENERBUILD and the IRH projects.

7 Suggestions for improvement of the ENERBUILD-Process

ENERBUILD Tool has showed to be an effective tool to assess the environmental performance of low energy buildings. Nevertheless the experience carried out has given the opportunity to identify some possible improvements.

A different version of the Tool should be defined following the different uses of buildings (office, school, residential, etc..). Not all the criteria are relevant for all uses and, more important, different performance benchmarks should be fixed. For some kind of buildings, due to the use, it is more easy to reach a better performance for instance with regard to the energy criteria than others. A unique energy consumption target seems not adequate.

The Tool assumes that the assessed building has a very good energy performance. The minimum score is given to buildings performing much more than the standard buildings, that in any case are fulfilling the energy regulations requirements. For this reason we suggest to recalibrate the performance scale to valorize the buildings that are not able to reach a passive house performance but that in any case are better than the standard practice.

Due to the fact that ENERBUILD Tool is used also in geographical contexts other than only the mountain, it would be necessary to include a criterion on water consumptions that could be eliminated in specific situations.