

Crowd climate tool

Working title: croclime



Abstract

This initiative follows the present [ee6-call of the EU horizon 2020-programm](#) with a budget of nearly € 2 Mio. It shall be a so called “csa” (coordination and support action) in about 300 dwellings all across EU under the title “engaging private consumers towards sustainable energy”. This means, that private consumers, here: tenants in existing bigger quarter buildings, will be enabled to become an active part of a energy efficiency community, that contributes dropped heating energy amounts into the national carbon balance sheets. All costs of all application partners will be covered by 100% except a clearly defined hardware package of about € 400 of each piloted dwelling. In three climatic zones each 100 dwellings shall be implemented. Partners from the housing industry all across EU are requested to bring in their existing buildings in bigger quarters, so that these application partners can participate from high-end-solutions of energy efficiency from the German Energiewende

<http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/topics/ee-06-2016-2017.html>

The present EE6-call does not require different climate zones, but integrating more than two zones would be a positive evaluation point. The potential application partners should be housing companies as knod-leaders, which identify regional sub-partners like technical scientists, social scientists and civil engineering experts and manage piloting actions, following a clearly defined and comparable technical piloting action in each region.

The ee6-action will cover the costs for the pre-customized technology support package (existing) and the costs for the labour of regional partners in all the now following piloting action, which help to implement all technical components by co-financing. Preferably municipal housing partners should beforehand apply for their flat units to be selected as a part of all pilot projects. The projects should exhibit the option to crosscheck the collected results with an existing reference-building.

The objective is the joint application of an existing pre-developed package of energy harvesting solutions to support DNK-actions for communal housing companies. Low cost protocols (EnOcean energy harvesting protocols) for broad end-user layers will be applied in piloting action by means of mobile applications to support the ee6-aims. National climate balances should therefore be determined, using valid parameters. The usp’s developed by the consortia leaders of wp 0 and wp1 (energy harvesting-based energy efficiency solutions) are to be opened to an international end user circle, here: tenants in dwellings. The prerequisites for this are extensive pilot projects. The housing partners and knod-leaders should nationally identify and supervise such pilot project partners and pilot projects.

With this application the necessary prerequisites for partnership can be outlined. Even at the current time the boundless opportunities for fruitful applications together with the tenants are apparent, requiring the opportunity for international placement and expansion.

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Project Description

I. Objectives

– Overall project objective

The objective of the proposed activity is the sustainable establishment of a consortium which will submit an application for development of information and communication technology (ICT) -based low-cost application for monitoring heat and power consumption in the house, in the block of flats, and in the neighbourhood of large end user layers, thereby working out in support of the change of use in heating and electricity energy consumption within the EU funding program Horizon 2020 EE6.

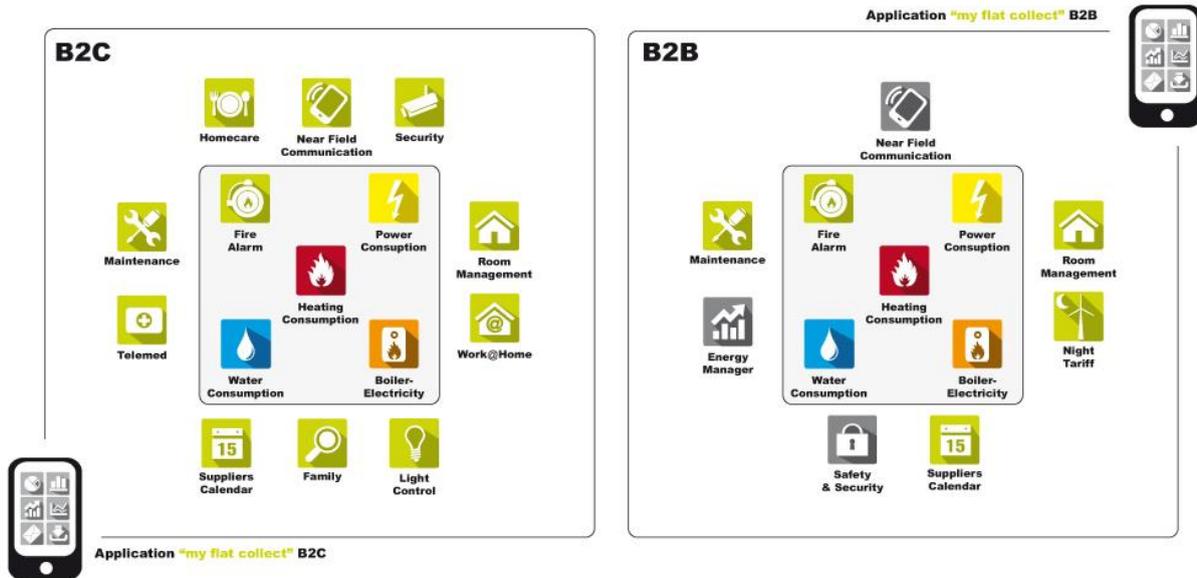


Fig 1: schematic diagram of the applications

The heart of the applications (see Fig. 1) is the visualization of thermal heat and energy flows as a basis for mass-distributed energy transparency. This in turn is a prerequisite for easy and low-investment changing user behavior. As an active contribution to the positive effect on the climate balance, broad sections of the population in Europe can be integrated into the programme. In addition to this visualization, more applications to map everyday habits are provided which take into account and reflect strictly the expectations of end users (B2C) and landlords (B2B). These include, among other examples, the EnOcean-based self-learning individual room control whose upscaled results of improved energy efficiency are used, the translation of proprietary protocols into the IP world and orders from the near field (delivery services) and calendar services (appointments with service providers). Another important point is improved communication between landlords (B2B) and tenants (B2C).



To build a reliable project consortium in the first phase, where all partners bring value by way of their experience and expertise, a 1-day meeting (kick-off meeting) in Buxelles with the potential partners will be carried out first to introduce the future project, get to know each other better, share experiences to date, tune first procedures, and to analyze energy efficiency in the region and to determine due to the demands of the candidate program, what additional skills and potential partners (organizations) are required. At the same time the partners define and select at least three to four climatic regions (zones) following EU-regulations. The solutions to be developed will be applied and evaluated following central adjusted rules in all regions.

After determining their climate regions all partners will identify and bring in additional organizations to determine specific contributors such as programmers, providers, producers of energy-saving technologies, energy providers, energy specialists, social sciences and humanities, building managers / housing cooperatives and representatives of civil or tenant organizations. All partners will send the organisation proposal content to the green with IT network database. The first examination of the proposed acquisition organizations will occur through the exchange of information between the partners and also through the organizations' websites and direct contacts.

The selected organizations will be invited in the second phase to the exam in Bruxelles. The meeting will last 2 days to introduce all the partners, get to know each other better, build mutual trust, integrate, become familiar with the upcoming stages of the project and requirements of the work program, the tender and exchange experiences to date. At the meeting, the procedure and coordination of future roles in the consortium will be agreed. At the meeting all partners will sign Letters of Interest (LOI). The meeting is rounded off by the convening of the first thematic working groups to identify individual work packages. Until the next working meeting the individual working groups are to focus on each work package.

As part of the named 2-day meeting, previously developed content will be adjusted. The coordinator will then summarize all the work packages in an application and adjust them. After this the application will be submitted in June 2017. The technology partners will take active roles in the identification of other organizations and in assisting in building the consortium and will appear in individual work packages. They have many years of experience in the field of international research and application projects, the knowledge and technology transfer from projects in the 7th Framework Programme of the EU.

The project will be led by the Hochschule für Wirtschaft und Technik (coordinator), university of applied sciences, Berlin (HTW). Two strengths are combined in this instance. While our network – as the technical leader of the project - brings in all technology and is necessary for the operational implementation of SME matches and the application content, objectives and implementation guides and directs, the HTW will bring experience in the administrative steering and management of complex application projects.

The network green with IT is a consortium of SMEs in the capital region that aims to establish the disruptive energy efficiency processes in new value chains and to place them on the market. While all members are economic enterprises, the network itself is a non-profit association without intent to realize a profit. Although the network itself has experience with regional application and research projects and has already been involved in international projects, it has little experience in the administrative steering of such projects.

The HTW is quite different: The HTW is a partner in the network green with IT, and as a university the HTW has a unique status, acts as a scientific management, and the university's core competency brings experience with national and international projects of the application in addition to teaching skills. In addition, some programmes at the HTW, such as Facility Management, Life Science Engineering and Environmental Computer Science, offer great opportunities for the development and testing of yet-to-be-developed applications in ready-made laboratories or student projects.

– Regarding funding policy objectives (for example, funding programmes)

The funding policy objective is the identification and involvement of international partners in the EU-Call "EE-6-2016 / 2017" – engaging private consumers towards sustainable energy. The sought **piloting action** will show, that ICT-based solutions can contribute to saving energy by engaging energy end-users towards a more sustainable handling of heating-, cooling and power energy.

The realized implementations

- (i) will demonstrate how a good return on investment through energy savings is realizable
- (ii) will make energy usage data accessible to the consumer and to also designated to third parties (for application development or designing new business models around them) and
- (iii) demonstrating that energy savings can be achieved without compromising comfort levels.

Activities are focused on the development of innovative user-friendly application programming interfaces (API's) by digital tools (system development kits) and applications or services making using regenerative energies. The energy end-user generates information and captures these from in-home equipment/sensors (like energy harvesting systems, smart meters, communication-enabled heat metering tools, smart plugs, smart appliances and/ or energy-aware products), in combination with intelligent controls and automation, with the purpose to significantly enhance energy efficiency by behavioural change of end-users taking informed decisions.

The solutions will focus on empowering consumers (b2b buildings managers), buildings owners (b2b) as well final users including residents (b2c), housing associations, visitors, public actors, etc. to engage and collaborate in achieving energy savings and allowing them to explore different means and measures to manage their energy needs over the longer term.

The consortium will integrate and validate different social and technological elements, each element with at least TRL 6 – TRL 8 (please see part G of the General Annexes), combined with appropriate business models and social acceptance parameters.

Insights from social and behavioural sciences will be used to understand: (i) factors influencing consumer choices and (ii) the impact of consumer behaviour on the energy system. Where relevant, gender, socio-economic, demographic and cultural differences should be identified and taken into account as a means of segmentation and tailoring actions to target groups.

The focus will be on the following:

The need for efficient and compact consortia, involving, as appropriate, ICT developers and providers, manufacturers of home appliances, energy experts, social sciences and humanities experts, citizens representatives, as well as near utilities (service providers or retailers), energy service companies (ESCOs) and building managers.

The impact of indoor climatic conditions is measurable on personal health, productivity and comfort matters. The piloting action will be deployed in a variety of building types located in at least three different climatic zones. Access to the buildings will be guaranteed, together with all relevant building information, including smart metering infrastructure along the lines of the data safety and security requirements of the BSI "Bundesamt für Sicherheit im Informationswesen" or on par with these restrictions.

The proposed solutions will be deployed and validated in real environments, clearly defined and monitored, for a period of at least 3 years, ensuring credibility and consistency of conclusions. Validation will cover business models and return-on-invest-rates and include detailed plans for sustainability and large-scale uptake beyond the project lifetime.

ICT solutions will focus primarily on energy efficiency, but will integrate other solutions including also indoor climate, building/home security or health monitoring. This global approach will demonstrate both the additional benefits for consumers, as well as the market potential.

The proposal will explain in detail how possible ethical issues like research on human participants and BSI-conform to personal data protection will be addressed.

The proposer will also explain what will happen after the end of the action of any project-related equipment deployed in buildings for the purpose of the project. Costs for the purchase of mobile devices like mobile phones, tablets as well as cost for services of internet connections will not be demanded.

Expected impact

Proposed actions are expected to demonstrate the impacts listed:

Significant reduction of final energy consumption prompted by innovative ICT solutions clearly quantified and substantiated, and subsequent reduction of CO₂ emissions.

Wider deployment and adoption of user-friendly ICT solutions prompting behavioural change and energy efficiency, including plans for its sustainability after the project's life and impact on the climate balance sheet in each case.

Number of energy end-users changing their behaviour documenting why and how changes are an effect of particular measures taken, as well in terms of the sustainability of the behavioural change.

See the "[ladder of success](#)" from the presentation on sept. 14th 2016 during the international green-with-it-conference "[COP 21 Berlin](#)".

The proposals should quantify foreseen impacts, using preliminary but credible baselines and benchmarks to substantiate calculations and clearly demonstrate how the energy savings will be measured and reached. The proposed contents will take advantage of using the already developed common methodologies for calculating energy savings in public buildings and social housing as good as already developed components, their protocols, bus systems etc.

– Scientific and/or technical objectives of the project

The existing possibilities being offered on the market for controlling heating demand have been designed only for very affluent customers, with very costly and investment-heavy measures. However, these existing offerings lack the bundling of complex functions. On the other hand there was no identifiable benefit for tenants (as potential end-users of heating energy and cooling in hot climates), and so no motivation to invest in hardware and software for an energy efficiency solution, which could exist for broad end-user layers and also for landlords tenancy barriers. Resilient business models are missing. A plausible return on investment is not given.

When tenants invest in energy-efficient hardware and software, ownership of the hardware is transferred to the landlord. The incorporation of such ICT-based energy-efficient hardware and software is also without apparent benefit for the landlord. There are also additional follow-up costs for the slots and caulking of cable guides. Another corollary activity is the optional use of non-electricity-controlled devices: the battery exchange - as the only alternative. The sum of these barriers has thus far resulted in no attempts to create a lower operating-cost system. Even with heating supplier and electricity producers there is no motivation to initiate savings: less consumption means less revenue. Nor is there a motivation for investment in infrastructure: the so-called smart meter gateways (SMGW) mean only a unilateral investment without legal basis in an unregulated market for the supplier. Resilient calculations for return on investment also do not exist. This has precluded such investments.

The solution we will develop includes innovations in the form of energy harvesting processes, strategic enabling as low-cost measures to measurable increase in energy efficiency, and entry into the mass market. The digital tool as self-powered application is developed as a user-friendly, understandable and safe solution in a complex and scalable total package. The application will show different ways of saving energy and allow end-users to manage the power consumption over time. The entire system is based on a pure control over users' mere presence in the heated or cooled rooms, so that via plug-and-play devices times heating in accordance with the schedule of the user (labour etc.). Data is collected and analyzed and space heating/cooling is reduced by 4 ° K or completely suspended in their absence.

The system will also regulate the entry of different fuels at off-peak periods, shopping for renewable energy at preferential prices. Moreover, it allows automatic error message and forwarding to service providers. The tool is also equipped with other features, such as the automated monitoring of the individual room climate, automated monitoring of emergencies to power users and system engineering, and delivery services. Because of the targeted data security measures no conclusions will be derived about personal user behavior from the individual rooms and apartments / heating operations.

Through these innovative features, the application will close the gap in the market and achieve wide end user layers. In addition, the tool has recognizable and easily achievable saving measures that will attract energy-users sustainably and contribute to their user behavior on heating energy through ICT-based energy efficiency measures to consciously change and their own attitude to improved energy efficiency enhanced in the house, in the block of flats and in the neighborhood.

II. State of science and technology; previous work

– State of science and technology (including alternative solutions, the exploitation of results, conflicting rights, information searches)

The project is the subject of much research and many development approaches worldwide. The training provided in the project to use technologies utilize worldwide protocols such as EnOcean Alliance (member of the Network), bacnet, LON, M-Bus etc. Own standards should not be developed or even patented because the focus is an innovative user project with piloting. In this context, there is no place for basic research, as this would make an application project in principle unmanageable and the development of new, patentable standards cannot be the aim of this project.

In the project proprietary protocols to IP standards will be introduced. The emphasis is on privacy / data security. The world speaks IP. Rights and their application do not preclude subsequent successful recovery. So-called "open standards" are more likely to avoid approaching proprietary technologies. The project should preferably use these open standards.

The mobile apps should be programmed for Android, iOS and boxes in all applicable modular systems.

– Previous work of the applicant

Subcomponents for later scalable overall solution already exist in various stages of development. Energy harvesting components were developed using EnOcean protocols, individual room regulation settlement systems, and quarter software components for controlling complex areas bidirectionally. Currently there are no such components as scalable complete solutions including a worldwide communication language. A new aspect will be that bacnet protocol is used in addition to the EnOcean protocol.

There are long-term preliminary experience, pre-pilot and user projects in preparation for the project, which began USPs from solutions using German energy-harvesting technologies and other solutions for the German energy transition. Thus, the network has many years of experience of energy efficiency implementations in the housing market, its members have diverse product cycles introduced validated saving measure and can be evaluated via the formal German operating costs for billing management. The HTW Berlin has already completed a number of research projects to develop mobile apps for recording and displaying resources and energy flows. (e.g. <http://energienetz.f2.htw-berlin.de/>, <http://openreskit.htw-berlin.de/>, <http://moebius.htw-berlin.de/>) and has a number of useful resources in the project (eg. air chamber and an energy-self-sufficient so-called future house).

III. Detailed description of the work plan

- AP1:** First funding phase; project starting from **02-17 to 04-17**
- AP1.1: Kick-Off-Meeting Berlin
 - AP1.2: Identification and determination of at least 3 climatic regions
 - AP1.3: Profiling partners, addressing identified partners as WP-manager
 - AP1.4: Identification of potential partners / roles from selected regions
 - AP1.5: Workshop to finalise the project content
- AP2:** **Second funding phase from 05-16 to 06-17**
- AP2.1: Exam, work on priorities and workshop, filing first sketch
 - AP2.3: Content Detailed Evaluation AP, roles, goals, risks, results
 - AP2.4: Deepening association roles, AP content recess
 - AP2.5: Depression content detail-drawing AP
 - AP2.6: Adjusting the details of call requests per each partner
 - AP2.7: Preparing a full proposal combining all content
 - AP2.8: Fit to practice information from all partners, workshop
 - AP2.9: Submit a full application 06-17

IV. Utilisation plan

– Economic prospects

The economic prospects in the market for municipal and cooperative housing are very good because there are no IP-based visibility tools for consumers (tenants). Heating transparency apps are not (yet) available, because the current providers below 6000 kW connection value have no regulated legal necessity to use so-called smart meters. This would, for example, include an approach to deliver custom current transparency values of each rental party. If the landlord for lack of foreseeable economic value is not interested in investing in the smart meter infrastructure, there remains current nationwide investment in such basic infrastructure. The same applies to the also unregulated heating energy consumption information market dominated by large companies with proprietary protocols (example techem). These companies have a valid interest, that free energy consumption information is not generated through open standards on mobile apps and is available “for free” to broad masses. Transparency products such as our planned app are therefore placed disruptive to the displacement of such stakeholders.

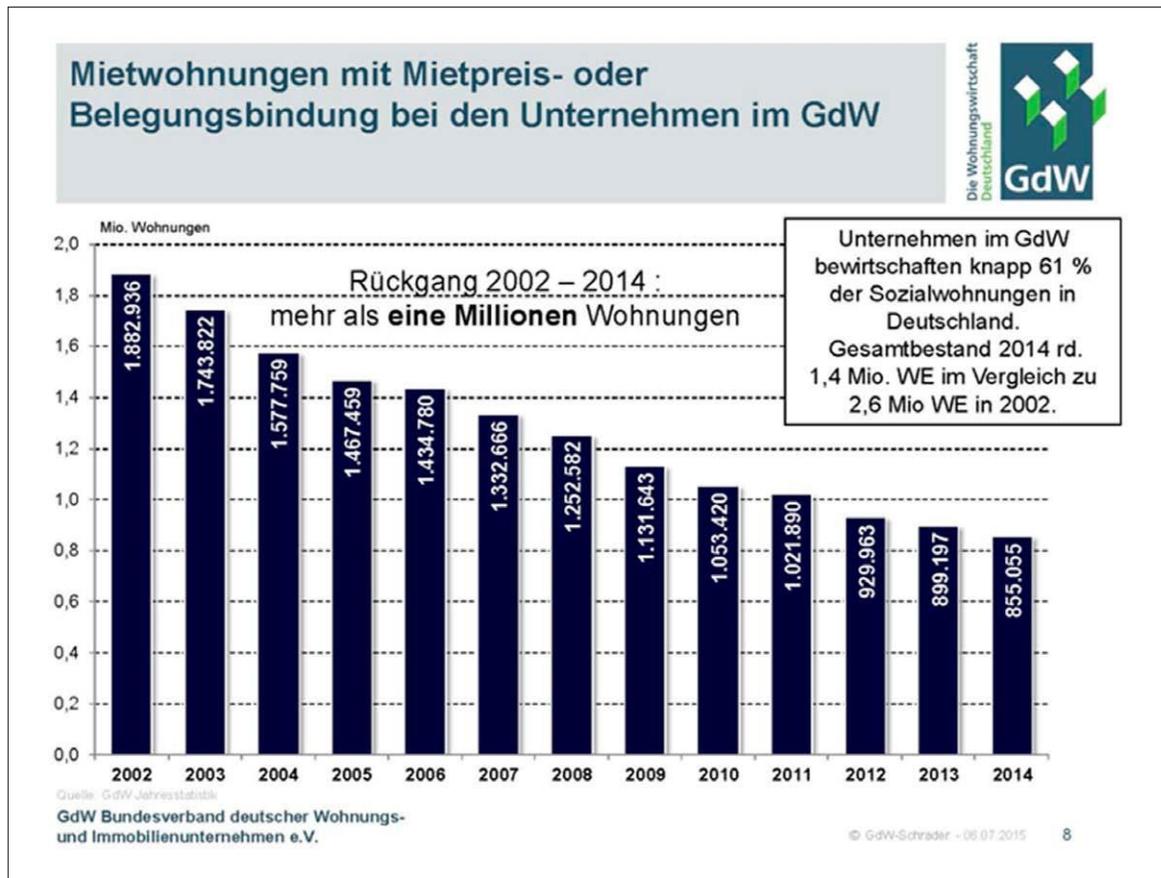
In the medium term heating energy consumption transparency can take over the global calculated annual cost reductions of electricity transparency (11% value here). It is conservatively assumed that a reduction of heating energy consumption by 5% would occur initially, once the secure individual heat requirement transparency is available. It should be mentioned here that in other European countries, a much higher transparency standard has to be stated in the electricity sector. But this is to be seen in conjunction with different liberties of electricity tariffs and electricity networks. But there is no doubt that transparency already brings great savings. In the long term energy transparency should be funded, but the initial heating energy consumption transparency in large-scale applications and valid conservation values are to be detected.

The markets of local energy providers / utilities and their heating products, the transparency of the primary circuits of supplied thermal heat quantities and providing scalable quarter management solutions are the subject of much basic and applied research worldwide. Manufacturers of IP-speaking devices, infrastructure hardware, bus systems and consulting companies are potential markets with companies of municipal and cooperative housing as potential application partners.

The prospective value to business (B2B) and consumer (B2C) user groups is impetus for the cooperation of entire groups of users

- Residential real estate business
- Industry real estate business
- Public property managers
- Managers of industrial plots in gear with energy balances of production processes
- Electromobility such as use of private e-car
- Manufacturer of home automation systems
- Users and planners of building control
- Social partners of neighbourhood management

This applies throughout Europe. The chances for fruitful technology and knowledge transfer are therefore as good as disruptive proprietary approaches are removed and replaced by IP-based open standards. Thus, for example, the national market of municipal and cooperative housing companies in the field of national industry association GdW at 1.4 million units (WE).



The proportion of available and achievable rental housing in the private sector is 17% nationwide in Germany. This is different in larger or smaller countries. The chances of implementation are optimal when tenants receive a free provision of an application on the transparency data of each individual apartment. Other Apps of near-consumption, health, public transport, public information systems can be easily placed in the wake of this infrastructure. This is an integral part of the pilot projects: Illustration of the environment of the end user and the management of everyday life. This applies to all consumers and brings them from where a first saving beckons: the reduction of heat costs throughout Europe, and indeed globally, is a substantial part of the lessees basic consideration: basic rent plus heating costs equal total rent. A rental party may compromise a little when it comes to basic rent, in contrast to the heat operating costs through optimized private consumptive behavior already. This is supported here, so changes in consumer behavior are visualized to a valid success.

So-called "high-end solutions" in the field of electricity and heating transparency are currently on the market. These usually result from the three-tier distribution of relevant suppliers, which are often organized in associations such as ZVEI or VDI (in Germany). Their solutions are too expensive for tenants and cannot easily be installed without prior consultation with the landlord. Similarly, the value at the exodus is often obsolete, hampering a motivation for lessee investment.

Our approach is not to "top" the three-stage distribution channel of industrial use, but to enter the tenant structure "from below". Since the release of the app is planned to be free and the value led by saving processes, the sales prospects are much higher than in the high-end range.

Due to the implementation of the proposed measures medium and long term economic success is in view:

The medium-term prospects of success of the project include:

- Strengthening the international and European focus of the partners involved through the development of international research collaborations
- Strengthening cooperation of project partners at the European level for bi- developing collaborative business models by establishing multinational project partnerships,
- Integration of project partners,
- knowledge and technology exchange between the partners,
- sustainable collaboration in the field of initiating further projects,
- development of competitive ict-driven solutions for the active configuration of reduced energy consumption behaviour (heating and power energy).

The long-term prospects include:

- Increasing the internationalization and innovation of the partners due to the development of new markets,
- Increasing the innovative potential and international competitiveness of the partners involved,
- World and European ranking of research results in the form of new products and solutions,
- Creation of value chains for developing common competitive products with European USPs,
- Sustainably increasing the conscious dealing with heat and electric power by end users

–Scientific and / or technical success

The proposed technology can be added shortly and implemented by each European partner. An existing, so-called modular system (system development kit) is delivered to all European partners for use in pilot projects including the hardware for the single-room-management based upon energy harvesting protocols and energy management controllers.

In the medium term, this technology can also be further developed in the respective countries and adapted to local market needs. The necessary tools are available worldwide; basic knowledge of programming app exists internationally.

In the long term, further research and application projects can be initiated when the chairs of universities and local SMEs want to record the excited solutions and evolve or adapt. Proprietary barriers are not obstacles in any case. National carbon footprints can vary in each country, depending on willingness to implement, are designed positive.

So our approach, for example, the control circuits gives entire heating centers the option to analyze IP-based driving cycles and habits, adapt and validate savings success nationwide.

– Scientific and economic connectivity

"Green with IT" is an initiative of 19 companies and university partners and institutions whose industry-specific skills, entrepreneurial scope and new business opportunities stimulated the creation of a network and who therefore want to increase their innovation and research potential through national and international collaborations. All member companies have years and successful r & d results with close proximity to the market and are winners for joint technology projects, pilot users in all regions or holders of important patents. In addition the central expertise of the HTW is in the range of international publications and projects. But additional competencies can also be demonstrated in the private sector of steering and managing complex development projects such as "architecture data protection and security health card" and "identity card" by Dr. Martiny, achelos GmbH, as a representative of the network. The use of German innovation in enabling technologies such as EnOcean protocol (powered wireless sensor) is important here.

In addition, the network has relevant experiences that have been gained by sample projects in the area, for example:

- Coordinating the participation of network members in the Horizon 2020 Project newMaRE,
- The identification of potential partners for the Interreg IV C Baltic Sea Region "Mobile Vikings" project as well as for the large R & D collaborative research project PROFIT Brandenburg,
- The coordination of the research project for the development (en: key) for active participation of the climate by final consumers in Brandenburg and Berlin as part of a GRW project with EFRE co-financing) (awarded the SME Award of Berlin / Brandenburg research institutions)
- Integration of research institutions (universities, colleges) in FP7- and H2020-research projects and technology transfer in the context of solution developments
- The project initiation and partner integration, eg notification for the BMBF tender AAL, participation in the design of exchanges of the European network Enterprise Europe Network

In the case of a positive outcome and progression to the next stage, the project can be planned with partners and structures.

V. Division of labour / cooperation with third parties

For the current project, the application will be formed of a manageable composite from the network and HTW, an applicant experienced university. While the network takes over the substantive coordination of all project content (WP 1), the HTW is involved to make the frame as application-link and direct the work along the time axis (WPO); hence the HTW will assume the administrative management of the CEE-SEE country project.

In the next step the main application partners, here: communal housing companies (undoubtedly "knod-leaders") will be identified and involved from the first stage. These knod-leaders will act with their tenants, public utilities, energy suppliers, IT and energy companies at all points of the supply chain as well as local authorities and social service providers.

The possible partners that are part of the consortium, are end users or their organizations, building owners or their associations, tenants, landlords, public utilities, commercial billing company for heating costs, facility managers, energy experts, security professionals, equipment manufacturers, cable / media provider, building control and Internet service providers, telemedicine and generational care, neighborhood managers, and ICT companies.

The partners will be characterized by a clear focus on CO₂-effective, carbon footprint-related processes. Such new processes that can be validated and introduced into their own national climate balance will be in sharp focus. Pilot actions make sense in this situation.

VI. Necessity of funding

The national pilot projects are the very beginning. The first valid practice values should be available from 09/17. In this stage, the application of a H2020-project in a disruptive established future scenario would be a risk that the personnel involved in the situation do not have to bear. Likewise, university partners cannot remove such risk from the respective university budgets. Therefore, it is essential that such a project is fully funded after appropriate examination of the prospects of success.

This stimulates the professional involved, who will utilise the spark of interest and join a conversion consortium. Until the design of the second phase, the chance of success of all participants remains calculable.

"Green with IT" is a GRW network, which is not for profit and the project will initially focus purely on regional content. It operates within its network and works closely together with companies and universities.

The project idea has the goal of developing an innovative user-friendly IT-tool, which will impact energy efficiency through behavior changes in the energy user as an important part of the more sustainable handling of energy by endusers (tenants). This is an object of applied research that introduces a particular challenge—to bring together the targeted partner/stakeholders all various disciplines, and develop and illustrate the common value. Therefore, the thorough preparation of this dialogue is of particular importance for the basic communication. For identification purposes, the stakeholders will carry out promising research activities in three different climate zones. The stages, as the structure of the consortium through identification of parties, getting to know the basis of internal working meetings, deepening and testing of partner competencies and their appropriation for the project, establishing and deepening cooperation with international partners, ultimately to prepare and submit the project, are laborious time-wise and financially intensive. Funding would therefore support the work and allow the thorough construction of the consortium, thus connecting international cooperation and qualitative preparation of the project proposal for the eligibility of the programme.

Statements of the applicant

Our e.V. (association) is not entitled to deduct according to § 15 UStG (German VAT-regulations).

In this phase we look for potential knod-leaders, scientific partners from universities and civil engineering experts to take over special work package action with a funding of 100%. In the present call a 100% funding is given ("csa").

Application partners from the housing industry should be able to finance a package of about 10% or about € 400,- per dwelling for hardware, as hardware principally is not fundable at all.

A potential partner should not have any known property rights or patents, which would stand in the way of proper utilisation of the results of the project.

Further issues are not identified and, if nevertheless identified, avoided.