



The plan for the promoting of energy efficiency

Sustainable energy in buildings

Project Promoters:

Consultancy Company SC DIALOG COM SRL, www.eficientaenerg.ro, CALARASI, ROMANIA

Project summary :

Promotion of Intelligent Building PLAN

Campaign to raise public awareness, disseminating knowledge, good practices and understanding regarding sustainable energy in Romania



Intelligent Building: energetic efficiency and clean, for Award !

In winter, much heat and summer, it is cool ! With saving cost and help from Nature...

In conditions, in a world undergoing profound change at energetic, environmental, social and economic levels, is imperative the promotion of aims to spread the experience of Intelligent Buildings Concept residential (house, block and apartment - single/multiple family) and tertiary (the protect of health, social houses, offices sport halls, cultural and administrative buildings/non residential buildings) Sectors, through creating documentation, awareness raising. For Sustainable Building and cost-efficient: rational use and increase of energetic efficiency, reduction of wastage, innovation in the field of envelopes and housing sustainable technology, beautiful lighted and cleanliness, inclusive enhanced integration of the Renewable energy sources and implementation of polygeneration, the set up of a certification Plan-for economic activities (including fuel consumptions in sectors like commercial, financial, banking, assurance, hotels and restaurants, public administration, civil defense, education, health, social assistance, non-mobile transactions), households (including fuel consumptions for heating and coking).

Almost one third of all electricity in OECD countries is consumed by home appliances. In 1990-2003 worldwide - population :+19%;CO₂ - energy :+21%; CO₂/inhabitant: +1,7%; CO₂ - energy Emissions Breakdown by sector - 2003: residential -7%; tertiare - 2%.. As 40% of Europe`s energy consumed by the residential & tertiary sector. In Romania, necessary, of short - term, much old building renevation, products and services not profitable, at 37,8% consumption in energy (8,5 million consumers,that 7,9 homes): residential - 32,1% / year and tertiary - 5,7%/year. The justification is the technical state of equipments - 80% on the thermal power plants have builded in 1970-1980 and district heating - now are the physique and ethical wear.

The purpose of the project is to develop a sustainable area with buildings designed to use less of the normal consumption of hot water, ventilation, and heating energy - 66%, inclusively lighting, cooling and home machines - 34%: residential - 35-50% and tertiary -13-19%. Generally, this economy potential for the eligible energy efficiency improvement, will be priced not more than the 30% of the normal and especially 40% for buildings, through to isolate.

The project will specifically focus on the following actions :

Documentation and information packages: through General consultancy and exchange of information, for general framework on valuation the Romanian building situation and to launch the projects for energy saving potential, function on the performance of installations, for National Policy - Energy and Sustainable development; to promote the improvement of the energy performance of buildings, in function climatic and local conditions, as well as indoor climate requirements and cost - effectiveness. Without energetic wastage and reduction of consumption .

In the framework of this project, a practical information package will be issued, featuring information such as building product documentation and feasibility studies are in the final step of benefit-cost analysis, intelligent metering systems, research results, calculation methods and quality assurance activities, that is the eligible energy efficiency improvement measures and implementation on new technologies.

Is necessary, for wide public and transfer of knowledge, the Implementation and Development of International projects: on reasonable energy costs and heat consumption, are in function the co-financing and grants by the UNDP- Energy Efficiency 21 Project (EE21) and GEF, EU (Sustainable Energy Europe Campaign 2005-2008, Intelligent Energy - Europe II, Framework Programme, European Investment Fund, Cordis, The first "Competitiveness and Innovation framework Programme (CIP)", The EC Buildings Directive, CONCERTO II,CIVITAS) central and local Romanian budget, FREE and landlords: Additionally, specific solutions will be conceptualised for Intelligent Buildings in different regions and climates and adapting the PLAN designing tool to meet the demands of architects and experts.

Inclusively, for authorities, that must to express the methodological norms of calculation in energy audit procedures for the Law on the energy performance of buildings (of 31 December 2006). The Plan proposal to include the following requirements for calculation and implementation in design, construction and operation of new and/or refurbished buildings, global objective in sharing the information and experiences between countries for increase in supply of services and products in this field:

- a. bioclimatic architecture approach - summer and winter, position and orientation of buildings -natural ventilation, outdoor and indoor climate, natural lighting;
- b. supply in water, cooling and lighting, thermal and electrical energy - renewables sources - the example, the sun power, small scale and micro-CHP and heat pumps; and district heating necessary produced by CHP and polygeneration, for substantially contributing to reduce energy intensity;
- c. combination intelligent metering systems such as individual metering instruments managed by remote and informative billing, energy calculating software, and demand-side management is an special indicative;
- d. prepare a coherent basis for the methodologies for inspection of heating boilers and air-conditioning equipment;
- e. research facilities - these actions aim to increase up to 30% the usage of technologies - photovoltaic, thermal solar, biomass heating systems, efficient appliances and lighting systems, among the local population.

The Actions Plan, for transfer of knowledge, include the Quiz, with drafting and sending a questionnaire": Sustainable energy and bioclimatic in buildings ", outline, for the harmonious territory development: and through to increase the citizen awareness on rational use of resources or energy.

Certification: The project Plan to set up of a certification programme and make a link between the Intelligent Buildings projects, technologies certification and the national Energy Performance Certification system, according to the Law no.372 /2006 and EU building Directive 2002/91/EC. And Clen Family, the Plan will be dedicated to any means available to reduce that CO2 amount by a significant part. In July 2007, after regional discussions and a national summit-Intelligent Day, Project Promoters and beneficiaries, is informed, through a consensus, the document on certification of Intelligent Buildings project and is launched the first Intelligent Building Certificate: Comfortable and Low-Energy Buildings.

Dissemination actions: Dissemination activities in the second semester 2007 year were focused on presentation of the Intelligent Building concept to specific target groups - citizens, energy agencies, local and central governments - for sustainable social house concept, consumers, for legislation, inclusively through legislative initiative, and to apply the Plan.

After application The Common Program, part on PLAN, for guarantee of energetic efficiency for rehabilitation and extension of the central heating system and the thermic reability in the house buildings, on citys and towns, through the partnership local public administration authorities and the consumers, on demand of landlords and renters: in July 2010 year, Intelligent Buildings Forum offers the AWARD for first Intelligent Buildings - House, Block and Apartment, inclusively low at buying.

The demonstration public buildings - colleges, cultural centres, nursery homes, offices, hospitals and hotels in the Romanian regions - practicable after 2002 Structural Funds, for socio-economic equality and programme electing the "Mine City energy saving champion! to add in heating, lighting, hot water provision, air conditiong, ventilation, yet and Clean!" In partenership, Proposal: The international Intelligent Building Days!

Duration: 09/2006-12/2012
Geographical scope: ROMANIA - local, regional, national
Campaigning area: Sustainable energy in buildings

Project beneficiaries:

1. Energy end -users and stakeholders
2. Social housing association
3. Central Public Administrations and Public authorities
4. Local Public Administration and Local authorities: Rural communities/ Municipalities and City administrations
5. Companies - Consumers industries/ Service companies/ Transport and energy companies/ Energy companies/ Building and housing companies ;Service companies -housing companies/ Building companies/ Renewable energy industry/ Handcrafter/ Enterprises - Individual users, Corporate users, Manufacturers of IT equipment
6. Consultants- Experts - Architects
7. Knowledge institutes - Universities
8. Local & European green NGOs Technicians and professional associations

Energy & environmental results:

Now, year 2006, the favourable impact and results are indirectly achieved through massive dissemination of knowledge on renewable energy and energy efficiency, the project will be focused for information, conviction and mutual consulting, cooperation between beneficiaries and partners - efficient appliances and sustainable energy technologies. However, to the development of knowledge and innovation, follow-up actions are expected in rhr investments in feasibility studies and implementation of transition experiments, the equipments and investment in sustainable energy developments - producers and customers, where to apply quantitative technical and financial measurement (in Romania - in the period until 2009, the total estimated investments: producers of electricity - € 3,6 milliard; environmental -1 mld; the thermic reability of dwellings - 3,4 mld; to the renewable energy producers - 0,55 mld), therefore energy

efficiency measures will be implemented. Any project aimed at changing energy - related behaviour through the disseminating knowledge, good practices and understanding regarding sustainable energy, inevitably leads to environmental long term benefits.

The objectives and proposals for The National Program and Policy

Efficient Use of Energy, for Global Benefit (corresponding to *Law no 199/2000 - Petre Naidin*): Energy Indicator (that is, the Energetic Consumption for to produce an Unit from Gross National Product), in the period 2006-2009, to lower with 2,5-3 %/year, face from the year 2001; to mention - 4 or bigger than average in EU ! The economical assessed potential for energy efficiency improvement for sector is: industry-13 % ; residential - 41,5%; transport and communications -31,5%; tertiary -14%. In a classical single family, with a heating demand less than 15 kWh/m².a, the energy demands for CO₂ emissions are actually close: heating (natural gas, oil, solid fuel) about 50% to 55%; electricity about 12% to 17% and transportation by its own vehicle 35% to 42% - gobal annual production around 15-20 tons of CO₂.

The targets of the Intelligent Building PLAN are to decrease energy consumption in the sustainable village buildings in general by - 34%: residential - 35-50% and tertiary -13-19%.

Pollution, congestion and environmental impact -Through the development of new, innovative energy solutions a substantial contribution can be made to environmental goals -these green electricity produced -e.g. reduction of greenhouse gas of CO₂ emissions. (Romania: corresponding to first period from engagement - 2008-2012 under the terms of the Kyoto Protocol, the impact are measurable and has committed itself to reduce its GHG emissions by 8%, compared to corresponding emissions in the base year 1989). In 2007, first date that is part - surplus from cap and trade 50 million tone of CO₂ equivalent /year and participation "Green Investment Scheme / ETS /Assigned Amount Units".

Human activities attributed to The Energy Sector constitute as much as 78% of the European Community greenhouse gas emissions, estimates project a cost - effective savings potential realizable by 2010 of around 22% within the building sector if this potential was realized, around 20% of the EU Kyoto commitment could be met. And the energy sector is the first source from pollution in Romania: especially, on the burning of fuels - 88% on the total emission of greenhouse carbon dioxide - CO₂ and nitrogen oxides - NO_x; 90% in all sulfur dioxide - SO₂; 72% from powders in suspension; investments, in the transit period 2006-2009, for the climate policy - about € 2,8 milliard, in big plants from burning (inclusively, price in the energy price). Therefore, to apply: capacity building for Greehouse Gas (GHG) Emission Reduction through energy efficiency improvement; promotion of cogeneration, promotion of cleans and renewable technologies, especially wangles of fuel and to use hydrogen, as energy vector.

The objectives and proposals for a climate protection and motivates private households, public, trade and commerce buildings:

The Project - Capacity Building for Greenhouse Gas (GHG) Emissions Reduction through Energy Efficiency in Romania: Energetic optimization of the municipalities and cities for local project - Reduction of consumption in buildings-apartments and public system of illumination ; Rehabilitation and extension of the heating system ,installation of metering equipment , inclusively promoting decentralized combined heat and power production the cogeneration plant ; To promote the use of renewable energies ; Thermal rehabilitation of the houses of the home consumers .Estimated reduction of 1 kg CO₂ /year at the economy from 4 -5 Kwh/year ;

The Project - Capacity Building for GHG precursors (with acidity effect - NO_x,SO₂, inclusively powders in suspension and sediment) Emissions Reduction through Energy Efficiency in Romania: Energy Efficiency improvement; Thermic rehabilitation and modernization to cleaner technology, of the company big thermal power plants on hydrocarbons, hard coal, lignite, hydrocarbons, refinery, petroleum: estimated reduction 10% - till in 2010.

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