



EBN XVII Annual Congress - Budapest 25 – 27 June 2008

Application form EBN-UNDP AWARD "Innovation for Human Development & Cooperation"

**Application form to participate in the EBN – UNDP Award Contest for
"Innovation for Human Development & Cooperation"**

Develop innovation to innovate development

Please complete the form below by filling in each case and return it by email to Eleonora Sambasile at esa@ebn.be not later than 15 May 2008

Name of your Organization	SOLAREF Autonomous solar ice fridges with cooperative trade.	Contact Details :	Contact Person:	Mr Olivier DERVAUX
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1 Identification of the innovation and authors

Please provide here identification of the innovation author

- Brief title of the innovation (product, service or methodology) and any subtitle that presents the problem it enables to solve
- Title of the innovation
- Name of the author (person or institution)
- Address of the author (with telephone, email and postal address)
- Scientific notarization - national or international (if any)
- National or international patent (if any)
- Name of the person representing the innovation

Autonomous solar ice fridge, 100% thermal solar, without wear nor maintenance, providing affordable and environmentally safe refrigeration for the maintenance of vaccines and medicines and the preservation of food in parts of the world that have no electricity or have unreliable supplies of electricity.

The development of the autonomous solar ice fridges was started by the CNRS in France during the 80th, and continued by HEIG-VD in Swiss during the begining of 2000th, releived by CEAS (NGO based in Swiss) at Ouagadougou in Furkina Faso the last 3 years.

These fridges are distributed around cooperative trade, orchestrated by SOLAREF, french company created by Olivier DERVAUX in Jun 2008.



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2 Description of the innovation

It consists in a brief summary highlighting the relevant aspects of the innovation. The aim is to focus on the subject of the innovation, capturing the core factors, emphasizing on the ones related to the contest.

- Highlight comparative advantages (environmental, technical, financial, etc.) of the proposed innovation compared to other adopted techniques to solve the same problem.
- Indicate to what extent the innovation plays a strategic role in its field of application and how it is linked to human development.

Created to answer 2 challenges raised by WHO :

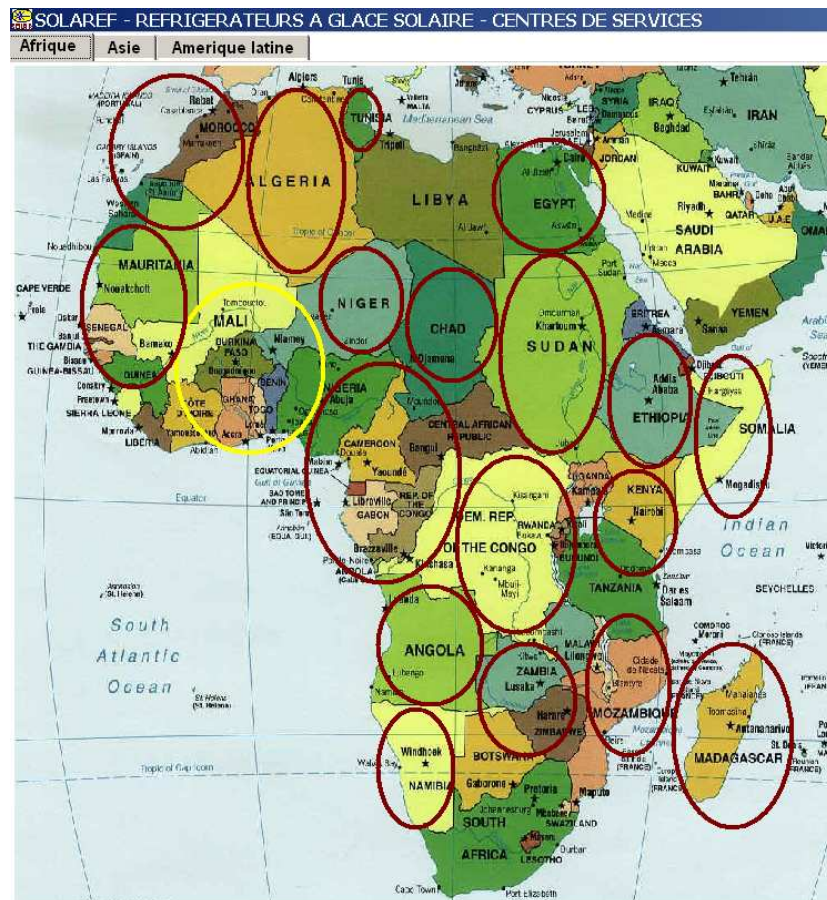
- Offer to isolated populations durable cooler engine to protect vaccins, medicinal drugs, foods... : Humanitarian challenge.
- Replacement of the 100 000 kerosene fridges actually in place in development countris wich emit more than 85 metric tons of CO2 in the atmosphere every year : Ecological challenge.

Solaref fridges need only the sun power to give cold temperature :

- Without nocive gaz or liquids or electrical battery,
- Without any electrical system or electronic component,
- Without any motor or compressor, no mechanical part in movement (except the door).

All main breakdown factors are eliminated, and the environment is protected.

Solaref fridges are assembled, installed and maintained by local working population in services centers created and trained by Solaref teams, that give local work, and local guarantee for the products : this is our notion of cooperative trade, weecan sell if and only if local population know how to build and repair !



3

Which problems does the innovation solve, and how?

- Indicate the most significant data related with this issue at international and national level.
- Indicate the institutions/organizations that are at the root of the innovation and those that took part or are currently taking part in its implementation.
- Indicate the benefits of the innovation in financial, technical and qualitative terms.
- Indicate the main comparative advantages of the innovation compared to other practices dealing with the same issue.

No consumption of distributed energy, no wear, no human action for daily use, 72 hours holdover time without sun at 34°C, free CO2 come out of, antitheft device, cooperative trade are the most advantages of SOLAREF technology. In comparison with other systems actually in use for same issues in isolated areas, our final cost is slightly expensive for more advantages :

	Classical fridge on petrol electricity-generator	Gaz or kerosene fridge	Low consumption fridge on P.V. sensor	SOLARCHILL (UNPD, WHO and Greenpeace development)	SOLAREF
Consumption	Yes	Yes	No	No	No
Electrical Battery	No	No	Yes	No	No
Gaz, CFC...	Yes	Yes	Yes	Yes	No
Wear (mecanical parts in movement)	Yes	Yes	Yes	Yes	No
Holdover time	8 hours at 27°C	8 hours at 27°C	8 hours at 27°C	20 hours at 27°C	72 hours at 34°C
Place manufacturing of	North or lowcost	North or lowcost	North or lowcost	Danemark	France and local population in services center
Operations installation of	By the user	By the user	By the user	By the user	By local population in services center
Maintenance	Return to manufacturer	Return to manufacturer	Return to manufacturer	Return to manufacturer	By local population in services center
Price (capacity in liters)	300€ (90) without generator nor petrol	800€ (90) without gaz nor kerosene	3.000€ (120) with P.V. sensor and batteries	1.940€ (40)	2.600€ (70) 3.700€ (200)

Since begining of developments, Swiss NGO CEAS is integrated in our plan of cooperative trade. One services center will be created very soon in Ouagadougou (Burkina Faso) in CEAS's delegation in that place, and we hope to open 2 new centers in 2009 in Senegal and MADAGASCAR always in CEAS's delegations.

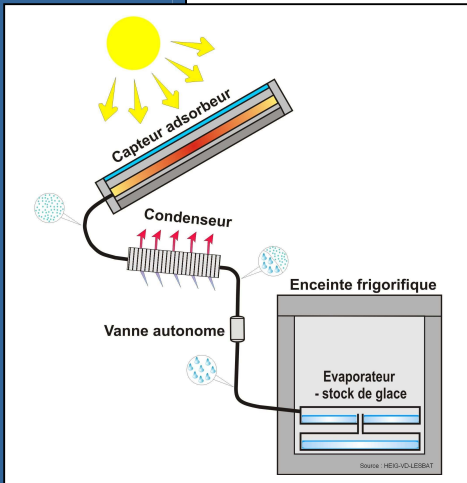


4

Entrants innovations in practice

Practical and universal elements of the innovation should be presented, in order to show the different situations and contexts in which it can be used.

- Indicate the basic phases, elements and principles of the adopted product/methodology/technique.
- Illustrate the innovation through a technical diagram/scheme, if necessary and/or useful.
- Mention environmental impact (direct and indirect).
- Describe innovation reproducibility in less industrialized contexts.



During day, the solar collector generates vapor which is transformed into water by the condenser.

During night, this water goes up in the collector by generating sufficient cold (by evaporation) to create ice in the tank.

More it's hot during the day, more stock of ice grows during the night. This cycle functions work in closed circuit under vacuum. The refrigerant fluid used is water, and the material used to create evaporation (by adsorption) is a natural desiccant.

The system is totally neutral and respects the environment without any pollution (directly or indirectly), until the end of life of the product.

The stock of ice is calculated to preserve a temperature of conservation up to 3 days without sun (established in sahel climate with 43°C the day and 34°C the night) after 5 first sunny days.

All technological parts are situated in the closed vacuum circuit and must be manufactured with care. The assembly and the installation can be made by operators beforehand trained.

Technological parts are packed in kit in destination to the services centers created by Solaref. This concept of cooperative trade can be generalized everywhere around the world, notably in sunny and isolated countries.

5

What are the outcomes? How sustainable is the innovation?

- Illustrate the innovation's impact at local, national and international level, from a cultural, institutional, scientific, economic and financial point of view.
- Provide key data showing the results achieved through the innovation.
- Indicate the conditions for sustainability from an institutional, scientific, cultural, and financial/economic point of view.
- Indicate the data that show all the cost/benefits of the innovation in comparison with possible alternative solutions to the same problem (briefly describe these alternative solutions).
- Indicate any other advantages in terms of qualitative cost/benefits, compared with alternative solutions.
- State if the application of the innovation attracted the interest and financial support of national institutions/organizations.

In association with NGO CEAS, we have 3 local structures (Burkina Faso, Senegal, Madagascar) to develop the distribution of our réfrigérateurs, and hope to install in these countries more than 1600 units the next 5 years. We found business angels to help us to finance tools, vehicles and trainings for the services centers teams (200 000€ requested). More than 24 people will be employed in local countries for this activity, and 7 at Solaref office.

The fixed objective is low, we plan to deal with international organizations to amplify the request of our products, and as a consequence, multiply the services centers in other countries and local employment.

As demonstrated in board (page 3), our refrigerators are not much more expensive than alternative solutions, but offer employment and services directly to local population. Our ambition is to procure autonomous and necessary solar products for emergent populations, by involving directly these populations in our process of development.

Basis of the technology we use allows us to envisage other new products :

- Autonomous solar machine for production of ice intended for conservation of fishermen and farmers fruits.
- Solar systems for cold rooms for preservation of seeds.
- Autonomous solar machine for production of water by condensation of air humidity.


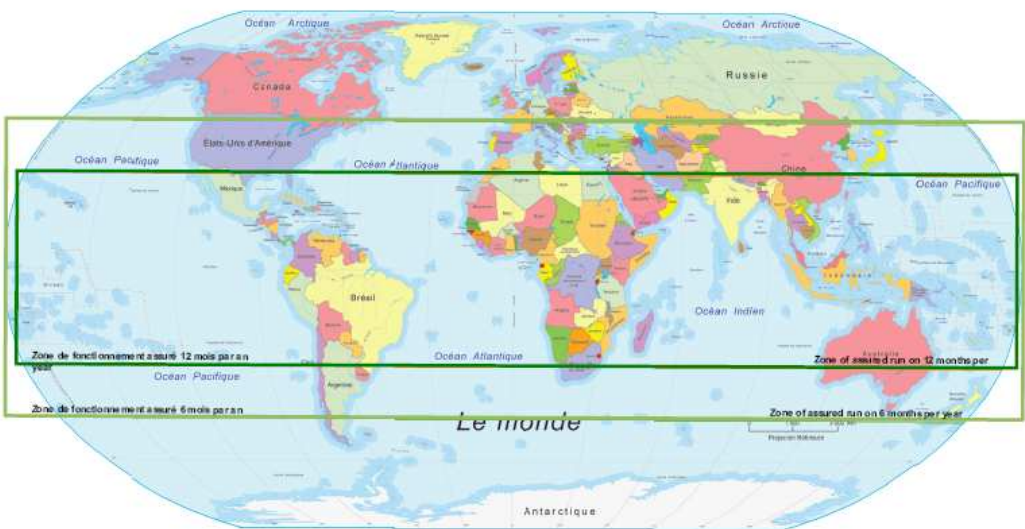
6

International interest

- List the international and national validations (if any) conferred to the innovation: institution, country, year, research, result.
- Provide a list, if any, of the prizes, international recognitions and relevant conferences in which the innovation has been presented.
- List the countries in which the innovation is actually used, indicating the institutions involved and indicate the international organisations that have supported the implementation of the innovation in other countries.
- Mention scientific evaluations (if any) elaborated by institutions, national or international qualified universities, specialized Agencies of the United Nations system related with the proposed innovation.
- State the status of the proposed innovation related with national/international patent.
- State which institutions should be involved for supporting the transfer of the innovation in other countries.

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	<p>More than 10 prototypes were tested in different countries of Africa during the developments. We will start the industrialization of kits, plan trainings of services centers team for the end of 2008 summer.</p> <p>All programs of evaluation were followed and qualified by HEIG-VD, their publications on this subject are accessible on web site http://igt.heig-vd.ch</p> <p>Our concept of cooperative trade around the autonomous solar refrigerators, always supported by our 3 entities : High school, International NGO, dynamic and innovative company, allowed us to win different prizes :</p> <ul style="list-style-type: none"> - By NGO PRIORITERRE (France, november 2007) : Prize of innovation 2007 in contest "J'aime ma planète" (I love my planet). - By the international jury of the exhibition of inventions Geneva (Swiss, April 2008), 3 rewards : <ul style="list-style-type: none"> * Golden medal and congratulations by the jury. * Special prize of innovation by the European Business Network (EBN, BIC Thesame France). * Special prize by the national federation of french inventors association (FNAFI).
<p style="text-align: center;">7</p> <p>Contribution to Human Development and profitability</p>	<ul style="list-style-type: none"> ▪ Explain the problems which the innovation solved/faced at local level, and its repercussions at national and international level, in relation with human development issues. ▪ Describe qualitative and quantitative aspects of the advantages resulting from the proposed innovation usage. ▪ Describe results of the innovation at local, national and international level, ▪ including available data, showing the achieved success and related publications. <p>Such as shown previously, Solaref's fridges don't need any distributed energy. That eliminates problems of storage of tins of gasoline or gas, that eliminates problems of plunders of these tins or P.V. solar sensors, that eliminates problems of their supplies.</p> <p>Thanks to the absence of mechanical parts in movement, electric or electronic system, harmful gases or polluting materials, Solaref's refrigerators are more durable than any other adopted techniques to solve the same issue.</p> <p>In addition to that, our notion of cooperative trade, and the involvement of the local populations in our services centers, we hope to seduce number of international organizations, and plan to take advantage of the EBN network to share our technology to a large number of countries.</p> <p>Directly concerned by the subject of the 2008 UNDP contest, the award will give us prescriptions with UNDP, WHO or other interested NGO, and the possibility to help us to create new services centers with the support of IDEASS and LEDAS organization.</p> <p>Number of media relieved the information of the existance of our autonomous solar refrigerators Solaref, All datas are available on www.solaref.com</p> <div style="text-align: center;">  <p>Fonctionnement 100% solaire thermique. 100% solar thermics run on.</p> <p>Localisation mondiale des zones d'ensoleillement suffisant au fonctionnement. World localization of zones of run on sufficient sunning.</p>  </div>