

One Solar Panel Per Child



The project “One Solar Panel Per Child”
requires 100 billion euros over 10 years
to sell portable solar panels
to 33% of the world population.

(traduct by google, prefer the original french paper if you can)

Current situation

The human activities reject an important quantity of CO₂ result of the combustion of oil. Although half is recycled by the atmosphere, other half remains there, which increases the effect of greenhouse. This Gas abundance for Purpose of Greenhouse (GES) is at the origin of a **climatic reheating**.

If the reheating continues at the current rate/rhythm, it can result from it from the modifications of the circulation of the oceans, a change of the catastrophic climate, a loss of biodiversity and damage irreversible on agriculture in the most affected écorégions.

Estimates recognized by the GIEC and certain groupings of insurance raise to 3,5 billion the number of people who could be touched by pandemias, the disappearance of sources of drinking water and other impacts possible.

These gases for purpose of greenhouse thus function as a cover which maintains a temperature hot on the surface of our Ground and thus prevent it from cooling.

However, **coal and oil are fossil energies which are condemned to disappear** if they are used more quickly than they are not formed. In 2015, remaining oil will become increasingly difficult to extract. It is thus necessary to envisage other modes of consumption of energy such as for example photovoltaic solar energy.

Solutions

Solar energy is the energy contained in the solar, direct or diffuse radiation. Thanks to various processes it can be transformed into another form of useful energy for the human activity, in particular in electricity and thermal energy.

Company AMD, a manufacturer of microprocessors, and its partners envisage to provide 2 billion Personal Internet Communicator (PEAK) in the ten next years to the populations disadvantaged within the framework of the initiative 50×15.

In the same way, the portable computer of MIT Lab Media is a research project of MIT Lab Media having for goal to develop a portable computer little expensive (in 100 USD), to give each child in the world access to the knowledge and the modern forms of education. This project is developed by the organization One Laptop Per Child (a portable by child).



However, this population does not have access to electricity yet. **This is why, the sale of portable/wandering solar panels would be a means of replacing fossil energies, of limiting the reheating of planet, of making it possible the populations to reach electricity and thus, their facility the access to the portable computers and the Internet.**

Restrictions

Performances



If the solar panel is directly directed towards the sun, it functions to 100%.

If the partially covered sky, the loss amounts to approximately 50%. The panel thus functions to 50% of its potential.

If the sky is covered, it does not function any more but at 10%. What is equivalent to a loss of 90%.

The techniques to collect a part directly solar energy are available and are constantly improved. Research is very active in the field of the **solar photovoltaic one**.

The prices decrease constantly and the outputs progress.

In 20 years, the outputs passed from 15% to 36% in the laboratories. This last figure would be that reached on Earth by the solar cells used by the robots Martians. The outputs of the systems available commercially as for them passed from 5% to more than 20%.

In 2003, the new installations represented, in the world, a power of 574 MW-peak, in increase of 34% compared to 2002. Financially, it is now about a market of 4 billion euro per annum. Japan, Germany and the United States account for 75% of the world market together. The installations connected to the networks (without storage of electricity) represent the majority of the new installations.

The systems of solar energy production have a cost proportional quasi-no one: once the installation of the apparatus carried out, energy is produced by the Sun, which does not cost anything. It is however necessary to take account of the maintenance costs of the apparatus.

Use

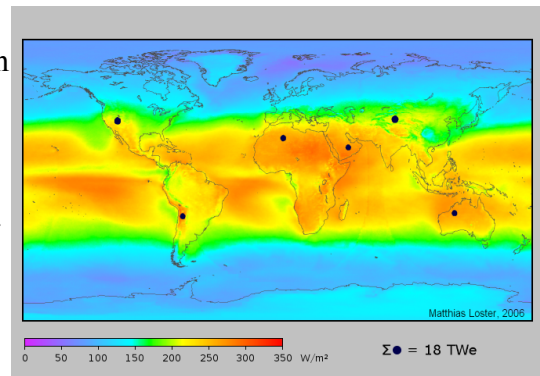
It is also possible to be useful of a solar panel inside a building. Only, the performances decrease by 10 to 25% when the radiations pass through pane.

Environmental factors

geographical situation: The countries which will be selected in priority will be those whose economic situation is most reliable.

weather condition: The solar panels must resist water, cold and with the shock. (to be supplemented)

seasonal solar radiation: According to the importance of the cloud cover of the atmosphere, the ground receives from 68% up to 28% (or less) of the solar radiation arriving on Earth.



Customers

On 6 billion human being, 1 billion people only has access to the Internet. However, these media should be accessible to all. There thus remain 5 billion prospective customers.

Asia, Africa and Europe only add up with them 82,9% of the world population. This is why, the countries which compose them remainder one of the priorities of the project.

To act

To create a structure

To choose its legal form:

For a **company**: to contact **businesses angels**.

For an **association law 1901**: to check that there is not already a similar structure in your city. If not, to deposit the status near your prefecture or under prefecture of the department or is located your registered office.

To go on the site of the APCE, the agency for the creation of companies: <http://www.apce.com/>

To ask subsidies

To fill a file with request for subsidies to your town hall using this document as well as status of your organization of affiliation.

See sections **financing** and **bugdet**.

Action plan

First phase: **Demonstration**

1. to buy a solar panel (section equips - > suppliers)
2. to check that the system functions
3. to make the demonstration with its entourage of it

Second phase: **Marketing**

1. to create its organization
2. to take the customer orders, to box the money, to place order
3. to engage of the personnel, to assemble a team

Third phase: **Financing**

1. faire of the requests for subsidies
2. externaliser: to create other communities local, regional, national and international.
3. relancer the phase of Marketing

Fourth phase: **Research and development (R & D)**

1. to explain how to assemble a solar panel
2. to explain how to use a solar panel
3. to share our know-how with the other organization via Internet (All work of the members of association "One Solar Panel Per Child" will be published under free licence.)
4. to build prototypes
5. to improve the outputs
6. to start again the phase of marketing

Financing

The financing will be done by the direct sale on Internet or telephone. What very strongly decreases any risk of unpaid and optimizes the treasury of association.

Association can receive financings of public institutions, associative structures already places from there as well as institutions private and civil company.

How to contribute?

This project is placed in the initiative [50×15](#) since it aims so that half of planet is a solar charger as well as a portable computer which will function with renewable energies before 2015.

By reading this document, by buying solar panels ou/et by transferring part of your benefit to the organization "One Solar Panel Per Child" in the form of gift in kind or of contributions, you contribute already to the success of this project. And I thank you.

Budget

The goal is that 2 billion people buys a portable solar charger with 50 euros (or less).

The necessary budget is 100 billion euros.

A portable solar charger is worth 50 euros. If one buys 2 billion portable solar charger and that one sells them with 51 euros, one obtains 2 billion euros of benefit.

By taking of account the economies of scale, if the portable solar charger is sold less expensive, therefore to 48 euros, the benefit by object is of 3 euros, the total benefit thus rises to 6 billion euros.

Impact

The project also received criticisms concerning the impact on health and the environment in particular because of the components used during the manufacture of these computers.

Human impact

Which will be the impact of a massive establishment of portable solar panels providing renewable energies for the world population?

Taking into account the fact that the project would have a considerable ecological impact, the OLPC made the point that they will use as many ecological materials they will be able; and that the portables and all the accessories will be compatible with the [RoHS directive](#). The portable computers will compared use also less energy to the portables available today (2006), consequently reducing their destroying impact on the environment. (source: [olpc FAQ](#))

In France, electricity is rented at EDF. Whereas to finance renewable energies is less expensive.

Demonstration: A computer costs 12,74 euros of electricity per annum on average. Therefore, over 20 years: 254,8 euros. To buy a solar charger totals 100 euros of standing fixed overheads. The placement becomes profitable at the end of 10 years. **That thus made a saving in 154, 8 euros per annum. Every year.**

This project aims so that half of planet is a solar charger for portable computer which will function with renewable energies before 2015.

The exemption from payment of the solar panels is possible. On the benefit that this fact the families, 50% can be used to finance other families in materials. Therefore, it is possible via contract “**to give**” **portable solar panels** without association pouring anything.

To make it possible the populations to reach a source of renewable electricity, it is on the one hand to reduce their expenditure, on the other hand to reduce the **numerical fracture** in their giving access to ouvelles Communication and information Technologies (NTIC: telephone, portable computers etc), to insert its population in the **numerical revolution**, finally is to allow the insertion of these populations in the **company of information**, thus attaching them to the world economy.

Environmental impact

Which is the extent of the ecological print resulting from the creation of 5 billion portable solar panel? That represents a considerable pollution. However, that represents less than the oil consumption and will not g  n  rera a radioactive waste.

The generally allowed aptitude wants that “More the *standard of living is high, plus the print (and thus the consumption of resources) is important.* ” That is dangerous if the resources used are not durable, but the portable computers will be supplied by the sun which is a renewable energy.

A population which has access to a high level of education will have the possibility of making better choices that a population with a level of weaker education. Therefore, if it selected the most ecological means of existence, it will produce less waste and its ecological print is by-the-even reduced.

Examples:

* Better choice as regards *transport*: to have a computer at home prevents that a person living in the countryside is not to be moved in the car in the city to connect itself nearest to a cyberca  .

* Better choice as regards *heating*: a LED rather than of the kerosene to light, produces a less impact on planet. (source: [lutw](#))

True the question is: **which are they the materials entering the composition of the solar panels and the portable computers, and are durable?**

Agents

Characteristics of the Portable with \$100 of MIT Lab Media

A processor, AMD Geode GX2-533@1.1W, integrated graphic controller

Frequency CPU: 400 MHz

Compatible: X86/X87 - MMX, 3DNow!

Chipset: AMD CS5536 South Bridge

A flat-faced screen SVGA of a diagonal of 7,5 " transmissif and reflective:

In transmissif mode Couleur/DVD with a resolution of 693 by 520 pixels with retro-lighting (for a use as a portable computer).

In reflective mode (using the ambient light) monochromic of a resolution of 1200 by 900 pixels (for reading "ebook outside" (electronic Books)).

128 MB of DDR266- 133 MHz DRAM.

512 MB of memory flash.

Network Without Wire 802.11b (WiFi) provided by a card functioning at a speed limited (2 Mbit/s) to minimize electric consumption.

Alphanumeric conventional keyboard localised according to country's of use.

Tactile paving stone (touchpad) for control of the pointer and like input area of handwritten writing.

Two loudspeakers.

3 Ports USB.

Sources of food:

Electric cable also being used as shoulder-belt.

Two rechargeable batteries C (R14) or D with a crank.

Four alkaline piles C (LR14) or D (LR20).

(To be supplemented)

Solar panels

There are already solutions for mobile telephone, MP3, PDA and GPS presented by these suppliers:

Name: Silva

cut (cm): 18 X 14 X 15 cm

Weight (kg): 0,3 kg

Exit (Volt and Watt): 12 Volts/4.75W

Type: Polycrystalline

Color: Black

Environment: Weatherproof

Guarantee (years): 2 years

Model: Solar II - 12V To charge

Price: 99 euros

To buy: [here](#)

The portable computer of MIT Lab Media, which consumes at least between 2 and 3 Watts, should function with the solar panels of Silva and ICP Solar previously quoted since it requires less performances. [\[olpc wiki\]](#)



To the maximum, between 5 and 10 Watts, whereas a traditional computer consumes 20 Watts on average.

Caution: it is necessary to be provided with one lights male cigar to connect the apparatuses!

And they precisely sell some on RueDuCommerce:

* [Adapter Conveys Notebook Power - Planes 250NCP](#) (49,95 Euros)

But also on koonect.com:

* [Caliber Adaptateur Lights cigar 12 Volts or 24 Volts - 1500mA - PS10](#) (25,90 Euros)

* [Caliber Adaptateur Lights cigar 3V with 12 Volts - 1000mA - PS20](#) (14,90 Euros)

What gives us a SOLAR KIT with 113,90 euros (99+14,90). The objective of the sales force will be initially to reduce this cost per 100 euros. Then, production and the helping research and development, with 50 euros. Since association will become its own supplier by controlling all the chain of production in order to reduce the costs and to improve quality.

In order to provide a KIT All-In-A for 100 euros including/understanding the portable computer of MIT (50 euros) as well as the Solar KIT (50 euros).

Partners

The project leaves the report that a portable computer of MIT Lab Media without solar panel would not function, and that a solar panel without materials functioning with electricity would not have any utility.

* [OLPC](#) (email: niav AT laptop.org)

* [AMD](#) and its [PIC](#) (email: amd.50×15 AT amd.com)

* [Simputer](#) (email: simputer AT csa DOT iisc DOT ernet DOT in)

References

[World statistics of the Internet](#)

[Information and statistics on the populations and the countries of the world](#)

[To simulate its electric consumption](#)

See also:

[my Web site](#)

<http://www.portail-solaire.com>

Extra

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Last revision: August 18, 2006