Changing with the climate

Education and Culture DG
Lifelong Learning Programme

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In this issue:
there is an article about foretelling the future, we consider the potential of renewable energy sources and what some schools are doing to switch from fossil fuels to renewable energy sources, news about the Amazon rain forest, the Earth Summit in Rio de Janeiro and the activities of the network partners. We reissue our 2012 climate change challenge to schools and provide some initial information about our second network meeting to be held in Reading in October.

A three-monthly newsletter highlighting the past and present activities of the CwC network and current issues relating to changing with the climate. Supported by a grant from the Lifelong Learning Programme of the EU's Directorate General for Education and Culture.

The best way to foretell the future is by creating it

We are living through a time of change, a paradigm shift, and we should consider that if certain things were intended to satisfy the basic needs of daily life these can be built through community-based projects thus forming a sustainable approach. In Spain we have a lot of renewable resources to help us obtain our basic needs sustainably (food, energy, etc).

In order to promote more sustainable ways of living in these complex times, to be able to see beyond the narrow boundaries of our everyday life and to be able to make informed decisions, we must ascend the steps of an imaginary staircase that leads us to a clearer place where we can see the scenario as a whole and we can analyse it from a broader point of view:

Before climbing up the stairs, a commitment is needed: some kind of involvement must be there or at least the willingness to develop it. The first step involves information: active research to get to know the true nature of things, looking beyond the surface and investigating the current opinion. The second step is the communication between those looking for solutions to overcome the difficulties we find in our community. The third step is the use of common sense in developing sustainable and lasting solutions to better manage our basic common needs.

Every step is a step forward in our social evolution and the one of future generations. Coordination is needed to best perform our own community-based projects. As I heard in a film I saw not long ago, "the best way to foretell the future is by creating it".

As a member of Solar Difusió and teacher at one school in the CwC Network, I encourage you to link with other people and organisations in order to create synergies to execute new projects. Society needs fresh air; new ways of behaving; new sustainable models; people practicing what they preach; people designing their own future in a constructive way; we also need to regain the values; to create, as the Changing with the Climate Network, cooperative networks with concrete

goals. In this regard, schools have a key role to consolidate those values and to pave the way for building many social and environmental sustainable alternatives in the future.

Toni Monteil - Toni is a member of Solar Difusió, an associate organisation of the CwC Network, and is also a teacher of our partner school "Guillem Catà", in Manresa (Catalonia, Spain) **www.solardifusio.cat**
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Potential of renewable energy sources

The sun is the ultimate source of almost all our energy whether directly through sunlight or indirectly through providing an energy source for biomass to grow. The advantages of using renewable energy sources include being wide spread and inexhaustible, low or zero running costs and little or no pollution when consumed.

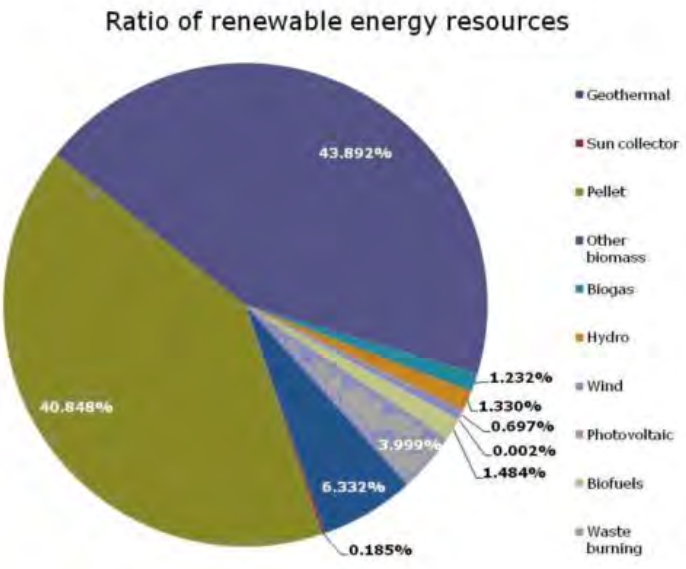
Their principal disadvantage is their variation between day and night and summer to winter. This variation can be overcome by utilising some form of storage, both short and long term. One of the principal methods of storing heat for example, is in the ground which is heated up during the summer and from which low grade heat can be extracted and concentrated during the winter using a heat pump.

Hungary

In Hungary the share of the renewable energies in the whole electricity supply has doubled during the last twenty years due to the social-economic changes, but it has not reach the EU average yet.

Between 1999 and 2009 the share of the renewable energy usage in the whole electricity supply increased from 3.3% to 7.3%. Compared with other post socialist countries, the Hungarian results seem good; for example in the Czech Republic 5.7 %of the electricity comes from renewable especially from water, wind or solar power plants and in Poland 6.6 %.

For the Hungarian Government supporting the renewable energies is a key issue and has a special priority. As the member of the European Union we have very serious commitment as well. The Hungarian Ministry of Economy and Transport set up a Renewable Energy Strategy (2008-2020) in 2008. This document was accepted by the Hungarian Government in 2010. The policy targets the increase of RES production to 15% by 2020. Hungary has introduced a sustainable (non-central-budget-based) feed-in-tariff scheme which is guaranteed until 2020. In addition to the feed-in-tariff system, significant resources (EUR 280 million) are earmarked for supporting investments in the renewable energy sector under the National Development Plan that distributes EU Structural Funds.
Julia Schuchmann



Source: Energy Center, 2008

Wood pellets and other biomass currently dominate the energy mix.

Identifying the potential

One of the network's main goals is to raise awareness of the potential of renewable energy sources to reduce our dependence on fossil fuels. This requires a basic understanding of the various energy sources and which sources are most suitable for a particular community.

The network has developed a series of activities which enable students to assess the potential of the various renewable technologies for their school buildings or homes. These types of activities are generally undertaken in small groups so students can agree their observations and then they can discuss their recommendations with the other groups in their class. For older students it is possible in addition to use computer programs which can estimate the output of such energy sources.

Deforestation of the Amazon

The tropical rain forests form a very important part of the biodiversity of our planet as over half the world's plant and animal species are found in them. Deforestation of rainforests to provide additional land for growing crops and raising cattle each year releases more carbon dioxide into the atmosphere than all the cars, planes and ships together. It is therefore very significant that deforestation of the Amazon rain forest has decreased to its lowest level since records began in 1988.

Guardian 8 June 2012

Sustainable development 3rd Earth summit

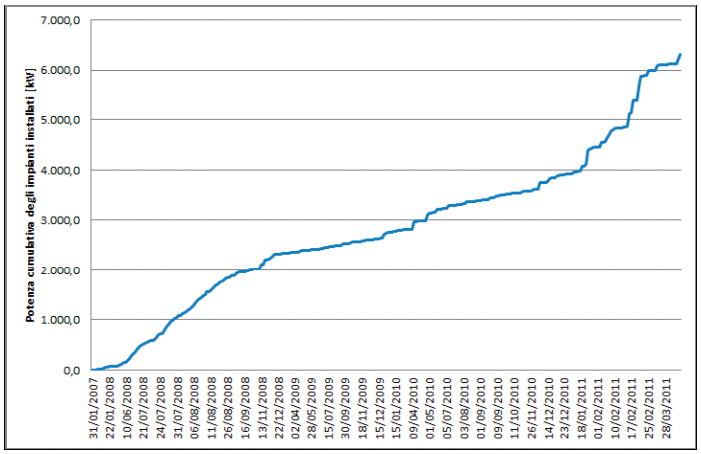
The first Earth summit was held in Rio de Janeiro, Brazil in 1992. At this meeting world leaders accepted that sustainable development was the only way to combine economic development with social progress and protecting the environment as it enables the needs of the present to be met without limiting the ability of future generations to meet their own needs. However, progress has been slow and unsustainable patterns of production and consumption are still imposing excessive demands on resources. In addition, our climate continues to alter due to pollution entering our atmosphere.

So the world's leaders will gather in Rio on 20 June some 20 years after the first Earth summit to review progress with attaining the sustainable development goals agreed in 1992. Ban Ki-Moon, the UN's secretary general, has proposed that nations should be willing to set new goals " that offer growth and social inclusion ….. and is more respectful of planet's finite resources." While it will be difficult to obtain a consensus amongst more than 200 countries with their varying stages of development, all countries accept the general principle that more sustainable economic, social and environmental policies are required.

Combustion of fossil fuels is a major contributor to the concentration of greenhouse gases that lead to global warming (artiste Jan Smolik)

Solar community in Bologna

The Sustainable Energy Action Plan (SEAP) of Bologna was approved on 28 May 2012, the result of a process of sharing with local stakeholders and citizens (forum). The actions of SEAP aim to reduce the GHG emissions in the City of Bologna: 20% by 2020 by reducing energy consumption and increased production from renewable sources. Among the renewable energy sources, the photovoltaic sector is very active in the territory of Bologna: as the chart shows, since 2002 we assisted an exponential distribution of PV systems in the municipality.



Cumulative power of photovoltaic systems installed throughout the Municipality of Bologna sorted according to their date of entry into service, from the first incentive system (Conto Energia), from July 2005 to April 2011

One of the most important new action's to develop RES is the constitution of "solar community". These aggregate the purchase of solar panels installed on roofs or areas of public property. The solar community aims to enhance the value and sense of participation in public life and increase the awareness of citizens in the active role they can play to change the energy future of their community.

Longhena school In December 2011 on the roof of the primary school "Longhena", located on the hills near Bologna, a solar PV system (for about 20kW power) was installed. The PV plant was achieved with funds donated by parents and other sponsor of the project, and thanks to an agreement with the Municipality of Bologna. The electricity savings will be about 3.000 euros per year to which can be added about 7,000 euros incentive, which will be used entirely to fund the school and its educational activities.

Comunità solari:

Il Piano d'Azione per l'Energia Sostenibile di Bologna, è stato approvato il 28 Maggio 2012, frutto di un percorso di condivisione con tutti i portatori di interesse locali e i cittadini. Le azioni del PAES hanno l'obiettivo di ridurre le emissioni climalteranti nel Comune di Bologna del 20% entro il 2020, attraverso la diminuzione dei consumi energetici e l'incremento della produzione da fonti rinnovabili. Fra le fonti energetiche rinnovabili, il fotovoltaico è quella che può trovare maggiormente sviluppo sul territorio bolognese. Come dimostra dal grafico, dal 2002 si assistite ad una esponenziale diffusion degli impianti fotovoltaici nel territorio comunale

Potenza cumulativa degli impianti fotovoltaici installati sul territorio del Comune di Bologna,
Fra le azioni del PAES per incentivare il fotovoltaico, vogliamo ricordare lo sviluppo delle "comunità solari". Si tratta di forme di acquisto aggregato di pannelli fotovoltaici istallati su coperture o aree di proprietà pubblica. Le comunità solari mirano a che rafforzare il valore del senso della partecipazione alla vita pubblica e accrescere la consapevolezza del cittadino nei confronti del ruolo attivo che può giocare per cambiare il futuro energetico del suo territorio.

Prendiamo il sole per I nostri bambini: l'esperienza della scuola Longhena – azione sul patrimonio pubblico. Sul tetto della scuola elementare Longhena, nelle collline di Bologna, il 23 Dicembre 2011 è stato inaugurato un impianto solare fotovoltaico da circa 20kW. L'impianto si è potuto realizzare grazie ai fondi donati dai genitori e da altri sostenitori del progetto, e grazie ad un accordo con il Comune di Bologna. Il risparmio sull bolletta sarà di circa 3,000 euro anni a cui si aggiungeranno circa 7.000 euro recuperati dall'incentivo, che saranno interamente destinati a finanziare le scuola e le sue attività didattiche
Daniele Zappi, Unita Ambiente, Bologna.

20th anniversary - first French grid connected photovoltaic system

On 15 June, the small photovoltaic system Phébus number 1 installed in Lhuis, France celebrated its 20th anniversary. A modest installation but an historic date: it was the first time that a photovoltaic system was connected to the grid in France. All other systems installed beforehand were isolated from the power grid, either for mountain refuges, boats or remote houses where the grid did not reach. The solar panels were dismantled recently, sent to the Solar Energy National Institute for tests and then reinstalled. On this anniversary HESPUL organised a full day of meetings and exchanges about the photovoltaic sector during the past 20 years and visited Phébus.. More information at **www.hespul.org/-Presentation,4-.html**

News from French schools

The three groups that have joined the network in France so far are have finished their work. Final presentations are to be held on the 18 June (Collège des Quatre Vents) and on the 25 June (Collège Pierre de Ronsard). Results are: posters explaining the interest of composting in a partner primary school (created by the students of Collège des Quatre Vents), recommendations in order to reduce the electricity consumption in the school (by the students of Collège Pierre de Ronsard), and an in depth enquiry on food and paper in the school (by the students of Collège Jean Macé). To sum up: ambitious projects that are ending successfully. Congratulations to teachers and students!
Recruiting is on-going for next school year; some teachers have already shown their interest.
Maite Eyquem, Hespul

Solar roofs on Reading schools

Schools, like Longhena near Bologna, are the ideal place to host renewable energy demonstrations because they provide practical experience for pupils in collecting and analysing data and also for students and parents to experience renewable generated heating or electricity. In Reading the Borough Council has taken this initiative forward and now 17 schools, mainly primary and a few secondary schools have installed solar photovoltaic arrays on their roofs. Schools will not only be able to generate clean, renewable electricity to reduce their electricity consumption from the National Grid, but the arrays also act as fantastic teaching resource, with real time display boards showing their electricity generation and the amount of carbon being saved. Their installation has been followed up with teacher training workshops and curricular packs to engage staff and provide practical and fun teaching ideas on renewable energy. 2 schools have also installed heat pump heating systems.
From information supplied by Helen Roberts, Reading Borough Council

Activity day for year 12/13 students, Reading UK

In the morning of 11 May 72 students from 6 secondary schools took part in an Activity Day hosted by Irene Bell of Leighton Park School. 12 teams of 6 students each participated in activities involving analysis of extreme weather events over the past 5 years, making the transition from fossil fuels to renewable energy sources, and considering additional passive solar measures to improve the energy utilisation of Leighton Park's buildings. This was followed by a debate "Should each of us use less energy?" which raised many of the key issues. These included -

(Against) Other people use more energy than us so why should we use less?
We should develop better and more efficient ways of doing work
We should find methods of using fossil fuels more efficiently
We can use less much energy simply by reducing wastage such as switching off TV, computers or lights when they are not used

(For) We managed without electricity in the past so why not in the future?
If all of us saved some energy, then the accumulated savings would make a difference
There are many ways of consuming less energy
If we continue using fossil fuels at our present rate there will be none for future generations
There needs to be sufficient fossil fuels available until such time that we can utilise renewable energy sources

At the end of the debate almost all students agreed that they should use less energy and so each of the six schools were encouraged to take the next step and participate in the CWC 2012 climate change challenge.
Rayner Mayer, IOE

Student teams looking at the solar shading of the refectory of Leighton Park who suggested that installing a green roof would enable the school to grow their own vegetables and herbs.

The first Hungarian teacher's workshop

In the framework of the Changing with the Climate Project, the Regional Environmental Center (REC) as the Hungarian coordinator of the CwC Network organized a national event for the 11 Hungarian schools involved, teachers, and students as well. The Bárczi Géza Primary School hosted the meeting. All together 24 participants were present at the events, 8 member school were represent.

The main aim of the workshop was to organize an event when the Hungarian teachers can meet with each other personally and can exchange experiences about the climate education in their school. They presented their first results implemented in the Changing with the Climate Network. The second aim was to give opportunity to the involved students to present their climate change activities implemented in the network.

This half day event was opened by *Ms. Margit Juhász* from the hosting school. Two lecturers were invited to the afternoon. First lecturer was *Bérczi Szaniszlo*, from the University of Eötvös Lorand Deparment of Physics. In his presentation he highlighted the complexity of the climate change issues, and the natural and social context

of this question. The second lecturer was *Mrs. Ágnes Halácsy* from the Hungarian Association for Environmental Education. She presented their own implemented EU funded project results focusing on the climate change education, called Carbon Detectives.

At the afternoon session the schools presented their own climate and environment protection activities. It was the pleasure for everybody when the youngest climate professionals presented their very interesting performances. The Climate Team from the Barczi Géza Primary School introduce the Ecoville game and the other interactive online games focusing on climate change and collecting from the web

The students from the Esze Tamás Secondary School presented their very remarkable results of a survey carried out with 600 citizens of Mátészalka. They investigated the general awareness of the citizens about the climate change and its negative environment consequences.

The students also prepared a very nice poster presentation to close the day
Julia Schuchmann, REC

The young climate professionals presented their posters with the theme of climate change

Eco-activities in Romania

The European School of Bucharest is a private school interested in reducing its ecological footprint and in developing active citizenship projects. Since 2009, the students and the teachers were involved in ecological projects, partnerships and contests. Two years ago, the school was part of the "Terra, our only home" competition, coordinated by "Greenitiative" NGO, winning the second place. Last year, the 6th grade students won the "European Schools for a Living Planet" competition, coordinated by WWF Austria and ERSTE Foundation. They worked hard during the whole school year and became the winners, over passing by their project the other 32 schools from 9 different countries involved in the competition. All their activities can be found on the website created especially for this project: **www.grrreen.scoalaeuropeana.ro**.

Școala Europeană din București este o școală privată interesată în reducerea amprentei sale ecologice și în dezvoltarea de proiecte ca cetățeni activi. Din 2009, elevii și profesorii au fost implicați în proiecte ecologice, parteneriate și concursuri. Cu doi ani în urmă, școala a fost parteneră în "Terra, singura noastră casă", concurs, coordonat de "Greenitiative" ONG, câștigând locul al doilea. Anul trecut, elevii de clasa a 6-a au câștigat concursul "Școli europene pentru o planetă vie", concurs coordonat de WWF Austria și de Fundația ERSTE. Ei au muncit din greu în timpul anului școlar și au devenit câștigători, depășind prin proiectul lor alte 32 de școli din 9 țări diferite implicate în competiție. Toate activitățile lor pot fi găsite pe site-ul creat special pentru acest proiect: **www.grrreen.scoalaeuropeana.ro**.

After spending one week in Neusiedler See National Park in Austria, as a prize for winning the contest, the European School of Bucharest the 7th grade students convinced their school mates to become part of their “green community” and continued their eco-activities by volunteering and fundraising projects. To name just three of these, we can say that:

- In November, over 50 students collaborated with “Viitor Plus” NGO and planted trees in an affected area near Bucharest, donating also money for helping the small trees to grow. Every child adopted the trees he planted, and want to go back in autumn to see how strong they are. They did this twice since now, and they were helped by their teachers and parents.

Our students planting trees near Bucharest
Plantare de copacei in jurul Bucurestiului

După ce au petrecut o săptămână în Parcul Național Neusiedler See în Austria, ca un premiu pentru câștigarea concursului, elevii de clasa a 7-a a Școlii Europene din București și-au convins colegii de școală să devină parte în "comunitatea verde" și au continuat să desfășoare eco-activități de voluntariat pentru strângere de fonduri și proiecte. Pentru a numi doar trei dintre acestea, putem spune că:

- În luna noiembrie, peste 50 de elevii au colaborat cu ONG-ul "Viitor Plus" și au plantat copaci într-o zonă afectată de lângă București, au donat bani pentru a ajuta, de asemenea, copacii mici să crească. Fiecare copil a adoptat copacii plantați de el și dorește să se întoarcă în toamna acestui an pentru a vedea cât de puternici sunt. Ei au făcut acest lucru de două ori, fiind ajutați și de profesori și părinți.
- În luna decembrie, elevii de clasa a 7-a au avut o inițiativă lăudabilă. Ei au decis să adopte un urs, mai exact să doneze bani pentru WWF România, care a inițiat o campanie pentru a proteja ursul brun, care trăiește în pădurea românească. Banii donați vor fi folosiți pentru a proteja și a menține habitatul populațiilor de urs brun, contribuind astfel la menținerea unui mediu sănătos și natural pentru ei.
- În luna aprilie, a fost momentul în care tinerii elevi au luat măsuri. O sută de elevi, cu vârste cuprinse între 7 și 11 ani, au dezvoltat un proiect în parteneriat cu "Fabrica Canvas" a ONG-ului "Viitor Plus". Ei au cumpărat saci de pânză și pictat, reducând în acest fel utilizarea de pungi de plastic și ajutând, de asemenea, persoane cu handicap care lucrează în fabrică.

Children painting textile bags in school's painting studio
Pungile de panza in atelierul de pictura

- In December, students of 7th grade B had a commendable initiative. They decided to adopt a bear, more precisely to donate money to WWF Romania, which initiated a campaign to protect the brown bear which lives in the Romanian forest. The donated money will be used to protect and maintain the habitat of brown bear populations, thus helping to maintain a healthy and natural environment for them.
- In April, was the time for young students to take action. One hundred students, with ages between 7 and 11, developed a project in partnership with "Canvas Manufactory" of "Viitor Plus" NGO. They bought and painted canvas bags, reducing this way the use of plastic bags and also helping the disabled persons working in the manufactory.

The eco-initiatives won't stop here for the European School of Bucharest students and teachers, because during the summer holiday a lot of them will spend a week in a camp where they will learn useful things about green living, trying to change their life style by eating green food, sharing rooms with more than 10 people, preserving water and energy obtained with solar panels and using only bikes for traveling.

Inițiativele ecologice nu se vor opri aici pentru elevii şi profesorii din Școala Europeană din Bucureşti, deoarece, în timpul vacanței de vară, o multime dintre ei vor petrece o săptămână într-o tabără în care vor învăța lucruri utile despre viața verde, încercând să-si schimbe stilul de viață prin consumul de alimente verzi, împărțirea camerei cu mai mult de 10 de persoane, consumând apă și energie obținute cu panouri solare și utilizând pentru călătorii doar biciclete.

Climate change challenge to schools 2012

The network has issued its climate change challenge to all schools to initiate an action to reduce the increasing emission of greenhouse gases in order to reduce global warming.

For further information and to download an entry form, go to our website
www.changingwithclimate.info

Closing date for expression of interest has been extended to 15 September 2012.

Coming events

October 24 to 26

The second annual network event will be hosted by the Institute of Education, University of Reading 24 to 26 October. The major focus will be on teacher education on climate change and the actions that have been initiated by the network members and other individuals and Groups. Participants are requested to bring with them a poster which illustrates their activities and be prepared to join and contribute to the group discussions which will be a feature of this event. For network members there is no charge, but for non-members a charge will be made to cover refreshments, lunches and dinners. for more details of the outline programme visit the CWC network website under events.

Contacts

If you would like to join the network, or require further information go to our website **www.changingwithclimate.info** blog site **www.changingwithclimate.tumblr.com** or contact the network partner in your country

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