

DOSSIER

Education on energy conservation and eco-mobility: training the citizens of tomorrow

In the campaign to combat global warming and to reduce our dependency on fossil fuels, changing citizens' behavioural patterns is key. In the Rhône-Alpes region, 49% of greenhouse gas emissions are linked to housing and transport. Current and future technological solutions will not suffice alone to overcome the climatic problems we face over the decades to come. Rather than a technological revolution, it is a major sociological evolution that is required. In this context, education on energy conservation across the board seems vital.

Every day, we use energy for travel, at work or at home. Thus in 2002 in the Rhône-Alpes region, transport was the sector which consumed the most energy with 32% of end consumption, followed by the household sector with 27% of consumption.

In addition, between 1990 and 2002, this consumption steadily increased: + 23% for the household sector in Rhône-Alpes and + 22% for transport!

The daily activities of Rhône-Alpes inhabitants, whether at home, in the office or during travel, account for over 60% of regional energy consumption and private travel (by car, train or airplane) accounts for 73% of the transport sector's fuel consumption. Decreasing our individual energy consumption is possible without having to make major sacrifices but merely by changing our habits somewhat.

Education on energy conservation and eco-mobility is one of the mainstays of the fight against climate change. Understanding the stakes and energy-saving practices is a good means to develop other values such as citizenship, sharing and responsible choices.



Eco-mobility or how to rethink the way we travel

It is likely that today we are going through a critical phase in the field of travel, similar to what we experienced in the 80s when the saturation of waste treatment sites and the increase in quantities produced went hand-in-hand with the creation of the first public waste collection centres and the launch of the first separate collection initiatives!

Who at the time would have thought that separate waste collection would be accepted and successful 20 years later? In the field of travel, the stakes are exactly the same. Problems touching the environment, health, road safety, the physical saturation of space (congestion, parking), urban sprawl, costs and the energy crisis, are all reasons inciting an increasing number of stakeholders to promote a different approach to mobility.

It has come to light through different European experiences (COMPETENCE, ALPINE AWARENESS projects) that purely technical solutions based on infrastructural aspect, while necessary, are no longer sufficient to satisfy public demand and,

moreover, to mobilise the public. In the same way, it is not enough to provide public transport lines, build cycle tracks or have pedestrian walkways as public amenities. In reality, it is evident that the means to be deployed to raise public awareness on the use of so-called "soft" transport should measure up to the budget of infrastructural investments. In these massive efforts to rally the public, local authorities play a pivotal role.

The urgency to act to combat climate change is now an extra persuasive argument to try to convince the public. It is easy to demonstrate that our short trips contribute largely to the greenhouse effect (roughly 50% of travels are over less than 3km in France). When we know that over 40% of home-to-school travels are made by car, for example (over distances of often less than a kilometre in urban areas), we can raise awareness about our individual role in travels which seem insignificant but which in fact are partly responsible for the escalating greenhouse effect.

In the same way, it is vital to develop a

complete case in order to inform the public. Indeed, the ecological argument, while essential, is only one of the factors motivating our travel choices. Health, safety, speed and available amenities are all just as determining issues in an awareness-raising campaign geared towards inhabitants (with each individual reacting to a given argument according to their own sensibilities).

Home-to-school travel is a fundamental factor in educating the public. Indeed, these trips account for approx. 15% of daily travel and are then extended by many parents who then commute to their workplace.

Managing to raise awareness among parents, grandparents, young people and even employees to travel by other means than the car to schools could change the whole chain of home-school-work travel.

Educating young people who are the citizens of tomorrow and providing them with solutions to suit their requirements in terms of eco-mobility is also a means of stimulating fundamental changes for the future.

Education on energy conservation:

One of the mainstays of the fight against climate change

We can see many short and long-term benefits in educating the population about energy conservation: training the citizens of tomorrow, reaching parents now through their children, giving "school partners" an active role in a project.

Rhône-Alpes Environnement, which has assisted public stakeholders in the field of energy conservation and sustainable development for almost 30 years, had to take a role in

energy education. For four years, the agency has been working on several projects with an educational slant.

The European CLIMATTITUDE project paved the way for work on educational tools on climate change and energy: an exhibition and its exploration booklet and a teachers' guide. The exhibition is currently touring secondary schools in the Rhône area and is coupled with presentations by energy specialists.

FEEDU: a European energy education project

This project rallied about ten schools around the topic of energy conservation with the following objectives:

- extending the outreach to around thirty teachers and their pupils in the course of the school year,
- extrapolating lessons learned from experience in terms of training, tools and methodology,

EDITORIAL



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Freedom of movement for everyone was one of the great achievements of the last century. While this may be so, this progress has taken a heavy toll on the climate, the extent of which we are only starting to gauge. In France, individual travel is the primary sector responsible for greenhouse gas emissions with almost 30% of total emissions. This situation is all the more worrying as the trend is on the up.

As it is out of the question to limit the individual's right to come and go at will, we must find new solutions in the field of "soft mobility".

This implies changing mindset from a culture dependent on a "alone in my car" philosophy. Solutions do exist: sometimes they must be implemented or upheld by the local authorities – door-to-door transport systems, company travel plan, etc. – but in many cases, it is above all a question of changing our habits.

Walking, cycling, taking public transport or car-sharing is helping in the fight against global warming!

Since 2000, Rhône-Alpes Environnement and its partners have developed a number of tools in the field of eco-mobility (websites, methodological publications and educational media) and concrete experience on the ground, in the city and in rural areas alike, such as mountainous areas.

All of these results, which are available on request, have shown that:

- sometimes a very small group of parents is initially enough to launch initiatives (walking, cycling children to school) in a school,
- it is possible to start on a small scale by test or small-scale phases before broadening the scope of the initiative,
- local contacts, contacts from institutions or associations, within towns or metropolitan areas, for example, providing local assistance and equipment, are often very useful,
- there are a great deal of possible solutions to be launched (development of a School Travel Plan, walking/cycling bus, car-sharing, test/festive events, awareness-raising in classes, publications, school exchanges, etc.) according to the goals and the resources in question.



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- forging a network of teachers, notably through a website.

Two half-days of training for teachers were organised in conjunction with the academic authorities. An initial session served to raise the awareness of teachers on the issue and outline a number of key notions. In the second session, several learning tools were proposed and distributed to the teachers, some of which were derived from the European partnership. Over the year, the teachers were given technical support by co-ordinators (partnership with Hespul and Ageden, associations forming part of the IERA network) at the rate of one day per class. Project results: interesting experiences and

tried and tested tools, such as:

- discussions with children and seniors on past and present uses of energy,
- links with certain schools and their community on energy conservation projects (visit from an elected representative, visit of a HQE® site – high environmental quality),
- model-making (solar furnaces, photovoltaic carousels, etc.)

The teachers who took part in the project are now trained, motivated and capable of repeating the lesson. It turned out to be very important to work more upstream on projects with teaching teams and to propose tools and simple and flexible methods.

A website has been created for the project but must be developed to become an education portal on energy in the Rhône-Alpes region.

In terms of energy education, the most relevant initiatives seem to be locally based projects in which a school and a local authority are brought together by a real project: creation of a renewable energy facility or the management of energy consumption in buildings. However, there is still a long way to go in the area of co-ordination so that teachers, National Education authorities, external stakeholders and local authorities work better together and in a more upstream manner in defining projects, while respecting the goals and skills of each player.

TO FIND OUT MORE

www.allerverslecole.net
www.energiealecole.org
www.alpineawareness.net
www.transportlearning.net

Contact

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EXPERIENCES

Agenda 21 in Trièves (38):

Success achieved through widespread involvement

A prestigious rural setting, Trièves is well known for the quality of its natural surroundings and its landscape. While the proximity of Grenoble has breathed new life into this area, it has also instigated major economic and urban changes. To keep abreast of this phenomenon, the elected representatives of the Syndicat d'Aménagement du Trièves (SAT) worked closely with the population in 2001 to develop a blueprint designed to curb urban development, by protecting strategic agricultural areas and natural areas through regulations. Then in 2003, they hoped to continue this dynamic by implementing an Agenda 21, a real local project satisfying the criteria of sustainable development.

A joint ambition: "living, working, relaxing and acting in Trièves, an area with a window onto its neighbours and the world."

After a year spent for the state of the art, this partnership with inhabitants gave rise to the shared values and objectives, which now constitute the cornerstone of the local Trièves project.

The subsequently defined Agenda 21 action plan is based on seven operational priorities:

- Stimulate a local economy based on solidarity and environmentally-friendliness;
- Manage and preserve resources, biodiversity and landscapes;
- Satisfy housing demand in Trièves by favouring the ecological accommodation;
- Improve mobility for all inhabitants via alternative means of transport;

- Provide general access to services and combat exclusion and isolation;
- Favour links and openness, in particular through an ambitious cultural policy;
- Raise awareness about sustainable development and mobilise local stakeholders to support Agenda 21.

Among the 43 initiatives set, six were put forward to let each person explain the Agenda 21 by giving a concrete illustration. They were given specific technical support to this end.

The 6 showcase actions in Agenda 21

- Support of small project managers, ecological companies and local know-how;
- Development of the wood industry;
- Creation of a centre for training, study and demonstration, specialising in ecological construction;
- Construction of eco-villages and development of eco-sites;
- Pooling of land resources in Trièves;
- Constitution of a single branch for mobility and alternative transport in the area.

For Rhônealpennergie-Environnement, which has supported SAT throughout the project, this Agenda 21 approach stood out because of the real investment of the population and elected representatives, the quality of the state of the art, the content of the project, the highly concrete proposals and the original action based on the specific features of the local area.



The Trièves Agenda 21 hinges on a process of continuous improvement. It will now be supplemented by the different assessments conducted in partnership with the participants and according to new proposals from elected representatives, technicians and inhabitants throughout its implementation.

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Methanization,

how has it developed in Rhône-Alpes and in Europe?

The methanization is a simple process of converting organic waste, resulting in the combined production of biogas, which can be converted into energy, and digestate (digested waste) which can be used as agricultural fertiliser.

Last October, Rhônealpennergie-Environnement participated in a study trip organised by the Club Biogaz run by the ATEE (Association Technique Energie Environnement). The goal of this trip was twofold: firstly, to provide concrete insight into agricultural anaerobic digestion plants using raw materials and diverse techniques, and secondly, to compare the development status of the sector in different European countries, namely Germany, Belgium, France and Luxembourg. This study trip provided important lessons both in terms of technical, economic and agricultural feasibility and the development of this sector in our neighbouring countries.

In Europe, methanization develops strongly through pro-active policies

For our neighbours, anaerobic digestion facilities have moved from the experimental stage

to that of industrial production. In Germany, over 3,000 plants produce agricultural biogas, against several dozen in Belgium and Luxembourg. According to the method of subsidy and the terms of purchase of electricity, different development methods have come to light.

Luxembourg is characterised by an organisation combining farmers and local authorities. In this way, the Rédange facility pools 29 farmers and provides the heating for public buildings.

In Belgium, farmers are encouraged to treat not only their own effluent but also waste from outside their farms. Finally, in Germany, the system in operation favours the conversion of energy crops like maize silage.

This development was facilitated by pro-active policies to support the generation of renewable origin electricity. Today, the experience of these three countries allows us to assess the feasibility and reproducibility of the technical solutions used.

France lags behind

Compared to these European countries, methanization in France is a sector still in its fledgling stage, with only three operational plants, including that of the GAEC Oudet in Champagne-Ardenne, visited during the trip. The French shortcoming in the development of this technique can be put down to:

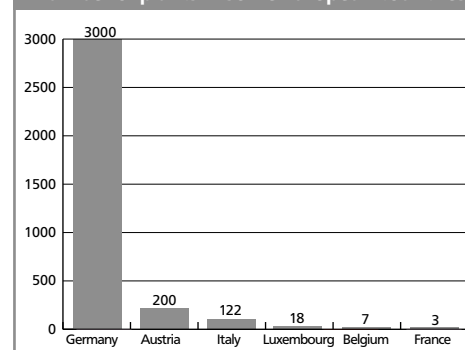
- electricity purchase rates before July 2006 which rendered anaerobic digestion farming plants unprofitable, even with good heat conversion,
- a lack of knowledge about the technique,
- an absence of equipment and know-how in the area,

- a poorly defined regulatory structure and complex administrative measures.

However, the development of the farmers' role in the energy sector and their increased participation in local sustainable development suggest that the long-expected development of the sector will finally take place.

In the Rhône-Alpes region, it is a booming sector. In Rhône-Alpes, a number of think-tanks have been conducted in Isère on the Tour-du-Pin territory and within the agricultural school of Roanne-Chervé in the Loire, demonstrating the interest shown by the farming sector in these issues. Many projects are currently under study, namely a dozen or so in the "Département" of Ain. In the region, applications can be developed in the agricultural sector, the largest producer of target fermentor materials. The production of manure able to be treated by methanization is estimated at over 8 million tonnes.

Number of plants in some European countries



TO FIND OUT MORE +

The study trip report can be downloaded in French on www.raee.org, "Actualité" section.

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