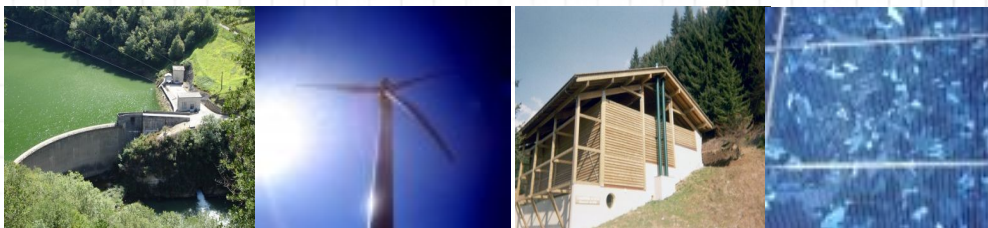


# Newsletter

## Education on Energy

### N°3

July 2008



*Managing energy,  
 Managing our future*

*Apprendre à maîtriser  
 l'énergie, c'est prendre en  
 main son futur*

*A 'convenient' truth about sustainable energy.*



Sustainability is now a much spoken of matter. But what's behind the buzz word?

Simply put, sustainability is about working today to ensure our tomorrow. In the field of energy, this translates into things like supporting renewable energy sources and pursuing a more rational use of existing sources. This is what we call "Intelligent Energy".

When it comes to promoting intelligent energy in Europe, a clear sustainability challenge has to do with shifting current behaviours. Here is where the role of education becomes crucial. Changing habits does not always come as natural, and tends to be a rather progressive process. New energy efficient practices are likely to become a daily routine only when they are thoroughly explained and their benefits are fully understood. And our experience shows that children are quite keen on knowing more about intelligent energy. Right from the start, the patient work of educators, teachers and professors is essential to spreading the best energy saving practices amongst the EU citizens of tomorrow.

But that's not all. By becoming more aware of these issues, everyone can actually set an example of intelligent energy and turn into an instant educator.

Enjoy the reading!

**Vincent Berrutto**

*Head of Unit "Energy Efficiency"*

*Executive Agency for Competitiveness and Innovation*

*European Commission*

*Established by the European Commission, the Executive Agency for Competitiveness and Innovation (EACI) manages projects, events and information campaigns funded under the Intelligent Energy Europe programme.*

*Intelligent energy education is one of the priorities of the programme and an important theme of the 2008 call for proposals, closing on 26 June 2008.*

*To find out more about the agency and the programme visit: [http://ec.europa.eu/energy/intelligent/index\\_en.html](http://ec.europa.eu/energy/intelligent/index_en.html)*

### On the Programme

Belgium, getting to know the APERe [page 3](#)

Games for learning while having fun [page 5](#)

Education on energy in Norway: discussion with Turid Helle, Enova [page 7](#)

The Rainmakers [page 9](#)

Reality TV at the service of Energy Education [page 11](#)

« Renewables energy discovery », an ASDER project [page 13](#)

A play about energy efficiency [page 15](#)

A European network dedicated to Energy Education [page 16](#)

Your opinions are valued [page 18](#)



## Belgium, getting to know the APERe

L'APERe is one of the principal Belgian associations for the Promotion of Renewable Energies, which has been supporting their development since 1991, as well as the principles of Rational Use Energy.

It is manned by 13 people, who are mainly project managers working in different renewable energy sources. The APERe is labelled an «eco-dynamic enterprise ».

### Activities

The APERe works in 4 specific areas : information and awareness, training and education in energy, support and development of renewable energies, auditing and studies of collective interest. These activities are numerous and carried out mainly in the Region of Wallonia as well as in Brussels.

Recently, the association was given the job of supporting the development of the wind generator sector in Wallonia by providing information, producing documentation and giving administrative support. Also in Wallonia, it was chosen to conduct operations to help distribute information about renewable energy sources for the general public.

It is also present in various European programmes such as FEEDU (see issue n°2 of our newsletter) and COOPENER in the context of the Energy Intelligent Europe programme (see issue n°1 of our newsletter).



### Energy education at the heart of APERe activities

Since its creation, the association has been active in Energy Education. It produces, collects and provides information about renewable energies in order to :

- Sensitise children and young people to energy issues and climate changes from an energy perspective and the environment and society to establish changes in behaviour.
- Educate as required in the areas of energy-use, consumption and activities.

- Promote a popular culture of solar energies, wind generators, hydroelectric power and biomass.

### An on-site and online information resource

At the APERe center, you will find, a rich archive of information covering 17 years of activity. Publications, periodicals, press cuttings, photographs and video material are all at your disposal.



For those who need information very quickly, you can connect directly to the [APERe](http://www.apere.org) website, where you will find a comprehensive [database](#) that will allow you to access a whole range of teaching resources suitable for all kinds of learner.

You will find a selection of documents and articles classified by theme for on-line consultation. A search engine will guide you by title, key words, description, general theme, date of publication, classification by sector, geographical area and projects. You can then download the information that interests you.

### A first initiation

For a first initiation, connect to the « renewable energies » section of the APERe website. You will be able to familiarize yourself progressively with climatic architecture, biomass energy, wind generators, geothermal energy and heat pumps, hydro-energy, photovoltaic and thermal solar energy.

For all your questions, please do not hesitate to contact the association or connect to the [renewable energy forum](#).



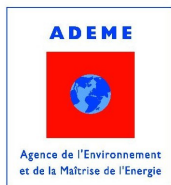
APERe, 7 rue de la Révolution, B-1000 Bruxelles

Tel : 0032 2 2187899 - Fax : 0032 2 2192151

Email : [info@apere.org](mailto:info@apere.org) ; Website : [www.apere.org](http://www.apere.org)



## Games for learning while having fun



ADEME is an agency jointly supervised by the ministries in charge of Ecology, Energy and Sustainable development and Higher Education and Research.

It participates in the implementation of public policies in the areas of the environment, energy and sustainable development.

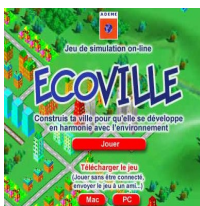
### Two educational games online



[ADEME's website](#) hosts two educational games as well as interactive learning files : « Ecoville, to create a town so that it is in harmony with its environment » and « Become the Grand Master of Protecting the Planet ».

This more targeted and fun version of the ADEME institutional website promotes energy awareness among children but also among online gamers concerning the environment and eco-habits.

### Ecoville, the simulation game

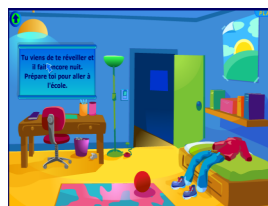


Ecoville fulfils two objectives : allowing by means of a game, to educate a large number of people in urban ecology management and to encourage older teenagers and young people to talk about and promote energy awareness around them, particularly among younger children.

This game is free and it can be played online or downloaded.

The player has the choice between several areas of land he or she will have to develop according to different ecological objectives, the main one being the creation and running of a town that will not exceed the authorized pollution limit. Each action carried out by the player is evaluated according to its impact in terms of energy consumption and production as well as the waste generated and its pollution level.

### Become the grand master of planet protection



This is the call to players who will have to guide a child through a day, from the time they get up and go to school, the aim being not to waste water and energy along the way.

As the day goes on, the player collects points for good habits that protect the planet. These points will show whether, by the end of the day, the player has become the Grand Master of Planet Protection or whether he still needs to progress.

### Learning files



Consultation of the learning files is also interactive. They follow on from one another by theme : electricity, waste, transport and water. For each of the themes, some eco-habits are recommended to the player. These hints are also useful for winning the game « Become the grand master of planet protection ».

At the end of each theme, more detailed information is made available to the player. For example for energy, he or she can learn more about the origins of electricity, the different energy sources, how lamps work, and about anti-waste strategies. To access this information, simply click on the different choices proposed.



For the games, [click here](#)

ADEME's website : [www.ademe.fr](http://www.ademe.fr)  
Tel : 00 33 2 41 20 41 20



# Education on energy in Norway : discussion with Turid Helle, Enova

Turid, could you introduce yourself and the energy agency activities ?



I am Head of Household Unit in Enova and has been responsible for developing the children programme in Enova. Enova SF is a public enterprise owned by the Norwegian Ministry of Petroleum and Energy. Operational from 2002, our main purposes are : exploiting the energy sources, renewable energy production and replacing less green sources.

Regarding energy education in Norway, may you say that a lot of things are done or the path to a global approach nationwide is still an urgent need ?

I will say there is still an urgent need but we are doing a lot in Norway. We do cooperate with the education authorities, especially with The Norwegian Centre for Science Education and The Research Council of Norway.

Regarding the European Conference on energy education held in 2006 in Paris, I think it is necessary to have more than 50% participation from the education actors as teachers!

Could you give us examples of projects, actions and tools your agency has been involved ?

I would introduce three events: the Knowledge Promotion, the rainmakers and the energy day.



**The Knowledge Promotion** is the new curriculum for primary and lower secondary schools has new subject syllabuses which contain goals for what pupils should know after 2 - 4 - 7 - 10 grade. We have few teachers with science education in the Norwegian primary school, and a lot of teachers think energy is very difficult. In collaboration with the Norwegian Centre for Science Education, Enova SF offers seminars with energy and climate-related themes for teachers in primary school. The purpose with the teacher training is to reinforce primary school, particularly science teachers' competence in energy-related matters, to assess and promote suggested teaching approaches in terms of the Norwegian educational reform, particularly with regard to the science curriculum and pupils' basic skills and to motivate schools to become Rainmaker schools.



**Rainmakers** is a global project. To be a rainmakers school, the school has to work with five tasks:

They have to discuss the global energy- and environmental situation by using the Rainmaker story, three science fiction books written by the famous Norwegian author Klaus Hagerup; they have to solve energy tasks and perform experiments by building a mousetrap car and other hands on activities; they have to monitor energy consumption of their school and analyse the measurements in the 6th grade; they have to make a survey of the local community's energy consumption in the 7th grade and if possible visit a local producer of energy; and finally they have to arrange an Energy Battle in the schoolyard.

Through these five tasks the school is qualified as a Rainmaker school and will be awarded a Rainmaker diploma. The schools are working with the energy issues through the school year. One of the local schools will become The Rainmaker School of the Year and will be invited to the national event; The Rainmakers Friends of Energy Day.



**Friends of Energy Day** is a different kind of schoolday including lots of educational and energetic rainmaker activities. Friends of Energy Day is hosted in the main cities in Norway. The events are arranged in close co-operation with the department of education in the municipality. All primary schools in the local area are invited to participate and every year we gather 4-5000 pupils from 5th and 6th grade. The television coverage includes a report of a school class' preparation prior to the event. They make mousetrap cars, kites or sailboats. The pupils are also reporting the awareness of energy in their local trade and industry environment, such as the dairy industry, City Hall, and so on. The same class is followed on the event itself while trying out energy activities and competing in sailing regatta and mousetrap-car racing.

TV plays a central role in the programme. Is it a relevant media to reach children?

Yes. We also co-operate with The Norwegian Broadcasting Corporation and televisionproducing companies, and tv is a powerful tool to reach the children. Every Saturday the Rainmakers appear in the childrens television, as reports, feature stories and energy competitions. And we have the Energy Survival - A reality series for children and featuring children. The program was first broadcasted 2001 and then each successive year - and with an international final from 2005. The winning teams have received generous travel grants to go to ; Island, Kenya, California, Brazil, Svalbard and now Japan.



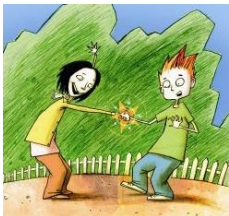
Contact :

Turid Helle, *Head of Household Unit*  
turid.helle@enova.no - www.enova.no



## The Rainmakers

### *Mysterious beings arrive in Europe*



The rainmakers arrived in 2007 in 10 European countries : Belgium, Bulgaria, Finland, Greece, Norway, Poland, Slovakia, Slovenia, Spain and Sweden. The principal partners of the project are the regional Energy Agencies thanks to the European project *Intelligent Energy Europe*.

The rainmakers are similar to us even if their origins are shrouded in mystery. They are attentive towards others, they feel close to nature and are interested in protecting the planet. These beings have a hidden power : a vast knowledge of questions relating to energy, the environment and climate. They know that thanks to all this knowledge, they will be able to change things and ensure a better future for the planet.

### *Norwegian origins*



We owe the creation of the Rainmakers to the Norwegian author Klaus Hagerup but also to the Norwegian Energy Agency, Enova. Indeed the Agency wanted to implement a national energy awareness strategy for children aged 6 - 12 years.



To do this, it decided to use and penetrate the imaginary and creative world of children, with a good dose of humour and interactivity.

It rapidly became a success and today 57% of Norwegian children aged between 9 and 12 years know the rainmakers and the Rainmaker's club has over 16 000 members. The reasons for this success are also the means of communication that have brought the concept to a large number of children : schools, television, an interactive website learning and fun events and activities about energy.

### *Kids for Future*



The European project from which the Rainmakers comes is « [Kids4Future: Creating Actions among Energy Conscious Children - Combining Education, Communication and Energy Knowledge in an Integrated Approach for a Sustainable Future](http://www.kids4future.eu) » ([www.kids4future.eu](http://www.kids4future.eu)).

It is backed by the Intelligent Energy Europe programme.

The story of the Rainmakers is in three volumes, all on the theme of energy. The 10 partners from 10 European countries each have a version translated into their language and have to involve a minimum of 20 test schools in the project per country.

All the pilot schools are supplied with the Rainmakers books as well as a set of tools involving the characters. One story, one visual identity and one theme for all in Europe, with language adapted to local specificities. The involvement of school authorities alongside communication and European Union specialists reinforce the relevance of the project.

### *3 years*

This is the period over which the project is to be implemented throughout the European countries. Launched in January 2007, it will run until 2009.

During this time, the schools involved will be able to share their experiences with a view to developing the tools and furthering the project in general.

The first volume is distributed free to schools that also have access to technical and teaching assistance and advice on appropriate activities, as well as information bulletins and access to the electronic tools kit. Training for teachers is also provided in all the partner countries.

So, see you right away on the [Rainmaker' website](http://www.rainmaker.org) and in 2009 to review the project, which will then be ready to continue and grow all throughout Europe.





# Reality TV at the service of Energy Education



This is the objective the creators of the Rainmakers TV programme are pursuing, in conjunction with the Rainmakers project. Energy Kampen (Sweden) and Energy Survival (The Netherlands) is a Reality TV show in

which different teams composed of children aged 10-12 meet in the countryside for a few days and have to meet various challenges, both physical and theoretical, related to energy and environmental conservation.

The starting point is the use of television, a medium highly appreciated by the age group targeted, as a complement the Internet and to other learning activities relating to energy awareness. It is a way to reach a young audience easily and to tackle energy-related issues in an entertaining way.

The programme has already been a great success in Norway and the Netherlands and a certain number of other European countries have expressed an interest in developing the concept. 10% of the Norwegian population follow the adventures of these children, 70% of whom, aged 5-15, watch the programme.

## The principle

A series of teams have to compete in different theory and physical events (fishing, rock climbing, rafting, etc.) for a week.

At the end of the week, one of the teams wins the competition but ,unlike in other reality TV shows, no-one is definitively eliminated. Each daily mission concerns a precise area : energy from water, wind, biomass and solar but also fossil fuels.



Naturally, throughout the adventure, much important learning takes place, especially when it comes to passing the theory tests.

Life on the camp is thanks to the use of wood for heating and cooking or solar energy for lighting and listening to music.

Beyond the national television programme, the winners from each country compete in an international competition in magnificent scenery in northern Norway.

The programme can be adapted to each country. 16 European countries have already expressed their interest in the concept. It can be used to support wider teaching projects, to go further in the acquisition of skills and knowledge.

Finally, a website has been set up with information about the programme. It also offers three sections for teachers, parents and children. The children's section allows them to sign friends up, find games, leave messages, etc.



In the Netherlands, the project is not yet part of the official school curriculum, but it is supported by government organisations. Some Dutch local authorities are also interested in developing the game during the eliminatory heats.

Thus, Amsterdam or the Hague are also interested in organising a preliminary competition in towns, before assembling the teams on a regional, national and finally, an international level.



For more information, please connect to the website :

<http://www.energysurvival0708.nl>



## « Renewable energies discovery »

### an ASDER project

#### *A learning activity combining initiation with manual Activities*



At the heart of environmental and sustainable development awareness, the themes of energy, energy efficiency, and renewable energies occupy an important place. All the more because they illustrate eco-citizenship on a daily basis in a practical way.

For over 20 years, the Association Savoyarde for the Development of Renewable Energies (ASDER), a member of the Energie Rhône-Alpes Information network (RIERA) proposes teachers in the Savoy region tools and teaching methods for introducing children to renewable energy sources, built around the different properties of solar energy : « Renewable energies discovery course ».

This teaching tool was originally developed with the Inspection Académique (teaching inspection) of the Savoie. The children aged 8-10 years, but also their parents and their teachers, are the principal targets of this tool, which is structured around 3 half days of training.

#### *A step-by-step approach*

The ASDER project is based on experimenting with an object that runs on a renewable energy source, and it is part of an educational activity that is organised into several stages :

- A contact and discovery stage, during which demonstration materials are used to give children an introduction to energy (including a thermal solar energy capacitor, a solar panel, a solar dryer, concentrators, model of a turbine and various samples) ;



- An in-depth learning stage involving the building of an object, which enables the child to put into practice, manually, the theory acquired in the introductory phase ;
- A hypothesis and experimentation phase which revolves around the building of the object, and which enables various hypotheses to be tested ;
- A teaching phase with the teacher, which will prolong the learning activity, once the ASDER instructor has finished the sessions ;
- Finally, a training phase to enable the teacher to reproduce the whole teaching sequence the following year.

After the first session, the class decides to build one or several objects using solar energy over the two remaining sessions. Among the most popular choices are : the individual solar water-heater, the solar oven, or the solar dryer.

Throughout the activity, children learn about energy and its consumption. They are encouraged to take responsibility for energy management and to observe, analyse and use the natural phenomena related to energy, during the course of a logical development of their scientific approach and experimental research abilities.

Of course, it is an opportunity for the child to deploy manual skills and dexterity, but it also involved taking responsibility in a group project. Over and above being a way to include Environmental and Sustainability Education in the school curriculum, this project is an opportunity for interdisciplinary activities calling upon Mathematics, Geography, written an oral expression etc.

#### *A positive feedback*

To assess the impact of the training sessions, and to continually improve the courses, the ASDER sends out an evaluation questionnaire to teachers who have participated in the course.

Feedback has been very encouraging because 83% of participants are « very satisfied » with the project and 17% are « satisfied ». 91% of people found the documentation handed out « satisfactory ». Among the points highlighted were the quality of the teaching materials and their interdisciplinary nature, but also the motivation of pupils in difficulty.

Concerning parents, the heightening of awareness also reaches them, because children take their objects, a way of ensuring a continuation of the work at home, involving parents, because the plans for the other objects not made in class are left with the children to try at home.

This project is pioneering several ways, as we have seen, because it educates children and their friends and families, necessitates a combination of different disciplines, and combines the children's thinking abilities with manual tasks that yield tangible results quickly. It also constitutes a good way of assessing through experience, the synergies put into practice between the National Education system and an association, the ASDER.

To find out more, do not hesitate to download the file « Analyse et impact d'un outil pédagogique (Analysis and impact of an educational resource) » by clicking [here](#).



Website address : [www.asder.asso.fr](http://www.asder.asso.fr)

Tel : 00 33 4 79 85 88 50

## *A play about energy efficiency*

Carole and Karène are teachers, but they are also actors in the Compagnie Tartine theatre group. For some years now, they have been putting on the play 'Gaspi et Bontruc' 'Wastey and Savvy' in which, in a circus clown atmosphere, they illustrate our everyday wasteful behaviour and the solutions for economising.

Born out of a partnership with the association Energie Environnement 74, the play has proved its effectiveness in every context : at school, on markets, in the street or even during conferences !

The two objectives are fulfilled : the audience is entertained and learns at the same time. After 7 years of success in France, the company has even taken the concept abroad, translating it into English and putting it on in Budapest.



## *A European network dedicated to Energy Education*

### *European Sustainable Energy Education Forum*

The ESEEF is a network of organisations active in energy education for primary and secondary schools. A veritable resource centre, it provides access to tools for teachers and pupils, lists of places to visit and pooling of experience.

[The website](#) of the network centralises experience and tools from the « Solar School Forum ». It proposes contacts with other teachers, classes and pupils who are interested in establishing partnerships with other European schools. Backed by European Commission, the site organises its resources according to the countries concerned. Clicking on the appropriate flag gives access to a selection of relevant teaching resources, examples of best practice, places to visit and useful links for each country.

### *Solar School Forum*

The « Solar School Forum » project is part of the European Commission's ALTENER programme. It deals with environmental education and more specifically, renewable energy and energy efficiency in schools. Launched in 2004, it follows on from the previous highly successful programme « Solar Schools, Brighter Future » led by the ISES (International Solar Energy Society) « Solar School Initiative ».

The different countries involved : Bulgaria, Denmark, Finland, France, Germany, Hungary, Italy, Norway, Poland, Romania, the United Kingdom, Belgium, Switzerland, Sweden, Spain and the Netherlands.

### **Some examples of places to visit**

**The house of Negawatts (La Maison des Négawatts)** is an exhibition of information panels (40m<sup>2</sup> and 2m high), models and CD-ROMs to develop an awareness of energy-saving strategies using the Negawatts concept : the most economical form of energy, and the least polluting is that which we don't use ! [www.terrevivante.org](http://www.terrevivante.org).

**The blue roof** : On the roof of the building of the CLER, the Liaison Committee for Renewable Energies, and other associations, in Montreuil-sous-Bois , a 220 m<sup>2</sup> of solar photovoltaic panels (22 kWp or kWp) transform the sunlight into electricity. The CLER organises regular visits : : [info@cler.org](mailto:info@cler.org).

**Engineering for Energy** is an interactive exhibition covering an area 300m<sup>2</sup> : 51 panels, 15 interactive elements, 4 3D projection models, 3 television screens showing videos, 4 renewable energy devices (2 solar captors, a turbine, a wind generator blade cross-section).

This exhibition, designed for any audience, traces the history of energy from the Industrial Revolution to the Kyoto Conference, and then takes a look at the different sources of renewable energy, before considering how renewable energy solutions can be applied in the current context. [www.ageden.org](http://www.ageden.org)

All the educational materials are available by clicking [here](#).

## Feedbacks



**The ADUHME energy education projects** : the local Agency for Energy Management, working closely with the Town of Clermont-Ferrand, has developed and implemented an awareness-raising strategy for youngsters for saving energy and water in schools. This is done using informative signs and notices put up in the schools train children effectively and long-term, as well as a practical teachers' guide for classroom use.

To find out more click [here](#).



**Model-making of towns** : Pupils aged 9-12 years made scale-models of 3 towns. This familiarised them with themes such as urban planning, and sustainable town management and they thought about how to set up a system to supply the town with energy that would be both sufficient and safe, as well as environmentally sound. The pupils played the roles of energy experts and local decision-makers. The experts presented the various possible forms of energy and their advantages and disadvantages. The members-for-a-day of the local council then evaluated the different proposals and voted to decide on the local energy policy. The energy solutions chosen, while were not always the cheapest, were often the most sustainable. The forms of energy chosen for Korsuhill (4000 inhabitants) were wood and geothermal heat pumps, for Duckhill (15 000 inhabitants), biomass, wind generators and geothermal heat pumps and for Nasula (100 000 inhabitants), the choices were wind generators, natural gas and waste. .



## Your opinions are valued

Committed to practical solutions to promote Energy Education, ARENE Ile-de-France is publishing its third quarterly newsletter this month, dedicated to furthering this major stake.

Our work is based around 3 fundamental axes :

- Promoting the importance of energy education on a European level;
- Publicising the activities of key contributors to the projects;
- Providing access to the tools developed and feedback on experience.

This third newsletter is the occasion to evaluate your satisfaction regarding the previous issues and your expectations for the next ones.

We invite you to answer the questions below and to return them to us, either by e-mail at the following address : [ml.falquemasset@areneidf.org](mailto:ml.falquemasset@areneidf.org), or by post to **ARENE Ile-de-France, Marie-Laure Falque-Masset, 94 bis avenue de Suffren, 75015 Paris.**

Thank you for your contribution ,  
ARENE team

Name & surname :

Organization :

Activities :

1 - Are you the main reader of the newsletter and did you receive the first third issues ?

Yes  No

Comments :

2 - Does the newsletter gives you relevant information regarding your activity ?

Yes  No

If yes, which are they :

3 - Do you forward the newsletter within your organization and/or outside ?

Yes  No

4 - Are you satisfy by the current pdf format ?

Yes  No

Comments :

5 - Are you satisfied by the length of the newsletter ?  Yes  No

Comments :

6 - Are you satisfied by the length of the articles ?  Yes  No

Comments :

7 - The newsletter is issued once each quarter, is it enough for you ?

Yes  No

Comments :

8 - Which part of the newsletter is the most interesting to you ?

Tools  Feedbacks  Interviews  News

Publicising the activities of key contributors  Info on European programmes

Comments :

9 - The writing of the newsletter is ?

Very good  Good  Not very good  Bad

Comments :

10 - The looking of the newsletter is ?

Very good  Good  Not very good  Bad

Comments :

11 - From a global point of view now, your opinion on the newsletter is ?

Excellent  Good  Can be better  No interest

Comments :

12 - Do you have any suggestions for the next issues ?

Comments :



[http:// www.arenidf.org](http://www.arenidf.org)

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 This newsletter is also available in French

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