



Newsletter

Young Energy Specialists and Development Co-operation

Volume 5, issue 2

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FROM THE CHAIRMAN

Dear YES-DC members,

Whether you have gathered new energy from the summer sun during this period of holidays or not, this YES -DC newsletter hopes to bring renewed energy for all YES-DC members to participate in YES discussions and activities.

You received the last newsletter of May 2000 just before the YES-DC general meeting. This meeting was attended by a substantial group of members, who established the new board and opened a discussion on a YES-DC strategy.

The new board is now well in its way into the YES-DC year. We have enjoyed a number of meetings in which we discussed the plans and strategies for the coming year. You will be able to read more about the outcomes of this strategy discussion in this newsletter. And of course the activity agenda is presented to invite you to participate in YES-DC activities.

The agenda for the coming half year is practically fully booked already. The COP 6 (Conference of Parties for the Climate Change negotiations which will be held in The Hague this November) is one of the highlights in the world of energy politics, and we aim to enable YES members to have a look behind the screens of this major event. Other planned activities are a visit to the new Shell PV production plant in Gelsenkirchen, and a discussion on the liberalisation of the energy market. The first activity coming up is a discussion on Technology and Behaviour on September 7th- for the rest of our plans have a good look at the agenda and please keep an eye on your emails for the latest news!

We have received many ideas for excursions and activities from the members, which we appreciate very much! We hope that anyone who has suggestions for YES-DC activities, or would like to (help) organise a meeting or excursion, will let us know. We will do our best to meet the interests of as many YES-members as we can. We would also like to invite you to present experiences in the field of energy in developing co-operation in the YES-DC newsletter. Another item in this newsletter for which your input is welcome is discussion! To liven things up a bit, starting from this edition, we will present a discussion topic, on which reactions will be placed in the following newsletter.

We would also like to use this newsletter to introduce the members of new board to those of you who have not received our introduction email. Please contact any of us if you have suggestions or ideas- and we hope to see you all in the coming activities after the summer holidays.

Annemarije van Dijk

YES-DC STRATEGY FOR 2000-2001

news from the board

During the annual meeting in May we enjoyed a lively discussion on the strategy YES should follow. The discussion was initiated by the board, which had presented a concept for the YES-DC strategy for the years 2000-2001 in the May 2000 newsletter issue. This strategy concept

provided ideas on how to improve YES-DC for its members. It was based largely on opinions and suggestions from YES-DC members provided through the interviews that were performed previously. Although the discussion got a good start during the annual meeting,

we did not have time to discuss all items. Therefore it was decided that the new board should continue the discussion and keep the members informed. Below we have given a short summary of the discussions so far, following from the points for discussion as formulated in the last newsletter:

Members can expect the following from YES-DC:

- 1) information and a platform for discussions on energy and development co-operation and related issues.
- 2) to become part of an informal network of YES-DC members in a large variety of

A number of ideas were brought forward in the strategy concept on how to meet these expectations better:

1- *improved participation of members in YES-DC activities. YES-DC members should want to participate in YES-DC activities. For themselves, so they get more fulfilment from their membership, and for other YES-DC members, so that the network becomes more useful, interesting and lively.*

discussion

YES! agreed

2- *more members ...extension of the network on a national and international level*

discussion

Although a minimum size of approximately 100 members is recommended for the functioning of the organisation, to provide sufficient basis and use of such a network, increasing the number of members is not a priority issue. Problems that may arise from growth will be dealt with when and if they arise in the future. Networks abroad may be established by or with the support of YES-DC members, but they will not form a part of YES-DC and the board will therefore not be responsible for these networks or have any obligations towards these networks.

3- *increased diversity of members*

discussion 1

YES-DC members have very diverse backgrounds: technical, social, economic, political, environmental, to name a few. We must cherish this diversity because it is very valuable to be able to view subjects from several angles and to have members bring in their different expertise. The one interest all YES-DC members have in common is that of energy in a global context. strategy: Activities should not focus on renewables as much as they have done in the past.

discussion 2

The target group of YES-DC is that of (graduating)students and young professionals with less than five years relevant working experience. YES-DC is proud to have a number of members that have been member for more than five years. Although these (and a number of others) no longer strictly fit in the target group, we feel that YES-DC benefits from their input in discussions, their expertise, their networks and their company. strategy When becoming a member, applicants should comply to the guideline of having less than five years' relevant work experience.

YES-DC members with more than five years' relevant work experience will not be permitted to join the board, but they can remain member as long as they wish.

action

Acquisition of new (young) members will be a priority. Contacts with student organisations will be used as soon as The YES-DC website has been updated. We invite any YES members who would like to help the board invite students or young colleagues or friends with an interest in energy issues and development co-operation to contact our secretary Hugo Burger (Burger@ecn.nl)

4 *members should get to know one another better,* and

5 *increased participation of members*

strategy

exchange of knowledge between YES members by organising at least one evening a year in which YES-DC members will be able to present and discuss our own experience with energy and development co-operation.

BIOMASS PLANT IN CUIJK

YES-DC excursion report (by Ellen Hoog-Antink)

Introduction

In the last newsletter we promised you an excursion to the biomass plant in Cuijk. Thanks to the contacts of Wendy Schellens-Haans -an attentive YES member- with the project managers of the plant, we could overcome all security barriers by making one phone-call. It was even possible to arrange this excursion in the evening. In this way nobody had to take a day off and we guessed that the attendance would be high. Well, this was a good guess! Enthusiasm was high and we even had to turn people down, for only 20 people were allowed to go (this was a restriction from the plant).

Thursday July 6: After an awful non-sustainable journey by diesel train most of the participants arrived half an hour too late on Cuijk Central Station. Thanks to cooperative YES members with cars, and a street guide which must date from the late middle ages, we arrived just (not) in time at the plant: Richard, Michael, Johan: thanks again! We were welcomed by Ton Louwers who would guide us through the plant. He had been involved from the first drawings of the plant as a project leader and could tell us everything we wanted to know, which was a lot! Crazy people can ask more than one wise man can answer and mister Louwers presentation became an unplanned long one, with absolute no possibility to lose attention. After the presentation we were professionally guided through the plant, equipped with helmets and headphones.

Fuel

The plant went into operation in October '99 and its economical lifetime is calculated at 15 years. It has a capacity of 25 MWe and can only be fueled by wood. Other fuels may be technically possible, but are not allowed within the present permits. The wood comes from different sources:

* About 50.000 ton (per year) is wood from the Forest Service, which comes from maintenance of the forests (Dutch: 'dunninghout'). This is the cheapest wood.

* 100.000 tons are sawing rests, which comes for a part from the sawmill next door.

* 100.000 tons are wood from pruning (Dutch: 'snoeihout'). This comes from districts, water boards (Dutch: 'waterschap') and public works.

Up to now, all wood has its origin within a range of 100-150 km. This is due to the fact that all transport goes by truck right now. It is expected that in the future half of the transport will be done by ship (which is one of the reasons why this location was chosen) so biomass can be imported from e.g. other countries. At this moment transport costs are about DM 2 per km per truck. Each truck carries 80-90 cubic meters of fuel, which weights about 25-26 tons.

Every truck that arrives is weighed before and after to determine the amount of fuel. A sample (imagine a 10 liter plastic basket) is taken from every truck to determine the humidity level and biomass quality. The average humidity is 45-50%. The quality of the biomass is prescribed by the size of chips and the content of non-organic materials.

The combustion value of the wood is about 19 MJ/kg. The plant combusts 34-38 ton fuel per hour. The efficiency is 30%. The steam which is produced during the process is not being used. The fact that the process heat was cooled away by an electric heat cooler in stead of being used for drying the biomass, induced some very disappointing reactions of energy saving special

ists. But, what a relief, maybe the neighbor has interest in the residual heat and the negotiations have already been started.

As if all this technical information was not enough, the inexhaustible project leader was stripped to the bone according to the cost price of the fuel. After some nail-pulling questioning strategies a price of about f40,- per ton came out.

3

Principle of the plant

The plant consists of a fuel storage and transportation installation, a fluidised bed boiler (or furnace), deNOx installation, heat exchangers, a water treatment system, an electrostatic filter, residue heat cooler and last but not least a nice red stack. Once the fuel is dumped a conveyor belt transports it to one of the two silo's. From there the biomass is fed to the boiler. The main principle behind fluidised bed combustion, is the occurrence of a zone with hot whirling sand in the combustion zone. This cloud of sand is kept in motion by blowing air from below. The biomass fuel is injected in this zone and gasifies and combusts at relatively uniform conditions throughout the combustion zone. Starting up the plant the bed is warmed-up by burning natural gas, after a while the sand is maintained on high temperature by the energy from the combustion of biomass. Supplementary to the air blown from below, air is added on two higher levels in the boiler. By regulating the amount of air on each level, the combustion process (gasi-





4
 fication and oxidation) is optimized. Optimization means complete combustion and limitation of the temperatures. The temperatures must be limited to avoid NOx-formation and to stay within the allowed temperature range of the deNOx installation (SCR: selective catalytic reduction). Urea is injected to reduce NOx. After the SCR, the exhaust gasses are lead through some heat exchangers. The condensed water is being cleaned in an extensive water treatment installation. In an electrostatic filter the particles, dust and heavy metals are removed after which the exhaust gas is released through the striking red

stack. Very exiting was the walk through the residue heat cooler, existing of three huge vans blowing cool wind along an uncountable amount of pipes in which the produced steam was condensed to liquid water. About 2 percent of the produced electricity was being used to drive the vans around under our feet, producing an incredible wind flow.

Costs of the plant

Electricity production costs 17-18 cents per kWh, which is build up by the following cost entries:

Fuel	48%
Capital	33%
Maintenance	8%
Operation	4%
Insurance / tax	2%
DeNOx	1%
Others	1%

Electricity from the biomass is labeled as "green" (Dutch: groene stroom). Dispensation for the regulated energy tax (REB) causes a market price reduction of 7 cent compared to electricity produced from fossil fuels. Although consumers are willing to pay some more cents for green electricity, the Cuijk plant is not very cost effective at the moment. Nevertheless Essent, the owner of the plant, uses the Cuijk plant as base load plant for green electricity production. This means that the plant has a load factor of more than 7000 hours per year. So the chance is big that you can see the red-hot boiling biomass through one of the peek holes in the boiler when you decide to visit the plant in Cuijk (in case you were so unlucky to not join the excursion...).

In this way I'd like to thank Ton Louwers (next to the seriously deserved bottle of wine) for his inspiring presentation and his guided tour through the plant.

BLUE GLOW IN THE DEEP

YES-DC excursion to the Petten Nuclear Research Reactor (by Otto Bos)

On a windy Saturday in June five YES-DC members gathered for an excursion to the High-Flux nuclear reactor in Petten, the Netherlands. This reactor is in operation since 1961 and has a thermal power of 45 MW. The generated heat is not converted into electricity, as is the case in commercial reactors, but directly pumped into the sea. It is the neutron flux in the reactor core that is used in this research reactor. Due to the design of the core and type of nuclear fuel used, the neutron intensity (flux) is ten times higher than in a 'normal' reactor. With this high neutron flow, scientific research in reactor technology and material technology is carried out. The reactor is also being used for the production of radio-active isotopes for medical purposes and experimental cancer treatment. After a presentation and a video about the reactor, we came to the core of the visit: an excursion into

the reactor building. The HFR (high flux reactor) is not only special because it has a high neutron flux, it is also one of the few reactors in the world where visitors can see the reactor core itself during action. Below six meters of water, enough to shield off all the radiation, it bathes in its distinct blue glow. From the reactor several tubes lead to test cells where the neutrons can be used for experiments. In one of these cells is a small clinic where patients with brain tumors can be treated. The operator that guided us through the reactor building was very open in answering our many questions. After an extensive

tour around the reactor the control room asked the operator to bring the ladies back to the starting point (four out of seven of our group were ladies). The excursion took twice as long as was planned, but was still too short to answer all the questions. It was most interesting and a unique experience!



MEMBERS' MIND

Dear Wim,

Do you know the feeling ? When suddenly the question arises whether you are on the right track ? Whether you are cooperating in something in which you would like to cooperate ? I get this feeling sometimes with development cooperation projects and studies.

If you consider that 1.3 billion people have to live from less than 1\$ a day, more than 1 billion people are lacking safe drinking water, decent light, television, and that about 850 million people are hungry, and if you consider on the other side of the coin how disproportionately rich life is here, will it not be clear that we should try to help and share ?

So, I start working with renewable energies in developing countries. Most of the time on a commercial basis, which is clear and straightforward: if the end-user really wants our PV panel and the cost price is right, he will buy it. If he has different priorities, he will buy something else. No problem. Once in a while, a development cooperation project passes by. The comprehensive theoretical approach, the beautiful reports and the important people (Ministers, top-experts, international donors) are thrilling. I see project-ideas, intermediaries,

consultants and NGOs pledge "Empowerment, participation, equity, sustainability, non-profit". Very nice concepts, but unfortunately so little realised. Of course, the main customer is the rich donor instead of the poor end-user. Is the end-user not very hard to reach, speaking in a different language, appearing dumb and passive ? What do they know about application of a high tech product such as photovoltaics, let's bring in the experts. The results: expensive projects have brought hardly any improvement for the end-user. In the mean time, the intermediaries have already cashed in and have started on the next project idea, the next study.

When I see this happening time and again, I cannot help wondering: if you would divide the money, that is spent on one person for one day of identification, management, monitoring, or study, amongst the people in the target group, would not the income for that day of over a thousand people be doubled ? And when you have given the money to the target group, and then ask them whether they are willing to invest it in the development project or study, what do you think they will respond ? Are they right ?

Greetings,

Frank

MEMBERS' MIND

In this issue of the YES newsletter we start with a new column: "MEMBERS' MIND". All members are invited to write a letter to our editor Wim and to express their ideas and feelings about energy and development cooperation, or to write down their reaction to one of the earlier published open letters.

This issue we start with an open letter to Wim from Frank. We hope that this letter will generate some reactions among our members and start of a lively discussion.

You can send your open letter to Wim or your response to Frank's letter by e-mail to burger@ecn.nl. All letters will be placed in the next issue of the newsletter (*).
(* the editors reserve the right of reservation

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YES-DC AND COP-6

The UNFCCC is the United Nations Framework Convention for Climate Change. The Conference of Parties 6 (COP 6) is the sixth meeting of countries who have assigned to the UNFCCC (almost all countries of the world). Their third meeting in Kyoto produced the Kyoto Protocol (KP), in which OECD and a number of East European countries agreed to reduce their CO₂ emission below 1990 level. The Conference of Parties 6 will be held in The Hague in November and the countries will negotiate on how to get the Kyoto Protocol opera-

tional. It is expected to especially focus on flexible mechanisms to reduce carbon dioxide. It is expected that 3000 to 5000 people will visit the COP 6 during a period of 2 weeks, consisting of Government Ministers, diplomats, bureaucrats, industry, international organisations, scientists, consultants, all sorts of NGOs ranging from the nuclear power lobby to the WWF and greenpeace, and, last but not least, also a few Young Energy Specialists.
YES is planning to organise an

event during the Conference. It will be an excellent change to look at the inside of such a big international circus of politicians, negotiators, NGO's and experts. The organising group consists of: Jan Willem Bode, Frank Ormel, Irma Jurrius, Monique Hoogwijk, Jan Willem Martens and Hugo Burger. We shall have our first meeting on Friday the fourth of August. We will keep you up to date on the developments at the COP!

THE YES-BOARD 2000-2001

Annemarije van Dijk

Chairperson

I am glad to be able to introduce myself as the new board chairperson. After a year of being the YES-DC activities coordinator, I hope to be able to keep playing an active role in making YES-DC an interesting organisation for its members. My daily work is in the field of renewable energy implementation. The motivation I have for my work is the same as that for YES-DC: energy is not only a necessary commodity for every human being, but also a very interesting subject to become absorbed in and to specialise in!



Hugo Burger

Secretary

Local energy and environmental policy is often associated with developing countries. Also in the Netherlands though, the local level is facing a challenge of translating international and national policy goals into daily practice. It is the local level here that I've made into my special interest. How can municipalities contribute to climate-policy? At ECN Policy Studies I am trying to find an answer.



After organising the so-called 'DEO-dag', the annually Debat on Energy and Development YES organises, I experienced the fun of being creative amongst young energy specialists. It is with this positive energy that I hope to contribute a tiny bit to the wellbeing of YES. A great deal of my job in the board consists of the keeping up to date of the membership-database. If you have any mutations or questions about your personal data in that database, feel free to contact me: burger@ecn.nl I hope to see you at one of the many activities YES organises.

Jeanette Scherpenzeel

treasurer

Hello. My name is Jeanette. I take care of the finances of Yes-dc. I work for the Ministry of Economic Affairs, the Foreign Exchange Service (EVD), since May this year. In my job I am involved in export promotion as contactperson Argentina and Latin America. This implies market opportunities for re-



newable energy in this region as well. Before starting at the EVD I worked for three years at the Biomass Technology Group in Enschede. As a consultant I have travelled to Africa (Mali, Senegal, Madagascar) and Latin America (Costa Rica, Bolivia) and studied the possibilities for commercial dissemination of renewable energy technologies.

During the weekends you can find me somewhere in Enschede where I return to every week. During weekdays you can contact me in Den Haag where I dwell in a very nice somewhat small room. If you have any questions regarding the finances or other issues you can contact me there: 070-3458946. Hopefully we meet soon with some of our activities.

Ellen Hoog-Antink

Activities co-ordinator

At this moment I am working on my final research at ETC Energy. Before this I have been involved in a market study on solar refrigeration in the South of Brazil. In Rio Grande do Sul, we did research on possible target groups and their preferences, and compared a solar PV refrigerator with other refrigeration technologies which were already on the market there. During this practical training I got really interested in sustainable energy technologies and their implementation in developing countries. Within YES I hope to learn more about this and to discuss about it with other YESsers. In the board I will try to organise excursions to actual sustainable energy projects and organise lectures and discussions on interesting topics. If you have any suggestions or questions, feel free to contact me any time: e.hoogantink@etcnl.nl. I hope to see you there!

Jeroen Verschelling

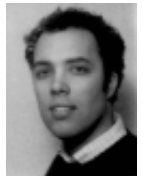
My name is Jeroen Verschelling, and I have been active on the board of Yes DC since 1998. I have a background in electrical engineering (BSc.) and project engineering management (MSc., University of Birmingham). For the last couple of years I have been active in Iceland (renewable energy inventory), the Philippines (fact finding mission, micro hydro), New York (United Nations Development Programme) but mainly in the Netherlands. In daily life, I work at Ecofys, section Stand-Alone Power



Systems, where I am involved in several projects, mainly with PV both in Europe and in developing countries. My personal motivation to work developing countries lays in the fact that we need to help the 2 billion people that have no access to commercial sources of energy. I believe renewable energy is the key to that.

Jan-Willem Martens

After having completed my degree in Economics, I have enrolled into the field of renewable energy in developing countries through experiences at United Nations Environment Programme in Nairobi and the Energy and Atmosphere Programme of the United Nations Development Programme. By the way, I learned about the opportunity at the UNDP through the YES-DC list-server, thus showing me the advantages of being member of YES-DC at once! Now I am working at the Netherlands Energy Research Foundation (ECN) as an energy economist involved in market assessments of renewable energy technologies in developing countries, technology transfer and climate change issues. I have been member of YES-DC since 1997 and have been active as board member since last year. I started last year as secretary and am this year responsible for public relations. We have got a number of interesting activities coming up soon, such as lectures on the social acceptance of technologies, liberalising energy markets in the Netherlands and of course YES activities around the international Climate Conference in the Hague: COP 6. I look forward meeting you at these activities.



Tim Mulder

I am since 1998 with the company Stroomwerk Energy and are mainly involved in providing energy solutions through photovoltaic energy (PV) systems. These are mostly autonomous systems that are implemented abroad in small and large (rural) electrification projects. Being a member of the YES-DC comity gives me the opportunity to be involved in energy issues in a broad sense as well as meeting people with different (energy) specializations. The upcoming activities are to be very exciting so I do hope to meet you at one of them!



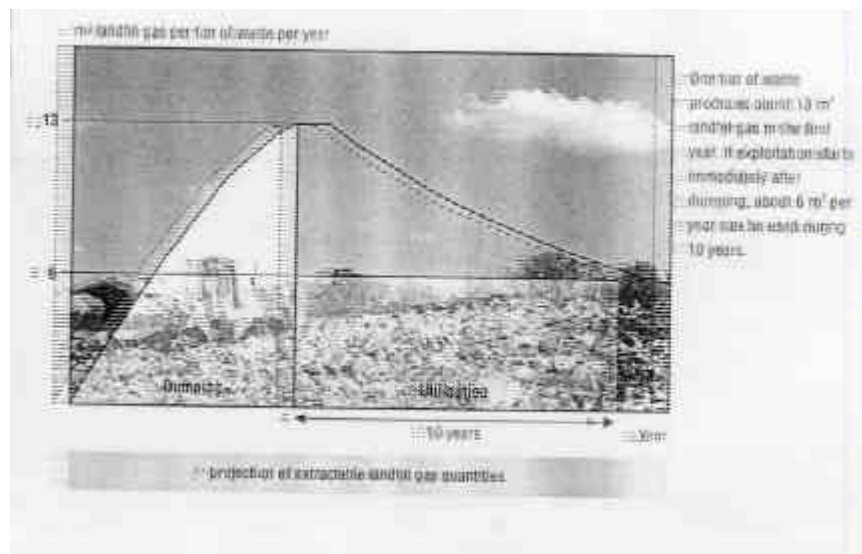
A SIMPLE SANITARY LANDFILL

CO₂-reduction, energy production and sanitary facilities (by Jan-Henk Welink, BTC BV, welink.jh@proav.nl)

In many countries outside the Western world a landfill is usually the balancing item of local governments. In practice this means that a landfill is an appointed area where waste is dumped on a heap, and that's basically it. However with a few and simple means a waste dump site can be build in such a way that the sanitary level is raised and that landfill gas can not escape. Escaping landfill gas is a form of methane emission. Methane contributes 11 to 21 times more to the green house effect than carbon dioxide from a fossil source. The landfill gas that is being extracted from the landfill contains typically 50% to 55% methane and therefore can be used as a fuel for gas engines and furnaces. In the Netherlands this has been a standard application for years [1,2]. Electricity from landfill gas gives an emission of short cyclic carbon dioxide because landfill gas is formed by a bacteriological conversion of organic matter (biomass). The largest contribution in this effort to minimize the green house effect is obtained by extracting the landfill gas from the landfill and therefore avoiding methane emission. At smaller landfills, where there is not enough landfill gas for a local application, the extracted is lead through a flare.

Investments

From a Dutch viewpoint building a sanitary landfill for a non-Western country is much too expensive. However experience has shown that the 90/10 rule can be applied here. With only 10% of the costs (from a modern Western landfill) 90% of the environmental effect is obtained. To obtain the last 10% of the environmental effect 90% of the costs are being made. Further, the Netherlands is not very lucky with its soil for making a sanitary landfill, because the Netherlands doesn't have rock or clay at the surface. Rock or clay is impenetratable for water, and therefore stop the washing out of water borne pollutants from the landfill. Therefore landfill in the Netherlands need complex facilities which raise the costs significant.



Casestudy of Izmir

Curi [3] describes the project of the new sanitary landfill of the municipal of Izmir (Turkey). The selection of the site depended on the public acceptance (stench), the (low) costs of the land and the impermeability (impenetratable for water) of the soil. Therefore the facilities for preventing the emissions of water borne pollutants from the landfill to the surrounding area was minimal. The water that flows out of the land fill is led through old riverbeds at the site to simple reservoirs from where the water is pumped back into the landfill. Dutch waste engineers call this "percolate water recirculation". The landfill gas is distracted from the landfill through simple plastic pipes with holes imbedded in a covered hole in the landfill, which is filled with gravel. A 2.25 m high fence preventing the entrance of animals surrounds the whole site. Trees were planted around the fence for aesthetic reasons. At the lower part of the landfill site two wells were constructed in order to be able to observe the deterioration of the quality of the ground water. Fishing nets were fixed on 6 m high poles and used as a movable curtain to control the drifting of papers, plastics, etc. by wind. The landfill (90.000 square meters) was constructed for 14 million metric tons and costs in 1992 1.6 million US\$.

Using landfill gas

The landfill gas has a typical lower heating value of around 18 tot 20 MJ/Nm³. In comparison: natural gas from Groningen (the Netherlands) has a lower heating value 32 MJ/Nm³. So the landfill gas has almost two thirds of the value of the natural gas from Groningen and therefore it can be used as a fuel for gas engines or furnaces. The sale of the landfill gas has a significant positive contribution to an economical exploitation of the landfill. If the Izmir landfill for example is filled let's say half (around 7 million metric tons) the production of landfill gas is about 6 Nm³ per metric ton waste for 10 years (see figure 1, [1]). This is a Dutch figure. Curi [3] shows that the quantity of organic matter (which forms the landfill gas) per metric ton of waste can be larger. Suppose a low price of 0.01 NLG/Nm³ landfill gas (1 NLG = 2.20 Euro), the contribution of the landfill gas will be about 0.4 million NLG per year. The reader can calculate the revenues from the landfill gas herself, given the production of landfill gas.

Careful!

Experience shows that irregular wages and financing, lack of parts for maintenance and irregular fulfilment agreements frustrated many waste handling and landfill projects. Another problem is that some coun-

tries want to use the landfill project as a showcase and therefore only want the newest Technology. Therefore at the moment the goals are set, it is impossible to reach them (Rushbrook[4]).

Let's get started!

It seems that the construction of a simple sanitary landfill doesn't necessarily be expensive. Furthermore the investment can be paid back if a reasonable price is obtained for the landfill gas. A simple sanitary landfill contributes to the effort to minimize the green house effect, contributes to a local sanitary facility and contributes to a carbon dioxide neutral source of energy. Striking is that with simple means, a smart choice of a location and a firm input of local knowledge and experience, the results can be satisfying (Curi [3]). One shouldn't have the expectation that the landfill is as good as the landfills in the Western world. But if the non-Western world have to foot the same bill for a landfill at Western level of sanitation, the landfill project is going to be a showcase (Rushbrook [4]), and follow up projects are out of the question. By applying of Dutch [1,2] or Western knowledge and experience in a sensible combination with the knowledge and experience of the local community, in a simple way a tangible contribution can be given to the goals which are formulated Kyoto. Who's taking this challenge?

Literature (literature can be obtained by the author)

1. "Landfill Gas, renewable energy in the Dutch Perspective", Novem, mei 1997 (english)
2. "Voorlichtingsbijeenkomst Stortgas 13 juni 1997", VVAV, 1997, (Dutch: Information meeting landfill gas 13 th of June 1997)
3. Curi, K., The Izmir sanitary landfill: An appropriate solution in a developing country, Proceedings Sardinia 93, Fourth International Landfill Symposium. (english)
4. Rushbrook, 'Over the hills and far away', Wastes Management, October 1997 (english)

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COLOFON

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UPDATE YES-AFRREI

Since the last newsletter the committee on the co-operation with the Afrrei initiative of the WorldBank has submitted a proposal to the WorldBank. This covered two issues: the programmatic co-operation between YES-DC and Afrrei and the establishment of YES-Uganda.

To strenghten the capacity building activities of Afrrei in Uganda a local network like YES-DC will be started in Uganda. A core group of enthousiast energy specialists in Uganda has been identified and asked for their vision on a local network. Next step is to focus on how YES-DC can assist this group of Ugandans in starting YES-Uganda.

On the program level co-operation, a meeting with Sten Bergman of the Afrrei team is planned for mid-September. He will update the committee members on the Afrrei activities and on the proposed founding of a YES network in Sweden.

More information on the YES-Afrrei working-group can be obtained from the chairman Wim Klunne.

AGENDA



September

Lecture: Technology and Behaviour

November

COP 6

October

Shell Solar Gelsenkirchen
Liberalising energy markets (with a contribution from Arthur Andersen)

More information on YES' web site at
<http://www.yes-dc.org>