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ENERGY AND TECHNOLOGY FOR OUR LIFE

- concept, execution, results -

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Permit me, first of all, to acquaint you with the aims and work of VDI (Association of German Engineers), as for some participants of this congress it may come as a surprise that an association not directly involved in the planning, construction or running of nuclear power stations reports about a campaign whose aim, not least, is to assuage doubts among the general population about this mode of energy transformation.

The VDI is a technological-scientific association. With almost 100.000 members it is the biggest in Europe. Its aim is to supply all professional engineers with "state of the art" information. Its organisatory mode is decisive for the success of the task at hand: non-aligned as far as economic interests are concerned, unsalaried and with statutory consensus requirement it offers its services not only to members but indeed to all engineers, no matter whether they are still undergoing professional training or are already in full employment. Our main services for this target group are:

- conferences, congresses, symposia, workshops,
- VDI guidelines and
- an individual membership service.

the range of VDI tasks includes practically all spheres of technology and hence also nuclear energy. Pars pro toto: The VDI guideline "Thermal acceptance test on turnkey nuclear power plants with steam turbines" or conferences such as "AVR - the first 20 years".

It may be inferred from these tasks and modes of work that the VDI also has an obligation towards the general public. The professional Division "The engineer in profession and society" is entrusted with this aspect.

From these dual positions - the technological-scientific and the professional-policy aspect - the VDI is justified in claiming to be the "spokesman for technology", as it were.

Before I come to my actual topic, allow me to mention one preliminary point: As a membership association we were unable to finance the campaign I am about to outline from our own funds. All activity was financed through donations. This was not always easy to accomplish in the course of the campaign. However, ultimately approximately 300 companies in the Federal Republic of Germany made financial contributions of which 8 enterprises, and also the Federal Ministry for Research and Technology, shouldered most of the financial burden for the campaign.

I should now like to come to the three points that I shall deal with:

- I. Concept of the campaign "energy and technology for our life",
- II. The main points of the measures taken between 1983 -1987
- III. The results achieved, verified by demoscopic surveys.

I, CONCEPT OF THE CAMPAIGN

Prior to establishing the facts to be conveyed in the course of the campaign, a group of unsalaried staff, in cooperation with the advertising agency in charge of the campaign - LINTAS, Hamburg - compiled a survey of the trends of opinion prevalent within the Federal Republic of Germany in order to vouchsafe commensurate presentation.

I.1 Analysis of public opinion trends concerning technology in general and energy technology in particular

Time does not permit a review of all sundry aspects of this analysis. Hence I have summarised the results.

1. The critical attitude of the 1968 student generation concerning industrial activity has gained a firm footing in the general opinion prevalent in the Federal Republic of Germany. Somewhat simplified I would express it as follows: Industries are denied the right to earn money on the basis of their activity. This has nothing to do with the fact that every single citizen has the right to earn money - but the understanding that money which is distributed must first be earned through industrial activity is lacking.

2. Since 1968 the demoscopic institute in Allensbach has been involved in ascertaining the attitude of the population concerning questions of technology. In the course of these 20 years a far-reaching change of opinion is evident which proves a significant and constantly increasing uncertainty among the population - especially the adolescent population - concerning questions of technology. This becomes especially clear in the somewhat simplified question: "Is technology a blessing or a curse for mankind?" The tabulation shows a dramatic development concerning this point.

In 1966 72 % of the population were of the opinion that technology is primarily a blessing. By 1981, however, this percentage had decreased to 30 % The insecurity of the population concerning questions of technology is mirrored in the drastic increase of the "don't knows". The relevant figures are:

1966:	17 %	of the population
1981:	53 %	of the population

Also the percentage of those rejecting technology outright has increased dramatically, namely from 3 % to 13 % in other words within 15 years the apex group of technology opponents has metamorphosed into a considerable opposition force.

The share of those approving of technology had decreased to less than 1 in 4. The "don't knows" - more than 50 % - constitute the majority.

3. In the Federal Republic of Germany a jostle for market positions has broken out between the primary and end-energy producers and public opinion is correspondingly diverse and inhomogeneous concerning matters of energy technology and energy industries. Approximately 180 associations and institutions endeavour to position the advantages of the mode of energy they represent or the application of this mode of energy as a boon for the public. The result is total confusion, even if, occasionally, joint endeavours are evident between the individual energy producers.

Let me give one example for each.

As an example for a joint endeavour, the campaign of the Electricity Board may serve when it tried to clarify that only a combination of coal and nuclear energy can assure a guaranteed electricity supply for the Federal Republic.

As the most recent example for a "confusion campaign" I could cite the advertisement of the Association for Economical and Environmental Protection Oriented Energy Consumption (ASUE), funded by the gas industry. Doubtless because of the projected and meanwhile levied gas tax, this association started a direct attack on atomic energy with the banner headline "Don't sacrifice the environment to fiscal policy".

4. The atomic forum was established in 1957 with the clear aim to awaken understanding and acceptance among the general public for "nuclear energy", an energy source new at that time. Without in any way wishing to denigrate the achievements of the association, which is funded by the nuclear energy industry, it must be stated that this target has not been reached - primarily due to the failure to ascertain the basic attitude of the general public. The atomic forum is regarded as a lobby. However justified its statements may be - as the source of those statements, its credibility is deemed to be more than dubious.

If one tries to summarize this analysis with all its negative and positive aspects, the following pattern results: A distinct unease concerning technology is ever more evident, particularly among the adolescent population. It leads to insecurity, uncertainty about the future and criticism concerning the consequences of technical progress. Technology itself, must, however, be seen as being free from any biased evaluation. Man himself bears full responsibility. An adverse attitude to technology must therefore be viewed as collective distrust of those technicians and engineers concerned with technological development and the application of technology.

However, the chances for a change in attitude are that man makes use of the advantages of technology, partly quite unthinkingly, as a matter-of-course, and with the premise of partaking of these advantages also in the future. The product is highly esteemed, but not the production. At the same time a large section of the general public is either unwilling or unable to assess the importance of technology for the humanisation of the working world, in the sphere of the household, as well as all other aspects of life and is therefore unwilling to accept the sources of these advantages - namely technology and energy which keeps it going. It is this contradiction that must be resolved through the communication strategy.

1.2 Communication Strategy

Those who comprehend the advantages of technology for personal as well as public use, those who are aware that there can be no product without production are more ready to comprehend the necessity for modern technologies and a guaranteed energy supply.

It may come as a surprise that the primary reason and aim of this campaign is the consequence of the energy discussion in the Federal Republic of Germany, particularly the main aspect of the discussion, namely the application of nuclear energy and also that up to now the concept "nuclear energy" has not been mentioned. This was, is, and will continue to be one of the essential aspects of the communication strategy. In our opinion, the general population is at a loss to understand the comprehensive totality of all aspects involved and this must be alleviated by means of this campaign. We deem it inappropriate to 'steamroller', as it were, the population with facts and to state bluntly that nuclear energy is prerequisite. By means of a detour, concentrating on the immediate need for each individual to make use of technology in all aspects of his life, we intend to draw a parallel to the necessity for a guaranteed energy supply. The Federal Republic has scant natural resources and hence this safeguard is only vouchsafed if all sources of energy, including nuclear energy, are made use of. It is this target that gave rise to the slogan "Energy and Technology for our life."

The second important aspect for the drafting of the communication concept was making it obvious that the Association of German Engineers is responsible for the campaign. It was the VDI's task to define its position in public opinion. On the basis of the VDI's activity, any commercial interests in the statements of the campaign may neither be imputed nor proved. However disadvantageous the slogan may be as regards the advertising purposes of many industrial enterprises, its application in this context is appropriate, because the VDI bears full responsibility for the statements and it has no vested interests whatsoever.

A third aspect was taken into consideration during the course of this communication strategy, an aspect which would appear to be perfectly obvious but which is, nevertheless, frequently contravened. "The bait must be tasty for the fish and not the fisherman." The premise that expertise is proved through incomprehensible jargon may be popular in specialised circles, but is quite unsuitable in communicating with the public at large. Information must not only be regarded as a conveyance of factual statements - information is rather a combination of factual knowledge (thematic information, which is forgotten with the same rapidity as any other knowledge that is conveyed) and emotion (unthematic information, which is relatively stable and is retained in the memory for weeks).

II. Measures

The same guidelines apply to the message as well as the mode of conveying this message - the public at large should be reached. If one examines the various media under these auspices, it becomes clear that a viable order may be established concerning media application.

Primarily it is television which, positively as well as negatively (especially because of its technical qualities), is undoubtedly the medium with the most far-reaching influence on the target group "general public". To this may be added specific physiological and psychological advantages of perception. Apart from magazines, TV has the advantage that 90% of all information reaches us visually. The advantage of TV is, moreover, that it conveys not only visual but also acoustic information, the latter being retained in the sensory receptor eight times longer than the former. The chances for a continual processing of the message is therefore increased, a fact which plays a considerable role in the intended courting of technological understanding. A study carried out by the sample institute in 1975 stated that TV is not only a very good medium for conveying information but also poses a challenge

to the viewer to assess statements critically, which is exactly what we wish to achieve. The emphasis of our campaign was therefore the transmission of advertising clips on national TV. The VDI was the first association to use TV for such a campaign in the Federal Republic.

A further medium was used in the course of this campaign. The cinema - with similar, positive characteristics, as far as physiological and psychological perceptions are concerned. If made use of correctly, the effectivity may even be intensified. However, there is a danger that because of communal viewing, factually incorrect statements may trigger a contrary response.

The emphasis of the campaign is of course on short advertising clips, all of which are based on a uniform concept.

Each film consisted of four parts:

- a) "Once upon a time"
- surprising, emotive, informative

Here we see life as it was - without energy supplies and without technology man had to do heavy manual work, the storage of foodstuffs was more difficult because large quantities were spoilt, infant mortality was higher.

- b) "Today"
- clear, comprehensible, emotional

Here the usefulness of energy and technology is clarified and it is shown that we regard it as a matter-of-course.

- c) "technology is not a fiend"
- presented in an unusual manner, informative, positive and emotionalised.

Here, the connection is made clear between technology that the public makes use of and the technological industry behind it. It is clarified that technology cannot function without energy and that many energy technologies are perforce large-scale technologies.

d) An appeal to all

- challenging, convincing, up-to-date

The VDI regards it as an obligation to acquaint the public with the application of technology and the necessity for a guaranteed energy supply. At the same time a challenge is made to us all to do our share to safeguard energy supplies, also for the future.

Example for the storyboard: Picture 1

In addition to both media, there were advertisements in the national press as well as radio spots in selected, densely populated regions of the Federal Republic. The content matter of the film clips were reiterated in these. One advertising example is shown in picture 2

The campaign ran from January 1983 to summer 1987. An effectivity study was simultaneously undertaken and I should now like to report on this.

III. Effectivity study

First of all I should like to mention subjective impressions about the effectivity of the campaign and mention two examples I deem to be indicative:

- Approximately 6 months after the commencement of the campaign, the information centre of the electricity board (IZE) started a placard campaign for the Electricity Board, making use of motives of our campaign. One month after placarding throughout the Federal Republic, with the motive "Incubator" of the IZE, a lively political and public discussion started up about the legality and credibility of the Electricity Board, as, to achieve its aim, it had made use of the

suffering of mankind. The result of this discussion was that the Electricity Board had to discontinue the campaign after three months.

For me this is a proof for the credibility of the VDI as originator of our campaign. Let me give one further, certainly again subjective example:

- In spring 1983 a 14-day smog alarm - emergency stage 3 - was announced in the Federal State of North-Rhine Westphalia. Personal restrictions (e.g. prohibition of private use of automobiles) were the result. By chance, and irreversible for us, exactly at that point of time the TV clip "clean air" was premiered on national TV and in the cinemas. Not one negative reaction reached the VDI office. This, too, seems to me a proof that we were able to position our association and our statements credibly in the eyes of the public.

Now let me come to the virtually representative result of the campaign, verified by an effectivity study. By means of 19 identically posed questions among a representative population cross-section of 2000 persons in December 1982 and a verification check in December 1984 it was endeavoured to ascertain objectively the effectivity of the campaign. I should like to concentrate on the three most salient points.

1. Extent of the campaign in comparison to other similar campaigns that were carried out in the same time span in the Federal Republic of Germany.
2. The effect of the VDI as originator of the campaign
3. The change of attitudes as a result of the campaign

1. The extent of the campaign

Four of the 19 questions were formulated to enable assessment of the effectivity of the campaign. Table 2 shows the result, sub-divided according to adolescents and parents. In comparison to the financial

expenditure involved, the verified and non-verified effectivity is astonishingly high. After a time-span of two years, the campaign had reached 35% of the adolescents and 24% of the parents. Table 3 and 4 show that the VDI was able to establish itself firmly, despite limited financial resources.

2. The effect of the VDI as originator of the campaign

The fact that the VDI - a neutral and positively regarded association - was the originator, contributed decidedly to the credibility of the campaign. As a consequence of the campaign, the VDI was clearly associated with the statements and targets of the campaign. This becomes evident in the replies to question 9 of the questionnaire. (Table 5) It also becomes evident that as a result of the campaign the VDI has become far better known among the general public.

3. The effectivity of the campaign

Those persons reached by the campaign showed a considerably improved attitude to technology. * This is an extremely positive aspect, especially if one takes into consideration that in the same time-span, reporting on technological matters was critical if not downright hostile. Two questions were posed to ascertain effectivity of the campaign with regard to the attitude of the target group to nuclear energy. (Table 7 and 8) Here it becomes plain that the campaign was unable to alleviate the negative attitude towards nuclear energy, but that the negative trend would have continued far more steeply if persons reached by the campaign had not had a certain counteractive effect in the opposite direction.

IV. Prospects

The positive effect in the Federal Republic of Germany has contributed to our still being able to influence public opinion concerning questions of technology and nuclear energy, even after the termination of the campaign. Indicative for this is the fact that 200.000 persons

* (Table 6)

ordered the "Chernobyl" documentation compiled by the VDI. As far as I am aware it is also the only documentation that was specified by the education authorities for use in schools. The credibility of the VDI cannot be doubted, especially also because we included in the documentation an article that deals very critically with the usage of nuclear energy. This article was supplemented by one dealing with the possibility of the application of regenerative energy. Both articles contributed to enhanced credibility and effective documentation value, a fact which is still being pointed out, even now.

I have already mentioned that the VDI financed the campaign solely through donations from industry. At present we are planning a follow-up campaign, aimed at adolescents, with the purpose of awakening interest in technological questions. One reason we deem this essential is because the demographic development shows a slump in the number of persons able and willing to commence a course of studies at university. If the Federal Republic of Germany wishes to maintain its position as one of the leading industrial nations, then it is necessary that more adolescents comprehend and take an effective interest in the interlinked aspects of technology. In view of the current "glut" of students it is exceedingly difficult to obtain the requisite funds for a national campaign - an aim that, in the medium and long-run, is most certainly essential. Nevertheless I deem it sensible that enterprises regard the VDI as vital to awaken interest and understanding among the adolescent and adult population for technological matters, because only then will our country be able to create technologies whose export will, in the long-run, safeguard our standard of living.

Technology: Blessing or a curse?

Population overall

	AUGUST 1966 %	SEPTEMBER 1976 %	SEPTEMBER 1981 %
Blessing	72	50	30
Curse	3	10	13
Don't know	17	35	53
no comment	8	5	4

Table 1

ADVERTISING EFFECTIVITY

		ADOLESCENTS		PARENTS	
		1982	1984	1982	1984
		%	%	%	%
F 3	non-verified effectivity	1	17	2	10
F 5	verified effectivity	5	35	12	24
F 7/3C	general description of advertising content	3	30	8	18
F 19	knowledge of slogan (verified) "energy and technology for our life"	28	35	31	35

WORDING OF THE QUESTIONS:

- F 3 What company- or institution advertisements have you noticed recently concerning general advertising for energy and technology?
- F 5 Can you remember whether you have seen, read, watched any kind of VDI advertising recently (Association of German engineers)?
- F 7 Do you remember any details about the VDI advertising? What was the subject matter? What was said or shown?
- F 19 Have you ever heard or read the slogan "energy and technology for our life"?

Table 2: Advertising Effectivity

Table 3 : Advertising Expenditure for comparable Campaigns in Thousand Deutsche Mark

	advertising expenditure 1983	advertising expenditure 1984	total	media distribution in %				
				ZT	PZ	FZ	TV	HF
VDI	3.139	4.020	7.159	6.3	6.0	0.6	87.2	-
GAS	6.787	11.529	18.316	22.0	77.9	0.1	-	-
IZE	1.283	4.866	6.149	90.2	9.7	0.1	-	-
RWE	7.562	5.244	12.806	22.3	59.2	0.2	18.3	-
ESSO	7.645	6.875	14.043	8.5	59.1	-	32.4	-
Chemical industry (action protected life)	8.295	6.748	15.043	14.8	85.2	-	-	-

The above-mentioned figures refer to gross expenditures for advertisements in daily newspapers, magazines, trade journals, TV, Radio - they do not include production costs nor VAT charges

Source: Schmidt & Phlmann, Hamburg

QUESTION What company- or institution advertisements have you noticed recently concerning general advertising for energy and technology?

		adolescents		parents	
		1982 995	1984 995	1982 1018	1984 1002
Don't remember, no statement		43	44	47	49
VDI		1	17	2	10
Esso		25	15	20	17
RWE		7	6	6	7

TABLE 4 Detailed Result Question 3

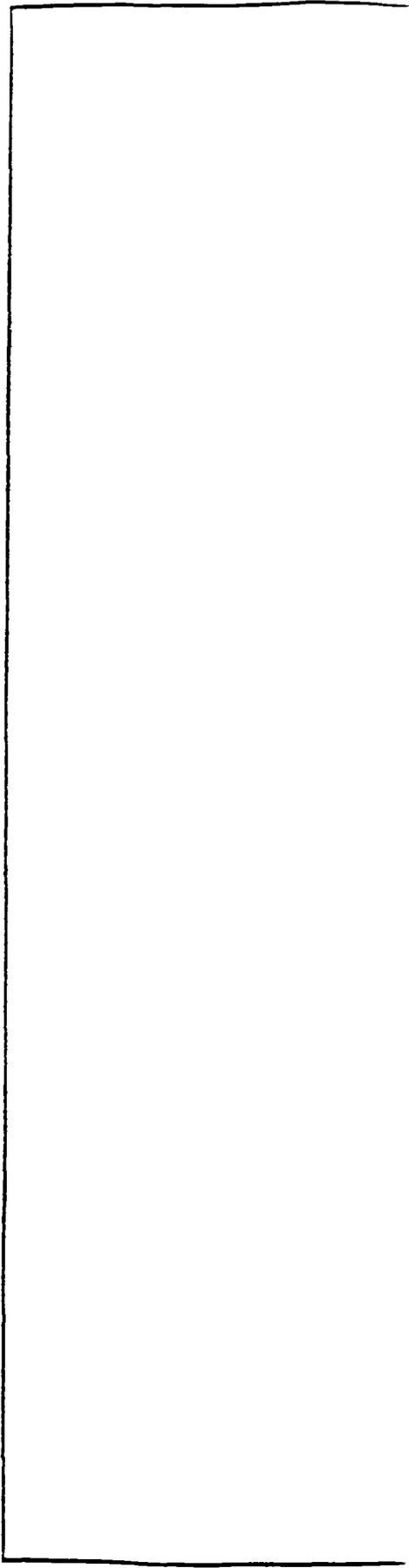
		ADOLESCENTS		PARENTS	
		1982	1984	1982	1984
		%	%	%	%
F 9	familiar with VDI	23,	54	46	55
F 10	general description of tasks and aims of VDI (including confusion with VDE)	20	46	41	50

WORDING OF THE QUESTIONS

F 9 Are you familiar with the VDI/Association of German engineers - if only with the abbreviation?

F 10 What do you think are the aims and tasks of the VDI (general questions)

Table 5: Familiarity and Knowledge Concerning VDI



Effectivity control: "Energy and Technology for our life"

QUESTION 18 Do you consider nuclear power stations at present necessary to safeguard our energy requirements or totally unnecessary?	adolescents				parents			
	total		VDI advert recalled 84		total		VDI advert recalled 84	
	1982	1984	Yes	No	1982	1984	Yes	No
	995	995	347	648	018	1002	238	754
necessary	43	38	40	37	55	50	63	46
not necessary but more economical than traditional power plants	34	38	41	37	29	33	25	36
totally unnecessary	18	18	12	22	11	13	10	14
other answers	4	5	7	3	5	3	2	3
no statement	1	1	*	1	1	*	1	*

TABLE 8 Detailed Result Question 18

VDI-TV-Kurzfilm. 60 Sek., „Inkubator.“



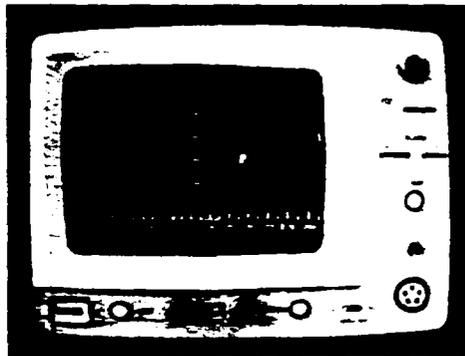
In 1950 six times as many babies died within the first 24 hours after birth than now



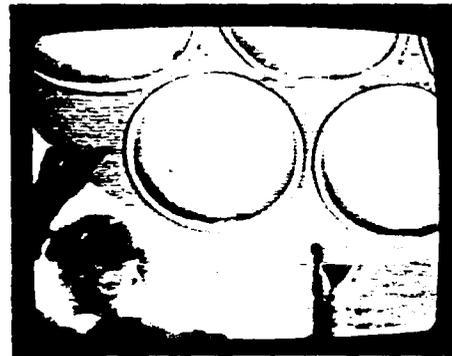
Claudia would no longer be alive, Torsten couldn't play with Holger and Susi could not play with Karin



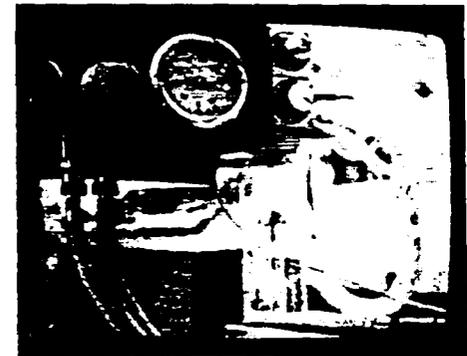
... if medical technology had not made enormous progress - for only technology could keep them alive



For this technical appliance we need energy - constantly



Energie affords warmth and light



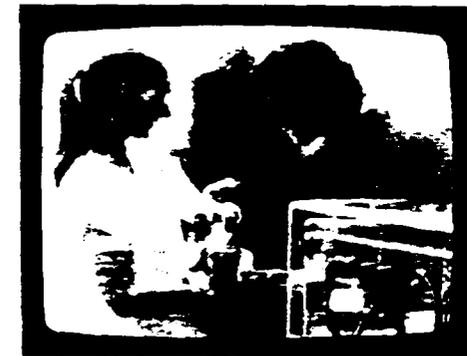
Energy creates oxygen



and monitors electronic apparatus



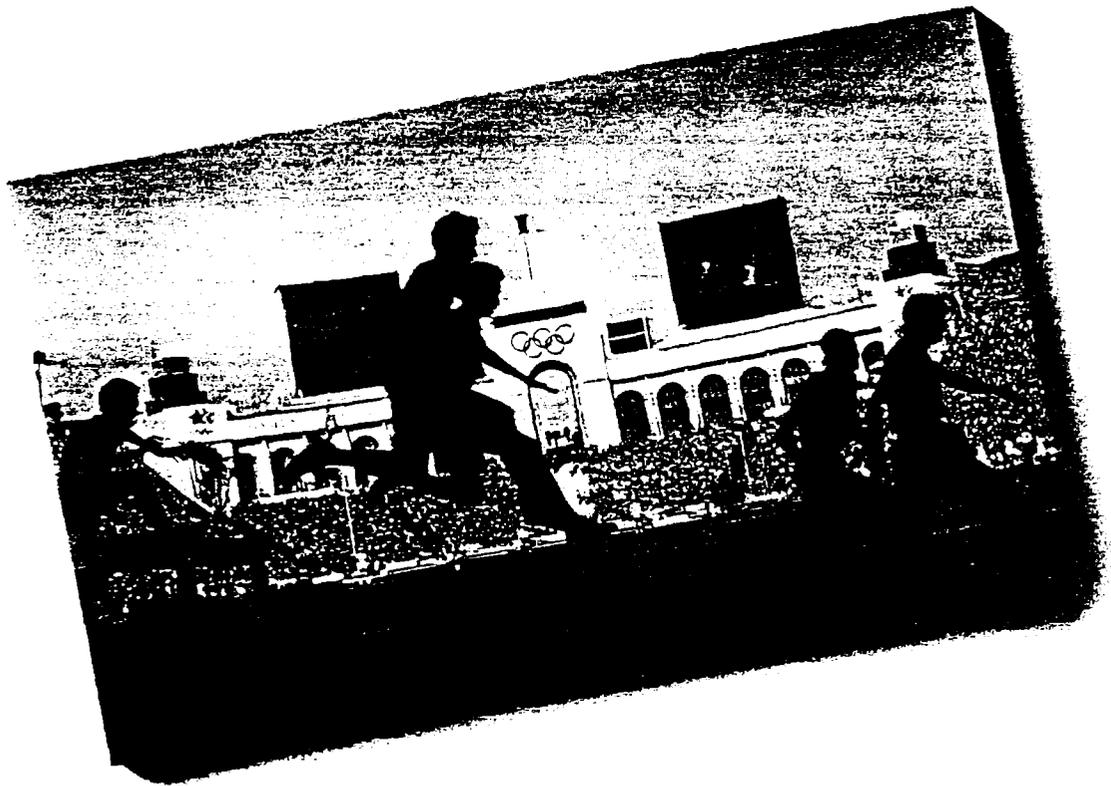
The safeguarding of energy supplies concerns us all. We need people willing to bear the responsibility



Energy and technology for our life

Picture 1: Storybord of the film clip Inkubator

In 10 Minuten von Los Angeles nach Frankfurt.



Selbstverständlich.

Als 1896 in Athen die ersten Olympischen Spiele der Neuzeit stattfanden, dauerte es viele Tage, ehe man bei uns die ersten Bilder zu sehen bekam.

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Selbstverständlich?

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