

Public Acceptance of Nuclear Power

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Summary

The lecture addresses the question why we need public acceptance work and provides some clues to it. It explains various human behaviour patterns which determine the basics for public acceptance. To some extent, the opposition to nuclear energy and the role the media play are described .

Public acceptance efforts of industry are critically reviewed. Some hints on difficulties with polling are provided.

The lecture concludes with recommendations for further public acceptance work.

Address

First of all in my speech I'd like to make a remark:

Public acceptance of nuclear power is really a large topic which can by no means be dealt with in depth within a short lecture. Therefore, I've chosen to touch upon the most important facets rather than elaborate in more detail on only a few aspects. As the situation in many countries is very similar, I decided to use not only material from Germany, but from other countries as well. I hope that will make it more understandable that we're dealing with an international anti-industry movement, although slight differences in the tactics used in the different countries are to be found.

After that remark let me just jump into the matter, starting with a question.

Do we really need public acceptance work?

Understandably, not all business leaders would answer that question with a definite yes. There are many factors affecting e.g. power plant investment decisions, as you can see from the first viewgraph (viewgraph 1). One could add factors such as legislation, technological development, load characteristics and more. Public acceptance is just one factor among many. Moreover, it is a factor which for decades was by no means decisive and therefore could be simply ignored.¹ And furthermore, acceptance problems are nothing new. Since there has been cultural evolution, cultural change, there have also been acceptance problems. Additionally, the combination of verbal agreement with progress and opportunistic hostility towards technology - which at the moment is widely practised - appeared time and again. All this is not new! But new is the dimension of the refusal of acceptance.² Lübbe provides some evidence why the problem, especially concerning risk acceptance is growing:

- 1 With an increase in the relative share of those preconditions of life which we have created ourselves, the willingness to accept the risk of life without complaining declines.**
- 2 Experience gained from risks intensifies with an increase in the extent of natural and social interference from our technical instrumental intervention just as with an increase in our knowledge of that what we additionally cause when we use technology in ways that can be accepted.**

- 3 Experience with insecurity increases with the amount of proportionate losses of experience specific to civilization.
- 4 Experience with insecurity increases as the inability to look into the future which is specific to civilization decreases.
- 5 Experience with insecurity intensifies to the same extent to which the sphere of information accessible to us broadens, exceeding the sphere of actions within which we can act - be it as individuals or in a group.
- 6 Experience with insecurity intensifies with slackening social control.
- 7 The demand for safety increases with the level of the technical and social safety.³

Many industries are affected by growing opposition. One example was given by David Locke: "This is the first time that one half the respondents are opposed (to nuclear power in Great Britain). The percentages show little change over the last few months but there is a drift over recent years towards a higher level of opposition."⁴

Könne sees some reason in that opposition because "modern technology is the principal enemy of all stable societies."⁵ He even explains that in greater detail, I quote another interesting statement: "For the relationship of technology to technology hostility, enlightenment to the period of reaction following the age of enlightenment you can use analogies: reaction following the age of enlightenment itself rejects the stirring for emancipation of reason, because no rational argument can be found for this aspiration, and this aspiration is oriented towards an unknown goal. An open future, an orientation towards the future is not worthwhile. We find the analogy of the rejection of every risk unjustifiable in the light of new technological developments. A rational comparison of various risks will not be accepted in principle with reference to the psychological experiences. Thereby the preference is given at all time to the present world as opposed to the future one. That always occurs qualitatively; a rational assessment of advantages was not given preference to."

Concerning nuclear power, the trend of public opinion is not really pleasant as the next viewgraph "opinions concerning the development of nuclear power plants within the European community from 1978 to 1987" shows (viewgraph 2). Given such an environment, a "wait-and-see"-approach is clearly wrong. The opposition to nuclear power won't decline at all for it is not nuclear energy which is the driving force behind the opposition. The reason for the opposition to

technology is clearly to be seen in the fact that the leading people of the anti-industrial-movement will not accept a society determined by technology at all as you can see from the blunt statement of one of the green forethinkers in Germany (viewgraph 3). Nuclear power is just one lever in order to achieve that goal.

To be quiet under such conditions won't help at all as Berthold Brecht stated in another context, but this is clearly applicable to our situation as well (viewgraph 4).

A lot of similar considerations can be found in the study by Carlos Syllus concerning public opinion and the nuclear program.⁶

All the things mentioned so far should have made it clear that we need to have public acceptance work. But

What is public acceptance?

Acceptance does not mean active support . Acceptance is only recognizing the need for a particular thing, maybe a nuclear reactor, the conviction that we cannot do without it, that the benefits outweigh the disadvantages. The same is true for sewage treatment plants, waste disposal facilities, prisons, public traffic and much more. It would be ridiculous to demand that the public love all facilities and institutions in order to accept them. I believe this to be a very important point as it directs our efforts not towards explaining how special things work but to the benefits which can be gained through them, although not for free.

In order to take the right measures in our public acceptance work we ought to know and not to guess

Some basics about human behaviour patterns

as things are not always as they seem at first glance (viewgraph 5). Just have a look at this viewgraph. What do you see? Is the impression created by that picture the right one? Is it really a spiral?. Of course not, these are concentric circles. Why such a silly viewgraph?

When reviewing a lot of public acceptance work in many countries I cannot help but get the impression that the whole work is based on the assumption that we are dealing within a rational environment. Nothing could be further from the truth. Many political decisions are based on the image of the facts rather than on the facts as such. Even scientists are not free from that attitude. Just to give you one example: Louis Pasteur, the great scientist, was one of the fiercest opponents to the planned sewer system for Paris. Why then do we expect competent decisions from politicians? Why do we complain about the inconsistent limits set for contamination of foodstuff after Chernobyl instead of recognizing that the output depends on the (comprehensible) input? We ought to know that one-sided or incomprehensible input can result in a really ridiculous output. There are other examples, e.g. from law books in the United States: In Danville, Pa., "fire hydrants must be checked one hour before all fires". A San Francisco ordinance forbids the re-use of confetti. In Seattle, it is illegal to carry a concealed weapon of more than six feet in length. An Oklahoma law states that a driver of "any vehicle involved in an accident resulting in death ... shall immediately stop and give his name and address to the person struck." The village of Lakefield, Ontario, passed a noise abatement legislation permitting birds to sing for 30 minutes during the day and 15 minutes at night. ⁷

Do we really live in a rational world?

Mohr discovered that irrationality in another context and stated: "One feels inclined to resign in view of this syndrome of irrationality and inconsequence. Nevertheless, we know that this is a question of utmost importance and that the significance of the scientific and technological ratio does not allow a noble hesitation on our part". He went even further and mentioned the institutionalized irrationality: "The stage of "institutional irrationality" is reached when influential politicians, important chairmen or even whole party conventions behave correspondingly. At present, it is, for example, highly fashionable within the large parties to phase out nuclear energy, some want to phase it out right now, others at the earliest time possible. Solar technology is what they want to have. The question of whether and on which conditions this is possible and if it can be ecologically justified is not even asked. One has decided that 2×2 is 5 or 7, and that is it." ⁸

This seems exaggerated. It is not. As Petr Beckman wrote in his book "The history of π ", "the state of Indiana passed a law setting a wrong value of π ". The proposal came from the physician Edwin J. Goodwin, M.D. and was heavily backed by an ex-teacher. Fortunately, Professor C.A. Waldo, mathematics

department of Purdue University, became aware of that and convinced the politicians in the last minute not to enact such a nonsense law".⁹

Tyll Necker, President of the Federation of the German Industry", realizes these dangers when he urges not to stick to wishful thinking: "Energy has to be provided in a way that it does not harm neither the climate nor the environment, and this in a sufficient quantity and at competitive prices for a constantly increasing number of people. The simultaneous fulfillment of these three principal tasks creates a complex sphere of tension that can be described only by the words "guaranteed supply", "highest possible conservation of environment and resources" and "competitiveness" The necessary measures for optimization have to be accompanied by an energy policy that orients itself at real possibilities and does not give way to wishful thinking and is not influenced by the ideas prevailing at the moment in view of the necessity of long-term prospectives.... Illusions are like soap bubbles: beautiful, but without any duration. To my mind it is vital to avoid soap bubbling in the sector of energy policy." ¹⁰

This kind of aforementioned irrationality can even be seen in (viewgraph 6). Here, once again, you can see that people regard the facts not always as the decisive basis for their judgements. And therefore I dare say that in real life decisions do not depend on facts alone. They depend to a great deal on the context and the situation in which they are made and on what people believe their knowledge to be - objectively correct or not. There would be much more to be said concerning that section of my speech. Just to put things into perspective I want to conclude this section with a provocative statement: All that obvious irrationality is irrational only from one point of view, from fact-orientation. People in real life have faith, have imagination, have for example the desire to belong to a majority and many more. Taking this into account, one could also come to the conclusion: all the afore-mentioned ridiculous things are rational, but based on criteria others than those we are used to.

Such a point of view could be relaxing, could give us the opportunity to concentrate on the really important points in public relations work rather than to respond to every silly statement or accusation of the other side. It could also help us to come out of the defensive to become active rather than reactive. In order to be successful in that we have to know more about

The other side.

Environmental concern and protecting people from the dangers caused by industry is their widely accepted battle-cry. In my opinion, the main reasons for their success have been the effective

- **creation of distrust in experts and authorities**
- **turning of scientific problems into political ones**
- **presenting of themselves as the good guys with no vested interests, thereby providing jobs and prominence for political scientists for consumer organisations and politicians**

To avoid misunderstandings: I am not saying that all people supporting or welcoming such movements can be characterized as above mentioned. Many of the followers of such groups are only misled, have become concerned. ¹¹ Nevertheless, this may be a harsh statement. Therefore let me give you some details on that.

There is a simple but very intelligent approach to create distrust in the real experts by simply saying "We're going to protect the people from dangers originating from industry". That can be said in a very convincing way, or couldn't you agree at least in part with such a statement ? (viewgraph 7) .Now, if I were to change one word in that statement, then it would not change the statement at all. Or let's take another word: the statement itself still seems to be valid and I can change the word once again, and I could continue to do this.

Although this is really a mild form of what has been said in order to create distrust in experts and authorities, it is for many people nevertheless very persuading and convincing. Who, at a first glance, would detect the inconsistency in that statement? The inconsistency which best can be described by the fact that due to this statement a lot of blind people can see better than maybe a few one-eyed people. That is really absurd logic.

The second thing I mentioned was to turn scientific problems into political ones. Here you are (viewgraph 8).

Why is this so important? Whenever the scientific ground is left there is no restriction on "opinions". It is then possible to voice even the silliest but most scaring "arguments". And exactly this is necessary in order to have the general

public accept all activities of the so-called NGO's (Non-Governmental Organizations). In their terms: "Strictly speaking, the NGO category might include any non-government institution, but here we shall restrict our attention to those organisations not tied directly to government, industry or the universities, with active programs related to environmental protection and sustainable economic development. Within this definition, a range of activities are carried out by a variety of groups with differing substantive agendas using diverse tactics. For example, international organisations such as Greenpeace and Friends of the Earth have focused on local activities which stimulate public awareness. At another extreme, the World Resources Institute has focused on policy studies related to the interaction of environment and development. Groups like the Environmental Defense Fund combine both types of activities. Grass roots groups aiming to protect tropical forests have combined local action with global networking. The groups are too numerous to mention, but their methods span the following range: political organization, public education, local protest, consultation with government, lobbying government, litigation against industry or government, political research and development, and even scientific research and analysis".¹² This is especially dangerous as a scared public believes that all this is necessary in order to protect them from the industrial dangers. The public does not realize that it is not the good guys they believe in.

Concerning the third point I mentioned "The Emancipation of authority" called for in the enlightenment presents itself on its own behalf as a new authority. From this point of view enlightenment qualifies itself as an authority among many other possible ones. Consequently, it's a question of superior considerations, which authority is to be acknowledged. The methods for the differentiation on this level (of course) no longer subjected themselves to the criteria of reason. The deliverances from injury, afflictions and fears through natural science and technology faces then the restriction through technological possibilities in their turn. You must contrast and discuss compulsions and afflictions on a superior level apart from a technical rationality and create institutions, in which these can be solved on the morally requested high level."¹³

And Mohr stated: "On the part of the politicians, the method of using experts is undermined in another way. Experts are no longer chosen in accordance with their ability, but according to the expected consensus."¹⁴

Könne discovered another facet of this point when he stated: "With Euripides in the drama "Bacche", we experience the arrival of a new God, the Dionysos, that ultimately represents all irrational and emotional trends. Only on the tip of this new "Dionysic" irrationality can the old power structures play a part once again. The leadership is also riding the wave of a new general requirement, with an irrationality, because they can only preserve power and influence in this way. Today, an equivalent analogy can be really relatively easily made."¹⁵

It is really a pity that even industries unfortunately often believe financing the (anti-industrial) movement is a good thing or can help in gaining an advantage over competitors. Just to give you one hint: let me quote from Nucleonics Week: "The president of Atomic Energy of Canada Ltd.'s Candu Operations, Don S. Lawson, says he has had encouraging response from 18 of 20 corporations that he contacted this spring regarding Energy Probe, the Canadian anti-nuclear organization which earlier this year urged the Turkish government not to buy a Candu reactor (NW 7, Feb., 11). Lawson wrote to those companies listed as sponsors of Energy Probe in recent years to ask if they endorsed the organization's actions in trying to deter Candu sales. Six said they no longer supported Energy Probe, two had not realized they were sponsors; five had sponsored specific projects; four were withdrawing sponsorship; another four were reviewing their support. Two told Lawson they would continue to support the organization's environmental work. In 1983, some 40 business organizations and foundations reportedly funded Energy Probe with (Cdn) \$ 553,000 in donations, goods, and/or services."¹⁶

There are more than 1,000 anti-industry organizations - not counting the smaller ones - usually well-financed and organized. Many live on their protesting. No wonder that an Icelandic video went so far as to call Greenpeace part of the "protest industry".¹⁷

The public at large has no chance but to rely on the media for information on which to base its decisions and selections whenever the topic concerned is beyond personal experience.

Therefore, one arrives at the question

What part do the media play?

It goes without saying that there is a whole number of journalists doing an outstandingly good job in informing the public at large. But unfortunately there are also many journalists fostering the anti-industrial movement. For Germany, this becomes clear by looking at the voting pattern (viewgraph 9). Bearing that in mind, the dominant attack on the industry in the media becomes plausible (viewgraph 10).

The support of the anti-industrial movement is not at all restricted to Germany, as the following statement makes clear: "The Government Accountability Project (GAP) has taken on the task of administering the last blows to the nuclear power industry already under ropes, thanks to the earlier efforts of organisations such as Ralph Nader's Critical Mass, the Union of Concerned Scientists, Physicians for Social Responsibility, and the Mobilization of Survival. If the NRC (Nuclear Regulatory Commission) of the United States dared to take on GAP, the weight of the entire anti-nuclear complex would be thrown into the lists, with the media as its propagandists."¹⁸

That the media, deliberately or not, can easily create a wrong image without distorting facts is impressively shown by a cartoon of Transmedia, a German organisation critical of the media (viewgraph 11).

The excuse of the media most often is that they are not influencing the public but only reporting public opinion. So far, nobody dared to refute that statement. Although some astonishing correlations between media reporting and public opinion can be observed (viewgraph 12). Especially as far as Germany is concerned that could change. The reason for this is: When the dramatic switch in the German Democratic Republic occurred, nearly all the media spoke out against a re-unification of both Germanies. But in that case, the desire of the people was stronger than the manipulating force of the media. People did not care at all about the published opinion. Therefore, after a while, the media decided to follow public opinion. This is quite a contrast to the usual pattern observable. Thus, I believe the statement of the media that they just report on public opinion is no longer valid.

All that does not mean that we should attack the media as a whole. We should just find the reasonable guys within that branch. They are the ones we have to work with and support. They are the only ones who would be in the position to spread messages to the public at large which do not throw such a pleasant light

on freedom of opinion within the media. I believe you will barely have heard of a real scandal which happened in Germany as the Germans were not widely informed on that scandal. The scandal is that one outstandingly good science reporter, Dr. Walter Baier, who had been working for 23 years for the left-wing daily "Frankfurter Rundschau" dared to write about facts in that newspaper. The consequence: he was dismissed. ¹⁹ This is of special interest since it was the Frankfurter Rundschau which ignited the so-called Biblis scandal. But seen with reason, it seems it was not a nuclear scandal, it was a media scandal (viewgraph 13).

Once again, I'd like to mention that it was not at all my intention to discredit the media. But I don't believe that only to cheer the media is honest. Quite to the contrary, it would be dishonest not to mention the deficiencies within the media. It is clear, that we in the nuclear industry suffer quite a lot from misreportings in the media - which concentrate on the dark side and not on the sunny side - that is common human behaviour. But I believe we have to find ways to get rid of unsubstantiated stories.

Having said that much, I believe it is time for us to act in order not to get drowned in an

Environmental wave.

I don't think that I have to convince you here in Brazil that environmentalism has become a fashion. In many countries, nuclear power is attacked because of its adverse effects on the environment. When looking at opinion polls in Germany, you could see that it is not corresponding with actual views of the population and politicians, at least as far as Germany is concerned (viewgraph 14).

Slightly different is the situation in the United States. Although Americans are dramatically more concerned about environmental issues than they were just a few years ago and waste issues in particular are currently a focal point of this concern and additionally a significant and growing number of Americans are becoming "green consumers" in their buying behaviour and "green voters" in their political activity, nuclear energy is widely accepted by Americans as an important force of today's electricity and even more important energy source for tomorrow. ²⁰ To what extent the environmental concern increased in the US is shown on the next viewgraph (viewgraph 15).

These are just a few examples. The environmentalism is rapidly spreading all over the world. This would not be something to worry about if it were not biased. But unfortunately it is, and therefore many efforts by different industries have been made in order to survive. The most common approach was to provide

Information.

That information was widely thought to be distribution of the knowledge of the facts. Some reasonable people recognized years ago that this is not the right approach: "Whoever worked for a longer period of time in public relations within the nuclear sector has become aware of the fact that emotions very often cannot be overcome by factual information." And, this was also recognized by NEA-OECD. "One has to review the assumption that it is sufficient to inform the public in detail on nuclear power plants, their safety, risks and advantages, or ionizing radiation in order to gain public acceptance. The experience gained in several important information campaigns in various countries point to the fact that especially these were not crowned by success".²¹

This recognition is becoming more and more common. One example is the statement: "It would be naive to assume that good and convincing pieces of information repeated patiently time and again would keep the opponents from their postulations. Even pro and contra discussions between experts nourish the impression of the layman that everything is much more complicated than assumed, as even the experts cannot agree. As a result, the readiness of the average listener to accept is shifted in a negative direction..... Information - as comprehensive and understandable as it may be - is a necessary but not a sufficient tool for gaining acceptance."²² And Mohr said in that context "Today we know - after many setbacks - that acceptance of factual information and logic cannot be forced, as the refusal of acceptance is in general irrational and only that information is accepted that fits into the pre-determined pattern of convictions."²³ And Lendvai stated. "... one of the basic rules we should try to follow in our publicity work: tell basic and comprehensible truths whose acceptance would not depend upon scientific education and knowledge of facts regarded by many as esoteric. Of course, we should sponsor activities aimed at dissemination of scientific knowledge. But first of all we have to bring across to people that the real source of electric power is not the wall outlet!"²⁴

Even more convincing than all these statements maybe a quote from "Nature": "... only 34 % of Britons and 46 % of Americans appeared to know that the Earth goes round the sun once a year.... only 34 % of British respondents knew that nuclear power stations are not a source of acid rain, whilst a mere 23 % recognized a link between the burning of fossil fuels in coal-fired power stations and the problem of global warming." And furthermore, "...in general, one would assume that people who are interested in a particular issue will tend to be relatively well informed about it..... self-reported interest and "informedness" match pretty well for sport, politics and films, but for science, technology and medicine there is a substantial discrepancy : here, only a minority of those who report that they are very interested also claim that they are very well informed."

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Maybe what I've said so far could create the feeling that we are confronted with an overpowering enemy. But nothing could be further from the truth. The protest groups are only strong through the number of their followers. That gives them their influence in international organizations and the media. But in fact, what are

Protest groups?

Ann Bisconti gave a very good description of the situation in the US which in my opinion is very similar to the situation in other countries, too. Therefore I would like to quote her: "Very few Americans, about two percent at most, take any political action on energy issues within any given six-month period, according to various Cambridge Reports polls. Only a fraction of that number (too small for reliable estimates by polls) are active protesters.

Although polling data on the values of these organized activists are not available, some insights can be gained from their origins, associated causes, and publications. Political activism emerged in the 1950s, focusing first on the issue of civil rights for minority groups. The structure and tactics shaped in that effort were then adapted to oppose United States involvement in Vietnam. Consumer and environmental issues were added to the agenda, and activists in these areas had a strong and enduring influence on Congress in the late 1960s and early 1970s. Energy-oriented activism emerged in part as a result of the rapid expansion of the nuclear power program planned in response to the mounting costs of imported oil. There are two types of protesters, local intervenors and

members of direct action alliances. Local intervenor groups are formed by people who live near a facility site. Their motives for joining tend to be concern about property value, noise pollution, general community impact and safety. They are sometimes called "NIMBY" ("not in my backyard") members.

Another type of protest group - direct action alliances - has a strong connection to the Vietnam war protesters. American Council on Education national surveys found Vietnam activists as a group to be relatively indifferent to formal religion, pessimistic, antimaterialists, and inclined toward humanitarian and artistic values.

Members of these alliances today oppose large-scale energy development in general, although nuclear energy was an early rallying point. They differentiate themselves from the local intervenor groups by being explicitly opposed to the system within which the latter are content to work. Their aims include reforming society and developing democratically controlled, localized sources of energy. The extreme egalitarianism of their own organization is seen as a model for future world government. Organizations like the Clamshell Alliance concentrated all social, economic, and political issues into the nuclear debate. According to Harvey Wasserman, one of the founders of the Clamshell Alliance: "As its core, the nuclear issue is a confrontation between corporate, technocratic domination and decentralized community independence. The choice is closely linked to a broad spectrum of issues - to unemployment and high electric rates, to exploitation of Third World people and resources, to the plagues of nuclear armaments, environmental chaos and our soaring cancer rates" ²⁶

This was impressively confirmed by Dr. Elizabeth Swaton who told me: "It should also be kept in mind that those who do engage in the related real activities are only a fraction of the population while the much larger part of the population is not committed to strong attitudes and active behaviour. The feelings about a particular energy source within a country should not be judged by the activities of a minority. ²⁷

Nevertheless, the majority tends to follow that vociferous minority thanks to the attention the media pay to it.

To some extent, polling can reveal through carefully chosen questions that the public at large is somewhat uneasy about energy matters. On average, about

30 % of the German population says nuclear energy will be used in the long run. But with the aforementioned set of questions about 60 % of the population believe that nuclear power plants will provide the biggest share of electricity production in the next 20 to 30 years. It is interesting, too, that a very slight change in the wording of the questions results in a partially quite remarkable change in the answers given (viewgraphs 16 and 17). Another interesting result of an Allensbach poll was the split of the Social Democratic Party on the question of phasing out nuclear power (viewgraph 18). This is especially remarkable as representatives of the official party line are very vociferous in promoting the phase out of nuclear plants.

Another very interesting development is that one of the most prominent leaders of the Green Party which is still heavily opposed to nuclear power left the party and joined the Social Democrats.

I believe there is good reason to be optimistic with respect to the future of nuclear energy if we agree on some basics which I would like to sum up in my

Conclusion.

Let me first start with some general remarks.

- At present, our first priority is to ensure that there is a market at all rather than to concentrate on competition.
- Proper public acceptance work needs the skill of public acceptance experts rather than the imagination of business leaders on how to do the job,
- Public acceptance is quite different from active support; it's just recognizing that the benefits outweigh the disadvantages; that there is a need for something.
- The public at large is not interested at all in education on technical facts, but rather on why we need nuclear energy.
- People comprehend things only within the range of their own experience.
- People don't like to be persuaded, but would rather make their own decisions.

- **We too are people who long for a clean and safe environment, and a peaceful and prosperous development of mankind.**
- **We have to behave like ordinary people and not like teachers of the nation who are the only ones with the right ideas.**
- **We should not deem ourselves as the guardians of responsibility, morals, law and justice, as no one can continuously live up to sheer principles.**
- **We have to come to a more active role, to set our own topics rather than to respond to every stupid accusation.**

You can find most of the reasons for these remarks in my speech of today.

But I would further like to make you also familiar with some do's and don't's defined by an international task force group as follows: 28

A) Messages which should be emphasized

(of course, continued good plant performance is an important basis for all communication).

- **Benefits of and need for nuclear energy:**
 - **Energy independence**
 - **Economic independence**
 - **Importance of electricity**
 - **Benefits to the local economy**
 - **Saves other energy resources**
 - **Environmental aspects**
- **Emphasize the image of openness, trust:**
 - **Build confidence**
 - **Example: The British "Come and see us" campaign**
 - **Be seen as a good neighbour.**

B) Messages which usually are not effective:

- Simple assertions that plants are safe.
- Messages which only state facts and figures (while accuracy must be maintained, one cannot effectively counter fear and emotional messages with just technical information).
- Beware of inconsistent messages, e. g., the waste problem is solved; we are spending x-money to solve this problem. Or, after Chernobyl: Don't eat the vegetables; if you have already eaten them, no problem.

C) Techniques which are effective.

- Play an active part in informing the public (opinion leaders) by setting your own topics and issues.
- Use adequate research.
 - Understand the concerns, attitudes, and reactions of various audiences and audience segments.
 - Identify the most effective messages.
 - Test ads before and after placement.
 - Evaluate the effectiveness of a program
- Maintain the consistency of messages (it's important to repeat them)
- Day to day communication with press and public officials, so that communication channels and trust already exist when unusual events occur.
- Build personal acquaintance and trust with national and local leaders. Notify them in due time of events which may receive news coverage.
- Inform the press immediately - even on small events - don't hold back information, and don't appear to be holding back anything.
- Have doctors, teachers and religious leaders informed (preferably through doctors, teachers and religious leaders).
- Inform women and women's associations.
- Regular communication (e.g. Newsletters) to residents near facilities.

- **Put messages in personal terms. Give audiences a "yardstick" by which to measure the information given. Make it relevant to them personally. A good example of how to explain radioactive emissions was given by B. Wahlström²⁹**
- **Operate visitor centers and widely advertise their availability to the public. Do encourage large numbers to visit, there is also a very positive impact on those who don't visit, as they know that they could. But visitor centres should not be designed in order to explain technology. Such centres have to put nuclear in a broader context. An exceptionally good centre was established at Sellafield by BNFL.**
- **Keep industry employees well-informed and give them responsibility to communicate. They are our best ambassadors.**
- **Conduct professional media training and speech training for industry spokespeople and repeat it periodically. As in any field, it is the professionals that continually train and practice. Include tour guides. Encourage credible people outside the industry to publicize messages.**
- **Continue to make benefits available to communities hosting nuclear energy facilities - taxes, employment (preferential hiring), public facilities, etc. Improve the quality of life in the community.**
- **The goal of communications is to achieve understanding of the need for and the benefits of nuclear energy and thereby achieve acceptance of its continued use and expansion. It is neither reasonable nor necessary to like nuclear energy. The same is true for other important facilities: landfills, water-treatment-plants, public housing, refineries, prisons, etc.**

D) Techniques which usually are not effective.

- **Don't react only to accusations of opponents.**
- **When possible avoid controversial public debates. Too often, it gives undue credibility to opponents and you end up reacting to accusations.**
- **Don't try to counter negative articles by arguing directly in the media. It is usually better to send corrective information to the publisher or**

journalist for future reference, but don't seek publication of the rebuttal. Debating in public perpetuates the negative story.

- Don't aim messages at active nuclear energy opponents - they will not be persuaded, often because they have a broader social agenda and nuclear opposition is one means of furthering that agenda.

Of course, there would be a lot more to say, but that would by far exceed the time available in a short speech. What I and some others are hard working on is the installation of a high speed information exchange system for the nuclear industry in order to provide us with the same chances of winning the confidence of the public , i.e. chances the other side already has of using a well-installed world-wide network. Part of this, I found in a computer magazine (viewgraph 19).

Thank you for your attention.

Should you have any questions, please don't hesitate to ask them.

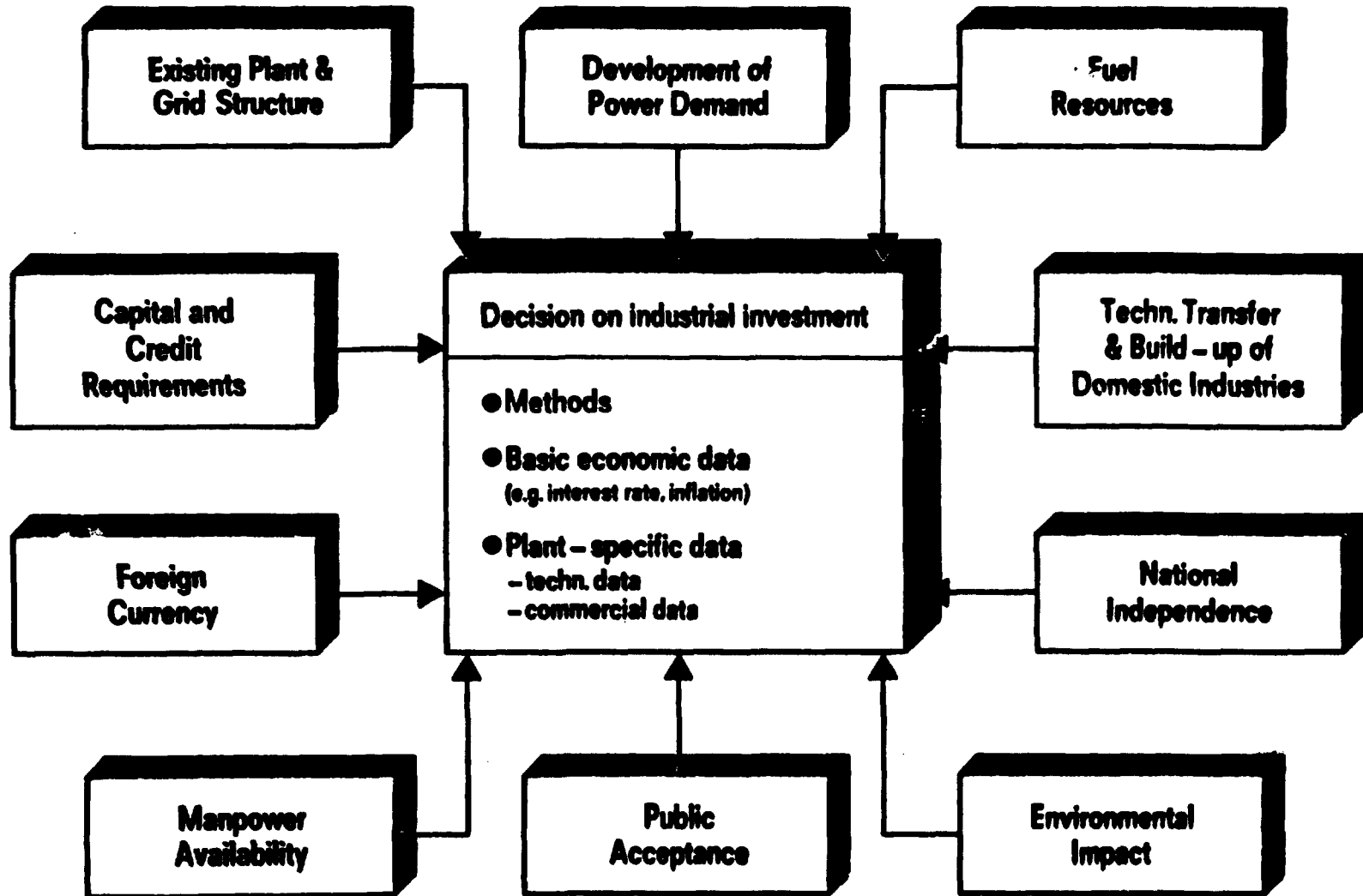
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14. see 2
15. see 5
16. Nucleonics Week, June 27, 1985, p. 12
17. Videotape "Survival in the High North" written and produced by Magnus Gudmunsson; Copyright Magned film, Reikjavik, Iceland
18. Rael Jean Isaac, "Games anti-nukes play", The American Spectator, Vol. 18, No. 11, November 1985
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22. Dr. Erwin Rahner, "Forschungsstandort Bundesrepublik wieder in der Diskussion", Pharm Ind. 50, No. 12 (1988), Pharmind-Aspekte
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25. John A. Durant et al, "The public understanding of science", Nature, Vol. 340, July 6, 1989

**26. Dr. Ann Bisconti, "Polling an Inattentive Public: Energy and US Public Opinion"
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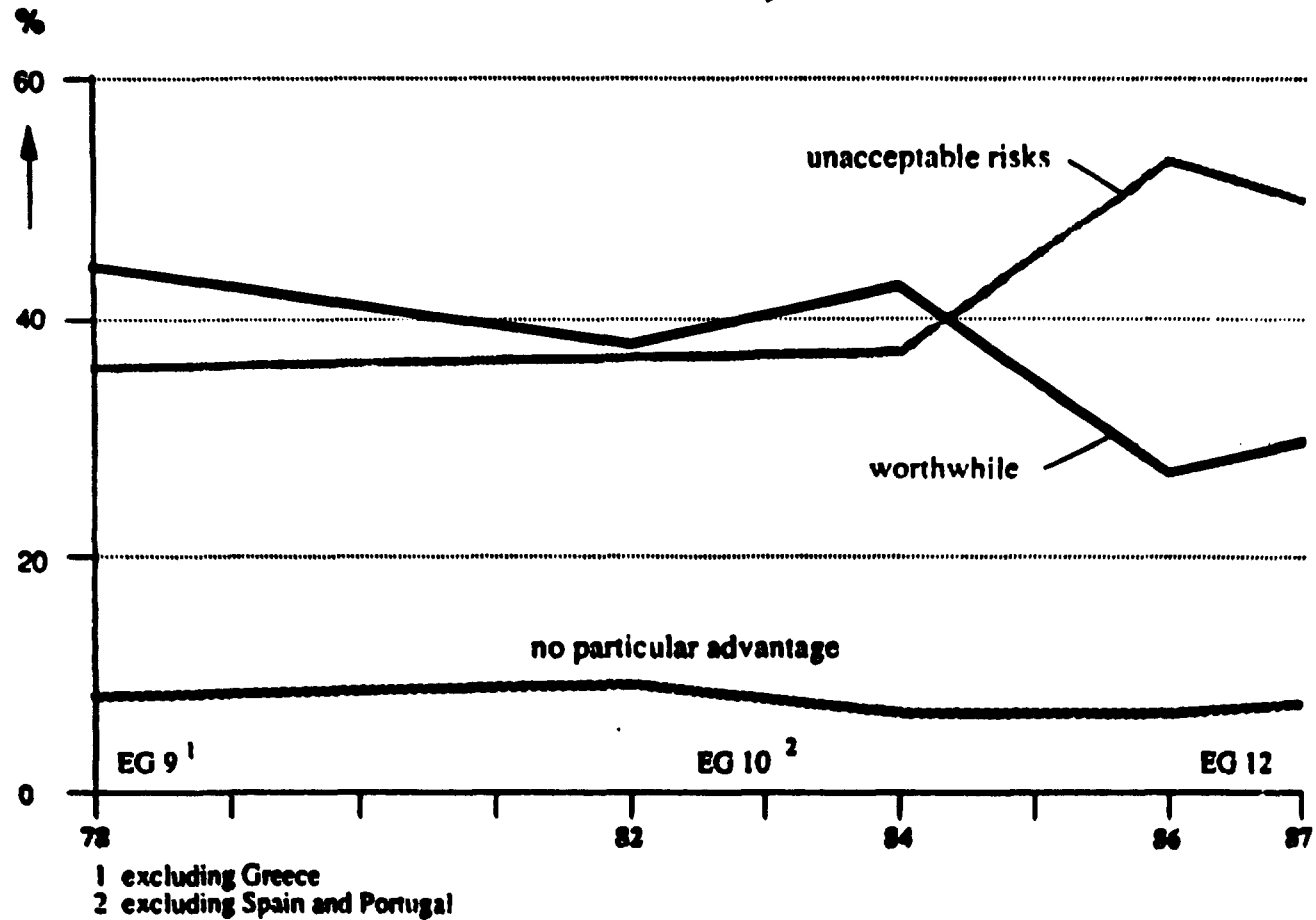
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language, Nuclear Europe, Vol. VIII, No. 3-4, March/April 1989**



Factors Affecting Power Plant Investment Decisions

SIEMENS



Source: Public opinion in the European community on energy in 1987 (published May 1988) XVII/365/88-EN
Commission of the European communities, rue de la loi 200 - 1049 Brussels

Basic Opinion on the Development of Nuclear Power Plants 1978 to 1987

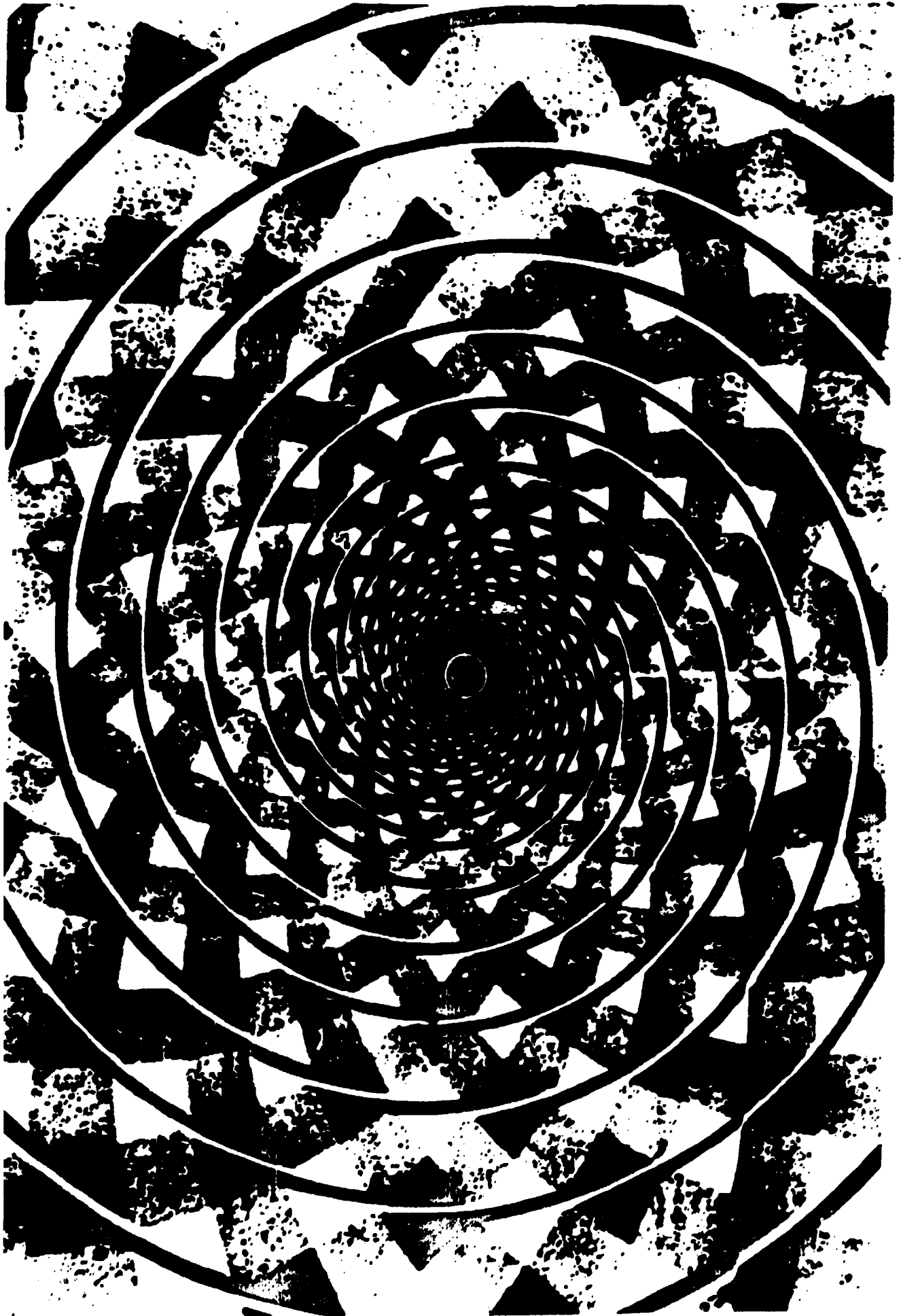
Carl Amery:

**The logic of survival of mankind
requires thus the quickest destruction
possible of the industrial system
and that at almost any price.**

**C.A., Natur als Politik
Page 184, Reinbek 1978**

"Imagine there's war
and nobody attends
- then war will come to you!
Those who stay at home when the fighting begins
and have others fight for their cause
have to be careful:
For those who didn't take a share in the fight
will have a share in the defeat.
Fighting can't even be prevented
by evading a fight:
For you will fight for the enemy's cause
when you don't fight for your own. "

Bert Brecht



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Question:

Which of the three lines on the right is equal to the standard line on the left?

Results:

- **The first two rounds without influencing judgement:
Unequivocally correct line**
- **Following ten rounds:
Before the candidates had to judge, 7 to 9 persons gave a firm but wrong statement . They named as the correct line one that was visibly too short.**

2 out of 10 stuck to the correct line

2 out of the remaining 8 agreed on the wrong line only once or twice

6 agreed more frequently with the false judgement of the majority

Source: Solomon E. Asch, "Group Forces in the Modification and Distortion of Judgments" Social Psychology, New York, Prentice-Hall, 1952, p.452

It is not our particular role to weigh the benefits of against the liabilities and declare a winner.

Industry groups and even some scientists are already doing this, with the result that all critiques are deemed suspect, unnecessary or wrong. At this early stage no expert could pretend to forecast the future of

Thus, it is important that society engage in dialogue. This requires that some attention be devoted to the possible negative consequences -something industry and government rarely, if ever, do.

biotechnology

biotechnology

artificial intelligence

artificial intelligence

new pharmaceuticals

new pharmaceuticals

nuclear technology




nuclear technology

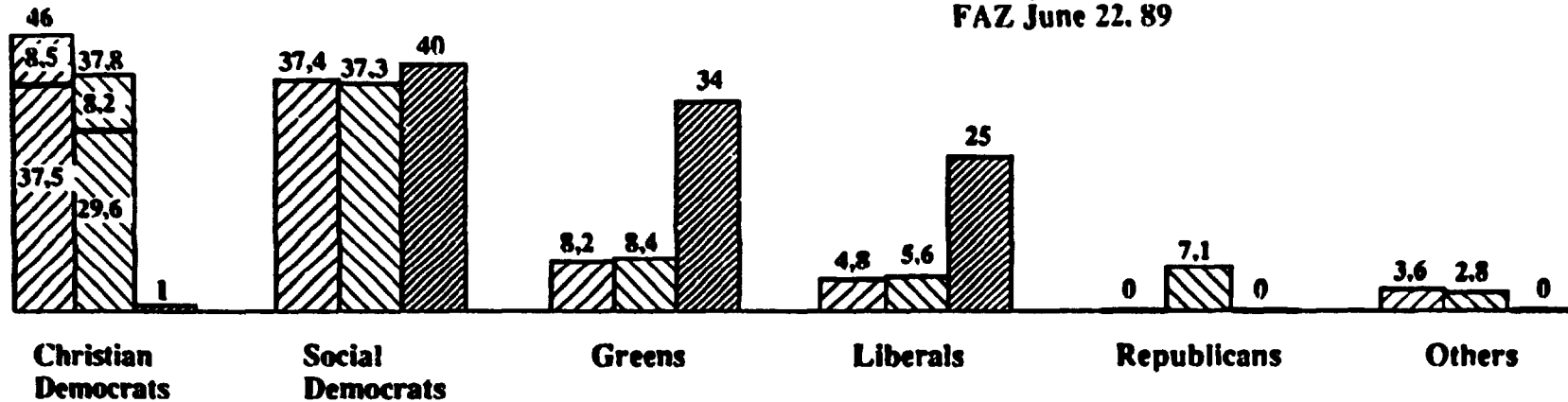
But there is another role for the NGO's which begins ahead of that noted above, a role that has already been undertaken: that of public education, of turning a scientific problem into a political one .

Michael Oppenheimer, Responding to Climate Change: The Crucial Role of the NGO's, Lecture held at the World Congress on Climate and Development, November, 1988

NGO: Non Governmental Organization

CSU: in Bavaria only
 CDU: in Germany without Bavaria

 Elections to the European Parliament June 17, 1984
 Elections to the European Parliament June 18, 1989
 Journalists according to Theo Sommer, editor in chief of the weekly "Die Zeit". Source: FAZ June 22, 89



Viewgraph 9

Voting Pattern of the German Population Compared to Journalists

SIEMENS

As far as the press is concerned, you can draw the conclusion that papers judged to be intellectually inferior clearly practise pure sensationalism without conveying any knowledge, and that, independent of the intellectual level, it could be said that the further left the medium, the harsher the unsubstantiated criticism.

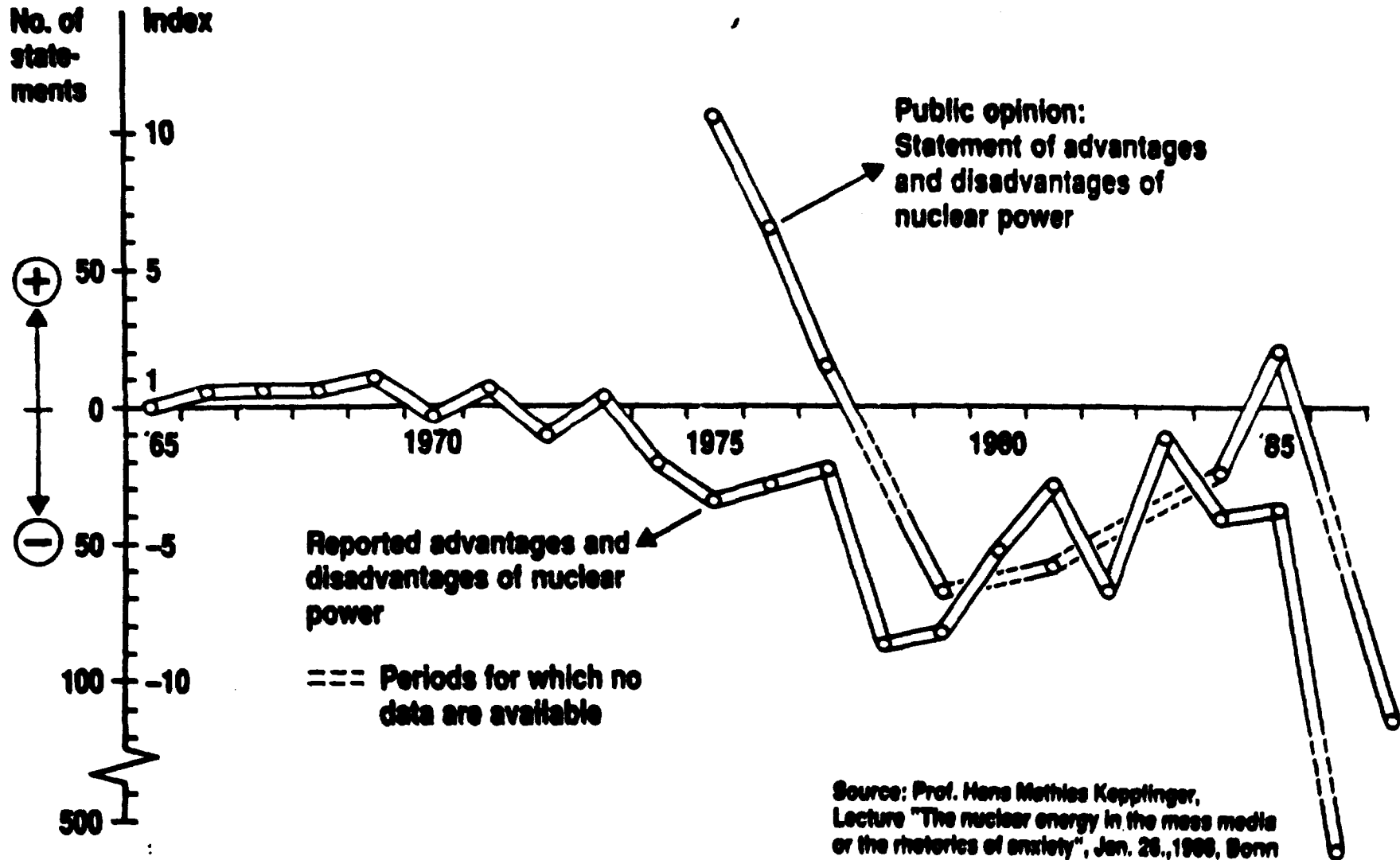
Chemische Industrie, Nr. 9/1986



„Berichterstattung“.

© Irma Media 1968

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Videograph 12

Diagram Showing Advantages and Disadvantages of Nuclear Power as Given in Reports and as Seen by the Public

1985
UFA 12
E 88 935 0

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Question: If you compared nuclear power plants with coal-fired power plants: are nuclear power plants a lesser burden to the environment than coal-fired power plants or are they a greater burden to the environment or would you say that there is no difference?

	Figures in percent	
	1984	1989
Nuclear power plants are a lesser burden to the environment	37	45
Nuclear power plants are a greater burden to the environment	13	14
No difference	27	21
Undecided	23	20
	<u>100</u>	<u>100</u>

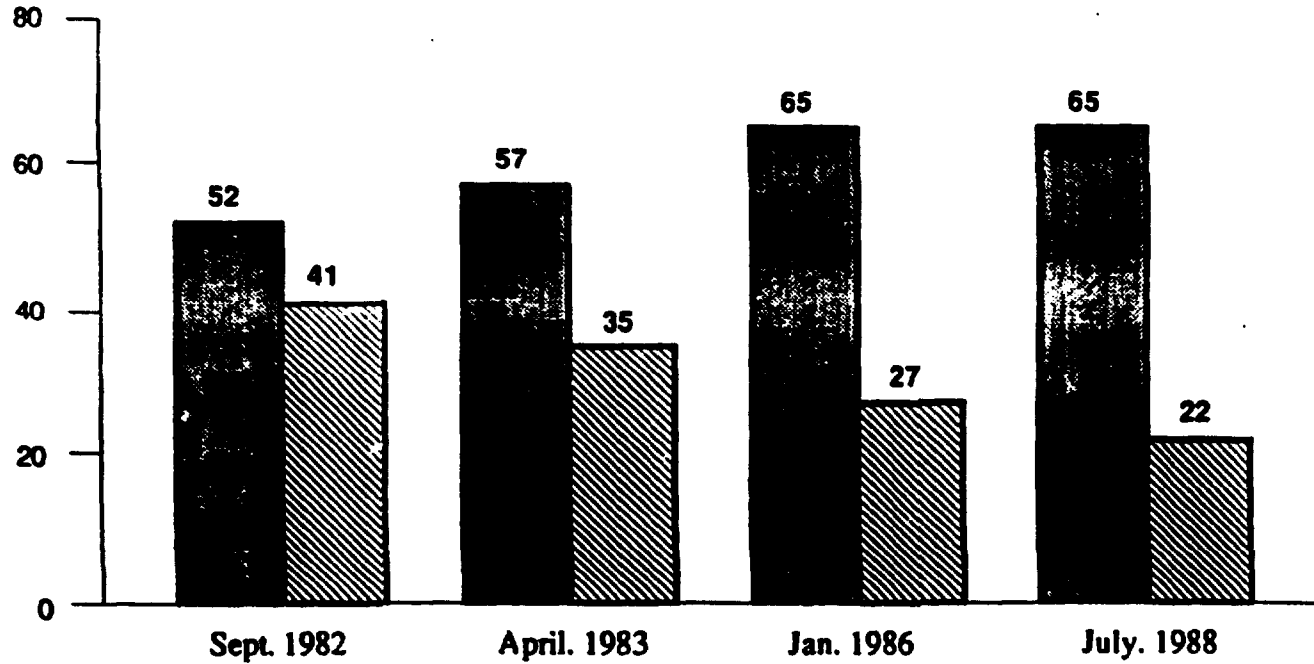
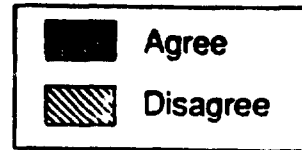
	Percentage of supporters of			
	Christian Democrats	Social Democrats	Liberals	Green Party
Nuclear power plants are a lesser burden to the environment	56	40	50	27
Nuclear power plants are a greater burden to the environment	10	18	11	34
No difference	16	21	23	24
Undecided	18	21	16	15
	<u>100</u>	<u>100</u>	<u>100</u>	<u>100</u>

Source: Allensbach archives, ifD poll 4047, 5022

Viewgraph 14

September 1989

**" Do you agree or disagree with the following statement:
Protecting the environment is so important that requirements and standards
cannot be too high, and continuing improvements must be regardless of cost."
(CBS/New York Times)
(in Percentages)**



Source: Polling an Inattentive Public, Report of the U.S. Member Committee (World Energy Conference) Washington , D.C. May 1, 1989
by Ann S. Bisconti, Ph. D.

Increasing Concern over Environment in the US

SIEMENS

Which sources of energy have the greatest significance?

Question: Nowadays much is said about how we can secure the power supply in the next 20 to 30 years. Here are several possibilities. Which of them will provide the greatest contribution to energy supply in the 20 to 30 years? (presentation of a list)

The greatest contribution of supply is expected from:

	figures in %		
	1984	1987	1989
Nuclear power stations	68 (61)	70 (57)	60 (54)
Solar energy	48 (57)	42 (48)	53 (56)
Hydro-electric power station	37 (51)	35 (47)	41 (49)
Coal-fired power stations	48 (51)	47 (49)	39 (40)
Wind energy	17 (35)	16 (28)	24 (39)
Electricity importation	16 (25)	12 (17)	22 (27)
Oil-fired power stations	18 (22)	17 (23)	17 (16)
Others	x (x)	1 (1)	x (1)
Undecided	6 (8)	8 (9)	6 (7)

() percentage with slightly different question

Source: Allensbach archives, ifD poll 4048, 4088, 5024

Viewgraph 17

September 1989

SIEMENS

Federal Germany including West-Berlin

Question: Which of the three scenarios listed below do you favour?

	Percentage of supporters of				
	Christian Democrats	Social Democrats	Liberals	Green Party	Republicans
We have to build new nuclear power plants	9	1	5	1	11
We ought not to construct new nuclear power plants, but continue to operate the existing ones	63	45	72	17	56
We ought to stop power generation from nuclear power plants and shut down existing nuclear power plants	15	44	20	72	22
Undecided	13	10	6	10	13
	----- 100	----- 100	----- 100	----- 100	----- 100

Source: Allensbach Archives, ifD poll 5022
Opinion Poll September, 1989

Viewgraph 18

