

Nuclear power and the public

by P. Kovacs and S. Gordelier*

Issues such as climate change, energy security and the longer-term availability of fossil fuels are causing many governments to reconsider their national energy policies. Promotion of renewable energy sources is often a first policy response but, increasingly, it is being recognised that renewable sources may only provide a partial solution, especially in countries where heavy industry or large cities make intense demands on electricity supply. Governments are coming to recognise nuclear power as an attractive option because of its near absence of carbon dioxide emissions and the widespread availability of uranium which serves as fuel. Furthermore, the major uranium producers – Canada and Australia – are noted for their long-term stability and good governance. The difficulty, of course, is that concerns over the safety and security of nuclear power often make it unpopular among the public. Hence, whether governments propose to introduce nuclear power for the first time, to simply replace existing ageing plant or to expand generating capacity, public acceptability questions must be faced.

The apparent intractability of this issue has given rise to innumerable studies of public attitudes to nuclear power. The NEA has recently completed a review of this information – what might be called “a poll of polls”. Particularly useful sources of information are surveys conducted for the European Commission (the Eurobarometer series) and the International Atomic Energy Agency (IAEA) between 2005 and 2007. Together, these provide in-depth information that helps to explain country-to-country differences and people’s underlying reasons for supporting or opposing nuclear-generated electricity.

Familiarity breeds content?

The results of the Eurobarometer and IAEA polls show that support for nuclear power varies widely

between countries. In the countries of the European Union (25 when the poll was conducted), responses to the question “Are you in favour or opposed to the use of nuclear power in your country?” show that those clearly in favour of nuclear power range between 5% (Austria) and 41% (Sweden), with an overall average of 20%. In the IAEA study, polls were conducted in 18 countries. Here, support for the expansion of nuclear power in each country ranges between 13% (Morocco) and 52% (South Korea), with an overall average of 28%. Closer examination of these results clearly shows that, in both polls, support for nuclear power is significantly stronger in countries that already have nuclear power plants. This is illustrated in Figure 1, which shows that people in EU countries that have nuclear power plants are twice as likely to be supportive of this option as people in countries that do not. A similar effect can be seen in the 18 countries in the IAEA survey and indeed, throughout the Eurobarometer surveys in responses to questions such as “Is it possible to operate a nuclear power plant in a safe manner?” and “Do you agree that the disposal of radioactive waste can be done safely?”

One could suppose that people living in countries with nuclear power plants are more supportive of this form of energy because they are more familiar with it, better informed about it and more aware of its benefits. The hypothesis that better and increased communication leads to an increase in support is backed up by a Eurobarometer poll that questioned Europeans about the degree to which they felt themselves to be informed about nuclear safety, and then looked at the impact of this on their views. As

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Figure 1: Percentage of people clearly supporting the use of nuclear power in each of the (then) 25 EU countries, after dividing them into countries with and without nuclear power plants

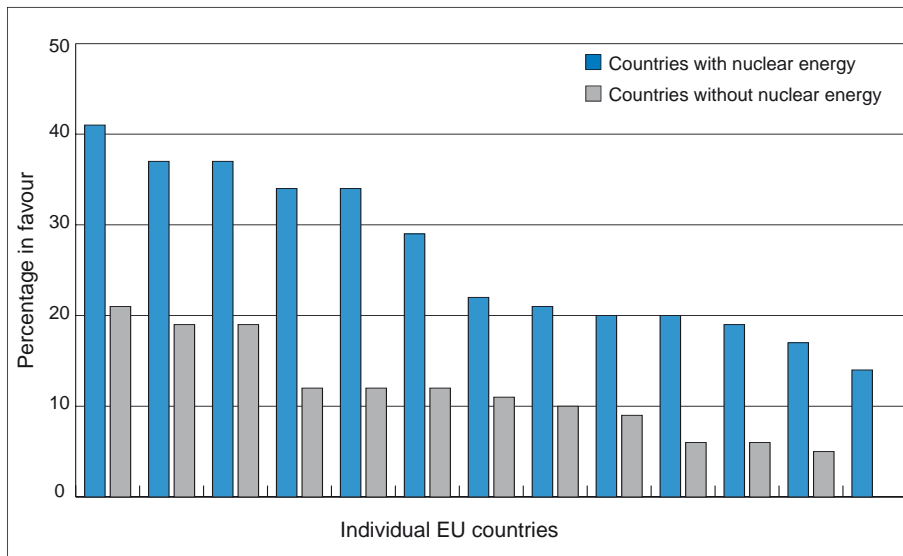
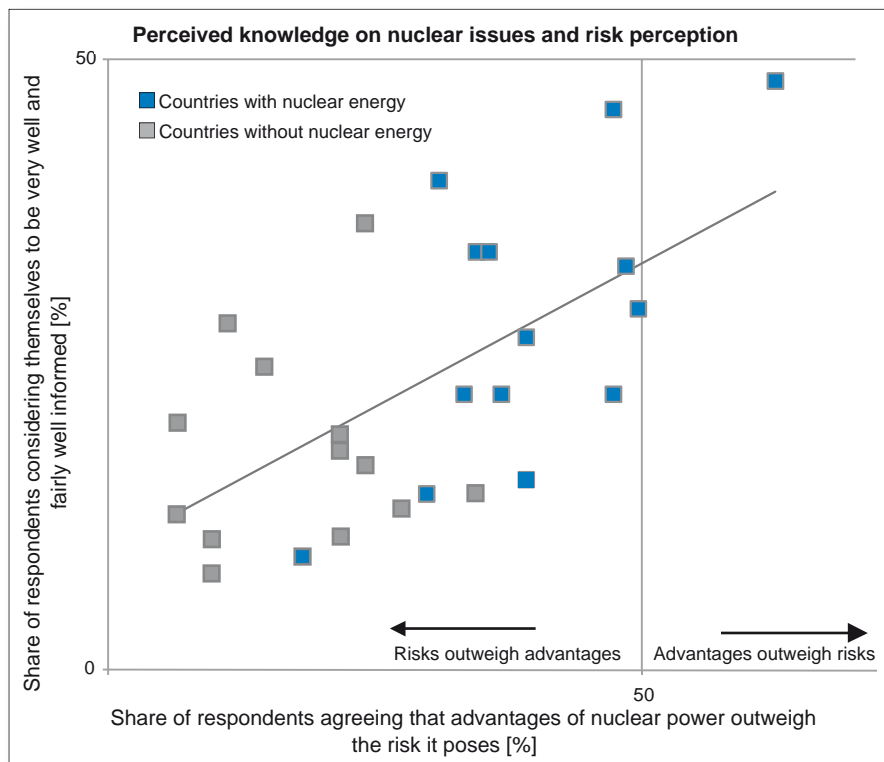


Figure 2: Correlation between the perceived level of knowledge about nuclear power and risk perception. Each spot presents average data for a different European country.



shown in Figure 2, those who feel informed about nuclear safety tend to perceive the risks as lower than those who feel uninformed. A similar link can be demonstrated between lower perceptions of risk and those having personal experience of nuclear power, even when the personal experience amounts to no more than living less than 50 km from a nuclear plant or knowing someone who works in

the industry. Again, people in countries without nuclear power plants feel less informed and more likely to say that the risks outweigh the advantages.

More evidence of the effect of knowledge and information on public acceptability of nuclear power comes from polls in which an opinion is sought before and after explaining some key fact. For instance, when it was explained that

nuclear power could help to protect the world's climate from global warming, the number of people supporting an expansion of nuclear power increased by an additional 10%, and more than a third of those who originally said that no more nuclear plants should be built subsequently changed their minds. Another, similar poll showed that knowledge about improvements in energy security also increased the proportion of people who were willing to accept nuclear power. Nevertheless, those who definitely favour nuclear power remain in a minority and, comparing the Eurobarometer and the geographically wider IAEA polls, it seems that Europeans are more sceptical than non-Europeans.

If one places EU respondents into pro-nuclear, anti-nuclear and middle-ground categories, in those countries that already have nuclear power plants, the middle ground is the largest group whereas in countries without nuclear power, those who are anti-nuclear constitute the largest group. This suggests a need for different communication strategies depending on the circumstances of the individual country. Demographically, support for nuclear power is strongest amongst males, those who are educated to a higher level, those with right of centre political views and the older members of society.

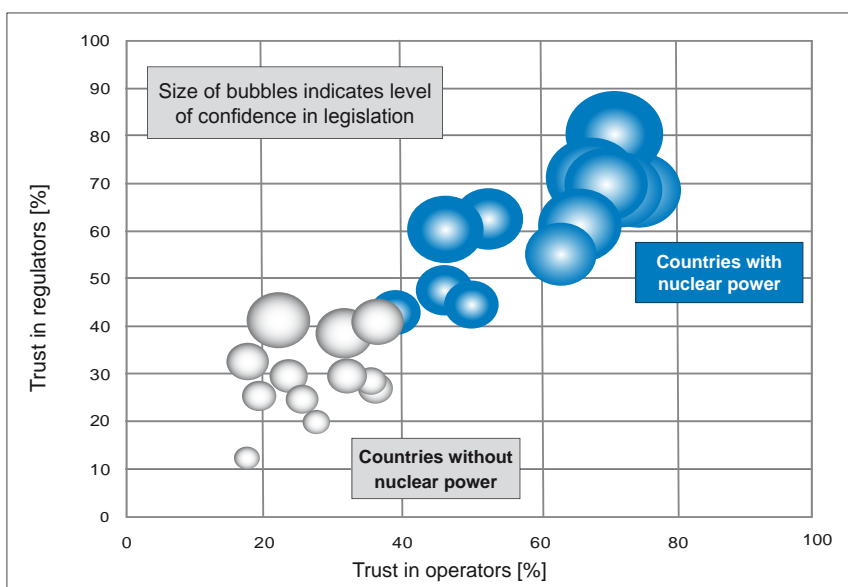
Where's the key?

When searching for the reasons motivating public attitudes to nuclear power, the first thing to be acknowledged is that, on a day-to-day basis, most people are much more concerned about issues such as unemployment, crime and healthcare than

they are about energy issues, let alone nuclear energy. Even when people are asked "When you think about energy issues, what is the first thing that comes into your mind?", the most frequent response (33%) is "price". This suggests that most people have not given much in-depth attention to the question of energy policy, so that, more often than not, they will respond from a position that is not very well-informed. This may be why so many people are quick to change their minds when presented with evidence to the contrary. Similarly, it is clear that many people may have unrealistic expectations with respect to renewable sources. A Eurobarometer question on future energy sources asked "What do you expect to be the top three energy sources in 30 years?" The most popular choice was solar power (49%), which even came top of the list in a number of northern European countries, a response that certainly overestimates its potential.

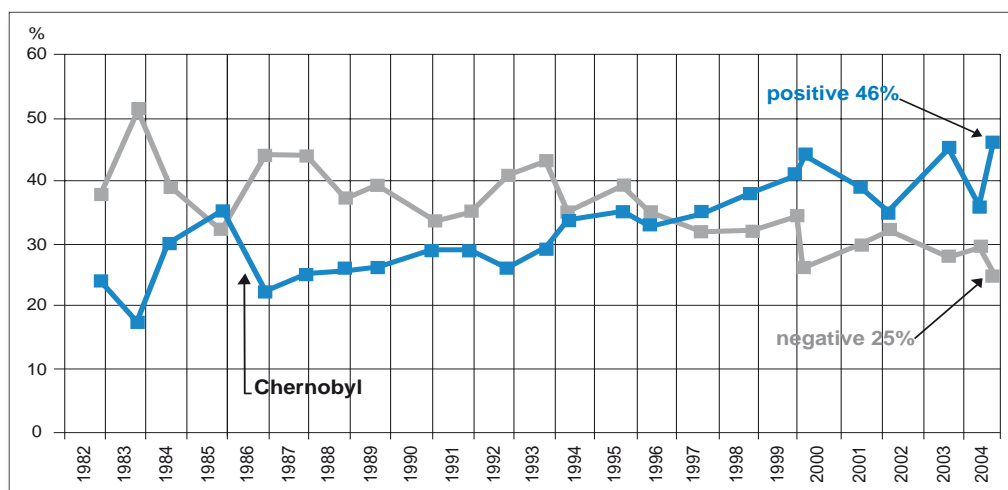
When people were asked to name the biggest risks associated with nuclear power from a list presented to them, terrorism was the most often cited risk (74%). Interestingly, in this case there was little difference in the response between countries that have and do not have nuclear power plants. The next two risks named were radioactive waste disposal (39%) and the misuse of nuclear materials (38%). For these issues, concerns are less pronounced in countries that already have nuclear power plants. More than a third of people who oppose nuclear power say that they would change their view if the issue of radioactive waste disposal could be resolved.

Figure 3: Confidence in European nuclear regulators, operators and legislation



Each bubble represents a different EU country. Confidence in regulators, operators and legislation is strongly correlated. Levels of confidence are higher in countries with nuclear power than in those without.

Figure 4: Attitudes in Finland towards the use of nuclear power since 1982



Source: Suomen Gallop Oy/TNS Gallop Oy/Finnish Energy Industries Federation.

Much of this points to a clear correlation between level of knowledge and support for nuclear power. At the same time, three-quarters of Europeans consider themselves either “completely uninformed” or “not very well-informed”. The inescapable conclusion is that more and better public information campaigns are needed in those countries where policy makers want to include nuclear power in the energy mix. But then another difficulty arises: while the media – television, radio and newspapers – are the prime source of information for most people, they are also amongst the least trusted sources. Governments are even more distrusted. According to a Eurobarometer poll, the three most trusted sources are scientists (71%), NGOs (64%) and national nuclear safety authorities (51%).

The public’s reluctance to believe information provided by the government suggests that, while it is necessary, supply alone is not sufficient. Measures to raise public confidence in institutions are also needed. In this context, a particularly interesting finding is that levels of public trust in nuclear legislation, nuclear regulators and nuclear power plant operators are strongly correlated (see Figure 3). It is as though, with the mind focused on more immediate issues (unemployment, crime and so on) the public does not look for distinctions between the different actors in the nuclear business, but rather tends to see all parts of the industry in a similar light. Again, higher levels of trust exist in countries that already have nuclear power plants.

A slow, upward trend

Supplementing the information from the Eurobarometer and IAEA polls are the results of regular

annual surveys in seven countries: Finland, France, Hungary, Japan, Sweden, the United Kingdom and the United States. These provide details of year-to-year changes and, in the case of Finland (see Figure 4), stretch all the way back to 1982. The Finnish survey shows a sharp drop in support following the Chernobyl catastrophe. A similar fall was seen in Japan after the 1999 accident at the Tokai-Mura reprocessing plant. Since Chernobyl, public opinion in Finland has gradually shifted towards a more favourable view of nuclear power. Similar increases in support are seen in four of the other five countries for which there are time series data. The exception occurs in France where support for nuclear power has stayed relatively constant at around 50% since the surveys began in 1994.

These polls suggest a state of affairs in which, in the absence of dramatic events, public opinion changes only slowly with time. The gradual increase in support that has been seen over the past 20 years may be due to the heightened media profile of energy issues generally and, in all probability, increased familiarity with nuclear power resulting from government and industry information campaigns. Trust-building measures may also have helped; these include improvements in openness and transparency and more active involvement of stakeholders in decision making. The nuclear industry has made great efforts in this direction in recent years. The NEA Forum for Stakeholder Confidence and certain national radioactive waste disposal programmes, such as those in Belgium, Canada and the United Kingdom, place stakeholder interactions at their core. In a world that no longer has any easy energy choices, public acceptance of nuclear power has never been more crucial. ■