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Nuclear Power and EU Enlargement: The Case of Temelín

REGINA AXELROD

The controversy over the Temelín nuclear power plant (TNPP) in the Czech Republic was transformed from a domestic issue to an international one by the year 2001. Besides providing an opportunity to examine domestic politics and administrative practices in the Czech Republic, the Temelín case raised questions about the future of nuclear power in Central and Eastern European (CEE) countries – and the rest of Europe. What began as a bureaucratic decision in the 1980s by the communist government of Czechoslovakia to build a nuclear power plant became by the late 1990s a major controversy affecting the enlargement of the EU and a nightmare for the foreign relations of the Czech Republic. After providing a general introduction to nuclear power in Central and Eastern Europe, this contribution chronicles the origins and development of the TNPP.

By examining changes over time, it becomes evident that Temelín is deeply connected to the resurgence of the anti-nuclear movement in Europe, the process of enlargement of the European Union (EU), the integration of environment and energy policy consistent with the EU's 6th Environmental Action Programme, and bilateral relations between the Czech Republic and its neighbours. The Temelín case occurring during the EU enlargement process, offered an opportunity for the EU to play an unusual role: that of moderator in a bilateral dispute between a member and non-member state.

Nuclear Power in Central and Eastern Europe

In the wake of the 1986 Chernobyl disaster and the dramatic political changes in the communist systems of the CEE and former Soviet regions, the safety of nuclear power facilities remained an important international issue in newly constituted post-communist states [*Andonova, 2002; Dawson, 1996*]. In 1992, the G-7 countries (Canada, France, Germany, Italy, Japan, the UK and the US) agreed that Russian-designed nuclear power plants should be closed owing to safety concerns, and that financial assistance would be given to replace nuclear power with renewable and alternative energy sources [*GAO, 1994*]. However, CEE governments and

their nuclear industries wanted to keep plants open to prevent them from losing their investments. Consequently, the policy changed from closing plants to upgrading them, giving life to the nuclear industry in the form of contracts for equipment, instrumentation and control systems (I&C), and nuclear waste storage facilities, (which are interim not permanent) [Woodard, 1995].¹ While Western Europe (particularly France and Belgium) had excess electricity to sell and the nuclear industry was anxious to find new markets, particularly in CEE countries and Asia, the policy to upgrade Russian-designed plants established a vast new market benefiting suppliers of nuclear technology, particularly US and European nuclear engineering companies. In fact, the ability of Western European and North American governments to achieve closure of Soviet/Russian-designed nuclear power plants across CEE and former Soviet regions proved quite limited [Dawson, 1996; Chandler, 2000; Gutner, 2002]. Furthermore, international assistance to upgrade nuclear power plant safety across these regions appears to have extended the working lifetimes of many of these facilities, breathing new life into the nuclear industry across CEE and former Soviet states [Darst, 2002].

The Origins of Temelín

As one of the nuclear power plants initially slated to be closed and then revitalised through a change in policy, Temelín represented a test for nuclear power interests across Europe. During the communist era, Czechoslovakia experienced high energy intensity, low energy prices, and inefficient energy production and electricity transmission, all of which distorted the economy. Because Czech heavy industry and chemical production required a reliable supply of electricity, nuclear power seemed to be a viable alternative that was consistent with the Stalinist model of building large projects. Temelín is located in the southern part of the Czech Republic, near the city of Ceske Budejovice, approximately 80 kilometres from the Austrian border. The decision for construction was approved in 1978 and construction began in 1986.

A review of Temelín's design after the 1986 accident and fire at the Chernobyl nuclear power plant resulted in construction being halted. In 1992 without adequate information on electric supply and demand, an absence of public debate on nuclear power, and uncertain government leadership, the decision about construction was left to the new government of Prime Minister Vaclav Klaus, which favoured completion of the TNPP.² Studies by the International Atomic Energy Agency (IAEA) found flaws in the design of Temelín, and recommended replacement of the I&C systems. There were also questions regarding the use of Russian fuel as well as the

fuel cycle itself, which contributed to higher levels of radioactive waste than Western designs. After a controversial and questionable bidding process, in 1993, Westinghouse was awarded a contract to graft Western technology on to the Russian-designed reactors.

Enter Austria

The Austrian position towards Temelín is influenced by its proximity to the plant and the fact that it is a non-nuclear state. In 1978, by plebiscite, Austrians agreed to close their one completed nuclear plant, Zwentendorf. Consequently, in the early 1990s, when the contract with Westinghouse to upgrade Temelín was being considered, Austrian officials began lobbying against the TNPP in the US Congress. Similarly, the Austrian state later opposed the completion of the Slovakian Mohovce nuclear power plant in 1998.

By 2000, the Austrian position was complicated because of the nature of its coalition government. The far right Freedom Party (FPÖ), headed by Jörg Haider, was vehemently opposed to Temelín, as was the Austrian Vice-Chancellor Susanne Reiss-Passer (FPÖ), who compared Temelín to Chernobyl because of unpredictable risks associated with nuclear power plants (*Czech National Newswire (CTK)*, 26 April 2001). If Haider pulled out of the coalition shared with Chancellor Wolfgang Schüssel's centre-right People's Party, the government could fall. All four political parties opposed Temelín, but it was the populist and xenophobic stance of the FPÖ that threatened to prevent Czech accession to the EU. In addition, Austria is a federal state with provinces that have their own governments and legislatures. Both Upper Austria and Lower Austria have taken independent actions in efforts to influence the federal government and working with Austrian and international environmental NGOs opposed to TNPP. Upper Austrian Greens wanted direct contact with Czech officials and argued that Temelín should be closed pending a new environmental impact assessment (EIA).

Austria's strategy for opposing Temelín was to 'widen the scope of conflict' [*Schattschneider, 1960*] to involve other European states and international NGOs and to provide information to various publics. This strategy also involved launching a campaign against nuclear power in Eastern and Western Europe – making the issue greater than Temelín – a position of the Social Democrats (*CTK*, 19 September 2001). Chancellor Schüssel agreed, stating that 'Europeanising Temelín will be the only way leading to EU standards for nuclear power stations' (*CTK*, 3 September 2001). In September 2000, the Austrian Parliament approved a resolution asking their government to block Czech entry into the EU because of

Temelín. Chancellor Schüssel demanded that Temelín comply with safety standards valid in EU states. The problem here was that there exists no EU competency for nuclear power plant regulation, probably because a number of the nuclear states, including France and the United Kingdom (UK), are wary of opening a Pandora's box of regulatory debates. In fact, EU member states (and publics) remain quite divided on nuclear power issues. Seven of the 15 member states have nuclear power plants, and eight of the 12 candidate states are nuclear. On the other hand, countries such as Austria have totally banned nuclear power while Sweden and Germany are officially engaged in phasing out their nuclear power facilities. As a result, there is a lack of agreement among the 15 member states about both the future of nuclear power in the EU as well as standards of safety. Austria wanted criteria to be developed and applied to all EU nuclear power plants.

In October 2000, when nuclear fuel was activated in the first Temelín reactor, Austria moved to widen the controversy to Brussels. Austrian officials argued that states should have a role in protecting their citizens from an environmental disaster originating in another state. It was a position the EU could take seriously. Yet, Austria had no legitimate political role in the launching of Temelín or receiving assurances that it would be safe. Although there is another Czech nuclear power plant at Dukovany, it was easier to oppose Temelín than advocate the closing of an existing nuclear plant.

In the autumn of 2000, anti-Temelín forces set up blockades on the borders between the Czech Republic and Austria to increase public attention on the issue. The Czech reaction was that the blockades impinged on trade and free movement of persons – the protests themselves were not the problem. The FPOe lobbied hard to get the government to withhold approval of the Czech energy chapter, threatening to oust Chancellor Schüssel. The Austrian Social Democratic Party (SPOe) disagreed, arguing that neighbours should not be held hostage over nuclear power safety issues and suggested that Austria find allies in the EU interested in seeking unified safety standards for the entire EU.

Austria soon changed its strategy from demanding the closure of Temelín, to blocking the closing of the Czech energy chapter in the accession negotiations – the FPOe position. This move could have jeopardised the entire accession process, since a veto of any of the 31 chapters by even a single EU member state would prevent accession to the EU. When Czech officials decided to go ahead with the completion of Temelín, they never thought the issue would rise to the level of potentially blocking Czech accession to the EU. The veto of one state could do so, which is what Austrian officials were threatening.

A Unique Role for the EU

NGOs engaged in anti-Temelín activity in Germany and in Austria, while political parties and regional governments became increasingly vocal. Owing to the impact of highway blockades between Austria and the Czech Republic and the emergence of the issue of nuclear safety as part of the accession negotiations, the EU became an important player. Mediating between two states that do not have equal status – one a member state and the other a candidate state – was a new role for the EU. Questions surfaced regarding whether it was, in fact, an appropriate role for the EU or whether the matter should have been left to bilateral resolution between the Czech Republic and Austria. In reality, however, bilateral negotiations were not proving successful even though the foreign ministers of the two countries seemed to share the same perspective.

At the request of the Czech foreign minister, Jan Kavan, the Commission offered its good offices to act as mediator at the end of 2000, when the Austrian blockades caused heightened diplomatic tensions. It was becoming increasingly difficult for the Austrian government to control the emotional demonstrations. Both Austria and the Czech Republic agreed to the mediation. Diplomatic contacts between the governments increased and it was agreed that the two heads of state would meet in December 2000. The result was the Melk Agreement, the result of many hours of tedious negotiation (Melk, Austria is where the agreement was signed). The Czech Republic agreed to an EIA with EU participation. Austria said it would cease threatening to block the closing of the energy and environmental chapters of the *acquis communautaire* and continue negotiations on both. It agreed to protect the borders from further blockades. As an early warning system for extraordinary events, a hotline was established from Temelín to the Austrian Federal Atom Centre at the Interior Ministry to supply updated studies on breakdowns and uncontrolled release of radioactivity. However, NGOs opposing Temelín were shocked when EU Enlargement Commissioner Gunter Verheugen suggested that Temelín would ‘probably be the safest nuclear plant in Europe’ (*Prague Post*, 29 November 2000).

Enlargement negotiations provided an opportunity to focus on nuclear power safety. The December 2000 Melk Process was undertaken specifically to examine nuclear safety issues and facilitate an exchange of information about Temelín [*Commission, 2001*]. EU Commission President Romano Prodi rejected Austrian threats to hold up Czech accession. ‘Veto should only be used if vital interests of a country are at stake’ (*CTK*, 6 January 2002). He acknowledged the critical role of the Commission in mediating the conflict and was concerned that the controversy could become quite serious. German Foreign Minister Joschka Fisher agreed,

arguing against any 'artificial' delays in the enlargement process because of Temelín.

In reality, the EU became officially involved earlier in July 2000, when the Enlargement Group of the Committee of Permanent Representatives of the Council (COREPER) charged the Atomic Questions Group (AQG) – a permanent Council body – to prepare a position concerning 'a high level of nuclear safety in the candidate countries'.³ Many prior European Councils had encouraged high levels of nuclear safety. In the absence of competence for energy and, more specifically, nuclear power in the *acquis*, legislation covering nuclear safety, except for levels of ionising radiation, transportation of nuclear fuel, and emergency preparedness derived from the Euratom Treaty and IAEA agreements, does not exist. While it was agreed that the EU would monitor Temelín until the accession of the Czech Republic, the position of the EU was that the responsibility for safe operations of a nuclear plant belonged to the country where the facility was located.

The result of these efforts was a 'non-paper' by AQG to COREPER in July 2001 that describes non-binding or 'soft' laws based on voluntary cooperation among EU nuclear states. Owing to the historical differences in their nuclear regulatory procedures and installations, these states strongly support only general rules of safety. The report also reviewed all nuclear candidate states. Based primarily on submitted documents – not on-site visits or comments by non-regulators – it admitted to being of limited scope. It did, however, note concerns at the Temelín nuclear power plant about embrittlement and integrity of the 'vessel beltline area welds' because of high nickel content, as well as weakness in fire prevention. Regarding the critical issue of nuclear waste disposal, the report said that in both Czech nuclear power plants – Dukovany and Temelín – long-term facilities were lacking. Spent nuclear fuel would be stored on-site at Temelín for ten years and then, most likely, transferred to Dukovany. The lack of an existing strategy to deal with nuclear waste is an issue of grave concern to Temelín opponents (and to the anti-nuclear power opponents in general). The report questioned the wisdom of increasing nuclear capability without resolving the issue of long-term nuclear waste disposal.

Recent years have also witnessed increased interest within the EU (especially the European Parliament) and among NGOs about the future of nuclear power because of uncertainties of climate change, policy commitments and renewed concerns about nuclear safety. Austria, however, was the driving force making nuclear power an issue within the context of EU enlargement. Enlargement negotiations provided an opportunity to focus on nuclear power safety. The December 2000 'Melk Process' was undertaken to specifically examine nuclear safety issues and facilitate an

exchange of information about Temelín [*European Commission, 2001*]. While there were hearings and meetings in both countries, the Melk Process did not proceed smoothly. Czech Environmental Minister Milos Kuzvart doubted that the new EIA could be completed by May 2001, as agreed to in the Melk Agreement. Rudi Anschoer, Upper Austria Green Party leader, wanted the Temelín plant to close while the review took place.

The Commission on the Assessment of Environmental Impact of the TNPP released its report on 31 July 2001, based on its assessment of nuclear safety at Temelín as part of the Melk Process, and utilising the Directive on Environment Assessment of Public and Private Projects No. 85/337/EEC and No. 97/11/EC [*Commission, 2001*]. The members of the Commission included four Czechs, two representatives from the EU, and observers from Germany and Austria. The Melk Protocol established this expert mission to assist in identifying safety issues. Normally an EIA is done before a project is begun. Although the EIA was guided by existing EU legislation, this was a special case because it was retroactive. The actual document was prepared by the Czech Environmental Ministry. The Commission concluded that the environmental impacts were considered to be insignificant and acceptable.

Between February 2001 and July 2001, in a parallel process, there were ongoing discussions between the EU, Czech nuclear experts and Austria. Twenty-nine issues of Austrian concern were identified and addressed by the Czech Republic. Chancellor Schussel as well as Austrian environmental groups said that the Czechs did not provide sufficient documentation. As a result, one hearing in May 2001 was postponed. There were unpleasant words between the Czech Minister of Industry and Trade (MIT) Miroslav Gregr, who said Austrian demands were ‘nonsense’, and Upper Austria Governor Josef Puchinger, who called Gregr ‘ignorant’ (*CTK, 24 April 2001, 27 April 2001*).

Jan Kavan, the Czech Foreign Minister, told critics, ‘We would shut down Temelín only if it were objectively proved that it does not comply with fundamental safety criteria’ (*CTK, 25 March 2001*). At the same time, Temelín again suffered turbine problems that worried the Austrians, who again called for a ‘zero variant’ – consideration of an option closing Temelín. The German Environment Minister Juergen Tritten, also a long-time opponent of Temelín, asked for the closing of the plant. More demonstrations were threatened by the Upper Austrian Greens. Austrian Finance Minister Karl-Heinz Grosse said the Czech Republic should abandon Temelín while Austrian and German Greens called upon EU countries to boycott electricity from the plant (*CTK, 16 June 2001*).

Upper Austrian Commissioner for Nuclear Facilities Bordering Austria, Radko Pavlovec, said the Commission’s report was deficient (*BBC, 11 April 2001*). The FPÖ reaction was that the document was a provocation (*CTK,*

12 April 2001). Chancellor Schussel asked the Czechs for more information. Lower Austria said documentation about crisis scenarios was deficient and that Temelín constituted a real threat to countries neighbouring the Czech Republic (CTK, 8 June 2001). The Czech Foreign Ministry responded by asking if the Austrians were questioning the sovereign right of the Czechs to determine their own energy policy. The Czechs did agree to respond to the 'zero option' and provided additional information. This, however, did not satisfy the governors of Upper Austria, Lower Austria and Salzburg, who announced that they would file a lawsuit for potential damages. German Environment Minister Tritten pulled out of the meetings on Temelín to disassociate himself from any conclusions of the Commission report. Environmental NGOs argued that the EIA failed to consider a crash of an airplane or the method of liquidation of stored radioactive waste.

Austria submitted a report to COREPER criticising the shortcomings of nuclear plants in candidate countries, including the Czech Republic and Slovakia, making nuclear safety an issue for consideration in accession. However, Enlargement Commissioner Guenther Verheugen, who brokered the Melk Agreement, warned that Austria could not prevent the construction of a nuclear power plant in a neighbouring county (CTK, 22 June 2001). The Czech Foreign Minister Jan Kavan indicated that he understood the concerns of the Germans and the Austrians because of their closeness to Temelín, stating, 'We perceive the fears of our neighbours' citizens as understandable, but because we do not feel them justified, we will do everything to dispel them and assure the people that the plant is safe' (*Austrian News Organisation Report*, 29 August 2001).

Austrian Greens interpreted the remarks as sympathetic to their cause – that building a nuclear plant close to borders is unacceptable. Some Austrian Temelín opponents suggested giving the Czech Republic money to close the plant or purchase the plant. There also was a suggestion of an international conference to discuss the possibilities of closing the plant. Chancellor Schussel asked EU President Romano Prodi to make Temelín a European issue as a means for leading the way to EU standards for nuclear power plants (CTK, 11 September 2001). Upper Austria's Governor agreed, stating that this was not a bilateral problem with the Czech Republic. Austrian Greens maintained that Temelín was a European problem and should be resolved at a European level. A serious accident would affect not only Austria, but all of Europe. Commissioner Verheugen said there would not be an international conference unless the Czechs supported it, which they did not. In January 2001, almost a million Austrians signed a 'Veto Temelín' petition organised by Jorg Haider's FPÖ. It demanded an Austrian veto to Czech accession if Temelín was not shut (CTK, 20 August 2001). FPÖ also called for an Austrian referendum on Temelín. The

pressure was relentless. The opponents argued that keeping the Czechs outside EU reduced the opportunity to make the plant safer, since Temelín would probably go online anyway. Schussel concluded by playing his trump card, stating that the energy chapter would not be closed until 'all safety and environment aspects of the Temelín nuclear power plant are assessed' (CTK, 11 November 2001).

The European Parliament, a strong supporter of environmental issues, passed a draft resolution in July 2001, recommending the phasing out of Temelín and hosting an international conference on the issue. It tried to convince the European Commission that Temelín was a failed investment. At the September 2001 plenary session of the Parliament, it was suggested that the EU finance the closure and dismantling costs of Temelín. The plenary session also advocated increased use of sustainable energy sources [EC, 2001]. This position was supported by all Austrian parties. The non-binding resolution was passed on 5 October 2001, recommending that as problems continue to come to light in the nuclear and non-nuclear section of the plant, the 'zero option' should be considered.⁴ Resolution supporters hoped that the Commission would consider the Parliament's position seriously. This was the first time an EU institution tied Temelín to accession.

The German Approach

The German Environment Minister questioned the economic sustainability of Temelín and reiterated his position that Temelín would not meet German standards (CTK, 14 February 2001), or be viable in Germany (*Agence France Presse*, 2 November 2000). The enormous cost overruns even surpassed the break-even point established by Ceske energetické závody (CEZ), the utility. The German anti-Temelín movement included environmental NGOs who joined with counterparts in Austria and the Czech Republic. The strategy was to force an in-depth EIA and raise public awareness through protests and the boycott of Czech-imported nuclear energy – a position supported by Environment Minister Juergen Tritten and Economics Minister Werner Muller. In July 2001, the German government formally asked the Czech government to revise its decision to operationalise Temelín (*Financial Times*, 8 July 2001). The Bavarian Economics Minister Otto Wiesheu complained that a boycott was a violation of free market competition as well as Czech sovereignty (CTK, 31 May 2001). Nonetheless, E.ON, a German power company, said it would cancel contracts with CEZ to import electricity. Meanwhile, Bavarian border towns launched a campaign to stop Temelín with petitions, in February 2002, Bavaria asked the Czech Republic to close Temelín (CTK, 14 May 2002).

A difficulty with the boycott strategy is the inability to distinguish between sources of electricity. Other German companies kept the CEZ contracts and purchased electricity indirectly through ENRON (CTK, 1 June 2001). Germany never threatened to block Czech accession over Temelín, although it is committed to close its own nuclear plants within 20 years. The Czechs were very aware of the anti-nuclear feeling in the Bundestag and tried to be responsive to inquiries. A study by the German Society for the Safety of Nuclear Facilities and Reactors said Temelín met international safety standards except for problems that could result from a break in the feeding water pipes (CTK, 19 December 2000).

Relentless Austria

Austrian Chancellor Schussel was in the awkward position of criticising the EU for lacking uniform nuclear energy standards, while demanding that Temelín comply with safety standards valid in EU countries. Since there are no EU standards, which national standards should apply? German, French and British standards are not the same. Czechs officials argued that the EU could not apply pressure to candidate states about nuclear power because it lacked the competency to do so with existing members. However, the EU position was that it could force an EIA on non-members even though it was not called for in EU legislation.

The conclusions of the Melk Process issued on 29 November 2001, defined a follow-up process. The agreement between the Czech Republic, Austria and the EU was 130 pages long. Each state recognised the sovereign right to its own energy policy, but there would be joint monitoring and cooperation to increase energy efficiency. In late November 2001, Chancellor Schussel changed his position regarding closing the Czech energy chapter. The Austrian Foreign Minister Benita Ferrero-Waldner implied that the energy chapter could be reopened, but she did not receive support from other foreign ministers. The Austrian Parliament passed a resolution giving it the right to reopen it in the future. This, however, would be highly unusual requiring the support of the Commission, which was supporting the Czech position. However, the Austrian Vice-Chancellor, Susanne Reiss-Passer (FPOe) still maintained that Austria take a stronger stand without fear of being isolated in the EU.

Why did Austria finally abandon a veto of Czech accession? First, Austria lacked support in the EU Council. Second, Chancellor Schussel risked jeopardising the strength of his coalition in a long, difficult and unpleasant fight. Having just recently been isolated by EU bodies and member states following the inclusion of Haider's right-wing FPOe in the government, Austrian officials were loath to risk being the 'outsider' again

and being subject to reprisals in the European Council. EU Commission President Prodi rejected demands for safety guarantees at the EU level. There was no legal basis for stopping Temelín. Finally, the proposed conference on nuclear power at the EU level was rejected by the Commission, as it deferred to the Czech Republic. In April 2002, the government of Upper Austria brought suit against CEZ in an Austrian court. The court rejected the claim saying it did not have the right to rule because the Czech Republic was sovereign – possessing the right to make decisions concerning its own territory. The Upper Austrian government is appealing (*CTK*, 26 April 2002). These factors give rise to the need for an examination of ‘sovereignty’ and the relationship between EU and member states and candidate states. The Temelín case also casts doubt on the effectiveness of the veto, if a vetoing state risks isolation and accompanying retribution.

At the December 2002 Copenhagen Summit, at which the CEE states were invited to join the EU, Austrian officials wanted to embed a protocol to the accession treaty with the Czech Republic making the Melk Protocol subject to international law and subject to enforcement by the European Court of Justice. Lacking an EU nuclear energy policy and given the influence of the nuclear states, the attempt failed. Nuclear member states may have feared that such a move might put other nuclear power plants under European Court jurisdiction with possible lawsuits initiated by anti-nuclear groups. However, Austrian right- and left-wing parties argued that without enforcement mechanisms, the Melk Agreement was meaningless. Chancellor Wolfgang Schüssel and Prime Minister Vladimir Spidla did agree on a declaration to be attached to the Czech Accession Treaty pledging the fulfilment of the Melk Agreement. It remains a bilateral agreement and not subject to international law. However, Austrians may turn to other strategies such as the International Court Justice, petitions or a national plebiscite.

Temelín Problems Continue

Most of the shutdowns and delays at Temelín were due to problems in the non-nuclear system. From the time CEZ put Temelín in test mode in October 2000, failures and shutdowns plagued the utility and the State Office of Nuclear Safety (SONS). Western European Nuclear Regulators Association (WENRA, the EU’s nuclear safety advisory body) reported some safety concerns on the basis of the different safety concepts in Eastern and Western technology, which did, and would, continue to cause technical problems and delays (*CTK*, 20 November 2000). WENRA’s President, however, left the decision of whether nuclear safety should be a factor in Czech accession, to the EU member states (*CTK*, 9 November 2000). In

November 2000, there was an automatic shutdown; in December, there was a failure of condensation pumps. After Temelín was connected to the grid, there was an oil leakage in a valve that controlled the amount of steam going into the turbine. The same situation happened in January 2001, but with a fire causing a two-week shutdown. A crack was found in one of the pipes and it was replaced (*CTK*, 17 January 2001). Because of excessive vibrations, 44 steel rings were welded to the vibrating ducts. The plant was closed again in March 2001, when another leaking oil control valve caused tens of litres of oil to escape from the primary circuit.

In March 2001, Skoda Energy adjusted some control valves trying to eliminate vibrations in the steam pipes leading to the turbines. The problem continued into May, when Temelín was to go back online. In June 2001, new control valves to eliminate vibrations on the intake piping were replaced by Skoda Energy. Temelín was shut for three months during the summer of 2001. During this time, Upper Austria issued a study by Hanover physicist Helmut Hirsch warning that the reactor vessel could become brittle due to high nickel content, that there were possible defects in the steam pressure piping, and that the containment of the primary cooling system was below Western norms (*BBC*, 2001). He concluded that Temelín did not meet EU safety standards and that the probability of an accident was 100 times higher than at other modern plants. Problems continued and Temelín was shut again in September of 2001 for 13 hours because of instability of turbine rotations. The response of a CEZ official was that Temelín could run at 100 per cent output and begin commercial operation, but it would be like driving in a fog (*CTK*, 20 September 2001)! Through 2001 and 2002, there were more closures. In mid-January 2002, technical malfunctions caused the plant to discontinue testing at 100 per cent capacity. A two-month shutdown occurred prior to June 2002. Problems continued into 2003 as Unit 1 experienced additional shutdowns. After Unit 2 was launched in May 2002, it too had technical problems such as requiring that its turbo-set rotors be replaced twice. Although both units have been connected to the grid, by early 2003 they were still not contributing a continuous and reliable energy supply.

NGOs Play a Hand

Generally, Czech NGOs were never successful in challenging the government position favouring Temelín except for a brief period in early 1998, when the transitional government's environment minister publicly opposed the plant, opened a media debate and authorised a cost/benefit study comparing energy futures with and without Temelín. Although NGOs participated in creative demonstrations in Prague and at Temelín, and

attempted to raise public awareness and provided information, it was the intervention of foreign NGOs and green political parties which forced the public hearings and EIA within the context of the EU accession process. During the Melk Process NGOs had a formal role in presenting their views.

The groups most successful and active in opposing Temelín were Hnutí Duha (Rainbow Coalition), South Bohemian Mothers, and Greenpeace. Rainbow and Greenpeace were on a police subversive list issued by the Prague Police in June 1996, until they protested and were removed (also on the list was Children of the Earth). Many of Duha's activities included demonstrations and protests that gained media attention and had a national presence. South Bohemian Mothers, headquartered in Ceske Budejovice, near Temelín, was more focused on the plant itself and organising the local community. It boycotted the Melk Process hearings to draw attention to the insufficient time for expert analyses and lack of serious consideration of the zero-option for Temelín. In 2001 it was successful in its lawsuit against the local District Authority in Ceske Budejovice for approving Temelín without an EIA and successfully defended itself against charges of 'harming the reputation' of CEZ as well as the Minister of Trade and Industry, Miroslav Gregr.

The Czech Perspective on Privatisation of CEZ

While Temelín was portrayed as an opportunity to retire coal-fired plants, in fact, not much progress has been made. There is no plan for reducing coal mining or retiring old coal plants. Many plants cannot be retrofitted to reduce emissions. In 2001, government officials stated that when the CEZ utility is privatised, the new owner must guarantee the purchase of 28 million tons of coal from Czech miners over 15 years. It also stipulated a level of output from coal-fired plants to be maintained to meet anticipated growth in electric demand, along with nuclear power (*CTK*, 17 December 2001). This will hurt the development of environmentally benign energy sources and conservation. The Czech Republic now exports electricity without Temelín online. The surplus when Temelín comes online will be even greater, making the plant a revenue producer. Temelín is critical to the privatisation of CEZ, which has a monopoly of production and distribution. CEZ is being sold as a bloc, perhaps to prevent the less marketable items from being stranded and the various components from being separated.

CEZ needs Temelín operational and in good condition if the government is to receive a good price. It has been suggested by Radko Pavlovec, Upper Austria Government Commissioner for Nuclear Power Facilities in Other Countries, that there has been pressure to move forward on Temelín because of pressure to privatise by MIT. The short list of potential buyers was

Electrobel of Belgium, Enel (Italy), Iberdola (Spain), a consortium of NRG Energy (US) and International Power (Great Britain), and Electricité de France (EdF). The latter was the favourite. In December 2001, Prime Minister Milos Zeman cancelled the tender, citing underbidding of prospective buyers. There were questions about the bid of EdF which was late and never opened, because the government made public Enel's bid giving EdF an advantage in a second round of bidding (*Prague Post*, 28 December 2001). EdF demanded that the Czech government be responsible for any damages incurred if the Czech Republic ceased to use nuclear power in the next 20 years as well as the responsibility for disposing of nuclear waste. Privatisation has nevertheless been postponed. For EU accession, it is important that the government divest of monopolies.

A primary concern of anti-nuclear activists is that when Temelín is finally sold to a foreign company, the Czechs will lose oversight over the safety of the plant. In such a scenario, Temelín could be producing surplus electricity to supply Europe while the Czech Republic incurs environmental risks without the ability to closely monitor and control a nuclear power plant within its borders.

Energy Policy in the Czech Republic

The Czech Republic has been trying to move closer to EU policy in the energy sector. Over 75 per cent of electricity is generated from fossil fuels, 3 per cent from hydro, 20 per cent from nuclear, and an insignificant amount from renewable resources. Given the pressure to reduce air pollution from coal mining and coal burning, coal is not projected to have a long-term future unless environmental regulations are modified. In the 1990s, the government encouraged the public to switch from coal to electricity by subsidising the price of electricity. This increased demand was used as a justification for completing Temelín. Demand is forecast to continue to grow. MIT Minister Miroslav Gregr has proposed that more nuclear plants could be built (in North Moravia) to meet these projections. The Czech government has also stated that any new plants built after 2015 will have to use primary sources other than coal.⁵ With nuclear power cast as a strategy to comply with the UN Framework Convention on reduction of greenhouse gases, it appears that a nuclear future is part of the country's long-term energy policy. In spring 2003, the Minister of Industry and Trade proposed a draft plan that would double the size of Temelín. It was met with criticism from opponents of nuclear power in the Czech Republic and Austria who instead support more financial support for renewable energy (*CTK*, 6 March 2003, 6 June 2003).

The Environment Ministry projects that renewable energy, which accounts for 2 per cent of the energy sector, will increase to 4–6 per cent by

2010. The development of this sector is one of the objectives of the 6th Environmental Action Programme of the Commission. The stated goal of the government is, 'creating a well-functioning, non-discriminating, transparent and motivating system of support and power savings, effective use of renewable energy sources, and co-generation of electricity and heat'.⁶ While there are references to sustainable development and its significance in EU policy, the government admits there has been no improvement in the business, or public, approach to energy savings or renewable energy sources.⁷ The MIT has a lower projection for renewable development of 1.5 per cent to 3–6 per cent by 2010, and 4–8 per cent by 2020. There are plans for energy savings programmes by the State Energy Agency. Because they estimate that more funds will be needed than are available, they are looking to the EU and World Bank for support. The new Energy Law and the Law on Energy Management, which came into force in January 2001, established rules for business operations using environmentally sound practices. There is also government support for energy audits, efficiency standards, labelling of appliances, and co-generation [*Ministry of the Environment, 2001*]. However, since energy prices are still below world market rate, there is little incentive to conserve energy [*Kramer, 1999*].

The mining of uranium has supported the nuclear power industry. Run by the state company Diamo, it employs about 1,000 workers. The EU would have liked the market opened to other sources of uranium, however, in the New Energy Act of 2001, Diamo has a two-year contract to continue to supply CEZ with uranium ore. The Czech Republic said it would lift the ban on imported uranium by 2002. The Environment Minister and the Foreign Minister were concerned that these restrictions would undermine Czech credibility in the EU (*Prague Post*, 15 November 2000).

Conclusion

The dynamics of energy and environmental policymaking in the case of Temelín provides a unique lens for examining the relationship between candidate states and the EU, as well as issues pertaining to the future of nuclear power in Europe. Many actors from within the Czech Republic, neighbouring states and the EU played supporting roles. Internally, the Czechs had to decide whether to continue a technically and economically questionable project. NGOs continued to gain strength as they found foreign allies, especially in Austria and Germany. The Environment Ministry and MIT were often at loggerheads, and decisions were ultimately made at the highest levels of government. Energy policy was made by MIT without consideration of or integration of environmental goals such as the development of sustainable means to comply with the EU 6th

Environmental Action Programme. The government vote in the Czech Republic in 1999 to continue Temelín was very close. Afterwards, ministers opposing Temelín had to support it publicly even as the cost escalated beyond all projections and delays in getting the plant operational mounted. These problems came as no surprise to many anti-nuclear NGOs as well as a number of scientists and environmentalists. Consequently, Temelín is regarded with pride by some Czechs and is perceived as a monumental blunder by others.

The Temelín case illustrates the limits of existing environmental policy not only in the Czech Republic, but among the member states of the EU where the long-term impact of nuclear energy has not been considered fully. Similarly, the World Bank has also met with mixed results in its attempts to close Soviet-designed nuclear power plants in Slovakia and Ukraine [*Gutner, 2002*]. EU approval of Temelín, while keeping the issue separate from Czech accession, overlooked difficult issues concerning nuclear safety and the desirability of an enhanced nuclear future. EU funds for nuclear power compete with commitments to support renewable energy. That the Commissioner for Energy and Deputy Chair of the Commission, Loyola de Palacio looks favourably on nuclear power and has indicated that the Commission will set safety standards, may open an EU-wide debate about the appropriate energy mix necessary for meeting sustainable environmental goals [see *European Commission, 2002*]. Based on this pending support, Bulgaria is considering building a new nuclear plant to compensate for the loss of its Kozloduy plant. At the same time, Finland is considering new nuclear power, Sweden is rethinking closing its plants, and Germany may be dragging its feet in closing its nuclear power plants. Yet, some attempts to set EU-wide minimum safety standards based on those from the International Atomic Energy Association is moving forward, partially as a result of the enlargement process [*European Commission, 2003*].

Temelín became an international issue when Austria and NGOs challenged its completion. Austrians, and later Germans with memories of Chernobyl, tried to stop construction of the plant and continued to oppose its operationalisation, supporting the sovereign right of a state (such as Austria) to protect its citizens from potential harm. Local government officials took independent action as well as pressuring their federal government. In Austria, almost all political parties eventually opposed Temelín, but advocated different strategies. The most adamant was the far-right Freedom Party (FPÖ) of Jorg Haider. Both Germany and Austria have non-nuclear power policies, achieved by referenda in each state, so there was ample reservoir for anti-nuclear sentiment.

The intense bilateral negotiations over Temelín between the Czech Republic and Austria coincided with, or could be considered to be, the result

of the Czech accession process. The Czech position was that if the plant was deemed unsafe by EU standards it could be closed. The Czechs argue that their plant has been scrutinised more than any Western European one. The problem was that there was no guidance from the EU because it could not agree on a nuclear policy. Standards for high nuclear safety are also lacking. The Austrians threatened to veto both the environment and energy chapters unless a new and comprehensive assessment was made of Temelín. The goal was to close Temelín or delay Czech accession. This was interpreted as extreme pressure or blackmail by most Czechs. Austrian opposition to Temelín was also perceived as outside interference threatening sovereignty. A few Czech leaders used the issue to arouse populist and nationalist resentment as well as old historical Austro-Hungarian antagonisms. As the plant became an object in Czech accession to the EU, the Austrians hoped this would be an opportunity for the EU to take a position on the future of nuclear power. Austria's aim was to raise questions, such as, is nuclear power consistent with sustainable development? What of long-term waste disposal and decommissioning?

Austria also raised the issue of cross-border environmental impact and sovereignty to public attention. Is a state free to decide how it will produce electricity? Is the answer yes for current member states and no for candidate states? If the majority of Austrians thought its government should try to convince its neighbours to abandon nuclear energy, does not Austria have the responsibility to do so? When the Czechs refused to stop construction pending an EIA, Austria increased its diplomatic pressure bilaterally and within the EU. For the Austrians, there was little room to compromise – the plant is either opened or closed.

Candidate states, in general, became more aggressive in the accession negotiations (for example, agricultural policy parity with Western Europe) because of the time schedule. In the future, a candidate state may want to use something similar to the Melk Process to expand the scope of conflict to garner support for its position from other candidate states or even member states. On the other hand, EU bodies (when unanimity has existed and when funds for closure were promised and provided) have forced candidate states such as Bulgaria and Lithuania to accelerate the closure of a small number of nuclear power plants deemed quite dangerous [*Gutner, 2002*]. The EU made termination of an unsafe nuclear power plant in Bulgaria a condition to begin EU accession negotiations [*REC, 2002*]. Without the spectre of EU membership it would have been much more difficult to close unsafe plants. Even so, Bulgarian officials and nuclear power interests continue to discuss the scheduling closing of a number of reactors in Bulgaria [*Andonova, 2002*]. These debates continue, at least in part, because Bulgaria has electricity export opportunities.

The EU could use the accession process to increase transparency in candidate states and support NGO pressure on their governments for information on environmental impacts of energy. Down the road, other candidate states will need guidance on energy policy. Decisions made during the accession process will affect the EU, especially after these states, some of which have Russian-designed nuclear power plants, achieve membership. However, expanding the scope of conflict could backfire if the EU goes down the path of harmonising nuclear standards, using the lowest common denominator.

NOTES

1. For a brief discussion of nuclear power in Central Europe, see Kramer [1995].
2. For a more detailed discussion of environmental policy and Temelin, see Axelrod [1999].
3. Contribution of the Commission services to question no.1 of the questionnaire submitted on 13 Sept. 2000 by the Presidency of the Atomic Questions Group in the framework of the mandate received from the COREPER on 26 July 2000 – Non-Paper (29 Sept. 2000), p.2.
4. See European Parliament resolution on the Czech Republic's application for membership of the European Union and the state of negotiations (COM(2000)703-C5-0603/2000-1997/2180(cos)) minutes of 9 May 2001.
5. See 'Energy Policy' pursuant to the decision of the Government of the Czech Republic of 23 June 1999, No.632 and §14 of the Act 244/1992 Col. On the appreciation of influences on the environment, p.26.
6. Ibid, p.5.
7. Ibid, p.4.

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