

## **Mochovce Nuclear Project in Slovakia: ENEL and Italy export serious nuclear risks**

*Briefing Sheet, April 2007*

### **Summary**

The Mochovce 3 & 4 nuclear power plant is perhaps the most outdated project that can be found anywhere in Europe. It consists of two 440 MWe reactors designed in the Soviet Union back in the 1970s. This is the reason why it is missing major and crucial safety systems that were introduced after the Chernobyl disaster. The most visible deficiency of this kind is an entirely missing containment (a solid structure above the reactor to prevent leakage of radioactivity to the environment and to protect the reactor from external events, such as a crash of an airplane).

In short, it is a one-and-a-half-generation older design than recent nuclear projects, such as the EPR in Olkiluoto in Finland or Flamanville in France. Yet, the new owner of the unfinished project – the Italian utility ENEL – is seriously considering finishing these blocks and putting them into operation after the year 2012. No western European country - such as France, UK or Germany - would today allow such reactors to be newly built and put on line.

What makes this story even more monstrous is that Italy had a plebiscite in 1987 that decided to close down all of its own reactors due to safety concerns. Twenty years later, it is a Italian utility, controlled significantly by the Italian government that plans to build the most risky nuclear project in Europe.

Besides safety, there other serious concerns raised around the Mochovce 3 & 4 project: the legitimacy of its approval and poor economics. The project is supposed to be finished on the basis of a permit issued by communist decision makers in 1986, with no public participation or even a proper environmental impact assessment process. Due to high financial risks on the side of the investor, the Slovak state that has been pushing the project forward provides ENEL with generous benefits and support, including financial state-aid that is most likely illegal under EU legislation. The Slovak government basically tries to bribe ENEL into a project that it would not be able to carry out in its own country!

The final and formal decision of ENEL about this project is expected during May 2007, and should be based on a feasibility study to be completed during April. Various environmental groups in many European countries are opposing this project. They raise an appeal on the Italian cabinet and on ENEL directors to abandon the project and invest rather into badly needed improvements of energy efficiency and the development of domestic renewable energy sources in Slovakia.

### **Background**

The Mochovce nuclear project, currently considered by Italian utility ENEL, consists of two reactors of a very old Soviet design. These are pressurized water reactors, with an installed capacity of 440 MWe each. This specific type is known as VVER-440/213 and it is in operation since mid 1980s in places such as Dukovany in the Czech Republic, Jaslovské Bohunice in Slovakia, or Paks in Hungary. Four units were under construction near Greifswald in East Germany, but construction was cancelled in 1990 after the German re-unification because the reactors already then did not meet basic German safety standards.

The construction of the Mochovce 3 & 4 reactors began back in 1987. In 1992, soon after the collapse of the communist regime, building was suspended. Construction is still at relatively early stage. Most of the concrete structures are finished (such as cooling towers, turbine and reactor halls), but a majority of machinery and equipment - the most expensive parts in the total investment – is still missing. In the meantime, several Slovak governments unsuccessfully tried to push the project to be finished, until economic studies showed in 2000 that the project is economically not feasible.

In April 2006, Italian utility ENEL successfully gained control over 66% shares of the Slovak energy utility Slovenske Elektrarne (SE) during privatisation. Immediately after that it began to consider finishing Mochovce 3 & 4 blocks as a key part of its investment portfolio planned in Slovakia. One of the reasons

for this was no doubt a very strong political, pro-nuclear pressure developed by the current Slovak government of Robert Fico.

ENEL announced that it will take a final decision on the project only after a complex feasibility study is finished, which is scheduled for April 2007. Official and formal approval at corporate level is expected during May of 2007.

ENEL is still a semi-state owned company. It states on its own website that *"The Italian Economy Ministry holds 21.4% of the company directly and another 10.2% indirectly through state-run lender Cassa Depositi e Prestiti, leaving a free-float of some 70%. Shareholders include leading international investment funds, insurance companies and pension funds, ethical funds, along with Italian retail investors."*

With the Italian government controlling more than 30 % of ENEL shares, there is also a clear co-responsibility of the Italian cabinet for the behaviour, strategy and project decisions of the company. Given the fact that Italy chose in 1987 to close down all its reactors because of safety concerns, the Mochovce project is a perfect example of the use of double standards and serious risk export to another country.

## **Key concerns**

The critics of the project point to those three crucial problems:

### **1. Very Low Nuclear Safety.**

The project is based on old Soviet technologies. Due to the advanced stage of construction of buildings, there is only limited space for modifications and improvements. Most visibly, the plant is completely missing containment – a barrier against leakage of radioactivity in case of heavy accident, but also a protection from outside events such as an attack by or fall of an aircraft. While today's modern reactor designs use double containment structure, Mochovce 3 and 4 would have none. Even the Slovak Nuclear Safety regulator (UJD) clearly admits in its written statement from 8<sup>th</sup> July 2004 that: *"... the documentation, based on which the original construction permit was issued in 1986, cannot reflect new requirements for nuclear safety developed over last seventeen years"*.

Although technical upgrades are considered – their scale has not been yet published by ENEL – they can improve safety only to a limited extent. This is not only because of cost limitations, but especially because the existing building structures are designed according to the original plan and this excludes the possibility of large, radical modifications.

### **2. Lack of Legitimacy and No Public Participation.**

The project of these Mochovce reactors was formally approved back in November 1986 – the year of the Chernobyl accident. At that time, communist decision makers did not allow any critical assessment, neither was there any open participation of the public. Ironically enough, today's Slovak government claims that state institutions do not and will not require additional licensing, and they maintain that construction works can be resumed almost immediately just on the basis of the original 1986 construction permit. The Ministry of Environment also confirmed in a letter from February 22<sup>nd</sup>, 2007 that according to law because of the continuity and validity of the construction permit, no Environmental Impact Assessment (EIA) process would be required according to the law. It should be stressed that no full scope and legal EIA process was ever held for the Mochovce plant, not even for the first two reactors finished in the 1990s. This means that citizens and organizations haven't had and will not have any possibility to participate in the decision-making and to influence its results.

### **3. Poor Economy.**

There are official economic analysis, prepared by the former Slovak government in 2000, that indicate that the project, with an estimated costs between 1.6 and 1.9 billion Euro for two 440 MWe reactors, will very likely not be profitable without additional benefits provided by the state. The previous Slovak State Energy Policy, approved in February 2000, states literally:

*"The return rate is 17 years and more. There is a large risk that [...] the project would end up in financial loss. It can be concluded that even under unrealistically favourable conditions the result of analysis is not positive."* Yet, this calculation was done with a budget estimation of only 1.2 billion Euros, without taking into account the costs related to decommissioning and radioactive waste management. This reality has forced the new Slovak government to provide ENEL with significant benefits, including special financial mechanisms, in order to compensate the risk of expected loss. However, such arrangements lead to market distortion and are most likely against EU regulations and laws. Should these subsidies be declared illegal and stopped, following an investigation of European

Commission, the project would end up in an economic loss for ENEL and Italian and foreign shareholders.

## Important Questions

- **Are the Mochovce reactors not needed to replace the closed Bohunice reactors?** The proponents of the Mochovce 3 & 4 reactors sometime argue that Slovakia needs them to replace two reactors in the Jaslovské Bohunice V1 plant, ordered to be shut down by EU before 2009. The fact is that the closure of Bohunice V1 was announced and planned already in mid 1990s, and that the Slovak government of that time decided to build the Mochovce 1 & 2 reactors as their replacement. Therefore, building a third and fourth reactor cannot be considered as a replacement of lost capacity. In addition, Slovakia has been a net exporter of electricity in the past several years, so that there was obviously an overcapacity. Last but not least, many new projects for power plants are being developed – including some projects by ENEL itself – that, when combined, would bring much larger capacity than the Bohunice V1 reactors.
- **But there are other reactors of the same kind in operation. Why should Slovakia not be allowed to start another two of them?** The fact is that the already running reactors of the same kind (VVER-440/213) were finished and started during 1980s, and their level of safety is comparable to other reactors of the same generation. They are mostly already after the middle of their designed operational life. Since 1980s, safety requirements and demands have seriously advanced, but Mochovce 3 & 4 cannot meet today's standards. In fact, finishing them in 2012 (as planned) would mean that at the moment of their start-up, their concept and design would be already forty years old and outdated. On top of that, the only case in which the general safety level of the VVER-440/213 design was seriously established – the assessment during the German re-unification process of the four reactors under construction in Greifswald in Eastern Germany – showed that this design was not able to meet safety standards applied already that time in Germany. Construction in Greifswald was therefore halted.
- **Does Slovakia not need to build new capacities and to reduce dependency on Russian gas?** Another argument says that Slovakia simply needs more capacities to cover expected economic growth and raising demand for electricity. But in fact, what the Slovak economy needs in the first place is to improve the extremely poor energy efficiency (it consumes 4.5 times more energy per unit of GDP than the whole EU-25). Second, with only a 3.5 % share of renewable energy sources on its total gross energy consumption, Slovakia needs to boost the development of renewable energy sources that are sustainable and domestic and thus can help to reduce heavy dependency on imports of energy sources from Russia. It should be noted here that the technology of VVER-440/213 would have to be largely imported from Russia, and that Russia is the only and monopoly supplier of nuclear fuel for this type of reactor.

## What we demand

1. Italian ministers as well as the Italian government as a whole must take all possible steps and employ full ownership rights and tools to force ENEL Spa to abandon the Mochovce 3 and 4 project.
2. ENEL must restructure its investment plan in Slovakia in such a way that a much larger portion of it is spent on decentralised energy technologies, including renewable energy technologies and energy efficiency.

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