

ENCI'S STRUGGLE FOR THE MARGRATEN PLATEAU
-
A CLASH OF ECONOMICAL AND ENVIRONMENTAL INTERESTS

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Introduction:

Maastricht, 16th of December 1991: It was an ordinary day at the ENCI cement factory. Excavators dug off limestone in the Sint Pietersberg quarry, a bit south of the city. Clinker was made in the large furnace and cement was filled in sacks or tank cars wherewith the product was brought to the consumer. Everything was normal on the day the excavation actually should have stopped. According to old calculations and concessions, the quarry should have been emptied up by then. ENCI's plans were to start a new quarry on the close-by Margraten Plateau that offered them 200 million cubic meter of marl. Already in 1976, ENCI requested a concession for the excavation of the Margraten Plateau, from 1991 till 2030. This request upset the local population so much that they wrote thousands of protest letters to the regional government. The Margraten Plateau, used as agricultural area, was a unique landscape in the Netherlands and could therefore not be excavated, they argued. By contrast, ENCI regarded the marl under the surface as much more important than the landscape and therefore the plateau had to be dug off – a clash of interests appeared: Those of ENCI versus those of the opponents of an excavation. Both parties discussed their arguments for 13 years until in the end the decision makers accredited the opponents' view and the plateau was spared.

This essay illustrates the extensive struggle for the preservation of the Margraten Plateau. Thereby, it will analyze the upcoming of an environmental movement that increasingly gained influence. Did ENCI lose the struggle because it was 'in' to be green? Were alternatives available so that the Margraten Plateau could be spared? What happened between 1976 and 1989 that made the excavation not necessary anymore? Did technological progress play an important role? Did the movements make the crucial difference? These are questions this essay is going to answer.

The opposing views on the Margraten Plateau will be analyzed with a SCOT (Social Construction of Technology) perspective. SCOT is a theoretical framework that was developed by Wiebe Bijker and Trevor Pinch in the 1980s. It studies the development of technological artifacts, for instance bikes or bulbs. In addition, one examines the artifacts' relation to relevant social groups, which all have different interests in the artifact. Besides this, the content of a technological artifact is related to a wider sociopolitical milieu. However, SCOT does not focus on artifacts only, the approach is also applicable to planning projects. This feature makes a SCOT approach appealing for the study of the struggle for the Margraten Plateau. As a theoretical framework, it will help to analyze the interaction between the two social groups, ENCI and Comité Mergelland, and their negotiations. Social groups

tend to develop so-called ‘technological frames’ which consist of goals, problems, standards, theories and practices. Such a frame is, in other words, about their view on the issue at stake. In the case of the Margraten Plateau, ENCI and the opponents both developed their own technological frame about the discussion that in the end had to be merged. How did this come about?

Besides the analysis with the help of SCOT, this essay offers an industrial and political history: First, it will look at the origins of the Dutch cement industry. Secondly, it will explore the research that led to the decision of ENCI to request a concession to excavate the Margraten Plateau. In a third step, the massive protest will be depicted and also integrated in the upcoming of an environmental movement in the Netherlands. A fourth chapter looks at the problems in the process of decision-making and presents several studies that explored pros and cons of the possible excavation. The fifth chapter gives insight in the decision-making process where firstly the Crown decided for a postponement of the excavation and later the minister decided to spare the Margraten Plateau forever. In a sixth chapter, the discussion will be analyzed with the means of the SCOT approach. A concluding chapter will summarize the findings in order to answer the questions: On which grounds was the concession that was about to end in 1991 extended and how did the protest of the inhabitants around the Margraten Plateau manage to prevent an excavation of the area?

Chapter 1: The history of the Dutch cement industry 1790-1969 and the production process of cement

Alongside with proceeding industrialization of the Netherlands, more and more buildings were not made of stone anymore, but with concrete. In order to make concrete, you need cement, gravel, sand, and water, whereby cement is the binder. Cement then, is made from clinker, which again is made from limestone as for instance marl. Many different processes are needed until concrete comes into existence: they all start with the quarrying of limestone as it is done in the Sint Pietersberg. The marl is crushed and blended with loam and pyrites. The three materials are grinded, dried and mixed together with slate, before the mix is fired in a large furnace. Small grains are produced – Portland cement clinker. Finally, clinker is blended with a small amount of plaster and grinded in a cement mill. Here, cement comes into being, which then is stored in silos or filled in sacks and transported to the consumer (Cf. Heerding, 1971, p. 226).

Cement was used for the first time in the Netherlands around 1790. Heerding quotes eyewitnesses’ reports about a lock near Muiden, which was built from cement. They were

very satisfied with the new material. In the time from 1820 till 1850, Portland cement was developed, which was fired, in contrast to the former binders that were not. Especially English scientists steadily tried to improve its quality in the second half of the century. The first Dutch Portland cement factory was set up in Delfzijl in 1870. Five years later, a cement factory was founded in Zuid-Limburg, too. It was situated in Vijlen-Vaals, close to the border with Aachen, and produced 8000 tons of cement a year (p. 65). The official ‘First Dutch Cement Industry [Eerste Nederlandse Cement Industry]’ however was founded in Maastricht in 1926. After World War I, the small factory’s production did not meet the demand anymore. In addition, one had learned lessons from the war, that import of cement made the Netherlands dependent on other countries and their prices. During the war, there was shortage of cement since the import from England, Belgium, and Germany got a problem. Therefore, one decided that the Netherlands needed a larger domestic cement industry. Consequently, ENCI was founded and a factory was set up at the Lage Kanaaldijk in Maastricht, where marl from the Sint Pietersberg was available. What was more, a channel directly in front of the factory guaranteed a good infrastructure for the transport of goods. Stakeholders of ENCI became a Belgian-Swiss cooperation of CBR (Cimenteries et Briquetteries Réunis) and Holderbank; both were experienced in the cement business. “In 1928, when the first of the four furnaces was enkindled, a part of the Sint Pietersberg had already given way to the place where the furnaces stood,” said Lambertus Klinckhamers, a former chemist at ENCI. Already in 1929, 161000 tons of ENCI cement were sold on the Dutch market (p.113), roughly 20 times more than the small factory in Vijlen could produce. The overall demand of cement almost tripled in a period from 1920 to 1930 (p.116).

During World War II, the production continued on a lower scale. After the war, ENCI received a Concession (concessie) for the Sint Pietersberg quarry, which was given to them for 60 years, thus for a period from 1950 till 2010. This was a general permit to excavate. Vergunningen (concessions with a small c) regulated in greater detail the areas and quantities to excavate. These were given for a short period only, for three or five years at that time. “Later”, according to Bas Rijk who worked at ENCI as land manager, “was said by the government; in order to reduce bureaucracy, concessions will be given on a long term basis. For us, this was also an advantage regarding the investments.” Moreover, the demand of cement was skyrocketing: “After the war, many houses were uninhabitable and roads, harbours, and bridges were destroyed. The Dutch state took upon itself the task of repairing the damage, and launched a building programme employing hundreds of thousands of construction workers” (Jamison, Eyerman, Cramer, & Læssøe, 1990, p. 124). Not only many

construction workers were needed, also the cement industry - ENCI - as supplier of one of the most important aggregates benefited from the building programme. “After a disastrous flood in February 1953, which inundated part of the area along the south coast of the Netherlands, the government launched a Delta plan for the construction of a large number of dikes, bridges, and dams, which also created many jobs” (p.124f). The numerous building projects like these were of great advantage for ENCI. The consumption of cement rose from 1.6 million tons in 1950 to 4.4 million tons in 1965, out of which 0.58 tons were made by ENCI in 1950 and respectively 2.95 million tons in 1965 (Heerding, 1971, p. 159). The remaining part was imported.

In 1967, a definitive and utmost concession was given to ENCI, for 25 years of time and an area of 136,5 ha. The concession was called utmost because the rest of the Sint Pietersberg became a nature resort. The terrain has compassed a large part of the hill, starting from the Van-Schaikweg in the north to the artificial hill D'n Observant in the south, the factory in the east and the ENCI-Bos (ENCI-forest) in the west. ENCI was allowed to dig as deep as it was economically and technically feasible. The exact data had to be noted in a detailed working plan ('werkplan'), that ENCI had to hand in every year. The three farmhouses 'Hoeves' Caestert, Zonneberg and Lichtenberg were left outside the concession line, due to the cultural and historical value of these three buildings. The utmost concession line was drawn on maps of the area and staked out with landmarks in the mountain itself. ENCI possessed at that time around 200-hectare of the Sint Pietersberg that was from then on situated outside the line. This terrain was returned to the Province of Limburg and became a nature resort (Rijk, 2009, interview). What was more, ENCI obligated itself to present a restoration plan for the quarry for the time after the end of the excavation (Cf. Nieste, 1997, p. 60). Landscape architect Vallen made this plan in the early 1970s. The plan allotted a lake in place of the quarry; it would become an area for recreation. In order to finance the implementation of the plan, ENCI had to pay 10 cent per ton of marl to a fund that was set up for the costs of the restoration.

In 1968, ENCI purchased furnace 8. The new furnace set them back 300 million guilders. “This was a very expensive investment for the company, but the big advantage was that the furnace worked very economically and production price for each ton decreased,” told Lambertus Klinckhamers. When applying the usual depreciation, this meant that ENCI needed to use the furnace the next 40 years at the spot. From a STS (science and technology studies) perspective, one sees a clear difference between labor-intensive systems and capital-intensive systems like the cement industry. In times of trouble, the former can reduce costs by

laying off workers; the latter however cannot lay off interest payment on machinery like furnace 8. “Durable physical artefacts project into the future the socially constructed characteristics acquired in the past when they were designed” (Hughes in Bijker et al., 1987, p. 77). As we will later see, the supply with materials for furnace 8 would play a crucial role in ENCI’s further policy. The furnace’s durability offered the company a certain ‘trajectory’ which they could not leave that easily. “There was a certain amount of insecurity about the deposit in the Sint Pietersberg, that would, according to the calculation, be depleted before the furnace was depreciated. As from the early 1970s onwards, we searched for alternative marl deposits,” stated Lambertus Klinckhamers, nicely linking one thing to another.

Chapter 2: The 1970s – Plans for a new quarry

The consumption of cement increased steadily until 1973. As from 1974, demand suddenly decreased and settled at a lower but constant level of 5.5 million tons yearly (Cf. Schreuder, Arntzen, & Hordijk, 1980, p. 30). The Economic Institute of the Netherlands NEI (Nederlands Economisch Instituut) forecasted a cement consumption of 6.6 million tons in 1990 (Cf. Volmer, 1976, p. 9). Even further in the future, they extrapolated a consumption of 7.3 millions of tons. ENCI was producing 2/3 of this, which would have been circa 5 million tons a year. That was considerably more than 3.75 million tons which they produced in 1970. The Sint Pietersberg quarry could not deliver the required quantities of marl to produce 5 millions tons of cement a year. Therefore, ENCI made out two not populated areas in the proximity of Maastricht’s factory that had a marl deposit as well. These areas were firstly the Rasberg, located between Amby, Rothem, Berg en Terblijt and Bemelen. Secondly, there was the Margraten Plateau close to Vilt, Sibbe, Welsden and Gasthuis. Decades ago, both areas had been suggested as alternatives for the Sint Pietersberg, but those plans were discarded at that time. ENCI compared environmental, functional, recreational, geological, and visual aspects of the two areas as well as the route of transport (Cf. Volmer, 1976, p.12ff). The Rasberg terrain showed many disadvantages: At first, it was assessed by regional planners as region with a great value of nature. What was more, it was further away, was used for drinking water extraction, contained less marl than the Margraten Plateau and digging off had meant a vast disturbance of the landscape which would have been visible to many people that lived close-by. By contrast, the Margraten Plateau was entitled to be a less worthwhile region. Nevertheless, there were considerations to call it an agricultural-recreational (‘park’) area. All in all, the Margraten Plateau “had in most points fewer disadvantages and was more

economically” (p. 17). Therefore, the ENCI opted for the Margraten Plateau as area for excavation.

In the meantime, the parent company CBR opened a new furnace in Lixhe (Belgium), just a few kilometres upstream the Maas. As from May 1976 onwards, ‘furnace E’ started production. This affected ENCI in Maastricht too, since CBR arranged that 700.000 tons of clinker from Lixhe were brought to and processed in Maastricht every year. The import increased the capacities of ENCI Maastricht in an enormous way. However, they said that the import would not eternally continue, so ENCI was still looking for a second quarry in the Netherlands.

On November 8th 1976, ENCI sent a request for setting up a limestone quarry at the Margraten Plateau to the Province of Limburg. There were three main reasons, why ENCI looked for new terrains for quarrying. In first place, the continuity of the company played an important role. As already mentioned, the cement industry was a capital-intensive industry, thus was bound to a certain trajectory. ENCI referred to this aspect with regard to the reason, why they were already then bothered with what was going to happen after 1991. The second point in ENCI’s argument were the almost 900 employees that were working there at that time. If ENCI was not allowed to excavate the Margraten Plateau, production would have to stop and all workers would be laid off. ENCI hit the government hard with this proposition, since due to the mine closing 45.000 persons lost their job lately. Zuid-Limburg’s unemployment rate was higher than anywhere else in the Netherlands. Besides the 900 jobs at ENCI, also jobs at suppliers and subcontracting firm were to get lost – altogether 1350 people. Thirdly, ENCI stated that marl digging was of national interest. ENCI and its spin-offs Cemij and Robur produced two thirds of the Dutch cement demand. ENCI said that you could not import materials (for instance marl) as easily as products (for instance cars); therefore, a domestic supply with marl was necessary (Cf. Neeleman, 1980, p. 5ff).

Little wonder, that the request to excavate the Margraten Plateau triggered protest. ENCI had already expected this and therefore asked for the concession quite early in order to gain time for dealing with the protesting people. What they did not expect was the extent the protest got. Within a very short period, more than 8000 citizens expressed their concerns regarding the excavation. In addition, the burgomasters of the towns Bemelen, Margraten, Valkenburg-Houthem and Wijlre wrote a joint letter to the Provincial Executive (Gedeputeerde Staten van Limburg) on 14th of February 1977. They underpinned that an excavation would damage the valuable landscape. Further concerns were the drinking water supply, a disturbance of recreational activities, farmers who would lose their jobs and the

pollution which would be caused by the excavation. The regional government also received protest letters from the Dutch Ministry of Agriculture, Nature and Food Quality (Ministerie voor Landbouw en Visserij), the agricultural and gardening organisation (Land- en Tuinbouwbond) as well as regional environmental initiatives (Stichting Het Limburgs Landschap & Milieufederatie Limburg). In February 1977, Superintendent Merlyn L. Grove of the close-by American military cemetery expressed in a letter her “deep interest in any activities which would detract from the dignity and aesthetic character of the cemetery site.” The Provincial Executive replied that this concern was gratuitous because there would be 850 meter distance between the quarry and the graveyard at least (Provinciale Griffie van Limburg, Stukken betreffende de adviezen en bezwarenschriften).

The protesting people scrutinized the reasons that ENCI offered for the excavation request: Is an autarky of cement supply really necessary? Are there any guarantees that ENCI is going to employ 900 workers in 1991 and thereafter? What about the cement demand? How will the consumption develop? What about the jobs in the agricultural sector that the Margraten Plateau offers? Isn't there a plan to turn the Mergelland into a national landscape resort?

Indeed, the whole area of 20.000 hectare had been declared to become a test region for a national landscape resort (Nationaal Landschapspark). The idea of landscape resorts was in its infancy at the time when ENCI requested the concession for the excavation of a comparably small part of the Mergelland. That is why it became a test region. “We can find in this region the for Zuid-Limburg characteristically dry valleys and hollow ways (droogdalen en holle wegen). Accompanied by steep gradients, it makes this landscape something unique in the Netherlands” (Van de Gazelle, 1980, p. 4). In addition, flora and fauna were different than anywhere else in the country. What was more, the ancient Roman road from Maastricht to Aachen crossed the planned quarry. All these arguments needed to be studied by a commission that was organized by the Provincial Executive. They concluded that the planned quarry would be a comparably small part of the whole region, so it would not disturb the beauty of the landscape much. A second advisory body, this time members of the Agricultural University in Wageningen concluded by contrast that an excavation would destroy the landscape considerably (Cf. Neeleman, 1980, p. 11).

The second concern were the jobs in the agricultural sector. The farmers pointed out that 116 cropping farms did exist at the plateau, most of them offered two or three families a living. One calculated that the excavation would affect approximately 150 to 200 farmers. The farmers complained that they also have a right to continue their small enterprises. Though

ENCI promised that the land would be given back to the farmers, but then 35-40 deeper, this proposal did not calm the farmers down. Firstly, they claimed that the grounds at the Margraten Plateau were very fertile, and there was no guarantee that they were fertile in depth as well. Secondly, fruit growers underlined that for instance their apple-trees would have to struggle with night frost that is more intense in deep valleys. What was more, the protesting people had doubts about the 900 jobs that would be saved if ENCI got the concession. They pointed to the rising level of automation and that ENCI had dismissed 150 people in recent years. Who guarantees the job security even if they are allowed to excavate the Margraten Plateau, the people asked.

The third point was the cement demand. In the early years of the protest, people compared the upward trend that ENCI gave to an extrapolation of the Central Bureau for Statistics (CBS) which by contrast claimed that the boom in the construction industry would come to an end. What they also suggested was importing cement from Germany, where there was over production. In the process of unification of Europe, import should not be a big problem, at least according to the opponents of an excavation, while the ENCI was denying this option (Cf. Neeleman, 1980, pp. 11f). The protest brought about that the Provincial Executive did not dare to decide the case (Bemelmans, 1989, p. 16). What they did was letting the deadline of nine months expire. Normally, they had to decide within that time; otherwise, a higher instance would have to study this case. Mr. Lienaerts who at that time worked at the regional government explained that “since we reacted too late or even not at all, the Minister of Transport, Public Works and Water Management (Minister voor Verkeer en Waterstaat) or, if necessary, the Council of State (Raad van State) will have to decide” (Provinciale Griffie van Limburg, Stukken betreffende het Kroonberoep van de ENCI). In addition, ENCI acted after the deadline was expired, they filed a crown appeal to underline the importance of the request for them. The Provincial Executive still needed to advise the national decision makers, but now they got two years to make a substantial statement. They launched the Commission for an Excavation of the Margraten Plateau (Commissie Ontgroning Margraten Plateau) as advisory body.

On 19th of April 1978, the commission published their advice. Six out of the panel's 18 members voted for ENCI's plans without any reservation and eleven members agreed as well, but explained their decision by pointing to job-security. About a month later, the Provincial Council, the legislative part of the regional government advised in favour of ENCI's plan too. Two days after the Provincial Council had spoken the advice, a demonstration march took place on the Margraten Plateau. On 20th of May 1978, the Dutch

Railways used extra trains to be able to carry the masses to Maastricht. From there, they were taken by bus to the village Cadier en Keer, where the protest march started. After a few rainy days, the sun was shining again that Saturday. Slowly, the square in the village filled with people – people from close-by and far away, farmers and vacationers, environmental activists as well as nature lovers. Eight thousand people gathered in Cadier en Keer and participated in the march, which was led by the farmers' tractors. Blankets and signs were made, stating "Digging off? Never!" and "No marl from Margraten" (Cf. Dorren, 2005, p. 113). As the historian Nanne Dorren quotes eyewitnesses, they were exclaiming 'Ooooooh' when they saw the much smaller quarry near 't Rooth. On the right hand side, there was the plateau, on the left hand side a deep gap. It was the Nekami quarry where marl for fertilizer production was being excavated. The protesting people clearly saw, what the whole plateau would look like in the future and were deeply impressed (ibid.).

Roughly two weeks after the demonstration march, Governor Sjeng Kremers sent a letter to the Minister of Transport, Public Works and Water Management and advised that the excavation should be permitted. He mentioned two main arguments for this: At first, there was the "regional importance of the cement works for Maastricht's employment situation and secondly, the national importance for Holland to have its 'own' cement factory" (Comité Mergelland, 1979b, p. 71). Kremers also put forward a few reservations: The first one was that the concession had to be split up into 20 + 10 +10 years, instead of permitting 40 years at once. Secondly, ENCI had to guarantee the employment of 750 workers. Thirdly, the marl needed to be processed in Zuid-Limburg and fourthly, a maximum of 30 hectares was allowed to keep as an open quarry at one time. After finishing each sector, it would be given back to the landowners. Kremers thus went against all those people, local councils and bodies that were protesting against such an advice, though one can at least find back their argument of guaranteed jobs. The decision was now up to the Minister or eventually the Council of State. However, seven years would pass by before the decision was made.

In 1978/1979, the Comité Mergelland published a two-volume summary of their arguments called *Antithese 1* and *Antithese 2*, a nice play on words with an ENCI report called *Synthese*. The two small books contained many well-argued points that showed that an excavation was not inevitable and that alternatives existed. The above-mentioned arguments against ENCI's claims were included as well. The documents that Comité Mergelland published can be characterized by "a dominant orientation towards realism and concrete alternatives" (Jamison et al, 1990, p. 177). The social scientist Andrew Jamison and his colleagues studied the development of the green movements in the Netherlands from the

1960s onwards. They concluded that in contrast to the 1960s and 1970s, where many environmentalists' movements aimed at "changing basic societal values and norms" (p.10), the movements of the 1980s "put major emphasis on influencing government policy and the development of exemplary alternative strategies" (p. 145). From then on, many movements did not try to alter the society, but tried to solve concrete environmental problems. What the authors figured out about Dutch Green movements in general, suits very much to the Comité Mergelland. For instance, their *Antithese* criticized Governor Kremers for taking over ENCI's prediction of the cement consumption without questioning, as well as for ignoring the fact that the construction industry was shrinking. They also mentioned alternatives for the cement production, like Blastfurnace Cement or Flyash Cement that need less marl per ton of cement. Flyash cement was already used in the US and UK, but not in the Netherlands. "ENCI's own data show that it could continue production (certainly by making more Blastfurnace- and less Portland-cement) if the current concession were extended in time (not in area)" (Comité Mergelland, 1979b, p. 72). By making this statement, they already suggested the alternative that was put into practice years later. The Comité Mergelland was a leader of new wave of environmental movement in the Netherlands. "In sum, we can conclude that in the course of the 1980s most Dutch environmentalists have tended to become more 'realistic' and to focus on concrete alternatives which can be implemented within the present industrialised society" (Jamison et al, 1990, p. 178).

One of the reasons why many Dutch people were getting increasingly concerned with questions about the environment was a report for the Club of Rome called *The Limits of Growth* (Meadows et al, 1972). According to the report, the growth of the past decades would not eternally continue but in the future be limited due to scarcity of food, natural resources and by environmental pollution. The Dutch saw clearly that the economic growth since the end of World War II had not only produced prosperity, but at the same time caused pollution and destroyed the nature. "These ideas of the Club of Rome soon found many supporters among the Dutch public because they corresponded very well with already existing, yet not so explicitly defined, feelings of discontent. It seemed as if in this book all the pieces of the puzzle, so to speak, had fallen together in the right place" (Jamison et al, 1990, p. 136). In their books, the Comité Mergelland referred to the report for the Club of Rome, since it backed their claims and was a motive for their engagement as well.

Chapter 3: Studies and reports, but no decisions (1980- 1985)

Before continuing the story, we will sum up what has already happened since 1976. After ENCI requested a concession for the excavation of the Margraten Plateau, they raised a storm of protest. Eight thousand people demonstrated against digging off the fields, they wrote letters and gathered for a protest march. The regional government felt unable to decide and handed the matter over to a higher instance. From a SCOT perspective, two different technological frames become apparent. According to the theory, technological frames depict opposing worldviews. For ENCI, the Plateau was “the most boring area” (Former head Platschorre in Bemelmans, 1989, p. 20) and after the excavation a much more interesting landscape would come into existence with, for instance, hollow ways and hillsides. This would suit very nicely to the other parts of the Mergelland. From their opponents’ perspective, the plateau was a landscape that was unique in the Netherlands and thus had to be preserved. The second point of opposition was the employment. While for ENCI only the jobs of their firm counted, for the environmental interest groups and the landscape organisation the continuity of jobs in the agricultural sector counted as well. They argued that they are even more important to preserve since “these are not dependent on one company as ENCI-jobs are” (Comité Mergelland, 1979b, p. 71). The two technological frames thus clashed concerning the attributes they ascribed to the Margraten Plateau.

In 1980, a report that was assigned by the national government appeared. It pointed out the relationship between “Cement and Employment” (*Cement en werkgelegenheid in Nederland*). The economists Schreuder, Arntzen & Hordijk studied the overall employment rate of Zuid-Limburg. From 1971 to 1976, it had declined by –5.2 per cent in the region Maastricht and Valkenburg. Compared to the eastern part of Zuid-Limburg, where the employment rate fell by –10.4 per cent, Maastricht-Valkenburg was much better off. Furthermore, the researchers referred to a new calculation of the cement consumption made by ‘Stichting Natuur en Milieu’. While the numbers that ENCI retrieved from the NEI forecasted a consumption of 6.6 millions of tons in 1990, the new numbers were considerably lower – a consumption of only 4.2 millions was expected (see also the table on p. 14). This was not the only point of insecurity. Besides the consumption, also productivity, recycling of waste products, demand of Blastfurnace Cement and the percentage of marl in the cement were crucial factors. (Cf. p. 81). The bottom line of the report was that excavating the Margraten Plateau was not necessary with respect to employment. If ENCI continued in the Sint Pietersberg, this would make little difference for the number of employees. Jobs, according to the economists, depended much more on the recycling of waste products and on

the demand for cement than on the size of deposits. If recycling was started and the demand dropped, a considerable part of the 750 employees would lose their jobs. However, they suggested that one should wait and see how the cement consumption would develop in order to make a more precise statement.

Like the Comité Mergelland, the three scientist of the University of Amsterdam brought forward the idea to continue the quarry in the Sint Pietersberg after 1991. The local press reported on this idea as well, and it found the agreement of many parties. The head of the ENCI said in an article in the local newspaper that appeared on 30th of June 1981 that the marl deposit would be emptied up in 1995 - just four years longer - it would not really be a long-term solution. A few days earlier, the Provincial Executive stated, “to have principally no objections against continuing the excavation after 1991, as long as it is possible according to the present concession” (Raad van de Waterstaat, 1982, p.13).

While the politicians considered an extension in time of the concession for the excavation of the Sint Pietersberg, the activists’ protest entered a new dimension: The Milieufederatie Limburg settled in the Van Tienhoven-molen (mill) located in the middle of the area that ENCI wanted to dig off in 1982. The monument would have been moved if ENCI got the permission. On the sails of the mill, the activists put large blankets, stating “Digging off? Never!” and other statements. Many photos and a lot of TV reports repeatedly showed the mill so that it became a, if not *the* sign of the protest. The location was also important for the protesting people. “For them it felt like a occupation of the threatened area” (Dorren, 2005, p. 116). Besides the mill, a second place on the plateau became a place of gathering for the activists: Cafe ’t Plateau in the little village Gasthuis. People met there to discuss the latest developments and to organise the protest.

And there was a lot to discuss in 1982, as the Raad van de Waterstaat published a summarizing volume. This council was an advisory body of the Ministry of Transport, Public Works and Water Management. In the very beginning of the book, they pointed out that an excavation of the Margraten Plateau should be a last resort after all other places where marl could be dug had been depleted. They explained their opinion by stating that ENCI was too important in an economical sense to let it close its doors in Maastricht forever (Cf. Raad van de Waterstaat, 1982, p.5). They figured out six alternatives that would enable ENCI to keep producing in Maastricht and at the same time would spare the Margraten Plateau. The first alternative was depth exploitation. This meant that marl from deeper layers was used in the production process. At that time, ENCI dug until a depth of 20 meters above sea level. But marl could be found also below that level. According to Lambertus Klinckhamers, “[they] did

not know about the quality of the marl in the depth. It had to be studied first.” The second alternative looked less promising: A horizontal enlargement of the quarry. On the one hand, the utmost concession line from 1967 was an obstacle since a nature resort surrounded the quarry. On the other hand, “this would have been even closer to the city, and moreover there was not enough marl,” told Bas Rijk. The third way were so-called ‘Grindgaten’ nearby Eijsden. These were small quarries where gravel was dug. It was suggested to dig deeper there, and to excavate the marl that was beneath the gravel. ENCI had several doubts about this idea. They wondered about the quality of this marl and moreover, the transport from Eijsden to the factory was difficult to organize, since the river Maas needed to be crossed, which had no bridge in this area. The fourth alternative was importing cement from abroad, mostly Germany and Belgium. According to ENCI, this would result in higher prices, due to transport costs and would lead to a dependence on Belgium and Germany. What was more, the domestic supply with the material would have been stopped. The fifth alternative was importing marl from Belgium. This would not be very appealing for the Belgians, since their landscape was destroyed, and they would not benefit from the excavation except for the money. The sixth alternative was an increasing (or even exclusive) production of Blastfurnace and Flyash Cements. This alternative was seen as promising since it combined two things. Sensible use of waste materials was made and at the same time, natural resources were used thriftily (Cf. p. 33ff).

Cultural aspects were researched in the volume as well: Firstly, the Roman road from Maastricht to Aachen was mentioned, the Van Tienhoven-molen and the settlement Wolfshuis. Secondly, recreation would not be possible anymore, due to pollution and noise disturbance. Thirdly, social disadvantages of the possible excavation were presented since it would inevitably lead to a separation of the community of plateau inhabitation. Their settlements and villages would be disconnected from each other. Lastly, a comparison was made of the two predictions about cement consumption (Raad van de Waterstaat, 1982, p.21).

	St. Natuur	
	NEI	en Milieu
1980	5700	
1985	6300	4960
1990	6600	4170
1995	7100	
2000		3540
	(x 1000 in tons)	

While NEI (Nederlands Economisch Instituut) expected an increasing demand, the Stichting Natuur en Milieu (Society for Nature and Environment) extrapolated precisely the opposite. ENCI believed the NEI, while the environmental groups used the numbers of the Stichting

Natuur en Milieu. Once more, the two different technological frames of the SCOT approach became apparent. The numbers were a point of disagreement, since every party was using those that fitted their worldview best. Finally, the report of Raad van de Waterstaat nicely summarized the latest findings and gave directions in which way the struggle for the Margraten Plateau would develop.

ENCI had already begun to put into practice the sixth alternative that the Raad van de Waterstaat had mentioned. Like many American and British cement factories, it introduced the newly developed product Flyash Cement. In January 1982, ENCI changed prices of their two existing products. From then on, there was a difference of 11,55 guilders between the more expensive Portland Cement and the cheaper Blastfurnace Cement. ENCI did this in order to create a margin where the new product Flyash Cement could fill in (Raad van de Waterstaat, 1982, p. 64). Flyash Cement uses ashes that are waste products of coal power plants. Flyash can be blended with a small portion of marl, and in the end a cement is created that is almost as good as Portland Cement, but needs less marl in the production process. With regard to the Sint Pietersberg quarry, producing large amounts of Flyash Cement would extend the lifetime of the quarry since the marl would be used very thriftily. ENCI expected that the new cement would quickly be accepted and bought by both consumers and the construction industry. The new product's price/performance ratio indeed seemed to convince the customers. As from 1983 onwards the consumption of marl decreased by a fourth, while the cement sales of ENCI remained stable ('Gebruikte kalksteen': table received from ENCI).

In 1983, a report about the possibilities of depth excavation, arranged by ENCI, was published by Willem Duynstee, student of Delft University of Technology. This report should research whether this alternative that the Raad van de Waterstaat had mentioned could be put into practice. Duynstee studied the possibilities of digging up to a depth of -35m NAP (Amsterdam Ordnance Datum). To assess this report, there are a few facts that should be known about the geology of the Sint Pietersberg. The mountain has an altitude of 100 meters above sea level. But ENCI-activities had created a second, and even higher hill: D'n Observant with a height of 160 meters. Roughly 15 meters of soil needed to be excavated before the marl could be dug off, and that soil had to be deposited somewhere. In the early years of the excavation, that soil was brought to a place in the southern part of the quarry. This resulted in a hill which is D'n Observant today.

The Sint Pietersberg contains limestone called Maastrichts Krijt, which is of good quality, from 85 meter above sea level until 50 meters above sea level. Limestone that can be found below +50m NAP is called Gulpens Krijt. The level of the river Maas and the ground

water lies approximately at 45 meter above sea level. This means that Gulpens Krijt which is excavated below this level is wet and has to be dried before it can be processed. From +50m NAP up to a depth of +5m NAP, the limestone is of reasonable quality. Below that, the marl is of poor quality. Only from 20 until 35 meters below sea level, the quality is reasonable again. If you have a look into the quarry, you can also see these differences in quality with your own eyes. While the upper layers are yellow, in the depth the limestone gets greyer. What is more, you should also keep in mind that there is a difference of almost 100 meter between the edge of the remaining Sint Pietersberg and the deepest point of excavating that today is at 5 meters above sea level. At the time the study was made, ENCI did not dig deeper than 20 meters above sea level. Duynstee's findings were, besides the geological study of the layers, that everything that was below +5m NAP was very expensive and technically difficult to excavate. This did not mean that it was not possible though, but only with the help of appropriate machines. The author refers to the costs for pumping away the ground water and the acquisition of new equipment that would make an excavation up to -35m NAP into a financial risk. The important aspect of this report was that ENCI now could be sure about the quality of the marl that could be found in the deeper layers of the Sint Pietersberg – what also gave them a prospect of extra time to continue quarrying at least up to +5m NAP.

It was 1984 now, and there was still no decision taken in the question if an excavation of the Margraten Plateau was permitted or not. On 27 September 1984, the Provincial Executive once again advised the Council of State that an excavation needed to be permitted. They stressed that the position they had taken back in 1978 was still valid and that all alternatives were only short-term solutions. The main criterion was that the jobs at ENCI needed to be secured (Provinciale Griffie van Limburg, Stukken betreffende de beantwoording van vragen). This letter marked an end to the first half of the decennium; a decision was not yet taken but looming. Despite all developments and arguments, the regional government was still in favour of an excavation, thus pro-ENCI. After nine more months, the national government would make a decision...

Chapter 4: 1985-1991 Time for decisions

In the end, not just one but two decisions were made in June 1985, which both were published in the *Staatscourant* on the 1st of July. Firstly, the Crown denied the appeal, which ENCI had filed in 1978, arguing that there was enough marl in the Sint Pietersberg to continue this limestone quarry for 20 more years. The Council of State denied the concession request for the same reason. The responsible minister Smit-Kroes thereby explained that her ministry

would draft a long-term policy note about the limestone excavation the next year. This note would enable the companies to assess the concrete opportunities for limestone excavation that went beyond the next twenty years (Cf. Staatscourant, 1.7.1985, p. 3). In other words, this meant a preliminary victory for the inhabitants of the Mergelland. They celebrated their success in Café 't Plateau.

ENCI now needed reconsideration. According to local activist Judith Smeets ENCI switched strategy at that time. Very quickly, they set up a new request for a concession for the excavation of the Sint Pietersberg until 2010 and up to a depth of +5m NAP. They handed in this concession request on November 1st 1985 to the Provincial Executive. An advantage of this approach was that there was not even the need to change the restoration plan; the 'Marlwater' (mergelmeer) just would become a bit deeper. Besides this, ENCI put forward a second plan. "We always said, we will come back later and dig off the Plateau then," remembered Martin Poesen, former PR officer of ENCI. ENCI moved to a two-track strategy: On the one hand, they wanted to continue the quarry in the Sint Pietersberg until 2010; on the other hand, they stayed lobbying for an excavation of the Margraten Plateau. If both requests were approved, they would have enormous marl deposits. ENCI explained that investments had to be made and that the import of clinker from Lixhe, which had started in 1976, would stop by the mid 1990s. So in the future, they would need sufficient marl deposits. Though almost ten years had passed since the original request, ENCI thumped that their future would lie in Margraten. All their hopes were directed upon the note of Minister Neelie Smit-Kroes. In 1987, the draft of the note called '*Gegronde Ontgronden*' appeared and with its appearance protests started again. In this note, the Margraten Plateau was indicated as an area for the excavation of limestone. The autarky of cement supply was given as a reason for this step. Furthermore, the plateau was the only place that had enough marl deposit for the next 30 to 40 years, the period the note was covering. The future of the Margraten Plateau did not look bright at all.

Meanwhile, the concession request of ENCI for the excavation of the Sint Pietersberg until 2010 did not meet much disagreement. According to Judith Smeets, everybody was happy that ENCI contributed to the search for alternatives for the Margraten Plateau. Moreover, the concession did not mean a huge disturbance for the landscape, as the quarry was already there and depth exploitation meant only digging roughly 15 meters deeper. It was much more important that the Margraten Plateau was spared for the next 20 years at least. What was more, the jobs at ENCI could also be saved. Not only the protesting people liked the idea, expert panels and regional authorities agreed on the extension in time as well. On

28th of June 1988, the Provincial Executive accorded ENCI the concession for the next 22 years and allowed the depth exploitation until 5 meter above sea level. Two reservations were made; firstly ENCI needed to hand in a revised plan for the restoration and secondly effects on the ground water level in the proximity had to be studied. The future of ENCI in Maastricht was secured now; nevertheless the discussion about the Margraten Plateau did not end with the new concession. On the contrary, the last act of the drama was still to come.

After the note '*Gegrond Ontgronden*' once again mentioned the Margraten Plateau as an area for quarrying limestone, the burgomaster of Margraten Herman Kaiser took a hand in the happenings. Kaiser managed to get an invitation to the Liberal Party's (VVD) meeting in Weert, in autumn of 1988. There he took the opportunity to talk to minister Neelie Smit-Kroes and convinced her to visit the Margraten Plateau herself (Cf. Dorren, 2005, p. 119). Six weeks later, on the 4th of January 1989, the minister visited the plateau on a cloudy and rainy day. According to the legend, fruit grower Gorissen offered her two things of which she was allowed to choose one: a chunk of marl and an apple. Neelie Smit-Kroes took the apple. Many people interpreted this as a first positive sign (Cf. Lemmens, 2004, p. 14). Burgomaster Herman Kaiser remembered other people were presenting, but were not daring to offer, the minister vlaai, a local flan, which was emptied in the middle. This was a symbol for how a quarry looks like in a landscape (Cf. Dorren, 2005, p. 119). The minister was deeply impressed by the protest. After her visit, she told in a press conference, "she will consider the question in a serious way" (ibid.). Two weeks later, Herman Kaiser received a call from Neelie Smit-Kroes. She said, "Burgomaster, you may keep your plateau" (p. 120). Kaiser was surprised first, then he recognized what the inhabitants of the plateau made possible and he was overjoyed. In a letter to ENCI that Bas Rijk showed, Neelie Smit-Kroes explained that there was no broad social basis that supported the ENCI's idea. Moreover, the Margraten Plateau was of ecological, scenic, and historical value which needed to be preserved. Also the argument of a domestic cement supply lost its urgency due to 'Europe 1992,' according to the minister. In the final version of '*Gegrond Ontgronden*' the plateau was not mentioned as an area for limestone excavation anymore. The people's protest had led to a victory and they were very glad that protesting had paid off.

The waiving of the Margraten Plateau had also become possible thanks to the thrifty usage of marl. Both the dropping of the demand for cement and the introduction of Flyash Cement enabled ENCI to reduce the consumption of marl. While 4,0 millions of tons were quarried in 1970, it were only 1,3 millions of tons in 1989. The sales of cement also declined from 2,3 millions of tons in 1970 to 1,8 in 1989. The crucial point was that at the end of the

1980s, much less marl per ton of cement was needed than 20 years before. The decline in marl consumption was much larger than the decline in cement sales in the same period ('Gebruikte kalksteen': table received from ENCI). It can also be seen that those institutes that had extrapolated a declining cement demand were right. Within twenty years of time, ENCI's sales declined by a half a million of tons cement. This was due to two reasons, firstly the boom in the construction industry had ended and secondly more cement had been imported from abroad. In other words, ENCI had lost a part of its market share.

From the standpoint of ENCI, the decision of Neelie Smit-Kroes meant a defeat. "A lesson you can learn from this," said Jan De Jong "is that national politics never goes against the people's will at the lowest level. That is what Neelie Smit-Kroes in other words told us in her letter" (Interview April 15, 2009). Also Dorren (2005) wonders about the sudden change in policymaking, especially because Smit-Kroes, as member of the liberal party VVD, now preferred nature to economy. Normally, VVD was in favor of business and economical growth. Dorren explains the changing attitude like this: Smit-Kroes has always been a politician with a good sensor for social developments; she knew that the environment was something that was important for the people. Therefore, neglecting the ENCI's request was a safe way to profile herself as somebody with an eye for the environment. What was more, the next elections were just a year ahead, thus it is always clever to listen what the voters want from you if you want them to elect for you (Cf. Dorren, 2005, p. 121). When the author tried to talk to Neelie Smit-Kroes about her interpretation, Smit-Kroes underpinned that it were the arguments that let her make the decision in favor of the Margraten Plateau – and nothing else than arguments (p. 122). All the same, the whole VVD was quite alert for environmental issues. Party member Ed Nijpels was the minister for environmental issues in those years. VVD leader David Luteijn, son of a farmer, was an expert for agricultural questions himself (Parlement, online). It was hard to imagine that they were on ENCI's side.

The question about a limestone quarry on the Margraten Plateau now was decided forever, at least with regard to ENCI's request for 433-hectare area. Ankersmit, formerly called Nekami, is still excavating marl for fertilizer production in the small quarry 't Rooth today and discussions about an extension of this quarry are still going on. After suffering defeat in the struggle for the excavation permit of the Margraten Plateau, ENCI was disappointed and entered discussions again. The ENCI leaders used their inferior position to get a permission to maximally quarry the Sint Pietersberg. In internal discussions with the municipality of Maastricht and the Provincial Executive, Plan Taken was created – called after landscape

architect Taken. This plan was the successor of Plan Vallen that should be adapted to the concession from 1988. Thereby, the artificial hill D'n Observant and parts in the northernmost region of the quarry suddenly were given to ENCI for the sake of excavation. This step gave extra marl deposits to ENCI, maybe as a sort of compensation for the loss in the struggle for Margraten. One wonders why these two parts of the quarry that were 'preliminary restored' to nature according to Plan Vallen, now became areas for excavation again, while the concession of 1988 did not mention any changes with respect to former agreements besides the extension until 2010 and an exploitation up to +5 meters NAP. Further research needs to be done to clarify how this change in the two plans for the restoration of the quarry came about. Anyway, the Provincial Executive accorded Plan Taken as the new plan for the restoration of the quarry after the end of excavation in 2010. The plan entailed a lake that should fill the quarry with water. In addition, and in contrast to Plan Vallen, a second lake would come into existence in place of the artificial hill D'n Observant. It is to say, that D'n Observant was located within the concession line made in 1967, so digging off would not contradict with the utmost concession; it would only contradict with Plan Vallen from 1974.

Overall, the second half of the decennium finally ruled off the discussions about the possibility to excavate the Margraten Plateau. At first, the Crown and the Council of State decided that an excavation had to be postponed to a time after the Sint Pietersberg quarry was empty. Four years later, Minister Smit-Kroes, in charge of excavations, finally decided against digging off the Margraten Plateau. The well-argued protest of the inhabitants of the Margraten Plateau helped them to celebrate a victory. Environmental movements could prevent the excavation that seemed inevitable in 1976, but became less urgent with every day that passed by. Thanks to protests in the year 2000, the people from Maastricht also prevented the excavation of D'n Observant and it was spared as well. Today, when the marl deposit in the Sint Pietersberg should almost be emptied according to the calculations from the 1980s, ENCI is planning to extend the excavation even until 2020. By then, the Sint Pietersberg quarry will be empty and also furnace 8, built in 1968, will be close to its retirement.

Chapter 5: Analysis of the discussion from a SCOT-perspective

For a technological determinist things would be clear; without the new technologies of blend cements and deep exploitation, the Margraten Plateau would have been excavated. Technological progress is thus the driving force of history. From the SCOT (social construction of technology) perspective, we see that also the wider socio-political milieu has played an important role. Consider, for instance, the unification of Europe, the declining

demand, and the green movements. All of them finally led to the preservation of the Margraten Plateau.

By applying the concept of technological frames of SCOT, it becomes apparent that the two opposing groups (ENCI vs. Comité Mergelland) had very different points of view. For ENCI, the plateau meant something very different than for the protest movements. ENCI was especially interested in what lies under the surface, the limestone. What was more, the plateau was seen as the most boring part of the landscape by the former ENCI director Platschorre (Cf. Bemelmans, 1989, p. 20). By contrast, for the environmental groups, the Margraten Plateau was an area with landscape that is unique in the Netherlands and therefore was worth protecting (Cf. Comité Mergelland, 1979a, p. 5). A second point of disagreement was the domestic supply with cement. For ENCI, this was of utmost importance, due to the shortages the Netherlands had experienced during World War I and which led to the company's foundation in the 1920s. In addition, they said that materials were no goods on the market. They were stating that only products were exchanged within Europe, but not raw materials such as marl (Cf. Bemelmans, 1989, p. 18). Therefore, importing marl was impossible or at least not economically feasible, according to ENCI. In the eyes of the protesting people, this argument sounded bizarre. Especially in Zuid-Limburg, wedged between Belgium and Germany, the borders slowly disappeared out of the peoples' heads. Cities as Aachen, Liège and Hasselt are close-by and local Dutch newspapers were filled with advertisements of shops in these cities. People from Maastricht moved to the Belgian villages that surround the city as well. An argument about autarky of Dutch cement supply was hard to grasp in this area.

A third difference between the two technological frames are the two forecasts of the cement consumption. While ENCI trusted the NEI with rising figures, the nature lovers were convinced that the extrapolation of Stichting Natuur en Milieu, projecting declining demand, was correct. A fourth point of disagreement was the long-term perspective: ENCI always pleaded for the long-term alternatives, and saw the only possibility in an excavation of the Margraten Plateau. All other alternatives, as for instance thrifty usage of marl, were in their eyes not long-term enough. This becomes crystal-clear if one sees the two-track strategy ENCI used after the government's decision in 1985. With regard to Hughes (1987), this is to some extent understandable, seen that acquisitions gave ENCI a certain 'trajectory' - 40 years were needed to depreciate furnace 8 - that influenced their policy. Fifthly, job security split the two camps. ENCI underlined its importance as employer of 900 persons, while the farmers fought for the survival of their jobs as well. Though this were only 200 jobs, they

were at least much more permanent and in addition not dependent on one single company. The farmers could not understand why the jobs at ENCI counted more than their own (Cf. Comité Mergelland, 1979b, p. 71).

The two opposing groups showed great differences in their views on what the Margraten Plateau meant for them and for what it was good for. On the one hand, there was ENCI, supported by its employees and the workers-unions (Cf. Bemelmans, 1989, p. 20). They wanted to continue their business and therefore stressed the importance of a domestic cement industry and gathered data and information that underlined their position. On the other hand, there were the inhabitants of the region, the farmers, nature lovers, and vacationers who pleaded for a protection of the plateau. Aroused by the growing green movement in the Netherlands, they were strictly against a disturbance of the landscape, collected counterarguments and organized a demonstration march. Seen on their own, the arguments of both groups seem to be sound. SCOT also looks at “requirements to be met by problem solutions” (Bijker, 1995, p. 125). At this point, the requirements of ENCI, deposit, job-stability, and domestic supply as such could also be met by extending the concession for the excavation of the Sint Pietersberg. By contrast, there was no way to partly meet requirements of the environmental groups, for them the only solution was prohibiting the excavation. They were very willing to discuss about alternatives. A middle way, as for instance a concession for a smaller part of the Margraten Plateau would not have been embraced by both parties either: ENCI would not have gotten enough deposits and the plateau would have been destroyed as well. The final decision to continue quarrying limestone in the Sint Pietersberg met the requirements of the protesting people – every solution was fine that spared the plateau – and partly also of the ENCI, since it relieved the time pressure, the jobs were saved and the domestic cement supply was secured, too. The two technological frames merged into one solution.

Conclusion:

“Neelie-Smit Kroes had been here ten times and talked with us, then she visited the plateau once and talked with the people over there. Afterwards, she decided in favour of them,” said Jan de Jong, the former general director of ENCI. He could not hide his disappointment, even 20 years after the case was closed. For ENCI, the lost struggle for the Margraten Plateau still feels like an open wound. When I talked to them, they emphasized how sensitive the topic was. Thereby, everything began so successfully. During the blossom of the cement industry in the 1960s, ENCI benefited from many state-initiated building projects. Sales and distribution

of cement were higher than ever before. They thought if the production continues on that level, the limestone deposit in the Sint Pietersberg will be empty soon and searched for new deposits in the proximity. Moving was difficult, firstly because the furnaces demanded that the factory stayed at the spot, and secondly Zuid-Limburg was the only region of the Netherlands with marl deposits. Two areas were envisaged, out of which the Margraten Plateau looked most promising – it was a 433-hectare area where nobody lived. However, ENCI reckoned without the people that lived close-by and who did not want to have a huge gap just a few hundred meters away from their settlements. Protests in so far unknown dimensions took place. The decision appeared too fundamental for the regional government, so they handed it over to the Minister of Transport, Public Works and Water Management. Nevertheless, they sent an advice to the Minister which was in favour of the excavation. Years passed by in which studies were carried out and arguments against the excavation were written down. Meanwhile, the demand for cement dropped and ENCI started producing Flyash Cement, which needs less marl per ton of cement. Thanks to this, the national government decided in 1985 that the Sint Pietersberg quarry would contain enough marl in order to continue until 2010, if ENCI dug 15 meters deeper than before. This concession was requested in 1985 and did not meet much disagreement. In 1988, the regional authorities approved the request and permitted ENCI the extension in time. The struggle for the Margraten Plateau should enter the final battle thereafter. For the time after 2010, the plateau was still seen as the place where marl excavation would take place. The inhabitants protested once again and were able to convince minister Smit-Kroes that the area was too valuable for an excavation. After 13 years of struggling, the final decision was made in 1989 and the environmental movements won.

In an interview, Neelie Smit-Kroes said that she came to the decision because of the arguments and she probably was referring to the studies that were made. First of all, research had shown that an excavation of the Margraten Plateau would make little difference for the jobs at ENCI, as long as they stayed excavating and producing in Maastricht. In order to do so, ENCI needed to enlarge their deposits. This was done in two ways: Firstly, the depth exploitation in the Sint Pietersberg quarry enabled ENCI to continue their work for the next two decades. Samples had shown that marl in deeper layers was also usable for the production. When ENCI requested the concession for the Margraten Plateau in 1976, they did not know the quality of the marl in the Sint Pietersberg's deeper layers. Secondly, the invention of Flyash Cement made it possible to produce cement of good quality with small amounts of marl. The thrifty usage of marl meant that ENCI could produce longer. In

addition, the demand dropped and ENCI lowered the production. All these changes extended the lifetime of the Sint Pietersberg quarry. Up to this point, a technological determinist could perfectly claim that it were the new technological developments that saved the Margraten Plateau. By contrast, the SCOT-theory looks to the relation to a wider socio-political milieu as well. When doing this, the following points come to the surface: The unification of Europe made a domestic cement supply superfluous, at least at a scale that was known from the 1960s. Besides this, the report *The Limits of Growth* aroused the environmental awareness of the Dutch. People started to fight for the protection of their surroundings in large numbers. The decision makers could not neglect this protest and especially its extent. Also the minister wrote that she could not see a broad social basis that was in favour of the excavation. The people actively participated in pointing to alternatives, which were in the end put into practice. The two technological frames, that the SCOT approach pointed out, could be merged, so that a solution came into being that was acceptable for both parties. It seemed possible for ENCI to receive the concession in 1976; otherwise they would not have requested it. In the course of time, however, alternatives became available, marl was used more thriftily and the importance of environmental protection grew. All the different influences together made it possible that the 16th of December 1991 was not the last day of quarrying limestone in the Sint Pietersberg.

Suggestions for further research

While studying the sources and conducting interviews, some inconsistencies appeared that I could not dismantle. At first, when interviewing the three former ENCI key men Poesen, Rijk and De Jong, they told that the concession request for the Sint Pietersberg until 2010 was made after Neelie Smit-Kroes' decision. "Within the next weekend, we made up a new plan for continuing quarrying here in the Sint Pietersberg. We coordinated it internally with the stakeholders and then handed in the request to the Provincial Executive." However, the request from 1985 and the concession from 1988 show that ENCI got the permission to continue the quarry in the Sint Pietersberg before Smit-Kroes visited the plateau in 1989. Only the option Margraten was denied by the politician. ENCI had no need to set up a plan for continuing in the Sint Pietersberg since they already had gotten a concession for it. My essay sticks to what the original documents tell, not to the interview. One wonders why they try to twist the story. But well, maybe they only did not retain the facts in their memory – who knows.

Secondly, it would be interesting to investigate how Plan Taken came into existence in 1990, and why both D'n Observant and the northern part of the quarry suddenly became areas for excavation. According to the former Plan Vallen, these areas were already restored and the first two subareas where the plan became reality. Strangely enough, the concession that was given in 1988 does not mention these changes. Thirdly, the original documents of the decisions made by the Crown and Council of State in 1985 are unfortunately not (yet) accessible in public archives. It would be interesting to read the original sources to see the explanations they gave for their decision. In addition, maybe they could be helpful in order to explain why the process of decision-making took so long (1978-1985). The obduracy of the process of decision-making would be a fourth point for further research. Fifthly, the environmental politics of the normally business friendly liberal party in the 1980s would be interesting to study in detail.

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