

THE RESITA INDUSTRIAL COMPLEX: RESTRUCTURING AND DIVERSIFICATION

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Abstract

Resita is a long-established centre of heavy industry based on steel making.

It's importance has rested primarily on the local resources, but there has been strong political support, on strategic grounds, for the engineering industry and in the communist period large imports of ore and coke enabled iron and steel making capacity to increase way beyond the local potential.

There has now been a major reappraisal in the light of real transport and energy costs. Drastic downsizing has led to high unemployment and major restructuring of the economy is now under way. The article examines the scale of the problem and assesses the prospects for diversification.

Resita is situated at an altitude of 225m in the Banat Mountains (Grigore 1990; Sencu 1978) and lies in a small depression drained by the Barzava, a tributary of the Timis which enters the Danube near Belgrade. Resita is one of the oldest industrial complexes in southeastern Europe. The mineral resources of the Banat Mountains were regarded as a major resource by the Habsburg authorities when the area was taken from the Turks under the terms of the Treaty of Passarowitz (1716). The first Habsburg governor of Banat (Claudius F. Mercy) immediately set up 'Banater Bergwerk-Einrichtungs Komission' to investigate the opportunities for the mining industry in an extensive area around Oravita, with particular interest in gold, silver and copper (Tinta 1972). However, at the northern extremity around Bocsa and Dognecea iron was found as well as non-ferrous ores and this became a major interest after the first blast furnace was lit in 1719. Resita eventually became the leading centre of a dispersed industrial region, with a population of 12,800 in 1891, 25,000 in 1944 and 111,000 in 1989. Curiously however, Resita only gained urban status after the First World War, although it had long overtaken the county town of Oravita in terms of population size. Meanwhile, the two other principal settlements in the Resita area (Anina and Bocsa) faced even longer delay before gaining urban status; first appearing in the urban population census rankings in 1958 and 1956 respectively. However, since 1989 the region's heavy industry has been in crisis and this paper outlines both the nature of the problem and the steps taken to restructure the industry and diversify the economy.

Developing the Complex

The iron industry took a firm hold in the Barzava valley during the eighteenth century, even though the original furnace (the 'Alt Werk' at Bocsa) was flooded in 1722-3 and had to be rebuilt as the 'Neu Werk', before a further start was needed following the Turkish invasion of Banat in 1738. Additional furnaces were built at Dognecea and Resita, while activity was further dispersed by the woodcutting and charcoal burning operations which took place in the Semenic Mountains; also by the development of coalmining at Anina (Steierdorf) which, for a time, became an independent centre of iron production (Fenesan et al. 1991) (Figure 1). However, when coke was adopted as the blast furnace fuel at Resita in

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the 1870s the functions of Anina and Resita became increasingly complementary, since Anina's iron ore (blackband) was soon exhausted while the coal resources of the Resita area (Doman, Secu and Lupac) were relatively limited (Turnock 1993). It fell to the Austrian company 'Staatseisenbahngesellschaft' (STEG), which took over the state installations during the Crimean War, to create a cohesive industrial region. This was done by concentrating most of the production on Resita and creating supply lines by means of narrow gauge railways with connecting roads and canals (Plate 1). There was also an important electrification programme (Germani 1926). However, while both Anina and Resita had their standard gauge rail links with the outside world the rail link between the two centres was extremely circuitous: 224kms via Oravita, Bela-Crkva and Voiteni in 1874, reduced to 127kms (still more than four times the straight line distance of 30kms) via Oravita and Berzovia in 1896. A narrow gauge link proposed in 1905 was only achieved in 1944 (via Secu) and survived for little more than two decades.

Nevertheless, STEG continued to invest and by the First World War Resita was producing 114,000t of iron and 122,000t of Siemens-Martin steel, as well as various engineering products (Suru 1987) (Plate 2). As part of the Romanian state after 1918, the new company ('Uzinele si Domeniile din Resita': UDR) (Pasarica 1935) continued to enlarge the complex with steel output rising to to 234,000t in 1943, thanks to the import of scrap (while iron production remained relatively static). The engineering industry extended its activity to oilfield equipment and armaments (Suru 1990). A railway link with Caransebes gave more direct access to Bucharest and Romanian architecture became more prominent as the town expanded (Plate 3). Then, under central planning, with power and transport costs heavily subsidised, steel production was expanded to over one million tonnes thanks to heavy ore and coke imports, initially from the former Soviet Union (Desmireanu et al. 1963). The local coal and ore continued to be used to the maximum, but these domestic resources became proportionately less significant. And increased power generation capacity was installed, with a major energy project embarked upon at Anina in the 1980s where a bituminous schist quarry was opened, although power supply through the national grid played a major role (Miklosi 1942). Engineering extended to hydropower aggregates, compressors, components for diesel and electric locomotives and marine engines (Bordan & Bogdan 1971).

During the present century Resita itself has become, most emphatically, the leading industrial centre in the district, generating strong migratory and commuting flows (Bejenaru 1946; Tiriung & Durdun 1942). The industrial structure has become gradually more diverse through the development of some light industry (Ianos & Iacob 1985). Moreover, the creation of an amalgamated Caras-Severin county in 1968 gave Resita a central position in the new order and so it was the obvious choice for the centre of administration; a position that contributed significantly to the growth in the tertiary sector in the later years of the communist era (Sencu & Bacanaru 1976). However, heavy industry continued to be of first importance and Resita contributed much to the national economy through high-quality output and the supply of key workers to new enterprises in heavy industry in other parts of the country (Bordan & Hillinger 1971). But the revolution of 1989 led to major reappraisal of the town's status as a heavy industrial centre and a combination of high transport costs for imported iron ore and exhaustion of local mineral resources threw the works and the town into crisis.

The Restructuring of Heavy Industry

The years since 1989 have been extremely painful for Resita, although the metallurgical works celebrated 225 years of activity in 1996 and continues to offer a wide profile extending to springs, tubes, railway materials (including rails and wheels) and various rolled products such as heavy sheet, as

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well as lime and refractory products (Manolescu et al. 1996). But like all heavy industries in Eastern Europe, Resita has experienced pressure to get rid of its old technology and increase labour productivity, considering that in the West 1,000 workers would be sufficient for the production of 1.0mln.t of steel. Plainly the combined employment of over 20,000 in the metallurgical and engineering works could not be sustained. In the metallurgical works the workforce was cut from 10,200 in 1989 to 4,600 in 1997, while steel capacity was reduced from 1.20 to 0.45mln.t. The future was always going to be uncertain in view of Resita's inland location combined with heavy dependence on imported ore. Ore handling costs for Resita are not available, but a figure of USD36/t has been quoted for Constanta-Calarasi alone (almost as much again as the USD38/t required to bring Brazilian ore to Constanta) which is only a fraction of the distance to Resita. Hence to decision to stop the blast furnaces at the end 1990.

The decision had major implications because it meant the closure of the ore preparation plant and the three batteries of coke ovens adjacent to the furnaces (now in a state of conservation). Small amounts of coke continued to be made in order to meet internal demand and also for sale to chemical industry at Copsa Mica and Tarnaveni. But this small-scale activity stopped in 1994 and the cutting off of the gas supply in 1997 (when the enterprise failed to settle its account) has prevented any resumption. A further complication has been the disappearance of all economic rationale for the new coke-chemical plant with two new batteries of coke ovens. Heavy investments were made during the 1980s in order to make Resita self-sufficient in coke with respect to blast furnace capacity adequate to maintain steel production at 1.0mln.t (although it would still have been necessary to import coal rather than coke from Comecon states). As a major steel producer, Resita was badly off for coking capacity and could only produce a tenth of the plant's requirements by mixing Anina and Lupeni coal (the latter being sulphurous coal obtained in the Petrosani district) according to a proven formula. It was hoped that when Resita's own blast furnaces closed it might still be possible to complete the new coking plant and produce coke for metallurgical centres elsewhere. A deal with Serbia's Smederevo plant (dependent on Croatian coke) was under negotiation when civil war broke out in the former Yugoslavia and UN sanctions against Serbia effectively closed this option. But the plant remains under conservation with the possibility that a partner can be found.

Further rationalisation was undertaken at Resita with a drastic cut in steel production from the Siemens Martin furnaces to 0.45mln.t. It was planned that the steel section would be modernised in the 1980s, but the coke-chemical plant gained priority. Today the old furnaces are still in production, making steel from scrap, obtained from local dealers and also from the state railways (SNCFR) in the form of surplus rolling stock. The present aim is to replace the old furnaces with an electric furnace of 100t linked with continuous casting, which will involve a major overhaul of the finishing section. A consequence of this strategy is the abandonment of the plan for new rolling capacity at Caransebes where a major investment was stopped in 1990 (part of the historic process of dispersing capacity from Resita itself). The optimum strategy is now considered to be production of 0.41mln.t of steel which will be used for rails and strip (for the car industry) as well as the supply of the local engineering industry. An important factor in the survival of the works is the control of its own electricity supply (Munteanu 1996). Although the thermal power plant in Resita belongs to the national electricity generation and supply company RENEL, the metallurgical works owns the hydro installations on the Barzava. Because of greatly reduced production the works can operate with 14-15MW of power station capacity and with a total potential capacity of 17MW of hydropower available there could be a small surplus of power for sale. Attempts have been made over several years to secure the necessary finance. The latest available information is that a 32bln.lei government loan has been made available for electric oven and

continuous casting installation. Moreover, the impending modernisation of the plant has attracted the attention of an American investor.

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Meanwhile, the engineering factory has seen a sharp decline in its workforce (from some 17,000 to 5,000), but its position is intrinsically more stable and the increasing sophistication of the industry should ensure that the city retains a key role in the Romanian economy through the turn of the century. Initially the engineering works continued within the industrial central for electrical equipment, but 'Uzina Constructoare de Masini Resita' (UCMR) was reorganised as a joint stock company in 1990, taking over the old machine works in its entirety and also (in 1991) the Engineering & Scientific Research Centre for Energetic Equipment (Perianu 1996). Substantial diversification was achieved under communism and the joint venture gear company 'Resita-Renk', which was started in 1971 and began production in 1976, employs 400 people and provides a model for the future. There were exports in the communist period, but in the context of greatly reduced domestic demand (for reduced levels of industrial production and transport have affected orders for locomotives and ships, as well as repairs and spare parts) the export share is expected to reach 50 percent in 1998, compared with seven percent in 1996 and 35 percent in 1997. This hope is based on collaboration with General Motors (USA) and Sulzer Hydro (Ravensburg, Germany). UCMR is to make power units for 70 locomotives in 1998-9 and in the process will become GM's first non-American supplier. This has provided a basis for privatisation and while 135mln.lei of capital is held by State Ownership Fund (70percent), Banat-Crisana Private Ownership Fund (POF) has 20.5 percent and other shareholders 9.5 percent.

The current profile also extends to chemical/metallurgical industry equipment as well as castings, forgings, mouldings and welded constructions. Electric motors can be provided with heat exchangers and thermal control systems; while air compressors for mining, construction and industry include the newest 'L' shape compressor of 25cu.m/min. Much attention in recent years has been given to marine engines and in 1990 a new licence was obtained from Burmeister & Wein of Germany. Much work is also done for the hydropower business, boosted by a recent order from Turkey to supply three power stations. The curtailment of domestic work (apart from Iron Gates II and the Olt and Siret rivers) was an embarrassment, but there is now a priority to modernise Iron Gates I after 27 years of operation and an offer from Sulzer Hydro/ABB has been accepted on the basis of collaboration with Resita and two other Romanian companies. An updating of laboratory and R&D activity has been undertaken in order to attain higher quality standards and during 1997-2000 equipment will be acquired to update hydrogenerators and electric engines. However, the works suffers from its inland location and the lack of direct access to a main line railway: the standard EU type of rail is too long to be carried away by train, while marine engines have to be carried in sections with consequent assembly problems when they reach the Danube or Black Sea. A more direct rail link with the Danube would be an advantage and hence the project (outstanding from the communist period) to connect Racasdia, south of Oravita, with Moldova Noua (Atnagea 1995).

Diversification in the Resita Area

The city of Resita has been hit hard by the reduction in employment in the two key industries and there has been a substantial fall in population as workers have returned to their villages, while members of the German minority have found themselves free to emigrate. However, while some apartments have been sold or let (for business or residential use), many people with houses and land in villages prefer to retain their apartments in Resita because they are not accustomed to agriculture and find the town convenient for children's education. Yet, the tradition of family working in heavy industry is very much

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in jeopardy and Resita is no longer a motor of the national economy. The picture for the whole county (Caras-Severin) is of a production record and an index of infrastructure falling below the national average. Of course, UN sanctions against Serbia had a depressing effect but these no longer apply: instead there is scope arising from the creation of the Danube-Mures-Tisza Euroregion (Surd 1998) and the resources being injected into regional development for a western area that covers the counties of Arad, Hunedoara and Timis as well as Caras-Severin.

Local iron ore production (at Ocna de Fier, near Bocsa) survived for a few years after the closure of the blast furnaces in Resita. But there was no longer any local demand (though some was reputedly taken to the small Otelu Rosu metallurgical works located east of Caransebes) and so the production was transported to Hunedoara, where it was mixed with local (Ghelar/Teliuc) and imported ores. Coal mining around Resita has also ceased apart from very small workings in Lupac and the bituminous schist at Doman which supply fuel to the railway in Resita for transport to Mintia power station at Deva. Coal mining continues at Anina (though the massive bituminous schist operation has been abandoned) and the fuel is taken to Turceni power station in Oltenia where it is mixed with the locally-mined lignite. However, Anina is now a high-cost operation and its future is uncertain at this time of radical restructuring in the mining industry. The area retains natural resources

although they are no longer relevant to the metallurgical industry. Timber and 'ornamental rocks' could support some local economic diversification. Under an agreement between Romsilva (the national forest administration) and the American wood processing company Tenneco (with a factory in Caransebes), the latter will build 50kms of new forest roads in inaccessible parts of the Resita area in order to open up stands of virgin beech forest in return for timber.

Resita has only 12.1 firms per 1,000 inhabitants (national average 15.8), a situation which has not been helped by the departure of the German community. In particular, there were relatively few mixed companies. There has been a big growth of trading by individuals and family associations. But because of poverty in the area, sales are depressed and some businesses are failing. However, the reduced circumstances for industry is good news where pollution levels are concerned. Indeed the general concern over environmental issues was reflected in the return of an ecology candidate for Caras-Severin in the 1990 parliamentary election. Some specific measures have been taken to achieve further improvements, such as the diversion of lorries bringing coal, schist and timber for road-rail transfer (in Calnic) away from the city centre. However, there are striking contrasts within the city as regards the quantity of particulates in some areas, while the Barzava is still polluted from factories and filling stations. Incineration and recycling in needed, along with a better-organised rubbish collection. There is still informal dumping on the hills and a problem of outdated infrastructure in the old town where rain water and waste water are not segregated. Public transport suffers from the poor quality of the tramway system installed in the 1980s: sharp curves destroy suspension and many of the tramcars are now defective. A private bus service was introduced in 1990 and the tram service is now less frequent. An important environmental measure has been the decision to cease the construction of apartment blocks. Instead individual houses will be built on the hillsides where hard stable rock is available.

Meanwhile, the rural areas are struggling to maintain their services during a period of financial stringency and continued depopulation. The most dramatic changes have occurred in Brebu Nou commune through the departure of virtually the entire German community from the villages of Brebu Nou and Garana. Former mining centres such as Dognecea and Secu are experiencing difficulty. Dognecea benefitted from a considerable overhaul of is housing stock under communism, but local employment dwindled many years ago and the greatly reduced public transport service, over unsurfaced roads as far as Lupac (for Resita) or Ocna de Fier (for Bocsa), complicates commuting to

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work in the towns. However, there are good prospects for a tourist industry based on winter sports on Semenic Mountain and summer tourism beside the various artificial lakes created in the Barzava Valley at Crivaia, Trei Ape and Secu; also in the Anina area at Buhui and Marghitas (Olaru 1996). A Dutch company intends to invest DM50mln in a hotel, tourist chalets and sports facilities which will greatly extend the facilities available at Trei Ape (Plate 4).

Development at Breazova (using the island on the lake) is also suggested, with scope further afield in the Almaj Depression in connection with the lakes of Valea Minisului and Lake Taria (Bozovici). Facilities are being provided in the proposed national parks of Cheile Nerei-Beusnita and Semenic (Banarescu et al. 1981), while in Resita itself, the surrounding hills might be opened up with cable car access to restaurants taking advantage of the fine views over the town.

The industrial heritage is well worth promoting (Uzum 1985), for there is plenty of opportunity in the metallurgical works where the Roman Catholic church actually lies within the complex. An open air railway engine museum already exists (marking the centenary of locomotive building in 1972) and there is a proposal to reconstruct a typical Resita workers house from the last century. In the vicinity there are the hydropower installations, particularly Grebla and its 12km canal dating to the beginning of the century, while the mining history of Dognecea and Ocna de Fier is particularly compelling. The private Gruescu museum lies adjacent to the Paulus mine and comprises a remarkable collection of beautiful rocks collected from the local mines. In Dognecea the two artificial lakes, built to provide water power for the washing and crushing of ore, are still in existence (after refurbishment in the 1980s) and the local furnace site is available for reclamation. Although most of the old buildings are covered by slag, the ruins of one of the furnaces can still be seen: closed in the late nineteenth century in order to concentrate production in Resita. Moreover, the old mine administration building (belonging to 'Intreprinderii Miniere Bocsa') stands complete beside the old furnace and could house an exhibition and visitor/interpretation centre. And finally there is opportunity in the Anina area: although much of the legacy from the STEG era has already disappeared, the mountain railway to Oravita is still in existence and could be developed as a major tourist asset with interpretation to cover the phases of construction, the use of horse and locomotive traction back-up relating to the historic locomotive depot at Oravita and some vintage equipment retained at wayside stations.

Conclusion

Resita's industries have a long history and constitute the earliest metallurgical complex to develop on Romania's present territory in modern times. They have been crucially important for the national economy as well as for the locality where the legacy is evident not only in terms of urban development but also in the rural landscape (forestry, mining and hydropower development) and in the functional links between urban and rural communities through commuting and mountain tourism. Resita offered outstanding opportunity in the context of nineteenth century industrial technology but by the First World War it was clear that the local resources could not sustain a metallurgical industry of vastly increased capacity. While steel output expanded in sympathy with the growing engineering industry, pig iron output grew much more slowly until the advent of the central planning system when the real costs of importing raw material was concealed. New locations more convenient for imports were much discussed between the world wars and they were eventually developed at Calarasi and Galati, but during the early years of the communist era the Romanians chose to expand production at existing centres like Resita. However, steel production was eventually pushed beyond a million tonnes and investments in the 1980s were dedicated to maintaining this incredible performance, a decision that must have been seen as increasingly debateable.

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We shall never know what a reformed communist party might have done, but the revolution of 1989 had immediate and devastating consequences despite the instinct of the first post-socialist government to protect the large state-owned enterprises. It was unfortunate that the Resita area had not only to suffer a setback in heavy industry but in mining as well through the collapse of the huge bituminous schist energy project at Anina. However, there is an abundance of evidence from various parts of Europe to show that there is life after heavy industry. Despite the departure of the Germans, the Resita community is resourceful and there are opportunities in wood processing, light industry and services to supplement the slimmed-down metallurgical and engineering industries which gained some qualitative experience in joint venture operations (with Renk) with enhanced R&D capabilities despite the push for greater volume during the communist era. Pollution levels will have to be reduced and housing policy will need radical reconsideration to reduce the population density and the emphasis on multi-storey apartment blocks. This paper is therefore dedicated to the hope that Resita will eventually benefit from the abandonment of central planning's industrial imperatives, which over the years diverted some of Resita's capacities to other parts of the country. The growth of other sectors like tourism is by no means irreconcilable with two centuries of heavy manufacturing given the fascinating mix of local cultural and physical resources.

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CAPTION FOR FIGURE:

Figure 1: Settlements and resources in the Resita area

CAPTION FOR PLATES:

- Plate 1: Resita iron and steel works, showing the Siemens-Martin steel mill on the right and the now disused blast furnaces and coke ovens in the middle distance just left of centre. Note the engineering works in the distance (right), the Roman Catholic church (lying just within the factory precinct) and the 1930s Orthodox church beyond.

- Plate 2: A locomotive built at Resita at the beginning of the century for STEG's narrow gauge railway system at Anina. The locomotive was photographed on the display at the museum in Resita established in 1972.

- Plate 3: The 'Cinema Cultural' one of public buildings constructed in the 1930s in the Romanian Brancovan style.

- Plate 4: The artificial water storage Trei Ape developed in connection with hydropower projects on the Barzava. The small tourist industry in the locality is set to expand as a result of foreign investment to establish a 50ha complex including accommodation and sports facilities.