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## CONSTANTIN BUȘILĂ - THE FOUNDER OF THE ROMANIAN INSTITUTE OF ENERGY

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**Abstract.** The lives of some people start in conditions remembered by history, adverse for some. These people, at least some of them, fight against the vicissitudes of life and they win. Some of them dedicate their energy to the other people, and they expect that the other human beings (or life) to tell them, one way or another, “We appreciate you, man!” Sometimes, this really happens, but some other times, other human beings tell them “We condemn you, man!”. The good ones have been forgotten, but the condemnation has a symbolic role: someone must be punished in order those other human beings to be frightened, to enjoy, or to have the feeling that they have won the fight against life. Here is an example of an engineer whose life began dramatically and ended even more dramatically although he set up institutions that function even nowadays.

**Keywords:** *Constantin Bușilă, Institute of Energy, General Association of the Engineers.*

### The son of a hero dead for the people’s independence

**Constantin Bușilă** was born on the 4<sup>th</sup> of May in Târgu Ocna, on the Troțuș valley. His father, Dimitrie Bușilă was a captain in the Romanian Army and he gave his life for gaining the independence, being heroically killed on the 31<sup>st</sup> of August 1877. He didn’t have the chance to see Dimitrie who was forced to fight against the adversity of life. He attended the “Principatele Unite “ High School of Iași. He was 18 when he started to attend the National School of Bridges and Roads of Bucharest. Being very smart and hard-working, he graduated top class in 1900, then he went to Belgium, to Liège for post-graduated courses in the electrotechnics domain at the Montefiore Institute for an year. He also defended his Ph.D. thesis here.



### Employed by Anghel Saligny.

He came back in the country in 1901 and he was employed by Anghel Saligny to take part in the designing and building the Constanța harbour. Constantin Bușilă designed the electric plant. The electric generator was put into function by a 1600 horse power Diesel motor. We must remember that in 1902 the first electric plant was put into function at Craiova. The construction of the electric plant of Constanța was finished in 1904, and Constantin Bușilă was appointed manager, position that he held until 1909.

In 1909 he moved at the Society of Trams of Bucharest, where he worked as deputy manager. It must be remembered that the first electric tram was put into function on the 9<sup>th</sup> of December 1894, between Grozăvești Electric Plant, Dâmbovița River Bank, Regina Maria Bridge, Elisabeta Avenue, Carol Avenue, University, Pache Protopopescu, Obor. During the World War One, he worked at the Ammunition Company because the students of the National School of Bridges and Roads were taught, during their studies, military knowledge specific to genius weapon. Constantin Bușilă's professional activity was closely linked to Anghel Saligny. Thus, when the latter became Minister of Public Works, between 1918 and 1919, he appointed Constantin Bușilă general secretary because he knew him very well after having worked together at designing Constanța harbour. In 1919 he took part, as a founding member, at the setting up of one of the biggest oil companies in Romania called Mining Credit, having the headquarters in Bucharest, 75 I.C. Bratianu Avenue. The aim of this company was to protect the Romanian interests regarding the exploitation of oil deposits and other natural resources which were then administrated by some foreign companies. Moreover, the Mining Credit was a model for setting up other engineering companies with Romanian capital, such as Petrolul Românesc, Nafta Română and so on.

### **Contributions to the development of the National Energetic System**

His specialization in Belgium, the experience gained during the building of the electric plant in Constanța harbour defined the rest of his professional activity in electric domain. He worked at the electrification of the railway, at the use of electric energy in oil industry and in agriculture, he was in charge with the electrification of some villages.

He had a significant contribution to the electrification of the railway between Arad and Pâncota. Since 1906, on this railway, there were used two self-propelled trains, each equipped with a 60 Hp motor with gas which started an electric generator for supplying the two electric traction motors. In 1912 the electrification of this railway started again, and it was inaugurated on the 10<sup>th</sup> of April 1913.

The supply was carried out in DC, with a voltage of 1500 V, through a pantograph, solution that was considered advanced at that time. The electric energy was supplied by the Electric Plant from Arad, and it was transported through a 15kV line.

He also had a contribution to the development of the electric networks on Prahova Valley. Thus, in 1920 he took over the German company called "Electrica", and he developed it, building and updating the electric plants from Câmplina, Florești, Ploiești, Slănic Prahova, plants which were built for refineries and oils wells.

He contributed to the development of the National Electric System by setting up, in 1926, the Romanian Institute of Energy – IRE, which had contribution in the domain of research. This institute still functions nowadays with a different name – The Romanian National Institute for the Study of Planning and Using the Energy Sources, with the same acronym – IRE.

Within this institute he founded the Journal of the Romanian Institute of Energy, journal which was published until 1944. Its activity continued from 1953 by Energetica Review which has been published until nowadays. In IRE journal there have been published a lot of scientific papers which contributed to the development of the electrotechnics in our country, to the organization of the research in the domain of the electrotechnics. A lot of papers were signed by Constantin Bușilă. Nicolae Vasilescu-Karpen, the inventor of the famous K electric batteries, also published in this journal.

### **Activity in professional associations**

Constantin Bușilă was a member of several professional associations. He took part in the constitution meeting of the General Association of the Engineers – AGIR, meeting which was held at Iași on the 12<sup>th</sup> of August 1918, being member of the Administration Board. Constantin Bușilă promoted România as a founding member of the World Commission of Energy founded in 1926 and of the International Commission of the Extended Electric Networks, known as CIGRE. In 1926 he was also a member of the International Commission of Electrotechnics – CEI- and of Romanian Committee of Electrotechnics – CER- as chairman. He was president of the General Union of the Industrialists of Romania, president of the Superior Council of Water and Energy, president of the Superior Technical Council.

He was very much involved in the activity of Polytechnics Society founded in December 1881 when it was inaugurated the railway between Buzău and Mărășești, the first railway designed and built by the Romanian engineers. In 1935 he was elected President of the Polytechnics Society. In this position he was involved in passing several laws regarding the title of engineer, in organizing the technical academic education, in setting up a technical library for inferior and medium technical personnel, in studying the programs of improving the national economy.

### **Teaching Activity**

He started his teaching activity in 1910, as soon as he came back to Bucharest from Constanța. He taught at the National School of Bridges and Roads the course entitled “Graphic Works”, and then, from 1916 “Mechanic Technology”, “Lifting Devices”. In 1920, with Nicolae Vasilescu-Karpen’s contribution, the Polytechnics School was founded. Constantin Bușilă continued his activity here as a vice-rector and then, until 1940, the Dean of Faculty of Electromechanics. In 1939 he was appointed president of the Council of Improvement of the Polytechnics Iași during the 1939/1940 academic year. In 1937 he was elected member of the Academy of Sciences. As a member of this academy, he had a significant contribution to the development of the Romanian industry, to the formation and promotion of the specialists in the domain of engineering.

### **Minister of public works and the specialist’s endeavour**

On Ion Antonescu’s insistences, who considered Constantin Bușilă a specialist with international recognition, he accepted in 1941 the position as a minister of public works and communications, position that he held until the 5<sup>th</sup> of August 1943. Although when he accepted the job he said that he would not do any politics, but only professional activity, although he resigned three times after the Romanian Army passed the Prut, he was arrested in the fall of 1944 and he went to trial on the 6<sup>th</sup> of May 1946 together with other Romanian politicians and condemned to prison. He resisted only until 1949 when he died in Aiud prison on the 6<sup>th</sup> of April. Until his condemnation, Constantin Bușilă wrote “I have done only good in my life, fulfilling my duty to the country! I see no reason to be afraid!”. After his trial, the president of the judges declared “Sir, I had the sad mission to judge a case that had already been judged”.

This was the engineer Constantin Bușilă’s endeavour, the son of the capitan Dimitrie Bușilă, hero in the war for the Romanian Independence in 1877.

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