



ACADEMIC YEAR 2014 – 2015

TITLE OF DIPLOMA THESIS:

The Transadriatic Pipeline (TAP). Route and compressor's location planned.
Evaluation of impacts and alternatives.

AUTHOR: Georgios Kazanas

ABSTRACT

This Thesis has been prepared in frame of the MSc Programme "Management and Construction Management" of the Civil Engineering Department of the Faculty of Engineering, A.U.Th., and investigates the impact of the route of the Transadriatic Pipeline (TAP), its construction specifications and in particular the position of the construction of compressor in Serres Prefecture and to propose solutions for the resulting problems. The main objectives of this Thesis are: the comprehensive presentation, of the construction project and its geostrategic role in the context of pipeline diplomacy, a thorough examination of the impact on social and environmental terms and also the presentation and the evaluation of the available options for mitigating negative impacts. TAP is 863 km long and is part of the Southern Gas Corridor through which is going to transport 10 bcm/year of natural gas from Azerbaijan. In its greek part, the pipeline starts from Kipi Evros and crossing the North Greece, will pass in Albania and with an underwater part via the Adriatic Sea will end in Italy. The capacity will be increased in the future to 20 bcm/year, and therefore a compressor will be required in Serres Prefecture. The location of the compressor in the plain of Serres, scheduled by TAP Consortium, is likely to have negative environmental and social impacts. Among these are the air pollution expected, heightened because of the intense phenomenon of temperature inversion in the area, which will make the contaminants to end up in the soil having a negative cumulative effect on plants and humans in Serres Prefecture, the high noise levels intensified by the lack of background noise, facts that will turn the area from agricultural-residential into industrial, also probable are the extensive impacts in case of an accident on settlements which are very close to the compressor. Meanwhile, the existing alignment, having a minimum depth of development that is 1 m., poses risks, due to its crossing of seismic areas, causes a fragmentation of the agricultural land and crosses protected habitats. In addition, the pipeline passes through the ponds of Philippi, where shrinkage of flammable soil takes place. Furthermore, the establishment of protection and security zones along the entire length of the pipeline, with bans on buildings, deep ploughing and deep rooting plants, will affect negatively the exploitation of the agricultural land. Four alternative locations for the establishment of the compressor have been examined, that do not affect widely areas under protection or of high productivity: two by the Serres Prefecture, one by local groups and one by the writer. By performing a multi-criteria analysis and setting as criteria the impacts, was found that the first best location is the one on Kerdyllio Mountain, with the second-ranked appropriate location, the one on Mount Vertiskos. The proposed by the Consortium TAP positions were rejected because of their proximity to a large number of villages and settlements and the following risk. The locations



were also rejected because of the reasons explained before. For accessing the high-ranked locations for the establishment of the compressor, an alternative route is suggested that has an underwater part through Strymonikos Gulf or a route parallel to the highway, next to Pangaion Mountain. Regarding the route of the pipeline in the part of Eastern Macedonia and Thrace, it is proposed to adopt the solution submitted by the Technical Chamber of Eastern Macedonia and Geotechnical Chamber of Greece. In conclusion, it is clear that the country can benefit from the construction of the pipeline but it is important, in this planning phase, to try to avoid significant negative environmental impacts, something that is possible but at present does not seem to attract the interest of the relevant decision makers.

KEYWORDS

Pipeline, Transadriatic Pipeline TAP, natural gas, compressor, environmental impact