

**Case Study:  
Inland risks from the planned construction and operation of the AMBO pipeline**

January 2009

***Introduction***

The AMBO project (Albanian Macedonian Bulgarian Oil Corporation) consists of the construction of an oil pipeline from the port of Bourgas (Bulgaria) through Bulgaria, Macedonia, and Albania to the port of Vlore (Albania)<sup>1</sup>. The 894.5 km long pipeline has been designed to facilitate the transfer of crude oil from the Caspian region to the Adriatic Sea and further – to Europe and the US. Some 30-40 million tonnes per year would be transferred, with total project costs estimated to be USD 1.8 billion.

The debate around the project has so far taken 13 years and is not over yet. It seems to have been a real challenge for the AMBO Corporation to secure the funding for the project, until the picture of the oil supply is clear to the potential investors.

On January 31, 2007 a tri-lateral convention for the construction of AMBO was signed in Skopje. This tripartite agreement was ratified by the Bulgarian, Albanian and Macedonian Parliaments. Project Companies are to be established in the partner countries.

Environmental studies (SEA and EIA) are expected to be completed within 2 years and the construction itself would take another 3 years. Albania and Macedonia lack proper experience in implementing EIA procedures, giving rise to concerns that the process may not result in an adequate level of public participation.

**Protected natural areas inland along the route**

The feasibility study for the AMBO pipeline was done in 2000. The latest proposed route would cross or pass nearby important conservation protected areas with a significant number of endangered animal and plant species. The ecological sites include:

- Narta Lagoon, Albania
- Gorge of Peshti Monument of Nature, Macedonia
- Atanasovo Lake Reserve, Bulgaria
- Vitosha Nature Park, Bulgaria
- Ostrica Reserve, Bulgaria
- Rila National park, Bulgaria

Additionally, with Bulgaria's accession into the European Union, the country joined the Natura 2000 network of protected sites with ecosystems and bird species of European importance. The Natura 2000 sites along the AMBO pipeline have not been identified due to the need of a more precise definition of its route, yet the future EIA in Bulgaria will require a specific assessment of the threats posed to Natura 2000 sites that the pipeline will cross.

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<sup>1</sup> The Albanian government has requested the AMBO company to examine an alternative location for situating the terminal on the Adriatic coast, due to severe public opposition in Vlore. According to Mr. Ferguson, the president of AMBO Corporation, before looking into the possibilities of shifting the terminal from Vlore to Durres, all alternatives should be studied in the Environmental and Social Impact Study for the project (e-mail communication from December 11, 2008).

### **Narta Lagoon, Albania**

The Narta lagoon was proclaimed as a “protected water-and-earth landscape” by the Albanian Government in 2004. It is situated in the northwest part of Vlore district next to Narta village. This is the second largest lagoon in Albania, with two islands, and represents an important fishing and aquacultural site.

### **Gorge of Peshti Monument of Nature, Macedonia**

More than 3 km long, the Gorge of Pesti is situated south of Veles, on both sides of the Babuna river. Home of around 50 cave churches and remnants of fossilized mammals (70 000 - 10 000 B.C), the Gorge is unique because it is also one of the rare places in Macedonia where the endangered Griffon Vulture (*Gyps fulvus*) nests and the Black Stork (*Ciconia nigra*) - present in the IUCN red list<sup>2</sup> - lives.

### **Atanasovo Lake Reserve, Bulgaria**

North of the suburbs of the city of Bourgas lies the Atanasovo hyper-saline lake. The lake is a very important staging, wintering and breeding area for migratory waterbirds, including globally threatened species such as *Numenius tenuirostris*, *Pelecanus crispus*, *Branta ruficollis*, *Aythya nyroca* and *Aquila clanga*. It is also a major migratory bottleneck site, where huge numbers of soaring raptors and waterbirds pass overhead in autumn.<sup>3</sup>

### **Vitosha Nature Park, Bulgaria**

There are two reserves within the park’s territory – Bistrishko Branishte and Torfeno Branishte. They have been established to preserve in their original state the coniferous forests, alpine grass vegetation and Bulgaria’s most significant complex of alpine peat, whose thickness reaches up to 2 metres.

Bistrishko Branishte has been proclaimed by UNESCO as a biosphere reserve - part of its global network of protected sites. Fifty two plants which can be found in the park are included in the Red Book of Bulgaria. Ten species of amphibians and 12 species of reptiles (6 lizards and 6 snakes) have been identified in the park.

### **Ostritsa Reserve, Bulgaria**

The Ostritsa botanical reserve is one of the oldest protected territories in Bulgaria. It was established in 1943 to preserve the unique landscape and predominantly grass species. It is situated in the Golo Burdo Mountain between the towns of Pernik and Radomir, near the Bulgarian-Macedonian border. It has 453 protected plant species, of which 5 are Bulgarian endemic species and 37 are Balkan endemic species.

### **Rila National park, Bulgaria**

Rila National Park is one of the largest and most valuable protected areas in Europe—listed as Category 2 by the World Conservation Union (IUCN). The Park and all four of its nature reserves are on the UN List of Representative Protected Areas. The Parangalitsa Reserve and the former Marichini Ezera Reserve (now incorporated in the territory of Central Rila Reserve) are part of the World Biosphere Reserves Network under the UNESCO Man and the Biosphere Programme. Central Rila is the largest nature reserve in Bulgaria and covers

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<sup>2</sup> <http://www.iucnredlist.org/>

<sup>3</sup> <http://www.birdlife.org/datazone/sites/index.html?action=SitHTMDetails.asp&sid=402&m=0>

a total area of 12,393.7 hectares. Parangalitsa, designated in 1933, is one of the oldest Bulgarian nature reserves.<sup>4</sup>

### **Potential threats and risks to the inland areas from the AMBO pipeline**

Having in mind the unique characteristics of each of the areas mentioned above, the construction of a pipeline will bring significant threats to the flora and fauna, as well as cultural heritage in the areas.

#### ***Threats to flora and fauna***

For example, in the Gorge of Pesti, where the Griffon Vulture is nesting, the construction of a pipeline during the nesting period (November-February) would result in a significant drop in the already diminished population. As the region is rocky, blasting would be needed to place the pipeline underground, and as vultures are extremely sensitive to noise, the construction may scare off the last few breeding pairs of birds.

The bats that live in the caves in the Pesti Gorge are also extremely sensitive when it comes to sounds and vibrations, so any noise coming from construction works and detonations will have an adverse effect on their population.

In the case of the Vitosha and Rila Parks, significant damage would be done to the forests. When constructing a pipeline underground, it is necessary that the ground above the pipe is cleared of any trees, shrubs and plants with large roots. For several kilometers along the pipeline's route (the exact length would depend on the pipeline route), this will result in clearing hundreds of hectares. This represents an additional problem when it comes to endangered, rare or endemic species of flora, and both parks are rich in such species.

Such large clearings also represent a threat to living fauna in the forests as it fragments their usual habitat. In fragmented regions, animal species have difficulties locating others of their kind and this also results in an absence of breeding and decrease of population.

#### ***Threats to cultural heritage***

Detonations will pose a threat to the 14 Century church, built inside a cave in the Pesti Gorge in Macedonia. The church has great historical and cultural value and since it was constructed on an extremely fragile location, it is sensitive to earthquakes and stronger detonations.

#### ***Threats to underground water***

Oil pipeline construction also poses significant threats to inland waters. The AMBO pipeline would be crossing 8 major rivers, 23 medium-size rivers and 41 minor rivers<sup>5</sup>. Underwater positioning of the pipeline usually generates considerable quantities of sediment and changes the feeding and breeding grounds of fish and other aquatic organisms, threatening their survival.

Spilled oil, for example, can make water unsuitable for human and animal consumption and irrigation. It can also pass through the soil and contaminate groundwater supplies. Once oil penetrates into an aquifer, it is difficult to remove or clean up. Above ground, oil spills may also cause fish and wildlife deaths and can damage vegetation.

<sup>4</sup> <http://www.rilanationalpark.org/en/index.phtml>

<sup>5</sup> "river width < 50 metres = minor crossing; 50 < width < 100 metres = moderate crossing; and width > 100 metres = major crossing", AMBO Corporation Feasibility Study.

### **Threats from inland oil spills**

In spite of sophisticated leakage protection, pipelines are vulnerable to earthquakes and ground movements that sometimes result in oil spills. Research in the United States shows that no matter the scale of the inland spills (40 000 litres or 400 000 litres), around 60% of oil spills are attributed to pipelines<sup>6</sup>. Additionally, more than half of the 12 000-15 000 reported spills in the U.S. each year are inland spills.

The costs of an oil spill are great. Cleanup costs generally are between five to ten times greater than the value of the spilled material. The level of environmental and economic damage from a spill may be up to ten times greater than cleanup costs.<sup>7</sup>

Another problem common to inland oil spills is that many of the spills go unreported, making it impossible to know if they were cleaned up using the correct response technology. Experts say many inland oil spills are incorrectly cleaned up by simply bulldozing the oil and burying it underground. This does not clean up the spill, but creates possible future problems of oil contamination of water supplies<sup>8</sup>.

### **Conclusions and recommendations**

During every oil pipeline construction, there are inevitable effects on the environment. In the case of AMBO pipeline, there are many such risks. Some, such as clashes with protected natural areas, may be minimised by changing parts of the route. Others however, such as the induced climate impacts of increased oil supply and the threat of inland oil spills, are an inherent part of oil pipeline projects.

This means that constructing new oil pipelines should be avoided, and financing should instead be used to ease the transition away from an oil-driven economy. If however a pipeline is built, it is essential to ensure that it is economically feasible throughout its lifetime and that the least environmentally harmful option is chosen. There are three oil pipelines being planned in the South East Europe. Even though they are planned for different countries, still none of them may be built until a strategic environmental assessment and feasibility study has been carried out encompassing all of the options, to see which, if any, is most feasible and least environmentally harmful. So far this has not been the case and it is of great concern that pipelines may be simply built on a first-come, first-served basis rather than on the basis of a detailed examination of demand, supply, effect on natural areas and impact on the EU's ability to meet its CO<sub>2</sub> reduction targets.

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<sup>6</sup> Characteristics of Reported Inland and Coastal Oil Spills, Gary Yoshioka and Madelyn Carpenter, ICF Consulting Fairfax, Virginia (<http://www.epa.gov/oem/docs/oil/fss/fss02/carpenterpaper.pdf>)

<sup>7</sup> Texas Water Resources Institute March/April 1985, Volume 1, No 2, <http://twri.tamu.edu/newsletters/TexasWaterResources/twr-v1n1n2.pdf>

<sup>8</sup> For example, on June 10, 1999, approximately 230,000 gallons of gasoline were released from a pipeline in Bellingham, Washington and spilled into Whatcom Creek (Cutler and Barber 2001). OPS reported that only 4 percent of the oil was recovered and \$1 million in property damages was incurred. In addition, the spill and explosion caused three fatalities and nine injuries. The nearby Interstate highway was closed, surrounding water supplies were affected, and 4,000 residents lost electricity. For three weeks during the emergency phase, more than 2,770 people responded to the spill and explosion, with concerns about toxic smoke fumes affecting the responders. Although this spill was quite large, our review of OSIR data shows that, on average, seven spills above 200,000 gallons occur in U.S. inland areas each year.", Characteristics of Reported Inland and Coastal Oil Spills, Gary Yoshioka and Madelyn Carpenter, ICF Consulting Fairfax, Virginia (<http://www.epa.gov/oem/docs/oil/fss/fss02/carpenterpaper.pdf>)

An important aspect is the implementation of the Strategic Environmental Assessment and Environmental Impact Assessment procedures in the countries of South East Europe. Albania and Macedonia have very limited experience in conducting the procedures and ensuring proper public participation. Even though the legislation is in place, its improper implementation might cause additional problems for any planned project. Moreover, as these countries are only envisioned as “transit” for the oil heading west, they would inevitably want to make sure that all the risks associated with the pipeline are minimal, and would not cause irreversible damage to their protected zones and environment. According the Feasibility Study on the AMBO pipeline, Volume III Environment, “In the case of Bulgaria the route passes near, but not within the four ecologically restricted areas.”<sup>9</sup>

The recommendations can be summarized as follows:

- A Strategic Environmental Assessment should be performed, taking into account all oil pipelines planned in South East Europe
- The Environmental Impact Assessment should make sure it especially addresses the impacts on protected zones and areas, particularly if the areas are or in the future may be proclaimed Natura 2000 sites.
- The procedures for Strategic Environmental Assessment and Environmental Impact Assessment should be carried out in accordance to both national legislation and EU laws, taking into consideration the low capacities of the authorities in some of the countries for their implementation.
- Special capacity building training or guidance should be provided to the competent authorities in order to ensure proper implementation of the procedures, and proper regulation, public involvement and participation.

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<sup>9</sup> AMBO Feasibility Study Volume III Environment, p. 3, May 2000.