Hellenic Republic
National & Kapodistrian University of Athens
Faculty of Geology and Geoenvironment
Laboratory on Prevention and Management of Natural Disasters
Director: Prof. D. Papanikolaou

To:
The President of the
Nisyrian Studies Society
Mr. K.Chartofylli

Athens, 20/07/2011

Dear Mr. President,

In reply to your letter regarding the exploitation of the Nisyrian geothermal field by PPC and the viewpoints expressed by the colleague Professor V.Dietrich, we hereby wish to point out the following:

1. The geothermal field of Nisyros is of high enthalpy and corresponds to the similar field of Milos and, to some degree, to that of Methana and Santorine. All of the above are volcanic areas with recent to current activity, belonging to the Aegean Volcanic Arc, owing to the geo-tectonic convergence of the plates, which has been in progress for millions of years. This unique geo-tectonic structure includes geothermal fields due to small depth laying fiery magma, which emits energy to abutting rock layers. This geothermal energy, a natural resource, must be exploited using suitable and environmentally attuned methods.
2. The volcanic field of the Aegean Arc is an area of exquisite natural beauty, favourable to touristic development, with Santorine, an island with worldwide renown, being the leading example. Therefore, the issue of the geothermal exploitation is inextricably linked to the kind of the development chosen for the specific area. The local community will assess the positive and negative aspects of each alternative on a medium to long term scale and will reach a decision depending on the incentives agreed with the exploitation organization of the geothermal field (e.g. free electricity, job creation, percentage on profits etc). For Santorine and Methana no issue of geothermal exploitation has arisen, while the effort to build such a unit in Milos was abandoned in 1987-88, after serious failures and environmental problems caused by gas emissions and leakage of liquids with critical quantities of harmful salts and other substances. It is self-evident that touristic development and environmental protection cannot co-exist with geothermal units. Specifically in Nisyros, between 1996 and 1999, there has been intense geological activity, including earthquakes, landslides, temperature, compositional and quantitative changes of gas and liquid masses and geodetically documented alterations of the terrain, all of which indicate that the sensitive volcanic area is in a state of fragile equilibrium and that any interference can have unpredictable repercussions, a characteristic example being the oblong chasm of a few hundred meters of length that appeared a few years ago in Lakki.
3. The geothermal field of Nisyros spreads to the entirety of the island and sea bed area of Nisyros – Kos, including the islets in between. Therefore the geothermal development should not be considered as a geographically localized issue of Nisyros,

but also of the entire geothermal field. Recent research performed by GEOWARN, as well as other scientific programs and scientific publications (for example the 2005 issue of Nisyrian Chronicles), indicate that there is a potential of geothermal development at the islands Giali, Pergoussa, Pachia and Stroggyli. From the aforementioned, the cases of Giali and Pergoussa seem more favourable, since besides recent volcanic activity there are magmatic chambers and active neo-tectonic fractures, which facilitate the circulation of tectonic fluids, indispensable for geothermal development.

4. From the above one can deduce the potential of geothermal development not in Nisyros, but either on Giali or Pergoussa. On Giali industrial units are currently located, hence the addition of geothermal units will not dramatically influence the already environmentally degraded area, as it will co-exist, in limited space, with the established activities there. On Pergoussa there exists no other activity and therefore a geothermal installation could be designed and developed independently of any other industry. Of course, there is the need of basic infrastructure, such as a harbor.

In conclusion, a solution to the problem of the geothermal development can be found, without any cost for Nisyros and with additional positive consequences in both local and national level.

Yours sincerely,

Professor E. Lekkas Professor D. Papanikolaou Professor E. Lagios