

EPFL - FACULTE DES SCIENCES DE BASE
CH-1015 LAUSANNE
Switzerland

Phone: +41 (0)21 - 693 3302
Fax: +41 (0)21-693 7910
E-mail: giorgio.margaritondo@epfl.ch



**Professor Giorgio Margaritondo Dean,
School of Basic Sciences**

His Excellency Edward Nalbandian
The Ambassador of the
Republic of Armenia
Armenian Embassy
9 Rue Viète,
75017 Paris
France

Re.: Candle Synchrotron Radiation Project

Lausanne, October 24, 2003

Excellency:

I hope that you will consider some comments of mine on the Candle project for a synchrotron facility in Armenia. I am the coordinator of the European Commission Round Table on Synchrotron Radiation and Free Electron lasers, and my duties include monitoring synchrotron projects worldwide and anticipating future needs in this domain.

The information in my possession shows that the Candle project is an excellent initiative for Armenian science and technology, for Armenia in general and for the international research community. The key facts supporting my assessment are the following: first of all, the project is of excellent quality according to international standards.

The second fact is that Armenia has a remarkable number of high-level scientists in the domain of accelerator science and in other areas relevant to a synchrotron facility. This puts the country in an unusually strong position to develop and exploit the Candle project.

The third fact is the acute and worsening worldwide shortage of synchrotron facilities, - in contrast to a rapidly increasing demand. This shortage is dramatic in certain key areas such as protein crystallography and in several cases less than 10% of the demand can be met. Because of this shortage, scientists are ready to travel to facilities far from their base institutions (for example my own collaborators in Switzerland are regular users of facilities in the USA, Korea and Taiwan).

Therefore, the Candle facility will constitute a resource not only for local researchers but also for international science, enhancing the visibility and the image of Armenia. The beneficial impact will extend well beyond the boundaries of research, producing the positive picture of a country oriented towards science and technology and capable to master the most sophisticated and ambitious projects.

The international use of the Armenian synchrotron will be certainly boosted by the many scientists of Armenian origin or background who are active in the USA and in Europe. These include eminent members of the international synchrotron community like Professor Soukiassian of Orsay.

Finally, I would like to comment on a delicate and important issue. I am quite sure that an ambitious project like Candle raises questions about the full utilization of the facility after commissioning. In fact, questions of this kind are invariably asked when a new synchrotron facility is proposed.

Numerous examples show that our *a priori* assessments of future utilization levels are not unreasonably optimistic. On the contrary, they systematically underestimate the real utilization levels.

For example, when Switzerland proposed the Swiss Light Source, many critics expressed the opinion that the facility would not be fully used. To counter this opinions, solid arguments were used to project not only full utilization but in fact over-subscription. This was confirmed by the facts: SLS is indeed oversubscribed and the over-subscription factor is much bigger than predicted.

Candle will be commissioned in a country blessed with a strong research community, located in an international region hosting many other scientists and no facilities of this kind and with strong ties beyond that region. Based on these facts, I would be very surprised if the facility would not be fully utilized and in fact oversubscribed.

Thanking you for your kind attention, Excellency, I remain at your disposal for any additional clarification you may request. I truly believe that Candle is a wonderful project and I will be more than happy to help it in any way I can.

With my best regards.

Sincerely,

A handwritten signature in black ink, appearing to read 'G. Margaritondo', with a long horizontal line extending to the right.

Prof. G. Margaritondo
Dean of basic sciences