

To the

COMMISSION OF THE EUROPEAN COMMUNITIES

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Comments on
COMMISSION WORKING DOCUMENT
CONSULTATION ON THE FUTURE "EU 2020" STRATEGY

Brussels, 24.11.2009 COM(2009)647 final

As representative of those German companies dedicated to innovative superconductor technology the ivSupra (Industrieverband Supraleitung, German Industrial Association for Superconductivity) strongly supports the Commission's target of creating a competitive, connected and greener economy as a main focus of the FUTURE "EU 2020" STRATEGY.

The Commission of the European Community is well advised to bear the challenge of dwindling resources and climate change in a timely manner to create a stable and sustainable economy on the basis of environmental technologies.

Electrical energy constitutes the most comfortable and versatile energy form coevally showing a constantly growing demand. It can be generated in a sustainable way and carbon-neutral from renewable sources. Hence, it is assumed to play the dominant role in a secure energy supply concept. Beyond generation, the distribution and conversion of electrical energy offer a lot of yet unused potential for increasing efficiency.

In this regard, the smart grid approach to improve knowledge and control of power flow is certainly a useful way to optimize the use of the existing grids. However, smart metering and levelling of temporal peaks are rather means to manage the bottlenecks than adapting the infrastructure to future challenges, such as integration of decentralized, renewable energy sources and of electro-mobility.

There are hardly any physical means to avoid losses available in electrical grids or to push the efficiency limit of electrical components even after a full century of engineering optimization. With respect to this, superconducting energy technology constitutes a unique chance to substantially improve energy efficiency by introducing new appropriate hardware components. Meanwhile, such components have either reached the maturity of advanced state of demonstration, technical products and now need to reach the commercial level or even first commercial products.

While this has been already recognized in the US and some Asian countries, there is an obvious lack of awareness within the European Union. This is all the more amazing since superconducting components excel with respect to both energy - and resource efficiency. However, superconducting energy technology is attracting increasing attention in Germany which is reflected in prestigious environmental awards for superconducting solutions

(Deutscher Umweltpreis 2009, Hermes Award 2008). A recent study about grid survey underlines the benefits of superconducting components for electrical distribution grids in urban areas (ISBN 978-3-8022-0970-3).

In terms of this strongly regulated market, however, it will be crucial that the Commission is committing itself to advocate favourable conditions for the implementation of innovative modern grid technologies and to encourage pilot installations in the large scale which is necessary to demonstrate the benefits of the technology. Convincing national regulators to establish incentives and to allow for innovative developments is indispensable to upgrade the European infrastructure, and to create a literal super-grid. Such super-grids will be absolutely crucial for the secure energy supply of Europe in the future and two concepts have been laid down quite recently: On the one hand generating electricity by concentrated solar power in North Africa and transmitting this to central Europe, the so called Desertec project. On the other hand, the initiative of the North Sea abutting nations to create a subsea high power transmission grid which connects off shore generation and hydro power generation together with hydro storage in Scandinavia. Both of such super-grids could definitely not be realized as fully superconducting grids in the first half of this century but would give the opportunity to solve issues in some critical areas with superconducting equipment. HTS could with this respect become an enabling technology for such super-grids.

All in all there's no doubt, that in terms of conducting electrical energy, superconductivity will receive comparable attention in the future, as carbon capture or renewables for power generation today. The future "EU 2020" strategy and its implementation should recognize and reflect the importance of the use of superconductor technology and support this development and deployment - e.g. also within future research framework programs.