

## ELI European Project: Construction Begins

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#### A laser rarity on its way to the CR

**The Institute of Physics of the ASCR, v. v. i. has taken more important steps necessary for the globally unique multifunction laser centre, ELI Beamlines, to be created in Dolní Břežany near Prague. This research workplace will be the largest scientific project in the history of the Czech Republic.**

At a press conference on 24 May 2013, the winner of the competition for the contractors of the main phase of the building of the laser centre, the group of Metrostav, VCES and OHL ŽS, was presented to reporters. The representatives of the media were also introduced to the new key partner of the ELI Beamlines project – the first-class American research centre, the Lawrence Livermore National Laboratory (LLNL). American scientists and technicians in cooperation with Czech colleagues from the scientific team of ELI

Beamlines will develop a unique laser system worth CZK 1.1 billion, which is to become one of the main parts of the centre in Dolní Břežany. The international character of the ELI project is also underlined by the foundation of a European consortium ELI-DC, whose aim is the support and development of ELI as a Europe-wide research infrastructure.

Those present at the press conference included among others President of the Academy of Sciences of the CR Jiří Drahoš, Ambassador of the USA in the Czech Republic Norman Eisen, Director of the Institute of Physics of the ASCR Jan Řídký, Managing Director of ELI Beamlines Vlastimil Růžička, representative of the LLNL Constantin Haefner and other important guests.

#### The largest R&D construction order in recent years

The construction of the ELI Beamlines laser centre the largest construction order in the area of research and development in recent years (the winning price was CZK 1.4 billion, with options and VAT it is CZK 1.8 billion). According to its director Jan Řídký, the Institute of Physics of the ASCR, which is implementing the project, therefore devoted exceptional attention to the transparency of the selection process, namely both legally and technically.

“The MVO group offered the lowest price of the four tenders. The members of the group have extensive experience with the construction of technically demanding buildings. Very precise rules for possible changes, which could impact the price of the building, are prescribed in the contract. They can be initiated only by the Institute of Physics, not the contractors of the building,” said Řídký.

The requirements for the construction contractors will be entirely exceptional: vibrational stability, resistance to ionising radiation, a high level of variability allowing the placement and further development of the experimental equipment, which has no parallel globally.

“Considering the experience with similarly demanding buildings, our own unique technologies, guarantee of quality and the time of the completion, the tender won that we submitted along with the participants in the MVO group - the companies VCES and OHL ŽS,” stated Pavel Pilát, General Director of Metrostav. As he further said, the work on the ELI Beamlines laser centre is an honour for the largest Czech construction company Metrostav and its partners. It is also a logical continuation of the mutually beneficial cooperation with the Academy of Sciences of the ASCR.

On the plots where the first-class research workplace is to grow over the next few years, demolition and landscaping work have taken place so far (including the excavation of pits almost 10 meters deep the size of a football pitch). The construction itself will start in the next few days, end in spring 2015 and in the following two years there will be the installation and tuning of the research technologies.

### **Not only Czech but also a European project**

From the beginning, ELI has been conceived and financed as a research infrastructure with a Europe-wide dimension. Forty institutions from 13 EU member states participated in the preparatory phase of the project. Besides the already mentioned centre in the Czech Republic, another two should be built as well – in Hungary and Romania. Precisely these three countries along with Italy have founded the ELI Delivery Consortium, whose aim is the support and development of the ELI as a Europe-wide research infrastructure. It concerns not only the management of all three infrastructures but also their financing in the operational phase. The importance of the ELI DC consortium was underlined at the press conference also by Wolfgang Sandner, who is its new head. Prof. Sandner is without exaggeration one of the most significant laser physicists of today, who in the past ran the prestigious Max-Born-Institut, the LASERLAB Europe project, or presided over the German Physicals Society.

“The foundation of the consortium is an important signal that the laser centre in Dolní Břežany is really perceived by our partners as a European undertaking and that the ELI project as a whole is one of the research priorities of the entire EU,” stressed President of the Academy of Sciences of the CR Jiří Drahoš. “It shows that despite all of the objective problems the Czech Republic manages to implement one of the most important union projects in the area of research and development.”

### **Research cooperation with the USA**

According to Managing Director Vlastimil Růžička, the uniqueness of ELI Beamlines laser centre lies mainly in its universal usage. “It was supposed to be a truly multifunctional centre in which not only physicists can conduct the necessary experiments but also chemists, biologists and others, including industrial companies. The combination of laser technologies, which we provide, will be truly unique.”

The L3 laser system L3 at a price of CZK 1.1 billion is to form one of the basic parts of the laser centre in Dolní Břežany. The scientific team of ELI Beamlines began to cooperate in its development with one of the most famous and largest laser workplaces in the world, California’s Lawrence Livermore National Laboratory (LLNL), which was represented at the press conference by Constantin Haefner. The LLNL hence along with the Rutherford Appleton Laboratory in Britain, Istituto Nazionale di Fisica Nucleare in Italy, Deutsches Elektronen Synchrotron in Germany or Laboratoire d’Optique Appliquée in France have become the key partners of the ELI project. The significance of the cooperation between ELI and LLNL was confirmed right at the press conference also by the presentation by Ambassador of the USA in the Czech Republic Norman Eisen.

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