CZECH FOCUS

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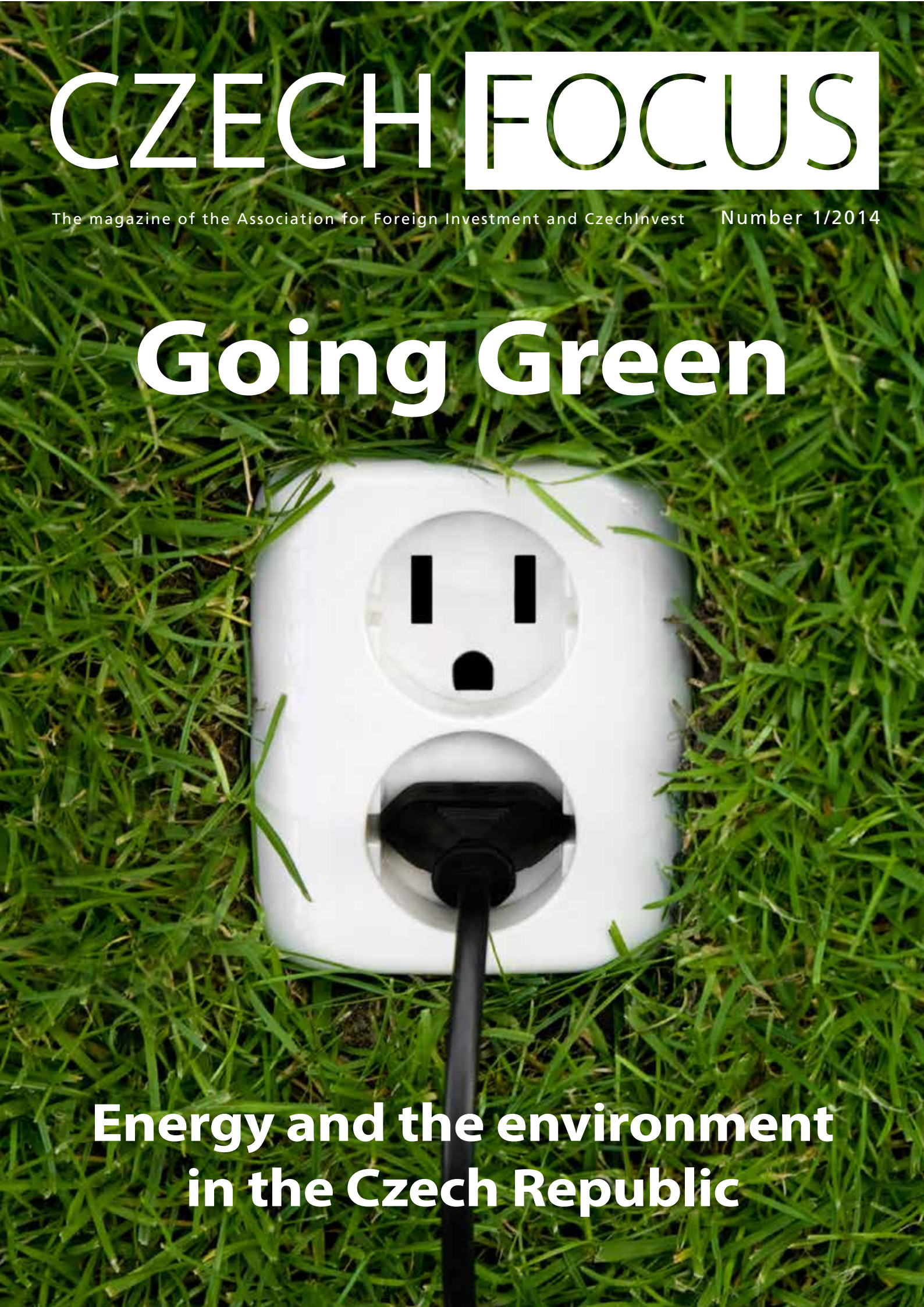
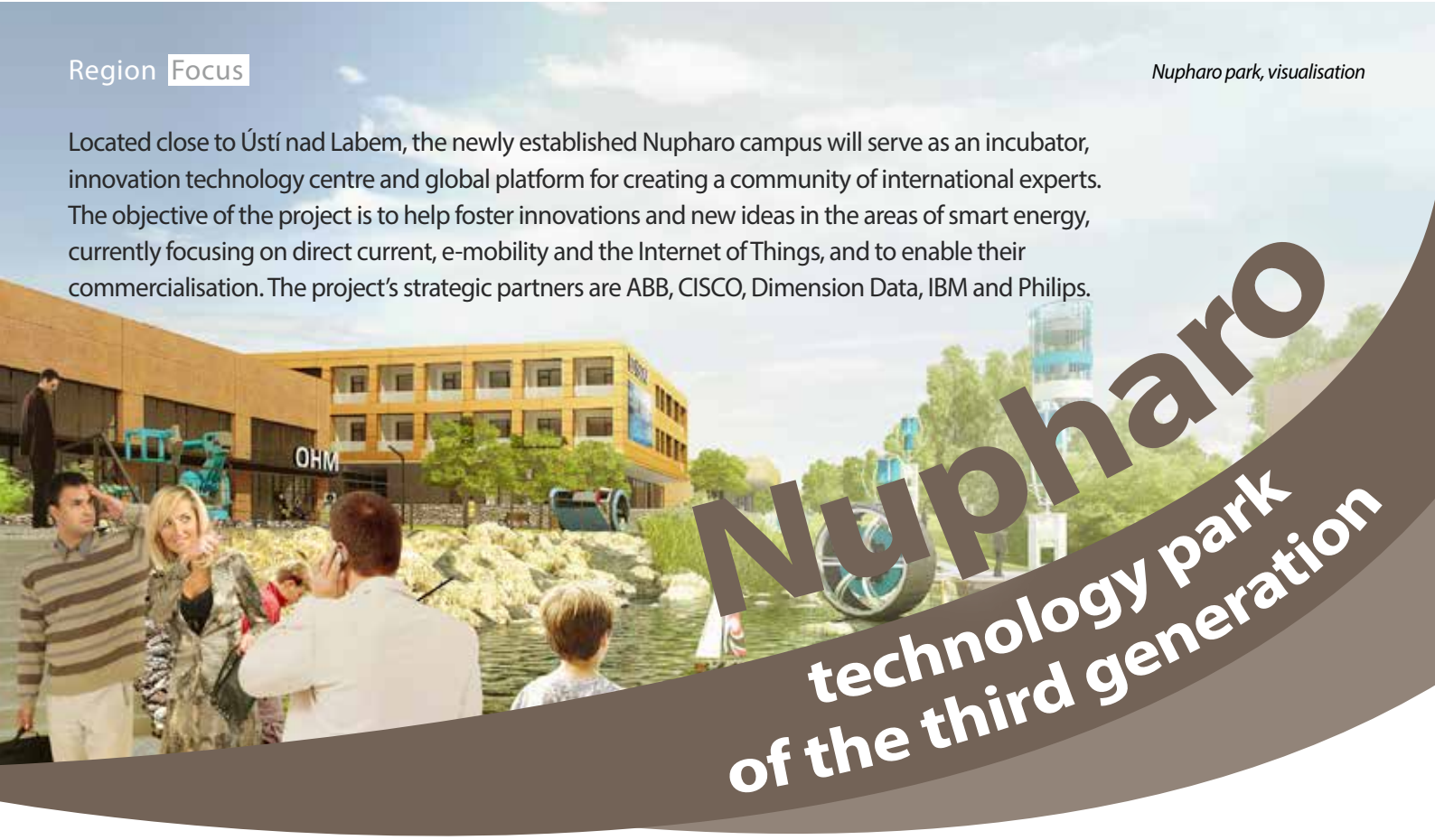
Going Green



Energy and the environment in the Czech Republic



Nupharo park, visualisation

Located close to Ústí nad Labem, the newly established Nupharo campus will serve as an incubator, innovation technology centre and global platform for creating a community of international experts. The objective of the project is to help foster innovations and new ideas in the areas of smart energy, currently focusing on direct current, e-mobility and the Internet of Things, and to enable their commercialisation. The project's strategic partners are ABB, CISCO, Dimension Data, IBM and Philips.

Nupharo
technology park of the third generation

In this phase Nupharo offers rental premises with a total area of 16,000 m^2 comprised of light manufacturing, offices, showroom, conference hall and other premises. Besides spaces for sharing comprehensive services and technical facilities, the park also offers services in the areas of financing, consulting and marketing. The campus' facilities include the Welcome Business Centre with a lodging, restaurant, and accomodation, all with a creative atmosphere. The campus offers basic services such as a day-care centre, education facilities and programmes, a fitness centre, rental shop, a map of hiking and sports activities and a generally cultural/educational and creative environment. Completion of the technology park is planned for 2015.

Smart technology campus and green buildings

The Nupharo project combines the technology of passive buildings pursuant to modern environmental standards with active building technologies, e.g. DC technology, which helps to manage and, especially, reduce operating costs by as much as 50%, LED lighting, latest ICT solutions and installation of state-of-the-art rapid-charging stations for electric cars and bicycles. The Nupharo campus is designed as a maximally self-sufficient and sustainable complex with its own island water-treatment system which, thanks to its own purifier, is divided into three water circuits: potable water, wastewater and rainwater. For heating and cooling purposes, 84 boreholes for heat pumps will be installed in the complex. A system for recuperating and sharing waste heat will also be used. All of the buildings are prepared for installation and DC connection of solar panels. The complex also features stations for continuous emissions measuring. With all of these technologies in place, Nupharo is striving to achieve one of the highest LEED certifications.

Innovation is the primary objective

Nupharo collaborates with public institutions and major Czech and foreign universities, such as the University of Pittsburgh, Delft University of Technology, the Indian Institute of Technology, Jan Evangelista Purkyně University in Ústí nad Labem, Czech Technical University, the Institute of Chemical Technology in Prague, and the Technical University of Liberec. Together with the University of Pittsburgh, Nupharo organised the first annual conference on the topic of DC technology last year in Prague. The conference was attended by more than eighty specialists from around the world. Nupharo's philosophy is to not wait only for the construction of a modern campus, but to work now on the content of future developments. In keeping with that philosophy, Nupharo organises specialised workshops and networking events, and is preparing several projects in cooperation with universities. It has already established a foundation to support the nearby town of Libouchec and is planning to formulate in the very near future a strategy to support not only the local area, but also creativity and innovation in the Ústí region. Nupharo is exceptional also in that it has its own start-up programme. Initial recruitment of start-up companies will take place in 2014.

Unique global focus

The Nupharo project is based on the idea that energy is the foundation of everything. The advantages of long-neglected direct current technology are increasingly coming to the fore and the commercialization of this old new know-how is the globally unique focus of the Nupharo project. The advantages of direct current include - in addition to higher safety and ease of use - particularly better compatibility with renewable and local sources of energy and higher efficiency, making it more ecologically sound. A good example of this is LED lighting technology, which is based on direct current and is roughly 75% more efficient than ordinary artificial lighting. Because it requires less energy and consumption, direct current is far more environmentally friendly than alternate current. Starting with renewable resources, such as photovoltaic, which function on direct current, transitioning to direct current could help to save energy also due to the fact that it is already used by electronic devices such as computers, telephones and LED lamps and televisions, as well as electric cars and bicycles. However, these devices have built-in convertors or batteries that convert AC to DC, which results in the loss of approximately 15% of input energy. The quantity of electrical appliances that we need for everyday life is constantly increasing – and the amount of lost energy is ever greater. However, it is expected that in 2014 a new USB format, called USB Power Delivery, will appear on the market and make it possible to transmit electricity via telephone (data) lines for much more powerful (100W) appliances, thus helping to reduce energy loss. ■

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