

Think Tank to Make Technologies Fit for the Future

Think Tank of the State, Industry, and KIT Develops Cross-disciplinary Concepts for the Efficient Use of Resources in Germany as a High-tech Location



Depending on their specific properties, many minerals may be highly demanded and scarce raw materials for construction industry. (Photo: Nicole Brinnel/KIT)

The growing world population's demand for energy and raw materials will increase in the future. Moreover, increasing mechanization will result in growing consumption of resources, examples being lithium for batteries or rare earths for catalytic converters and electric motors. Meeting these demands in a sustainable, reliable, and economically efficient manner is one of the big challenges for high-tech locations like Germany. The think tank "Industrial Resource Strategies" of Karlsruhe Institute of Technology is to develop solution concepts. It will be funded by the State of Baden-Württemberg and industry with up to EUR 2 million annually for the next four years.

"The think tank "Industrial Resource Strategies" will be the first institution of its kind in Germany. It is to be the mastermind in the raw materials and resource efficiency sector and to essentially contribute to the development of innovative solutions in this area," Minister-President Kretschmann says. "By supporting resource-efficient technologies, we will make our state fit for the future. At the same time, we will reduce the consumption of non-renewable resources and energy."

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“Except for sand, gravel, and stones, Baden-Württemberg does not possess any substantial quantities of raw materials,” the Baden-Württemberg Minister of the Environment, Franz Untersteller, explains. “This means that our companies are highly dependent on imports of raw materials and, hence, have to cope with the associated imponderabilities, including incalculable costs of resources. This is a major risk. To maintain competitiveness and secure the associated economic power, jobs, and prosperity of our state, we have to minimize this risk by the efficient use and recycling of raw materials. The think tank can and will support our companies in this respect.”

“Baden-Württemberg as a location of high-tech production crucially depends on permanent availability of a variety of raw materials at reasonable prices,” says the Baden-Württemberg Minister of Economics Nicole Hoffmeister-Kraut. “It has to be our objective to enable our companies to respond autonomously and flexibly to the sometimes rapidly changing raw materials markets. With the think tank, we want to specifically enhance these competencies in Baden-Württemberg.”

“Responsible use of the limited quantities of resources is our social duty to next generations,” says Professor Holger Hanselka, President of KIT. “I am very happy that KIT with its broad range of disciplines from natural and engineering sciences to economics and the humanities can make a valuable contribution in this respect.”

“The new think tank will focus on the extraction, use, and recycling of raw materials in a holistic way, including the technological, economic, ecological, and social impacts,” says Professor Thomas Hirth, KIT Vice President for Innovation and International Affairs and spokesperson of the think tank “Industrial Resource Strategies.” “We want to bridge the gap between findings and applications for the benefit of society, economic prosperity, and the preservation of our natural basis of life.”

Industry strongly depends on raw materials. And the need for materials, such as platinum, magnesium, cobalt, or rare-earth metals continues to grow, as they are the basis of new technologies for the electric mobility sector or the energy transition. Circular economy and recycling of raw materials make sense for keeping the added value in the state and for reducing the dependence on imports. Hence, development of concepts for the efficient use of resources and recycling is a major task of the think tank. It is to give rise to new ideas and to think outside the box. In addition, the research institute is to give advice to politics and industry in the area of resource strategies.

The cross-disciplinary think tank for the efficient use of scarce resources will be established at Karlsruhe Institute of Technology (KIT) and develop new approaches to using raw materials. Presently, two types of projects are being considered, pilot projects and flagship projects. Pilot projects initiated by industry will cover close-to-application developments and technologies of short-term implementation potential. Among the topics covered may be resources availability, needs, and transparency, recycling and circular economy models, resource-efficient processes, and climate protection.

Flagship projects of several years' duration will address strategic and social aspects of environmental and economic policies. In a cross-disciplinary approach, they will study aspects from various industrial branches and enhance national resource efficiency. Among the topics covered may be the demand for raw materials and their availability for future mobility or establishment of circular economy of bulk raw materials in the construction sector.

The think tank "Industrial Resource Strategies" will describe technological challenges and solutions for tomorrow in highest possible detail. Unexpected effects will be identified earlier and then be considered in the dialog of industry, science, politics, and society. The think tank's approach to enhancing resource efficiency is to enable strategic classification of new technologies for the early development of viable business models. The think tank is to support political decisions that provide the companies with sufficient freedom as regards economic and technological aspects as well as environmental protection and resource consumption. The think tank is not only planned to identify strategically relevant questions, but also answers them.

As part of Baden-Württemberg's strategy for resource efficiency, the think tank project is scheduled for a duration of four years. After an evaluation, the partners will decide on its continuation. The think tank will be funded jointly by the state and industry that are planned to share the costs of EUR 2 million annually. In addition, projects funded by third parties might be acquired. The project teams will not only consist of internal, but also of external experts.

For more information, click:

<https://mwk.baden-wuerttemberg.de/de/service/presse/pressemitteilungen/> (in German only)

<https://um.baden-wuerttemberg.de/de/service/presse/pressemitteilung/pid/zukunftsthema-ressourceneffizienz-empfehlungen-fuer-eine-landesstrategie/> (in German only)

Being “The Research University in the Helmholtz Association,” KIT creates and imparts knowledge for the society and the environment. It is the objective to make significant contributions to the global challenges in the fields of energy, mobility and information. For this, about 9,300 employees cooperate in a broad range of disciplines in natural sciences, engineering sciences, economics, and the humanities and social sciences. KIT prepares its 26,000 students for responsible tasks in society, industry, and science by offering research-based study programs. Innovation efforts at KIT build a bridge between important scientific findings and their application for the benefit of society, economic prosperity, and the preservation of our natural basis of life.

Since 2010, the KIT has been certified as a family-friendly university.

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