

# DEVELOPMENT OF SCIENTIFIC AND RESEARCH ACTIVITIES UNDER THE CIRCULAR ECONOMY IN CHINA

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In the context of the formation of the model of the circular economy, a special place is given to scientific research. In connection with the construction of a new model of management, a revision of the mechanism for organizing scientific and research activities is required. The circular economy is undoubtedly the goal of various scientific and research organizations in the context of sustainable development. According to the 3R principles (reduce, reuse, recycle) of circular economy, the implementation of scientific research activities and the application of circular economy are reflected in many aspects, most notably in the research on energy saving and emission reduction by scientific and research organizations.

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Scientific and research organization refers to an institution that has a clear research direction and mission, a high level of academic leadership, a certain number and quality of researchers, the basic conditions for scientific research work, and long-term organized to engage in scientific research and development activities [1].

In general, according to the founding bodies of scientific and research organizations, there are three types of scientific and research organizations in China: government scientific and research organizations, university scientific and research organizations, and corporate scientific and research organizations.

The different identities of the founders and the different purposes for which they set up scientific and research organizations have led to the different characteristics of these three types of scientific and research organizations. The main function of university scientific and research organizations is to train more talents for the society, while the main characteristic of government and corporate invested scientific and research organizations is to absorb talents trained by universities. The scientific and research organizations of universities are more complete and richer in terms of disciplines than those of governmental and corporate scientific and research organizations, but the research and development management mechanisms and incentives of governmental and corporate scientific and research organizations are more complete and richer than those of university scientific and research organizations.

To comprehensively investigate the scientific research performance of scientific and research organizations, a series of indicators are usually used to evaluate the overall strength of scientific research, considering the actual situation, and conducting statistical surveys. For example, the performance evaluation index system of scientific research management in higher education institutions is shown in table 1.

**The performance evaluation index system of scientific research management in higher education institutions**

Level 1 indicators	Level 2 indicators
Science and technology resource allocation	Innovative Human Resources
Scientific research funding and projects	Scientific research funding
	Significant Projects
Scientific research achievements awards and benefits	Essays
	Publications
	Patent licensing and other intellectual property rights
	Scientific research awards
	Technology transfer revenue
Science and technology communication	Academic conferences
	Visit study
Scientific research input-output ratio	Human efficiency
	Efficiency of funding

As we can see from the table above, the current evaluation system for scientific and research organization management is still mainly in the more traditional mode, looking at the number of research results and research resources, without directly incorporating the circular economy into the assessment criteria.

But in view of today's situation, advocating a circular economy is an inevitable trend in the development of international society. It is a new mode of economic operation for human beings to achieve sustainable development, and this mode of economic operation is a circular economy that realizes the ecological transformation of economic activities. The ecology of the circular economy is a breakthrough change in the history of human society's economic development, it is also an important way and effective way to implement sustainable development strategies.

Consequently, in the context of the development of a circular economy, scientific and research organizations should adapt their own management systems and evaluation systems to the requirements of sustainable development.

First, it is important to understand the fact that development is not only about economic development and technological development, but that the goal of both economic and technological development is to serve a better life for mankind. Therefore, it is important for scientific and research organizations to abandon the traditional concept of focusing on the results of scientific

research and to consider the concept of circular economy and sustainable development as a core element of development, which should be always considered in the research process.

Furthermore, during scientific research activities, consideration should be given to whether the resources used are non-polluting or low-polluting, and renewable energy should be actively developed and utilized, with the aim of energy restructuring, and practical management policies should be formulated to strongly support and guide the healthy and rapid development of renewable energy.

Moreover, scientific and research organizations should strive to build an industrial system characterized by low carbon emissions, as well as promote green consumption model. They should also actively participate in international cooperation and organizational cooperation in response to environmental changes.

Finally, circular economy assessment indicators should be included in the research evaluation system. In the past, the evaluation system was based more on the number of research results and income (e.g. number of SCI papers, awards, research income, etc.) as the main evaluation indicators. For the future, scientific and research organizations should include the circular economy as part of their evaluation, focusing on the significance of research results for the development of the circular economy and whether the research process is in line with the concept of the circular economy.

The development of a circular economy is a long-term process that requires continuous efforts and struggles. Scientific and research organizations need to explore and improve their organizational mechanisms in the process of development, so that the results of scientific research can truly benefit mankind.

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