

## **Summary**

### **“Technological innovations management in heating companies”**

The scientific problem of the doctoral dissertation concerns the evaluation of significance of technological innovations as a factor influencing competitiveness of heating companies in changing conditions resulting from the climate and energy policy. The main objective of the paper was to examine innovative activities of heating companies in Poland and to identify and analyse elements of development strategies concerning the management of technological innovations in heating sector companies with a diversified scale of operations in terms of improving competitiveness.

The dissertation consists of five chapters. The first chapter discusses the essence and the role of technological innovations in the strategy of an enterprise, as well as the crucial elements of the innovation management process. In the second chapter the heating sector in Poland was characterized in comparison with the EU countries. Factors shaping demand and supply for system heat as well as directions of changes and the development of heating companies were presented. The third chapter describes legal and environmental restrictions in heating. The factors affecting the operation and competitive position of heating companies were characterised. Typical technological innovations are also described in the field of technical infrastructure and management of heating systems.

The subject of the fourth chapter was the evaluation of innovative activity and technological innovations in the local district heating companies carried out with the method of comparative analysis based on the author's database. It was found that there is a correlation between the level of innovativeness of the enterprise and its competitive position. The fifth chapter presents selected issues regarding the implementation of technological innovations essential for the improvement of the efficiency of Polish district heating industry and the use of IT tools for the management of district heating systems. Moreover, it demonstrates the results of simulation studies of the implementation of technological innovations carried out on a model of a municipal district heating network in the TERMIS program.

The results of the research confirmed that technological innovations management determines the development of district heating companies and their competitiveness on the local heat markets in the conditions of environmental and energy restrictions.