exergy cost of the product, that is strictly consistent with the aim of the thermoeconomic analysis.

This can be achieved approaching the optimal allocation of two different types of losses: local losses inside the control volume of the system vs. external losses in the thermoeconomic environment, for making available all resources actually consumed by the system itself. In the thermoeconomic language, this is the optimal trade-off between the capital investment and the exergy destruction of the production process, and corresponds to the thermoeconomic optimization of the system.

In consequence of the evolution prescribed by the Constructal Law, it has been highlighted that recycling flows may arise in the productive structure and, once a recycling flow has arisen, the selection criteria expressed by the Constructal Law works in the direction of reinforcing the recycling flow itself. In this process, a crucial role is played by the framework of the thermoeconomic environment, because, if there are no choices about the local resources to be employed, the Constructal Law does not find any degree of freedom to morph the productive structure and to make the recycling arise.

In the outlined context, the evolution of energy systems toward highly interrelated productive structures, with multiple recycling flows, can be regarded as a consequence of the Constructal Law.

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