ENERGY AUDIT ACCORDING TO DIN EN 16247-1

IN ACCORDANCE WITH § 8 ENERGY EFFICIENCY ACT

PREAMBLE

In 2007, Germany, together with its European partners, emphasized the importance of energy efficiency and adopted targets such as reducing the EU's primary energy consumption by 20% by 2020. In recent years, several legal acts have been adopted at the European level to implement measures to increase energy efficiency. In 2012, the European Commission issued an Energy Efficiency Directive, with the currently valid recast dated 13 September 2023. In order to transpose the EU Directive into national law, inter alia, the Act on Energy Services and Other Energy Efficiency Measures (EDL-G) was amended.

The DIENES GROUP, together with K+K Wissen GmbH & Co. KG, conducted an energy audit in accordance with DIN EN 16247-1 at Dienes Werke für Maschinenteile GmbH & Co. KG and Messerfabrik Neuenkamp GmbH during the period from 25 November 2024 to 27 February 2025. Both companies are part of the DIENES GROUP. Accordingly, the subject of the energy audit comprised the following companies of the group:

1. Dienes Werke für Maschinenteile GmbH & Co. KG – Overath
   Registered office: Kölner Straße 7, 51491 Overath
2. Messerfabrik Neuenkamp GmbH – Hückeswagen
   Registered office: Bockhackerstraße 14, 42499 Hückeswagen

In accordance with § 8a paragraph 1 no. 5 EDL-G, the present energy audit was designed to be sufficiently representative to allow a reliable picture of overall energy efficiency and its potential for improvement to be derived on a proportional basis. More than 90% of the company's total energy consumption, as required by law, was recorded.

OBJECTIVE AND THOROUGHNESS:

In cooperation with the organization, the following objectives were defined:

- Compliance with legal requirements (§ 8a EDL-G)
- Recording of the current energy status
- Auditing of at least 90% of energy consumption
- Recommendations for improving energy efficiency
- Identification of technically and economically feasible measures
- Evaluation of relevant investments in accordance with DIN EN 17463
- The building envelope is not part of the audit

The energy audit team of K+K Wissen is led by Dr. Wilhelm Krebs. Dr. Krebs possesses the necessary qualifications and expertise in accordance with the requirements of the German Federal Office for Economic Affairs and Export Control (BAFA) and is listed by BAFA as an energy auditor. He prepared an advisory report documenting a standard-compliant energy audit in accordance with DIN EN 16247-1.

The energy audit methodology complies with the requirements and procedures of the European standard DIN EN 16247-1. The audit was carried out by reviewing records as part of data analysis and by interviewing employees regarding energy-saving activities at the sites during on-site inspections. The energy-related behavior of employees in energy-relevant departments/processes was recorded and evaluated. The determination of energy efficiency was carried out at all sites based on defined criteria (checklists, ISO 50001, ISO 50005). These include:

- Maintenance and servicing measures
- Compliance with standards and legal requirements
- Review of the current energy situation
- State of the art
- Employee behavior

Data collection consists of compiling existing information on energy-consuming systems, processes and facilities, as well as available measuring equipment and other data sources. This also includes quarter-hourly load profile measurements of the energy sources electricity and gas, as well as the total quantity of heating oil. Site inspections were carried out during which the recorded data and information were evaluated on site, and workflows and existing practices were assessed. Findings regarding opportunities to improve energy efficiency were discussed. Relevant areas and processes were identified accordingly.

The analysis consists of the energy evaluation of energy performance. For this purpose, energy consumption is broken down by energy sources and an energy balance is established. On this basis, optimization potentials for energy use are systematically identified and examined with regard to their feasibility, effectiveness and economic efficiency.

EXAMPLES OF MEASURES ALREADY IMPLEMENTED AT THE OVERATH SITE:

- Installation of electric charging stations
- Wall insulation and window replacements
- Investment in electrically powered forklifts
- Use of photovoltaic (PV) electricity
- Continuous monitoring of the cos φ value >99% to measure the efficiency of the electrical machines and systems used
- Reduction of heating load by adjusting administrative areas

EXAMPLES OF MEASURES ALREADY IMPLEMENTED AT THE HÜCKESWAGEN SITE:

- Improvement of temperature stability control through electronic regulation of electrical heating load
- Installation of a strip curtain at the truck delivery entrance
- Simulation and optimization of PV orientation
- Electronic monthly monitoring system for energy sources electricity, gas and PV electricity

For both sites, 100% of the final energy consumption was recorded. The international sites of the DIENES GROUP (France, Belgium, Luxembourg, Poland, Hungary, Russia, Asia and USA) were not considered in this energy audit. Likewise, group companies without significant energy consumption/employees were not taken into account.

In conclusion, K+K Wissen GmbH & Co. KG states that the energy audit was carried out without complications and was supported very cooperatively by the company. It became evident that the DIENES GROUP continuously and proactively addresses energy efficiency. The handling of energy performance is carried out systematically and continuously by employees, specialists and management.

Within the framework of the audit dated 25 March 2025, the following energy efficiency potentials were identified:

1. Optimization of compressed air supply

   Reduction of leakages with a savings potential of approx. 10 MWh p.a.

2. Modernization of lighting systems

   Conversion to LED technology in production and administrative areas with a savings potential of approx. 13 MWh p.a.

3. Stronger integration of the Hungarian subsidiary

   The relocation of a small portion of production to the subsidiary in Hungary will be analyzed and decided upon within the next three years due to its high CO_2 savings potential of 175 MWh p.a.

Responsibility for measures 1 and 2 lies with plant management, while measure 3 is assigned to executive management. The implementation of all measures has already begun and is being carried out continuously. Taken together, the identified measures enable annual energy savings of approximately 198 MWh, corresponding to a CO_2 reduction of about 86 tonnes per year. The economic efficiency of the measures was evaluated as part of the audit; the planned investment volume amounts to EUR 35,000.

Dienes Werke GmbH & Co. KG and Messerfabrik Neuenkamp GmbH are committed to the responsible use of energy and will actively pursue the implementation of the identified efficiency measures.

Overath, 05 January 2026

The Management