Energy Renovation of Hotel Systems
Green AC&DC Energy™

This document presents an analysis of the effects of energy renovation of professional cooling and dishwashing systems in the hotel sector of the European Union. The measure is based on a gradual replacement of existing equipment with new, energy-optimised solutions that enable an immediate reduction of energy consumption and CO_2 emissions without disclosing specific technical components. It represents a comprehensive approach consistent with the principles of Green AC&DC Energy™.

1. Basic Data

- Number of hotels in the EU: approximately 200 000
- Average annual electricity consumption per hotel: 300 000 kWh
- Share of cooling and dishwashing systems in total use: 40–60 %
- Average share used for calculation: 50 % (150 000 kWh per hotel)

2. Annual Energy Savings

With the introduction of new, energy-efficient systems, the reduction in consumption reaches 30–40 %:
150 000 kWh × 35 % = 52 500 kWh saved per hotel per year

Total savings for all hotels in the EU:
200 000 × 52 500 kWh = 10.5 TWh/year

3. Financial Impact

At an average electricity price of €0.12 per kWh:
52 500 × 0.12 € = €6 300 per hotel per year

For all hotels combined:
200 000 × 6 300 € = €1.26 billion in annual savings across the EU.

4. CO_2 Emission Reduction

At an average emission factor of 0.25 kg CO_2/kWh:
10.5×10^9 kWh × 0.25 kg = 2.6 million tons less CO_2 per year.

5. Energy Equivalent

1 GW of power generation produces approximately 8.76 TWh/year.
10.5 TWh ÷ 8.76 ≈ 1.2 GW

Therefore, the energy renovation of hotel systems in the EU corresponds to the effect of one large power plant, achieved without building any new energy infrastructure.

6. Conclusion

Comprehensive renovation of cooling and dishwashing systems in the hotel sector represents an immediate, feasible, and measurable contribution to reducing energy consumption and CO_2 emissions across the European Union. The measure delivers

more than €1.2 billion in annual savings and a significant relief to electrical grids. This solution follows the core principle of Green AC&DC Energy™:
Sustainability begins with efficiency — not production.

7. Energy Reflection

“The real energy transition does not happen in power plants, but in the devices we use every day.”
— Lirim Muharemi, Green AC&DC Energy™