Walk-through energy audits at Hotel President (Kyiv) and “ORION” plant (Ternopil)
30 October 2015
Visits of President Hotel - 27th October 2015
Main findings

Rented and managed by CC “Quadr” LLC since 2009.
2009 – 2013: Reconstruction works and energy efficiency improvements (hall entrance and rooms, window insulation, additional heaters, lighting)

Total surface: 33,000 m² including parking (2,000 m²), rooms (374), congress center, restaurant, public spaces on 10 floors
250 employees
Specific Energy Consumption: > 400 kWh / m² per year

Lighting Improvements
The Hotel has cut by 20% its energy consumption by changing its lighting system
Classic lights, CFl and LEDs are used in the Hotel with preference for LEDs
Visit of President Hotel - 25th October 2015

Main findings

**HVAC**
- Heating supplied by district heating + 3 small electric boilers for summer
- Main system is an outdated heating/cooling ventilation with heat exchanger
- Secondary systems based on heaters/radiators
- Ventilation is centralised with no individual regulation / room
- Chiller on the roof for hall entrance cooling needs
- Premises kept between 22°C and 24°C

**Building and insulation**
- No thermal insulation on walls nor roof
- Some high efficiency double glazing

- Insulate building from outside and install panels on the roof.
- Protect chillers on the roof from sun
- Air-handling ventilation difficult to manage. Improvements possible.
- Additional under-window heaters are not efficient (marble layers).
- Isolate ventilation/exhaust of the second kitchen when not in use. Same with Congress hall.

Heating cannot be centrally regulated and radiators are not thermostatic. Cooling system can be turned on while heating is still running.
Visit of President Hotel - 27th October 2015

Key issues

- Goodwill and efforts to control energy consumption in facilities (windows and lighting)
- Lack of metering, organisation and overview
- Lack of methodology and overall knowledge of consumption
- Energy Management System is not understood in the same manner as international standards
Visit of Orion Plant - 28th October 2015
Main findings

Production: radio devices, mainly for military purposes.
611 employees (used to be 6,000) of whom 200 for administrative work.

There is no data for total surface of premises. But extensive surface not adapted to production process. 70% of export rate.

Working units:
• Administrative buildings
• Mechanical workshop
• Drawing press and machining units supplied with CA
• Foundry
• Galvanisation
• Boilers unit (gas and wood log)
• Electronical card/board assembly unit
Visit of Orion Plant - 28th October 2015
Main findings

HVAC
Heating in administrative buildings cannot be regulated but is kept really low (8°C) + additional heaters.
2 gas boilers and 1 wood boiler.
Infra-red heating is being installed in some production areas.

Building and insulation
Production is concentrated on small part of total premises
Double-glazing of some windows – No wall insulation of buildings.

Compressed Air
3 compressors (15, 40 and 50 kW capacity)
2.5km of pipes. No tank nor air treatment.
No data on leakage or compressors working ratio (roughly evaluated at 75%).

Lighting Improvements
The Daylight is well used
Estimated consumption: 15%

- Undertaking some test during non-hour production to evaluate leakage. Working hours: 8h - 17h.
- Insulation of pipes
- Energy Management: advise and training
- Install subsidiary meters for workshop and sectors of energy consumption.
Visit of Orion Plant - 28th October 2015

Key issues

- Energy Efficiency actions are based on random checking
- Only one meter for the whole plant – Lack of subsidiary meters and knowledge of consumption
- Energy Management System is not understood in the same manner as international standards
- No budget for Energy Efficiency
Conclusions and recommendations

Need of implementing meters
= understand how energy is used within the enterprise

Energy auditing will need measurement devices

Knowledge needed on Energy Management.

Invest in new heating and production technologies
THANK YOU

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