GOOD PRACTICES IN SME

Using internal monitoring and control lists

Designed by freepik

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Why and where is it worth to use control lists?

Monitoring is necessary for collecting data on current energy consumption. The data collected allows for a thorough analysis of energy efficiency within an enterprise and identifying areas which require changes. Control lists are useful for this type of analysis. Control lists are lists of actions which must be done to identify areas in which:

- energy losses are generated,
- opportunities of reducing energy consumption are present,
- processes are inefficiently managed.

Areas which should be monitored include: spatial planning, primary energy, electric energy, energy transformations, cooling equipment, energy distribution, room heating, climate control and ventilation, domestic hot water, technological water, lighting, compressed air, waste heat, operation and servicing of equipment, devices and installations.

Source: KAPE

How should an example of a control list for a compressed air installation look like?

Proper maintenance

1. Are compressors off outside of operating hours?
2. Are possibilities of decreasing the pressure, which would allow for lower consumption and lower losses being considered?
3. Is the possibility of using a more efficient compressor considered?
4. Is the compressor's air supply installed outside of the building? Compressors operate more efficiently when using cooler air.
5. Do the compressors used have demand control functionality?
6. Is an effective leakage reporting and control system in place? Have additional employee duty hours for checking the installation, locating and removing possible leaks been set up?
7. Are all pipelines insulated?
8. Is the condensation collection system is working properly and if it does not cause compressed air losses? Is the air supply shutter checked? Is using an electronic control system for opening and closing condensate collector devices being considered?

Pic. 1 almig: compressed air installation

Air treatment

1. Is the demand for air treatment limited to its absolute minimum?
2. Is and maintain the efficiency of the treatment equipment regularly checked and maintained? Are pressure drops on filters upstream and downstream from the compressor checked? If the drop in pressure is above 0.4 bara (400 hPa) is the filter being replaced?
3. Is the of the air output temperature of the dryers being measured? Does it not exceed 35°C when the compressors are under full load?
4. Is the temperature in the dryer room being measured? Is the temperature no more than 5°C different than the temperature outside?

Source: KAPE based on: eko-net.pl „Ogólne metody poprawiania efektywności energetycznej w ramach najlepszych dostępnych technik(BAT)", 2011

Example of a list for a building

1. Are all installations located in at an appropriate location considering the cardinal directions (e.g. photovoltaics and solar collectors facing south, refrigeration in the north side of the building)?
2. Are the heat transfer coefficients for each partition of the building (walls, windows, roof) appropriately low?
3. Are all door and window leakages eliminated?
4. Is there a buffer zone at the north side of the building (e.g. storage warehouses, less windows)?
5. Are rooms with different internal temperatures are adequately situated to each other (are situation where high and low temperature rooms are next to each other avoided)?

Example list for primary energy

1. Is the fuel storage safe (e.g. no risk of gas fuel leakage, solid fuels are not exposed to moisture)?
2. Is there a possibility of changing fuel suppliers to lower energy costs?
3. Is it possible to change energy carriers to use renewable energy source?

Source: KAPE