

Cefic Workshop on Energy Efficiency

“The Benefits of CARE+ Poland ”

Brussels, 08 February 2011

PCCI, KAPE S.A.



Goals of CARE+



- **Find 25 SMEs to participate in project**
- **Train self-auditors**
- **Conduct self-audits**
- **Draw conclusions from trainings, visits and audits**
- **Reduce energy consumption by 10%**
- **Find ways to continue CARE+ and further develop the Program**

Methodology & logistics used during Roll-out Campaign.

Visits to 25 chemical SMEs (July 2010 – January 2011)



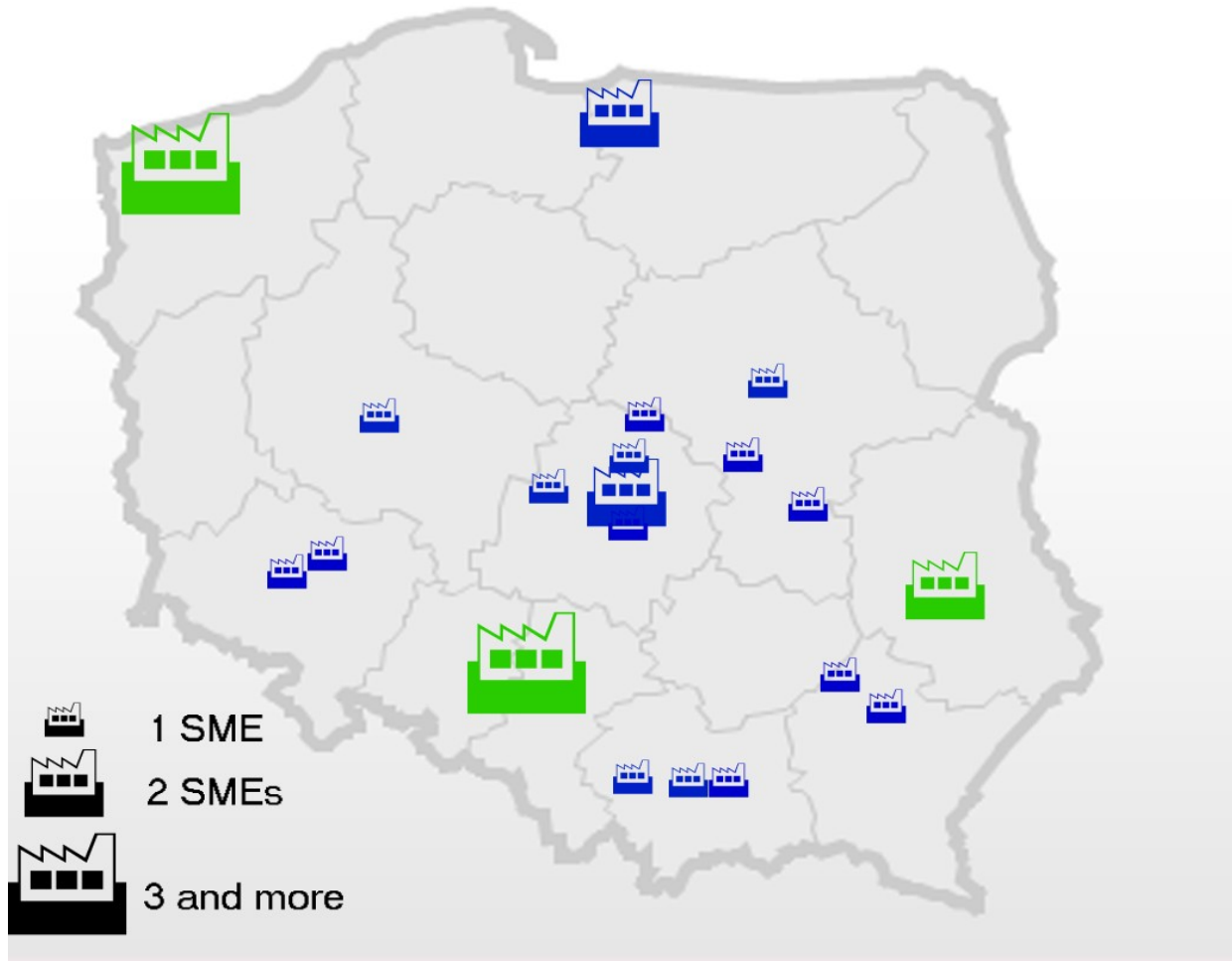
- **Introductory meeting with plant management and chief engineers – presentation of CARE plus project and main tasks to be fulfilled by the plant**
- **Walk through the plant’s main installations, familiarization with technology and energy equipment, identifying energy flows, look at points of generation, distribution and final consumption of energy**
- **Instructions for plant’s engineers regarding process of taking inventory of energy equipment (thermal & electrical)**
- **Practical training of nominated self-auditors on methods of conducting industrial energy audit**
- **Presentation of Self-Audit Guide Workbook, introduction to 15 step approach leading to finding energy saving measures and allowing to estimate energy/financial savings**
- **Describing and delegating the main tasks for self-auditors. Determining the time frame of their activities and expected energy conservation results.**
- **On-line and phone consultancy provided to self-auditors**

Production profile of 25 visited chemical SMEs



- **fertilizers – high energy intensity**
- **plastics**
- **explosives**
- **drugs**
- **chemicals**
- **windscreen washers**
- **sodium glass**
- **petroleum chemistry.**
- **distribution of chemicals**
- **silicons**
- **paints**

location of visited companies



Supported by

Observations from conducted trainings and audits



- Level of energy efficiency conciseness differs from company to company
- **Lack of energy policy in visited SMEs**
- **Energy monitoring systems do not exist or are weakly developed**
- Lack of need to train engineering staff in energy efficiency
- Lack of appropriate personnel to implement energy efficiency measures
- Lack of time to give attention to energy saving, production is priority
- **Lack of energy savings habits among production staff**
- Lack of internal energy auditors
- **Lack of knowledge on percentage share of energy costs in total operational costs and final product**
- Lack of energy management structure
- Weak metering system limited in most cases to indispensable measuring equipment
- Lack of Energy Manager position
- No history of energy auditing (external or internal)

Energy saving recommendations given to SMEs



- **Replace mercury lamps with metal halide lamps, implement control systems, movement sensors, in case of external lighting replace sodium lamps with LED**
- **Replace coal fired boilers with gas fired boilers.**
- **Use waste heat for heating of warehouses and production halls**
- **Utilize reverse osmosis systems for boiler feed water preparation to extend operational life of boilers and reduce boiler scale deposition rate**
- **Improve thermal insulation of piping and fixtures**
- **Decrease compressed air pressure at generation point**
- **Improve compressor control system – avoid long time idle run of compressors**
- **Eliminate leakages from compressed air system, periodically check out for leaks using ultrasonic detector**
- **Replace throttle control by frequency control (use inverters instead of valves)**
- **Decrease energy consumption by air conditioning systems through change of control settings**

Results achieved through implementation of CARE plus project



- **Training of engineering staff from 25 chemical SMEs in methodology of industrial energy audit**
- **Providing all necessary energy saving tools to chemical SMEs: Self Audit Guides, Best Practice Manuals and SAG Workbook**
- **Completing of 25 energy self audits by chemical SMEs**
- **Practical implementation of energy saving measures, case studies which can be used in other chemical plants or other branches of industry**
- **Determination of needs of chemical industry in energy efficiency area**
- **Energy consumption reduction – to be determined**

Conclusions based on outcome of visits to 25 SMEs



- **Awareness of need for energy efficiency solutions is low in SMEs**
- **SAG Work-book has been tested with very good result and have been fully accepted by all 25 chemical SMEs.**
- **SAG Work-book forces SMEs to follow up a systematic way of conducting self audit. It is a good tool for regular (annual?) self-auditing.**
- **Methodology of Care+ project can be used in implementation process of BS 16001.**
- **SAG Work-book can also be used in large companies and other branches of industry**

Conference in Poland on CARE+ and Energy Efficiency



1st March in Warsaw

- **At this moment 25 participants from chemical companies (SMEs and large), NGO's, press**
- **Speakers from**
 - **On CARE+: PCCI, KAPE, “Fosfan”**
 - **On energy efficiency: Ministry of Economy, Lewiatan, NFOSiGW, Certiquality (Italy)**
- **Guest will be provided with Self-audit Guide and Best Practice Manual**

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