IEA ENERGY EFFICIENCY HUB
EMAK12 - EVOLUTION OF ENERGY EFFICIENCY POLICIES INTO DEMAND-SIDE ENERGY POLICIES

Session 2 – Exchanging best practices and challenges of demand-side efforts in the industrial sector

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ABOUT SAINT-GOBAIN

Construction businesses – main brands

FLAT GLASS - GLAZING

GYSPUM PRODUCTS

INSULATION

CEILING TILES

TECHNICAL TEXTILES

CAST IRON PIPES

CONSTRUCTION CHEMICALS

About Technical Insulation

Technical Insulation Markets

Industry

Marine & Offshore

HVAC heating, Ventilation & Air-conditioning

OEM Original Equipment Manufacturers

Chimneys & exhausts

Tanks & Vessels

Thermal insulation

Balks & overs.

Fire protection

Acoustic insulation

Pipelines

The Saint-Gobain Group
OUR SUSTAINABILITY COMMITMENTS

Walking the talk – 2030 Commitment

Leveraging collaboration

SESSION 1
The Buildings Breakthrough unveiled:
PIONEERING GLOBAL COLLABORATION FOR NEAR-ZERO EMISSIONS AND RESILIENT BUILDINGS
ENERGY EFFICIENCY / INSULATION IN INDUSTRY – THE SITUATION

- Low level of energy efficiency / insulation
- Existing insulation systems and technical requirements focus on safety to keep surface temperatures below 55 °C
- Many plants aging and in a dire need for insulation repair

Energy Savings Potential = 163 TWh / 14 Mtoe
CO2 Emissions Reduction Potential = 40 Mt

The savings potential for EU 27 is equivalent to the annual energy consumption of:

- More than 10 million households
- More than 20 million cars

Calculation based on the national average energy consumption provided by the Odyssee-Mure EU project www.odyssee-mure.eu
INSULATION IN INDUSTRY – WHY ISN’T IT HAPPENING?

How to explain the tendency in industry to insulate less instead of implementing more energy-efficient insulation systems?

- Thermal insulation for energy savings: not legal requirement
- Key priorities on process security and personnel protection
- Economic industrial insulation to minimize heat loss and CO2 emissions often not part of insulation specifications
- Lack of well organised maintenance of insulation systems
- Pressure to reduce investment and maintenance costs
- Split responsibilities for energy and maintenance budgets
- Increasing lack of insulation know-how
**Mission:** Promote sustainable insulation systems for industrial and technical installations with the aim of saving energy and reducing CO₂ emissions

The TIPCHECK Programme was implemented by EiiF with the aim of providing industry with tools and solutions to save energy and to reduce CO₂ emissions by improving technical insulation systems. TIPCHECK stands for Technical Insulation Performance Check.

**TIPCHECK INSPECTIONS**
Evaluate insulation systems of existing facilities identifying the spots bearing the highest energy and CO2 savings potential, offering a rapid payback time of most often one year or even less.

**TIPCHECK TOOLS**
EiiF provides practical tools and guidance to support Tipcheck Inspections:
- TIPCHECK: calculator, creator, viewer, estimator, converter…
- TBI APP: easy-to-use self-inspection & reporting tool for smartphones

**TIPCHECK TRAININGS & CERTIFICATION**
Every year EiiF organizes training courses to train the attendants on how to perform TIPCHECKs. Those who pass the final exam receive their certification and become TIPCHECK engineers.
Measurements on field

Thermal conductivity of insulation products
- the lower the thermal conductivity the better the thermal performance

TIPCHECK report creation

Insulation and structural related thermal bridges
- reduce insulation installation and construction related thermal bridges

Thermal efficiency of insulation system

1

2

Insulation thickness of chosen insulation
- the higher the total insulation thickness the better the thermal performance

3

4

Emmissivity of cladding
- the lower the emissivity the higher the thermal efficiency
In summary

- Insulation systems evaluated
- CO2, energy and costs savings
- Improves process efficiency
- Safety & maintenance benefits
- Standardised
- Non intrusive
- Cost-attractive and affordable
- Timely

TIPCHECK Impact in past 10 years

- Total energy savings: > 4.000.000 MWh
- Emissions reductions: > 1.000.000 t CO₂ eq.
BOOSTING ENERGY EFFICIENCY IN RESIDENTIAL VIA RENOVATION PASSPORTS

- MEPS, finance, support tools - one stop shops
- Building renovation passport to guide step wise renovation work, simplify admin/finance, create ownership

Challenges:
- Deep/holistic renovations vs subsidies for single measures
- Challenge caused by deployment of heat pump in very badly performing buildings (Class F or G).
- EE1 principle : lack of visibility of energy demand / energy needs (focus on primary energy consumption)

Way forward
- Building renovation passport as a tool to embed proper demand driven policy
- Articulation of demand reduction potential with calibration of renewable heating
- Work on low temperature ready buildings
- Systemic dimension : benefits of reducing peak load in a renewable grid – flexibility, decrease of overall costs
SOME TAKE AWAYS

1. Proper implementation of Energy Efficiency First principle
2. More accompaniment of energy efficiency solutions in industry
3. Understanding & activating the systemic benefits of EE

=> real interaction needed between demand reduction and renewable heat solutions (in industry and in residential).