



PAROC AND TIPCHECK

Technical Insulation Performance Check





ENERGY AND CO₂ SAVINGS POTENTIAL OF INDUSTRIAL INSULATION IN EU27

Did you know that the tremendous energy savings potential of technical insulation is 620 PJ. As a consequence, 15 coal-fired power plants of 500 MW could be switched off. Industrial insulation is a Best Available Technique, which could help EU27's industry to reduce its energy consumption by 4 %.

WHY IS THE POTENTIAL IN INDUSTRY SO LARGE?

Expert experiences show that in industrial plants about 10 % or more of the equipment is uninsulated or covered with damaged insulation. Furthermore the level of insulation applied is typically based on a minimum investment decision following requirements regarding the maximum surface temperature to avoid personal injuries, minimum process needs or based on generic maximum heat loss rates only.

Requirements like cost-effectiveness or maximum energy efficiency of the insulation system are therefore often not considered.

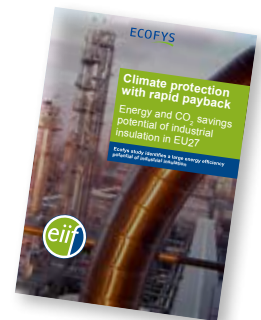
In the past, when fuel prices were lower energy efficient insulation would not have led to a large difference. Nowadays, the price of energy is higher and is expected to grow even further. As a result there is an increasing gap between current and cost-effective insulation levels. Additional costs for CO₂ emission allowances will accelerate this trend and further increase the savings potential.

Source: EiiF

EiiF AND THE ECOFYS STUDY

In 2007, EU leaders endorsed a set of ambitious climate and energy targets to be met by the year 2020. These EU ambitions are known as the 20-20-20 targets. In this policy context, there is significant attention on measures that reduce energy demand and mitigate CO₂ emissions in all sectors of the economy such as the built environment, transport and industry. From their experience, the European industrial insulation Foundation (EiiF) is convinced that there is a significant energy saving and CO₂ mitigation potential related to improved thermal insulation in industry and that this potential is currently untapped despite being cost-effective to implement. With energy and CO₂ prices likely to rise, this potential is probably growing. Against this background, EiiF commissioned Ecofys to identify the Energy and CO₂ savings potential of industrial insulation in EU27.

Find the complete study on WWW.EIIF.ORG



CLIMATE PROTECTION

The savings potential of industrial insulation is large. **Energy: 620 PJ / CO₂: 49 Mt**

- The total cost-effective savings potential amounts to about 480 PJ and 37 Mt CO₂ per year for industry or more than 4 % of total industry fuel consumption and emissions.
- In fossil fuel-fired power generation the cost-effective potential was found to amount to 140 PJ and 12 Mt per year.

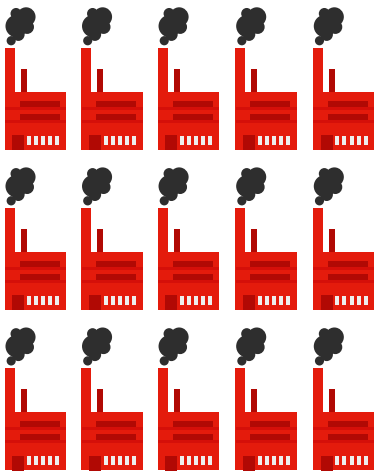
The savings potential exists across all regions, sectors, equipment and operating temperatures.



The European Industrial Insulation Foundation (EiiF) is a neutral and non-profit Foundation headquartered in Switzerland. It promotes insulation as a top-of-mind method of enhancing sustainability and profitability. Since its foundation, the EiiF has established itself as a resource for industries that need to reduce CO₂ emissions and save energy. Its programme raises awareness of the growing, much needed benefits of insulation.

The EiiF was established in 2009 by 12 Founding Partners. Nowadays, it comprises more than 50 leading industrial insulation companies; from global player size to small and medium-sized companies.

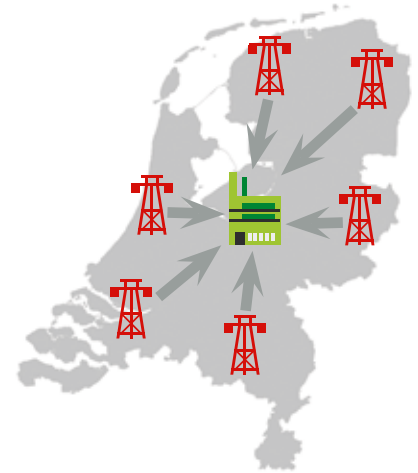
THE ANNUAL SAVINGS POTENTIAL IS EQUIVALENT TO:



15 coal-fired power plants of 500 MW.

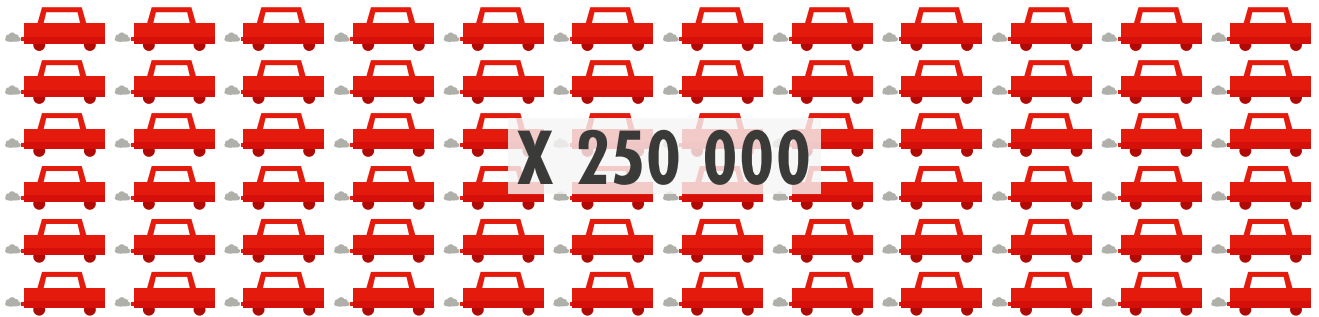


The energy consumption of 10 million households.



The energy consumption of the Dutch industry (The Netherlands).

THE ANNUAL CO₂ REDUCTIONS POTENTIAL IS EQUIVALENT TO:



The CO₂ emissions of 18 million middle class cars each running 12 500 kilometres per year.

RAPID PAYBACK

The potential can be tapped cost-effectively.

- Insulating bare surfaces to cost-effective levels and repairing damaged insulation in industry EU-wide requires initial investments of about 900 million euro.
- This one time investment would represent an energy savings potential of about 460 PJ, which at current prices would save industry 3.5 billion euros every year.

Payback times for these investments are usually less than one year.



900 million

**Invest once
—> save every year**



3.5 billion

TIPCHECK



Technical Insulation Performance Check

SAVE MONEY, ENERGY & CO₂

The aim of the TIPCHECK Programme established by the European Industrial Insulation Foundation is to provide industry with a standardized, high quality thermal energy audit tool focusing on the thermal performance of technical insulation systems. TIPCHECKs quantify the amount of energy and money an industrial facility is losing with its current insulation system (including uninsulated parts).

- Thermal energy audit
- Performed by certified TIPCHECK engineers
- Quality-controlled by Eiif
- Easily integrated with energy management systems, e. g. ISO 50001

Insulating bare surfaces can reduce heat loss by up to

95 %

TIPCHECK THERMAL ENERGY AUDITS

The aim of the TIPCHECK programme established by the European Industrial Insulation Foundation (Eiif) is to provide industry with a standardised, high quality thermal energy audit tool. TIPCHECKs quantify the amount of energy and money an industrial facility is losing with its current insulation system (including uninsulated parts).

TIPCHECKs evaluate the insulation systems of existing facilities, planned projects or retrofits and demonstrate how more efficient insulation could:

- Save energy
- Save money
- Contribute to a cleaner environment through reduced CO₂ emissions

In addition to energy efficiency potentials, TIPCHECK thermal energy audits can help to identify:

- Process efficiency improvements
- Safety risks to personnel

CHECK YOUR SAVINGS POTENTIAL IN 3 SHORT STEPS:

- Do you inspect the insulation of your facility on a regular basis, e. g. for ice build-up, surface temperatures above 50 °C?
- Are all pipes, vessels, valves and flanges on your plant insulated?
- Are you aware of the fact that investments in technical insulation usually have a payback period of less than one year?

NOT SURE? CONTACT Eiif TO LEARN HOW PROPER INSULATION CAN SAVE YOU MONEY AND ENERGY.

Visit: WWW.EIIF.ORG

PAROC TIPCHECK ENGINEERS

The TIPCHECK programme is also a qualification programme for insulation engineers to become EiiF certified thermal energy auditors, so called TIPCHECK engineers. Auditors that can support you in evaluating insulation systems of existing facilities, planned projects or retrofits and demonstrate how more efficient insulation could Save energy, Save money and Contribute to a cleaner environment through reduced CO₂ emissions. Paroc has trained a number of TIPCHECK engineers in order to serve you better with energysaving advice.

HOW CAN WE HELP YOU?

Today most people understand that human activity is the first and foremost reason for global warming. Greenhouse gases and other emissions affect the atmosphere and cause a change in temperatures, sea levels and precipitation patterns. These changes can be mitigated by our own actions.

Sustainability requirements are driving change among our customers, suppliers, stakeholders and end users. The change is both a significant opportunity and a huge challenge. Paroc wants to be at the forefront of this change. Over the years, we have aimed at both short- and long-term environmental, social and economic sustainability by developing operations with a focus on resource and energy efficiency. In more recent years, we have started and participated in several projects dealing with everything from our products' environmental impact to knowledge on how to build energy-efficient houses and how to make energy-efficiency renovations as cost effectively as possible. We can proudly claim to have pioneered both low-energy house concepts as well as cutting edge concepts for cost-effective energy refurbishments.

As we develop our offering, we aim to reduce the energy use in the built environment and developing our competence with tipcheck engineers is one step more in this direction.

Contact us and let's see how we can help you!

TIPCHECK at Your Facility

Step 1 Establish your objective(s)

- ▶ Cost-efficiency?
- ▶ Maximize energy savings and CO₂ reduction?
- ▶ Optimize your specifications to meet (future) energy prices and emission reduction goals?

Step 2 Facility visit with TIPCHECK engineer

- ▶ Assess the state of your insulation
- ▶ Identify areas with the highest energy savings potential
- ▶ Determine the initial scope
- ▶ Collect all information needed

Step 3 Calculate your potential energy and cost savings as well as resulting payback period



Watch the Insulator:
Hasta la vista CO₂!
www.eiif.org/insulator

NOTES

Paroc is the leading manufacturer of energy-efficient insulation solutions in the Baltic Sea region. The cornerstones of our operations are customer and personnel orientation, constant innovation, profitable growth and sustainable development. Paroc products include building insulation, technical insulation, marine and offshore insulation, sandwich panels and acoustic products. The products are manufactured in Finland, Sweden, Lithuania and Poland and in Russia. Paroc has sales and representative offices in 14 European countries.



Building Insulation offers a wide range of products and solutions for all traditional building insulation. The building insulation products are mainly used for the thermal, fire and sound insulation of exterior walls, roofs, floors and basements, intermediate floors and partitions.



Sound absorbing ceilings and wall panels for interior acoustic control, as well as industrial noise control products, are available in the range.



Technical Insulation products are used for thermal, fire and sound insulation in building techniques, industrial processes and pipe work, industrial equipment and ship structures.



Sandwich panels are fire proof lightweight steel-faced panels with a core material of stone wool. Paroc panels are used for façades, partitions and ceilings in public, commercial and industrial buildings.



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