



European Industrial Insulation Foundation

Digital energy efficiency self-inspection tool for insulation work

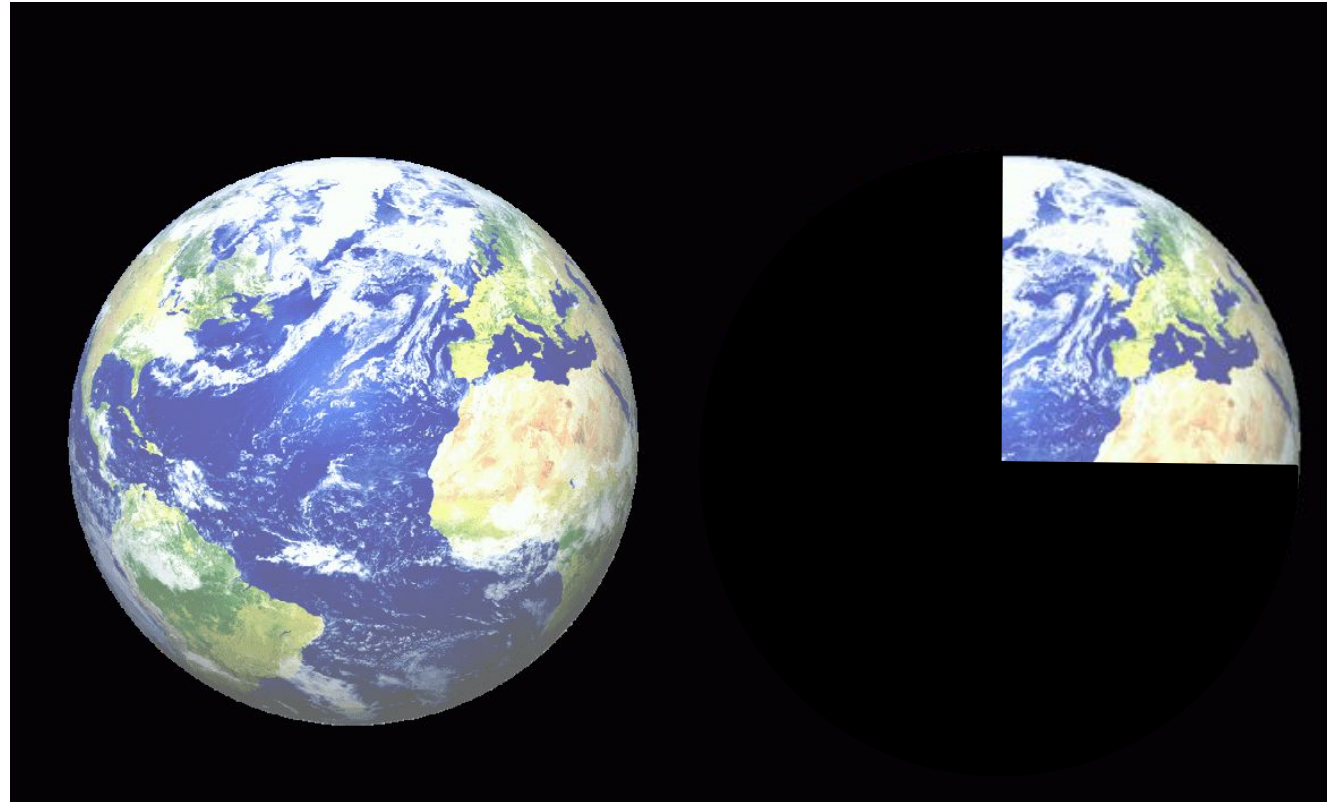
27 Feb 2019



The technical INSULATION “WORLD” has a job to do!

2010 We were consuming roughly

1.25 planets.



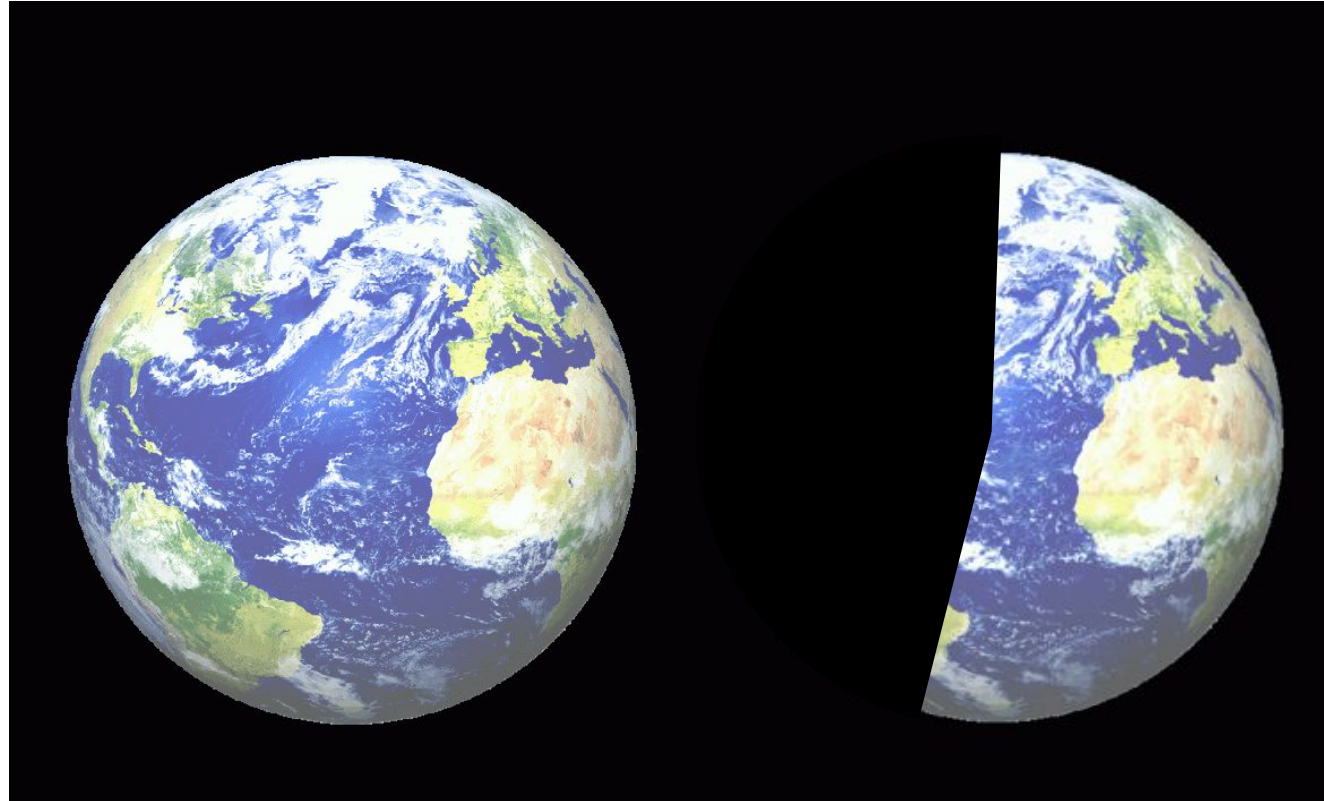
The technical INSULATION “WORLD” has a job to do!

2017 humanity already
used the equivalent

1.7 planets

We have to learn how **to
produce more with less:**

One of the solutions: **Energy
Efficiency**



Source: http://www.footprintnetwork.org/en/index.php/GFN/page/world_footprint/

Why European Industrial Insulation Foundation

- **COP 21/22 – 1.5 °C The Paris Climate Agreement**



United Nations
Framework Convention on
Climate Change

- **Today we are already at 1 °C**

“Insulation is one part of the solutions to reduce CO₂ emissions in industry!”

The EiiF Foundation

Article 2 Purpose of the Foundation

- The Foundation engages itself, exclusively and irrevocably, on a non-profit basis for the **deployment of sustainable insulation systems** in industrial plants and in the industrial environment with the aim of **saving energy, reducing CO2 emissions** and realizing the best possible noise and fire control systems.



EiiF Membership

European industrial insulation Foundation

12	Founding Partners
12	Premium Members
32	Members

26	Contractors
21	Manufacturers
9	Distributors/Others



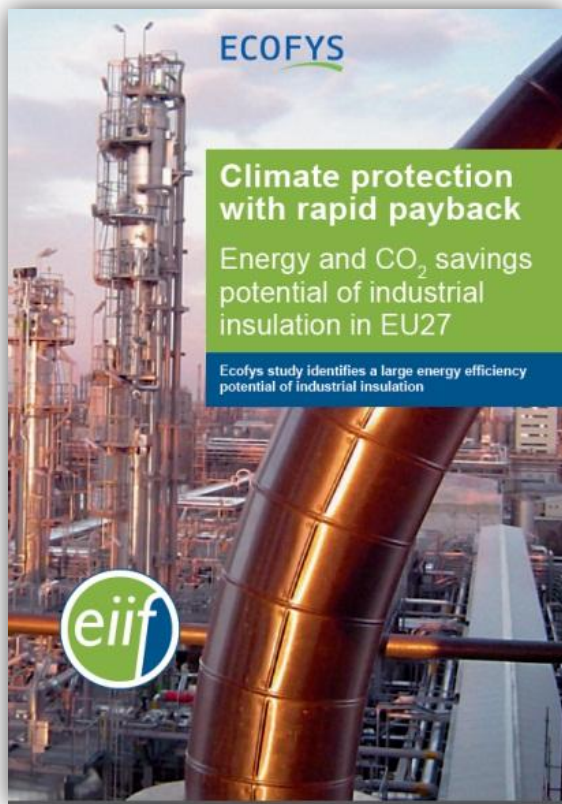
From
 Europe
 +
 Saudi Arabia, UAE
 +
 Brazil

Austria, Belgium, Finland, France,
 Germany, Great Britain, Greece,
 Hungary, Italy, The Netherlands,
 Norway, Spain, Switzerland,
 Turkey



Proof – Ecofys Study

Climate protection with rapid payback – Energy and CO2 savings potential of industrial insulation in EU 27

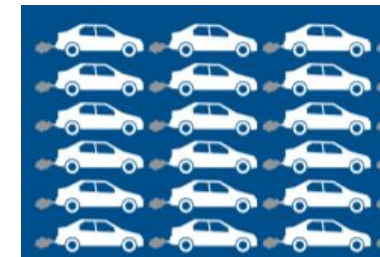


Polish savings potential of industrial insulation represents **40 PJ** and **3.4 Mt CO2** per year



The energy consumption of **600.000 households**
(EU – 10 Millions)

or



The CO₂ emissions of **1,7 million middle class cars**
each running 12'500Km/a

TIPCHECK Programme

- **Technical Insulation Performance Check:**
- Energy Assessments specialised on insulation system in industrial environments.
- Training programme for insulation engineers: certified TIPCHECK engineer



TIPCHECK 

Proof – TIPCHECK Case Studies

Chemical Plant – Process temperature range 75 °C to 150 °C

Identified components: 650 m of piping with missing or damaged insulation, 300 uninsulated pairs of flanges, 160 uninsulated valves, 3 uninsulated tanks.

TIPCHECK Outputs:

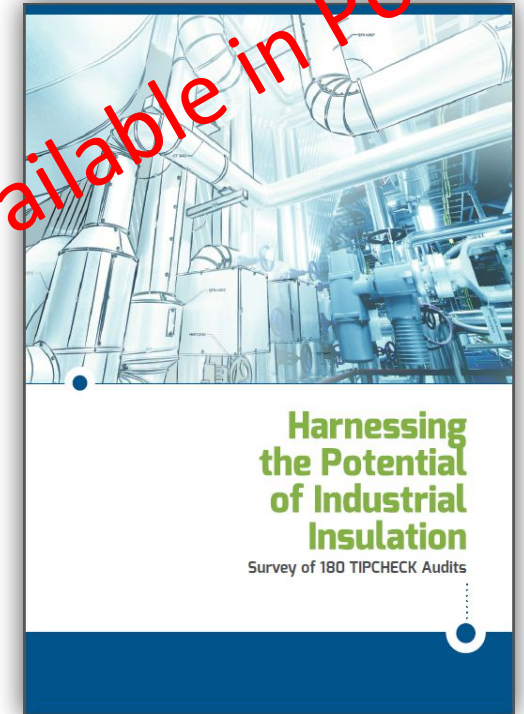
- **Saving potential: 11.100 MWh/year & 200.000 €/year**
- **CO₂ emission reduction potential: 2.240 t/year**
- **Payback time less than 1 year**



Proof – TIPCHECK Report

- The annual **energy savings potential** identified by approximately 180 TIPCHECK audits was more than **750.000 MWh/year**. Equivalent to the annual greenhouse gas emissions of almost **110.000 cars**.*

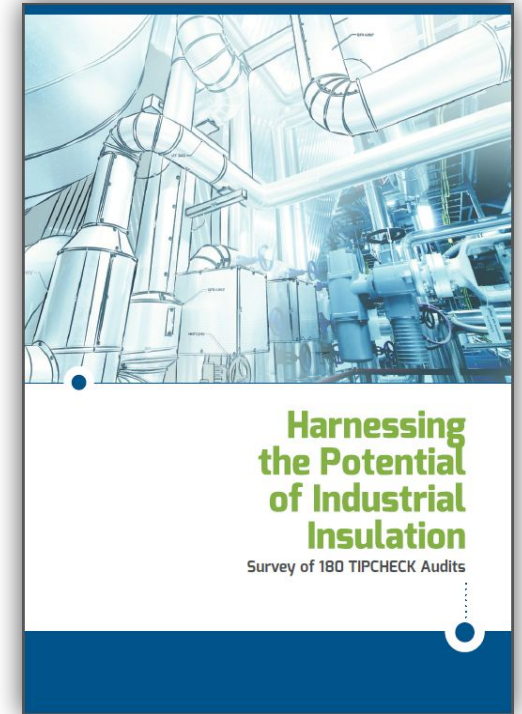
Available in Polish



Proof – TIPCHECK Report – Update 2018

Until today about **300 TIPCHECKs** were reported back to EiiF:

- The average payback time for the recommended insulation measures was **2 years** or even less
- **3 out of 4 clients** acted or plan to act
- **95%** of all TIPCHECKs identified energy, CO₂ and cost reduction potentials



But we need more TIPCHECKS...

So far, we have tackled only 0,5 % of the potential: 62'000 TIPCHECKS needed.

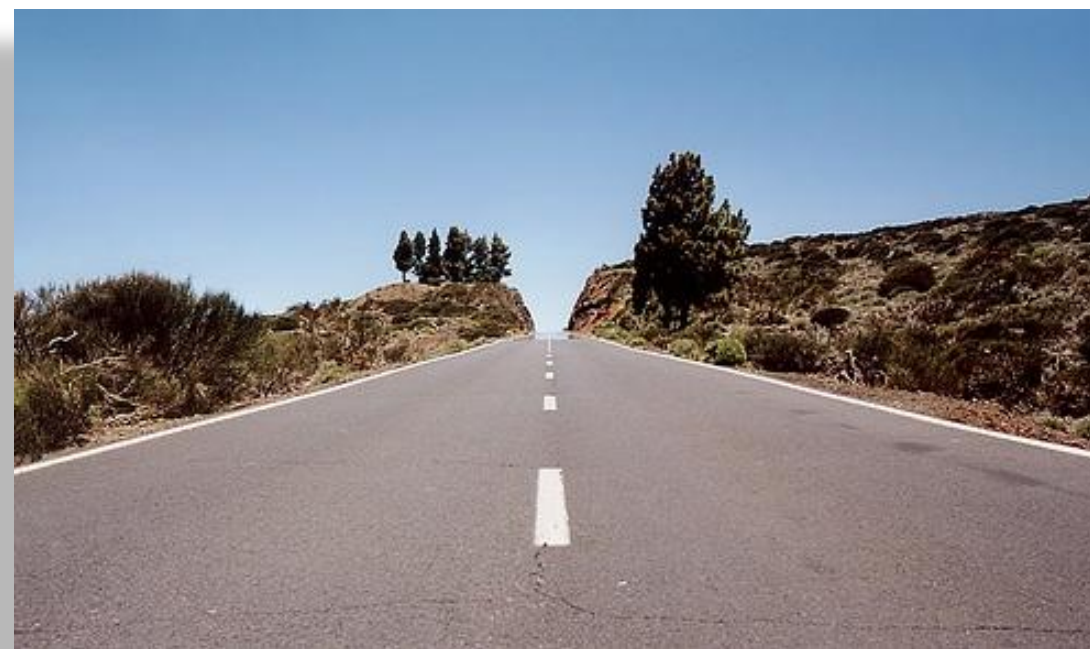
- Average number of TIPCHECKS: 60 per year/~100 TIPCHECK engineers
- **1'000 years!**

FUTURE PERSPECTIVE:

100 TIPCHECKS realise ~ 1 PJ

To realise the **620 PJ** we will need
to carry out:

62'000 TIPCHECKS



TBI App – TIPCHECK Based Inspections

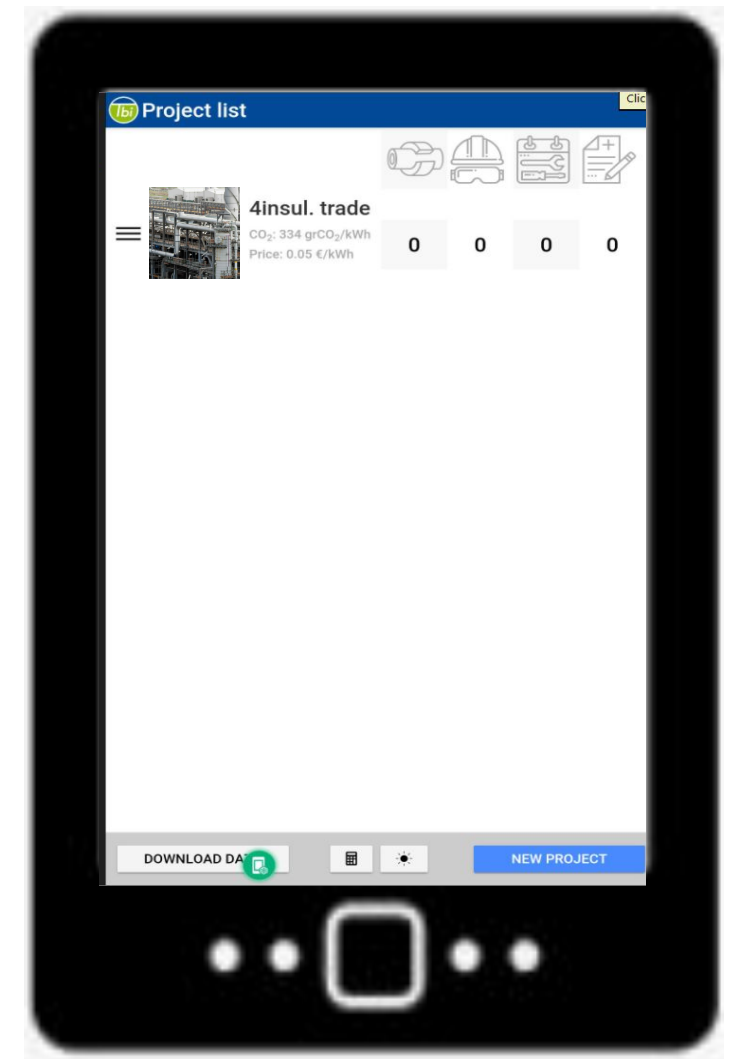
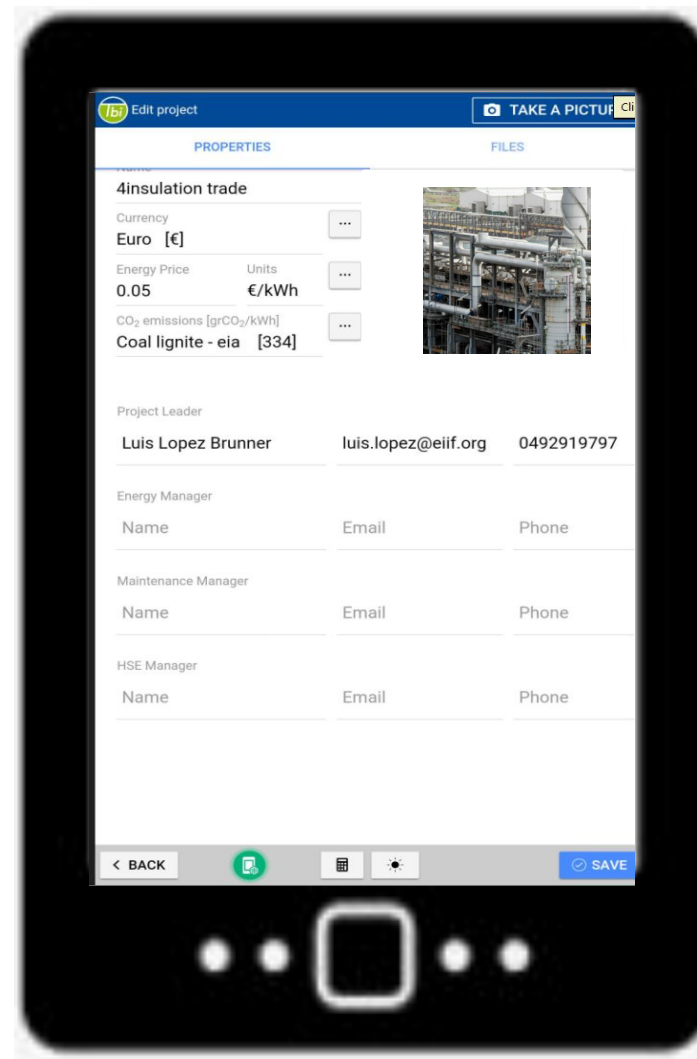
- **Tbi-App** (TIPCHECK Based inspection) is a “**do it yourself inspection**” for anyone who wants to organise a tailored reporting about the quality of the existing insulation system of a production line, facility, etc.
- The **TBi-App** offers a conservative estimation of the amount of energy a system is losing and its potential savings with a better insulation system in place.
- The **TBi-App** is designed in such a way that it motivates the asset owners and their staff to use it, even if they are “not interested nor qualified for insulation”



TBi – Demo



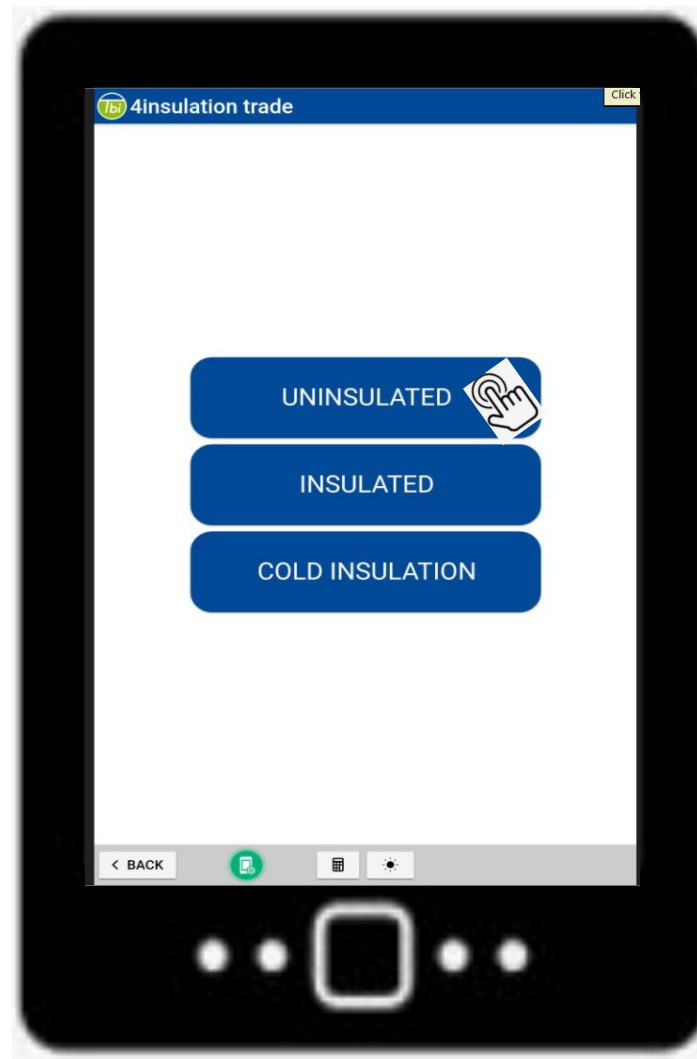
TBi – Demo



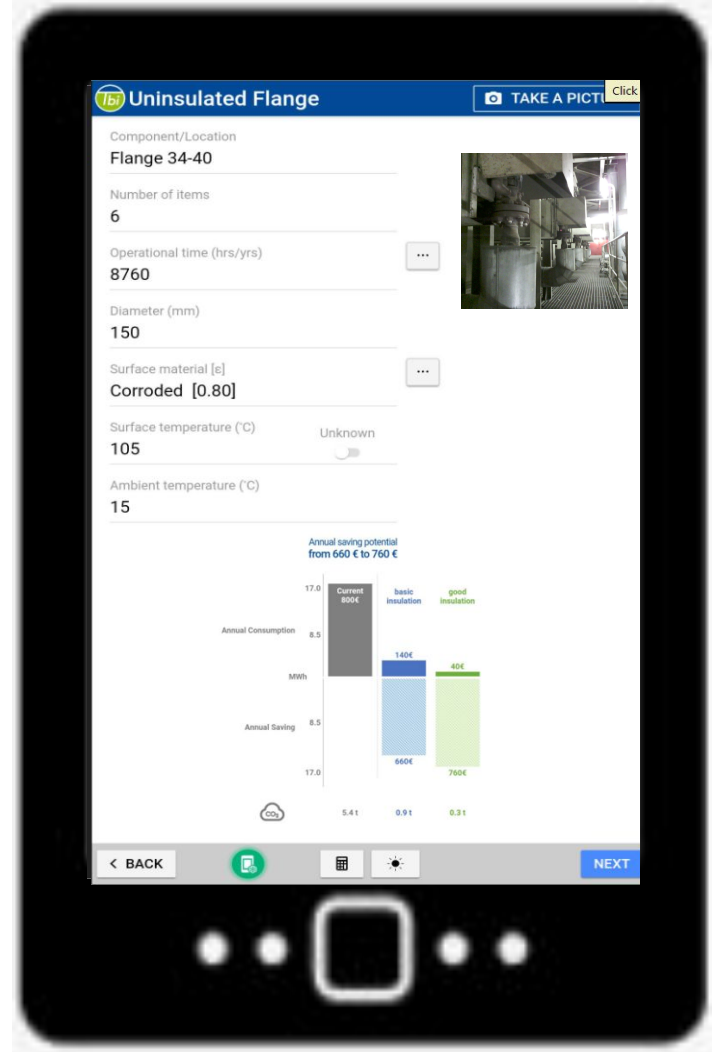
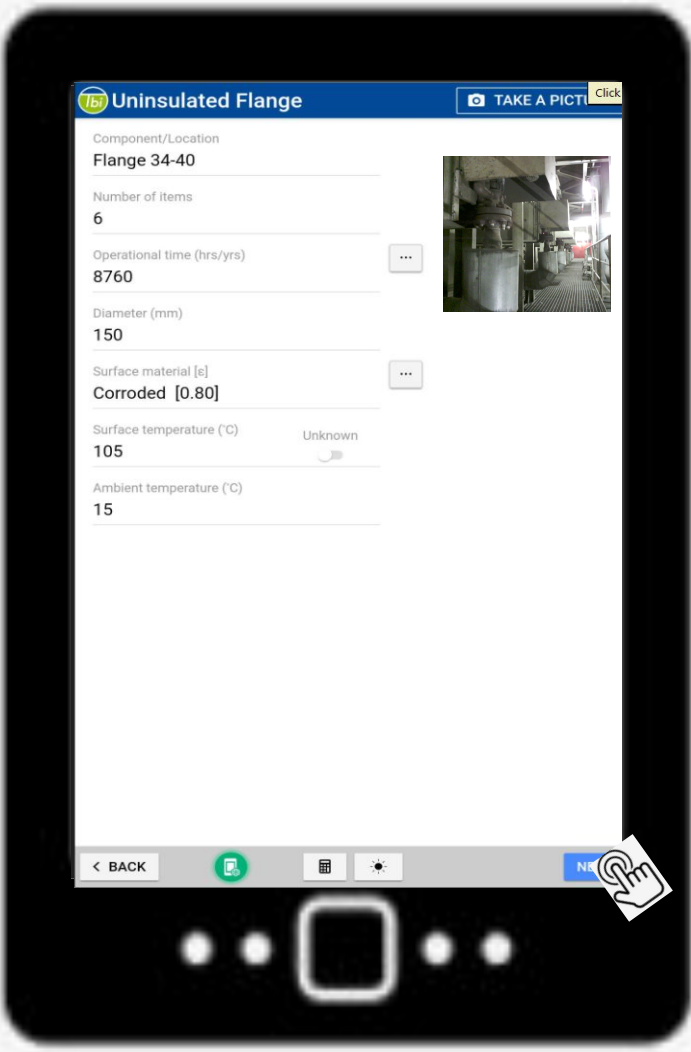
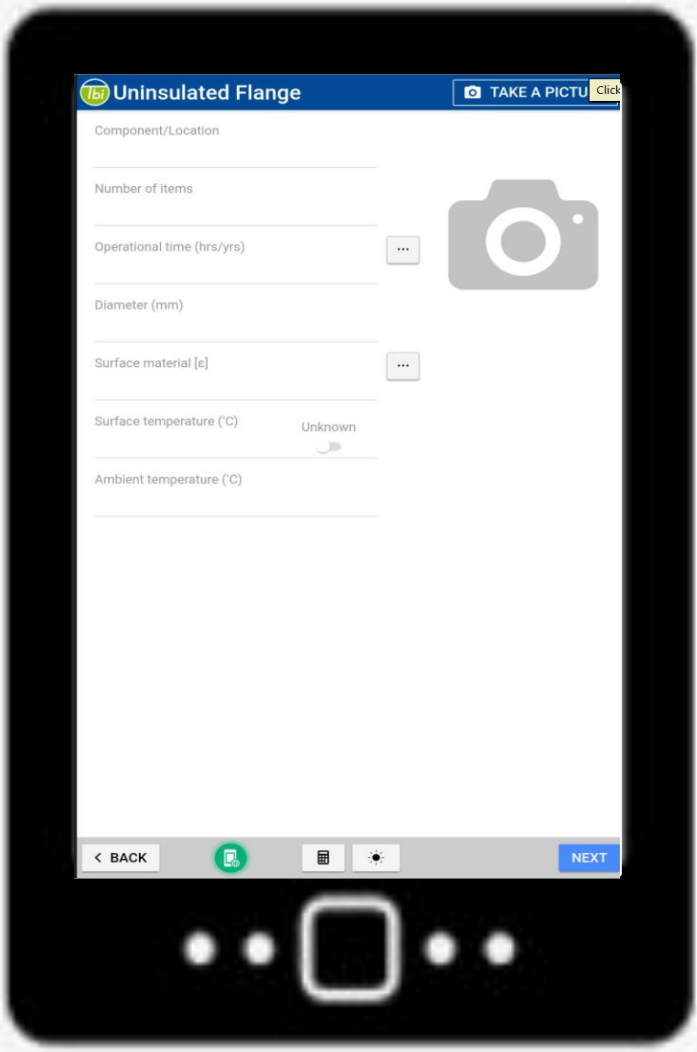
TBi – Demo



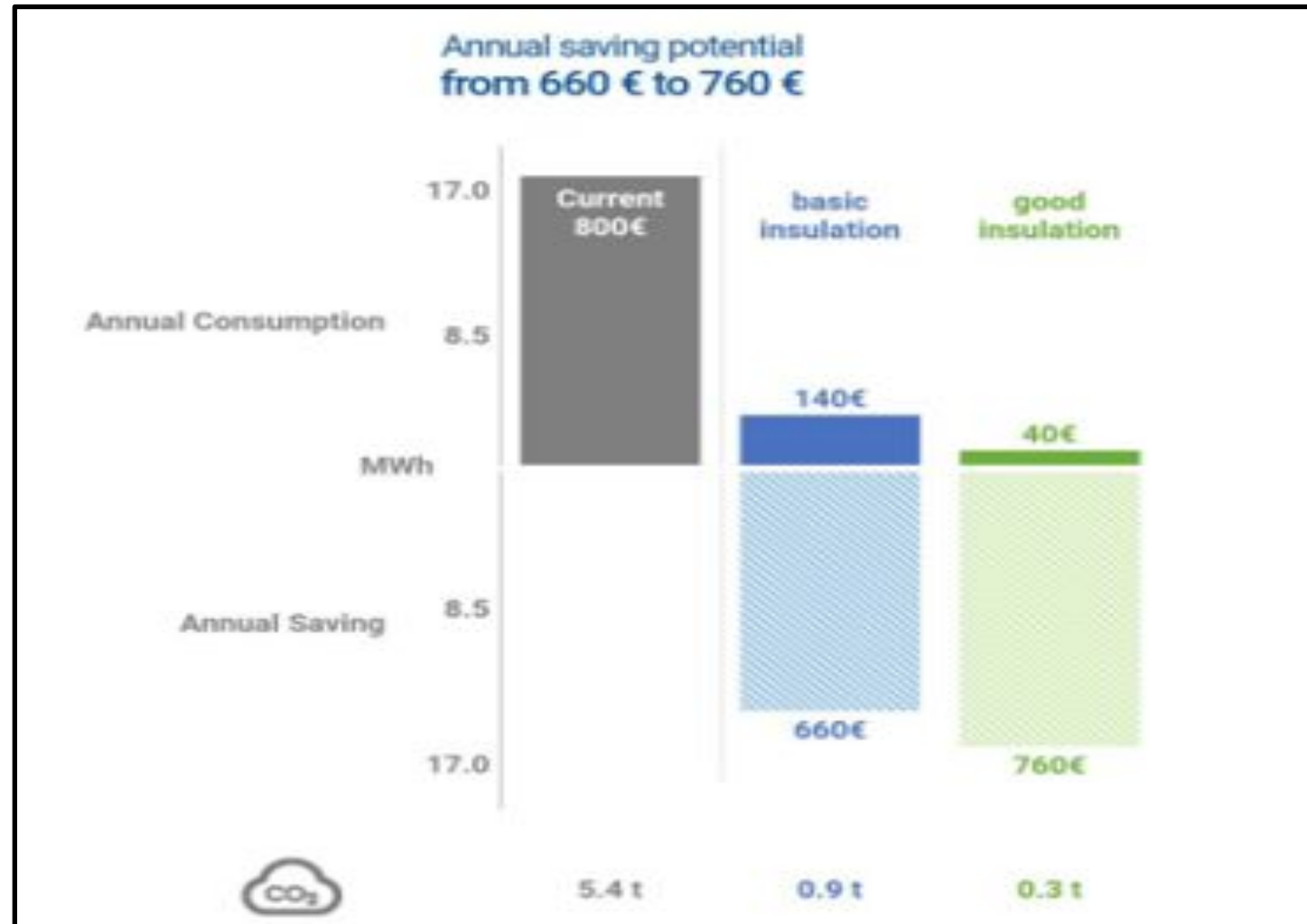
TBi – Demo



TBi – Demo



TBi – Demo



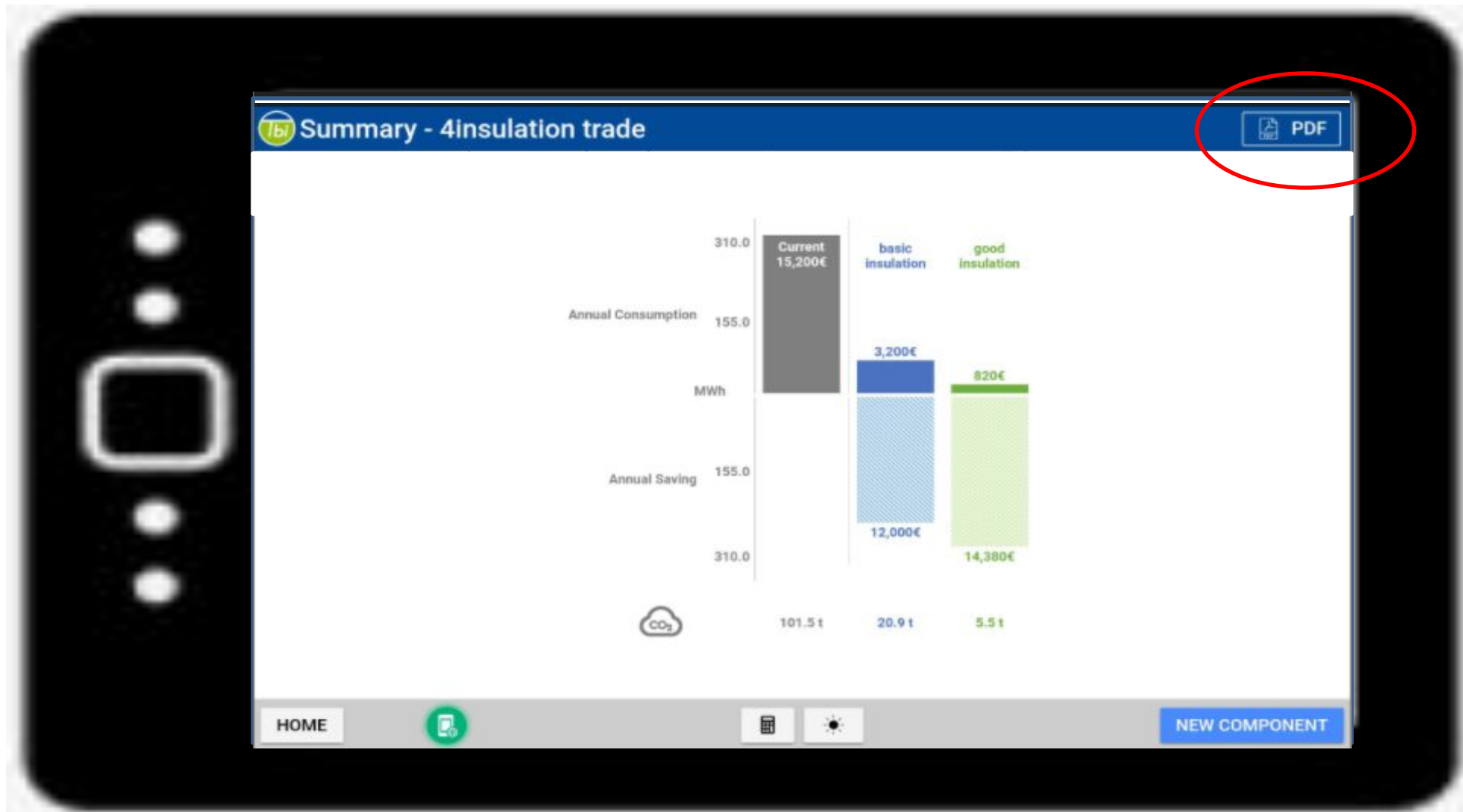
TBi – Demo

Summary - 4Insulation trade PDF

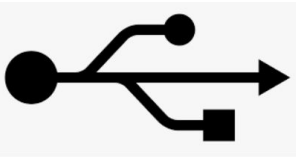
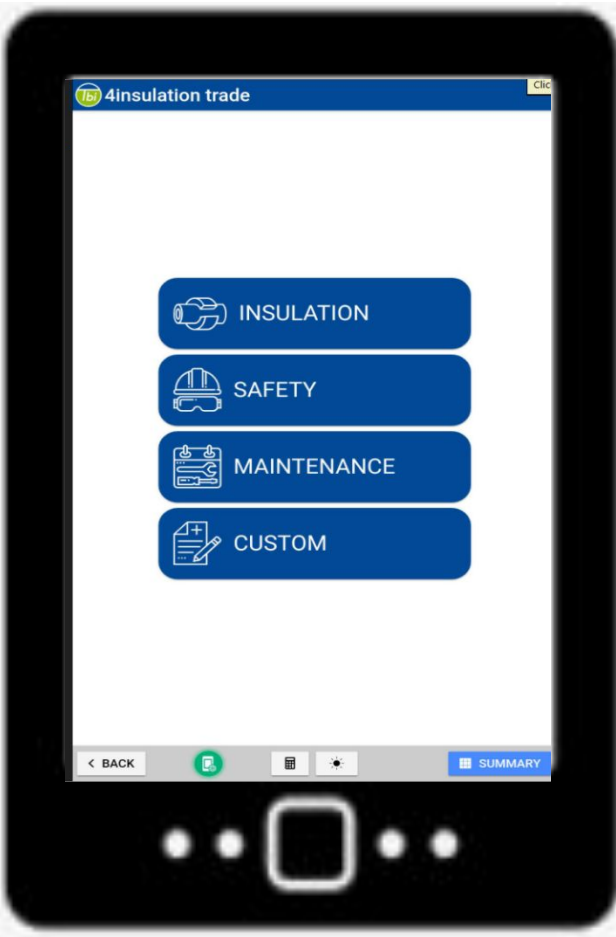
Component / Location	Energy & CO2 analysis per year			Safety	Maintenance	Others	TBI Advice	Validation	Insulated
	Current Losses & Emissions	Potential savings year							
1- Flanges 34 - 40	16.1 MWh	13.3 -- 15.3	MWh	Hot surface +	Leakage +	+	🔧		N
	805 €	666 -- 765	€						
	5.4 tn CO ₂	0.9 -- 0.3	tn CO ₂						
2- Pipe5674	46.2 MWh	35.1 -- 42.7	MWh	Hot surface +	+	+	🔧		N
	2,310 €	1,757 -- 2,134	€						
	15.4 tn CO ₂	3.7 -- 1.2	tn CO ₂						
3- Valve 45-55	53.7 MWh	44.4 -- 51.0	MWh	Hot surface +	+	+	📈		Y
	2,685 €	2,221 -- 2,548	€						
	17.9 tn CO ₂	3.1 -- 0.9	tn CO ₂						
4- Burner 5	188.0 MWh	148.4 -- 178.7	MWh	Hot surface +	Damaged +	+	🔧		N
	9,401 €	7,421 -- 8,936	€						
	62.8 tn CO ₂	13.2 -- 3.1	tn CO ₂						
TOTAL PROJECT	304.0 MWh	241.3 -- 287.7	MWh	🔄 Insulation recommended 📏 Surface unknown 📈 Increase performance or thickness		🛠️ Maintenance 🟢 System OK			
	15,200 €	12,066 -- 14,383	€						
	101.5 tn CO ₂	20.9 -- 5.5	tn CO ₂						

HOME [Mobile Icon] [Calculator Icon] [Sun Icon] NEW COMPONENT

TBi – Demo



TBi – Demo



The image shows a computer monitor displaying a 'Summary - 4Insulation trade' report. The report includes a table with columns for 'Component / Location', 'Current Losses & Emissions', 'Potential savings year', 'Safety', 'Maintenance', 'Others', 'TBI Advice', 'Validation', and 'Insulated'. The table lists four components: Flanges 34 - 40, Pipe 5674, Valve 45-55, and Burner 5, along with their respective energy losses, emissions, and potential savings. A 'TOTAL PROJECT' row summarizes the overall data. A legend at the bottom explains the symbols used in the 'TBI Advice' column.

Component / Location	Energy & CO2 analysis per year		Safety	Maintenance	Others	TBI Advice	Validation	Insulated
	Current Losses & Emissions	Potential savings year						
I 1- Flanges 34 - 40	16.1 MWh	13.3 - 15.3 MWh	Hot surface	Leakage	●	⚠		N
	805 €	666 - 765 €						
II 2- Pipe 5674	5.4 tn CO ₂	0.9 - 0.3 tn CO ₂	Hot surface	●	●	⚠		N
	46.2 MWh	35.1 - 42.7 MWh						
III 3- Valve 45-55	2.316 €	1,797 - 2,194 €	Hot surface	●	●	⚠		N
	15.4 tn CO ₂	3.7 - 1.2 tn CO ₂						
IV 4- Burner 5	53.7 MWh	44.4 - 51.0 MWh	Hot surface	●	●	⚠		N
	2,685 €	2,221 - 2,548 €						
TOTAL PROJECT	17.9 tn CO ₂	3.1 - 0.9 tn CO ₂	● Insulation recommended		● Maintenance			
	15,200 €	12,066 - 14,383 €	● Surface undamaged		● System OK			
	191.5 tn CO ₂	20.9 - 5.5 tn CO ₂	● Increase performance or thickness					



TBi –



TBi App Easy – for free (one project, one component)

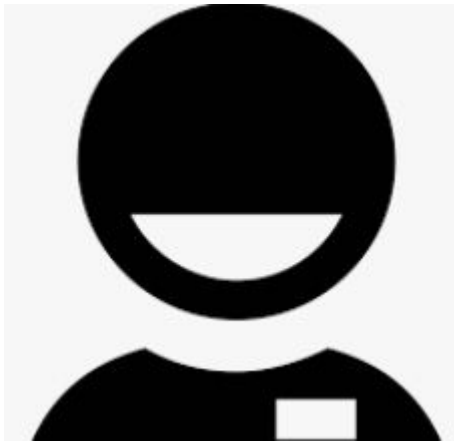


TBi App Pro – yearly fee



TBi Desktop – yearly fee

Available from Q2 2019



Are you interesting in testing the TBI beta version?

Please, give me your contact details

Materiał pochodzi z IV
Konferencji Naukowo-Technicznej
Heat Not Lost organizowanej przez <https://hnl.pl/>



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