



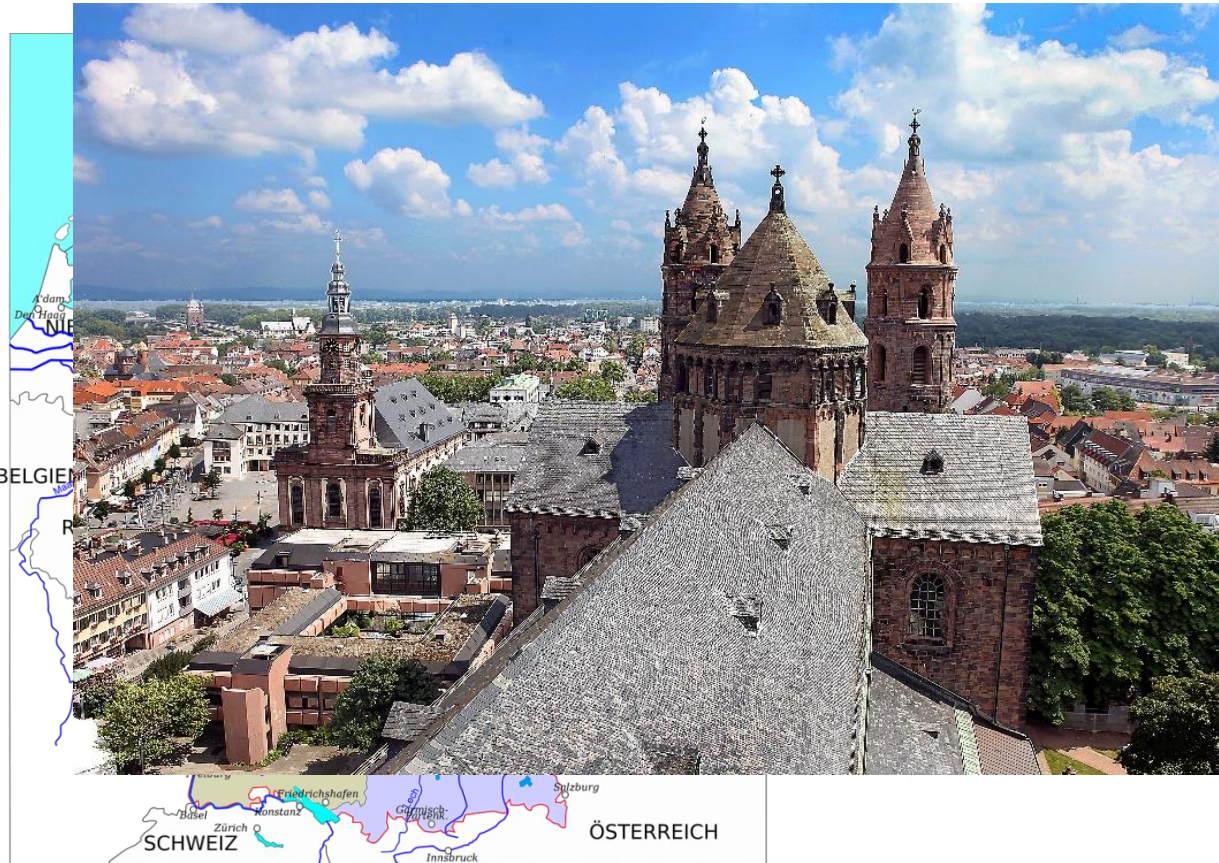
**Supporting sustainable local economy
in North-West Europe.**

Climate Active Neighbourhoods: Final Conference,
March 1st 2023, Liège, Belgium

Energy Caravan for SMEs

City of Worms
Selma Mergner

The city of Worms - geographic location



- Worms is located in Rhineland-Palatinate in the south-west of Germany
- 85.000 inhabitants
- Wine-growing region on the river rhine

Project goal of CAN SME

Reduction of GHG emissions in micro, small and medium-sized enterprises (MSMEs) in Worms through

- Identification of energy saving potential
- Increase of energy efficiency
- Reduction of energy & resource consumption



Energy Caravan in Worms

from house owners to SMEs & associations
- our approach -

**We have no bus and no camels but
we still call it a “caravan”.**

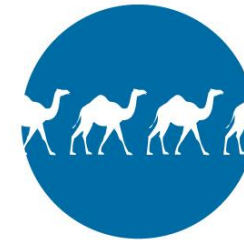


Energy Caravan in Worms

from house owners to SMEs & associations

- our approach -

- Free individual impulse energy consulting for companies and associations
- Consisting of 3 energy audits
- Conducted by experienced and certified energy consultants
- Combination of digital & on-site visit

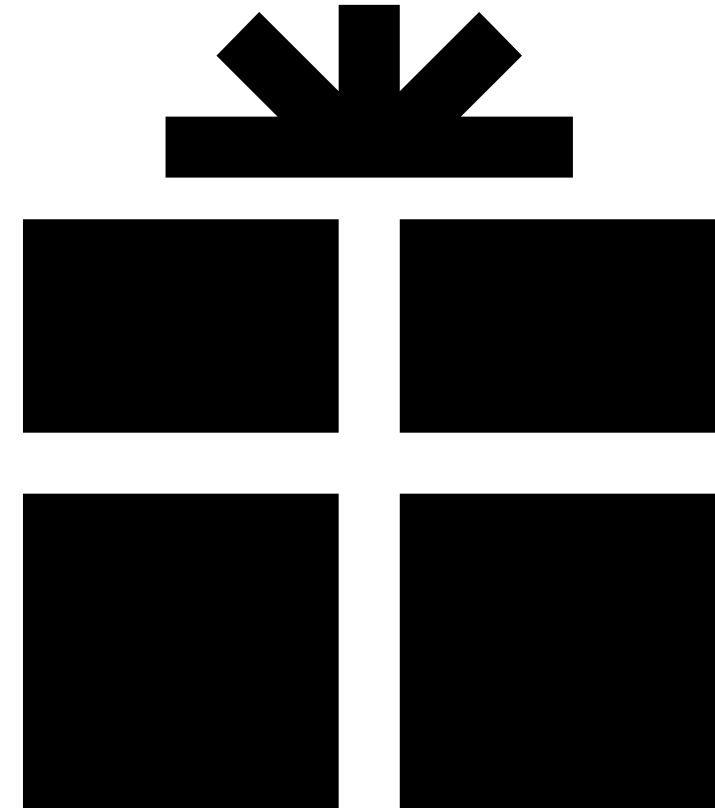


ENERGIEKARAWANE
kleine & mittlere Unternehmen

Energy Caravan in Worms

- additional offer -

- Immediate technical assistance such as data loggers, measuring devices, lighting equipment
- Also partial costs of acquisitions possible
- Reimbursement of 150-250€ per participating company/association
- Exchange of experience & networking



Without energy consultants no caravan!

Conditions required

- Knowledge about how to carry out energy consultation at companies
- Regional proximity to the city of worms
- Time availability in the project time frame

Our team of energy consultants



Christian Persohn
Geschäftsführer



Sophie Bechberger
Ingenieurin für energieeffiziente Systeme



Nino Sattler
Maschinenbautechniker



Bernhard Persohn
Bauingenieur

Kickoff event April 2022

*Registration phase officially
until end of may 2022*

**1st energy
audit**

Jul. 2022

**2nd energy
audit**

Sep. 2022

**3rd energy
audit**

Feb. 2023



The energy audits - how do they look like?

1st energy audit

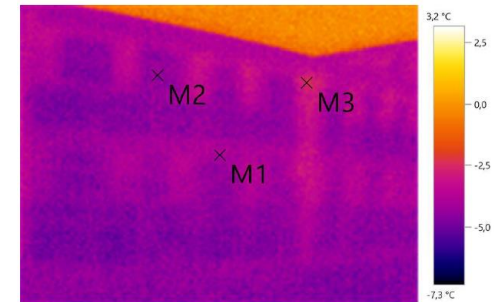
- Before: Preparatory telephone conversation with energy consultant for
 - Appointment
 - Short data collection
- Approx. one-hour tour of the company area
- Thermographic recordings with the thermographic camera
- Preparation of a first action plan
- Consultation protocol

Namen/Verein		Interne Nummer		Ansprechperson(en)	
Allgemeiner Überblick					
Bereiche		Organisatorische Veränderung			
Technische Angaben	Betriebszeiten	Schichtbetrieb	Verbundgruppen / Innungen		
Energiemanagement	Personal	Energiemanager:in	Software	THG-Emissionen	
Bisherige Hürden					
Maßnahmen	Maßnahme		Beschreibung	Investitions-Jahr	Pläne
Heizung / Raumwärme / Warmwasser					
Kühlung					
Belüftung / Lüftung					
Druckluft & Kompressor /					
Leuchten & Vakuum					
Verdrahtung / Geräteeinstellungen /					
Management					
Elektrische Antriebe & Motoren /					
Kommunikations- & Informationstechnik					
Energieverbrauch & Energiebedarf					
Beleuchtung					
Unterhaltung von Mitarbeitenden					
Werkzeugherstellung					
Isolierung / Abdichtung /					
Wandhülle					
Barrierefreiheit & Fuhrpark					
Abfall & Ressourcen					
Abwasser					
Umweltgrünung					
Bisher genutzte	Mittelgeber	Förderprogramm	Fördergegenstand/Maßnahme	Fördersumme in €	Jahr
ermöglichkeiten					

The energy audits - how do they look like?

2nd energy audit

- Discussion of the results & recommendations
- Discussion of profitability and funding opportunities
- Provision of immediate technical assistance, e.g. measuring equipment
- If necessary, implementation of smaller non-investment measures, e.g. checking compressed air
- Action plan with measures



Bilddaten:	Datum:	19.12.2022	Emissionsgrad:	0,95
	Uhrzeit:	11:26:10	Refl. Temp. [°C]:	10,0
	Datei:	IR000179.BMT		

Bildmarkierungen:

Messobjekte	Temp. [°C]	Emiss.	Refl. Temp. [°C]	Bemerkungen
Messpunkt 1	-4,5	0,95	10,0	CenterSpot
Messpunkt 2	-4,9	0,95	10,0	-
Messpunkt 3	-3,0	0,95	10,0	-

The energy audits - how do they look like?

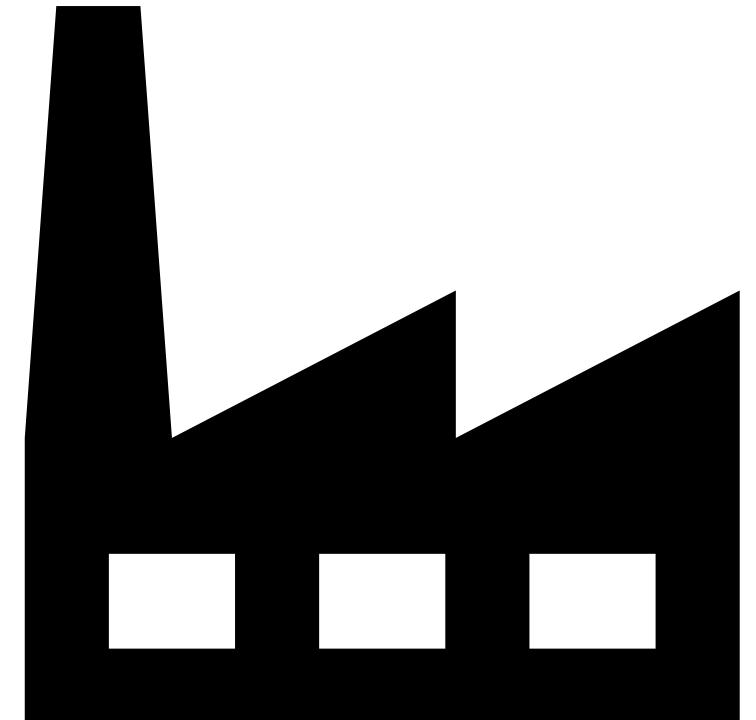
3rd energy audit

- Survey of savings already realized
- Development of strategies to overcome identified barriers
- Planning further steps
- Measures & evaluation



The energy audits - topics

- Heating & Warmth
- Cooling / Refrigeration / Air Conditioning
- Compressed Air / Compressor / Ventilation / Load Management
- Regulation & device settings
- Electricity consumption & demand
- Lighting
- Employee behaviour
- Insolation / Waterproofing
- Mobility & Vehicle Fleet
- Waste & Resources
- Water & Wastewater
- Energy generation
- Funding opportunities



Energy Efficiency Table

Dec 2022

Thermography event

Feb 2023



02.02.2023 / Thermografie
**Nibelungenturm durch die
Wärmebildkamera entdecken**

Die Stadt Worms lädt Unternehmen, Vereine, Bürger und Medien zum Thermografie-Spaziergang am 8. Februar ein.



"CO₂-Verbrauch reduzieren und damit Geld sparen"

Viele Menschen denken bei der Energiewende immer noch zuerst an den Bau von Photovoltaik- und Windkraftanlagen und vernachlässigen die Einsparung von Energie, vor allem in Form von Wärme. In Rheinland-Pfalz werden rund 55 Prozent des gesamten Bruttoenergieverbrauchs in Form von Wärme und Kälte verbraucht. Nur wenn der Gesamtenergieverbrauch sinkt, haben erneuerbare Energien auf absehbare Zeit eine Chance, den Energiebedarf weitgehend zu decken. Aktuell liegt ihr Anteil bei rund 13 Prozent. Diesen Anteil zu

Final event

April 2023

Exchange of experience & networking

Thermography event

- Thematic presentation & network event
- Exemplary observation of buildings of different companies through the thermal imaging camera
- Comparison of the photos & thermographies and explanation of the application possibilities (heat losses etc.)

02.02.2023 / Thermografie

Nibelungenturm durch die Wärmebildkamera entdecken

Die Stadt Worms lädt U...
Februar ein.



"CO₂-Verbrauch re

Viele Menschen denken bei der Energiewende an Windkraftanlagen und vernachlässigen die Energieeffizienz. In der Pfalz werden rund 55 Prozent des gesamten Energiebedarfs verbraucht. Nur wenn der Gesamtenergieverbrauch sinkt, besteht die Chance, den Energiebedarf weitgehend zu decken.



Energy Efficiency Label

Independent certification of climate protection efforts in companies as an incentive to save energy

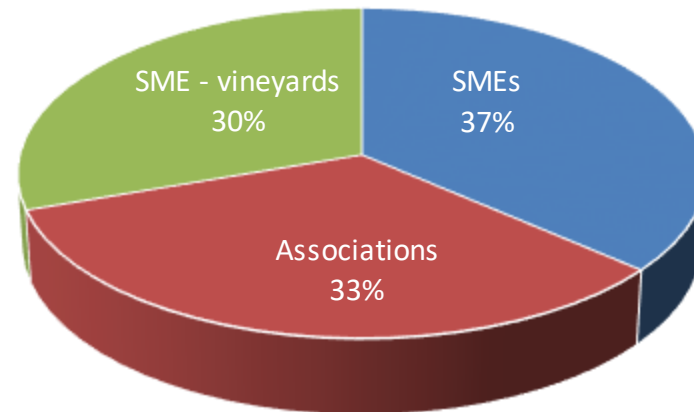
- **Pro-Climate Worms**
 - after energy audit 2
- **Pro-Klima Worms PLUS**
 - after Energy Audit 3, when measures have been implemented and energy has been saved



Participation in the project

- 33 participating SMEs & associations
- Main topics of the consultations
 - Heat
 - Renewable energies

sector



SMEs

Flower wholesale, Retail, Guestrooms, Wholesale (2x), Tree care specialists, Special machinery, mechanical engineering, Therapy/prevention/medical fitness/swimming pool/sauna, Garden and landscaping, industrial lacquering

Associations

Sports Club (2x) / Rifle Club, Boy Scouts / Girl Guides, Gymnastics club, Church parish, Football club, singing society (2x), Sports club, Tennis club

Wineries

Viticulture, Winery & Hotel, Agriculture, Wine trade

Thank you for your attention



Selma Mergner

City of Worms

Climate protection & adaptation to climate change

Martin Hassel

City of Worms

Climate protection & adaptation to climate change