



SHIP Egypt

Opening Expert Training II

Wolfgang Glatzl & Josef Buchinger

AEE INTEC & ConPlusUltra

Expert team

- **Wolfgang Glatzl
(AEE INTEC)**



- **Josef Buchinger
(ConPlusUltra)**



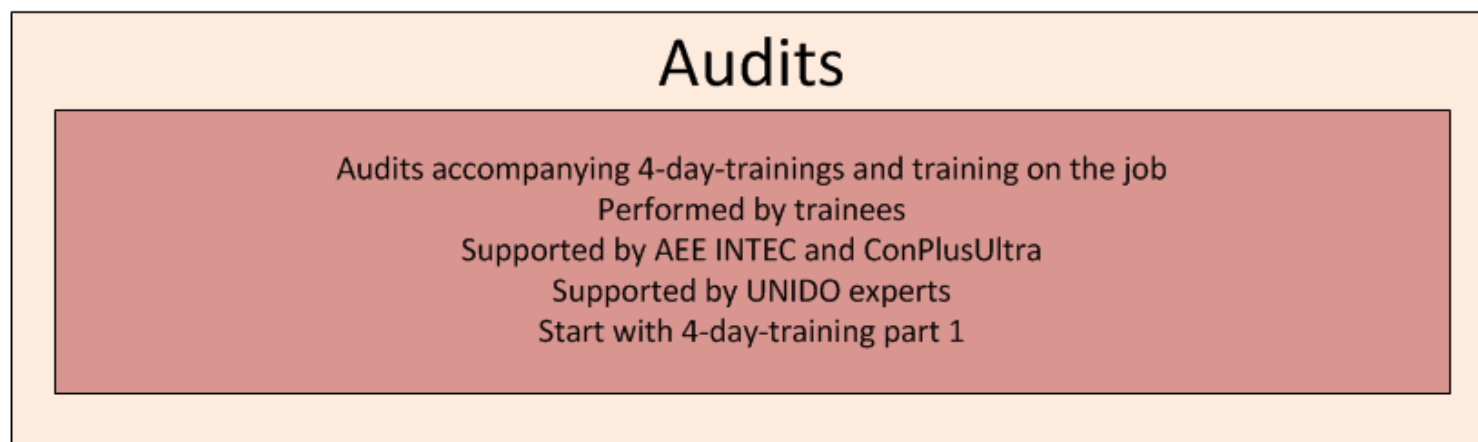
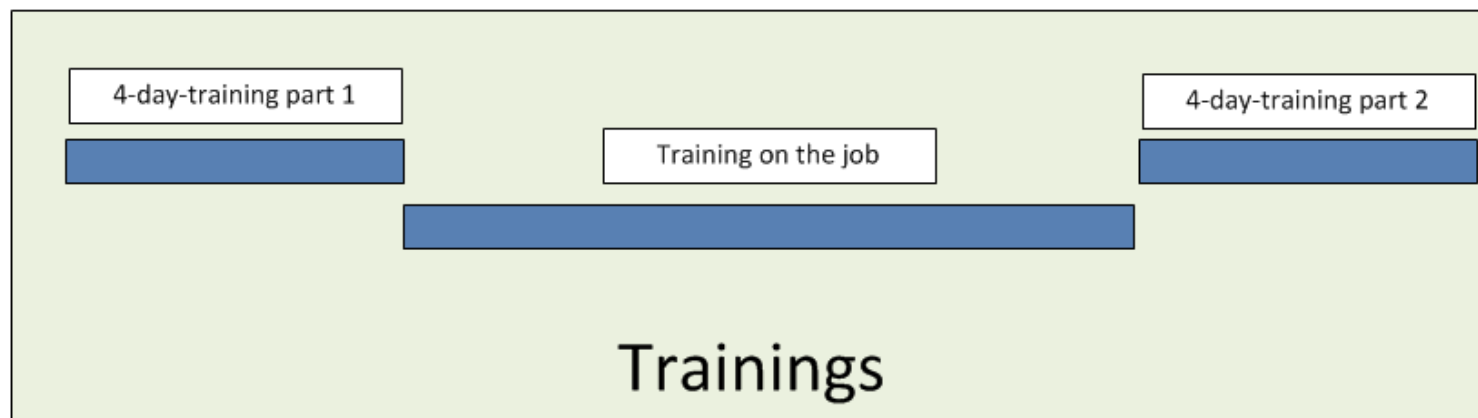
- **Christoph Brunner
(AEE INTEC)**



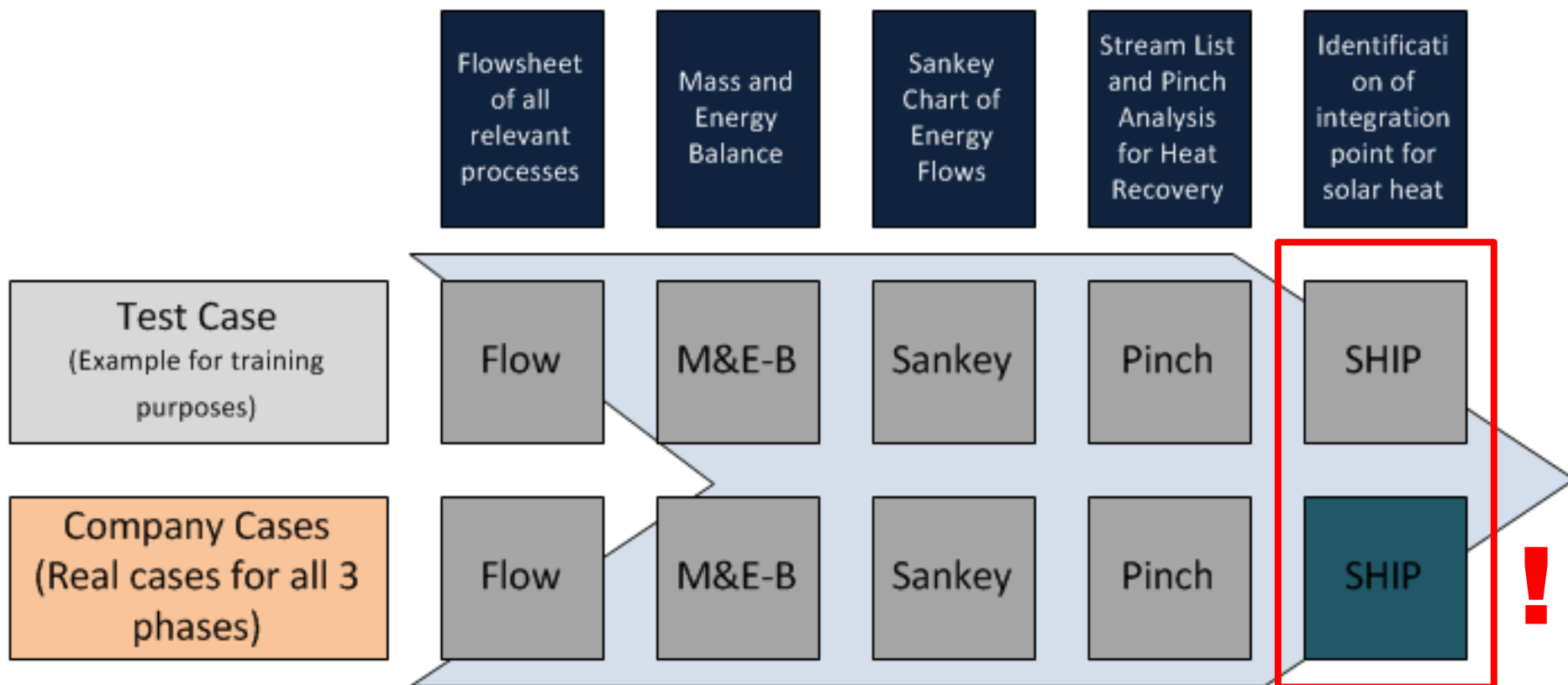
- **Juergen Fluch
(AEE INTEC)**



Timeline



Timeline – second shift of training



3 important steps

➤ (1) Process optimisation

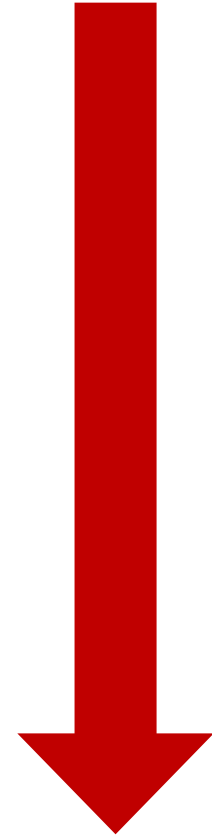
- ⇒ Improve the production process itself
- ⇒ New technologies

➤ (2) System optimisation

- ⇒ Optimize the energy system (heat and cold)
- ⇒ Heat recovery

➤ (3) Renewables

- ⇒ Provide clean forms of energy
- ⇒ e.g. **Solar process heat**



Agenda DAY 1

Day 1				
Start	End	Content		Duration
08:30	09:00	Registration		
09:00	11:00	Introduction and welcome Get together Training agenda Project update	Update on personal development Know what is included in the training Administrative issues	
11:00	11:30	Tea / Coffee break for interactive discussion		
11:30	13:00	Presentation of ongoing work in the companies and case studies	1. Beyti 2. Mars 3. Oriental Weavers	Participant presentations
13:00	14:00	Lunch break		
14:00	15:30	Presentation of ongoing work in the companies and case studies	4. Hurriya food 5. L'Oreal 6. Bariq (t.b.c.)	Participant presentations
15:30	16:00	Tea / Coffee break for interactive discussion		
16:00	17:30	Presentation best-practise-examples Presentation of SHIP TOOL (Overview)	Presentation & Tool	Trainer presentation
17:30	Closure day 1			



Agenda DAY 2

Day 2

Start	End	Content			Duration
09:00	11:00	Summary of day 1 and questions			
		Presentation on solar thermal basics Tool Tasks 1-1 to 1-3	Test case & Tools	Trainer presentation + group work	
11:00	11:30	Tea / Coffee break for interactive discussion			
11:30	13:00	Solar process heat - design guideline Tool Tasks 2-1 to 2-5	Test case & Tools	Trainer presentation + group work	
13:00	14:00	Lunch break			
14:00	15:30	Presentation on stagnation control Solar process heat - design guideline Tool Tasks 2-1 to 2-5	Presentation Test case & Tools	Trainer presentation + group work	
15:30	16:00	Tea / Coffee break for interactive discussion			
16:00	17:30	Presentation on field hydraulics Solar process heat - design guideline Tool Task 3-0	Presentation Test case & Tools	Trainer presentation + group work	
17:30		Closure day 2			

Agenda DAY 3

Day 3

Start	End	Content			Duration
09:00	11:00	Summary of day 2 and questions			
		Solar system design case studies	Case studies & Tools	Group work	
11:00	11:30	Tea / Coffee break for interactive discussion			
11:30	13:00	Presentation on control strategies Solar system design case studies	Presentation Case studies & Tools	Group work	
13:00	14:00	Lunch break			
14:00	15:30	Presentation of available funding and financing systems	- Know about funding and financing in Egypt - Identify barriers, weak points, strengths of available system	External presentation	
15:30	16:00	Tea / Coffee break for interactive discussion			
		Discussion about funding and financing and tailor made systems	Internal feedback	Discussion	
16:00	17:30	Practical calculation of economic evaluation linked to solar thermal and funding and financing	Case studies + Tools	Group work	
17:30		Closure day 3			

Agenda DAY 4

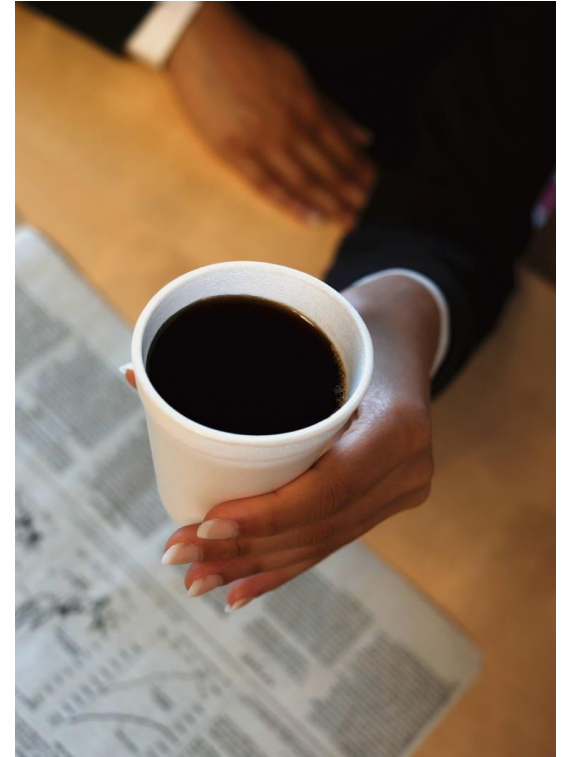
Day 4

Start	End	Content			Duration
09:00	11:00	Summary of day 3 and questions			
		Group presentation on developed solar concepts	Group 1 Group 2	Trainees presentation	
11:00	11:30	Tea / Coffee break for interactive discussion			
11:30	13:00	Group presentation on developed solar concepts	Group 3 Group 4	Trainees presentation	
13:00	14:00	Lunch break			
14:00	15:30	Group presentation on developed solar concepts	Group 5 Group 6	Trainees presentation	
15:30	16:00	Tea / Coffee break for interactive discussion			
16:00	17:00	Final examination	- Evidence of learnt skills	Exam	
		Closing session	- Know about the next steps - Trainees feedback and evaluation of training - Administrative tasks, question round	Participant questions	
17:00	17:30	Discussion and Feedback round			
17:30	18:00	Certification ceremony			

Organisation

- **Coffee/tea and lunch breaks**
- **Breaks**
- **Lunch**
- **Dinner**
- **Signature list**
- **Emergency exits**
- **Restrooms**
- **WiFi**

- **Laptops**
- **Training materials**
- **Evaluation**
- **Finish time**



Involved last months...

- **PMU – local supporting contact point**
- **Industry**
 - ⇒ Get a supported assessment/audit
 - ⇒ Energy managers
 - ⇒ Developing concepts
 - ⇒ In best case implementation of EE and/or ST measures
- **Consultants**
 - ⇒ Trained
 - ⇒ Supported audit
 - ⇒ Certified auditors
- **International experts**
 - ⇒ Support, advisory

Training on the Job - ToJ

- **Close cooperation industry and consultants
→ group work within the last months**
- **Performance of audit**
- **Measurements**
- **Milestones**
- **Presentation of draft results at companies**
- **Report to be developed**
- **Support by PMU, AEE INTEC and ConPlusUltra**

Group definition

- **Clear definition of one working group per industry**
 - ⇒ Responsible at industry: energy manager, operating manager + commitment of management
 - ⇒ Consultant(s)
 - ⇒ **Changed partly in last months**
- **Regular communication supported/monitored by PMU and international experts**
- **Regular meetings and cooperated work on audit**
 - ⇒ Main responsibility was defined
 - ⇒ Who was doing what?

Time schedule

➤ **Definition industry/experts/consutants**

- ⇒ Starting 01/06/17
- ⇒ Following the checklist and monitoring
- ⇒ Definition of milestones
- ⇒ Project communication
- ⇒ End date 14/12/17
- ⇒ Some company cases no participation in training II
- ⇒ Some company cases new

➤ **Basis for**

- ⇒ Implementations of EE
- ⇒ Identification/evaluation SHIP (Solar Heat for Industrial Processes)
- ⇒ Decision on funding
- ⇒ Training

Expected output ToJ

➤ **Audit performance following the procedure of trainings (EN16247, GREENFOODS, EINSTEIN) focussing on thermal demand/supply**

- ⇒ Data acquisition on **detailed level**
- ⇒ Evaluation of status quo
 - **Flow sheet including processes and supply system**
 - **Energy consumption (per source)**
 - **Energy supply: load profiles, efficiency, etc.**
 - **Energy demand per process (load profiles, temperatures, etc.**
 - **Sankey diagram**
- ⇒ Identification and evaluation (technical, energetic, ecologic, economic) of energy efficiency measures
 - **Process and system optimisation**
- ⇒ Presentations/reports for industry and project

Milestones

➤ **During ToJ**

- ⇒ Time schedule
- ⇒ Checklist
- ⇒ Company visit
- ⇒ Data acquisition / measurement plan
- ⇒ Measurements done
- ⇒ Flow sheet (detailed)
- ⇒ Stream list
- ⇒ Energy supply and demand status quo (total, load profile)
- ⇒ Sankey diagram
- ⇒ Process optimisation
- ⇒ Pinch analysis + heat exchangers (storage)
- ⇒ Presentations
- ⇒ Report based on template (working document draft/final)

Offered support

➤ Offered by the project

- ⇒ Support by PMU + experts, international experts
- ⇒ Measurement devices can be rent from PMU: T, V
- ⇒ Feedback on milestones
- ⇒ Discussion on identified optimisation measures
- ⇒ Support on evaluation of measures (process, system)
- ⇒ Training material, tools
- ⇒ Checklist audit steps
- ⇒ Project monitoring
- ⇒ Report template
- ⇒ Identification and support (funding) of implementations
 - **Decision board, innovative, feasible, multiplication**
 - **Criteria list soon depending on project**

Day 1

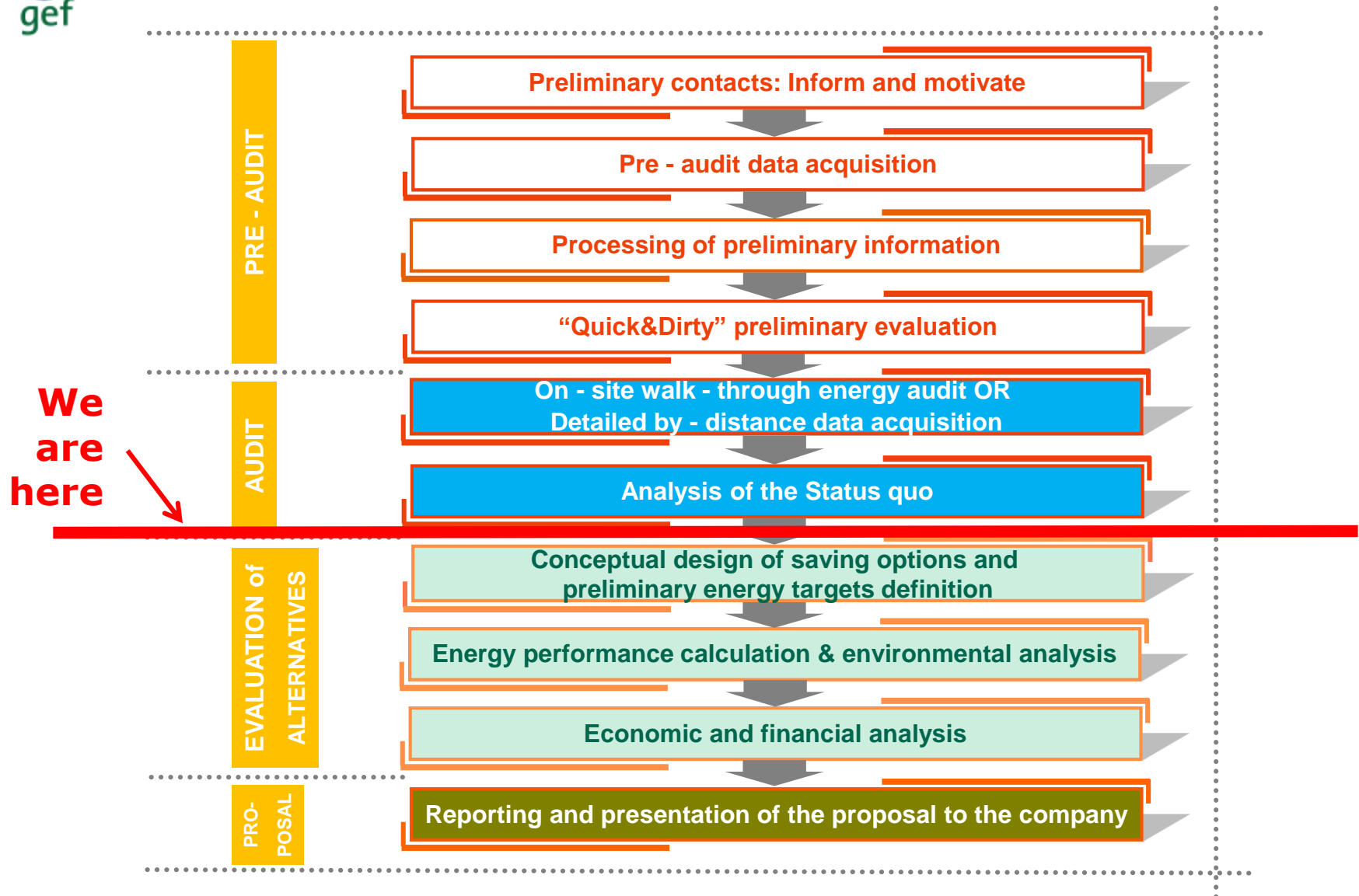
- **Presentation of work done following checklist**
 - ⇒ Update time schedule and experience
 - ⇒ Company visit
 - ⇒ Data acquisition / measurement plan and done
 - ⇒ **Flow sheet (detailed)**
 - ⇒ **Stream list**
 - ⇒ Energy supply and demand status quo (total, load profile)
 - ⇒ Sankey diagram
 - ⇒ **Process optimisation**
 - ⇒ Pinch analysis + energy efficiency (heat exchangers)
 - ⇒ Presentations
 - ⇒ Update us on your findings
- **30 minutes**
- **Basis for attendance day 2-4**



Day 1 – group presentation

➤ **tbd**

10 Audit steps



Expert training II – Focus on solar thermal

➤ Main points

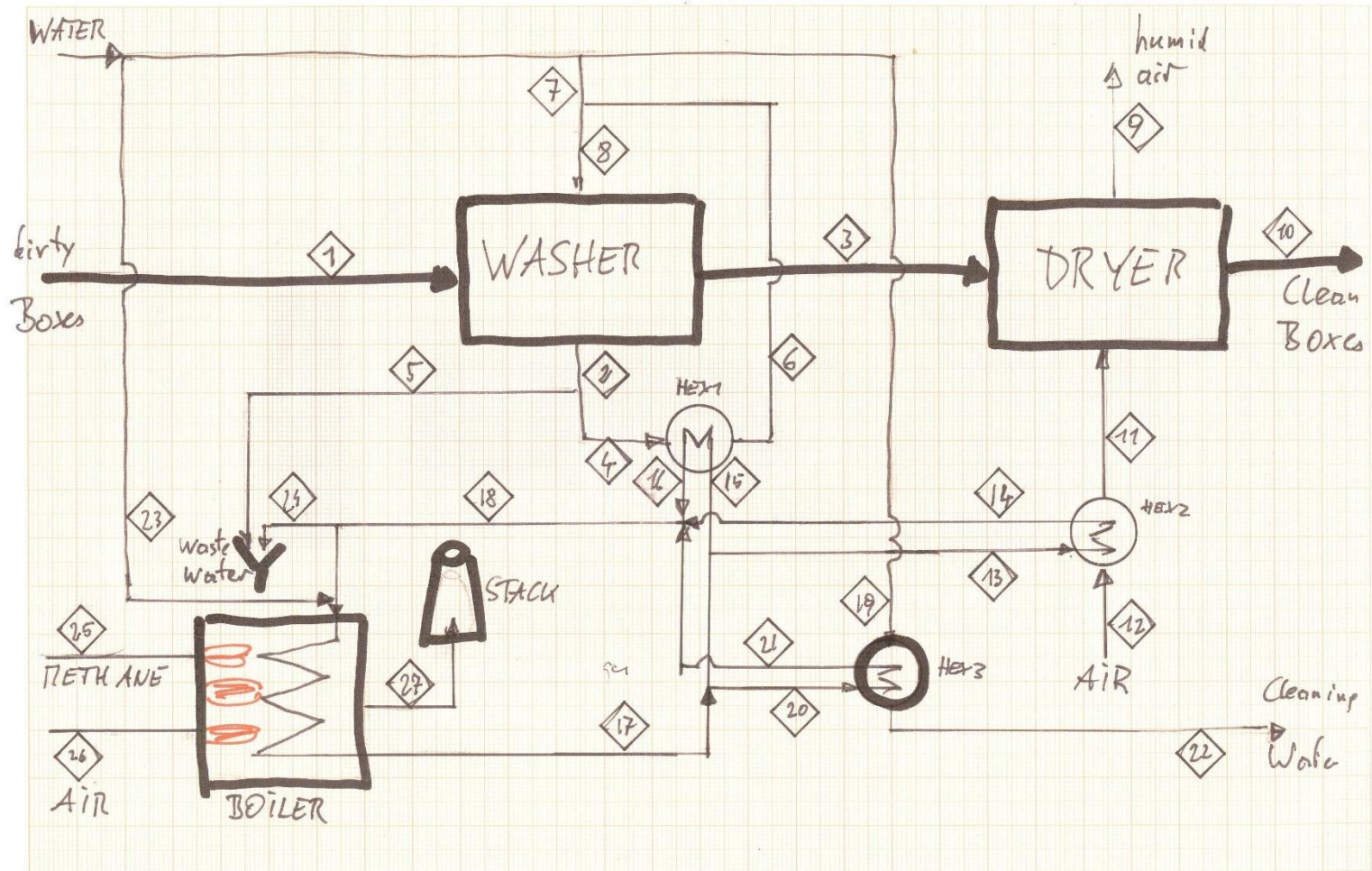
- ⇒ Update / presentation status quo project work
- ⇒ Basic solar thermal (collectors, storage)
- ⇒ Solar thermal integration
- ⇒ Economic evaluation
- ⇒ Funding and financing
 - **Presentation from external expert**

Methodology

➤ Identification and evaluation of solar thermal potential

- ⇒ Solar thermal basics
- ⇒ Integration points
- ⇒ Application of pre- / detailed design of solar thermal on
 - **Test case**
 - **Your project work (Company cases)**
- ⇒ Learn the potential and how to apply it
- ⇒ Group work supported by experts and trainers
- ⇒ Evaluation of the findings
- ⇒ Presentation of your results
- ⇒ Basis for the final concept design and presentation at the company

Testcase





Company Cases

- **Beyti**
- **Mars**
- **L'Oreal**
- **Horreia Foods**
- **Oriental Weaver**
- **Bariq**

Expert training II – Focus on solar thermal

➤ **Final evaluation day 4**

⇒ Attendance certificate

⇒ Certified expert

- **Exam covering whole training I + ToJ + II**
- **Proven knowledge about**
 - Performing an audit
 - Thermodynamic basics
 - Evaluation status quo
 - Process optimisation
 - System optimisation and heat exchanger design
 - Design of solar thermal system
 - Energetic, ecologic and economic evaluation of measures
 - Use of tools provided
- **Proven audit steps and results out of ToJ**



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