

# EINSTEIN II TRAINING

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# Overview of course structure



2011

1-day thermal energy fundamentals refresher  
(optional)

3-day introductory training course

Trainee project work  
& Tutorial availability

2-day advanced training course

Project evaluation

2012

Certified as an EINSTEIN auditor  
by EINSTEIN II consortium

# Training locations

**EINSTEIN**  
thermal energy  
industry audit

Austria  
Bulgaria  
France  
Germany  
Ireland  
Italy  
Luxembourg  
Slovakia  
Spain  
UK



# Refresher day

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- Optional
- Local teacher
- A recap on thermal energy fundamentals:
  - Heat balances
  - Heat transfer
  - Steam
  - Humid air
  - Combustion & boilers

# Intro 3-day course

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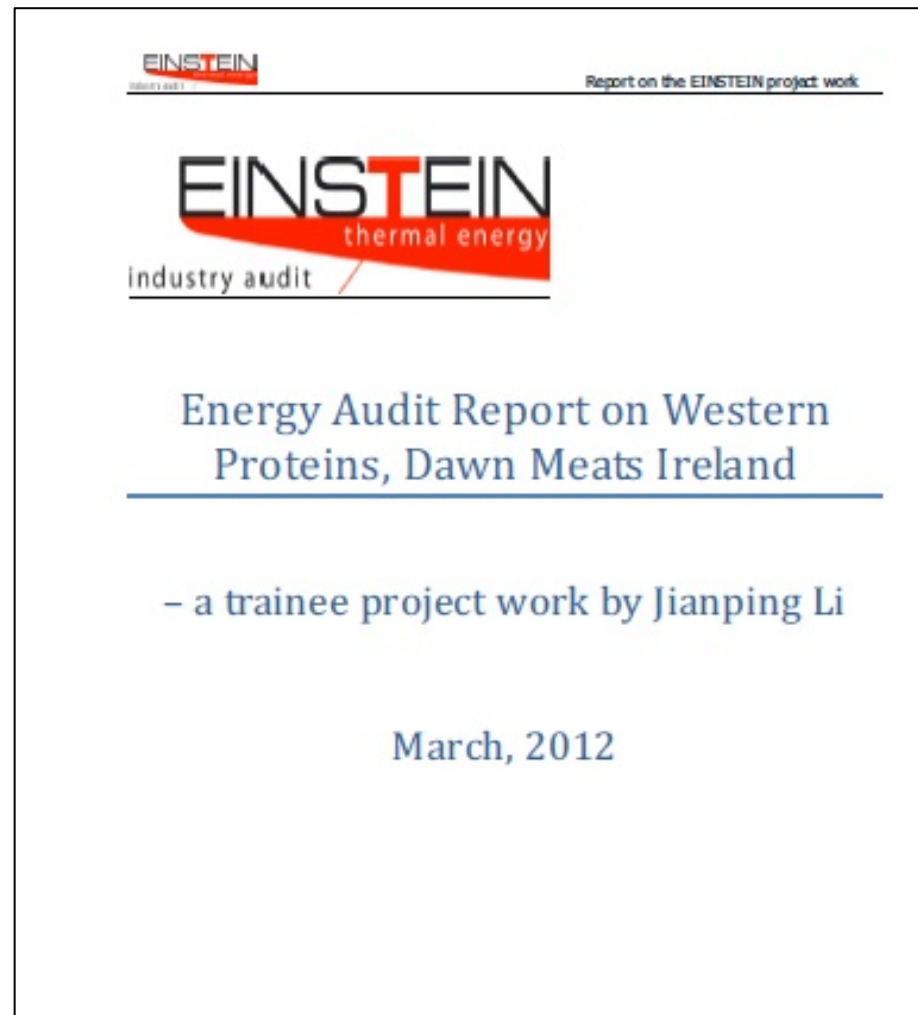


- Going through EINSTEIN II audit procedure
- Concepts and definitions
- Worked examples
- Focus on “hands on” use of the tool
  - What data to obtain and how to input it
  - Showing the existing situation & consistency checking
  - Implementing improvements:
    - Optimising process to reduce energy demand
    - Incorporating heat recovery
    - Integrating renewable energy sources & efficient technologies

# Project work

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For example: heat recovery in a rendering plant



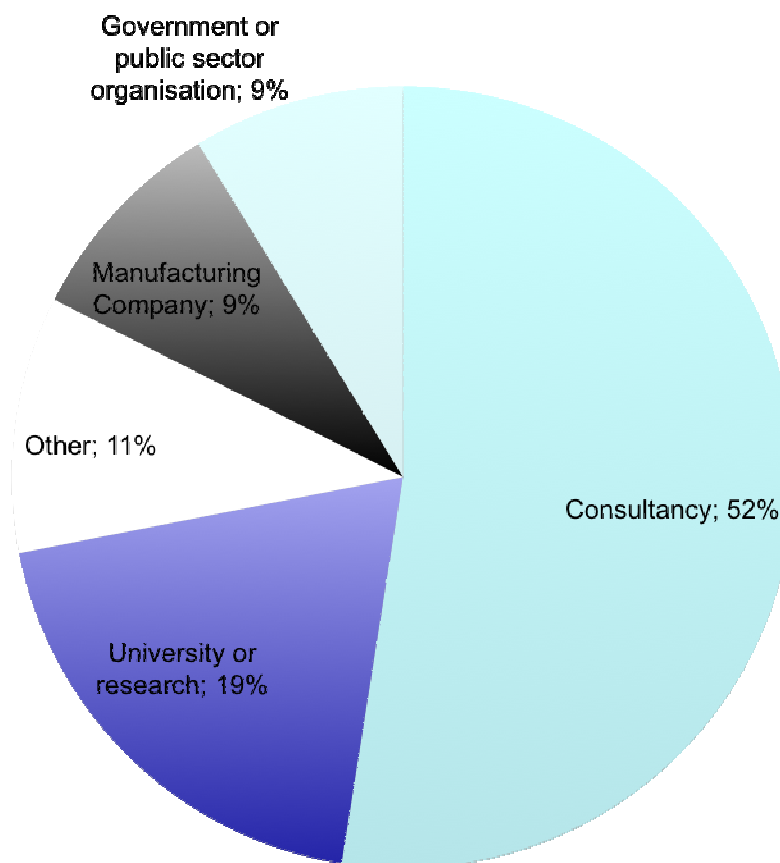
# Advanced 2-day course

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- Getting into detail for specific situations:
  - Modelling tricky things (e.g. humid air), deeper into buildings, cooling
- Again, focus on “hands on” use of the tool, including trainee experiences with project work

# Trainees' Organisations

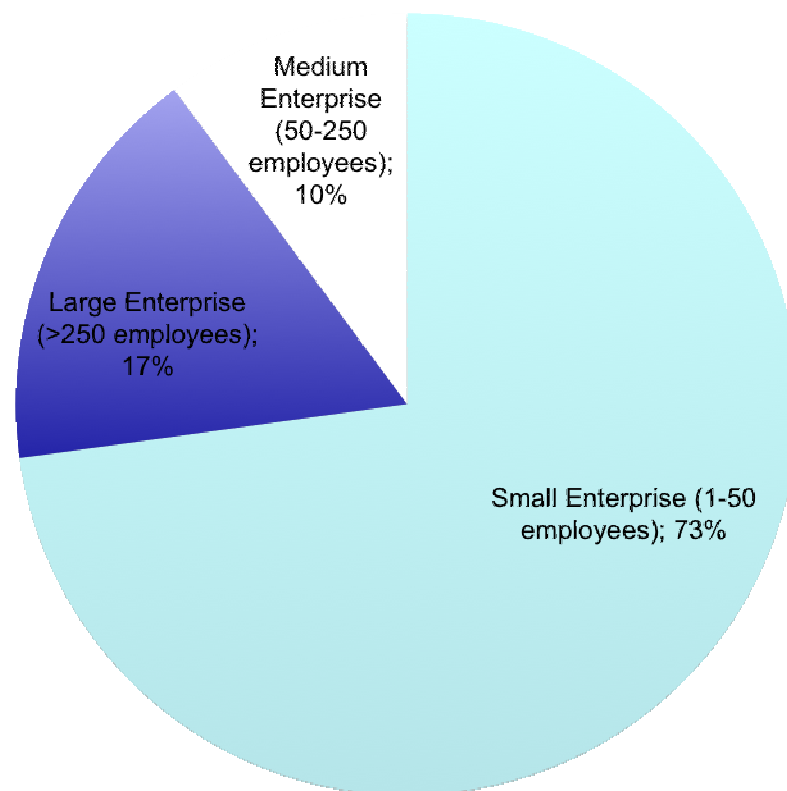
Introductory courses 2011





# Trainees' Organisations

Introductory courses 2011



# Numbers

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- Introductory training 2011:  
194 trainees across 10 countries
- Advanced training, 2011:  
109 trainees across 10 countries
- Introductory training 2012:
  - 2 held - France & UK – 30 trainees
  - 2 more planned – Spain in June
- EINSTEIN energy auditors:  
8 certified; 2 pending certification



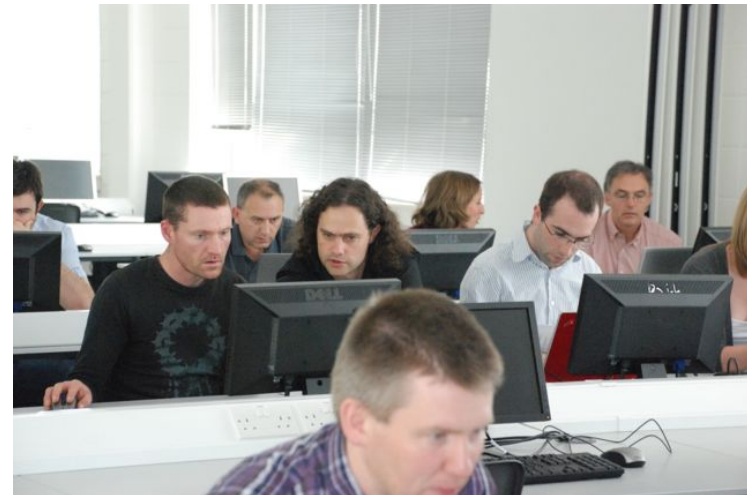
# Future courses

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- 3-day Introductory course:
  - Madrid 20 – 22 June 2012
  - Barcelona 26 – 28 June 2012

Keep a look out on:

[www.einstein-energy.net/training-activities](http://www.einstein-energy.net/training-activities)



# Audits: Seafood cooking

**EINSTEIN** thermal energy  
industry audit

90 employees

LPG:

1800 MWh/year

€120 000

Electricity:

1200 MWh/year

€137 000



## Improvements under EINSTEIN

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**EINSTEIN** thermal energy  
industry audit

Whelk cooking line  
(live steam)

Heat recovery on  
condensate:  
saving 100 MWh





## Improvements under EINSTEIN

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**EINSTEIN**  
thermal energy  
industry audit

Heat recovery on flue gas:  
saving 260 MWh



## Improvements under EINSTEIN

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Both heat recovery projects  
being installed total cost:

€67,000

savings:

€24,000

35% grant aid, payback:

1.8 years