


How do German energy advisors work with companies.



Development of individual energy efficiency concepts



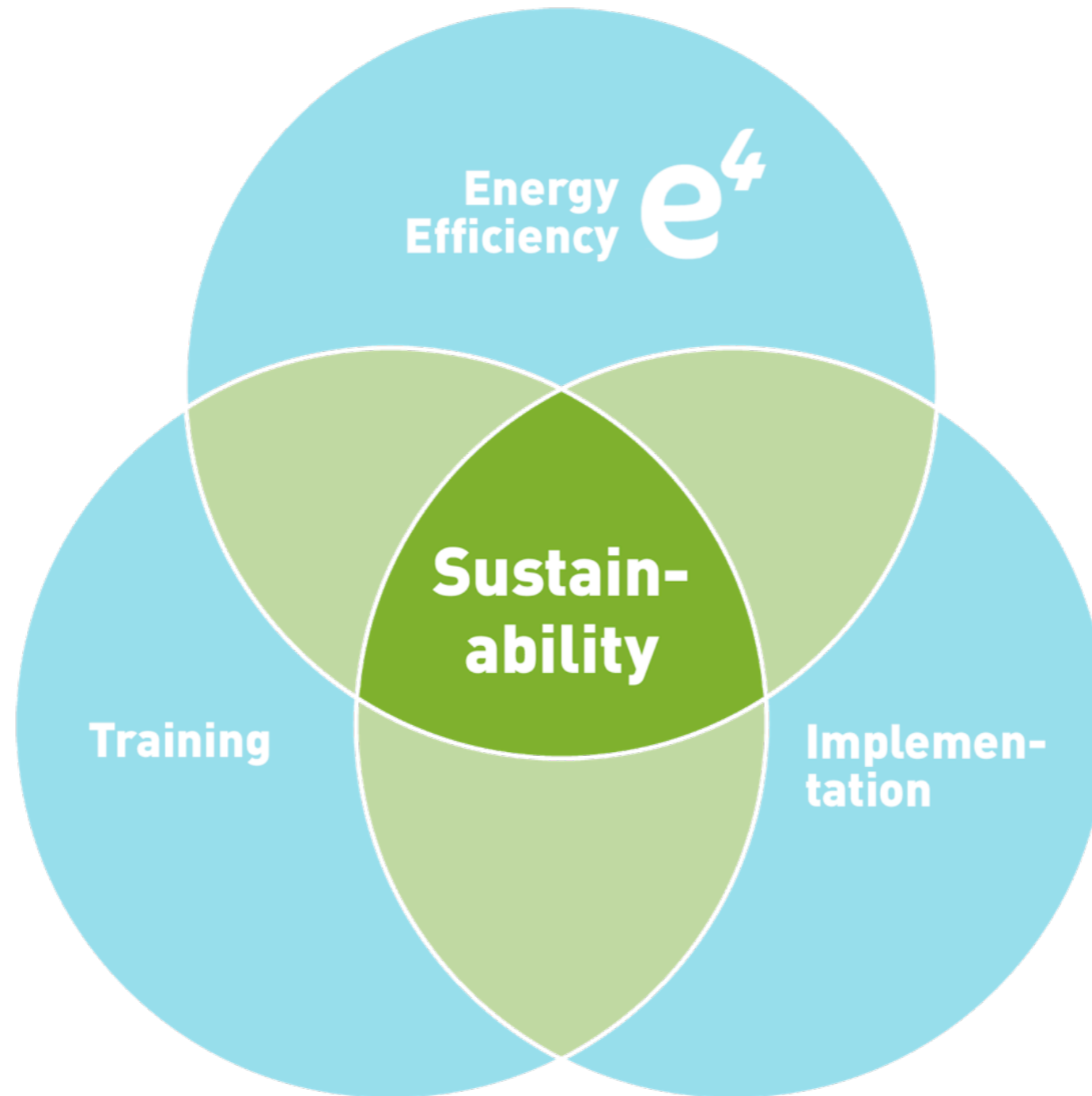
Development of individual energy efficiency concepts

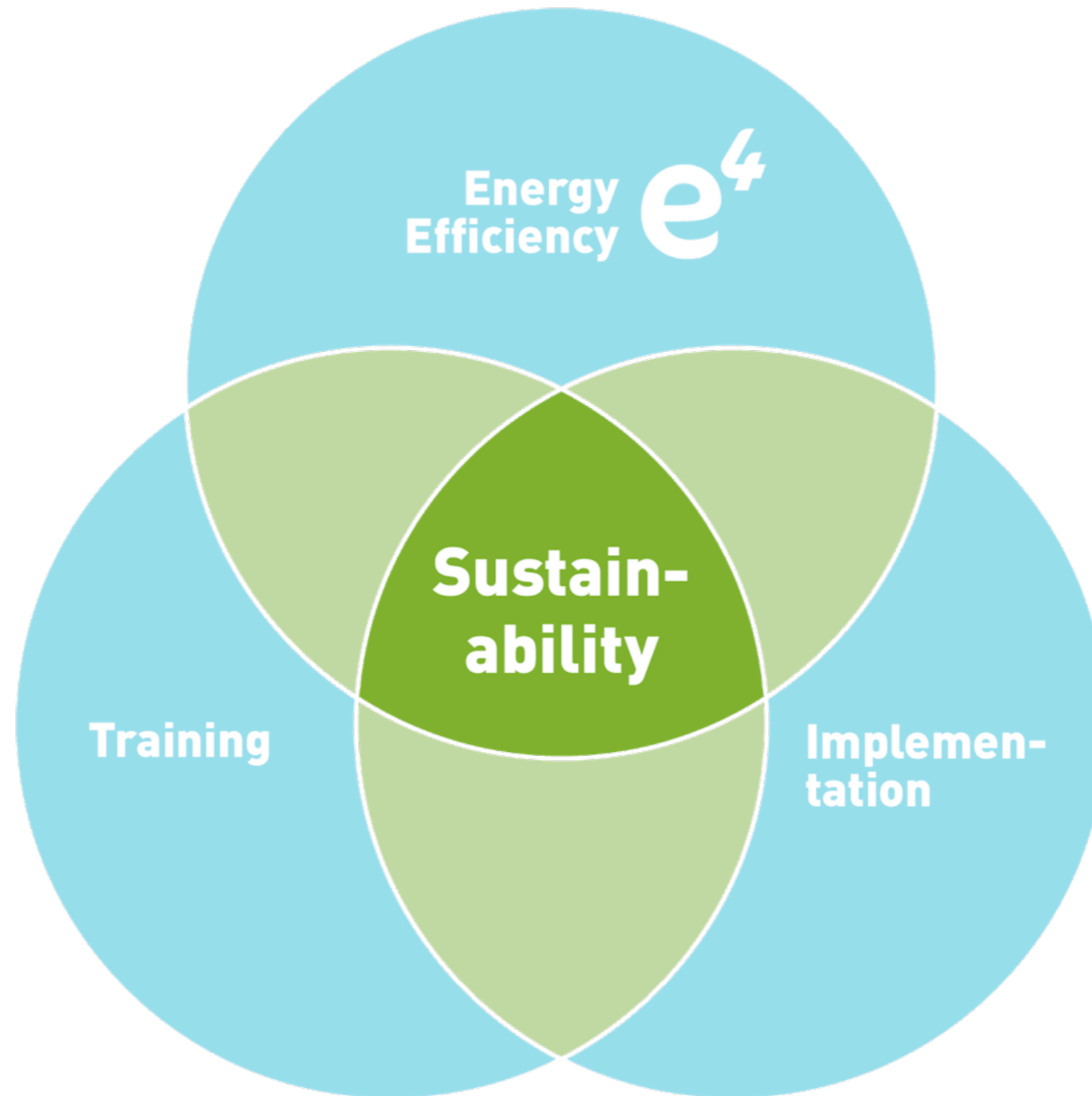
- Comprehensive
 - Technologically neutral - integrated
 - Independent of manufacturer
- 

Development of individual energy efficiency concepts

- Comprehensive
- Technologically neutral - integrated
- Independent of manufacturer

Auditing DIN EN ISO 50001, ISO 14001





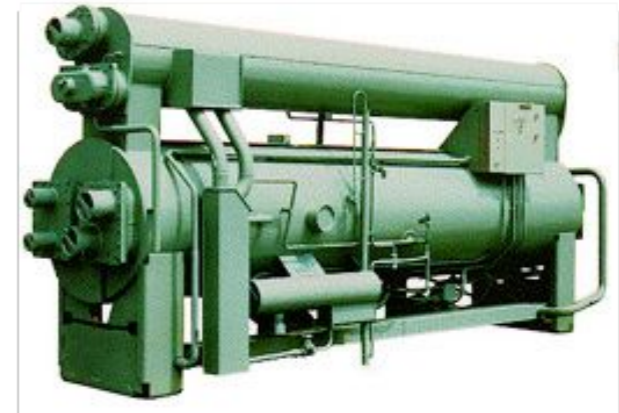
Technologies & Potentials



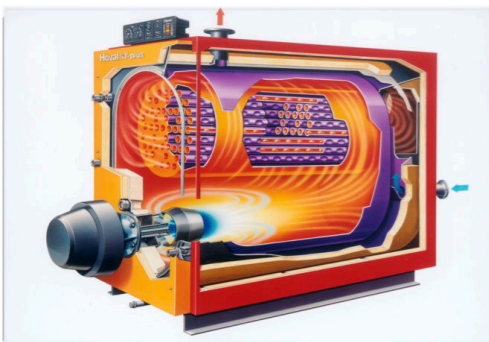
Lighting
up to 70%



Pumping systems
up to 30%



Cooling
up to 30%



Heating
up to 30%



Compressed air
up to 50%

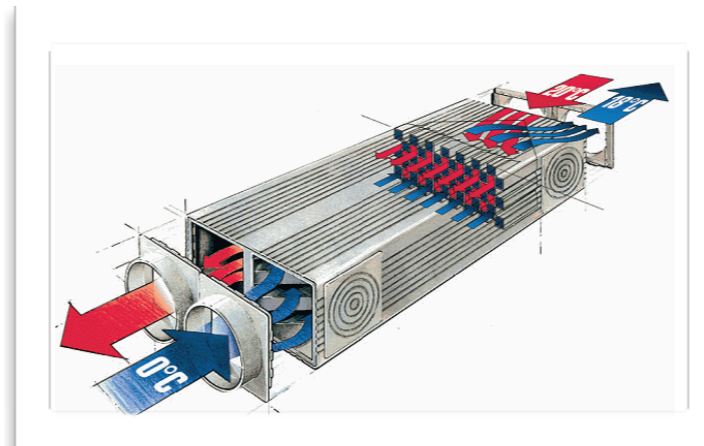


Ventilation
up to 25%

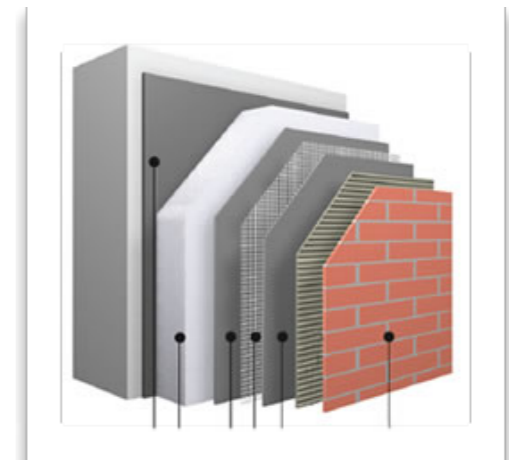
Technologies & Potentials



High efficiency motors
up to 20%



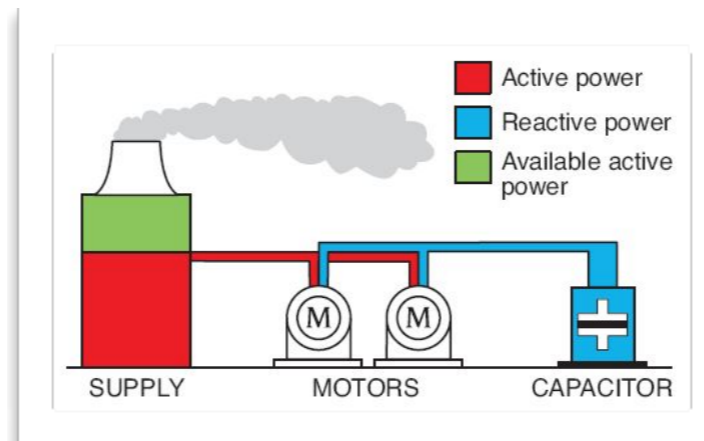
Heat recovery
up to 90%



Insulation
up to 40%



Building automation
up to 30%



Power factor correction
up to 20%



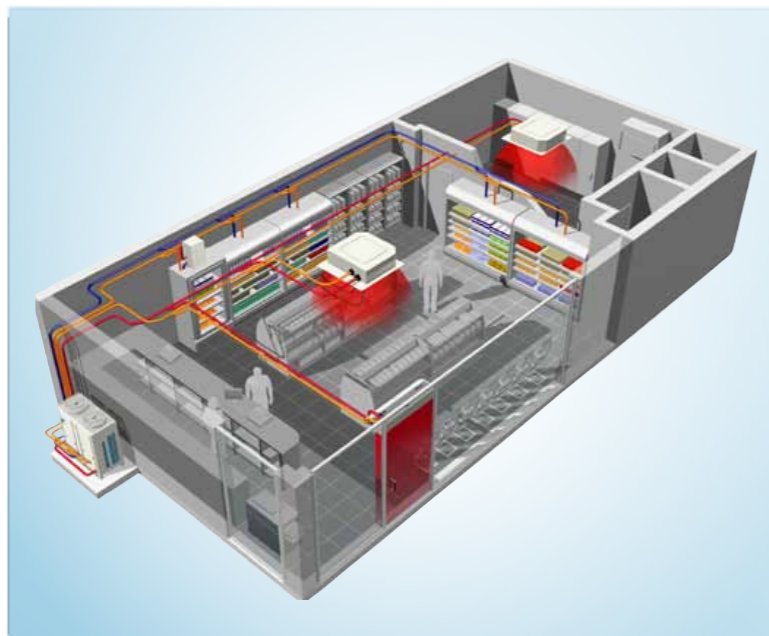
Green IT
up to 75%



Co-generation



Absorption chillers



VRV system



Adsorption chillers

Renewable Energies



Photovoltaic



Solar thermal energy



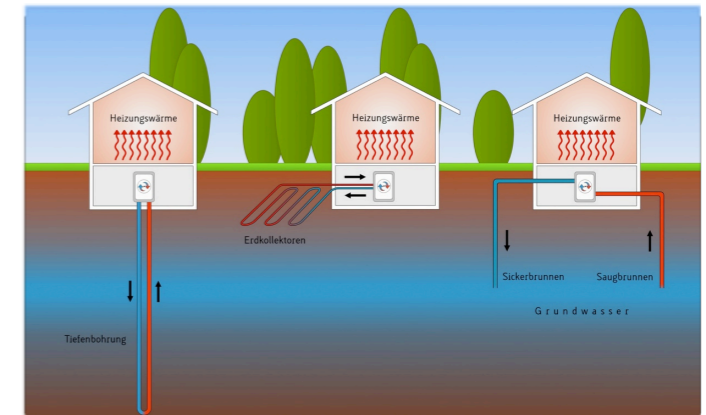
Wind turbines



Biomass



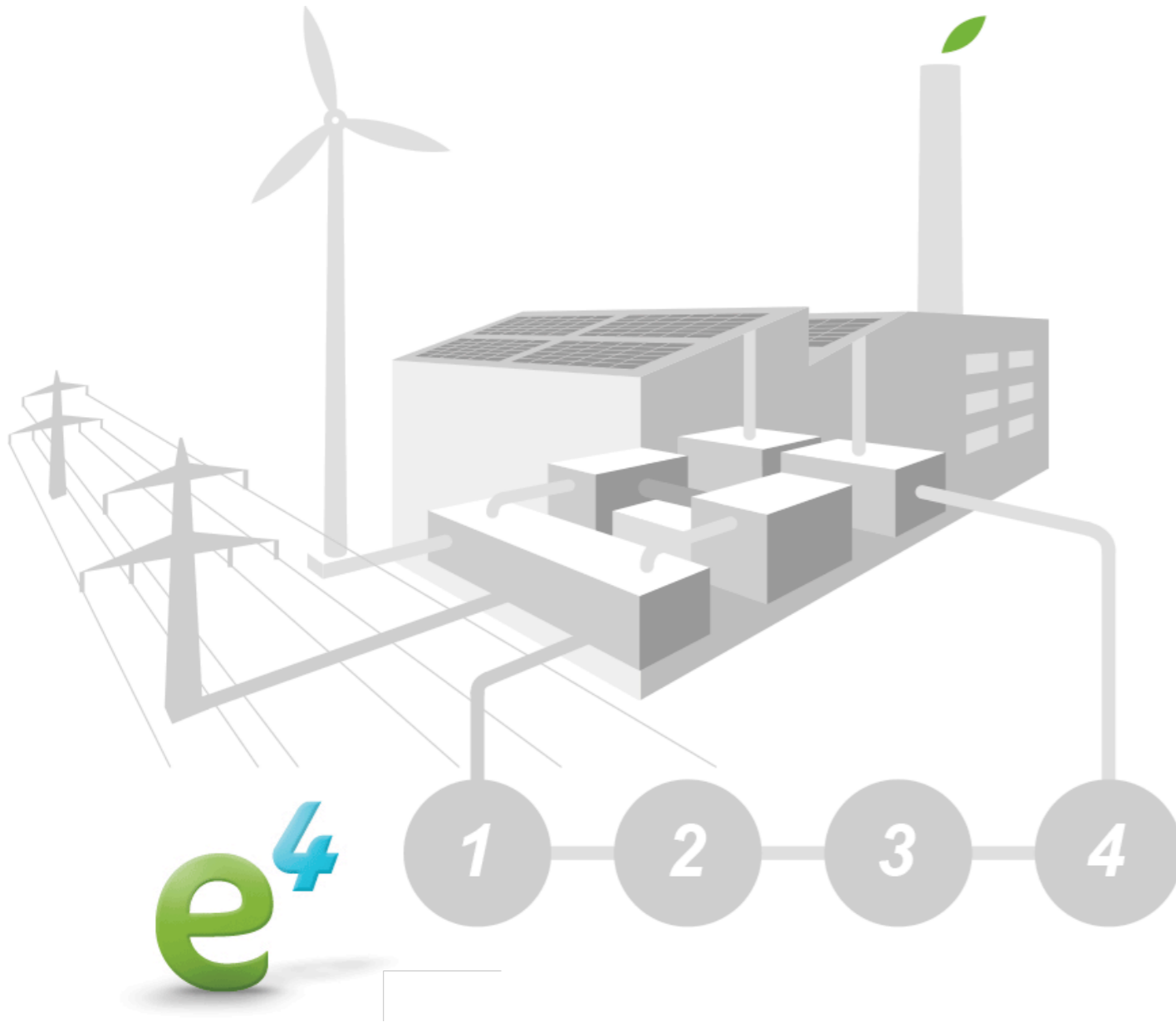
Wood chips



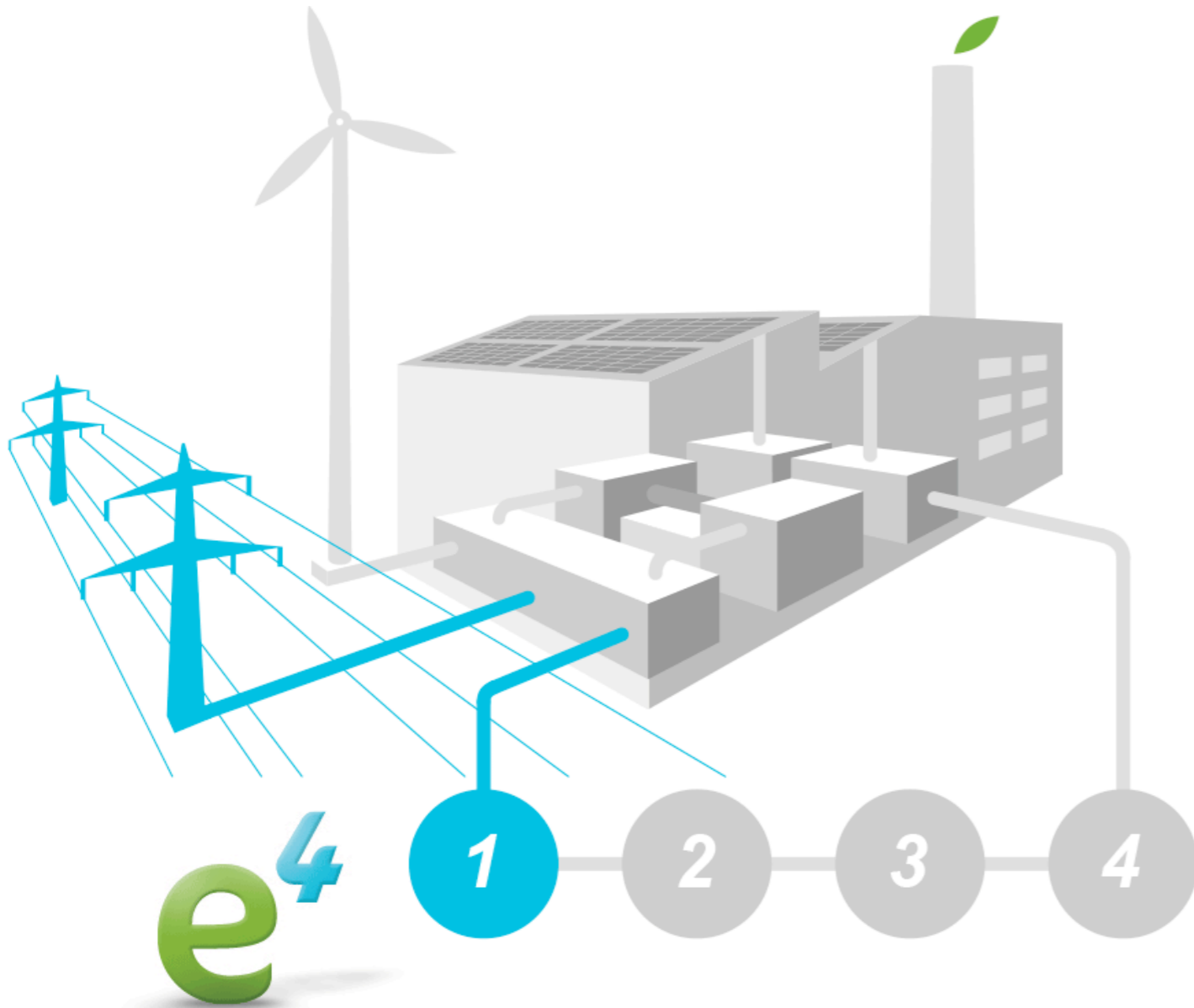
Geothermal energy

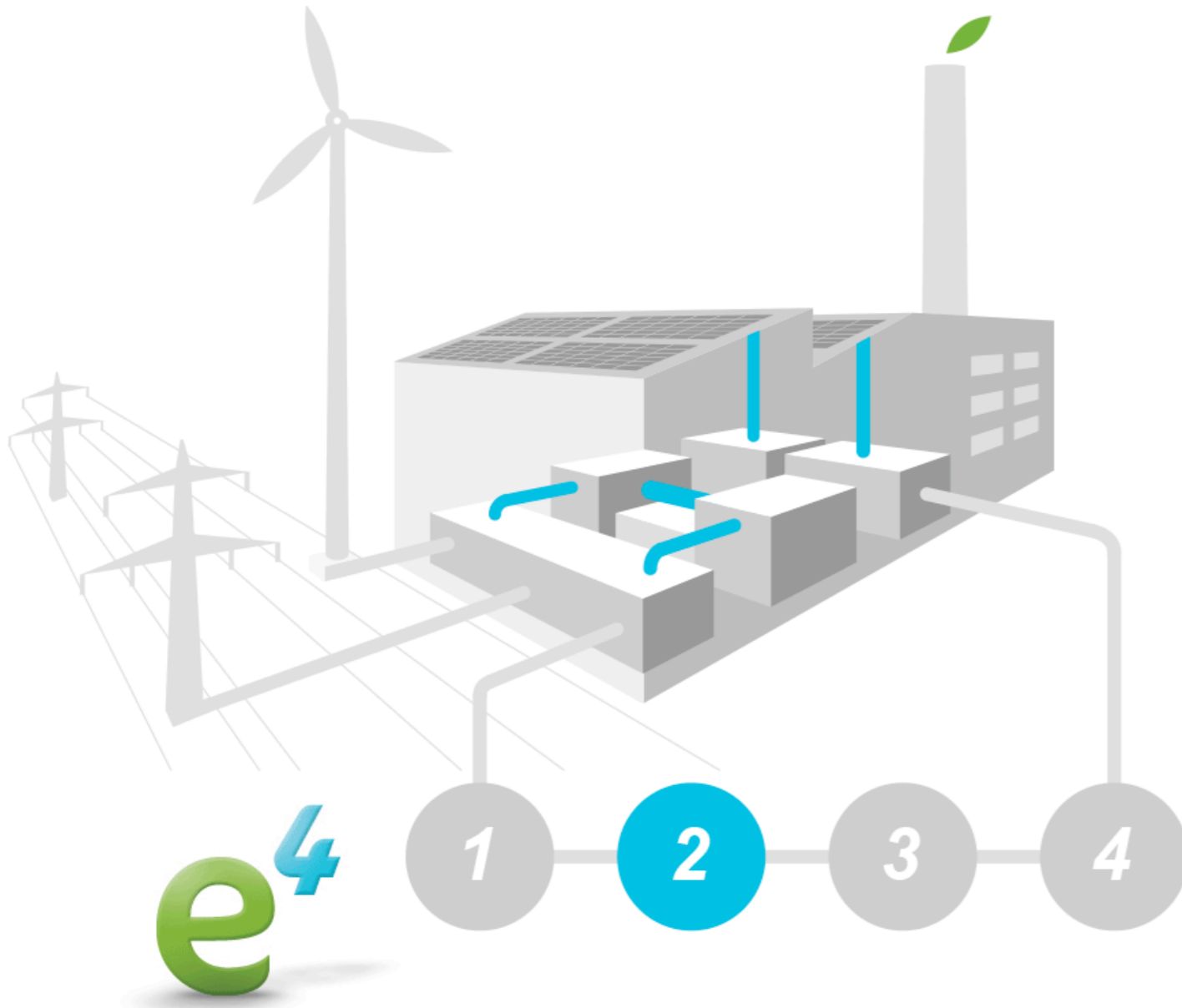
Challenge...





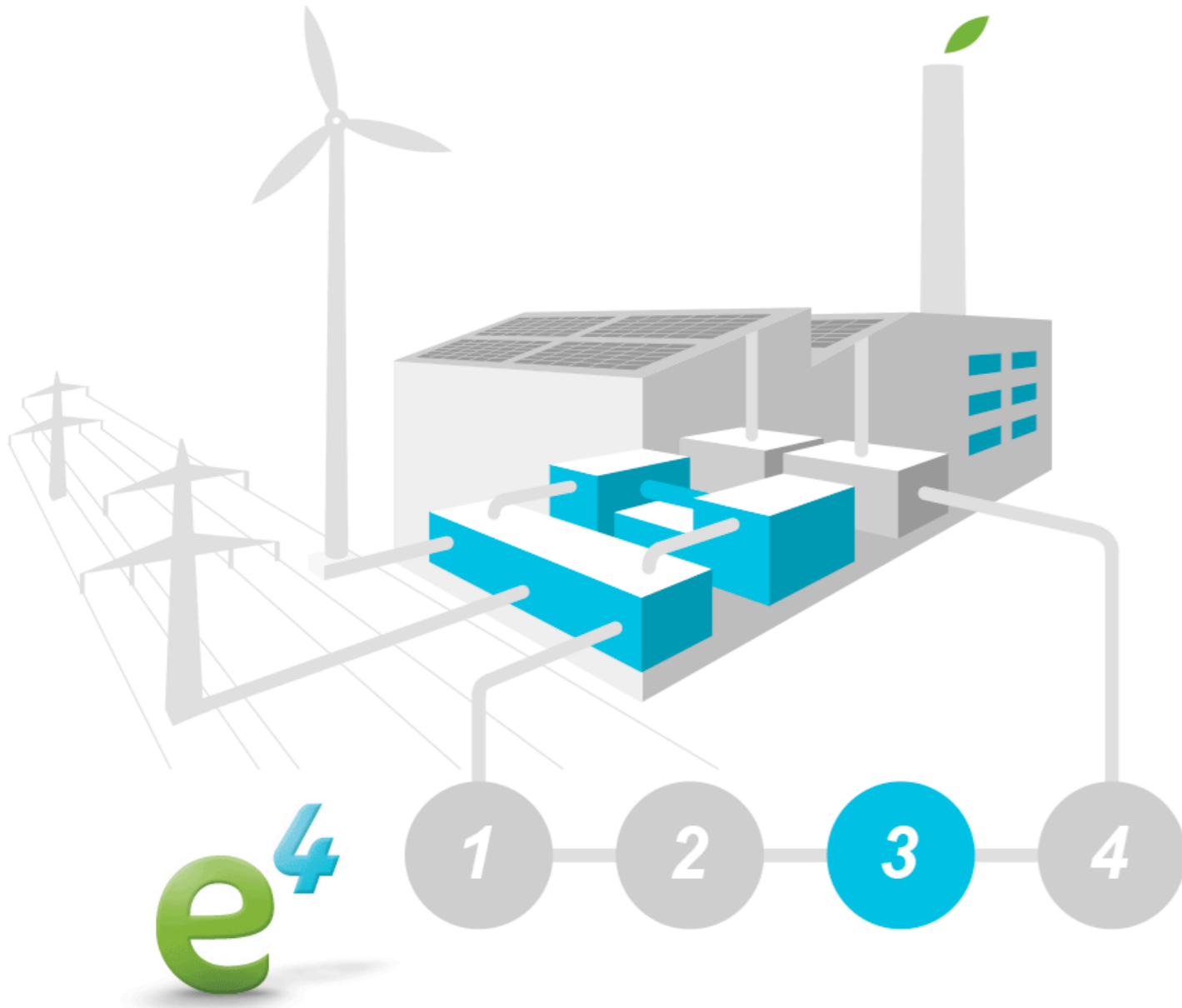
e PROCUREMENT





e PROCUREMENT

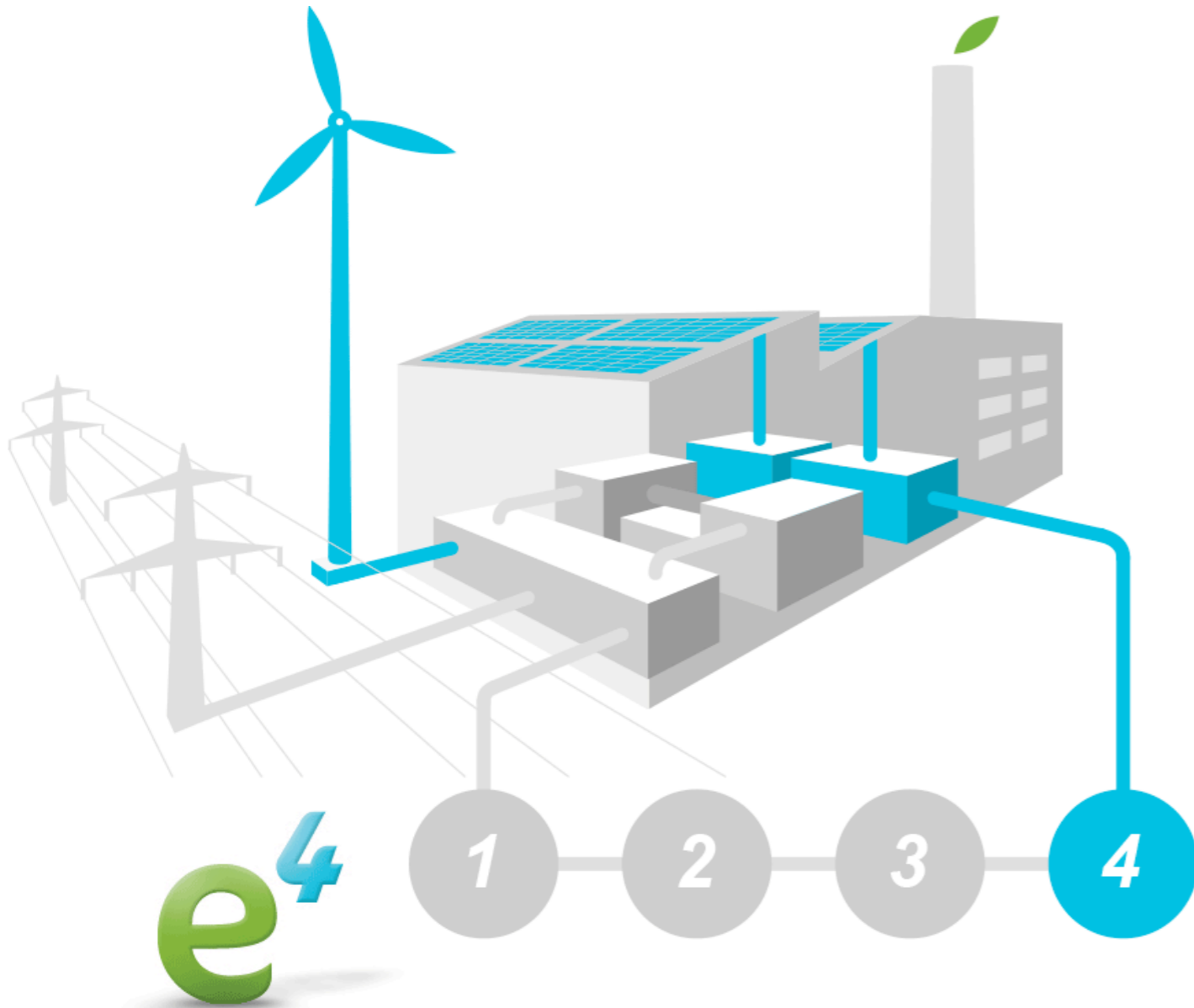
e DISTRIBUTION



e PROCUREMENT

e DISTRIBUTION

e CONSUMPTION

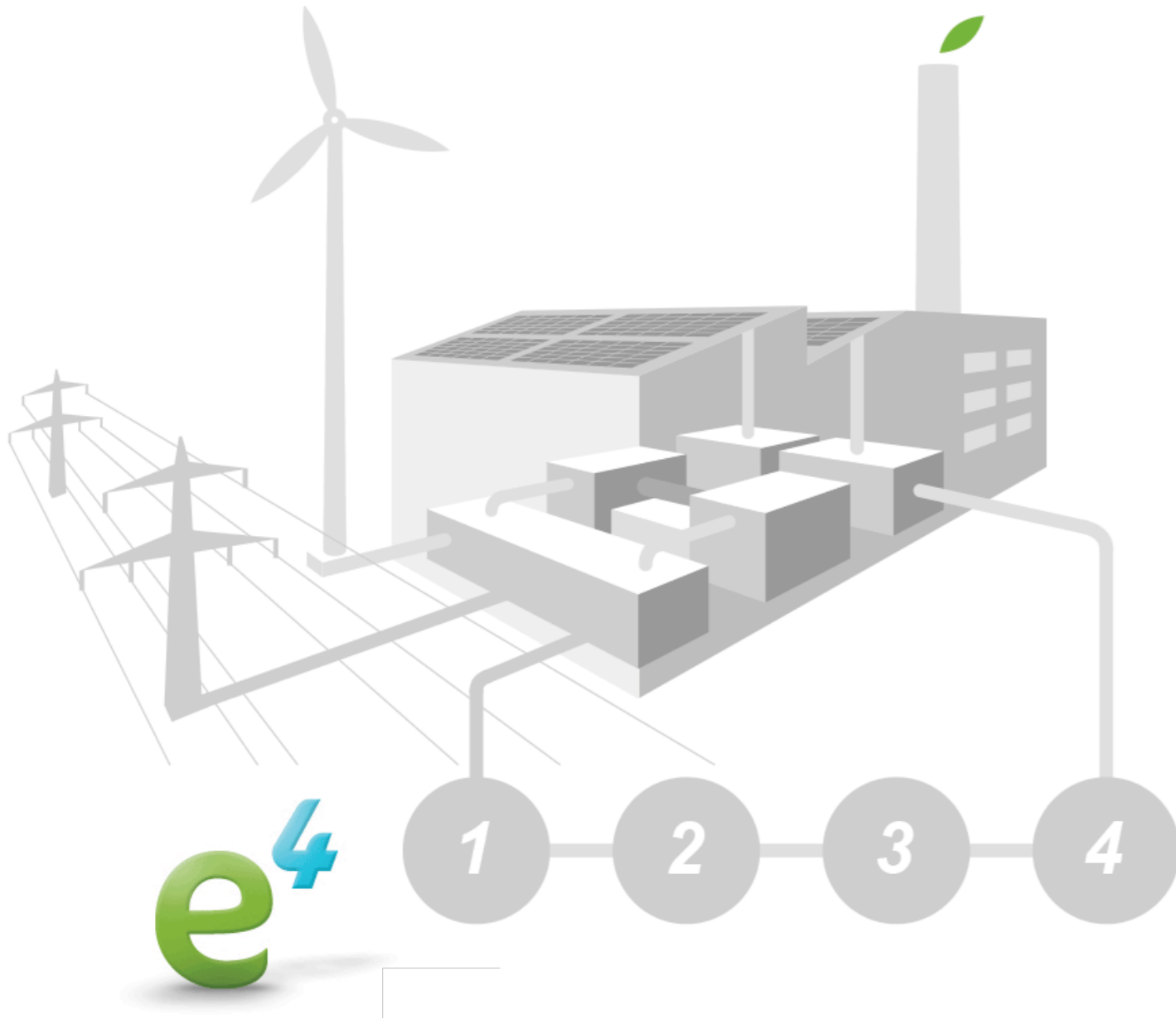


e PROCUREMENT

e DISTRIBUTION

e CONSUMPTION

e GENERATION

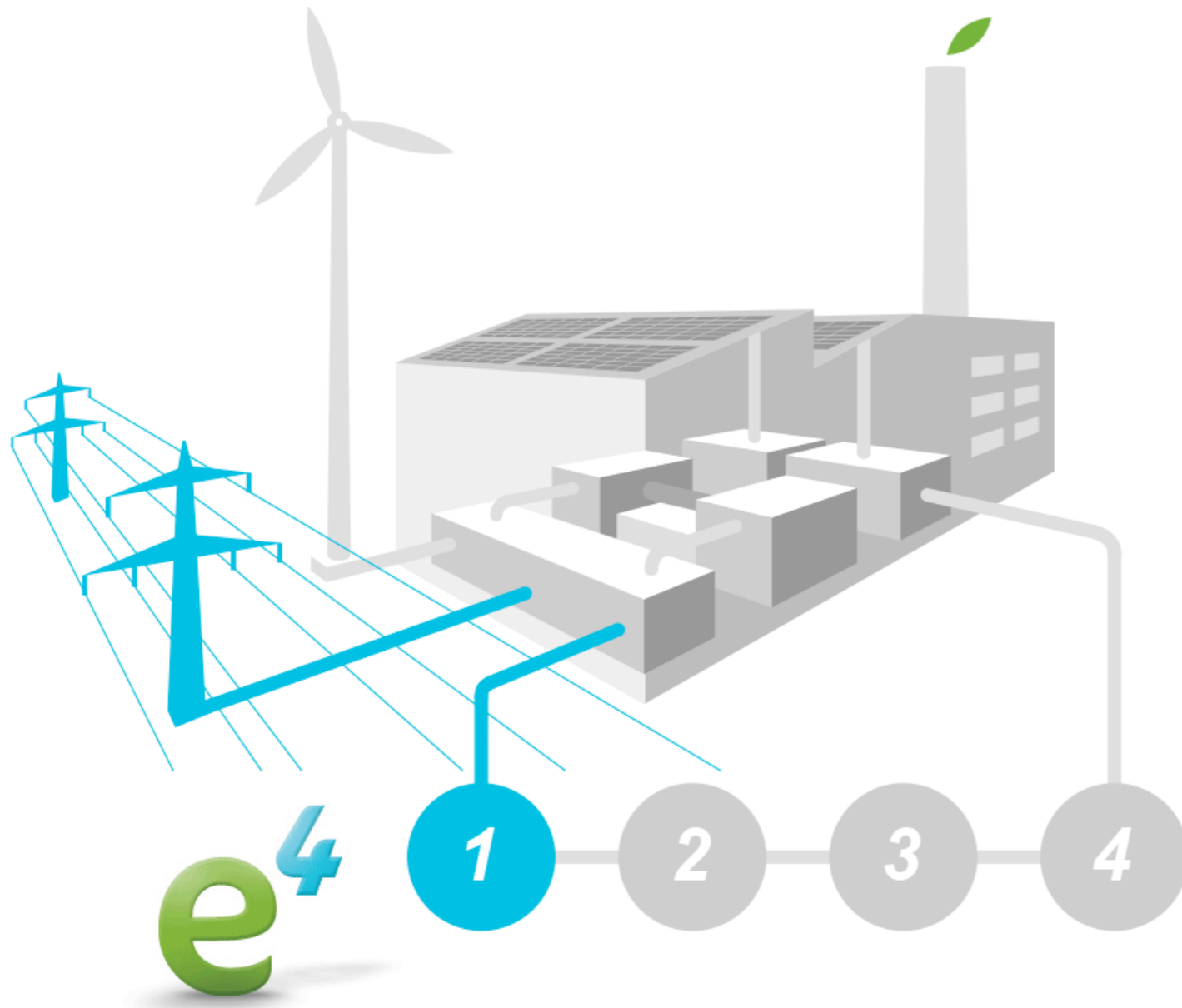


e PROCUREMENT

e DISTRIBUTION

e CONSUMPTION

e GENERATION



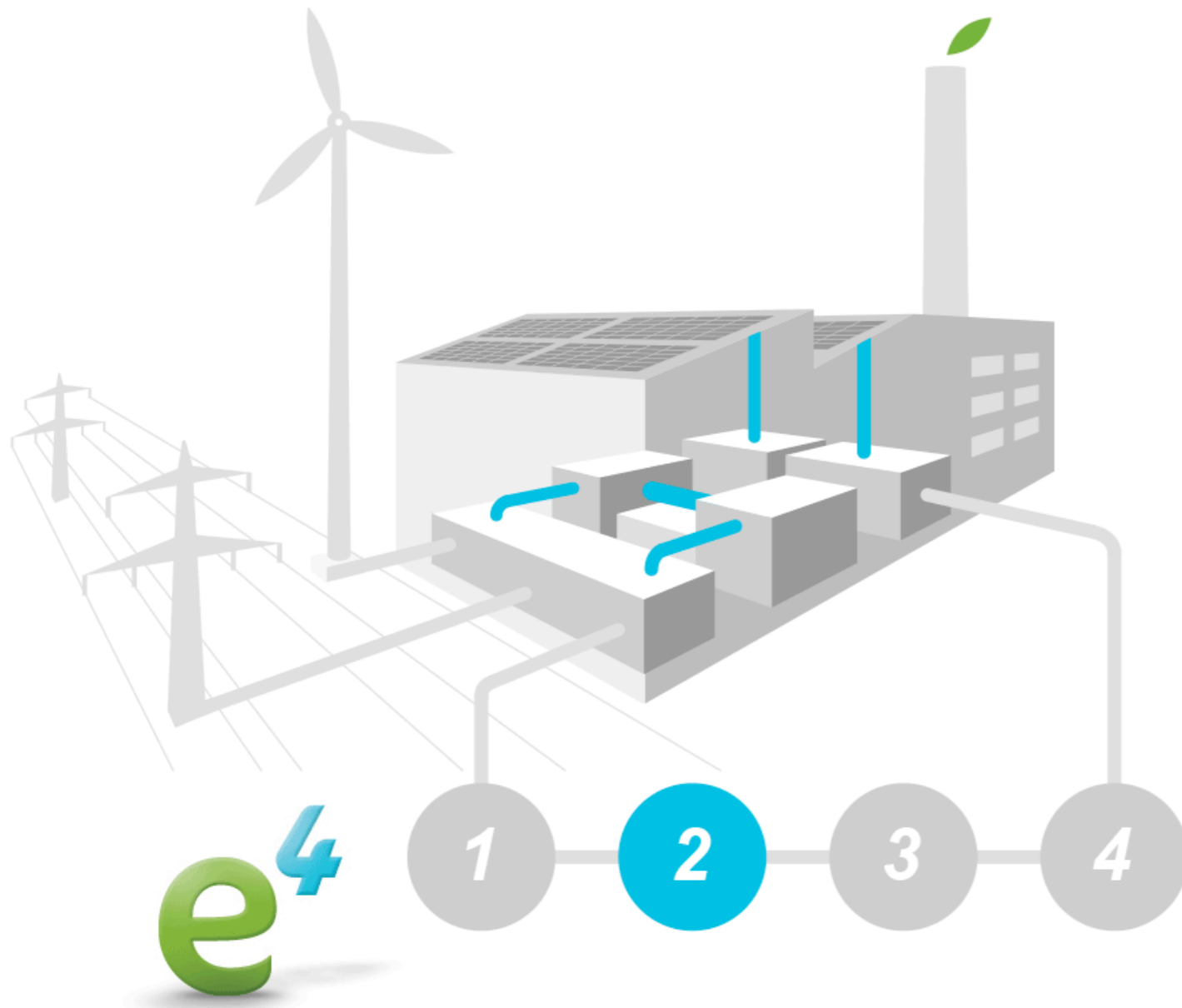
e PROCUREMENT

e DISTRIBUTION

e CONSUMPTION

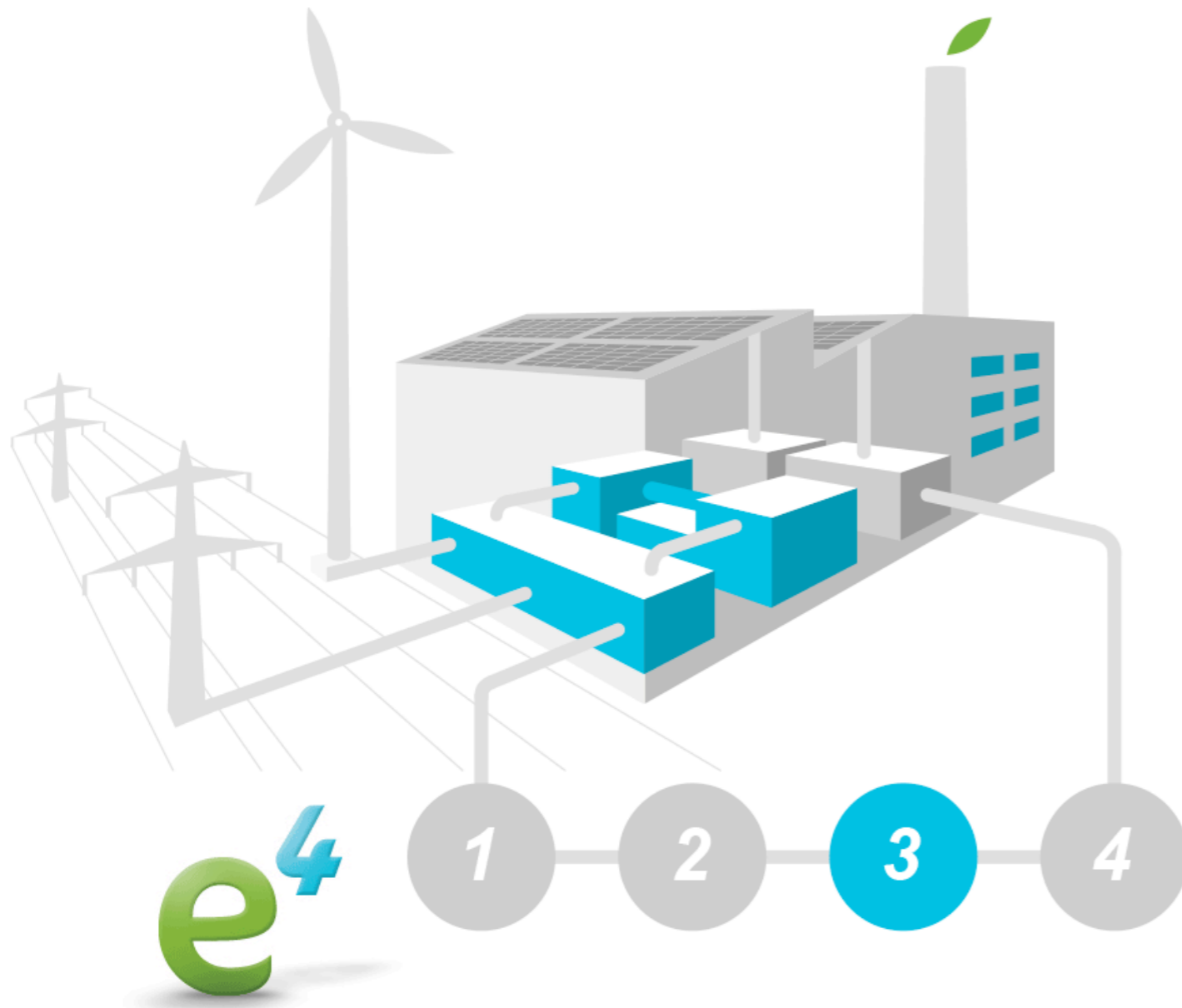
e GENERATION

Optimisation of tariff structure and energy supply contracts



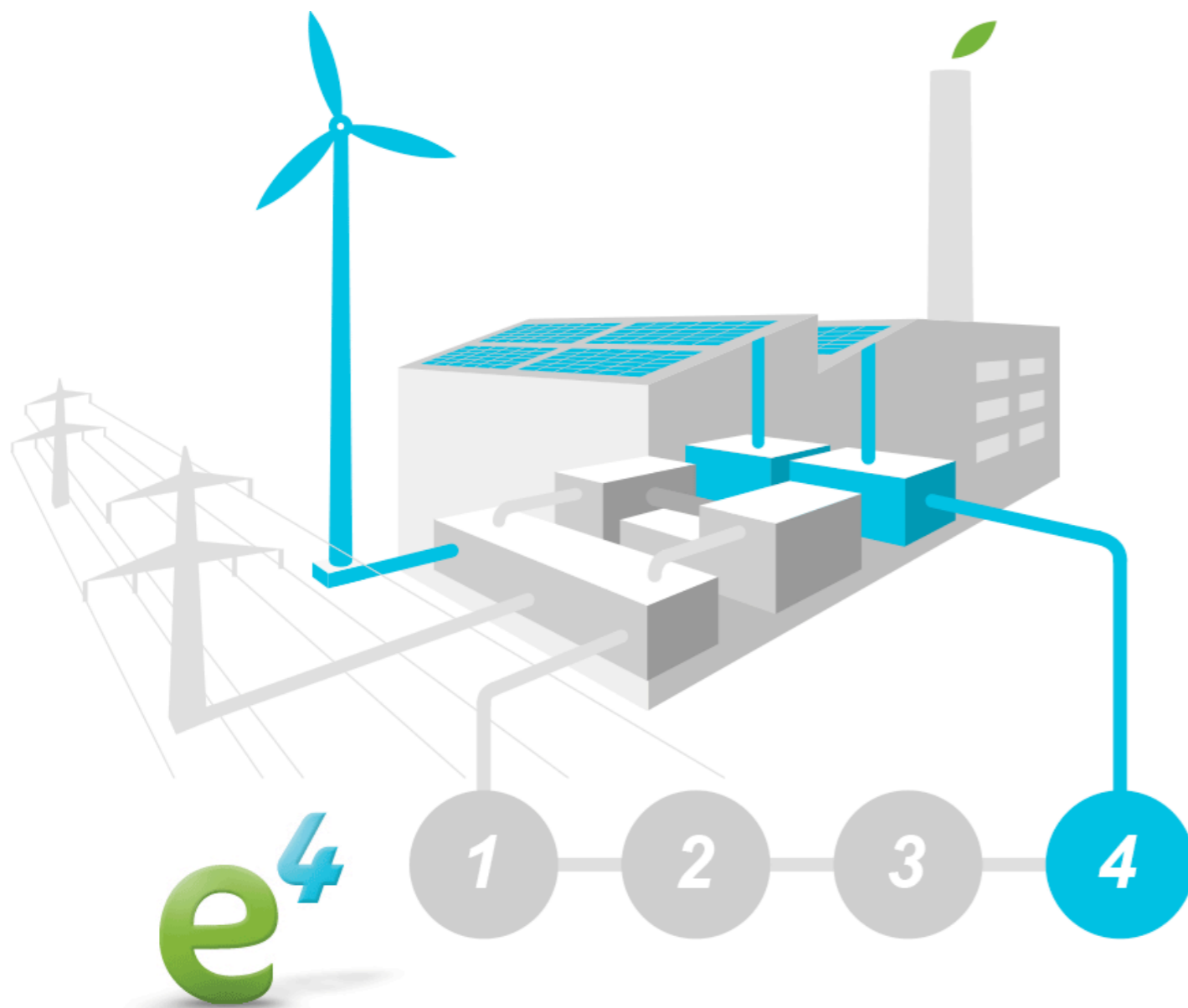
- e** PROCUREMENT
- e** DISTRIBUTION
- e** CONSUMPTION
- e** GENERATION

Optimisation of insulation, switching & control mechanisms, elimination of leakages



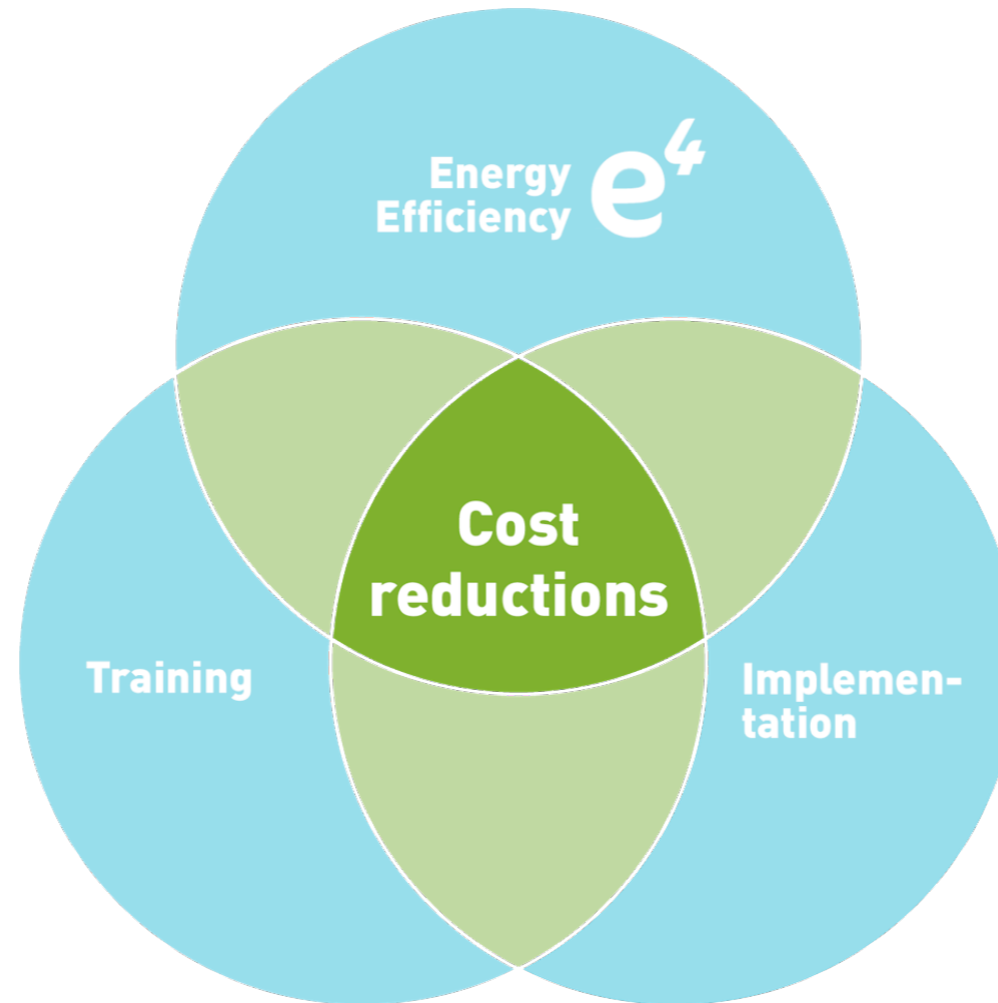
- e** PROCUREMENT
- e** DISTRIBUTION
- e** CONSUMPTION
- e** GENERATION

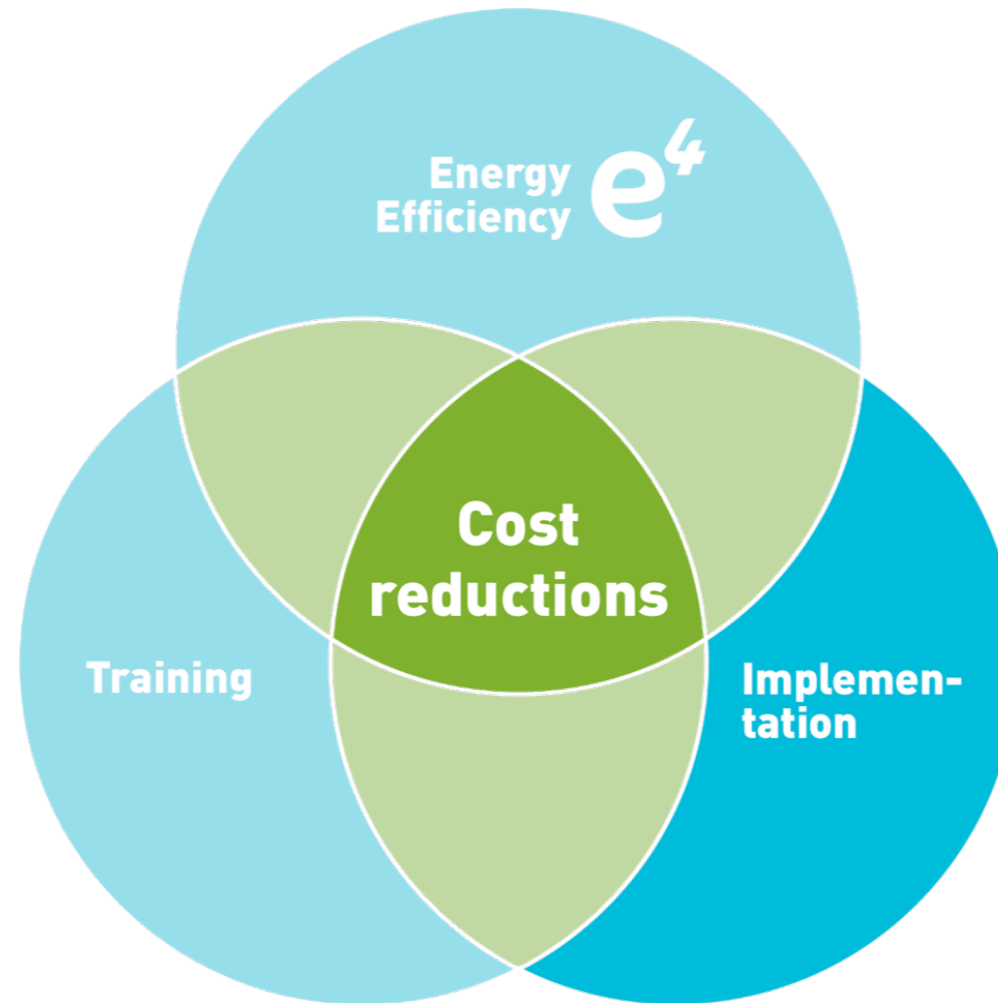
- Optimisation of amounts, performance, volume, etc.
- Deployment of new energy efficient technologies

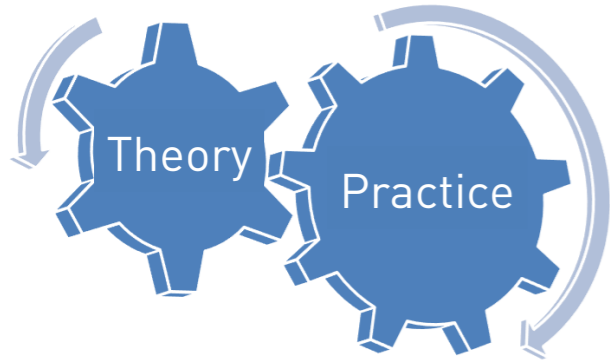


- e⁴ PROCUREMENT**
- e⁴ DISTRIBUTION**
- e⁴ CONSUMPTION**
- e⁴ GENERATION**

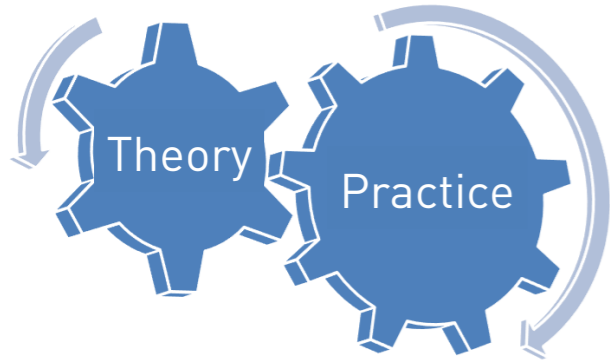
- Deployment of energy efficient technologies and renewable energies
- Future: Use of self-generated energy – or even energy self-sufficiency





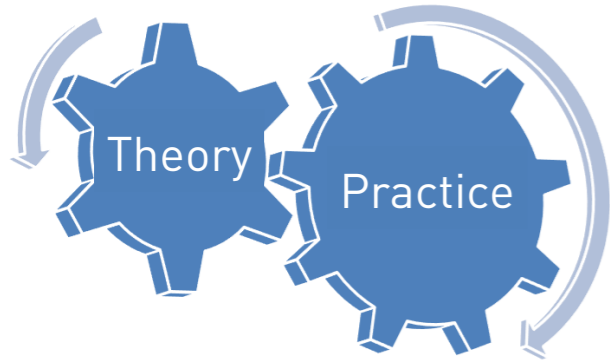


- Transition and Integration in the planning process
- Initiation of tendering process
- Independent project management



- Transition and Integration in the planning process
- Initiation of tendering process
- Independent project management

Goal: continuously improvement process



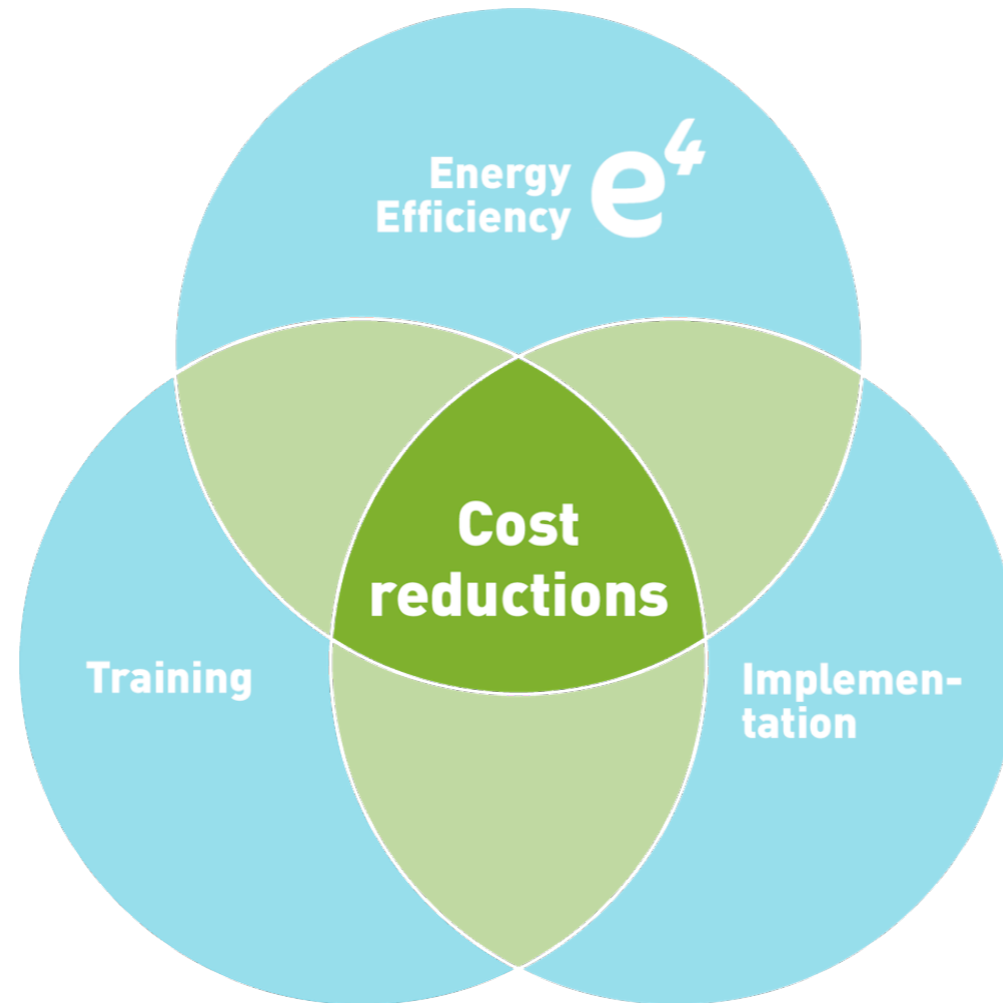
- Transition and Integration in the planning process
- Initiation of tendering process
- Independent project management

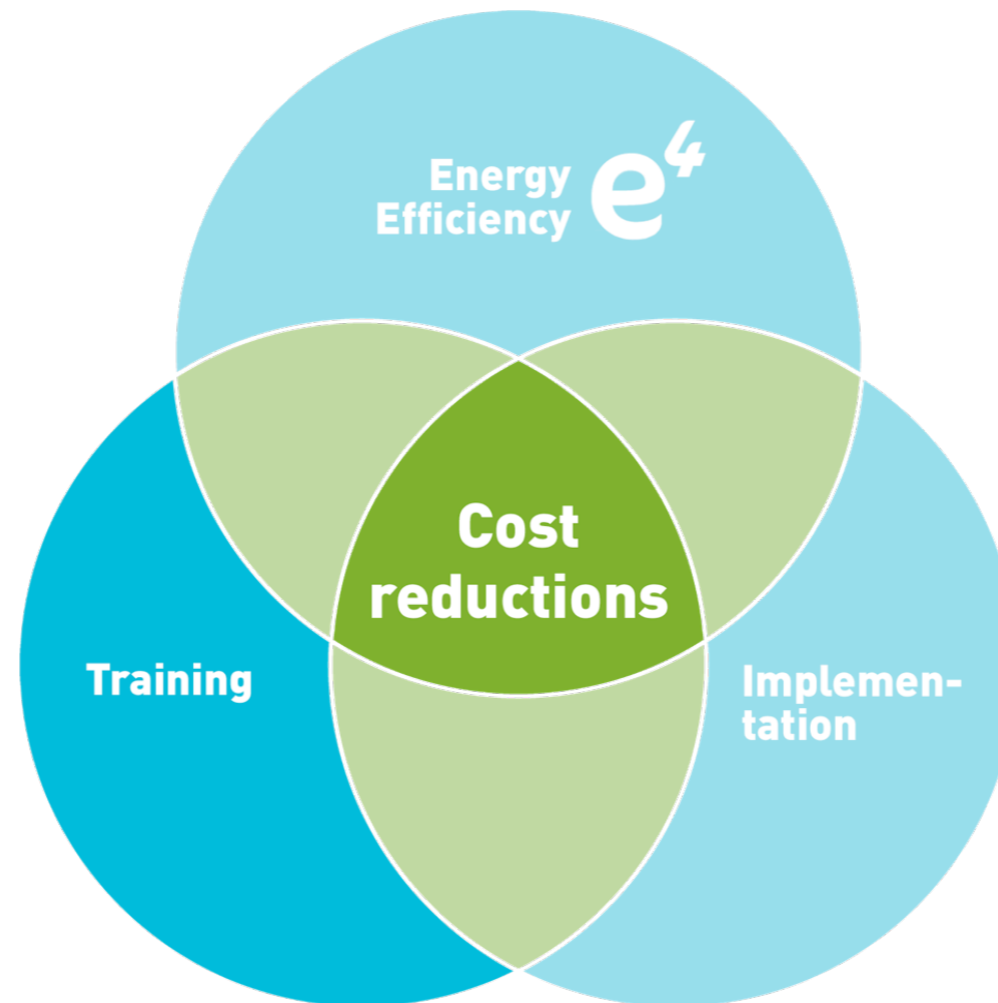
Goal: continuously improvement process

- Energy Management system in accordance with ...

ISO 50001
Energy Management System







- Seminars on energy efficiency and renewable energies
- Coaching of energy managers, departments, plants

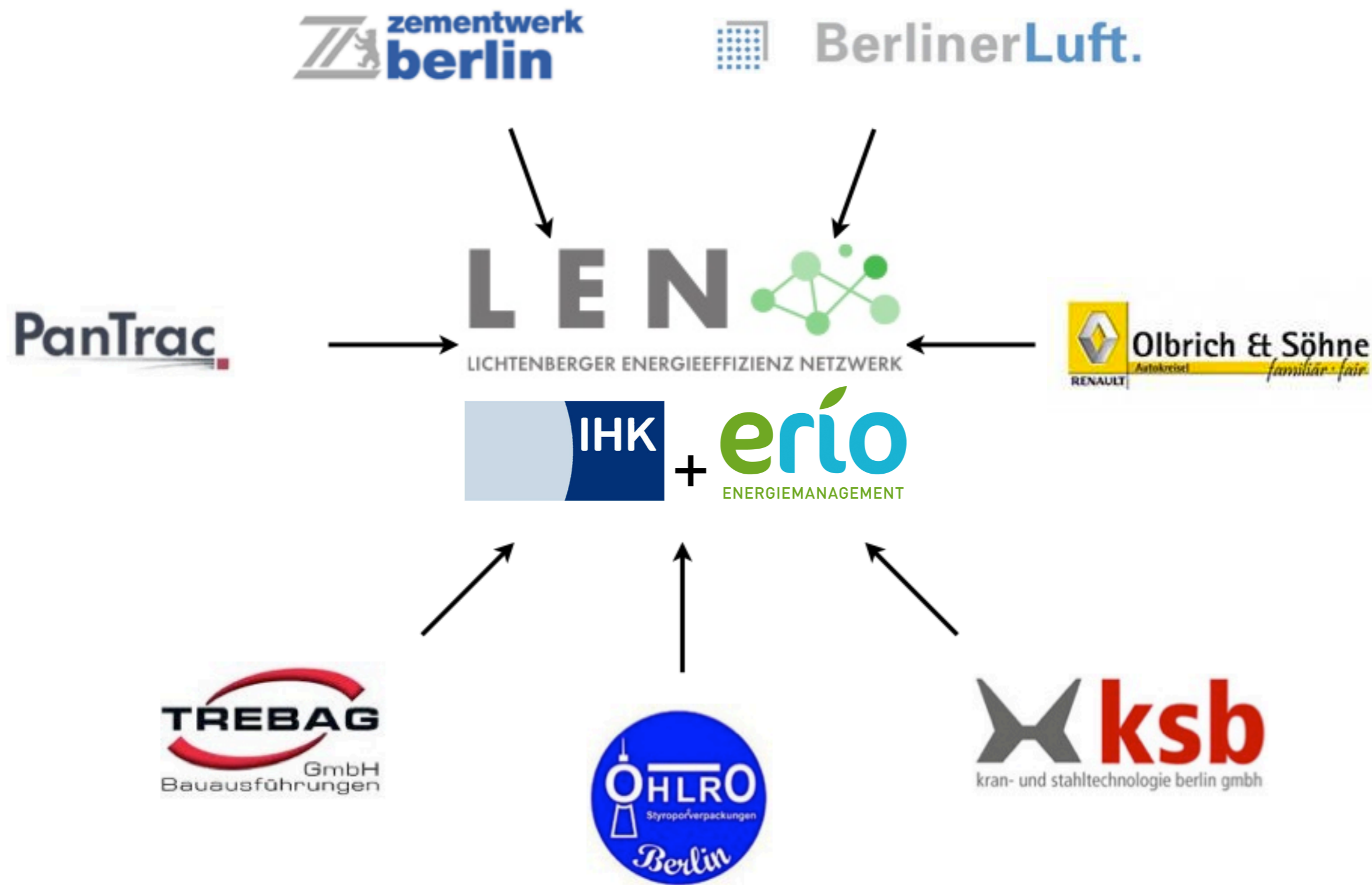
- Seminars on energy efficiency and renewable energies
- Coaching of energy managers, departments, plants
- Development of employee programmes and incentives

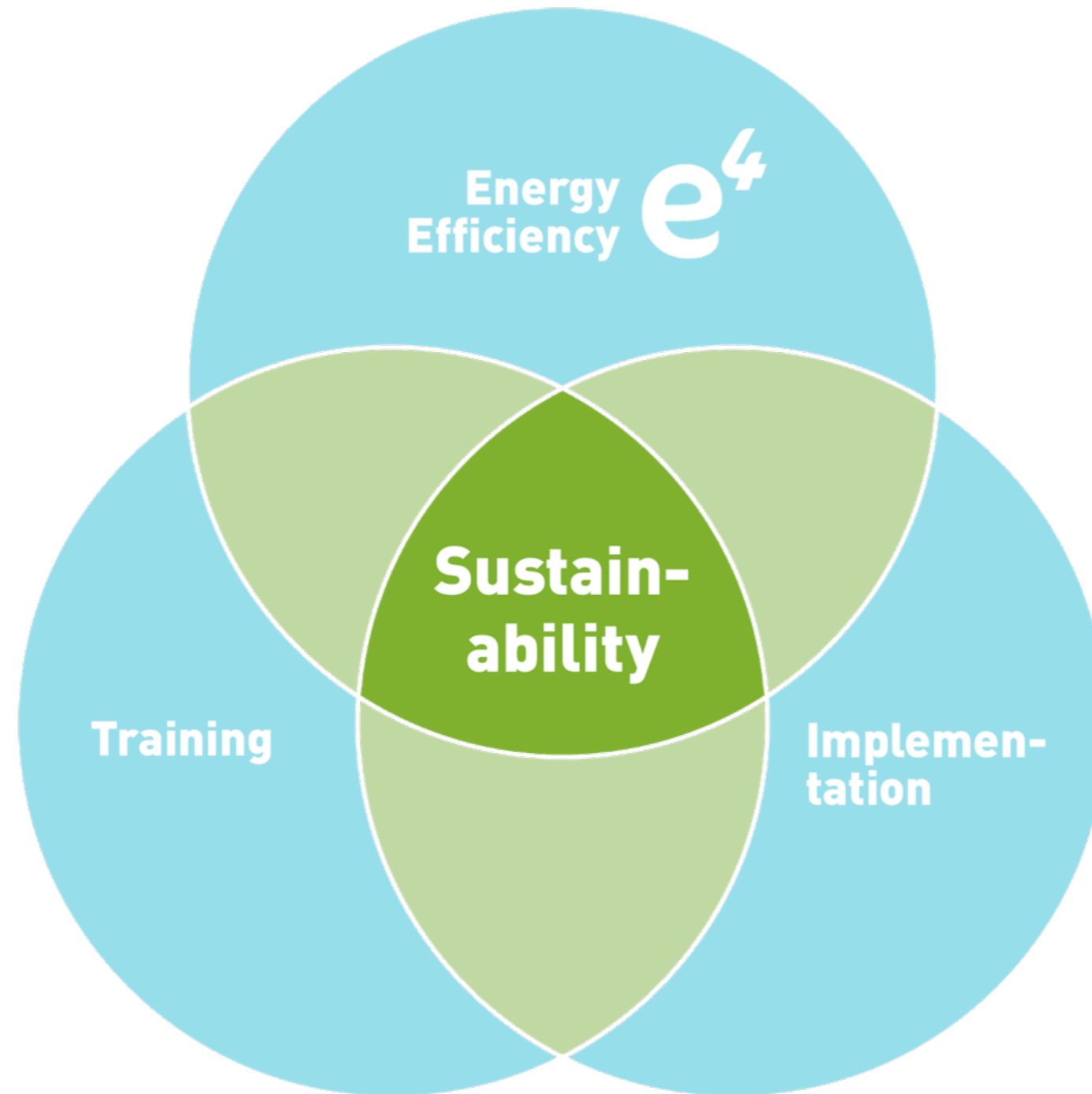


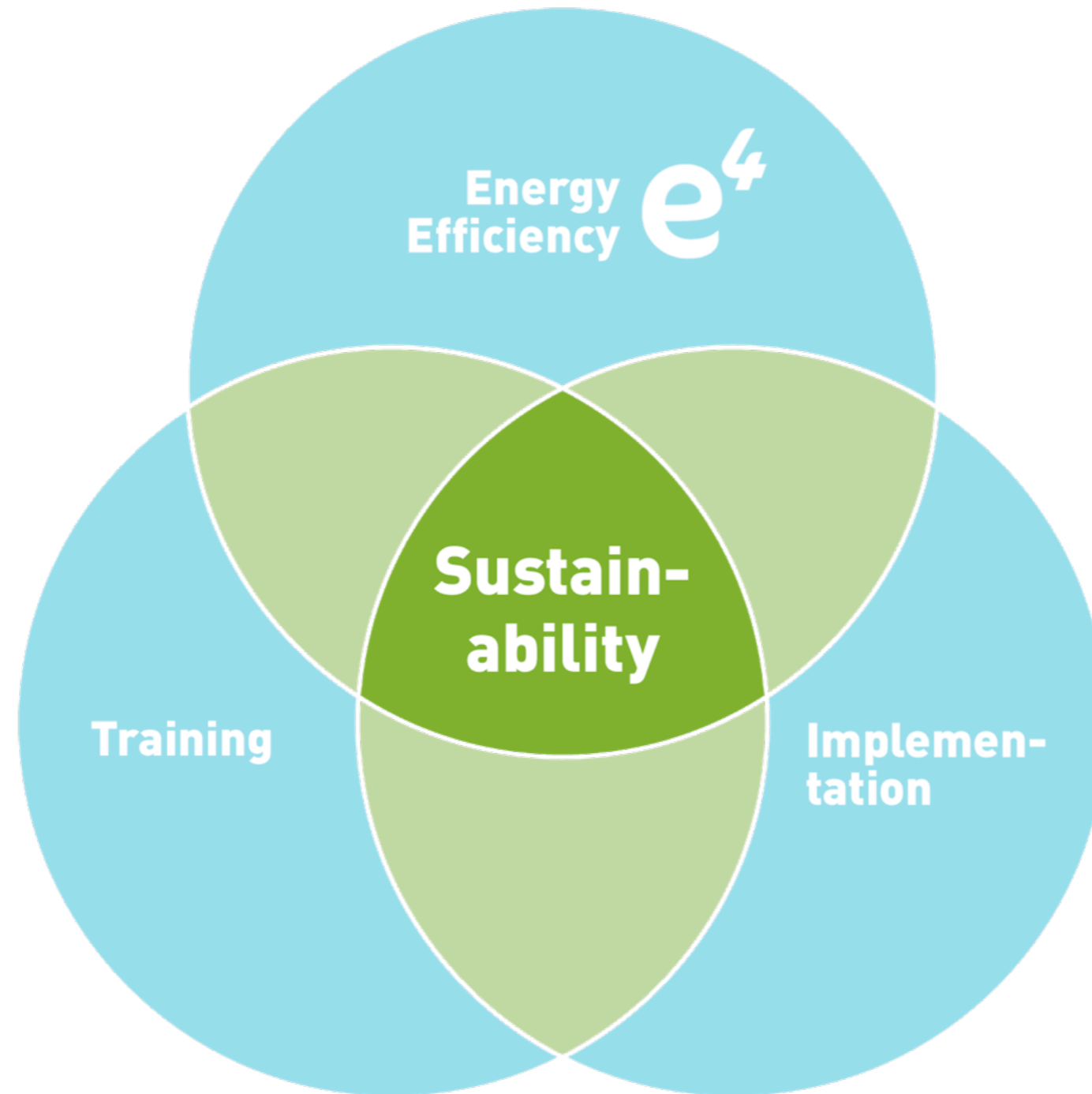
- Seminars on energy efficiency and renewable energies
- Coaching of energy managers, departments, plants
- Development of employee programmes and incentives



Energy Efficiency intensifies communication
and has teambuilding aspects





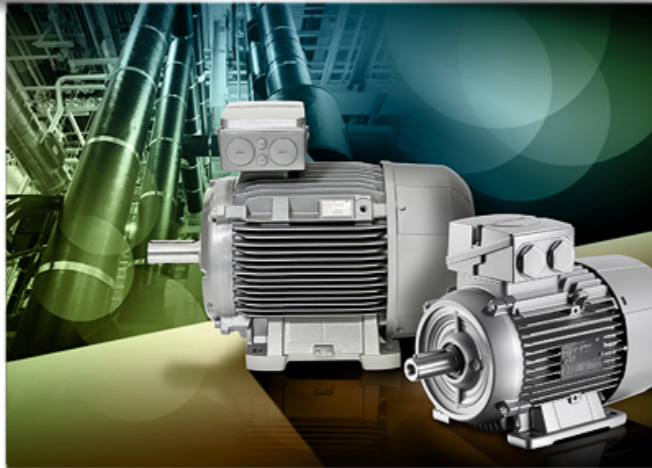


Best Practice Example



Siemens AG
(consumption 5GWh/year)

SIEMENS





SIEMENS



Siemens AG

(consumption 5GWh/year)

Energy efficiency measures:

- Electric motors
- Energy efficient & demand-oriented lighting (LMS - Light Management System)



SIEMENS



Siemens AG

(consumption 5GWh/year)

Energy efficiency measures:

- Electric motors
- Energy efficient & demand-oriented lighting (LMS - Light Management System)

Results:

- Investment 2.000.000 €
- Cost savings 1.000.000 €/year
- Amortisation 2 years
- CO₂ reduction 565 t/year

Best Practice Example

Knorr Bremse AG





Knorr Bremse AG

Energy efficiency measures:

- Drives in production plant
- Air-conditioning technology
- Heat recovery from electroplating system
- Elimination of leakages



Knorr Bremse AG

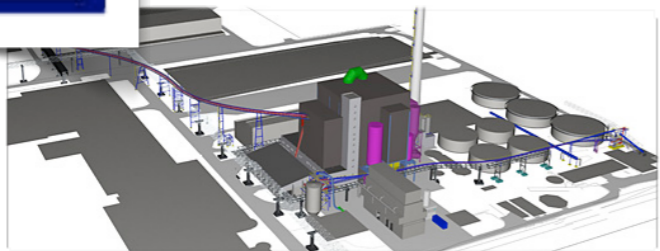
Energy efficiency measures:

- ✓ Drives in production plant
- ✓ Air-conditioning technology
- ✓ Heat recovery from electroplating system
- ✓ Elimination of leakages

Results:

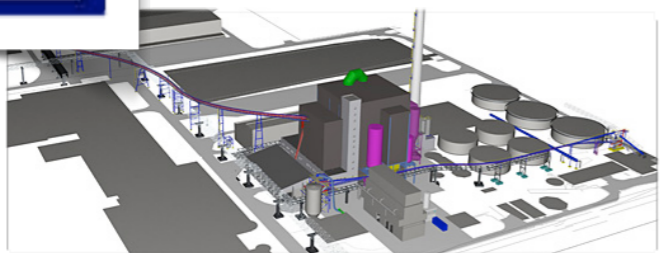
- ✓ Investment 1.500.000 €
- ✓ Cost savings 600.000 €/year
- ✓ Amortisation 2,5 years
- ✓ CO₂ reduction 6.500 t/year

Best Practice Example



Leipa GmbH

(paper industry, consumption 480 GWh/a)

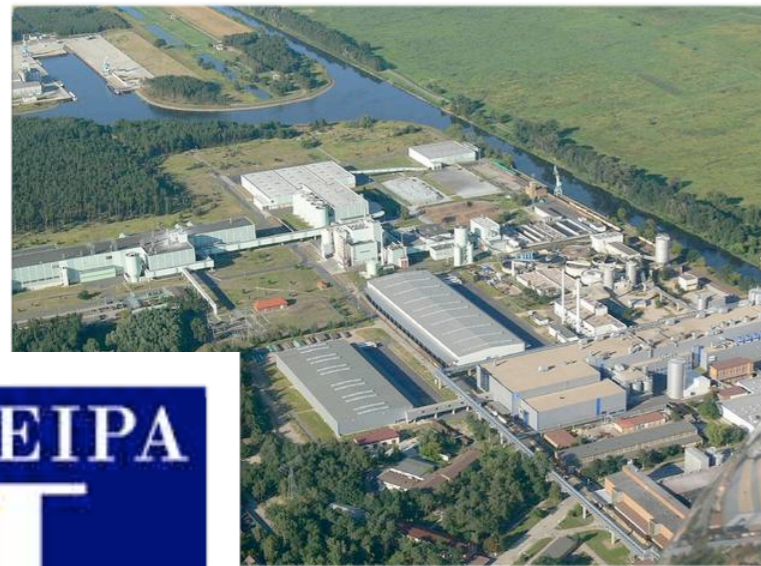


Leipa GmbH

(paper industry, consumption 480 GWh/a)

Energy efficiency measures:

- ✓ Load Profile management (-4,8 GWh)
- ✓ Energy efficient pumps



Leipa GmbH

(paper industry, consumption 480 GWh/a)

Energy efficiency measures:

- ✓ Load Profile management (-4,8 GWh)
- ✓ Energy efficient pumps

Results:

- ✓ Investment 1.000.000 €
- ✓ Cost savings 2.000.000 €/year
- ✓ Amortisation 0,5 years
- ✓ CO₂ reduction 27.120 t/year

Best Practice Example



HWL Löttechnik GmbH

HWL
Härte • Plasma • Fügetechnik





HWL
Härte • Plasma • Fügetechnik



HWL Löttechnik GmbH

Energy efficiency measures:

- Drives + frequency converter
- Pumps + frequency converter



HVM
Härte • Plasma • Fügetechnik



HWL Löttechnik GmbH

Energy efficiency measures:

- Drives + frequency converter
- Pumps + frequency converter

Results:

- Investment 100.000 €
- Cost savings 94.920 €/year
- Amortisation 1,05 years
- CO₂ reduction 298 t/year

Best Practice Example

Enterprise rent a car Germany (ca. 150 branches)



Enterprise rent a car Germany (ca. 150 branches)

Energy efficiency measures:

- ✓ LED & demand-oriented lighting
- ✓ Optimised heating control
- ✓ Power Management for IT infrastructure



Enterprise rent a car Germany (ca. 150 branches)

Energy efficiency measures:

- ✓ LED & demand-oriented lighting
- ✓ Optimised heating control
- ✓ Power Management for IT infrastructure

Results:

- ✓ Investment 620.000 € (4.000€/branch)
- ✓ Cost savings 350.000 €/year
- ✓ Amortisation 1,9 years
- ✓ CO₂ reduction 48 t/year



Enterprise rent a car Germany (ca. 150 branches)

Energy efficiency measures:

- ✓ LED & demand-oriented lighting
- ✓ Optimised heating control
- ✓ Power Management for IT infrastructure

Results:

- | | |
|-----------------------------|---------------------------|
| ✓ Investment | 620.000 € (4.000€/branch) |
| ✓ Cost savings | 350.000 €/year |
| ✓ Amortisation | 1,9 years |
| ✓ CO ₂ reduction | 48 t/year |

100% Energy efficient



Challenges SME

- Capacity - Capacity - Capacity
- Financial restrictions
- competition for liquidity
- Generating data

- All In One Hand Service
- Coop Know-how and trust
- Regionality (short ways)
- PR (politics, customers)
- Financial support

Energy Efficiency

The best way to
save energy costs.



**Thank you for your
attention!**

erío Energy Management
Anklamer Straße 53
10115 Berlin - Germany

Fon: +49(0)30 / 120 76 253-0
Fax: +49(0)30 / 120 76 253-9

Web: www.erio.de
Mail: info@erio.de

