

# Best Practice - Saving Energy in the Glass Industry with Energy Efficiency Networks (EEN)



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# The Energy Efficiency Networks initiative



Ein zentrales Ziel der Energiewende und des Energiekonzepts der Bundesregierung ist die Verbesserung der Energieeffizienz. Die Verbände und Organisationen der Wirtschaft unterstützen dieses Ziel und sehen eine weitere Steigerung der Energieeffizienz durch wirtschaftliche Maßnahmen als wichtiges Instrument auch zur Erhöhung der Kosteneffizienz des gesamten Energiesystems.

Angesichts der Unterschiedlichkeit der Unternehmen und der Notwendigkeit individuell zugeschnittener Konzepte setzen Bundesregierung und Wirtschaft insbesondere auf die Wahrnehmung unternehmerischer Selbstverantwortung bei der Steigerung der Energieeffizienz. Ein geeigneter Ansatz sind Energieeffizienz-Netzwerke, also der freiwillige, systematische und zielgerichtete Erfahrungsaustausch von Unternehmen aus einer Region oder Branche.

Die unterzeichnenden Verbände und Organisationen sagen zu, die Verbreitung von Effizienz-Netzwerken bei den Unternehmen über die gesamte Laufzeit der Vereinbarung nach Kräften zu fördern, unter anderem auch indem sie als Initiatoren von Netzwerken mittelbar oder unmittelbar zum Erfolg der gemeinsamen Initiative beitragen. Die Bundesregierung sagt ihrerseits zu, die Wirtschaft bei diesen Bemühungen über die gesamte Laufzeit der Vereinbarung tatkräftig und sichtbar zu unterstützen. Beide Seiten sind sich einig, dass es sich um eine gemeinsame Initiative handelt. Dies machen sie auch bei der Kommunikation nach außen deutlich. Sie sind sich ebenfalls einig, dass die Initiative Energieeffizienz-Netzwerke ausschließlich auf freiwilliger Basis erfolgt.

Gemeinsames Ziel von Bundesregierung und Wirtschaft ist die Initiierung und Durchführung von rund 500 neuen Energieeffizienz-Netzwerken bis Ende 2020. Damit leistet diese Netzwerkinitiative einen wichtigen Beitrag zur Erreichung der klima- und energiepolitischen Ziele der Bundesrepublik Deutschland, zu dem jährlich ein Monitoring stattfindet.

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- Agreement between the German government and German industry associations/organisations on the introduction of Energy Efficiency Networks of 3 December 2014
- BV Glas was a founding member
- Objective: to set up 500 Energy Efficiency Networks by 2020
- Government's energy savings estimate: 75 PJ of primary energy and 5 million tonnes of CO2 emissions
- Participation is voluntary
- Savings are monitored annually

# The Energy Efficiency Networks Agreement



## Minimum requirements for networks

- EENs should have **5-15** companies and run for 2-3 years
- Each energy efficiency network is initiated by a **network facilitator**
- The participating companies are supported by **advice from qualified energy consultants**
- The companies in the network meet up regularly to share ideas, experiences and best practices (**moderator**)
- With the help of the **energy consultants** each participating company sets an energy saving target and defines the measures it will implement to achieve it (The target can be relative)
- **These individual targets are the basis for the overall network target**

# The Energy Efficiency Networks Agreement



- **Networks** can be
  - Multi-sector
  - Sector-specific
  - Intragroup
- **Networking synergies are leveraged**
  - Energy audits can be prepared in the framework of the network
  - Existing energy audits replace an energy potential analysis or review within the network process
  - Companies with an ISO 50.001 or EMAS energy management system can contribute their energy potential analyses and energy programme requirements to the network
  - The energy management system can be optimised within the framework of the network

# Stakeholders



- Network facilitator
  - Organises the establishment of an Energy Efficiency Network,
  - recruits members and supports the network's activities
  - e.g. industry associations and organisations, energy companies, enterprises, local authorities, service providers or energy agencies
- Moderator
  - Organises, moderates and prepares the network meetings plus follow-up,
  - supports participants by establishing a timeframe and sets the network objective (with the help of an energy consultant)
  - Can be the network facilitator, a person in the company or a third party (e.g. energy consultant)
  
  - BV Glas is a network facilitator and moderator!

- Energy consultancy services
  - Can be provided by the network facilitator or an energy services company, a consultancy firm, or by internal or external persons
  - The consultant conducts an energy potential analysis with the companies in the network before it commences its work, unless one already exists
  - He or she defines suitable activities to enhance efficiency for each network member and presents them to the companies
  - Based on the energy saving potential for each company, the energy consultant supports the network in the formulation of a cumulative savings target for the entire network

# BV Glas Energy Efficiency Networks



- Multi-sector Rennsteigenergie
  - A network with members from various sectors of industry such as the screen-printing industry, and the glass industry
- Sector-specific GlasNET
  - A network of companies in various glass industry segments, such as flat glass and container glass
- Intragroup SCHOTT
  - A network of the group's various sites

# An example of a network meeting agenda



<b>1. Welcome</b>	<b>Company X &amp; BV Glas</b>
<b>2. Energy efficiency network</b> Closing report, discussion of monitoring, discussion of the network's re-establishment	<b>BV Glas</b>
<b>3. 'Tour de Table' on energy efficiency measure implementation</b> All companies in the network report on planned and implemented measures in respect of the targets in the Excel spreadsheet	<b>BV Glas</b>
<b>4. Energy efficiency potential associated with the use of absorption chillers</b>	<b>External energy consultancy firm</b>
<i>Lunch and guided tour of the production facility</i>	



# Technologies covered at the network meeting



- Compressed air
- Fans
- Pumps
- Drive systems
- Refrigeration/air-conditioning/ventilation
- Energy savings with annealing lehrs
- Lighting
- Energy efficiency in smelter plants and burner technology

# Examples of energy saving measures



Company	Site/plant	Type of measure	Implementation timeframe	Purpose	Description	Energy source	Projected energy savings	Real energy savings (kWh)
1	Plant 1	Lighting	Jan - Jun 2017	Substitute	Installation of LED technology	Electricity	108,000 kWh	108,000 kWh
1	Plant 2	Lighting	Jan - Jun 2018	Substitute	Installation of LED technology	Electricity	27,000 kWh	27,000 kWh
1	Plant 3	Lighting	Jan - Jun 2019	Substitute	Installation of LED technology	Electricity	120,000 kWh	120,000 kWh
1	Plant 4	Lighting	Jan - Jun 2020	Substitute	Installation of LED technology	Electricity	45,000 kWh	45,000 kWh
1	Plant 5	Lighting	Jan - Jun 2021	Substitute	Installation of LED technology	Electricity	50,000 kWh	50,000 kWh
1	All plants	Motors/drive systems	Jan - Dec 2017	Substitute	More efficient motors	Electricity		
2	Site 1	Lighting	Dec 17	Optimisation	Lighting	Electricity	30,000 kWh	30,000 kWh
2	Site 1	Lighting	Dec 15	Optimisation	New construction/installation	Electricity	40,000 kWh	37,221 kWh
2	Site 2	Lighting	Aug 16	Optimisation	LED lamps at the cold-end of furnace 2	Electricity	200 kWh	263 kWh
3	Glassworks 1	Vehicle fleet	Oct 2016 – Jun 2017	Optimisation	New cullet silo for plant 1. Phase-out of the wheel loader	Other	40,000 kWh	40,000 kWh



9 April 2018: The German Government pays tribute to GlasNET 2.0