Brochure

Industrial Energy Efficiency
Realising sustainable savings
Industrial Energy Efficiency

Business partnership for accelerated energy savings.

The potential to reduce energy consumption, cost and environmental impact is enormous across the global industrial base. While there are some excellent cases of best practice, in terms of technology implementation, behaviours and practices and government support and programmes, there are many areas where little progress has been made. People either don’t know where the opportunities are or have had the ‘discovery’ survey done, but there is a long list of opportunities that aren’t being progressed. This may be because of having insufficient detail to progress to the next step, insufficient technical expertise, insufficient management time or insufficient finance.

ABB’s 2011 global energy efficiency survey\(^1\) of 348 senior executives found that 72% of respondents believe that energy efficiency is already a critical success factor for manufacturers. And yet 66% of respondents responded that their organisations have not undertaken a company-wide energy audit in the past 3 years.

\(^1\)Trends in global energy efficiency 2011, ABB / Economist Intelligence Unit.

Capabilities

ABB helps customers to reduce energy consumption, cost and environmental impact. We are not in the business of just highlighting where energy can be saved, we consider the total journey - from zero knowledge to fully implemented, sustainable energy reductions - and we always keep the final goal in mind.

Delivering sustainable energy reduction requires a broad range of skills, skills that ABB has and includes; energy specialists, change management practitioners, project managers, project estimators and planners, process engineers, and functional engineering specialists. All of our teams are backed up by appropriate methodologies, tools and software. Our solutions are pragmatic ones, taking into account the requirements of working in a live operating plant environment.

Finance should not be an obstacle for energy reduction projects - the returns are at least as good as the majority of de-bottlenecking and production improvement projects. And yet capital is often off-limits for energy projects. ABB can help in bringing finance to bear on energy reduction projects and we are also ready to accept energy performance guarantees.

Our experience

ABB understands the stages of the journey that companies must go through - from wanting to reduce energy, through finding out where / how to reduce energy, to finally delivering sustainable energy reductions.

“We are very pleased with the results as ABB have defined very clearly where energy can be saved and how to achieve it. The work is really appreciated. It is better than just an audit.”

Customer, Energy Manager (Europe)

“We’ve had no end of audits that either tell us to turn the lights off or invest millions of pounds. What I like about your approach is that you concentrate on the practical.”

RHM
**Approach**

Our approach is flexible and allows for each customer’s particular starting point. Our aim with all our customers is to implement real, significant energy saving projects. Without implementation savings are not realized.

**Industrial Energy Efficiency**

<table>
<thead>
<tr>
<th>Self-check</th>
<th>Opportunity Identification</th>
<th>Feasibility and Master Plan</th>
<th>Implementation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Report</strong></td>
<td><strong>Opportunities Portfolio</strong></td>
<td><strong>Investment Cases</strong></td>
<td><strong>Execution</strong></td>
</tr>
<tr>
<td>Areas to focus attention</td>
<td>Detailed listing</td>
<td>Order of magnitude cost &amp; benefit</td>
<td>Management</td>
</tr>
<tr>
<td>Technologies to consider</td>
<td>Capital projects</td>
<td>Quick wins</td>
<td>Engineering</td>
</tr>
<tr>
<td>Order of magnitude savings potential</td>
<td>Behaviours &amp; practices assessment</td>
<td></td>
<td>Procurement</td>
</tr>
</tbody>
</table>

**Value**

<table>
<thead>
<tr>
<th>Project stage</th>
<th>Energy Management</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Policy, Strategy</strong></td>
<td>Policy, Strategy</td>
</tr>
<tr>
<td><strong>KPIs</strong></td>
<td>KPIs</td>
</tr>
<tr>
<td><strong>Measurement, monitoring &amp; reporting</strong></td>
<td>Measurement, monitoring &amp; reporting</td>
</tr>
<tr>
<td><strong>cpmPlusEnergy Manager</strong></td>
<td>cpmPlusEnergy Manager</td>
</tr>
<tr>
<td><strong>Team engagement</strong></td>
<td>Team engagement</td>
</tr>
<tr>
<td><strong>ISO50001</strong></td>
<td>ISO50001</td>
</tr>
</tbody>
</table>

**The ABB energy efficiency value accelerator process**

The journey begins with assessment: often initiated through a self-check, for which ABB has a free, web-based check-up tool, that quantifies and identifies areas of likely energy savings opportunities.

For many industrial energy users the journey continues with a site-based opportunity identification assessment. ABB experts spend time on the client’s site to investigate in detail the possibilities and opportunities for saving energy. Our work produces a portfolio of opportunities which fit into three discrete types: quick wins, projects, behaviours and practices. We frequently find that quick win projects pay for the cost of the assessment - making ABB’s work cost-neutral. An order of magnitude cost / benefit analysis is carried out for each opportunity.

In order to maintain momentum we rank the project opportunities and work with our clients to select the top few for development to capital authorization, during the feasibility and master planning phase. Our aim is to deliver a manageable number of projects that will deliver 5-20% energy savings - the amount being a function of process complexity and business size.

Using our experience of project front-end development, project management, execution and functional engineering design ABB will take approved projects through the entire engineering, procurement, installation and commissioning cycle to ensure our clients realize actual energy savings.

**Energy management - sustaining and enhancing the gains**

Energy management involves the engagement of operators, supervisors and managers to monitor and act upon energy performance KPIs. Our energy management processes directly support ISO 50001 implementation and certification and our cpmPlus Energy Manager software provides a highly sophisticated, real time monitoring and targeting solution as well as energy forecasting and procurement optimization capabilities.

**Benefits**

- Quick win improvements delivered - typically worth 2-3% of annual energy bill - easily funding ABB’s work
- Verifiable energy reductions and cost savings - typically 5-20% of total energy usage
- Improved energy management practices - to continue the improvement process

“How ABB’s methods of helping us to help ourselves have delivered not only excellent results but provided sustainability.”

Degussa
Energy services:
- Web-based self-check check-up tool
- Site-based opportunity identification assessment
- Behaviours and practices assessment
- Metering surveys
- cpmPlus energy manager
- ISO 50001
- Gap analysis
- Policy and strategy
- Energy management system design
- System implementation
- Team development and coaching
- System surveys
  - Boiler fingerprint
  - Direct heating
  - Steam distribution
  - Process cooling
  - Refrigeration
  - HVAC
  - Compressed gases
  - Materials handling
  - Pumps and fans
  - Electrical distribution
  - Motors and drives
- Operator, supervisor and manager training
- New plant design review

Other ABB capabilities include:
- Environmental services
- Functional engineering
- Inspection
- Integrity management
- Operations improvement
- Process safety
- Project services
- Technical software
- Technical training

For further information please contact:

**ABB Consulting**
Daresbury Park
Daresbury
Warrington
Cheshire, WA4 4BT
United Kingdom
Phone: +44 (0)1925 741111
E-Mail: contact@gb.abb.com

www.abb.com/consulting

**ABB Consulting**
3700 West Sam Houston
Parkway South
Suite 600
Houston 77042
Texas
United States
Phone: +1 713 587 8000
E-Mail: cahal.f.devlin@us.abb.com

www.abb.com

ABB (China) Ltd
10 Jiuxianqiao Lu
Universal Plaza
Beijing 100015
China
Phone: +86 10 8456 6688
E-Mail: consulting@cn.abb.com

www.abb.com.cn

ABB Pte. Ltd.
2 Ayer Rajah Crescent
Singapore 139935
Phone: +65 6222 7778
E-Mail: contact.center@sg.abb.com

www.abb.com.sg

ABB South Africa (Pty) Ltd.
ABB Campus, 2 Lake Road
Longmeadow Business Estate (North)
1609, Modderfontein, Gauteng
South Africa
Phone: +27 10 202 5000
E-Mail: consulting@za.abb.com

www.abb.co.za

ABB provides technical and engineering services to improve performance in the areas of compliance, operations and engineering to customers in the chemical, petrochemical, oil & gas, power, pharmaceuticals, metals and consumer industries worldwide.