



## INDUSTRIAL ENERGY MANAGEMENT

# CHANGING BEHAVIOR SAVES ENERGY

An innovative approach to reduce energy costs by 5-15%

Energy efficiency has been on the agenda for years but significant saving potential remains. Fully capitalizing on this potential requires more than technology and engineering. It requires a change in Energy Culture.

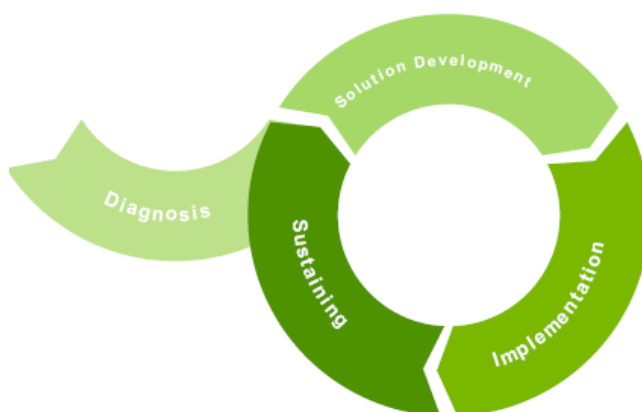
Nearly half of all industrial energy savings can be achieved without significant capital investment. These savings can be realized simply through management and behavioral changes.

- What drives an employee's behavior?
- Why do seemingly identical production units perform so differently?
- How is variability in energy performance linked to employee behavior?

We refer to this as *Energy Culture*.

Energy Culture is the shared mindset that creates and sustains an environment that leads to continual improvement of the organization's energy performance. It comprises people, systems, structure, skills and strategy.

DNV GL implements a proven, four-stage approach to improve an organization's Energy Culture.



## Four-Stage Approach

### Stage 1: Diagnosis

To identify potential savings and understand how to capture the gains, DNV GL will first assess the maturity of an organization's Energy Culture. This stage typically includes surveys, interviews, workshops, observations and energy variability analysis.

The organization's Energy Culture is characterized through eight dimensions: visibility, accountability, collaboration, targeting, commitment, motivation, learning and progress.

MATURITY	EXAMPLES
Inert	<ul style="list-style-type: none"><li>■ Limited or no available information on energy performance</li><li>■ No energy-related training provided</li></ul>
Reactive	<ul style="list-style-type: none"><li>■ Energy is measured via on-site utility meters only, which are recorded manually at irregular/long intervals</li><li>■ Poster campaigns are organized to generate awareness</li></ul>
Involved	<ul style="list-style-type: none"><li>■ Management bonuses are linked to energy performance</li><li>■ Plant-wide energy performance is illustrated throughout the facility</li></ul>
Proactive	<ul style="list-style-type: none"><li>■ Energy use of main energy users is measured in real-time and automatically analysed and stored</li><li>■ Energy champions conduct regular self-assessments</li></ul>
Continually Improving	<ul style="list-style-type: none"><li>■ Comprehensive, real-time metering structure is in place, covering main energy users and drivers</li><li>■ All level of the organization discuss energy performance on a daily basis</li></ul>

### Stage 2: Solution Development

DNV GL will create a 12 to 24 month action plan that reflects the organization's maturity level, its ambition, commitment and budget. The plan encompasses awareness, metering, effective planning, standard operating procedures and continuous improvement. It includes activities related to the change process such as setting up a task force, developing a communications plan, removing barriers and creating quick-wins to motivate people.

### Stage 3: Implementation

The immediate savings identified during the diagnosis phase are implemented first. These quick wins create momentum that helps drive the process. DNV GL provides ongoing implementation support through training, developing energy dashboards, improving reporting, designing KPI structure, creating a communication plan, and establishing a baseline to track progress.

### Stage 4: Sustaining

To sustain the achieved savings, it's important to measure progress compared to the baseline while identifying and implementing new saving opportunities. This closes the continuous improvement cycle.

## DNV GL Delivers Added Value

### Successful "Safety Culture" Approach

Energy Culture is an extension of DNV GL's well-known Safety Culture change programs, which have been widely used to identify and influence behavioral factors that affect safety.

### Leader in Energy Management Systems, ISO 50001 Advisory Services

DNV GL has been delivering Energy Management System services since early 2000. To date, DNV GL has supported a variety of industries with ISO 50001 gap analyses, implementation support, and certification. One requirement of ISO 50001 is to engage employees to implement a continuous improvement culture.

### Subject Matter Experts with Industrial Experience

DNV GL understands the industrial processes. Our in-house industry experts implement our projects and support our clients.

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Explore our full scope of services at [www.dnvgl.com](http://www.dnvgl.com).

### ABOUT DNV GL

DNV GL is a global authority in business and technical consultancy, testing and inspection, emissions reductions, certification, and risk management across the energy value chain.

With over 16,000 experts around the world, DNV GL is committed to driving the global transition toward a safe, reliable, efficient, and clean energy future. [www.dnvgl.com](http://www.dnvgl.com)

### IN THE ENERGY INDUSTRY

DNV GL delivers world-renowned testing and advisory services to the energy value chain including renewables. Its expertise spans onshore and offshore wind power, solar, conventional generation, transmission and distribution, smart grids, and sustainable energy use, as well as energy markets and regulations. DNV GL's 3,000 energy experts support clients around the globe in delivering a safe, reliable, efficient, and sustainable energy supply.